



Criteria 3.1.2

Sanction letters of award of seed money, Proposals & Utilisation Certificates to the teachers.

Appendix-II

(2023-24)

F.No.1/2023-2024/Seed Fund-Nov23/01

Dated: 03-Nov-2023

To

Dr. Latika Singh
Project Investigator
School of Engineering and Technology
Sushant University
Gurgaon.

Subject: Seed funding for research project “Multiversebase Gamification of Training Programs in Indian Language for Children with Autism”.

Sir/Madam

I am directed to inform you that your application for seeking seed funding from the University for the research project “Multiversebase Gamification of Training Programs in Indian Language for Children with Autism” has been recommended for financial support. With this support you will be able to procure the required resources. We hope that the support will empower the stakeholders with the latest technology.

Recommended Budget:

Head of Account	Sanctioned Budget	Remarks
Procurement of System/Equipment	1,00,000/-	Submission of invoice and bills
Travel Expenses/Field Visits/Data Collection	14,000/-	Submission of invoice and bills
Manpower	96,000/-	Submission of invoice and bills
Total	2,10,000/-	

The support is subject to the following conditions:

1. The amount will be disbursed in three phases. You must submit the utilization certificate and other completion documents.
2. You should maintain the proper accounts of the expenditure, which shall be utilized, only on approved items of expenditure.
3. The PI has to submit the final technical report of the project after successful implementation and its utilization.

Jshar
03/11/2023

Head
Centre for Research and Development
Sushant University



F.No.1/2023-2024/Seed Fund- Nov23/02

Dated: 03-Nov-2023

To

Prof. Aruna Bhardwaj
Project Investigator
School of Art and Architecture
Sushant University
Gurgaon.

Subject: Seed funding for research project "Co-create gender sensitive public spaces in an urban neighbourhood with school children using a multidisciplinary digitally integrated methodology."

Sir/Madam

I am directed to inform you that your application for seeking seed funding from the University for a research project "Co-create gender sensitive public spaces in an urban neighbourhood with school children using a multidisciplinary digitally integrated methodology" has been recommended for financial support. With this support you will be able to procure the required resources. We hope that the support will empower the stakeholders with the latest technology.

Recommended Budget:

Head of Account	Sanctioned Budget	Remarks
Travel Expenses	25,000/-	Submission of invoice and bills
Equipment/Software/Services	60,000/-	Submission of invoice and bills
Research assistant	60,000	

The support is subject to the following conditions:

1. The amount will be disbursed in three phases. You must submit the utilization certificate and other completion documents.
2. You should maintain the proper accounts of the expenditure, which shall be utilized, only on approved items of expenditure.
3. The PI has to submit the final technical report of the project after successful implementation and its utilization.

John
03/11/2023

Head
Centre for Research and Development
Sushant University



F.No.1/2023-2024/Seed Fund- Nov23/03

Dated: 03-Nov-2023

To

Prof. Varsha Khetrupal
Project Investigator
School of Art and Architecture
Sushant University
Gurgaon.

Subject: Seed funding for research project "Indian Green Building Council (IGBC) Training and Membership."

Sir/Madam

I am directed to inform you that your application for seeking seed funding from the University for research project "Indian Green Building Council (IGBC) Training and Membership" has been recommended for financial support. With this support you will be able to procure the required resources. We hope that the support will empower the stakeholders with the latest technology.

Recommended Budget:

Head of Account	Sanctioned Budget	Remarks
Travel Expenses/Field Visits/Data Collection	50,000/-	Submission of invoice and bills
Equipment/Software/Services/S subscriptions	73,000/-	Submission of invoice and bills
Consumables	20,000/-	Submission of invoice and bills
Total	1,43,000/-	

The support is subject to the following conditions:

1. The amount will be disbursed in three phases. You must submit the utilization certificate and other completion documents.
2. You should maintain the proper accounts of the expenditure, which shall be utilized, only on approved items of expenditure.
3. The PI has to submit the final technical report of the project after successful implementation and its utilization.

John
03/11/2023

Head

Centre for Research and Development
Sushant University



F.No.1/2023-2024/Seed Fund- Nov 23/08

Dated: 03-Nov-2023

To

Dr. Jyoti Sinha
Project Investigator
School of Health Sciences
Sushant University
Gurgaon.

Subject: Seed funding for research project "Experimental Research work"

Subject: Sir/Madam

I am directed to inform you that your application for seeking seed funding from the University for "Experimental Research work" has been recommended for financial support. With this support you will be able to procure the required resources. We hope that the support will empower the stakeholders with the latest technology.

Recommended Budget:

Head of Account	Sanctioned Budget	Remarks
Travel Expenses/Field Visits/Data Collection	70,000/-	Submission of invoice and bills
Equipment/Software/Services/Subscriptions	70,000/-	Submission of invoice and bills
Consumables	70,000/-	Submission of invoice and bills
Total	2,10,000/-	

The support is subject to the following conditions:

1. The amount will be disbursed in three phases. You must submit the utilization certificate and other completion documents.
2. You should maintain the proper accounts of the expenditure, which shall be utilized, only on approved items of expenditure.
3. The PI has to submit the final technical report of the project after successful implementation and its utilization.

Jyoti Sinha
03/11/2023

Head
Centre for Research and Development
Sushant University



F.No.1/2023-2024/Seed Fund- Nov23/04

Dated: 03-Nov-2023

To

Prof. Sehba Saleem
Project Investigator
School of Art and Architecture
Sushant University
Gurgaon.

Subject: Seed funding for research project "Urban Heat Island."

Sir/Madam

I am directed to inform you that your application for seeking seed funding from the University for research project "Urban Heat Island" has been recommended for financial support. With this support you will be able to procure the required resources. We hope that the support will empower the stakeholders with the latest technology.

Recommended Budget:

Head of Account	Sanctioned Budget	Remarks
Travel Expenses/Field Visits/Data Collection	50,000/-	Submission of invoice and bills
Equipment/Software/Services/Subscriptions	64,900/-	Submission of invoice and bills
Consumables	50,000/-	Submission of invoice and bills
Total	1,64,900/-	

The support is subject to the following conditions:

1. The amount will be disbursed in three phases. You must submit the utilization certificate and other completion documents.
2. You should maintain the proper accounts of the expenditure, which shall be utilized, only on approved items of expenditure.
3. The PI has to submit the final technical report of the project after successful implementation and its utilization.

John
03/11/2023
Head

Centre for Research and Development
Sushant University



F.No.1/2023-2024/Seed Fund- Nov23/05

Dated: 03-Nov-2023

To

Dr. Dinesh Rai
Project Investigator
School of Engineering and Technology
Sushant University
Gurgaon.

Subject: Seed funding for research project "Implementation of Azure Active Directory for Secure Identity Management and Access Control in Educational Institutions".

Sir/Madam

I am directed to inform you that your application for seeking seed funding from the University for research project "Implementation of Azure Active Directory for Secure Identity Management and Access Control in Educational Institutions" has been recommended for financial support. With this support you will be able to procure the required resources. We hope that the support will empower the stakeholders with the latest technology.

Recommended Budget:

Head of Account	Sanctioned Budget	Remarks
Travel Expenses/Field Visits	20,000/-	Submission of invoice and bills
Equipment/Software/Services	80,000/-	Submission of invoice and bills
Consumables	20,000/-	Submission of invoice and bills
Total	1,20,000/-	

The support is subject to the following conditions:

1. The amount will be disbursed in three phases. You must submit the utilization certificate and other completion documents.
2. You should maintain the proper accounts of the expenditure, which shall be utilized, only on approved items of expenditure.
3. The PI has to submit the final technical report of the project after successful implementation and its utilization.



J. S. ...
03/11/2023

Head
Centre for Research and Development
Sushant University

F.No.1/2023-2024/Seed Fund- Nov23/06

Dated: 03-Nov-2023

To

Dr. Monika Khurana
 Project Investigator
 School of Engineering and Technology
 Sushant University
 Gurgaon.

Subject: Seed funding for research project "Green Synthesis of nanoparticles and its interactions with biomembranes".

Sir/Madam

I am directed to inform you that your application for seeking seed funding from the University for the research project "Green Synthesis of nanoparticles and its interactions with biomembranes" has been recommended for financial support. With this support you will be able to procure the required resources. We hope that the support will empower the stakeholders with the latest technology.

Recommended Budget:

Head of Account	Sanctioned Budget	Remarks
Travel Expenses/Field Visits/Data Collection	40,000/-	Submission of invoice and bills
Equipment/Software/Services/S subscriptions	1,05,000/-	Submission of invoice and bills
Consumables	60,000/-	Submission of invoice and bills
Total	2,05,000/-	

The support is subject to the following conditions:

1. The amount will be disbursed in three phases. You must submit the utilization certificate and other completion documents.
2. You should maintain the proper accounts of the expenditure, which shall be utilized, only on approved items of expenditure.
3. The PI has to submit the final technical report of the project after successful implementation and its utilization.



John
 03/11/2023

Head
 Centre for Research and Development
 Sushant University



F.No.1/2023-2024/Seed Fund- Nov23/07

Dated: 08-Nov-2023

To

Dr. Himadri S Dey
 Project Investigator
 School of Art and Architecture
 Sushant University
 Gurgaon.

Subject: Seed funding for research project “Spatial analysis of Natural Conservation Zone (NCZ) in Gurugram: A GIS study”.

Sir/Madam

I am directed to inform you that your application for seeking seed funding from the University for research project “Spatial analysis of Natural Conservation Zone (NCZ) in Gurugram: A GIS study” has been recommended for financial support. With this support you will be able to procure the required resources. We hope that the support will empower the stakeholders with the latest technology.

Recommended Budget:

Head of Account	Sanctioned Budget	Remarks
Travel Expenses/Field Visits/Data Collection	40,000/-	Submission of invoice and bills
Equipment/Software/Services	60,000/-	Submission of invoice and bills
Consumables	36,000/-	Submission of invoice and bills
Total	1,36,000/-	

The support is subject to the following conditions:

1. The amount will be disbursed in three phases. You must submit the utilization certificate and other completion documents.
2. You should maintain the proper accounts of the expenditure, which shall be utilized, only on approved items of expenditure.
3. The PI has to submit the final technical report of the project after successful implementation and its utilization.


 08/11/2023

Head
 Centre for Research and Development
 Sushant University



F.No.1/2023-2024/Seed Fund- Nov23/08

Dated: 08-Nov-2023

To

Dr. Neelam
Project Investigator
School of Health Sciences
Sushant University
Gurgaon.

Subject: Seed funding for research project "Enhancing the Efficacy and Environmental Sustainability of Biopesticides through Nano Formulation".

Sir/Madam

I am directed to inform you that your application for seeking seed funding from the University for research project "Enhancing the Efficacy and Environmental Sustainability of Biopesticides through Nano Formulation s" has been recommended for financial support. With this support you will be able to procure the required resources. We hope that the support will empower the stakeholders with the latest technology.

Recommended Budget:

Head of Account	Sanctioned Budget	Remarks
Travel Expenses/Field Visits/Data Collection	40,000/-	Submission of invoice and bills
Equipment/Software/Services/S subscriptions	1,60,000/-	Submission of invoice and bills
Consumables	80,000/-	Submission of invoice and bills
Total	2,80,000/-	

The support is subject to the following conditions:

1. The amount will be disbursed in three phases. You must submit the utilization certificate and other completion documents.
2. You should maintain the proper accounts of the expenditure, which shall be utilized, only on approved items of expenditure.
3. The PI has to submit the final technical report of the project after successful implementation and its utilization.



Joshua
03/11/2023

Head
Centre for Research and Development
Sushant University

F.No.1/2023-2024/Seed Fund- Nov23/09

Dated: 08-Nov-2023

To

Dr. Swati
 Project Investigator
 School of Business
 Sushant University
 Gurgaon.

Subject: Seed funding for research project “Sustainability of Biopesticides through Nano Formulation”.

Sir/Madam

I am directed to inform you that your application for seeking seed funding from the University for a research project “Sustainability of Biopesticides through Nano Formulation” has been recommended for financial support. With this support you will be able to procure the required resources. We hope that the support will empower the stakeholders with the latest technology.

Recommended Budget:

Head of Account	Sanctioned Budget	Remarks
Travel Expenses/Field Visits/Data Collection	40,000/-	Submission of invoice and bills
Equipment/Software/Services/S subscriptions	70,000/-	Submission of invoice and bills
Consumables	30,000/-	Submission of invoice and bills
Total	1,40,000/-	

The support is subject to the following conditions:

1. The amount will be disbursed in three phases. You must submit the utilization certificate and other completion documents.
2. You should maintain the proper accounts of the expenditure, which shall be utilized, only on approved items of expenditure.
3. The PI has to submit the final technical report of the project after successful implementation and its utilization.



[Signature]
 08/11/2023
 Head

Centre for Research and Development
 Sushant University

F.No.1/2023-2024/Seed Fund-Nov23/10

Dated: 08-Nov-2023

To

Dr. Saurabh Saraswat
 Project Investigator
 School of Health Sciences
 Sushant University
 Gurgaon.

Subject: Seed funding for research project "Herbal Nasal Inhaler".

Sir/Madam

I am directed to inform you that your application for seeking seed funding from the University for the research project "Herbal Nasal Inhaler" has been recommended for financial support. With this support you will be able to procure the required resources. We hope that the support will empower the stakeholders with the latest technology.

Recommended Budget:

Head of Account	Sanctioned Budget	Remarks
Travel Expenses/Field Visits/Data Collection	40,000/-	Submission of invoice and bills
Equipment/Software/Services/S subscriptions	120,000/-	Submission of invoice and bills
Consumables/Manpower	60,000/-	Submission of invoice and bills
Total	2,20,000/-	

The support is subject to the following conditions:

1. The amount will be disbursed in three phases. You must submit the utilization certificate and other completion documents.
2. You should maintain the proper accounts of the expenditure, which shall be utilized, only on approved items of expenditure.
3. The PI has to submit the final technical report of the project after successful implementation and its utilization.

Jsh
 08/11/2023
 Head

Centre for Research and Development
 Sushant University



F.No.1/2023-2024/Seed Fund-Nov23/11

Dated: 08-Nov-2023

To

Dr. Deepak Miglani
Project Investigator
School of Law
Sushant University
Gurgaon.

Subject: Seed funding for research project "Role of Mediation in solving Disputes".

Sir/Madam

I am directed to inform you that your application for seeking seed funding from the University for the research project "Role of Mediation in solving Disputes" has been recommended for financial support. With this support you will be able to procure the required resources. We hope that the support will empower the stakeholders with the latest technology.

Recommended Budget:

Head of Account	Sanctioned Budget	Remarks
Travel Expenses/Data Collection/Field visits	1,00,000/-	Submission of invoice and bills
Consumables	26,000	Submission of invoice and bills

The support is subject to the following conditions:

1. The amount will be disbursed in three phases. You must submit the utilization certificate and other completion documents.
2. You should maintain the proper accounts of the expenditure, which shall be utilized, only on approved items of expenditure.
3. The PI has to submit the final technical report of the project after successful implementation and its utilization.

Johar
08/11/2023

Head

Centre for Research and Development
Sushant University



F.No.1/2023-2024/Seed Fund- Nov23/12

Dated: 08-Nov-2023

To

Dr. Aastha Mehta
Project Investigator
School of Law
Sushant University
Gurgaon.

Subject: Seed funding for research project "Role of Women in decision making roles in Corporates in the State of Haryana".

Sir/Madam

I am directed to inform you that your application for seeking seed funding from the University for research project "Role of Women in decision making roles in Corporates in the State of Haryana" has been recommended for financial support. With this support you will be able to procure the required resources. We hope that the support will empower the stakeholders with the latest technology.

Recommended Budget:

Head of Account	Sanctioned Budget	Remarks
Travel Expenses	15,000/-	Submission of invoice and bills
Equipment/Software/Services	80,000/-	Submission of invoice and bills
Consumables	15,000	Submission of invoice and bills

The support is subject to the following conditions:

1. The amount will be disbursed in three phases. You must submit the utilization certificate and other completion documents.
2. You should maintain the proper accounts of the expenditure, which shall be utilized, only on approved items of expenditure.
3. The PI has to submit the final technical report of the project after successful implementation and its utilization.



Head
Centre for Research and Development
Sushant University



F.No.1/2023-2024/Seed Fund- Nov23/13

Dated: 08-Nov-2023

To

Dr. Sulakshana Bannerjee
 Project Investigator
 School of Law
 Sushant University
 Gurgaon.

Subject: Seed funding for research project “An Empirical Study on Urgent Need of Prison Reforms Based on the Prison in Bhondsi, Gurugram, Haryana, India”.

Sir/Madam

I am directed to inform you that your application for seeking seed funding from the University for research project “An Empirical Study on Urgent Need of Prison Reforms Based on the Prison in Bhondsi, Gurugram, Haryana, India” has been recommended for financial support. With this support you will be able to procure the required resources. We hope that the support will empower the stakeholders with the latest technology.

Recommended Budget:

Head of Account	Sanctioned Budget	Remarks
Travel Expenses/Field Visits/Data Collection	40,000/-	Submission of invoice and bills
Equipment/Software/Services/S ubscriptions	60,000/-	Submission of invoice and bills
Consumables	15,000/-	Submission of invoice and bills
Total	1,15,000/-	

The support is subject to the following conditions:

1. The amount will be disbursed in three phases. You must submit the utilization certificate and other completion documents.
2. You should maintain the proper accounts of the expenditure, which shall be utilized, only on approved items of expenditure.
3. The PI has to submit the final technical report of the project after successful implementation and its utilization.



John
 08/11/2023

Head

Centre for Research and Development
 Sushant University

F.No.1/2023-2024/Seed Fund- Nov23/14

Dated: 08-Nov-2023

To

Ms. Chandana Paul
Project Investigator
Vatel Hotel and Tourism Business School
Sushant University
Gurgaon.

Subject: Seed funding for research project "Recycle Renewed project".

Sir/Madam

I am directed to inform you that your application for seeking seed funding from the University for research project "Recycle Renewed project" has been recommended for financial support. With this support you will be able to procure the required resources. We hope that the support will empower the stakeholders with the latest technology.

Recommended Budget:

Head of Account	Sanctioned Budget	Remarks
Travel Expenses/Field Visits/Data Collection	80,000/-	Submission of invoice and bills
Equipment/Software/Services/S subscriptions	1,42,600/-	Submission of invoice and bills
Consumables/Manpower	96,000/-	Submission of invoice and bills
Total	3,18,600/-	

The support is subject to the following conditions:

1. The amount will be disbursed in three phases. You must submit the utilization certificate and other completion documents.
2. You should maintain the proper accounts of the expenditure, which shall be utilized, only on approved items of expenditure.
3. The PI has to submit the final technical report of the project after successful implementation and its utilization.

John
08/11/2023

Head

Centre for Research and Development
Sushant University



F.No.1/2023-2024/Seed Fund- Nov23/15

Dated: 08-Nov-2023.

To

Mr. Saif Anjum
 Project Investigator
 Vatel Hotel and Tourism Business School
 Sushant University
 Gurgaon.

Subject: Seed funding for research project "FRESH TULSI INFUSED WATER".

Sir/Madam

I am directed to inform you that your application for seeking seed funding from the University for research project "FRESH TULSI INFUSED WATER" has been recommended for financial support. With this support you will be able to procure the required resources. We hope that the support will empower the stakeholders with the latest technology.

Recommended Budget:

Head of Account	Sanctioned Budget	Remarks
Travel Expenses/Field Visits/Data Collection	50,000/-	Submission of invoice and bills
Equipment/Software/Services/Subscriptions	78,500/-	Submission of invoice and bills
Consumables	30,000/-	Submission of invoice and bills
Total	1,58,500/-	

The support is subject to the following conditions:

1. The amount will be disbursed in three phases. You must submit the utilization certificate and other completion documents.
2. You should maintain the proper accounts of the expenditure, which shall be utilized, only on approved items of expenditure.
3. The PI has to submit the final technical report of the project after successful implementation and its utilization.

John
 08/11/2023
 Head

Centre for Research and Development
 Sushant University



F.No.1/2023-2024/Seed Fund- Nov23/164

Dated: 08-Nov-2023

To

Dr. Saurabh Chhabra
 Project Investigator
 Vatel Hotel and Tourism Business School
 Sushant University
 Gurgaon.

Subject: Seed funding for research project “The Leaf Project - Farm to Fork Salad Kiosk”.

Sir/Madam

I am directed to inform you that your application for seeking seed funding from the University for research project “The Leaf Project - Farm to Fork Salad Kiosk” has been recommended for financial support. With this support you will be able to procure the required resources. We hope that the support will empower the stakeholders with the latest technology.

Recommended Budget:

Head of Account	Sanctioned Budget	Remarks
Travel Expenses/Field Visits/Data Collection	35,000/-	Submission of invoice and bills
Equipment/Software/Services/Subscriptions	1,22,000/-	Submission of invoice and bills
Consumables/Manpower	96,000/-	Submission of invoice and bills
Total	2,53,000/-	

The support is subject to the following conditions:

1. The amount will be disbursed in three phases. You must submit the utilization certificate and other completion documents.
2. You should maintain the proper accounts of the expenditure, which shall be utilized, only on approved items of expenditure.
3. The PI has to submit the final technical report of the project after successful implementation and its utilization.

John
 08/11/2023

Head
 Centre for Research and Development
 Sushant University



22

F.No.1/2023-2024/Seed Fund- Nov23/17

Dated: 08-Nov-2023

To 22

Dr. Kanika
 Project Investigator
 School of Business
 Sushant University
 Gurgaon.

Subject: Seed funding for research project “Socio-Economic Analysis of “Ayushman Bharat for Inclusive Health Insurance in India”: Unveiling the Impacts of the Government Initiative on Entrepreneurship and Economic Growth”.

Sir/Madam

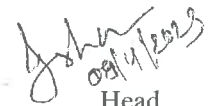
I am directed to inform you that your application for seeking seed funding from the University for research project “Socio-Economic Analysis of “Ayushman Bharat for Inclusive Health Insurance in India”: Unveiling the Impacts of the Government Initiative on Entrepreneurship and Economic Growth” has been recommended for financial support. With this support you will be able to procure the required resources. We hope that the support will empower the stakeholders with the latest technology.

Recommended Budget:

Head of Account	Sanctioned Budget	Remarks
Travel Expenses/Field Visits/Data Collection	40,000/-	Submission of invoice and bills
Equipment/Software/Services/S subscriptions	96,920/-	Submission of invoice and bills
Consumables/Manpower	60,000/-	Submission of invoice and bills
Total	1,96,920/-	

The support is subject to the following conditions:

1. The amount will be disbursed in three phases. You must submit the utilization certificate and other completion documents.
2. You should maintain the proper accounts of the expenditure, which shall be utilized, only on approved items of expenditure.
3. The PI has to submit the final technical report of the project after successful implementation and its utilization.



Head

 Centre for Research and Development
 Sushant University


F.No.1/2023-2024/Seed Fund- Feb24/18

Dated: 09-Feb-2024

To

Ms. Shanu Agarwal

The Project Investigator
School of Art and Architecture.
Sushant University
Gurgaon.

Subject: Seed funding for research project "Model for Affordable Housing in Gurugram: Addressing Land Market Dynamics".

Sir/Madam

I am directed to inform you that your application for seeking seed funding from the University for the research project "Model for Affordable Housing in Gurugram: Addressing Land Market Dynamics" has been recommended for financial support. With this support you will be able to procure the required equipment. We hope that the support will empower the stakeholders with the latest technology.

Recommended Budget:

Head of Account	Sanctioned Budget	Remarks
Travel Expenses/Field Visits/Data Collection	40,000/-	Submission of invoice and bills
Equipment/Software/Services/S subscriptions	85,000/-	Submission of invoice and bills
Consumables/Manpower	60,000/-	Submission of invoice and bills
Total	1,85,000/-	

The support is subject to the following conditions:

1. The amount will be disbursed in three phases. You must submit the utilization certificate and other completion documents.
2. You should maintain the proper accounts of the expenditure, which shall be utilized, only on approved items of expenditure.
3. The PI has to submit the final technical report of the project after successful implementation and its utilization.



Srha
9/02/2024

Head
Centre for Research and Development
Sushant University

F.No.1/2023-2024/Seed Fund- Feb24/19

Dated: 09-Feb-2024

To

Ms. Shruti Hippalgaokar
 Project Investigator
 School of Art and Architecture
 Sushant University
 Gurgaon.

Subject: Seed funding for research project "Conservation of Najafgarh Jheel- A Bird Sanctuary Approach".

Sir/Madam

I am directed to inform you that your application for seeking seed funding from the University for the research project "Conservation of Najafgarh Jheel- A Bird Sanctuary Approach" has been recommended for financial support. With this support you will be able to procure the required resources. We hope that the support will empower the stakeholders with the latest technology.

Recommended Budget:

Head of Account	Sanctioned Budget	Remarks
Travel Expenses/Field Visits/Data Collection	40,000/-	Submission of invoice and bills
Equipment/Software/Services/S subscriptions	75,000/-	Submission of invoice and bills
Consumables/Manpower	60,000/-	Submission of invoice and bills
Total	1,75,000/-	

The support is subject to the following conditions:

1. The amount will be disbursed in three phases. You must submit the utilization certificate and other completion documents.
2. You should maintain the proper accounts of the expenditure, which shall be utilized, only on approved items of expenditure.
3. The PI has to submit the final technical report of the project after successful implementation and its utilization.

John
 09/02/2024

Head
 Centre for Research and Development
 Sushant University



F.No.1/2023-2024/Seed Fund- Feb24/20

Dated: 09-Feb-2024

To

Ms. Kiran Singh
Project Investigator
School of Art and Architecture
Sushant University
Gurgaon.

Subject: Seed funding for research project "Renewable Energy generation through Solar Photovoltaics".

Sir/Madam

I am directed to inform you that your application for seeking seed funding from the University for research project "Renewable Energy generation through Solar Photovoltaics" has been recommended for financial support. With this support you will be able to procure the required resources. We hope that the support will empower the stakeholders with the latest technology.

Recommended Budget:

Head of Account	Sanctioned Budget	Remarks
Travel Expenses/Field Visits/Data Collection	40,000/-	Submission of invoice and bills
Equipment/Software/Services/Subscriptions	80,000/-	Submission of invoice and bills
Consumables/Manpower	60,000/-	Submission of invoice and bills
Total	1,80,000/-	

The support is subject to the following conditions:

1. The amount will be disbursed in three phases. You must submit the utilization certificate and other completion documents.
2. You should maintain the proper accounts of the expenditure, which shall be utilized, only on approved items of expenditure.
3. The PI has to submit the final technical report of the project after successful implementation and its utilization.

J. Shrivastava
09/02/2024

Head

Centre for Research and Development
Sushant University



F.No.1/2023-2024/Seed Fund- Feb24/21

Dated: 09-Feb-2024

To

Mr. Md. Shahroz Alam
Project Investigator
School of Art and Architecture
Sushant University
Gurgaon.

Subject: Seed funding for research project "Grid connected moveable Roof Top and Building Integrated Solar Photovoltaics".

Sir

I am directed to inform you that your application for seeking seed funding from the University for a research project "Grid connected moveable Roof Top and Building Integrated Solar Photovoltaics" has been recommended for financial support. With this support you will be able to procure the required resources. We hope that the support will empower the stakeholders with the latest technology.

Recommended Budget:

Head of Account	Sanctioned Budget	Remarks
Travel Expenses/Field Visits/Data Collection	30,000/-	Submission of invoice and bills
Equipment/Software/Services/S subscriptions	1,00,000/-	Submission of invoice and bills
Consumables	25,000/-	Submission of invoice and bills
Total	1,55,000/-	

The support is subject to the following conditions:

1. The amount will be disbursed in three phases. You must submit the utilization certificate and other completion documents.
2. You should maintain the proper accounts of the expenditure, which shall be utilized, only on approved items of expenditure.
3. The PI has to submit the final technical report of the project after successful implementation and its utilization.



Shah
9/02/2024
Head
Centre for Research and Development
Sushant University

F.No.1/2023-2024/Seed Fund- Feb24/23

Dated: 22-Feb-2024

To

Mr. Mohd. Anees
Project Investigator
School of Art and Architecture
Sushant University
Gurgaon.

Subject: Seed funding for research project "Model village development".

Sir

I am directed to inform you that your application for seeking seed funding from the University for the research project "Model village development" has been recommended for financial support. With this support you will be able to procure the required resources.

Recommended Budget:

Head of Account	Sanctioned Budget	Remarks
Travel Expenses/Field Visits/Data Collection	50,000/-	Submission of invoice and bills
Equipment/Software/Services/Subscriptions	53,000/-	Submission of invoice and bills
Consumables/Manpower	60,000/-	Submission of invoice and bills
Total	1,63,000/-	

The support is subject to the following conditions:

1. The amount will be disbursed in three phases. You must submit the utilization certificate and other completion documents.
2. You should maintain the proper accounts of the expenditure, which shall be utilized, only on approved items of expenditure.
3. The PI has to submit the final technical report of the project after successful implementation and its utilization.

Jaha
22/02/2024
Head

Centre for Research and Development
Sushant University



F.No.1/2023-2024/Seed Fund-Feb24/22

Dated: 22-Feb-2024

To

Ms. Payal Taneja
Project Investigator
School of Art and Architecture
Sushant University
Gurgaon.

Subject: Seed funding for research project "Architecture Education courses through Edtech platform".

Sir

I am directed to inform you that your application for seeking seed funding from the University for research project "Architecture Education courses through Edtech platform" has been recommended for financial support. With this support you will be able to procure the required resources.

Recommended Budget:

Head of Account	Sanctioned Budget	Remarks
Travel Expenses/Field Visits/Data Collection	42,000/-	Submission of invoice and bills
Equipment/Software/Services/Subscriptions	1,00,000/-	Submission of invoice and bills
Consumables	35,000/-	Submission of invoice and bills
Total	1,77,000/-	

The support is subject to the following conditions:

1. The amount will be disbursed in three phases. You must submit the utilization certificate and other completion documents.
2. You should maintain the proper accounts of the expenditure, which shall be utilized, only on approved items of expenditure.
3. The PI has to submit the final technical report of the project after successful implementation and its utilization.



gsh
22/02/2024
Head
Centre for Research and Development
Sushant University

F.No.1/2023-2024/Seed Fund- Feb24/24

Dated: 22-Feb-2024

To

Ms. Avitesh
Project Investigator
School of Art and Architecture
Sushant University
Gurgaon.

Subject: Seed funding for research project "Urban Hotspot minimisation".

Madam

I am directed to inform you that your application for seeking seed funding from the University for research project "Urban Hotspot minimisation" has been recommended for financial support. With this support you will be able to procure the required resources.

Recommended Budget:

Head of Account	Sanctioned Budget (INR)	Remarks
Travel Expenses	25,000/-	Submission of invoice and bills
Equipment/Software/Services	75,000/-	Submission of invoice and bills
Consumables	25,000	Submission of invoice and bills

The support is subject to the following conditions:

1. The amount will be disbursed in three phases. You must submit the utilization certificate and other completion documents.
2. You should maintain the proper accounts of the expenditure, which shall be utilized, only on approved items of expenditure.
3. The PI has to submit the final technical report of the project after successful implementation and its utilization.

Joha
22/02/24
Head

Centre for Research and Development
Sushant University



F.No.1/2023-2024/Seed Fund-Feb24/25

Dated: 22-Feb-2024

To

Dr. Alpana Jijja
Project Investigator
School of Engineering and Technology
Sushant University
Gurgaon.

Subject: Seed funding for research project "Early detection of Depression among Teenagers on social media using Deep Learning".

Madam

I am directed to inform you that your application for seeking seed funding from the University for research project "Early detection of Depression among Teenagers on social media using Deep Learning" has been recommended for financial support. With this support you will be able to procure the required resources.

Recommended Budget:

Head of Account	Sanctioned Budget	Remarks
Travel Expenses/Field Visits/Data Collection	40,000/-	Submission of invoice and bills
Equipment/Software/Services/S ubscriptions	80,000/-	Submission of invoice and bills
Consumables	30,000/-	Submission of invoice and bills
Total	1,50,000/-	

The support is subject to the following conditions:

1. The amount will be disbursed in three phases. You must submit the utilization certificate and other completion documents.
2. You should maintain the proper accounts of the expenditure, which shall be utilized, only on approved items of expenditure.
3. The PI has to submit the final technical report of the project after successful implementation and its utilization.



Jijja
22/02/2024
Head

Centre for Research and Development
Sushant University

F.No.1/2023-2024/Seed Fund-Feb24/ 30

Dated: 22-Feb-2024

To

Dr. Rinky Ahuja
Project Investigator
School of Engineering and Technology
Sushant University
Gurgaon.

Subject: Seed funding for research project "Mental Disease Prediction Using Machine Learning Techniques".

Madam

I am directed to inform you that your application for seeking seed funding from the University for the research project "Mental Disease Prediction Using Machine Learning Techniques" has been recommended for financial support. With this support you will be able to procure the required resources.

Recommended Budget:

Head of Account	Sanctioned Budget	Remarks
Travel Expenses	45,000/-	Submission of invoice and bills
Equipment/Software/Services	90,000/-	Submission of invoice and bills
Consumables	55,000	Submission of invoice and bills
Total	1,90,000/-	

The support is subject to the following conditions:

1. The amount will be disbursed in three phases. You must submit the utilization certificate and other completion documents.
2. You should maintain the proper accounts of the expenditure, which shall be utilized, only on approved items of expenditure.
3. The PI has to submit the final technical report of the project after successful implementation and its utilization.



Jsha
02/02/2024

Head
Centre for Research and Development
Sushant University

F.No.1/2023-2024/Seed Fund- Feb 24/26

Dated: 22-Feb-2024

To

Ms. Simar Dhingra
Project Investigator
School of Design
Sushant University
Gurgaon.

Subject: Seed funding for research project "Mobile Design and Technology Van for Design Awareness Among School Children in Gurugram".

Sir/Madam

I am directed to inform you that your application for seeking seed funding from the University for the research project "Mobile Design and Technology Van for Design Awareness Among School Children in Gurugram" has been recommended for financial support. With this support you will be able to procure the required resources. We hope that the support will empower the stakeholders with the latest technology.

Recommended Budget:

Head of Account	Sanctioned Budget	Remarks
Travel Expenses/Field Visits/Data Collection	50,000/-	Submission of invoice and bills
Equipment/Software/Services/Subscriptions	65,000/-	Submission of invoice and bills
Consumables	30,000/-	Submission of invoice and bills
Total	1,45,000/-	

The support is subject to the following conditions:

1. The amount will be disbursed in three phases. You must submit the utilization certificate and other completion documents.
2. You should maintain the proper accounts of the expenditure, which shall be utilized, only on approved items of expenditure.
3. The PI has to submit the final technical report of the project after successful implementation and its utilization.

Jaha
22/02/2024

Head

Centre for Research and Development
Sushant University



F.No.1/2023-2024/Seed Fund- Feb 24/27

Dated: 22-Feb-2024

To

Mr. Sachin Datt
Project Investigator
School of Design
Sushant University
Gurgaon.

Subject: Seed funding for research project "Design of Physical File Data Room for University Records".

Sir/Madam

I am directed to inform you that your application for seeking seed funding from the University for the research project "Design of Physical File Data Room for University Records" has been recommended for financial support. With this support you will be able to procure the required resources. We hope that the support will empower the stakeholders with the latest technology.

Recommended Budget:

Head of Account	Sanctioned Budget	Remarks
Travel Expenses/Field Visits/Data Collection	40,000/-	Submission of invoice and bills
Equipment/Software/Services/Subscriptions	85,000/-	Submission of invoice and bills
Consumables/Manpower	60,000/-	Submission of invoice and bills
Total	1,85,000/-	

The support is subject to the following conditions:

1. The amount will be disbursed in three phases. You must submit the utilization certificate and other completion documents.
2. You should maintain the proper accounts of the expenditure, which shall be utilized, only on approved items of expenditure.
3. The PI has to submit the final technical report of the project after successful implementation and its utilization.

Jaha
22/02/2024

Head
Centre for Research and Development
Sushant University



F.No.1/2023-2024/Seed Fund- Feb 24/28

Dated: 22-Feb-2024

To

Dr. Deepti Sehrawat
Project Investigator
School of Business
Sushant University
Gurgaon.

Subject: Seed funding for research project "Enhancing Millet Farming for Sustainable Food Security in India".

Sir/Madam

I am directed to inform you that your application for seeking seed funding from the University for research project "Enhancing Millet Farming for Sustainable Food Security in India" has been recommended for financial support. With this support you will be able to procure the required resources. We hope that the support will empower the stakeholders with the latest technology.

Recommended Budget:

Head of Account	Sanctioned Budget	Remarks
Travel Expenses/Field Visits	40,000/-	Submission of invoice and bills
Equipment/Software/Services	62,000/-	Submission of invoice and bills
Consumables/Manpower	60,000/-	Submission of invoice and bills
Total	1,62,000/-	

The support is subject to the following conditions:

- The amount will be disbursed in three phases. You must submit the utilization certificate and other completion documents.
- You should maintain the proper accounts of the expenditure, which shall be utilized, only on approved items of expenditure.
- The PI has to submit the final technical report of the project after successful implementation and its utilization.



Jaha
22/02/2024
Head

Centre for Research and Development
Sushant University

F.No.1/2023-2024/Seed Fund-Feb 24/29

Dated: 22-Feb-2024

To

Dr. Gunjan
Project Investigator
School of Business
Sushant University
Gurgaon.

Subject: Seed funding for research project "Women farmers/daily wage laborers in relation to Migration".

Sir/Madam

I am directed to inform you that your application for seeking seed funding from the University for a research project "Women farmers/daily wage laborers in relation to Migration" has been recommended for financial support. With this support you will be able to procure the required resources. We hope that the support will empower the stakeholders with the latest technology.

Recommended Budget:

Head of Account	Sanctioned Budget	Remarks
Travel Expenses/Field Visits	40,000/-	Submission of invoice and bills
Equipment/Software/Services	92,000/-	Submission of invoice and bills
Consumables/Manpower	60,000/-	Submission of invoice and bills
Total	1,92,000/-	

The support is subject to the following conditions:

1. The amount will be disbursed in three phases. You must submit the utilization certificate and other completion documents.
2. You should maintain the proper accounts of the expenditure, which shall be utilized, only on approved items of expenditure.
3. The PI has to submit the final technical report of the project after successful implementation and its utilization.

Jeeta
22/2/2024
Head

Centre for Research and Development
Sushant University





**Proposals & Utilisation
Certificates**

**PROFORMA FOR SUBMISSION OF SEED FUND
PROPOSAL**

Part I: General Information

1. Project Title (should be focused not exceeding 15 words);

Multiverse Gamification of Training Programs in Indian language for children with Autism
2. i. Name of Principal Investigator: Dr. Latika

ii. Name of Co-Investigator: NA
3. Collaboration if any, give details of institution(s)-NA
4. Any Project(s) previously sanctioned by any funding agency? If yes give the details: NA

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)

5. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues? Not required.
6. Duration (months): 1 year
7. Enclose the following while submitting the application form:

Duly filled application form (complete with all Annexures)- 2 hard copies	
Bio-data of the PI & Co-I -2 copies	



Part II: Proposal Summary

1. Origin of the Proposal:

Progressive collapse analysis is a critical engineering process used to assess and enhance the resilience of structures against catastrophic failures. Also known as disproportionate collapse analysis, it focuses on understanding and mitigating the potential for the progressive failure of buildings and other large structures under extreme loading conditions, such as explosions, earthquakes, or accidental impacts.

The goal of progressive collapse analysis is to identify weak points within a building design such as insufficient load redistribution mechanisms, inadequate lateral bracing, or inadequate column connections. By simulating and analyzing the behavior of the structure under extreme loads, engineers can predict potential failure paths and develop effective strategies to prevent or control progressive collapse.

Abaqus is a software suite for finite element analysis and computer-aided engineering. Finite Element Analysis is a computerized method for predicting how a product reacts to real-world forces, vibrations, fluid flow, and other physical effects. Abaqus is well-known software based on FEM and used in automotive, aerospace, construction, and industrial products industries.

In this work, a 3-D building model is developed by using the finite element software Abaqus to simulate the behavior of high-rise composite building under sudden column loss. The results of progressive collapse analysis adopting multistorey building benchmark model provide important information for standardization design to prevent progressive collapse

2. Objectives (Only 4-5 focused one that can be observed, measured or clearly assessable)

- | |
|---|
| i. To Solve complex civil engineering problems like multipurpose problems, nonlinear dynamic problems, changed boundary condition |
| ii. To perform numerical simulation to access the dynamic response and collapse behavior of the composite structure with base-isolation under the isolation bearing removal scenario using abacus |
| iii. To develop comprehensive analytical models that accurately simulate progressive collapse behavior in structure taking into account various factor. |

3. Review of status of Research and Development in the subject-

In Civil engineering works, the most common structural type is RC frame structure. Damage to such structures may spread, causing greater damage or the entire collapse of the structure. Progressive collapse studies focus on the solution to minimize such extreme events. The progressive collapse analysis of a reinforced concrete (RC) building occurs when an extreme event arises (vehicle collision, gas explosion, bomb blasts, etc.), which often cause damage to the RC structural frame were a sudden loss of primary structural element takes place or due to the failure of one or more critical structural element leading the structure to partial or entire collapse.

3.1 International Status:

Yun, Z., Tai-ping, C., Xiang, H., & Wei-jian, Y. I. (2019). Progressive collapse resistance of RC frame structures considering surrounding structural constraints. *工程力学*, 36(1), 216-226

Altheeb, A., Alshaikh, I. M., Abadel, A., Nehdi, M., & Alghamdi, H. (2022). Effects of non-structural walls on mitigating the risk of progressive collapse of RC structures. *Latin American Journal of Solids and Structures*, 19, e440.



Alshaikh, I. M., Bakar, B. A., Alwesabi, E. A., Zeyad, A. M., & Magbool, H. M. (2021, October). Finite element analysis and experimental validation of progressive collapse of reinforced rubberized concrete frame. In *Structures* (Vol. 33, pp. 2361-2373). Elsevier.

3.2 National Status:

Kumar, P., Lavendra, S., & Raghavendra, T. (2022). Progressive collapse resistance of reinforced concrete frame structures subjected to column removal scenario. *Materials Today: Proceedings*, 61, 264-274.

Pujari, A. B., & Sangle, K. K. (2023). Progressive collapse analysis of seismically designed three-dimensional special moment resisting frames. *Asian Journal of Civil Engineering*, 1-15.

Vinay, M., Rao, P. K. R., Dey, S., Swaroop, A. H. L., Sreenivasulu, A., & Rao, K. V. (2022, November). Evaluation of progressive collapse behavior in reinforced concrete buildings. In *Structures* (Vol. 45, pp. 1902-1919). Elsevier.

3.3 Importance of the proposed project in the context of current status

Progressive collapse is a catastrophic chain reaction of failure of a structure that is caused due to loss of vertical load bearing element of the structure, resulting damage of a part of the structure or entire structure.

In this work, a 3-D building model will be developed by using the finite element software Abaqus to simulate the behavior of high-rise composite building under sudden column loss. The results of progressive collapse analysis adopting multistorey building benchmark model will provide important information for standardization design to prevent progressive collapse

4 Work Plan:

4.3 Methodology:

Steps may be follow as

1. Developing the structure geometry using given parameter by the building by law.
2. Following all the rule and regulation of code and analysis the structure and design as per given materials.
3. Analysing the results and apply the optimization technique.
4. Comparing the result.



4.4 Time Schedule of activities giving milestones through Gantt Chart.

Work completion duration	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24
Training of software												
Objective1												

Objective2										
Objective3										
Result Analysis and Publications										

5 Expertise:

5.3 Expertise available with the investigators in executing the project:

Learning new software as it is required in the research work of a phd scholar.

5.4 Bibliography NA

6 List of facilities required from Sushant University for the project implementation.

6.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	Not required
2.	Water & Electricity	Electricity required to run laptop/desktop
3.	Laboratory Space/ Furniture	Not required
4.	Power Generator	Power back up required
5.	AC Room or AC	Sitting/ working space required
6.	Telecommunication including e-mail & fax	Not required
7.	Transportation	Not required
8.	Administrative/ Secretarial support	Not required
9.	Information facilities like Internet/Library	Required for research /literature review
10.	Computational facilities	required
12.	Any other special facility being provided	No

6.2 Equipment available with the Sushant University for the project: NA

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group			
PI's Department			
Other Institute(s)			



Other Institute(s) in the region			
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6.3 Total Budget (Rs. in Lakhs):

6.3.1 Recurring Cost (Rs): 1lakh 55thousand

6.3.2 Non-Recurring Cost (Rs): nil

Sl. No.	Item	Budget			
		1 st Yr	2 nd Yr	3 rd Yr	Total
A	Recurring				
	1. Manpower	Nil	Nil	Nil	Nil
	2. Consumables	Nil	Nil	Nil	Nil
	3. Travel	Nil	Nil	Nil	Nil
	4. Field testing, Demo/ Training expenses (if applicable)	20K	Nil	Nil	Nil
	5. Contingencies/Other costs	Nil	Nil	Nil	Nil
	6. Institutional Overheads*	Nil	Nil	Nil	Nil
	7. Any other item	Nil	Nil	Nil	Nil
B	Non-Recurring	NA			
	Permanent equipment				
	Construction of work shed/structures				
	Fabrication of prototype equipment				
	Grand Total (A+B)	210000Rs			

A. Recurring:

1. Budget for Manpower NA

Sl. No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	Budget (Rs. in lakhs)			
					1 st Yr	2 nd Yr	3 rd Yr	Total

2. Budget for Consumables* NA

Sl. No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel -NA

Sl. No.	Purpose	Budget (Rs. in lakhs)			
		1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Project logistics				
2.	Field activities				
3.	Review meetings (if elsewhere)				



Sl. No	Description of field testing/demos /trainings	No/Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
	Training of software required	2 times in first year per subscription. Required for operating and using the software	20000Rs	-	-	-

*Include material for technology field testing/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of beneficiaries/training, duration of training days, cost /training).

5. Budget for Contingencies*- NA

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

B. Non-Recurring: NA

Budget for Permanent Equipment/ Workshed/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.			
2.			
3.			
4.			

7 Deliverables

Deliverable	Mark ✓	Brief description
Product development/adaptation	na	
Process development/adaptation	✓	Simulating the behavior of high-rise composite building under sudden column loss
Technology package for development of the project area and local community		
Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)	✓	The results and outcomes of the research work will be published in the form of reaserch papers/patensts etc Training/hands on will also be done.
Scientific knowledge and/or data generation leading to technology development in future	✓	The outcomes of the research work will



		help the future researchers to Study on progressive collapse seeking to comprehend the causes of propagation and investigate ways for prevention.
Other (Please specify)		

8 *Name and address of experts/ institution interested in the subject / outcome of the project.*

1. Prof. Parvez (GNOIT, Greater Noida)

91 84477 28951

parvez.civilengg@gmail.com

2. Shalabh Raizada

91 98113 64230

shalabhraizada.sr@gmail.com (industry expert)



LATIKA SINGH

#205, Sukh Shanti Apartments, Sector-56, Gurgaon, 8860788843,duhanlatika@gmail.com

<https://in.linkedin.com/in/latika-duhan-4abb3548>

EDUCATION

Institute of Technology Blanchardstown, Ireland Masters in Science/computing (with specialization in BI & Data Mining) Dissertation: Dynamic behavior analysis of android applications for malware detection	2014-2016
National Brain Research Centre, India Ph.D. in Computational Sciences Dissertation: Development of articulatory features in children	2002-2009
Guru Jambheshwar University, India Master's in Information Technology Project work: Automation of Examination related processes	1999-2001
Kurukshetra University, India Bachelor of Sciences Areas of concentration: Computer Applications, Mathematics	1996-1999

EXPERIENCE SUMMARY

Presently working as Professor and Associate Dean at School of Engineering and Technology. I am also Director Accreditations at Sushant University (erstwhile Ansal University)

Designation	Duration	Organization/Name
Senior Lecturer	Sept 26- 2007 to Mar 31-2008	Institute of Technology & Management (now known as "The NorthCap University")
Assistant Professor	April 1- 2008 to March 31-2009	Institute of Technology & Management (now known as "The NorthCap University")
Assistant Professor (Selection Grade)	Apr 1, 2009 to Feb 28, 2010	Institute of Technology & Management (now known as "The NorthCap University")
Associate Professor	Mar 1- 2010 to June 13 -2010	Institute of Technology & Management (now known as "The NorthCap University")
Associate Professor	June 14- 2010 to July 26-2011	Institute of Technology & Management (now known as "The NorthCap University")
Associate Professor	July 27- 2011 to May 16-2012	ITM University (now known as "The NorthCap University")



Associate Professor	May17, 2012 to May 26, 2018	ITM University (now known as "The NorthCap University")
Professor, Associate Dean, Director Accreditations	June 11, 2018 to till date	Sushant University (erstwhile Ansal University)

JOB RESPONSIBILITIES

- Administrative responsibilities of School of Engineering & Technology
- Accreditation responsibilities of Sushant University
- Guide PhD thesis and M.Tech dissertation
- Present research by publishing in journals or presenting in conferences
- Teach two courses per semester to Bachelors of Technology in Computer Science Engineering (B.Tech CSE) and Masters of Technology in Computer Science Engineering (M.Tech CSE). Teach specialized pre-PhD courses based requirements (course selection by the students)
- Design/update detailed syllabus incorporating latest developments of Industry, prepare lecture plan; delivery lectures; conduct tutorials classes and laboratory practice periods
- Design students' assessment and evaluation for the courses being taught, in line with University's policies, administer these examinations and grade students' accordingly
- Mentor a group of students to guide them on academic matters and career building
- Carry out research projects in specialized areas; present/publish finding in conferences and Journals of international repute
- Contribute to the development of the School and the University by being a part of the member of committees dealing with academic matters like curriculum development, policy making
- Work towards the growth of research of the School and the University by serving in committees/boards related to research like Scholar Research Committee, School of Doctorate Research Committee etc.
- Conduct outreach activities for University like guest lectures/workshops etc.

SELECT PUBLICATIONS AND PAPER

CITATIONS – 387, H-INDEX – 12, I10-INDEX – 13 (AS ON JAN 25, 2021)

Aggarwal, Gaurav; Singh, Latika ",Comparisons of Speech Parameterisation Techniques for Classification of Intellectual Disability Using Machine Learning", International Journal of Cognitive Informatics and Natural Intelligence (IJCINI),14,2,16-34,2020,IGI Global

Dewan, Surbhi; Singh, Latika; ",Use of blockchain in designing smart city", Smart and Sustainable Built Environment,2020,Emerald Publishing Limited

Aggarwal G and Singh L, "Classification of intellectual disability using LPC, LPCC, and WLPC parameterization techniques", International Journal of Computers and Applications 41 (6), 470-479, 2019.

Verma S, Chaudhary M and Singh L, "Classifying red and healthy eyes using deep learning", International Journal of Advanced Computer Science and Applications 10 (7), 2019

Verma S, Chaudhary M and Singh L, "Evaluation of Convolution Neural Network Model for classifying red and healthy eye", International Journal of Innovative Technology and Exploring Engineering 8 (12), 2019



Mishra A L, Gigras Y and Singh Y, "Design of Framework to Quantitatively Measure the ubiquity of an IT Solution", International Journal of Innovative Technology and Exploring Engineering 8 (10), 2019

G Sharma, L Singh and Gautam S, "Automatic Facial Expression Recognition Using Combined Geometric Features", 3D Research 10 (2), 14, 2019

P Sabherwal, M Agrawal, L Singh, "Fusion Algorithm for Accurate Delineation of QRS Complex in ECG Signal", Circuits, Systems, and Signal Processing 38 (4), 1811-1832, 2019

Aggarwal G and Singh L, "Age Classification with LPCC Features Using SVM and ANN", Information and Communication Technology for Competitive Strategies, 399-408, 2019

Gautam S and Singh L, "Speech disorders in children and adults with mild-to-moderate intellectual disability", Signal and Acoustic Modeling for Speech and Communication Disorders 5, 123

S Singh, S Madhwal, G Datta, L Singh, "Modelling Search Habits on E-commerce Websites using Supervised Learning", 2018 IEEE 8th International Advance Computing Conference (IACC), 53-58

Aggarwal G and Singh L, "Evaluation of Supervised Learning Algorithms Based on Speech Features as Predictors to the Diagnosis of Mild to Moderate Intellectual Disability", 3D Research 9 (4), 55

Sabherwal P, Singh L and Aggrawal M, "Aiding the Detection of QRS Complex in ECG Signals by Detecting S Peaks Independently", Cardiovascular Engineering and Technology, 2019

Gautam S and Singh L "Speech disorders in children and adults with mild to moderate intellectual disability", Chapter to De Gruyter book on Signal and Acoustic Modelling for Speech and Communication Disorders, accepted (2018)

Gautam S and Singh L, "Development of Spectro-temporal features of speech in children", International Journal of Speech Technology, 20(3), 543-551, 2017

Sabherwal P, Aggrawal M and Singh L, "Automatic Detection of R Peaks in Single-Lead ECG Signal", Circuits, Systems, and Signal Processing, 36(11), 4637-4652, 2017

Singh L and Hofmann M "Dynamic behavior analysis of android applications for malware detection", in proceedings of IEEE International Conference on Communication and Computational Techniques, 2017

Chhikara, Rita Rana; Sharma, Prabha; Singh, Latika; "An improved dynamic discrete firefly algorithm for blind image Steganalysis", International Journal of Machine Learning and Cybernetics, 2016

Chhikara, Rita Rana; Sharma, Prabha; Singh, Latika; "A hybrid feature selection approach based on improved PSO and filter approaches for image steganalysis", International Journal of Machine Learning and Cybernetics, 2016

S. Gautam, and L. Singh, "Speech Impairments in Intellectual Disability: An Acoustic Study", International Journal of Advanced Computer Science & Applications, vol. 7, no. 8, pp.259-264, 2016.

Gautam, Sumanlata and Singh Latika, "Classification of the Speech of Normally Developing and Intellectually Disabled Children International Journal of Data Mining and Emerging Technologies" 6(1), 28-37, 2016

Chhikara, Rita Rana; Singh, Latika; "An improved discrete firefly and t-test based algorithm for blind image steganalysis", 2015, 6th International Conference on Intelligent Systems, Modelling and Simulation



Aggarwal G and Singh Latika; "Characterization between child and adult voice using machine learning algorithm, IEEE International Conference on Computing, Communication & Automation (ICCCA), 246-250 2015

Jindal, Komal; Singh, Latika; Gautam, Sumanlata; "Developmental Patterns in Speech Analysis on the Basis of Time Duration", International Journal of Advanced Research in Computer Science 5(1) 2014

Gautam, Sumanlata; Singh, Latika; "Developmental pattern analysis and age prediction by extracting speech features and applying various classification techniques", 2015 International Conference on Computing, Communication & Automation (ICCCA) 83-87 2015

Aditi Goel, Akansha Arora, Akash Kohli, Gaurav Aggarwal, Latika Singh, "Interactive Picture- based learning module for children with learning disabilities", National Conference NCACT 2013 at MDU

Gill, Nasib S; Singh, Latika; "Built-in testing in component-based software-a mapping study" 2nd International Conference on Computing for Sustainable Global Development (INDIACom), 159-158, 2015

Sharda, Megha; Subhadra, T Padma; Sahay, Sanchita; Nagaraja, Chetan; Singh, Latika; Mishra, Ramesh; Sen, Amit; Singhal, Nidhi; Erickson, Donna; Singh, Nandini C. "Sounds of melody—Pitch patterns of speech in autism", Neuroscience letters (Elsevier), 478, 1, 42-45, 2010

Singh, Latika; Singh, Nandini C; "The development of articulatory signatures in children", Developmental science (Wiley Online Library), 11, 4, 467-473, 2008

Das, Tanusree; Singh, Latika; Singh, Nandini C; "Rhythmic structure of Hindi and English: new insights from a computational analysis", Progress in brain research (Elsevier), 168, 207-272, 2007

Singh, Latika; Shantisudha, P; Singh, Nandini Chatterjee; "Developmental patterns of speech production in children", Applied acoustics (Elsevier), 68(3), 260-269, 2007

KEY PROFESSIONAL ACTIVITIES/KEY SEMINARS AND CONFERENCE PRESENTATIONS

- General Chair, 4th IEEE International Advance Computing Conference 2014, Gurgaon India
- Reviewer, Computers, a Journal of MDPI
- Reviewer, 8th International Advanced Computing Conference
- Reviewer and TPC member, 9th International Advanced Computing Conference
- Reviewer, International Conference on Computing Communication and Automation 2016
- Coordinator from AU as a partner to Bennett University project "Deep Learning and AI skills mainstream in India to fulfill trilateral needs of entrepreneurship, Industry-academia partnership and application-inspired Engineering Research" funded by Royal Academy of Engineering, UK, 2018
- Session Chair, 8th IEEE International Advance Computing Conference 2018, Noida India
- TPC member, 9th IEEE International Advance Computing Conference 2019, India
- International conference on theoretical neurobiology, New Delhi, February 2003
- Indo-US symposium on Brain Research, Manesar, December 2003
- International Symposium on Neurobiology and Neuro-informatics (NBNI), May 2004
- Indian Academy of Neurosciences, Bangalore, December 2005
- National Conference on Advance Computing(NACT-2013), March 2013
- Invited talk at GITM Gurgaon on "Internet of Things", 2017
- Invited talk at DPGITM Gurgaon on "Cyber Security: Emerging challenges and issues", 2016



- Invited talk at International Webinar on Qualitative Research, Blog writing and Neuroscience in Outbreak of Covid'19

FUNDED R&D PROJECTS

- Principal Investigator of DST funded "Fuzzy algorithms to characterize nature of speech impairments in children with autism", Dec 2010 – Mar 2014
- AICTE funded projects "Speech impairments in children with learning disorders", July 2010 – July 2012
- Mentor of DST-WOS funded project – Cancer detection using classification Techniques
- Mentor of DST-WOS funded project – Delineation of QRS complex in ECG signal

PATENTS PUBLISHED

Indian Patent 202011020323 "A system of round robin, active monitoring, throttled, DSBP selection data center simulation over cloud for centralized and distributed data center by using load balancing techniques" (Publishing date June 26, 2020)

Indian Patent 202041020419 "A system and method for providing online first aid guidance during ocular emergency situations" (Publishing date June 05, 2020)

Indian Patent 202011043075 "Blockchain based solution to combat bed allocation problem in epidemic outbreak" (Publishing date Oct 23, 2020)

ACADEMIC MANAGEMENT AND ADMINISTRATION

EXTERNAL External Examiner of B.Tech projects at Jamia Hamdard, 2012, 2013
Paper Setter for Jamia Hamdard, 2010

UNIVERSITY Director Accreditations
Associate Dean, School of Engineering & Technology
Chairperson, IQATC
Chairperson, ICC
Incharge- Unnat Bharat Abhiyan
SPOC, npTEL-Swayam Local Chapter
SPOC, Bosch Collaboration
SPOC, Coursera Collaboration
Member of Academic Council
Member of School of Doctorate Research Committee
Member of Board of Doctorate Research
Member/Chairman, Scholar Research Committees

TEACHING AND SUPERVISION

Teaching Activities

Level	Course
B.Tech	Fundamental of Computer Programming
B.Tech	Introduction to Java
B.Tech	Object Oriented Programming
B.Tech	Programming Languages
B.Tech	Advanced Java
B.Tech	Data Structures and Algorithms
B.Tech	Python



B.Tech	Ruby on Rails
B.Tech	Business Intelligence
B.Tech	Data Warehousing and Mining
B.Tech	Programming of Internet of Things Devices
M.Tech	Text and Web Mining
M.Tech	Operating System
M.Tech	Software Testing & Validations
Pre-PhD	Acoustics of Speech Production
M.Tech	Machine Learning

Student Supervision

- PhD Awarded to student with dissertation title "Automatic Delineation of QRS complex and T-wave in Electrocardiogram using signal processing techniques"
- PhD Awarded to student with dissertation title "Evaluation of Machine Learning Algorithms Based On Speech Features as Predictors to The Classification of Intellectual Disability"
- PhD Awarded to student with dissertation title "Feature reduction for blind steganalysis"
- PhD Awarded to student with dissertation title "Development of articulatory features in speech of children"
- PhD thesis submitted "Design and Evaluation of Metrics for Determining the Ubiquity of Modern Information and Communication Technology Based Products and Solutions" (reports have been received)
- PhD Awarded to student with thesis titled "Analysis of Real World Traffic Accident Data Using Data Mining Techniques"
- 16 M.Tech Thesis Awarded
- Guided More than 30 B.Tech Projects

AWARDS

- Best Teacher Award, The NorthCap University **2014-15**
- Best Teacher Award, The NorthCap University **2016-17**

LANGUAGES

- English
- Hindi

MEMBERSHIPS

- Association for Computing Machinery
- Computer Society of India




Utilization Certificate

Certified that grant of ₹ 2,10,000/- (Rupees Two Lakh Ten Thousand Only) sanctioned by centre of Research and Development, Sushant university vide letter no. F.No.1/2023-2024/Seed Fund-Nov 23/01 Dated 3rd November 2023 towards financial assistance for the Project titled “Multiverse Base Gamification of Training Programs in Indian Language for Children with Autism” was utilised for the purpose for which it was sanctioned.

Financial expenditure incurred

Sl.no	Nature of expense	Proposed Expenditure (in Rs.)	Expenditure incurred (in Rs.)
1	Equipment	2,10,000	2,10,000
	Total	₹ 2,10,000	₹ 2,10,000


Principle Investigator
 Sushant University
 Sector 55, Gurugram


Accounts Officer,
 Account & Finance Officer
 Sushant University
 Gurugram, Haryana



PROFORMA FOR SUBMISSION OF SEED FUND PROPOSAL

Part I: General Information

1. Project Title: Co-create gender sensitive public spaces in an urban neighbourhood with school children using a multidisciplinary digitally integrated methodology.
2. Name of Principal Investigator: Prof Aruna Bhardwaj
 - ii. Name of Co-Investigators: Prof. (Dr.) Latika Duhan & Prof. (Dr.) Suruchi Modi
3. Collaboration if any, give details of institution(s): Muncipal Corporation of Gurugram (MCG) & I Am Gurgaon (NGO)
4. Any Project(s) previously sanctioned by any funding agency? If yes give the details:

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)

5. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues? Not required
6. Duration (months): 12 months
7. Enclose the following while submitting the application form:

Duly filled application form (complete with all Annexures)- 2 hard copies	
Bio-data of the PI & Co-I -2 copies	



Part II: Proposal Summary

1. Origin of the Proposal:

This project will identify, enable and create awareness about the crucial role that children can play in transforming their surroundings to create gender sensitive urban environments. Through participatory engagement of children it will enable the children to play an active role in shaping their environment. By using simple digital technology to identify, document and resolve issues of their surroundings the children will develop confidence in themselves by bringing a positive change in their physical environment and their mental outlook.

It will promote the use of technology as a tool of human connections and gender equitable community creation.

This project can be further useful as an outreach activity for the University.

This project will support PhD research on this topic and help design of new policy/bye laws for contextual, contemporary SDG 11 aligned planned neighbourhoods.

2. Objectives (Only 4-5 focused one that can be observed, measured or clearly assessable)

i.	Build confidence and skills of children of through a series of workshops and awareness of opportunities in both digital and real time.
ii.	Co - create gender equitable recreational areas for children in public places of one Gurugram neighbourhood.
iii.	Conduct surveys and interviews with users and stakeholders to understand their experiences plus document outcomes of the co-create engagement workshops into a publication and present findings to the larger community of academician and professionals.
iv.	Develop an app that can be used in making urban environment resilient and promote safety of children and specifically young girl.

3. Review of status of Research and Development in the subject

3.1 International Status:

An emerging global child-friendly cities movement shifted the focus onto children's rights and participation. (Gills. T. (2017) Cities Alive, Designing for Urban Childhoods, Aurup)Urban Mind, Research project by National Institute of Public Health (University of Southern Denmark) aided by the Ramboll Foundation, poses the question, "How can the design of urban spaces contribute to the mental health and well-being of teenage girls?" (2023, Copenhagen, Denmark) A study from Sweden (2012) indicated that only 20% of teenage girls and women use outdoor areas for spontaneous sport activities, compared to 80% of boys and men. (Blomdahl, U., Elofsson, S. & Åkesson, M. (2012). Spontanidrott för vilka? En studie av kön och nyttjande av planlagda utomhusytor för spontanidrott under sommarhalvåret. [online] Stockholm: Stockholms stad - Idrottsförvaltningen, Forskningsenheten.)

3.2 National Status:

In most states of India the percentage share of Children and Adolescents, out of urban population is 30 to 40 %. Also as per 2011 Population Census, percentage share of Children of Haryana , Rajasthan, UP, MP etc in 0-5 age was 10% and above. The publication Children and Adoloscents in Urban India, Scale and Nature of Deprivation, published in 2020 by Save the Children foundation and sponsored by UNICEF & NIUA, brings in focus the issues faced by urban children specifically in the EWS category. India formulated National Charter for Children, 2003 followed by National Plan of Action for Children, 2005, which was further revised in 2013 and final draft released in 2016. The draft National Plan of Action for Children 2016, focuses on four priority areas – survival, health and



nutrition, education and development and participation & protection.

Importance of the proposed project in the context of current status

Through this project students from Architecture and Engineering discipline of Sushant University will develop an application that will enable children participation in creating gender equitable urban spaces in Gurugram City. This is in accord with the **Digital India Scheme and is in alignment with Pradhan Matri Yuva Yojana (PMYY) scheme**. This project will enable a safer livable environment for our children, specifically **young girls**, and securing the future under the mandate of **SDG Goal 11** that promotes sustainable cities and communities.

4. Work Plan:

4.1 Methodology:

Project formulation:

Literature Survey: Through this review set of various children participatory engagements and their outcomes will be collated. A literature research review of the role digital medium plays in promoting learning in children. The outcome of which will be used to select the skilling models to be used in this exercise.

Collaborative project development with students of SET and SAA, SU, to create a framework for an app that can be used by school children for engaging with their neighbourhood.

Preliminary Engagement: Orienting with school children and local community, and local authority to collection and collation of data, to understand need and requirement of the children, with the focus on gender in the specific age brackets of 6 to 9 and 9 to 13. Dialogue with knowledge experts and community, as a process of co-learning

Children Workshops: Organising school children art based workshops to co-develop spatial design for co-learning spaces in the community along using apps developed by Sushant university students to document data based on gender mainstreaming issues.

Data coalition and analytics: Mapping behavioural change, identifying digital induced learning enhancements.

Report Documentation and Information Dissemination. Outcomes will be collated into a research report publication and made into short videos on open source platforms for further circulation.



4.2 Time Schedule of activities giving milestones through Gantt Chart.

GANTT CHART		3 Months	6 Months	9 Months	12 Months	15 Months	18 Months
1	Project Vision						
2	Research & Literature review						
3	Collaborative digital project development with students of SET and SAA						
4	Preliminary Engagement with school children and local community						
5	Children Workshops						
6	Data coalition and analytics						
7	Report Documentation and Information Dissemination						

5. Expertise:

5.1 Expertise available with the investigators in executing the project:

Investigator, Prof Aruna Bhardwaj is pursuing PhD on the topic “Urban Spatiality for the Girl Child in the Neo-Neighbourhood in India” Her research publications on children friendly urban space includes

- Lost city for the migrant child. National Seminar on Ekistics : An approach to Urban-Regional Planning and Development , at Jamia Millia Islamia, New Delhi, 21-22 February 2019.
- Child as the Storyteller of Urbanity.“Design that cares” 10th FARU International Research Conference 2017, 8 & 9 December 2017, Wadduwa. Sri Lanka.

Co-Investigator Prof. (Dr.) Latika Dhun is a doctorate in Computational Science from National Brain Research Center India, with several multidisciplinary publications such as ‘Use of blockchain in designing smart city’, Smart and Sustainable Built Environment’ and ‘Comparisons of Speech Parameterisation Techniques for Classification of Intellectual Disability Using Machine Learning’

Prof. (Dr.) Latika Dhun also holds the following patents

- Indian Patent 202011020323 “A system of round robin, active monitoring, throttled, DSBP selection data center simulation over cloud for centralized and distributed data center by using load balancing techniques” (Publishing date June 26, 2020)



- Indian Patent 202041020419 “A system and method for providing online first aid guidance during ocular emergency situations” (Publishing date June 05, 2020)

5.2 Bibliography

Aerts, J. (2018). Shaping Urbanization for Children: Handbook on Child-responsive Urban Planning. UNICEF.

Gill, T. (2017). The Child as an indicator species for cities: reflections on Philadelphia. Child in the city.

Oyeyemi, A. L., Sallis, J. F., Deforche, B., Oyeyemi, A. Y., Bourdeaudhuij, I. D., & Dyck, D. V. (2013). Evaluation of the neighborhood environment walkability scale in Nigeria. *International Journal of Health Geographics*, 12, 16. doi:https://dx.doi.org/10.1186%2F1476-072X-12-16

Sivaramakrishnan & Rademachar. (2013). *Ecologies of Urbanism in India*. Hong Kong: Hong Kong University Press.

Stella K. Muthuri, V. O., & Tremblay, M. S. (2016, 3). Associations Between Parental Perceptions of the Neighborhood Environment and Childhood Physical Activity: Results from ISCOLE-Kenya.

Journal of Physical Activity and Health, 13, 333-343. doi:https://doi.org/10.1123/jpah.2014-0595

Panicker, K., Anand, P., & George, A. (2023). Assessment of building energy performance integrated with solar PV: Towards a net zero energy residential campus in India. *Energy and Buildings*, 281, 112736. https://doi.org/10.1016/J.ENBUILD.2022.112736

Hasler, S., Chenal, J. & Soutter, M. (2017). *Digital tools and citizen participation: Towards sustainable and responsive urban planning October 2017* DOI: 10.5176/2425-0112_UPPD17.18

6. List of facilities required from Sushant University for the project implementation.

6.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	Yes (sharing)
2.	Water & Electricity	Yes
3.	Laboratory Space/ Furniture	Yes (sharing)
4.	Power Generator	No
5.	AC Room or AC	No
6.	Telecommunication including e-mail & fax	Yes
7.	Transportation	Yes
8.	Administrative/ Secretarial support	Yes
9.	Information facilities like Internet/Library	Yes
10.	Computational facilities	Yes
12.	Any other special facility being provided	Roof Area for Solat Voltaic

6.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment



PI & his group	Not Available		
PI's Department	Not Available		
Other Institute(s) in the region			

6.3 Total Budget (Rs. in Lakhs):5 Lakhs

- Recurring Cost (Rs): Electricity, Manpower, Data, Travelling and Man hours 4.85 lacs
- Non-Recurring Cost (Rs): Digital Equipment, Server etc 1.9 lacs

Sl. No.	Item	Budget			Total
		0-6 th Month	6-12 th Month	12-18 th Month	
A	Recurring	150000	175000	160000	485000
	1. Manpower				
	2. Consumables				
	3. Travel				
	4. Field testing, Demo/ Training expenses (if applicable)				
	5. Contingencies/Other costs				
	6. Institutional Overheads*				
	7. Any other item				
B	Non-Recurring		10000	20000	190000
	Digital server space	160000			
	Mobile phones 3 numbers				
	Laptops 3 numbers				
	Printer				
	Stationary				
	Grand Total (A+B)	310000	186000	180000	676000

A. Recurring:

1. Budget for Manpower

Sl. No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	Budget (Rs. in lakhs)			Total
					0-6 th Month	6-12 th Month	12-18 th Month	
	Principal Investigator	1		15000	30000	15000	45000	
	Co-PI	1		15000	30000	30000	15000	
	Participatory urban Planning Expert	1		10000		30000	20000	
	Research Assistant	1		5000	30000	30000	30000	
	SCSI Expert	1		10000	20000	10000		
	Total				110000	115000	100000	

2. Budget for Consumables*

Sl. No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)			Total
			0-6 th	6-12 th	12-18 th	



		Month	Month	Month	
1-	Stationary	10000	10000	10000	30000
	Models workshop material		15000		15000
	Total				45000

*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel

Sl. No.	Purpose	Budget (Rs. in lakhs)			Total
		0-6 th Month	6-12 th Month	12-18 th Month	
1.	Project logistics	10000	5000		
2.	Field activities	-	5000	5000	10000
3.	Review meetings (if elsewhere)	-	5000	5000	10000
	Presentations	-	5000	30000	35000
	TOTAL		25000	40000	55000

4. Field Testing/ Demo/ Trainings*

Sl. No	Description of field testing/demos /trainings	No/Yr	Budget (Rs. in lakhs)			Total
			0-6 th Month	6-12 th Month	12-18 th Month	
	N/A					

*Include material for technology field testing/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of beneficiaries/training, duration of training days, cost-/training).

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)			Total
			0-6 th Month	6-12 th Month	12-18 th Month	
	Contingencies		5000	5000	5000	

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

B. Non-Recurring:

Budget for Permanent Equipment/ Workshed/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.	Mobile Phones 1	3	25000
2.	Lap tops	2	90000
3.	Digital space	1	15000
5.	Software	1.5 Year Subscription	30000

7. Deliverables



Deliverable	Mark ✓	Brief description
Product development/adaptation	Yes	Real time process adaption of participatory urban planning methodology.
Technology package for development of the project area and local community	Yes	Focus on the Girl child through collaboration with the schools.
Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)	Yes	Students and the institution will be able to publish socially relevant digitally empowered research.
Scientific knowledge and/or data generation leading to technology development in future	Yes	Capacity building of both students and faculty in digital tools for empowering vulnerable stakeholders
Other (Please specify)		

8. *Name and address of experts/ institution interested in the subject / outcome of the project.*

Government of India, Gurgaon Metropolitan Development Authority.



Education Qualification: Ph.D. Scholar Sushant University (Erstwhile Ansal University)
Enrolled since: July 2019
Masters in Ekistics (Jamia Millia Islamia University)
Year of Post graduation: June 2014
B'Arch (SPSMBH'S College Of Architecture, Kolhapur)
Year of Graduation: June 1995

Work Experience: **Total Number of Years: 28**
SSAA Research Cell & Knowledge Track head
Programme Head for Masters in Interior Architecture (2021-2023)
Professor at SAA, Sushant University. October 2021-till date)
Associate Prof. at SSAA (August 2014-October 2021)
Co-founder Vertex Designs /Associate Vertex Inc (2000 onwards)
Visiting faculty at SSAA (2011-2013)
Partner at SAAR (1997 onwards)
Ar. B V Doshi (Ahmedabad) Architect Assistant (1995 onwards)
Kothari and Associates (New Delhi) Internship (1993)

Personal Details:

Date of Birth: June 1 1973
Residence address; E-16 Ground Floor, Suncity, Sector-54,
Gurugram, Haryana. 122003

Council of Architecture CoA No – CA/1996/20576

Indian Institute of Architects Reg Sr No 20980

Executive Committee Member of Indian Institute of Architects (Northern Chapter) Head of IIA (NC) Women Empowerment Committee

Life member of Eseed (Ex-students Excellence in Emerging Entrepreneurs Domain) Ex-Architecture Students of SPSMBH's College of Architecture Trust.

Professional Introduction

Aruna Bhardwaj, Professor, SSAA Research Cell and Knowledge Track Head, School of Art and Architecture, Sushant University.

Co-founder of Vertex Designs and an Associate partner at Vertex Inc, a design practice, where I was involved with the principal designer, administration, designing and client interactions. As an entrepreneur, I was involved with conceptualization, design, supervision and end-to-end execution of various projects that ranged from hospitality, organized retail, commercial & residential.

Vertex Design/ Inc has to their credit association with companies such as Standard Chartered Bank, IDBI Bank and Vodafone besides working on one off design intensive projects such as Delhi Art Gallery, Rajasthali plus Khadi showrooms. The firm was involved in creating a visual brand identity for various B 2C points such as Hutch, Reliance Webstores and even Fab India. Small format retail, stand-alone boutiques for fashion designers were a significant milestone of my design journey.



MSMSII Museum at City Palace & Jaigarh Gallery, Jaipur were some of the other key contemporary adaptive reuse projects.

ACADEMICS

I have taught various subjects at M Des, B Ach and Interior Architecture M Arch Programme, **traversing disciplines. Creative exploration, material knowledge and innovative details has been the USP for all my endeavours.**

As Studio Director for Design STUDIO for first year and fourth year, I handle SPACE ORGANISATION AND USER EXPERIENCE at varied scales, from the intimate, simple to complex-city level.

Industry experience has also enabled me knowledge of technical subjects such as construction and services. I have been the B Arch vertical track director for Building Construction subject for an year and also B Plan coordinator. I was also the coordinator for the Mid Level SSAA Faculty, Training, Orientation and Research (FacTOR) programme and the Events Head at SSAA from 2015 to 2018.

Presently I am pursuing PhD in Child Friendly Urban Spaces, which places the most vulnerable stakeholder of the built environment at the forefront. Design and creative thought is at the center of children engagement. Through this research, I endeavor to bring a change for the young, targeting the law of lowest denominator, which will create valid and safe solutions for all other stakeholders.

As convener of the Convener and moderator of three INTERNATIONAL SYMPOSIUMS, of iPAC Mud Futures 2021-2022 | Motor# Technological Advancement # Hybrid Futures and # Rualisation, I am looking forward to take material innovation in natural, sustainable materials using technological processes.

Council of Architecture Inspections

Convener and member Council of Architecture Inspection Committee (for B Arch and M Arch program) on behalf of the COA for the academic sessions 2017-2018, 2018-2019 and 2019-2020.

Official professional & academic duties- Faculty Selection Panel, Juror & Examiner

- 1- Guest and Visiting Faculty Selection Panel Expert, Masters Programmes, 22nd & 23rd August 2022.
- 2- External Juror to Jamia Millia Islamia, Sharda University for the academic sessions M Arch Ekistics Batch 2020-22, 2018-2019 and 2015-2017 and B Arch Programmes.
- 3- Examiner for NATA examination in 2017 & 2019.

Ph.D Thesis Title Urban Spatiality for the Girl child in the Neo Urban Neighbourhood

Supervisor: Prof Dr Suruchi Modi, Ex Supervisor-Prof (Dr.) Vibhuti Sachdev



A child friendly approach, focused on the spatial experience, can change both the direction and method of development that third world nations are experiencing. Children expression as the drivers of processes, materials and life lived bring sustainable social design to center stage. As it places the most vulnerable stakeholder in the forefront, the law of lowest denominator comes into play, creating valid and safe solutions for all other stakeholders. Through this research, I hope to bring the Indian urban child to the forefront with respect to spaces and places they inhabit in the 21st century city.

ANNEXURE 'A'

Research & Publications:

Bhardwaj A R, Bhatt JM, 2022, BUILT & UNBUILT INTERACTIONS OF THE CHILD IN AN URBAN VILLAGE: A Reason For Hope. International Research Symposium on Urban Villages, UVCT,COA,NIUA,FOA&E,JMI (selected for publication as a chapter in Scopus-indexed Springer book series "Advances in 21st Century Human Settlements" Book title "Urban Villages in India")

Bhardwaj A 2020, Engaging with our Past, Building for Today, State of Built Heritage in India: case of the unprotected, INTACH Report (Article)

Bhardwaj A R, Bhatt JM, 2020, Lost city for the migrant child. Ekistics : An approach to Urban-Regional Planning and Development, Urban Regional Transformations, Vol II, Jamia Millia Islamia Publication

Bhardwaj A, Bhumika, Jha B, Kanwar T, Saini N, 2019, I-City-My City: Idea City, An approach to appropriation of public realm. (In)Fusion, Sushant School of Art and Architecture.

Bhardwaj A R, Bhatt JM, Sani N 2017, Child as the Storyteller of Urbanity. "Design that cares" 10th FARU International Research Conference 2017, 8 & 9 December 2017, Wadduwa. Sri Lanka.

Bhardwaj A,(ed) Manthan -II - 'Teaching and Learning Architecture in 21st Century (In)Fusion, Sushant School of Art and Architecture. 06th November 2016,

Bhardwaj A 2015, Bamboo Habitats: Icra, Darjeeling, Context: Built Living and Natural, Special issue on Traditional Materials and Construction Technologies| Volume XI | 2015

Bhardwaj A, Rawat DS , Design Guidelines for Homestay Village; Chotti Haldwani, Uttrakhand, (working paper)

Bhardwaj A R, Bhatt JM, A City For The Child – In search of Sustainable Development. (Unpublished)

Madan A, Bhardwaj A, Casting Wisdom: Traditionally Inspired Architectural Expressions by Women Architects from Across India. (Unpublished)

CONSULTANCY RESEARCH BASED

'Draft Social Infrastructure Strategy – Investing in childhoods, **Shaping a learning city**', **Social Infrastructure Plan based on the concept of the two 'Ds'- DESIGN AND DISTANCE** For Gurugram Metropolitan Development Authority (GMDA) – Urban Planning Division. (2019-2020)- Consulting team- Dr Ajith Kaliyath, Juhi Malpani Bhatt and Aruna Bhardwaj.(Pro-Bono Research Consultancy)

Sachdev V,Dandona B,Munjaj P, Bhardwaj A, Shah S,Semal T 2015, Conservation Design Development of Quila Pratapner,Etawah. Draft Conditions Report SSAA. (Proposal development on restorative techniques combined with contemporary design ethos.)



SEMINARS, CONFERENCE & QIP ATTENDED

- **19-24.05.2021;** Faculty Development Programme Online Series III. Sushant University Course Completed
- **17-18. 10. 2016;** Regional FDP COA NIASA, SSAA,AU. Course completed
- **08.07. 2016;** Teri-National Conference on "Enabling Policy Frameworks for climate resilient cities
- **6-10.06.201;** Big Data Analytics , FDP QIP Program at IIT Rourke.
- **22.12.2015;** Orientation Workshop on Greening Architecture Education, CSE
- **25-26.08. 2015;** Urban Transformations in India, Spotlight; Cities of Delhi, Centre for Policy Research.
- **06.01.2015;** Women in Architecture in India, challenges in the 21st Century, SPA Delhi, SPA Alumni and IIA(Northern Chapter)

SYMPOSIUMS, WORKSHOPS ORGANISED & TALKS PRESENTED

- **Convener of COA TRC Program organized on Sustainable Architecture: Embracing Renewable Energy and Sustainable Practices. Dated 18.03.2024 to 22.03.2024**
- **22.05 2022;** "Built & Unbuilt Interactions of the Child in Urban Village: A reason for Hope Conference Paper presented at UVCT,COA, FOA&E JMI, NIUA International Research symposium on 21st &22nd May, 2022.
- **06.05. 2022;** *Architecture in Schools & in Colleges* Presenter of COA-TRC Online Training Program "National Online Teacher Training Program (TTP) on "SDG-4's 10 Targets for Teaching and Learning in Architecture" from 2nd to 6th May 2022, through Zoom Web Application.
- **24-25.02.2022; 31.03.2022; 01.04.2022; 13.05.2022; 27.052022 and 03.06.2022**
Convener and moderator of three INTERNATIONAL SYMPOSIUMS, of iPAC Mud Futures 2021-2022 | Motor, a multi-host, multi-location, global, online conclave on the futures of earth construction.
Technological Advancement; 24,24TH Feburary,2022
Hybrid Futures; 31st March 2022 & 01st April, 2022 and
Rualisation; 13th & 27th May 2022 & 3rd June, 2022.
- **15. 09.2021 to 02.10. 2021** Conceptualizer for 'Streets for Me' An online workshop for Schoolchildren at Kashipur, Utrakhand, for creating experiential safe urban streets, an initiative of SETU group. This workshop promoted community participation of children and ownership of urban space, while tagging the SDG and climate change agenda.
- **06.07.2021;** Chair of the 1st Day of iPAC Mud Futures 2021-2022:Urban Origins, Online Conference



- **17.07.2021;** Head-Start (Online Event) for Undergraduate Aspirants, Sushant University. Speaker. Introducing design think from product to space.
- **31.10.2020;** Panelist for session Roundtable 3 : City as a Learning Landscape: Child friendly Gurugram VIRTUAL URBAN THINKERS CAMPUS-Imagining Gurugram as a Learning City.
- **13.08.2020;** Proposition Presentation on Dilemma of Research Design: Journeys of Urban Childhood.
- **25.06.2020;** PhD Colloquium Poster Presentation- Urban Spatiality of Diverse Childhoods
- **8-9.12.2017;** Paper presentation at 10th FARU International Research Conference, Wadduwa. Sri Lanka
- **21-22 .02. 2019;** Paper presentation at National Seminar on Ekistics : An approach to Urban-Regional Planning and Development , at Jamia Millia Islamia, New Delhi.
- **06.09 201;** Participant & organizer of Manthan -II - 'Teaching and Learning Architecture in 21st Century' A roundtable workshop on Architecture Education at School of Art & Architecture, Gurgaon

Organisation of Certificate Course

- **iPAC Mud Futures 2021-22. Motor Theme Convener.** A multi-host multi location online and offline Conclave and certificate course on the use of mud in architecture. This is an year long conclave in which various online sessions were organized per month for two days from July to December, then February till June. (<https://ipac.page/mudfutures/>)
- **'Design Principles & Conceptualisation' Certificate course.** Date- 16, 17 & 18 August, 2021. Online Course for school students. Organised by School of Art and Architecture, Sushant University.
- **'To Build or Not to Build'- Teaching of Building Construction Tools, methods and Outcomes.** SSAA Faculty Orientation Teaching and Research (FacTOR) Online FDP. June 2020.

Knowledge Enhancement Roles-

Professor at School of Architecture, Sushant University October 2021-Till date.

Associate Professor at Sushant School of Architecture, AU/ School of Art and architecture (SU).

January 2015 –October 2021

Assistant Professor at Sushant School of Architecture, AU/ School of Art and architecture (SU).

August 2014-January 2015

- M Arch Interior Architecture Programme Head and M design faculty
- Role-Head SSAA Research Cell.
- Responsibility- Overseeing and organizing the school research vertical that promotes and facilitates faculty research,
- Official Member SAA for IQAC Even Semester 2020-21 and Odd Semester 2021-22.
- M Arch I A Thesis studio director Sem IV Even 2022
- Time –table generation,
- Identification of visiting faculty,



- Syllabus & curriculum strengthening.

I have also been a visiting faculty for the for design studio at Sushant School of Art and Architecture from 2011 to 2014.

Events Organised at School of Art and Architecture, Sushant University(erstwhile Ansal University)

- Life and Work of CP Kukreja : Exhibition, April 15, 2019 First ever exhibition of CP Kukreja's life and works. Core Coordination Team Member.
- Manthan- Teaching and Learning Architecture in the 21st Century. Core Coordination Team Member and Event head.
- Manthan- Conference on the Curriculum for Built Heritage Program. Event head
- JKC Gallery Launch with an exhibition Celebrating Modern Indian architecture JK Chowdhary. 2015 Core Coordination Team Member and Event head.
- Orientation day hosting new admissions and their parents,
- Organising lecture and workshop series with various subject directors for relevant years.
- Hosted various International dignitaries such as Ar Fernando Menis, Dr Peter Scriver & Amit Srivastava, Prof John Bass

Summary Academic roles-

As a full time faculty at Sushant School of Art and Architecture, I have enjoyed wearing a number of hats. Besides **guiding Thesis and Dissertation** and teaching Professional Practice at B Arch program, I have taught the Master's programs; **Elective studio (All Masters), Design studio (Masters Interior Architecture), Planning theory & Techniques (M Plan)**. I have also been part of the **7th Semester Design Studio, Material Technology and Processess for the 3rd Semester**. My post graduation in Ekistics enabled me to also teach in the B.Plan and M plan programmes. **Planning Theory, Settlement Sociology and Demography** are subject that I have relished in exploring with the B Plan students in the past.

I have also successfully conducted the **Elective Studios on planning through public participation**.

- **Lead Collaborative Community Engagement Initiative** with PRIA (Participatory research in Asia)for Adaptation Research Alliance (ARA) Micro Grant Project between January 2022 to April 2022, to showcase community based participatory methods that are very useful in systematising lived knowledge and localised data sets. This project focused on the issue of water – the lack of availability, poor quality of water, and water hazards like flooding – that urban poor communities face in their everyday lives.
- **Apni Sadak-** A Community Participation Project, promoting ownership of public space in the neighbourhood. This project was a Sushant School of Art and Architecture initiative in the MERA GRAM: GURUGRAM series titled 'Apni Sadak' in collaboration with HKS as part of their CSR initiative.
- **Spaces for Migrant Worker's Children-** A children participatory design project for low income worker's children in Gurugram with B'Arch 4th Yr Students. (Publication in progress)
-

Summary Knowledge Service Roles

- Programme Head M Arch, Interior Architecture. (July, 2021 onwards)
- Head SSAA Research Cell. (March, 2022 onwards)
- Sem 3-& Sem 4 M Arch Studio Head August 2021-June 2022
- Head, Vertical Track for Building Construction B Arch Program. Till June 2021
- 4th Year Architecture Design Studio head for B Arch Program. (Till June 2021)



- 1st Year Architecture Design Studio head for B Arch Program.
- 2nd Year Architecture Design Studio head (M Arch Interior Architecture)
- Events Head for SSAA (August 2015-May 2018)
- B Plan Coordinator (2015-2016)
- Admissions Councilor: Counseling parents and prospective students

ANNEXURE 'B'

ARCHITECTURE PRACTICE

Co-founder Vertex Design/Associate Vertex Inc since 2000 to August 2014:

As Co-founder of Vertex Design, I have spent over fifteen years in the field of conceptualization, management and execution of various design projects of different typologies. Focused on material explorations and intense creative expression.

Vertex Design (presently Vertex Inc) was a design-centric solution provider that served varied clients spanning from hospitality, organized retail, commercial & residential developers for well over a decade. In the capacity of Co-head, I have ensured seamless solutions for design conceptualization, supervision and end to end execution. Vertex's involvement with any project began with research of its context and then striving to develop details that reflected a unique identity, based on experimental materiality and craft. A process of repeated, reworked conceptualization & modifications that resulted in built form or space utilization stood apart from the usual run of the mill outcomes. In addition, the exploration of contextual details in a contemporary manner was at the center of its design philosophy.

Profile Synopsis:

1. Client Service and Marketing

- Promoting services to potential clients and business professionals for securing new business.
- Advising the clients on service selection from an array of services offered by Vertex and related technical services providers & ensuring satisfaction and generating repeat business
- Mapping client expectations and requirements through a series of dialogues with relevant stakeholders.
- Exploring the various options for the design language that the project shall follow and finalizing the same after taking into account the client preference, nature of the project, defining project structure and timelines.

2. Design & Project Management:

- Conceptualization and ideation for various types of projects architectural, residential and retail interiors to even product design
- Brief internal team and set timelines/direction to develop presentation formats.
- Guide the team to develop a presentation covering visual schemes showcasing finishes, look and feel, layout options etc.
- Overlook the production of detail drawings and shop drawings for the project and resolve problems related to design.
- Liaison with clients, consultants & contractors for effective communication of design elements to ensure operations are carried out smoothly and resources are effectively utilized to deliver results.



- Site visits during the course of construction to check proper implementation of design specific specification and recommendation to consultants and/or contractors.
- Monitor all activities related to project closure in terms of bills, vendor payments, as built drawings and all relevant documents. Ensure project design development & communication to stakeholders at client organization within expected timelines.

Key Projects Completed

City Palace Museum

The museum for original artworks of the Maharajas' of Jaipur is to be housed within the City Palace Complex in a building of recent origin but matching the exterior of the City Palace Jaipur itself. The Maharaja Sawai Mansingh II museum takes the visitor on a journey through the time of the founder of Jaipur through the display of original artwork paintings and photographs. Juxtaposing factory finish material like epoxy and laharua print-inspired ceiling as key markers of the space experience. A very subtle graphic design was developed for communicating the sections, which was again inspired by the lahariya print.

Jaigarh Galleries

The gallery at Jaigarh Fort, Jaipur, showcases a very significant piece of history and is located in one of the most important historical locations. The approach here has been to re-engage with the space in a contemporary manner using it in the most efficient manner possible to display the exhibits but at the same time use traditional wall finish and stone crafts. This in effect becomes our ode to a sustainable re-utilization of the historical environs.

Camping Resort in Kalimpong (West Bengal)

A challenging project with a multitude of structures varying in their functions. Standalone cottages for long stays, simple two-room units, camping site, dining facility and the owner's residence. Interesting use of traditional bamboo construction, identifying water catchment areas, rain water harnessing etc make this project an exciting study in sustainability through traditional methodology.

Dehi Art Gallery (Hauz Khas)-Area 7000sq ft.

(Design & office support)

Flagship Rajasthali Showroom – Area 17000 sq ft. The first contemporary design Rajasthali store organizing built in fitments celebrating different stones.

Khadi Stores –Area 1500-3000 sqft

Awarded first prize in the Design Competition between other leading design firms to create the a new look for the **Flagship store for Rajasthali and a contemporary module for the Khadi store** in Jaipur.

Bharat Diamond Bourse at SDB Ahmedabad (Working drawings, as Junior Architect) 1995-96



Residential Design and Interiors

Jacob's Residence, GK-1, New Delhi

A contemporary look for the architecture of the house incorporating fun and elegance combined for a modern family. Ideation of internal and external spaces and elevations plus supervision of the work on site clarifying contractor problems and coordinating between the various vendors.

Jacob's Office/ Guest house, Trivandrum

An exploration of Traditional Kerala architecture in a contemporary theme. Conceptualising/ design detailing/ Client management

Tandon's Residence, Noida

A seventies look inspired architecture with interiors competing with daily soaps on television.

Brigadier Residence, Defence Colony

Functional modern looking apartments block using the complete fsi to get maximum space.

Mr Sharma's Residence, DLF-III

One of the initial projects involving a floor option as well as providing the flexibility to have a single family unit.

Interiors and remodeling of residences

Ms Neena Tejpal, GK-II, 404 Apartment Aralias, Gurgaon, 405 Apartment Aralias, Gurgaon, Farmhouse at Bhakrota, Jaipur, Swimming pool with spa at Prithviraj road, Jaipur for NR Kothari, Singhanias, Chowdary's Apartment at Belvedere Gurgaon.

Design/projects of Brand Identity:

Spatial branding involving homogenizing elements of design and installation of identical fitments in various locations. Reinforcing brand identity by use of materiality and harmonizing

Hutch Tele Shops (Kiosks) (Area-120 sqft) Metro Stations New Delhi n Mumbai

RPG Cellucom Retail Outlets (Area 1500-2000 sq ft) Pan India.

Reliance Express ways and Web store Area 500-1000 sq ft Punjab and New Delhi.

Satyam I-ways (Area 500 sq ft) New Delhi.

Boutique Retail Outlets

Concept, detailing and execution of shop design ensuring hi-quality finishes to create a one-off experience.

Gem Palace (Lodhi Colony)



- # Interior espania (Udyog Vihar)
- # Kaaya Jewelry Store (1 MG),
- # Fashion Store H20 (Ambavatta complex),
- # Audio Visual Aids (DT Mega Mall),
- # Fab-India Furniture outlet (N-Block, GK-1)
- # Aromatherapy Spa (GK-1)

Offices and Bank Interiors

- # Tehelka office interiors (Area 4500 sq ft)
- # Impulse Next- Design (Area 2000 sqft)
- # Impulse Esprit-Office (Area 2000 sqft)
- # Sage publications (Area 1500 sq ft)
- # IDBI Bank, Rajouri Garden
- # Standard Chartered Noida
- # Tomar's Exporters (Area 6000 sqft)(Udyog Vihar)

-----THE END



Utilization Certificate

Certified that grant of ₹ 1,45,000/- (Rupees One Lakh Forty Five Thousand Only) sanctioned by the Center of Research and Development, Sushant University, vide letter no. F.No.1/2023-2024/Seed Fund-Nov 23/02 Dated November 3, 2023, financial assistance for the project titled “Co-create gender sensitive public spaces in an urban neighborhood with school children using a multidisciplinary digitally integrated methodology “was utilized for the purpose for which it was sanctioned.

Financial expenditure incurred

S.no	Nature of expense	Proposed Expenditure (in Rs.)	Expenditure incurred (in Rs.)
1	Manpower	4,11,000	1,00,000
2	Travel	55,000	12,000
3	Consumables	45,000	13,000
4	Contingencies	5,000	5,000
5	Equipment(Phone,laptop ,software)	1,60,000	1,50,00
	Total	₹ 6,76,000	₹ 1,45,000



Principle Investigator




Accounts Officer
Account & Finance Officer
Sushant University
Gurugram

SEED FUND PROPOSAL

Part I: General Information

1. Project Title (should be focused not exceeding 15 words):

Indian Green Building Council (IGBC) Training and Membership

2. i. Name of Principal Investigator: Varsha Khetrapal Kumar

ii. Name of Co-Investigator: Ishani Garg

3. Collaboration if any, give details of institution(s) NA

4. Any Project(s) previously sanctioned by any funding agency? If yes give the details:

SL. NO	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)

5. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues?

NA

6. Duration (months): 12

7. Enclose the following while submitting the application form:

Duly filled application form (complete with all Annexures)- 2 hard copies	
Bio-data of the PI & Co-I -2 copies	Attached



Part II: Proposal Summary

1. Origin of the Proposal:

As India committed its Net Zero goal of 2070, the need of the Green Building Professionals has increased manifold. IGBC has set its own vision of going Net Zero by 2050 and the industry has been keenly embracing this transition of going Net Zero from the Green Buildings. Today, India stands tall with over 7550 registered green buildings amounting to 8.18 billion sq ft of footprints. The scope to further enhance this figure is enormous and IGBC with its 20+ years of services to the nation is aspiring to contribute onwards and upwards. Thus, arises the need to develop qualified professionals & experts who are well-equipped and competent to facilitate & handhold all the upcoming green building projects across the Country. Many State & Central Govt. Departments are incentivizing Green Buildings and thus emphasizing upon having more Accredited Professionals to bring in more accountability and transparency in the practices.

2. Objectives (Only 4-5 focused one that can be observed, measured or clearly assessable)

i.	Introduction to latest green building technologies and Net Zero trends & technologies
ii.	Understanding of the Green buildings and practices.
iii.	In house capability to develop green buildings and promote sustainable development
iv.	IGBC AP examination

3. Review of status of Research and Development in the subject

3.1 International Status:

In 1993, the first Green Building Council was founded in the US, formed by Rick Fedrizzi, David Gottfried and Mike Italiano with a mission to promote sustainability-focused practices in the building and construction industry. Around the world, other green leaders in the industry looked at the impact of the US GBC and decided to start similar movements in their own countries, led by a GBC. Individuals from across the globe were supported by the US GBC. Gottfried seeded and managed the formation of the “United Nations of the Green Building Councils” with the mission of supporting the development of GBCs, and uniting them with a common voice and purpose.

In 1999, the founding meeting of World GBC was held in California, US. In 2002, World GBC was officially formed with eight founding GBCs: Australia, Brazil, Canada, India, Japan, Mexico, Spain, and USA.

In 2007, a Secretariat for World GBC was formally established in Toronto, Ontario, Canada, supported by the Toronto and Region Conservation Authority – which continues to work with World GBC. Start-up funding of over \$1 million per year for three years was provided by the Government of Ontario.

Since then, World GBC has seen growth and evolution in its focus and structure. In 2009, World GBC launched five regional networks and three membership levels (Prospective, Emerging and Established). In 2010 a Corporate Advisory Board was formed to deliver strategic insight from the industry to the World GBC Board. By 2012, there were 71 member GBCs.

The WorldGBC began to produce reports such as *The Business Case for Green Building* in 2013^[5] and *Health, Wellbeing and Productivity in Offices* in 2014.^[6] In 2015, the WorldGBC Board agreed a new strategic plan for the organisation with five focus areas: Membership; Regional Networks; Projects and Partnerships; Marketing, Communications and Influence; and Governance and Operations.



WorldGBC's mission is to "create green buildings for everyone, everywhere" - enabling people to thrive both today and tomorrow.

WorldGBC has a board of directors, comprising building industry professionals who hold senior positions on the staff or boards of member GBCs (or who are closely affiliated with them). The board's role is to advise and oversee WorldGBC's organizational strategy and governance, and to ensure it is operating effectively as a not for profit organisation and delivering on its mission.

GBCs are independent, non-profit organisations made up of businesses and organisations working in the building and construction industry. As members of WorldGBC, they work to advance green building in their own countries, as well as working with other GBCs to achieve environmental, economic and social goals on a larger, global scale.

GBCs are organised into five Regional Networks - powerful, collaborative platforms where they can effectively exchange knowledge, generate new ideas and design solutions that speed up green building in their own markets and across the region. World GBC's five main areas are the Americas, Africa, Asia Pacific, Europe, and the Middle East and North Africa.

Member GBCs also stand at one of World GBC's three levels of development: Prospective, Emerging and Established.

3.2 National Status:

The Confederation of Indian Industry (CII) works to create and sustain an environment conducive to the development of India, partnering Industry, Government and civil society, through advisory and consultative processes.

CII is a non-government, not-for-profit, industry-led and industry-managed organization, with over 9000 members from the private as well as public sectors, including SMEs and MNCs, and an indirect membership of over 300,000 enterprises from 294 national and regional sectoral industry bodies

For more than 125 years, CII has been engaged in shaping India's development journey and works proactively on transforming Indian Industry's engagement in national development. CII charts change by working closely with Government on policy issues, interfacing with thought leaders, and enhancing efficiency, competitiveness and business opportunities for industry through a range of specialized services and strategic global linkages. It also provides a platform for consensus-building and networking on key issues.

Extending its agenda beyond business, CII assists industry to identify and execute corporate citizenship programmes. Partnerships with civil society organizations carry forward corporate initiatives for integrated and inclusive development across diverse domains including affirmative action, livelihoods, diversity management, skill development, empowerment of women, and sustainable development, to name a few.

Importance of the proposed project in the context of current status

As India marches towards its 75th year of Independence in 2022, CII, with the Theme for 2021-22 as Building India for a New World: Competitiveness, Growth, Sustainability, Technology, rededicates itself to meeting the aspirations of citizens for a morally, economically and technologically advanced country in partnership with the Government, Industry and all stakeholders.



With 62 offices, including 10 Centres of Excellence, in India, and 8 overseas offices in Australia, Egypt, Germany, Indonesia, Singapore, UAE, UK, and USA, as well as institutional partnerships with 394 counterpart organizations in 133 countries, CII serves as a reference point for Indian industry and the international business community

3.3 Work Plan:

The main objective of this training programme is to impart knowledge on Green Building concepts and share best practices in Green Buildings.

To cater to these enormous future demands & needs and the commitments to continue serving for the sustainable build environment of the country, CII IGBC announced the '7th Edition of IGBC Green League (IGL) – Reform, Perform & Transform' which is scheduled this year in two phases. Phase II of IGL 2022.

3.4 Methodology:

Anyone can attend the 5 days training program and after appearing for the exam can become IGBC AP.

3.5 Time Schedule of activities giving milestones through Gantt Chart. (Maximum 1 page)

Scheduled between 2 – 6 August 2022 (5 consecutive days) over virtual platform. Each day will have 3 hrs 30 min of learnings on various concepts of Green Buildings and Net Zero through tutorials, culminating into a National Level Quiz Competition on Sustainability and Green attributes. The 5 days training session would cover about 25 topics by as many renowned expert faculties from the industry.

4. Expertise:

4.1 Expertise available with the investigators in executing the project:

IGBC members and trainers

4.2 Bibliography

NA

5. List of facilities required from Sushant University for the project implementation.

5.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	NA
2.	Water & Electricity	no special arrangement needed
3.	Laboratory Space/ Furniture	Table and Chair/ Faculty workstations
4.	Power Generator	NA
5.	AC Room or AC	NA
6.	Telecommunication including e-mail & fax	NA
7.	Transportation	NA



8.	Administrative/ Secretarial support	NA
9.	Information facilities like Internet/Library	NA
10.	Computational facilities	NA
12.	Any other special facility being provided	NA

5.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group	NA	NA	NA
PI's Department	NA	NA	NA
Other Institute(s) in the region	NA	NA	NA

5.3 Total Budget (Rs. in Lakhs):

- Recurring Cost (Rs): 0.73
- Non-Recurring Cost (Rs): 0.70

Sl. No.	Item	Budget			
		1 st Yr	2 nd Yr	3 rd Yr	Total
A	Recurring				2500/- per yr (membership fees)
	1. Manpower				
	2. Consumables				
	3. Travel				
	4. Field testing, Demo/ Training expenses (if applicable)				
	5. Contingencies/Other costs				
	6. Institutional Overheads*				
	7. Any other item				
B	Non-Recurring				
	Permanent equipment				
	Construction of work shed/structures				
	Fabrication of prototype equipment				
	Grand Total (A+B)				2500/- (Plus GST)

A. Recurring:

1. Budget for Manpower

Sl. No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	Budget (Rs. in lakhs)			
					1 st Yr	2 nd Yr	3 rd Yr	Total

2. Budget for Consumables*



Sl. No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel

Sl. No.	Purpose	Budget (Rs. in lakhs)			
		1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Project logistics	NA	NA	NA	NA
2.	Field activities	NA	NA	NA	NA
3.	Review meetings (if elsewhere)	NA	NA	NA	NA

4. Field Testing/ Demo/ Trainings*

Sl. No	Description of field testing/demos /trainings	No/Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Include material for technology field testing/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of beneficiaries/training, duration of training days, cost /training).

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

B. Non-Recurring:

Budget for Permanent Equipment/ Workshed/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.	Training Fees	10	0.70
2.			
3.			
4.			

6. Deliverables

Deliverable	Mark ✓	Brief description
Product development/adaptation		
Process development/adaptation		
Technology package for development of the project area and local community		



Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)		
Scientific knowledge and/or data generation leading to technology development in future		
Other (Please specify)		

7. *Name and address of experts/ institution interested in the subject / outcome of the project.*

Department of Planning and Development is interested to take up this activity. The outcome of the training program.

1. Exposure to Green Building Design Strategies
2. Exposure to Green Building Case Studies
3. Acquire Knowledge on IGBC Green Building Rating Systems
4. Get equipped for facilitating green building certification
5. Get equipped to appear for IGBC AP Exam
6. Hands-on training on Green Building documentation



CURRICULUM VITAE

PERSONAL DETAILS:

Name	:	Ms. Varsha Khetrapal Kumar
Date of birth	:	24th Oct 1980
Nationality	:	Indian
Address for Correspondence	:	A3 – 002, City Homes, Vatika India Next, Sector 83, Gurgaon 122004
Telephone	:	+91-9971302666 (Mobile)
E-Mail	:	varshakhetrapal@gmail.com
Graduation	:	B-Arch (1998-2003) from IPSA Indore.
Post-Graduation	:	M-Plan (Environmental planning) (2003-2005) from the School of Planning and Architecture, New Delhi.



PhD	:	Final report submitted, under review, form the School of Architecture and Planning from GD Goenka University, Gurgaon
Achievements	:	<ul style="list-style-type: none"> - IGBC AP - Gate (graduate aptitude test for engineering) qualified in 2003 with 130 all India rank with 89.63 %. - Done master with scholarship. - SPA thesis topper of the year 2005, - National Award winner for Best thesis of the year 2005 by Institute of Town Planners India (ITPI)
Total Experience till date	:	19Yrs (from Jan 2003 to till date)
Certifications and Training	:	IGBC AP, Workshops on Green buildings by GRIHA, IGBC. IGBC Green League phase 2 in 2022, Corporate sustainability
Area of Expertise	:	Sustainability, energy efficiency, Feasibility Study, Master Planning, sustainable urban transport, Eco-restoration, planning for sensitive areas, Urban mobility, Street Planning and designing, report writing, QMS, Revit Architecture, and BIM, Concept design for commercial, hospitality, residential and retail buildings.

IT SKILLS:

Skills	Years of experience	Proficiency
Revit architecture	15	Excellent and most preferred
Autocad	20	Excellent
Ms office	21	Excellent
GIS (Map info, Arc GIS)	6	Proficient
Photoshop cs	12	Good

Academic Experience

Period:	June 2021, to Till Date
Employer:	Department of Planning and Development, Sushant University, Gurugram
Post holding:	Associate Professor, and Program Head
Roles and Responsibilities	<p>Academic Roles</p> <ul style="list-style-type: none"> • Thesis coordinator and guide for students working on topics like ESG Framework, Walkability, NMT, Solid waste management, and circular economy, and street hawkers. • Thesis Guide for architecture students on various types of projects, like revitalization, mixed-use development, cultural center, etc. • Curriculum development, syllabus restructuring, PO and CO mapping.



	<ul style="list-style-type: none"> • Research work with students and published papers in peer-reviewed journals and UGC-listed journals. • Published book on “Urban Crisis” with ISBN No. • Mentored students in the preparation of an area appreciation plan for selected areas in Gurugram. • City Development Plan (CDP) for BMIR, and report writing, and data collection. <p>Administrative Roles</p> <ul style="list-style-type: none"> • The program director (B Plan and M Plan Courses) • Handling research cells for faculty development • Conducting BOS, and advisory council meetings • Documentation of NAAC. • Organizing secretary for international Conferences and journal publication • Coordinating and inviting Industry and academic expert’s speakers. • Admission and Marketing In charge • Responsible for collaborations and signing MoUs with industry and research-based organizations. • Student counselling.
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Period:	Aug 2015 to Dec 2018
Employer:	GD Goenka, School of Architecture and Planning
Post holding:	Assistant Dean and Associate Professor
Projects handled:	<p>Academic Level</p> <ol style="list-style-type: none"> 1. Mentored students for designing Housing projects, super specialty cardiac hospital, urban design studio, Urban Planning studios for B-Plan and M-Plan students, 3-star Hospitality (hotel) design and mixed use development. 2. Urban Planning, and Township Planning. 3. Helped and guided students for designing climate responsive architectural designs. 4. Worked with students for designing townships; Traffic studies and various site planning projects. 5. Organizing secretary for 1st international Conference, AGORA, organized workshops, seminar site visit, students study tours in India and abroad, Marketing, publicity, recruitment and admissions. 6. Organized and trained students during summer schools on Revit Architecture through workshops. 7. Created Annual Reports and newsletters for the school at university level magazine. 8. Taught subjects like Architectural Design, Building Construction, Town Planning, Research Methods, Working Drawing, Auto-cad And Revit software skills, M-Plan and B-Plan Studio (CDP, EIA, etc.). <p>Administrative Level</p> <ol style="list-style-type: none"> 1. Curriculum making for B-Arch, B-Plan and M-plan. 2. Organizing BOS (Board of studies) and member of BOS committee. 3. Responsibilities handled at University Level, Member of library committee, and member of GDGU research centre, CSR member, examination superintendent. 4. Tour organiser for students of Architecture and Planning. 5. Team management, student discipline coordinator, Anti ragging in charge. 6. Assistant superintendent of examination for last 5 semesters.



Professional Employment Record:	
Present employer:	
Period:	March 2021, to Till Date
Employer:	Whizztech Pvt. Ltd

Post holding:	Head Design and Development Consultant
Roles and Responsibilities	<ul style="list-style-type: none"> Involved in site planning, project planning, and project execution, responsible for overseeing the project and direct or indirect leadership and/or management of project resources for small-medium sized projects hospitality projects. Presentation and training to the clients and colleagues. Analyze architectural, Structural, and Services drawings provided by customers and external consultants. Schedule activities and prepare project formats Utilize in-depth knowledge of a technical discipline and analytical thinking and technical experience to execute policy/strategy Work in a customer interfacing role and should independently handle design and execution of projects with experience in execution of building services Demonstrated track record of strong focus on guiding customers through planning till execution of designs Acts as a resource for colleagues with less experience. Explains information; develops skills to bring team members to consensus around topics within the field. Conveys performance expectations and may handle sensitive issues.
Projects working/ Done	<ul style="list-style-type: none"> The concept for the Resort at Sonarpur (Done) Architecture of a 5 Star Hotel in Kanpur (Ongoing) Interior of a 5 Star Hotel in Mangalore (Ongoing) The concept for the hotel at Shadol (Done) Hotel At Varanasi Architecture (Ongoing) Office Interior at Mangalore 7000 Sq. ft (Ongoing)

Previous employer:

Period:	Dec 2019, to Feb 2021
Employer:	TAKENAKA INDIA PVT. LTD.
Post holding:	Deputy Manager
Projects handled:	<p><u>NIFCO India at Gujarat, DIN renovation at Manesar , Japan embassy at New Delhi</u></p> <ul style="list-style-type: none"> Working a team leader and heading the ta of 6-8 people per project. Prepare construction schedule and monitor construction work. Supervise the works to ensure conformance of construction works and materials. Ensure environmental and social safeguards as per standard practices Concept design, Design development, GFC's to be issued to site, coordination with structure, MEP, QS, shop team Client and Site Team. Project scheduling, Project budgeting and value engineering. Approvals and its coordination as per schedule, <p><u>QMS</u> Working as QMS administrator, for all the ongoing/ completed projects. Working as support for:-</p> <ol style="list-style-type: none"> Documentation and review of various stages of the projects. Organizing the DTR, project review meetings, CKO meetings. Data management and filing as per QMS system. Annual Audit and overall review of projects and status.



Period:	Oct 2012, to Nov 2019
Employer:	WHIZZTECH PROJECT MANAGEMENT PVT. LTD.
Post holding:	Head Design
Projects handled:	<p><u>Hotel design:</u> Layout and designing of 2 hotels in Mangalore,</p> <ol style="list-style-type: none"> Design development and design drawing for 5 star hotel operations. Concept presentation, and detail drawings for approval to authorities. Project meeting with 5 star groups to make design function as per brands. <p><u>Wellness resort:</u></p> <ol style="list-style-type: none"> Development of concept for a wellness resort at sonarpur.

	<p>2. Architectural designing of resort, site zoning, along with interiors and Vastu consultation.</p> <p>3. Presentation to the client.</p> <p>Feasibility Study:</p> <p>4. Feasibility study for 5 star Japanese's hotel near Ahmedabad.</p> <p>Conceptual design:</p> <p>Development of concept for commercial and hotel project at Varanasi. Architectural designing of residences along with interiors and Vastu consultation of various Residential Projects at Gurgaon and Raipur.</p> <p>Master planning:</p> <p>Master Planning of a 7 Acres township area at Bilaspur (C.G).</p> <ol style="list-style-type: none"> 1. Responsible for planning and designing of site layout 2. Building design 3. Orientation of the buildings 4. Site zoning 5. Road setting out, plot setting out 6. Design intents to the consultants 7. Coordination with various consultants (Structure, MEP, HVAC, Landscape, etc.) <p>Residential Design</p> <p>Designing of various unit sizes in the township and responsible for:</p> <ol style="list-style-type: none"> 1. Design development 2. Preparation of working drawings 3. GFC's for site 4. Service coordination 5. Facade development 6. Design presentations to the client 7. Coordination with the various government bodies. <p>Coordination with various consultants (Structure, MEP, HVAC and Landscape consultants).</p>
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Period:	April 2008, to Sept 2012
Employer:	Studio u+a India pvt. Ltd.
Post holding:	Architect
Projects handled:	<p>Master planning:</p> <p>Master Planning of a 700 Acres township area at Gurgaon for Vatika Group.</p> <ol style="list-style-type: none"> 1. Responsible for planning and designing of site layout 2. Building design 3. Orientation of the buildings 4. Site zoning 5. Landscape planning 6. Road setting out, plot setting out 7. Design intents to the consultants 8. Coordination with various consultants (Structure, MEP, HVAC and Landscape) <p>Residential Design</p> <p>Designing of 360, 400 and 500 Sq. yards plots at Vatika India Next Gurgaon.</p> <p>Responsible for:</p> <ol style="list-style-type: none"> 1. Design development 2. Preparation of working drawings 3. Issuing blue prints to the site 4. Service coordination 5. Facade development 6. Design presentations to the client 7. Coordination with the various government bodies. 8. Coordination with various consultants (Structure, MEP, HVAC) <p>Commercial Projects</p>



	<p>Gold LEED rated Commercial building at Gurgaon of 1.5lakh sq ft. of built up, which includes offices, signature restaurants and retail blocks. Responsible for:-</p> <ol style="list-style-type: none"> 1. Concept development 2. Design development 3. Building design 4. Building zoning 5. Site zoning 6. Service coordination 7. Client presentations 8. Coordination with landscape consultant 9. Coordination with various consultants (Structure, MEP, HVAC, facade consultant, green building consultants and Landscape) <p>Commercial building at Bangalore of 1.2lakh sq ft of builtup which includes offices, 5 star hotel for Westin and embassy group and service apartments. Responsible for:-</p> <ol style="list-style-type: none"> 1. Concept development 2. Design development 3. Building design 4. Building zoning 5. Site zoning 6. Service coordination 7. Client presentation 8. Coordination with landscape consultant 9. Coordination with various consultants (Structure, MEP, HVAC)
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Previous employee:

Period:	Dec 2007, to Feb 2008
Employer:	IAAD, New Delhi
Post holding:	Architect
Description of Duties:	<p>Worked as Project Architect for “SEZ Gujrat M-Gift project”.</p> <p>M-gift is a CFBD area identified by the Gujrat Govt. project includes residential area, office block as well as retail areas.</p> <ol style="list-style-type: none"> 1. Preparation of site development Plan, building drawings, Working Drawings and other detailed drawings. 2. Co-ordination with various consultants such as structural consultant, services consultants, and BOH. <p>Preparing various presentation drawings on Photoshop and PPT for presentation.</p>

Period:	Oct 2006, to Nov 2007
Employer:	Ashu Paul Associates, New Delhi
Post holding:	Architect / Project Coordinator for SEZ project
Description of Duties:	<p>Responsible for master planning, and designing of site layout, building design, orientation of the buildings, site zoning, landscape planning etc. Some of the prestigious assignments are given below: –</p> <ul style="list-style-type: none"> • Working as planner coordinator for “Uppal’s SEZ at Gurgaon”. <ol style="list-style-type: none"> 1. Preparation of master plan. 2. Preparation of plans and data collection for Environmental clearance. 3. Negotiations with other consultants. 4. Preparation of brief report/ detailed reports for SEZ. 5. Preparation of design guidelines and Zoning plan for SEZ. • Worked as Project architect/ coordinator for motel/ Banquet at GT Karnal Road. <ol style="list-style-type: none"> 1. Responsible for designing of project. 2. Co-ordination with various consultants such as structural consultant, services consultants, and back of the house work. • Coasting and project scheduling for various other projects. • Preparing various presentation drawings on Photoshop for presentation.



	<ul style="list-style-type: none"> • Working as Project Architect for “Energy Efficient corporate Office at Gurgaon for Acme group.” <ol style="list-style-type: none"> 1. Preparation of Plan/ Working Drawings and other detailed drawings. 2. Co-ordination with various consultants such as structural consultant, services consultants, and back of the house work. 3. Preparing various presentation drawings on Photoshop and PPT for presentation.
Period:	June 2005 to Sept 2006
Employer:	GHERZI Eastern Limited, New Delhi.
Description of Duties:	<p>Responsible for planning and designing of site layout, building design, orientation of the buildings, site zoning, landscape planning etc. Some of the prestigious assignments are given below: –</p> <p>“Preparation of a Preliminary Layout Plan for the Proposed Hero Honda Group’s Industrial Area at Kukas, Near Jaipur”,</p> <p>Married Accommodation Project for Army Head Quarter, New Delhi. For various stations identified by Army Head Quarter.</p> <ul style="list-style-type: none"> • Group housing for Amrit Banaspati, Ghaziabad. <p>Also responsible for business co-ordination & promotion activities, etc.</p> <ul style="list-style-type: none"> • Site development and landscaping for Norwegian embassy. • Concept preparation for Common wealth games village 2010. • Township of 230 Acres for Munish Promoters and developers Phase-I & Phase-II (Site Area approx. 154 Acres). • Noodles factory project at Rudrapur for C.G Foods India Ltd. • Concept for Polar Industries at Haridwar for Polar Fans and CFL’S. • Green building concept for Hero Honda group.

Internship

Period:	Aug 2003 to May 2005
Description of Duties:	<p>Worked on various live projects by CPCB (Central pollution control Board) and MHRD (Ministry of Human Resources and Development).</p> <p>Worked as a trainee on “sustainable development of city” case study Alwar Sustainable development of city case study Alwar (Rajasthan)” project by MHRD.</p> <p><u>Work down</u></p> <ul style="list-style-type: none"> ▪ Literature study ▪ Environmental assessment of city ▪ Primary survey and secondary data collection ▪ Map digitisation and data entry for analysis in GIS. ▪ Data management <p>Under guidance of Dr, Prof. Sanjukta Bhaduri, Project co-ordinator. Assistant prof. in urban planning department, SPA New Delhi.</p> <p>Resource management of a metropolitan city case study Bangalore It is a project taken by Bangalore mahanagarpalika given by World Bank, for the improvement of Bangalore. So all the aspects such as Air, Water, and Land are studies in detail and detailed project report (DPR) of each aspect is made.</p> <p>Task handled “AIR”</p> <p>Work done:</p> <ul style="list-style-type: none"> ➤ Detailed project report of air quality in Bangalore city in to following heads <ul style="list-style-type: none"> ▪ The existing air quality, causes of pollution ▪ Its impact on human health and environment ▪ Mitigation measures and proposal ▪ Financial analysis of the project ➤ <u>Eco-city development project</u> <p>Eco-city development project is a live project done by environmental planning department of SPA, New Delhi given by GTZ. So environmental assessment is for</p>



	<p>sustainable development of city.</p> <p>Task handled “Natural Resource Management”</p> <p>Work done:</p> <ul style="list-style-type: none"> ▪ Geology of that area ▪ Hydrology ▪ Geo morphology ▪ Coastal regulation zones ▪ Hazards can happen due to sea <p>Environmental assessment of Vidisha, madhaya Pradesh, India (Jan - may 2004)</p> <p>To develop Vidisha as a regional node by exploring and exploiting the potential of primary sector through ecologically sustainable and viable options.</p> <p>Task handled: Traffic and Transportation</p> <p>Work done:</p> <ul style="list-style-type: none"> ▪ Transportation network plan ▪ Volume count ▪ Origin and destination survey
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Area of Research

Period:	Jan 2017 to On Going (towards completion)
Topic:	An Integrated Approach towards Street Planning and Designing
Description:	<p>Working as part time scholar in the area of Street Planning and Design. Aim of study is to the formulate a evaluation framework to evaluate the efficiency of streets, and measure the urban design qualities for pedestrians.</p> <p>Keywords: Complete Streets, Streets Design Elements, Urban Mobility, Urban Design Qualities, street efficiency</p> <p>Working on:-</p> <p>Parameters to measure urban design quality.</p> <p>Identifying indicators for street design elements.</p> <p>Integration of urban design qualities and street design to have safe, accessible and mobile streets for all types of users and better social, economic and environmental conditions.</p>

Publications:

1. **“Public Health: Issues, challenges, opportunities prevention, awareness”** (Public Health: 2016), ISBN: 978-93-85822-10-0, Conference Proceedings Volume-II, 15th January 2016.
2. **“Positive and Negative Impacts of Tsunami”**, AGORA 2016, 1st International Conference on Disaster and risk Management, ISBN: 978-93-86256-12-6, November 2016 at Gurgaon.
3. **Healthy Neighbourhoods**, (Public Health: 2016), ISBN: 978-93-85822-17-9, Conference Proceedings, 21st May 2016.
4. **“Efficient street planning and design: An approach towards developing sustainable cities”**, National conference on Environment and Sustainable development at NIT Raipur, Conference proceedings, 19 Feb. 2019
5. **“Need for an integrated approach towards street planning and design to ensure safety, accessibility and mobility to all types of users: A Review of Literature”**, Journal of ITPI ISSN: 0537 – 9679, volume: 16 Number: 3, July – September 2019.
6. **“An Approach towards Street Selection to Evaluate its Completeness: Case Study Gurgaon” ICRC-2K20 2020**, International Conference on Rediscovering Cities 2K20, July 2020 at Ambala, Page 220 – 235, ISBN: 978-93-89932-48-5.
7. **“Complete Street Planning and Design: A framework to develop quantitative and qualitative evaluation method”** (International journal on engineering and advance technology), Volume 9, Issue – 1, October – 2019, Page 6015 – 6021, ISSN: 2249-8958. (Elsevier and Scopus indexed, B Impact factor of IJEAT is 5.97 for year 2018).
8. **“Complete Streets: An Inclusive And Integrated Approach Towards Street Planning And Designing”** Asian Regional Conference on Peri-Urbanization, 2019, SPA, Bhopal.



9. "Assessing the Urban Design Qualities of streets for pedestrians: A case study Gurgaon" --
(International journal of scientific & technology research), Volume 8, Issue – 12, October – 2019, Page
3067 – 3073, ISSN: 1219-27124. (Scopus Indexed)

CERTIFICATION:

I, the undersigned, certify that to the best of my knowledge and belief, this bio data correctly describes my qualification and my experience.

Varsha Khetrapal Kumar

Place : Gurgaon
Date : May-2023



Utilization Certificate


Certified that grant of ₹ 1,43,000/- (Rupees One Lakh forty Three Thousand Only) sanctioned by the Center of Research and Development, Sushant University, vide letter no. F.No.1/2023-2024/Seed Fund-Nov 23/03 Dated 3rd November 2023, financial assistance for the project titled “Indian Green Building Council (IGBC) Training and Membership” was utilized for the purpose for which it was sanctioned.

Financial expenditure incurred

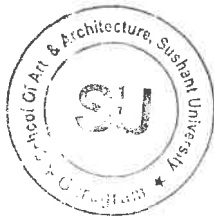
Sl.no	Nature of expense	Proposed Expenditure (in Rs)	Expenditure incurred (in Rs)
1	Manpower	73,000	73,000
2	Training fees	70,000	70,000
	Total	₹ 1,43,000	₹ 1,43,000



Principle Investigator



**Accounts Officer
Account & Finance Officer
Sushant University
Gurugram Haryana**



PROFORMA FOR SUBMISSION OF SEED FUND PROPOSAL

Part I: General Information

1. Project Title (should be focused not exceeding 15 words): Experimental Research Work
2. i. Name of Principal Investigator: Dr. Jyoti Sinha
ii. Name of Co-Investigator:
3. Collaboration if any, give details of institution(s): NA
4. Any Project(s) previously sanctioned by any funding agency? If yes give the details: No

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)

5. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues? No
6. Duration (months): **6 Months**
7. Enclose the following while submitting the application form:

Duly filled application form (complete with all Annexures)- 2 hard copies	
Bio-data of the PI & Co-I -2 copies	



Part II: Proposal Summary

1. **Origin of the Proposal:** (Maximum 1 page)
(Scientific/Technical rationale for doing this work should be elaborated)

Lack of a small, cost effective, scalable health monitoring system for bringing healthcare to remote, rural areas in developing countries such as India. COVID 19 has increased the stress on Global Healthcare infrastructure and also brought to fore deficiencies in our healthcare monitoring

2. **Objectives (Only 4-5 focused one that can be observed, measured or clearly assessable)**

i. To develop a cost effective IoT based health monitoring system using esp8266/32 for monitoring Blood pressure (BP), pulse rate, oxygen saturation and temperature of a patient
ii. To apply machine learning on data collected from the developed health monitoring system for anomaly detection

3. **Review of status of Research and Development in the subject**

3.1 International Status: (Maximum 2 pages) –

(Researchers working in the area worldwide and their contributions must be properly highlighted with recent references and reviews. A correct and faithful description of the international research status must be given)

S. No.	Author Name	Title of the Research	Objective	Summary and Research Gap
1	Gustavo Girao, Savio Rennan Menezes Melo “ [1]	An IoT-Based Healthcare Platform for Patients in ICU Beds During the COVID-19 Outbreak	Remote Monitoring of patient using Iot	ML was proposed but not applied and sensors validation is not done
2	Cooley Health [2]	Cooley Health remote patient care	To develop a remote monitoring patient care system with a value-based care system.	1. Developed model is not user friendly 2. Developed System is very costly system.

3.2 National Status: (Maximum 1 page)

(Same as above to cover the contribution of Indian Scientists in the project area)

S. No.	Author Name	Title of the Research	Objective	Summary and Research Gap
1	A. Kishor, C Chakraborty [3]	Artificial Intelligence and Internet of Things Based Healthcare 4.0 Monitoring System	Use of AI and ML with IoT in Healthcare	Validation of Sensors and hardware model are not discussed in paper
2	H. Ahmadi, G. Arji, Leila, Reza Safdari [4]	The application of internet of things in healthcare: a systematic literature review and classification	A review of healthcare applications	Cost and hardware not mentioned
3	Md. Milon Islam, Ashikur Rahaman, Md. Rashedul Islam “ [5]	Development of Smart Healthcare Monitoring System in IoT Environment” Springer Nature Singapore Pte Ltd 1(3):185 May 2020	IoT based healthcare monitoring	no validation done



3.3 Importance of the proposed project in the context of current status (Maximum 1 page)

(Highlight what is the new area or gap which will be solved in the project in relating to what is already known. This is a very important section to project the novelty content of the proposal)

The project is novel in the sense that it aims to mount multiple biomedical sensors on a single smart board, and further aims to analyze data with machine learning techniques using Artificial Intelligence algorithms.

4. Work Plan:

4.1 Methodology: (Maximum of 5 pages)

(It should contain all the details of how each of the objectives will be addressed. This section must be detailed and have clear plans, not vague and generalized statements. It should have several schemes, tables, figures, equations etc. in addition to text, explanation and justification of why the project research plan will work)

The technologies implemented to develop these health monitoring devices are: embedded systems, System on Chip (SOC), biomedical engineering, artificial engineering and machine learning.

The sensors mounting on smart board is an important process in the proposed objective of health care system. It is an intersection of VLSI, embedded systems, biomedical engineering, machine learning, Artificial Intelligence and cloud computing

The proposed healthcare model is divided in three sections:

1. **The first part of the model is:** To develop a circuit using the proposed smart board and sensors on any industry-oriented simulation and PCB-based software. This circuit could convert into the printed circuit board (PCB) and further this PCB could mount with four proposed sensors on the smartboard to develop the proposed hardware for the health monitoring system. In addition, hardware components used in the proposed models are explained below:

ESP32: It is a System on Chip (SoC) microcontroller with integrated Wi-Fi and Bluetooth. The advantage of using ESP8266 is its integrated RF components like Power Amplifier, Low-Noise Receive Amplifier, Antenna Switch and Filters. It is manufactured by Taiwan Semiconductor Manufacturing Company (TSMC) with ultra-low-power 40 nm technology, it helps in designing battery operated applications like wearables, audio equipment, baby monitors, smart watches, etc. Using ESP32 should be very easy. The ESP32 supports multiple programming environments like Arduino IDE, LUA, Micro- Python, Espressif IDF (IoT Development Framework) and JavaScript

Heart Rate and Pulse Oximeter (MAX30102):

The MAX30102 is an integrated pulse oximetry and heart-rate monitor biosensor module. It includes internal LEDs, photo-detectors, optical elements, and low-noise electronics with ambient light rejection. It operates on a single 1.8V low power supply and a separate 3.3V power supply for the internal LEDs. Communication is through a standard I2C-compatible interface. The module can be shut down through software with zero standby current, allowing the power rails to remain powered at all times.

LM35(Body Temp Monitoring):

The LM35 series are precision integrated-circuit temperature devices with an output voltage linearly-proportional to the Centigrade temperature. The LM35 device has an advantage over linear temperature sensors calibrated in Kelvin, as the user is not required to subtract a large constant voltage from the output to obtain convenient Centigrade scaling. The LM35 device does not require any external calibration or trimming to provide typical accuracies of $\pm 1/4^\circ\text{C}$ at room temperature and $\pm 3/4^\circ\text{C}$ over a full -55°C to 150°C temperature range. The device is used with single power supplies and it draws only $60\ \mu\text{A}$ from the supply. It has very low self-heating of less than 0.1°C in still air. The LM35 device is rated to operate over a -55°C to 150°C temperature range

BMP180 (Pressure Monitor Module)

BMP180 is a barometric pressure sensor with altitude and temperature sensor. The BMP180 sensor is built upon the piezo-resistive technology for EMC robustness, high precision with linearity and also for long

term stability [13]. The BMP180 comprises of a piezo-resistive sensor, control unit by E2PROM, an analog to digital converter and a serial I2C interface. Sensor BMP180 conveys the uncompensated data of temperature and pressure. Microcontroller directs a start sequence to initiate a pressure or temperature calculation. After translating time, the outcome value (pressure or temperature respectively) is extracted via the I2C interface. For computing temperature in °C and pressure in hPA, the calibrated data obtained initially must be utilized

2. Data Collection and Processing: The second phase is pre-processing and data collection from isolated/remote patient or hospitals or clinics using the four proposed sensors which would be mounted on the smart board.

3. Prediction: Third phase of the module is to store the raw data and predicted data in cloud repository. The suitable machine learning algorithms pre-process the raw data coming from sensors and predict the early disease based on the data. These data could be accessed by the any authorized person or organization. Based on these live or stored data early disease prediction and early treatment could be possible remotely

4.2 Time Schedule of activities giving milestones through Gantt Chart. (Maximum 1 page)

Activity	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24
Background Research						
Prototype Development						
Testing						
Analysis & comparison						
Final Product development						
Packaging & Logistics						

5. Expertise:

5.1 Expertise available with the investigators in executing the project: (Maximum 1 page)
(Professional expertise existing with each of the investigators in terms of publications, Patents and preliminary results, to execute every component of the proposal should be highlighted)

Primary Investigator – Expertise in IoT / 5G, several national & international publications, 2 Patents

Co-Investigator – Expertise in IoT / 5G, several national and international publications, 4 Patents



5.2 Bibliography

[1] Gustavo Girao, Savio Rennan Menezes Melo “An IoT-Based Healthcare Platform for Patients in ICU Beds During the COVID-19 Outbreak” Digital Object Identifier IEEE
Access10.1109/ACCESS.2021.3058448

[2] Coeey Health (2021, January 1). Re-imagine Healthcare. Retrieved <https://www.coeeyhealth.com>

[3] A. Kishor , C. Chakraborty “Artificial Intelligence and Internet of Things Based Healthcare 4.0 Monitoring System” Springer Nature June 2021

[4] H. Ahmadi, G. Arji, Leila, Reza Safdari “The application of internet of things in healthcare: a systematic literature review and classification” Springer Nature pages 837-869(2019)

[5] Md. Milon Islam, Ashikur Rahaman, Md. Rashedul Islam “Development of Smart Healthcare Monitoring System in IoT Environment” Springer Nature Singapore Pte Ltd 1(3):185 May 2020

6. List of facilities required from Sushant University for the project implementation.

6.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	Yes
2.	Water & Electricity	Yes
3.	Laboratory Space/ Furniture	Yes
4.	Power Generator	Yes
5.	AC Room or AC	No
6.	Telecommunication including e-mail & fax	Yes
7.	Transportation	No
8.	Administrative/ Secretarial support	No
9.	Information facilities like Internet/Library	Yes
10.	Computational facilities	Yes
12.	Any other special facility being provided	No

6.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group	Arduino IDE	NA	NA
PI's Department	NA	NA	NA
Other Institute(s) in the region			

6.3 Total Budget (Rs. in Lakhs):

- Recurring Cost (Rs): 100,000
- Non-Recurring Cost (Rs): INR 110,000

Sl. No.	Item	Budget			Total
		1 st Yr	2 nd Yr	3 rd Yr	



A	Recurring 1. Manpower 2. Consumables 3. Travel 4. Field testing, Demo/ Training expenses (if applicable) 5. Contingencies/Other costs 6. Institutional Overheads* 7. Any other item	100,000			
B	Non-Recurring Permanent equipment Construction of work shed/structures Fabrication of prototype equipment	110,000			
	Grand Total (A+B)	210,000			

A. Recurring: None

1. Budget for Manpower

Sl. No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	Budget (Rs. in lakhs)			
					1 st Yr	2 nd Yr	3 rd Yr	Total

2. Budget for Consumables*

Sl. No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel

Sl. No.	Purpose	Budget (Rs. in lakhs)			
		1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Project logistics				
2.	Field activities				
3.	Review meetings (if elsewhere)				

4. Field Testing/ Demo/ Trainings*

Sl. No	Description of field testing/demos /trainings	No/Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Include material for technology field testing/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of beneficiaries/training, duration of training days, cost /training).



5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

B. Non-Recurring:

Budget for Permanent Equipment/ Workshed/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.	ESP32 ESP Microcontroller	20	INR 25,000
2.	Heart Rate and Pulse Oximeter (MAX30102)	20	INR 10,000
3.	LM35(Body Temp Monitoring)	20	INR 20,000
4.	BMP180 (Pressure Monitor Module)	20	INR 5,000
5	Additional components	20	INR 50,000

7. Deliverables

Deliverable	Mark ✓	Brief description
Background Research	✓	
Prototype Development	✓	
Testing		
Analysis & comparison		
Final Product development		
Other (Please specify)		

8. Name and address of experts/ institution interested in the subject / outcome of the project. – Sushant University



Curriculum vitae

Permanent Address

CW-50-GF, Malibu Towne, Sohna
Road, Gurgaon. Haryana
Mob: 9996787092

DR. JYOTI SINHA

1. NAME : Dr. JYOTI SINHA
2. NATIONALITY : Indian
3. FIELD OF SPECIALIZATION : Pharmaceutical Chemistry
4. CURRENT POSITION : Sushant University, Gurgaon
5. DATE OF BIRTH : 07.04.1968
6. E-MAIL ID : jyoti_sinha70@yahoo.com
7. PASSPORT DETAILS : No. A0859487
8. ACADEMIC QUALIFICATION:

Qualification	Year of Passing	Marks(%)	Division	Board /University
Ph.D	1997	-	Awarded	BITS, Pilani, Rajasthan
M. Pharmacy	1993	74	1st	BIT, Mesra, Ranchi
B. Pharmacy	1991	75	1 st with Distinction	MIT , Muzaffarpur, Bihar University
10+2	1986	73	1 st	Denobili School , Indian School Certificate
10 th	1984	65	1st	Model English High School , Sindri, CBSE
GATE SCORE	1993	89 %ile		All India Rank



9. **Fellowship:** University Grants Commission (UGC) fellowship during 1991-1993 at BIT Mesra Ranchi.

10. EMPLOYMENT HISTORY:

Total No. of years of experience: 25 years: Academic - 24 Years, Industry - 01 Years

Year	Designation	Organization	Type of Organization
22 nd July 2018 – till Date	Prof. and Principal	Kukreja Institute of Pharmaceutical Sciences	University Institute
August 2017- July 2018	Prof. and Director	Dev Bhoomi Institute of Pharmacy & Research Dehradun	University
July 2010- July 2017	<i>Prof. and Principal</i>	International Institute of Pharmaceutical Sciences, Sonapat, Haryana	Institute
July 2008 - June 2010	Prof. and Principal	Ram Gopal College of Pharmacy, Gurgaon, Haryana	Institute
January 2008 - June 2008	Prof. and Principal	PDM college of Pharmacy, Bahardurgarh. Haryana	University
January 2005- December 2007	Assoc. Prof. and Head of "Centre of Academic Excellence & Planning"	ITM, Gurgaon. Now named as NorthCap University Gurgaon	University
2003-2004	Senior Research Scientist in the Innovation and Development Dept. (I&D)	Xepa Soul Pattinson Sdn. Bhd. Melaka, Malaysia.	Pharmaceutical Industry
2002	<i>Assistant Professor</i> in the Dept. of Pharmacy	SRMS College of Engineering and Technology, Bareilly India.	Institute
1998 - 2001	<i>Assistant Prof.</i> in School of Pharmacy,	Addis Ababa University, Addis Ababa, Ethiopia.	University
1993-1997	Lecturer in the Dept of Pharmaceutical sciences	Birla Institute of Technology and Science, Pilani	University

11. SUBJECTS TAUGHT AT VARIOUS UNIVERSITIES:

Almost all subjects of UG taught and Pharm. Chemistry specialization subjects taught for PG students during 26 years of my teaching experiences.

12. OTHER ADMINISTRATIVE RESPONSIBILITIES

Was committee member of Pandit B.D. Sharma University of Health Sciences, Rohtak, Haryana.



- UG BOS member Pt. B.D.Sharma University of Health Sciences, Rohtak
- Member PG Course Review committee
- Member University Examination and evaluation committee
- PG BOS
- Examination setter, center Superintendent etc

13. ACADEMICS AND RESEARCH EXPERIENCES:

Research and Development Experience In Pharmaceutical Industry in Malasiya:

Worked as Research Scientist in Innovation and Development (I&D) department which included the following responsibilities:

- Literature study including all the research done on the new drugs.
- Planning for the matrix trials for new drugs.
- Carry out process development activities
- Responsible for execution of projects
- Responsible for performing transferring technology from lab to pilot. Project costing.
- Lot of work done on troubleshooting formulation (stability of formulation, dissolution profiles and disintegration problems.
- Conducted technical training to supervisors and managers with non-pharmacy background. Designed modules for the training.
- Developed **10 pharmaceutical training modules** for managers and executives which include theoretical and practical knowledge to them.
- Was also the **leader of projects**, which involves grant from Malaysian government for carrying out the research in collaboration with Malaysian University

14. PARTICIPATION IN OTHER ACTIVITIES: Project, Seminar, Conferences

Apart from teaching, actively involved in developing "Research and Development" activities at ITM University Gurgaon (Now Named as NorthCap University) under "Centre of Academic Excellence & Planning" which was launched by me in year 2005.

A. Convener of the following conferences and fund raised under my supervision :

- 1 Received seminar grant from AICTE and organized AICTE sponsored National Seminar on "Novel Drug Delivery Systems" at Ram Gopal College of pharmacy
- 2 National Seminar on "*Renewable Energy Technology And Applications*" In Jan. 2006 at ITM, Gurgaon



- 3 National Seminar on "*Smart Governance in Rural Development*" in Feb. 2006 in India Habitat Centre, New Delhi.
- 4 National seminar in "*Mathematics*" on the occasion of Ramanujan's day in 2006 at ITM seminar hall.
- 5 National Seminar on "*Intelligent Technologies in Mechanical & Automotive Engineering.*" Jan.2007 in 32nd Milestone etc.

B. Organized workshops under Faculty Development Programmes on following:

1. Conducted AICTE funded Staff Development Programme at Ram Gopal college of Pharmacy in 2009
2. Organized and attended teaching workshops in 2006 & 2007 on "Effective Lecture Design & Delivery".
3. "IT infrastructure Management Technology in Automation" for Faculty of ITM conducted by IBM.
4. Artificial Intelligence and Introduction to Soft Computing Using MATLAB Toolbox
4. Other college level workshops.
5. Renewable Energy Club was formed and activities undertaken as per the instruction of Haryana Govt. under my guidance .
6. Guest Lecture Series is regularly conducted under my centre for the students Speakers are eminent people from industry.
7. Received several grants (e.g. MODROB, Seminar etc.)from MDU, AICTE and DST
- 8 . Have supervised many projects in the area of QSAR for various kinds of drugs when working in universities in India and abroad



A. RESEARCH PAPER PUBLISHED

1. " A Perspective Observational Study for Monitoring of Adverse Drug Reactions in Medicine Wards of Tertiary Care Hospital", Turkish Journal of Physiotherapy and Rehabilitations; 2021 32(3), pp 29597-29613.
2. "Microwave assisted synthesis of novel 3-mercapto-4,5-disubstituted 1,2,4-triazole derivatives and evaluation of antimicrobial, anti-tubercular activity", The Pharma Innovation journal 2018;7(1);41-47.
3. "Triazoles as antimicrobial: A review", International journal of Chemical studies, International Journal of Chemical Studies 2017; 5(2): 01-07.
4. " A comparative Study between Conventional and BSF Solar Cells to Gauge the Efficiency Factor", ENERSTATE-2010 on Clean Energy Technologies and Energy Efficiency for Sustainable Developments, 3-5 October 2010, Dehradun
5. "Production Of Hydrocarbons" in National Seminar on "Renewable Energy Technology & Applications" , Institute of Technology and Management. Gurgaon, 2006
6. " A Quantitative Structure-Activity Relationship Study On Some Compounds Acting With Dopamine Receptors", Seminar delivered in annual conference of pharmaceutical association, Ethiopia.1999
7. "A Quantitative Structure-Activity Relationship Study On Some Non-Peptide Cholecystokinin Antagonist", Journal of Bioorganic and Medicinal Chemistry, Vol. 7, 1999, 1127-1130.
8. "A Quantitative Structure-Activity Relationship Study On Some Chol-Cystokinin Antagonist", Quant.Strct.-Act. Relat. **14, 437 (1995)**.

B. BOOK PUBLISHED:

9. **Dr. Jyoti Sinha**, "Environmental Sciences" Galgotia Publications, 2008(first edition) ISBN 81-7515-526-4.
10. **Dr. Jyoti Sinha** and **Mr. Avdesh Bhardwaj** "Environmental Science" Galgotia publications, 2011(second edition) ISBN 81-7515-632-5 .



Summary of Research Area

Drug research is a multi step process involving synthesis, isolation, and random or intuitive selection and screening. To design a new molecule it is necessary to optimize a "lead" molecule.

To avoid design, development by trail and error method, recent advances made in various branches of science have been employed in designing new chemical leads and optimization of activities with the congeneric series of the compounds. Computers also have been used for this purpose and it is observed that computer aided techniques have been useful in reducing random synthesis and screening of various chemical compounds.

Biological and therapeutics activities are considered to be a function of physiochemical properties. My present research is based on this concept. The set of physio chemical properties of congeners is found to explain the variations in biological responses of those compounds, i.e. a method called " **Quantitative Structure – Activity Relationship or QSAR**".

The QSAR study tries to explain the reasons of observed variations in biological activities of a group of congeners in terms of molecular modifications or variations caused by the change of substitute.

Approaches for QSAR studies- there are several approaches for QSAR studies but the most widely used approach continues to be Hansch approach. The other approaches used in the research are Free Wilson approach, the Fujita –Ban approach, the parameteric methods developed by Hansch etc. various factors such as quality of the biological data, number of compounds tested, degree of variance in the results and ratio of the time required for synthesis and biological testing indicates the choice of approach for the QSAR studies.

Various parameters used for study: Van der-Walls Volume, Hydrophobic constants of the substituent, Electronic parameters etc. which are calculated for various substituent.

Compounds chosen for QSAR studies:

CNS Agents: Drugs that exert their primary effect upon the central nervous systems comprise the most widely employed groups of the pharmacologically active agents. Various neurotransmitters and their antagonists are considered for study.

Cholecystokinin antagonist: It is a gastrointestinal polypeptide. It is also neurotransmitters. Different series of this compound are chosen for QSAR studies.

Hence, the objective of QSAR is to define the chemical consequence of changing the drug structure and subsequently to establish thereby which changes in chemical structure and properties would produce better biological activities.



Summary of Current Research Area

Green Chemistry – A Tool in Pharmaceutical Processes in Academic laboratories.

Green chemistry has grown from a small idea into a new approach to the scientifically based environmental protection. Pharmaceutical academic and research institutions and companies can improve the environmental performance with utilizing green chemistry.

My research area is based on twelve principles of green Chemistry developed by Paul Anastas and John Warner. The following principles of Warner can reduce pharmaceutical waste, hazardous effect on human and environment to considerable extent.

1. Prevention
2. Atom Economy
3. Less Hazardous Chemical Syntheses.
4. Designing Safer Chemicals
5. Safer Solvents and Auxiliaries
6. Design for Energy Efficiency
7. Use of Renewable Feedstocks.
8. Reduce Derivatives, Catalysis
9. Catalysis
10. Design for Degradation.
11. Real-time analysis for Pollution Prevention
12. Inherently Safer Chemistry for Accident Prevention

In the development of solvent-free alternative processes, microwave assisted organic synthesis is the best solution for achieving this. Experiments designed in UG, PG and pharmaceutical research laboratories need to be paid attention by changing the methods of synthesis, use of environment free solvents. Use of solvent free methods and safe analytical methods.

When the importance of green chemistry principles are taught to students to curb environmental and health hazards, students will prove to be good employee for pharmaceutical company who in turn will help reach company's goal to protect environment.



Utilization Certificate

Certified that grant of ₹ 2,10,000/- (Rupees Two Lakh Ten Thousand Only) sanctioned by the Center of Research and Development, Sushant University, vide letter no. F.No.1/2023-2024/Seed Fund-Nov 23/08 Dated 3rd November 2023, financial assistance for the project titled “Experimental Research Work” was utilized for the purpose for which it was sanctioned.

Financial expenditure incurred

Sl.no	Nature of expense	Proposed Expenditure (in Rs.)	Expenditure incurred (in Rs.)
1	Manpower	50,000	60,000
2	Travel	30,000	20,000
3	Consumables	20,000	15,000
4	Laptop	80,000	65,000
5	Printer	30,000	50,000
	Total	₹ 2,10,000	₹ 2,10,000

Principle Investigator



Accounts Officer
Account & Finance Officer
Sushant University
Gurugram, Haryana



PROFORMA FOR SUBMISSION OF SEED FUND PROPOSAL

Part I: General Information

1. Project Title (should be focused not exceeding 15 words): Urban Heat Island
2. i. Name of Principal Investigator: Ms. Sehba Saleem
ii. Name of Co-Investigator: Dr. Nadim Reza Khandaker
3. Collaboration if any, give details of institution(s): Department of Civil and Environmental Engineering, North South University, Dhaka, Bangladesh
4. Any Project(s) previously sanctioned by any funding agency? If yes give the details:

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (If yes, mention date)
1.	N/A	N/A	N/A	N/A	N/A	N/A

5. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues? N/A
6. Duration (months): 3 Years
7. Enclose the following while submitting the application form:

Duly filled application form (complete with all Annexures)- 2 hard copies	No
Bio-data of the PI & Co-I -2 copies	No

Part II: Proposal Summary

1. Origin of the Proposal:

(Scientific/Technical rationale for doing this work should be elaborated)

Proposal to Mitigate Urban Heat Island Effect Caused by Food Joints in Residential Areas

Introduction:

The urban heat island effect has become a pressing issue in modern cities, leading to increased temperatures, energy consumption, and adverse health impacts. In particular, the concentration of food joints in residential areas contributes significantly to this phenomenon due to the heat generated from cooking and increased human activity. This proposal aims to address this issue through a comprehensive approach to mitigate the heat island effect in urban residential localities.



Scientific/Technical Rationale:

- **Heat Emissions:** Food joints often release substantial heat from cooking appliances, ventilation systems, and increased human activity, exacerbating the urban heat island effect in surrounding residential areas.
- **Surface Albedo:** Dark surfaces of food joint structures absorb more solar radiation, leading to higher surface temperatures and contributing to elevated ambient temperatures in the locality.
- **Lack of Green Spaces:** Residential areas with an abundance of food joints often lack green spaces, which would otherwise help in mitigating heat through shading and evapotranspiration.

Proposed Solutions:

Implementation of Green Infrastructure: Introducing green roofs, vertical gardens, and street trees around food joints can provide shading, reduce surface temperatures, and enhance the natural cooling effect through evapotranspiration.

Regulation of Building Materials: Enforcing the use of cool roofing materials and light-colored surfaces in food joint constructions to minimize heat absorption and reduce the overall heat island effect.

Energy-Efficient Cooking Solutions: Encouraging food joints to adopt energy-efficient cooking appliances and ventilation systems can reduce heat emissions and overall energy consumption.

Community Engagement:

Awareness Campaigns: Conducting awareness campaigns to educate the community about the adverse impacts of the urban heat island effect and the potential benefits of implementing the proposed solutions.

Collaborative Initiatives: Involving local residents, businesses, and policymakers to foster a collaborative approach in implementing and monitoring the effectiveness of the proposed solutions.

Expected Outcomes:

Temperature Reduction: Implementation of green infrastructure and regulation of building materials is expected to lower ambient temperatures in residential areas by a significant margin.

Improved Air Quality: Increased greenery and reduced energy consumption will contribute to better air quality and a healthier living environment for residents.

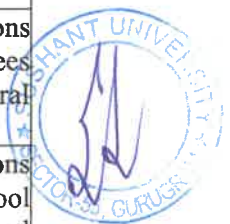
Sustainable Development: Promoting energy-efficient practices and the integration of green infrastructure will contribute to the sustainable development of urban areas.

Conclusion:

By adopting a holistic approach encompassing green infrastructure, regulatory measures, and community involvement, we can effectively mitigate the urban heat island effect caused by food joints in residential areas. This will not only enhance the quality of life for residents but also contribute to the sustainable development and resilience of our urban environment.

2. Objectives (Only 4-5 focused one that can be observed, measured or clearly assessable)

i.	Assessment and Monitoring: Conduct a comprehensive assessment of the urban heat island effect generated by food joints in residential areas, utilizing advanced monitoring techniques to understand the extent of the temperature rise and its impact on the local environment and community health.
ii.	Implementation of Green Infrastructure: Integrate green infrastructure solutions such as the establishment of green roofs, urban forests, and strategic planting of trees in the vicinity of food joints to counteract the heat island effect and enhance natural cooling mechanisms within the residential area.
iii.	Regulatory Measures and Policy Implementation: Develop and enforce regulations to ensure the use of energy-efficient cooking equipment, ventilation systems, and cool roofing materials in food joint constructions, thereby minimizing heat emissions and mitigating the overall heat island effect in residential neighborhoods.
iv.	Community Engagement and Education: Foster community engagement through educational programs and awareness campaigns, emphasizing the importance of



sustainable practices, encouraging active participation in the mitigation process, and promoting community-led initiatives to combat the urban heat island effect created by food joints in residential areas.

3. Review of status of Research and Development in the subject

3.1 International Status:

(Researchers working in the area worldwide and their contributions must be properly highlighted with recent references and reviews. A correct and faithful description of the international research status must be given)

- a) **Mr. Md. Naimur Rahman**, Department of Geography and Environmental Science, Begum Rokeya University, Bangladesh

References: - Impact of Urbanization on Urban Heat Island Intensity in Major Districts of Bangladesh Using Remote Sensing and Geo-Spatial Tools

- b) **Li Yang**, College of Architecture & Urban Planning, Tongji University

References: - Research on Urban Heat-Island Effect

- c) **M. Santamouris**, Anita Lawrence Chair on High Performance Architecture, Faculty of Built Environment, University of New South Wales, Sydney, Australia

References: - Recent progress on urban overheating and heat island research. Integrated assessment of the energy, environmental, vulnerability and health impact. Synergies with the global climate change

- d) **Nyuk Hien Wong**, National University of Singapore

References: - Urban heat island research: Challenges and potential

- e) **RIZWAN Ahmed Memon**, Department of Mechanical Engineering, the University of Hong Kong, Hong Kong, China

References: - A review on the generation, determination and mitigation of Urban Heat Island

3.2 National Status:

(Same as above to cover the contribution of Indian Scientists in the project area)

- f) **Ansar Khan**, University of Calcutta,
g) **Mr. Arvind Kumar**, Principal Secretary, Municipal Administration and Urban Development Department, Government of Telangana
h) **Anindita Bhattacharjee**, Birla Institute of Technology, India
i) **Neel Kamal**, Banasthali University, India
j) **Akshey Bhargava**, CEPT University, India



3.3 Importance of the proposed project in the context of current status

Novel Contribution: Addressing the Interplay Between Food Joints and Urban Heat Island Effect in Residential Areas. While previous research has extensively documented the urban heat island effect and its associated challenges, the proposed initiative offers a pioneering approach that specifically targets the unique dynamics resulting from the concentration of

food joints in residential localities. The novelty of this proposal lies in its holistic understanding and mitigation of the intricate relationship between food joints and the urban heat island effect, addressing a critical gap in current urban planning and environmental management strategies.

1. Integrated Approach to Green Infrastructure Implementation:

The proposal advocates for the integration of green infrastructure solutions in the immediate vicinity of food joints in residential areas. While existing research emphasizes the importance of green spaces in mitigating urban heat islands, this proposal uniquely emphasizes the strategic placement of green roofs, vertical gardens, and trees, specifically catering to the thermal impacts stemming from food joint activities. This integrated approach fosters a localized cooling effect that directly targets the heat generated by food joints, thereby providing a novel perspective on the use of green infrastructure as a direct countermeasure to localized heat emissions.

2. Tailored Regulatory Measures for Food Joint Operations:

In contrast to conventional regulations focused on broader environmental concerns, the proposed regulatory measures directly address the specific heat emissions associated with food joint operations. By advocating for the mandatory implementation of energy-efficient cooking appliances, ventilation systems, and cool roofing materials, the proposal introduces a pioneering framework for controlling the immediate environmental impact of food joints on urban heat island dynamics. This nuanced regulatory approach aims to ensure that the food industry aligns with sustainable practices, setting a precedent for future urban planning regulations tailored to specific business activities.

3. Community-Led Mitigation Initiatives:

The proposal emphasizes the need for active community involvement through educational programs and awareness campaigns, specifically tailored to the challenges posed by food joints in residential areas. By encouraging residents to actively participate in the mitigation process, the proposal aims to foster a sense of collective responsibility and ownership in addressing the urban heat island effect, setting a precedent for community-led initiatives that target specific localized environmental challenges. This community-centric approach represents a paradigm shift from traditional top-down mitigation strategies, underscoring the importance of grassroots engagement in tackling complex urban environmental issues.

In essence, this proposal pioneers a comprehensive and nuanced approach that not only acknowledges the role of food joints in exacerbating the urban heat island effect but also proposes tailored solutions that cater specifically to this overlooked dimension of urban environmental management. By highlighting the interplay between food joints and the heat island effect, this initiative offers a pioneering blueprint for sustainable urban development that acknowledges the intricate relationship between local businesses and environmental sustainability.

4. Work Plan:

4.1 Methodology:

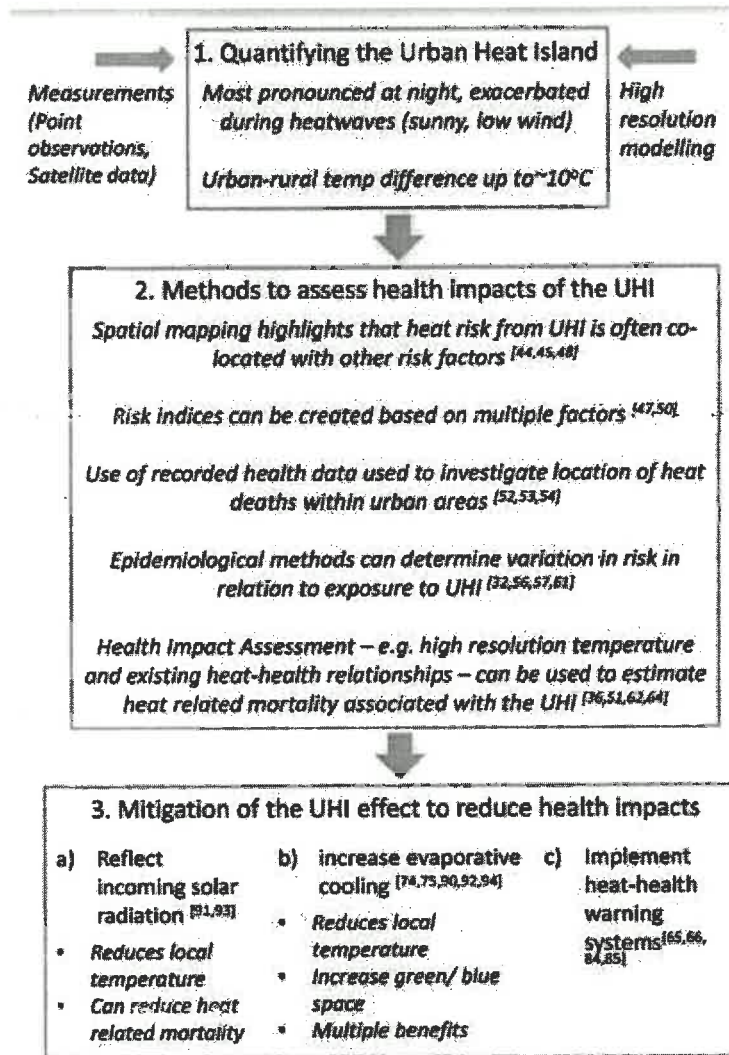
(It should contain all the details of how each of the objectives will be addressed. This section must be detailed and have clear plans, not vague and generalized statements. It should have several schemes, tables, figures, equations etc. in addition to text, explanation and justification of why the project research plan will work)

Justification of the Methodology:

The proposed methodology incorporates a multidisciplinary approach, integrating advanced technology,



policy interventions, and community engagement strategies to effectively address the complex dynamics of the urban heat island effect caused by food joints in residential areas. By combining robust data collection methods, sustainable infrastructure development, and stakeholder collaboration, the methodology ensures a comprehensive and sustainable mitigation strategy that accounts for both short-term and long-term environmental impacts. The incorporation of community-driven initiatives not only fosters a sense of shared responsibility but also guarantees the long-term sustainability and resilience of the proposed interventions.



Since the existence of the UHI has been acknowledged for so long, methods to quantify its intensity have evolved over time. These can be broadly classified by the use of

- a) Ground observations (either fixed or mobile),
- b) Satellite images or
- c) Modelling using regional climate or meteorological models.

Methodology

i. Assessment and Monitoring:

1. **Temperature Data Collection:** Deploy an array of temperature sensors and data loggers across the residential area, strategically placing them near food joints and in control areas. Utilize advanced monitoring techniques, including infrared thermography and thermal imaging, to capture real-time temperature fluctuations and identify heat hotspots.



2. **Environmental Impact Analysis:** Conduct regular environmental assessments to analyze the impact of the urban heat island effect on the local ecosystem and biodiversity. Employ ecological surveys and species abundance monitoring to understand the ecological repercussions of heightened temperatures.
3. **Health Impact Assessment:** Collaborate with healthcare professionals to conduct health impact assessments, examining the correlation between temperature rise and community health. Utilize medical records and surveys to identify heat-related illnesses and develop targeted intervention strategies.

ii. Implementation of Green Infrastructure:

1. **Site Analysis and Selection:** Conduct a detailed site analysis to identify suitable locations for the installation of green infrastructure. Consider factors such as sunlight exposure, soil quality, and structural stability to determine optimal sites for the establishment of green roofs, urban forests, and tree planting zones.
2. **Green Infrastructure Design:** Collaborate with landscape architects and urban designers to create detailed plans for green roofs, urban forests, and tree planting initiatives. Use 3D modeling and simulation tools to visualize the spatial distribution of green infrastructure and assess their potential cooling capacities.
3. **Hydrological and Thermal Performance Assessment:** Implement hydrological and thermal performance assessments to evaluate the effectiveness of the green infrastructure in mitigating the heat island effect. Employ hydrological models and thermal mapping techniques to measure the impact of green infrastructure on surface temperature reduction and stormwater management.

ii. Regulatory Measures and Policy Implementation:

1. **Regulatory Framework Development:** Engage policymakers, urban planners, and environmental experts to develop a comprehensive regulatory framework mandating the use of energy-efficient cooking equipment, ventilation systems, and cool roofing materials in all food joint constructions. Conduct in-depth policy analyses and cost-benefit assessments to ensure the feasibility and effectiveness of the proposed regulations.
2. **Compliance Monitoring System:** Establish a robust compliance monitoring system to track the implementation of regulatory measures in food joint establishments. Develop a database for recording energy consumption and emission levels, and conduct regular inspections to verify adherence to the set standards.
3. Conduct periodic evaluations to assess the impact of regulatory measures on the reduction of heat emissions and the overall urban heat island effect. Use statistical analyses and policy impact models to measure the effectiveness of the implemented policies and identify areas for policy refinement and enhancement.

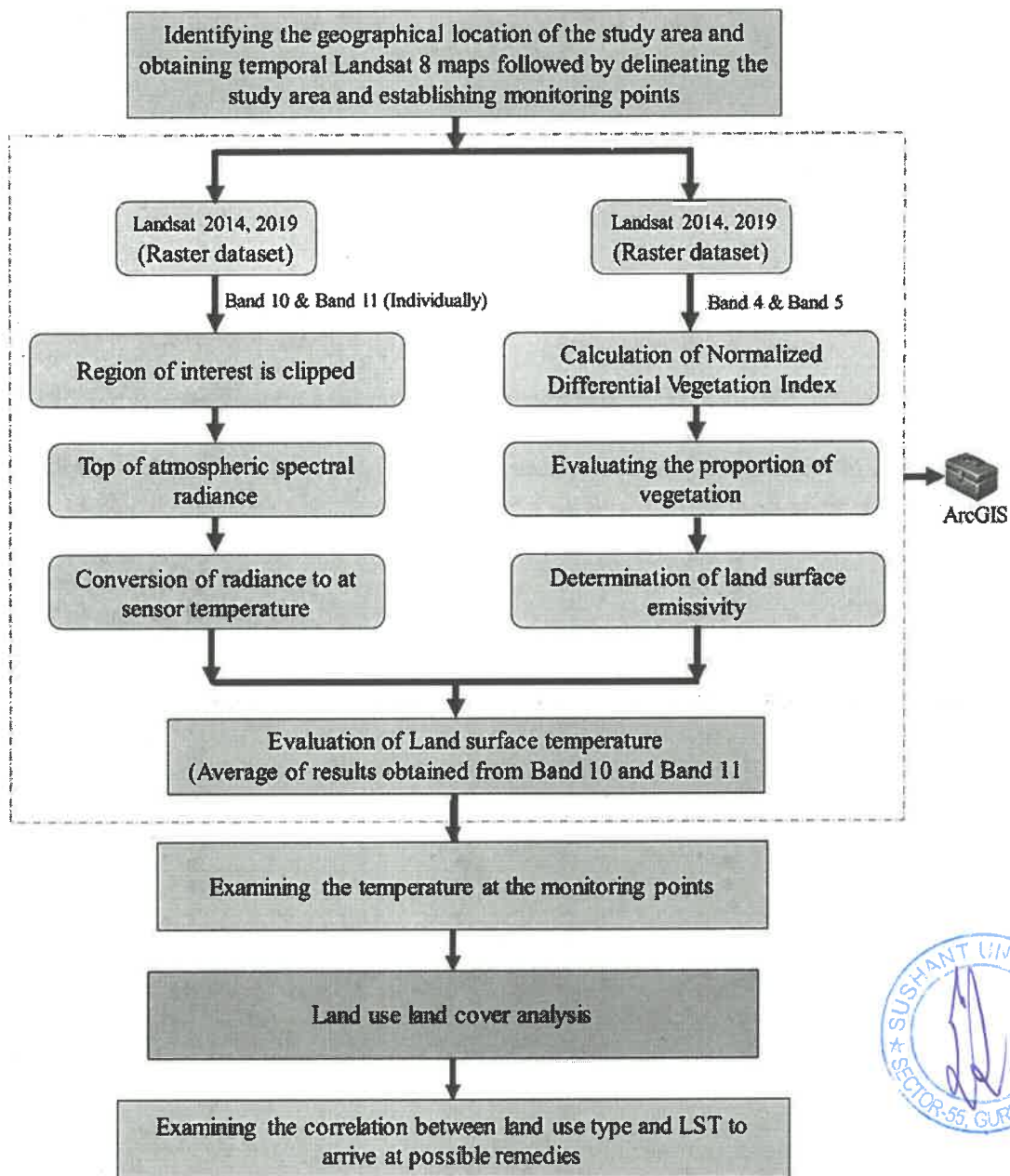
iii. Community Engagement and Education:

1. **Stakeholder Analysis and Engagement Strategy Development:** Conduct a comprehensive stakeholder analysis to identify key community influencers and opinion leaders. Develop an engagement strategy that emphasizes active participation and collaboration, leveraging social networks and community-based organizations to disseminate information and encourage involvement in the mitigation process.
2. **Educational Program Development:** Design and implement educational programs tailored to the specific needs and concerns of the community. Utilize interactive workshops, educational seminars, and informative materials such as pamphlets and infographics to raise awareness about the urban heat island effect and the role of sustainable practices in mitigating its impact.
3. **Community-led Initiative Facilitation:** Facilitate community-led initiatives such as volunteer groups, task forces, and neighborhood associations focused on implementing and maintaining green



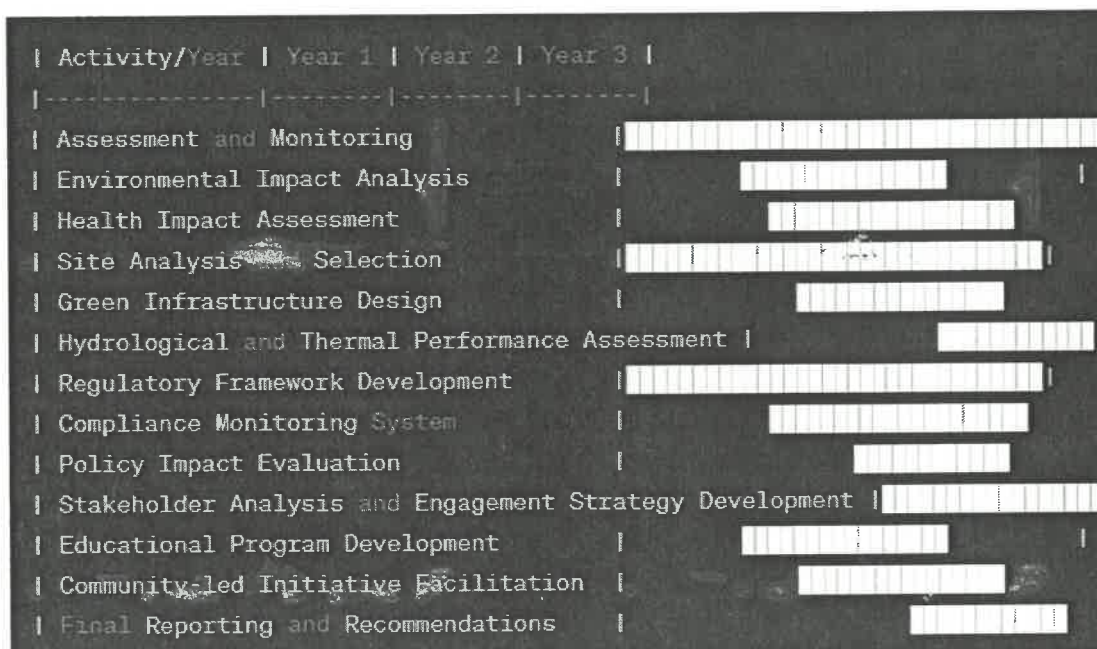
infrastructure. Organize regular community meetings and feedback sessions to foster a sense of shared responsibility and ownership, encouraging the community to actively participate in combating the urban heat island effect.

This comprehensive methodology combines advanced scientific techniques, meticulous planning, and community engagement strategies, ensuring the effective implementation of each objective and the successful mitigation of the urban heat island effect caused by food joints in residential areas. By integrating multidisciplinary approaches and fostering community empowerment, this research plan is poised to make a significant and lasting impact on the local environment and community well-being.



Methodology to perform urban heat island analysis

4.2 Time Schedule of activities giving milestones through Gantt Chart.



Year 1: Project Initiation and Data Collection

Month 1-3 (Milestone 1):

- Project planning and team formation
- Stakeholder meetings and collaboration agreements

Month 4-6 (Milestone 2):

- Baseline data collection and temperature monitoring system setup
- Initial community health surveys and environmental impact assessments

Month 7-9 (Milestone 3):

- Analysis of baseline data and identification of heat hotspots
- Preliminary environmental impact analysis

Year 2: Implementation and Regulatory Measures

Month 10-12 (Milestone 4):

- Finalize designs for green infrastructure (green roofs, urban forests, tree planting)
- Hydrological and thermal performance assessments

Month 13-18 (Milestone 5):

- Begin the implementation of green infrastructure
- Health impact assessments and community awareness campaigns

Month 19-24 (Milestone 6):

- Establish regulatory framework for food joint operations
- Develop a compliance monitoring system
- Community engagement strategy development

Year 3: Community Engagement and Monitoring

Month 25-30 (Milestone 7):

- Full-scale implementation of green infrastructure
- Enforcement of regulatory measures
- Initiate educational programs and workshops

Month 31-36 (Milestone 8):

- Monitor the impact of green infrastructure on surface temperatures
- Policy impact evaluation and refinement
- Facilitate community-led initiatives and volunteer programs

Month 37-39 (Milestone 9):



- Final project evaluation and data analysis
- Reporting and documentation of project outcomes and lessons learned
- Knowledge dissemination and sharing of results

Throughout the Project: Regular meetings, progress reviews, and adjustments to the project plan based on ongoing data and community feedback. Continuous stakeholder engagement and communication with residents, business owners, and policymakers.

This Gantt Chart provides a general overview of the project's timeline, **with milestones at critical point** throughout the three-year period. However, the actual scheduling may vary based on project-specific factors, available resources, and local conditions. Regular monitoring and adjustments are essential to ensure the project's success.

5. Expertise:

5.1 Expertise available with the investigators in executing the project: (Professional expertise existing with each of the investigators in terms of publications, Patents and preliminary results, to execute every component of the proposal should be highlighted)

N/A

5.2 Bibliography

N/A

6. List of facilities required from Sushant University for the project implementation.

6.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	Yes
2.	Water & Electricity	Yes
3.	Laboratory Space/ Furniture	No
4.	Power Generator	Yes
5.	AC Room or AC	Yes
6.	Telecommunication including e-mail & fax	Not required Full or sharing basis
7.	Transportation	Yes
8.	Administrative/ Secretarial support	Yes
9.	Information facilities like Internet/Library	Yes
10.	Computational facilities	Yes
12.	Any other special facility being provided	N/A

6.2 Equipment available with the Sushant University for the project:



Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group	N/A	N/A	N/A
PI's Department	N/A	N/A	N/A
Other Institute(s) in the region	N/A	N/A	N/A

6.3 Total Budget (Rs. in Lakhs): Eight Lakhs Sixty-Four Thousand and Nine Hundred(8,64,900/-)

- Recurring Cost (Rs): Six Lakhs Ninety-Four Thousand and Nine Hundred (6,94,900/-)
- Non-Recurring Cost (Rs): One Lakh Seventy thousand (1,70,000/-)

Sl. No.	Item	Budget			Total
		1 st Yr	2 nd Yr	3 rd Yr	
A	Recurring	1,92,000	2,50,000	2,90,000	6,94,900/-
	1. Manpower				
	2. Consumables				
	3. Travel				
	4. Field testing, Demo/ Training expenses (if applicable)				
	5. Contingencies/Other costs				
	6. Institutional Overheads*				
	7. Any other item				
B	Non-Recurring	1,00,000	45,000	25,000	1,70,000/-
	Permanent equipment				
	Construction of work shed/structures				
	Fabrication of prototype equipment				
	Grand Total (A+B)				8,64,900/-

A. Recurring:

1. Budget for Manpower

Sl. No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	Budget (Rs. in lakhs)			
					1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Project Manager	1	M.B.A	40	80,000	--	80,000	1,60,000
2.	Urban Planner/Environmental Scientist	1	Urban Planner	20	40,000	40,000	--	80,000
3.	Climate Scientist	1	Scientist	30	--	60,000	60,000	1,20,000
4.	Environmental Engineer	1	Engineer	20	--	40,000	40,000	80,000
5.	Healthcare Professionals/Public Health Expert	1	M.S.W	15	--	--	18,000	18,000
6.	Data Analyst/Statistician	1	B.Com	10	--	20,000	20,000	40,000
7.	Community	1	M.S.W	10	20,000	20,000	--	40,000



	Outreach Coordinator							
8.	Regulatory Expert/Legal Advisor	1	L.L.B	10	20,000	20,000	--	40,000
9.	Landscape Architect	1	Ph.D. in Architecture	30	--	60,000	30,000	90,000
10.	GIS Specialist	2	G.I.S	60	10,000	10,000	--	20,000
11.	Research Assistants	2	Master in Architecture.	20	40,000	40,000	40,000	1,20,000

2. Budget for Consumables*

Sl. No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
1.	N/A	N/A	N/A	N/A	N/A	N/A

*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel

Sl. No.	Purpose	Budget (Rs. in lakhs)			
		1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Project logistics	N/A	N/A	N/A	N/A
2.	Field activities	N/A	N/A	N/A	N/A
3.	Review meetings (if elsewhere)	N/A	N/A	N/A	N/A

4. Field Testing/ Demo/ Trainings*

Sl. No	Description of field testing/demos /trainings	No/Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
1.	N/A	N/A	N/A	N/A	N/A	N/A

*Include material for technology field testing/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of beneficiaries/training, duration of training days, cost /training).

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Computer	4	30,000	--	--	30,000
2.	Secretarial assistance	1	30,000	30,000	--	60,000
3.	Documentation	2	--	10,000	10,000	20,000
4.	Cost of technology transfers/acquisitions	1	5,000	5,000	5,000	15,000
5.	Lab/field trials	N/A	N/A	N/A	N/A	N/A
6.	Maintenance/servicing of equipment	1	7,000	7,000	7,000	21,000
7.	Incidental expenses	1	4,000	4,000	4,000	12,000

*Includes items like computer time, secretarial assistance, documentation, cost of technology



transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

B. Non-Recurring:

Budget for Permanent Equipment/ Workshed/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.	Lab	1	1,00,000
2.	Workshop	1	45,000
3.	Store	1	24,000

7. Deliverables

Deliverable	Mark \checkmark	Brief description
Product development/adaptation	X	X
Process development/adaptation	X	X
Technology package for development of the project area and local community	\checkmark	Courier
Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)	\checkmark	Stationary
Scientific knowledge and/or data generation leading to technology development in future	\checkmark	GIS software
Other (Please specify)	N/A	N/A

8. Name and address of experts/ institution interested in the subject / outcome of the project.

Dr. Nadim Reza Khandaker, Department of Civil and Environmental Engineering, North South University, Dhaka, Bangladesh



SEHBA SALEEM

Associate Professor, Ph.D. Research Scholar
Sushant School of Art and Architecture, Gurugram
sehbasaleem@sushantuniversity.edu.in, ar.sehba.saleem@gmail.com
+91 8447378770



EDUCATION

Jamia Millia Islamia	Masters in Urban Regeneration (2012-2014)
Central University	First Division with Distension (CGPA 8.32)
Jamia Millia Islamia	Bachelors of Architecture (2006-2011)
Central University	First Division (73.6%)

TEACHING EXPERIENCE

November 2021 – Present

Associate Professor, School of Art and Architecture, Gurugram,

Subject Handle:- Urban Design studio, Building construction, Electives, Art studio, Dissertation, Building Conservation.

Year coordinator for 4th Year, 2022- Present (Batch size of 80-120 students).

Subject coordinator for Urban Design and Building Construction

Supervised Final year thesis, guided five students every year, doing projects on different topics related to undergraduate program.

Dissertation and Electives for 4th year in which study was focus on different form of architecture approach and disaster management (about half the strength of the class)

Extra-Curricular:-

Organizer of different seminar, competitions, lecture series at department and university level

- COA Zonal Thesis Award Jury, 2021
- FOID 2021, 2022
- Webinars on different topics related to architecture
- Guest Lecture by Dikshu Khukreja 2022
- World Heritage Day celebration 2022

Educational Tour (OCIS):- Help in organizing and conducting the tours of 1st, 2nd and 3rd year. Setting tour exercise for the student to be completed during their visit to the selected place. (Batch size varies from 80 to 120 students), 2022

Administrative Responsibilities:

- **Coordinator** for Admission and Outreach
- **Coordinator** for Digital Marketing (Webinars and promotions)
- **Coordinator** for Examination
- **Coordinator** for Digital Learning platform (ERP)
- **Coordinator** for SAARC collaboration
- **Coordinator** for NAAC
- **Coordinator** for Trans-disciplinary learning
- **Coordinator** for Competition entry and cultural activities



- Preparing data for miscellaneous administrations work

August 2018 - July 2020

**Assistant Professor, College of Science and Technology, Bhutan
(Deputation by Ministry of External Affairs, New Delhi)**

Subject Handle:- Architecture Design IV, Elective-I and II, Urban Design and Planning, History of Architecture, Building construction.

Studio coordinator for 5th year, urban design exercise studying the neighborhood concept for the Phuentsholing city, Bhutan, 2018 and 2019 (Batch size of 13-14 students).

Supervised final year thesis, guided two to three students, doing projects on different topics related to undergraduate program.

Elective- Vth and IVth year in which study was focus on intelligent building techniques and vernacular architecture style along with the existing and modern interventions (Batch size of 13-14 students).

Educational Tour:- Help in organizing and conducting the tours of 2nd year. Setting tour exercise for the student to be completed during their visit to the selected village in Lhuentse, Bhutan. (Batch size 21students), 2019.

Coordinated Project on Landscape redesign of College of Science and Technology Campus (2019).

Administrative Responsibilities:

- **Member of** Program committee meeting.
- **Coordinator for** syllabus revision and review.
- **Executive member of** Centre for Disaster Risk Reduction and Community Development (2018-2019)
- Preparing data for miscellaneous administrations work

September 2014 - July 2018

Assistant Professor, Jamia Millia Islamia, New Delhi

Subject Handle:- Architecture Design II, Architecture Drawing II, Computer Application II and III, Art and Graphics II, Workshop II, Dissertation II and III, History of Architecture I, Visual Communication, Interior Design.

Class coordinator for 2nd Year (S.F.S), 2014 till 2016

Class coordinator for 3rd Year (S.F.S), 2017-18

Studio Co-coordinator for Master in Urban Regeneration (Regional Planning), 2017 (Batch size of 20 students).

Supervised final year thesis, guided five students every year, doing projects on different topics related to undergraduate program.

Dissertation for Ind and IIIrd year in which study was focus on different form of architecture style and also the architect and work done by them (about half the strength of the class)

Extra-Curricular:-

Organizing team member of different seminar, student's fest, lecture series and conference held in the department like

- Habib Rahman Memorial Lecture, 2014, 2017
- Education Day (birth anniversary of Maulana Abul Kalam Azad), 2015
- Fenestration (Student Fest), 2015, 2016, 2018



- Freshers Party, 2015, 2016
- Earth Day Celebration, 2016
- Talimi Mela (Jamia Foundation Day), 2016
- International workshop (Inclusive Cities), 2016
- Bamboo Workshop, 2017
- Architecture for masses, 2018

Organizing visit for 2nd year s.f.s students for the exhibition of the works of BV Doshi at the National Gallery of Modern Art, New Delhi, 2014

Educational Tour:- Help in organizing and conducting the tours of 2nd and 3rd year. Setting tour exercise for the student to be completed during their visit to the selected place, mainly the desert and coastal areas. (Batch size varies from 38 to 40 students), 2015, 2016, 2017, 2018

Accompanied Masters in Pedagogy Students on their Field study to Mandava, Rajasthan for their town planning exercise, 2015

Accompanied Masters in Urban Regeneration Students on their Field study to Chandigarh, for their Regional planning exercise, 2017

Accompanied Masters in Recreational Architecture Students on their Field study to Amravati, for their planning exercise, 2018

National Association of Students of Architecture (NASA): Organized and escorted Annual and Zonal Nasa Student's delegation (2015, 2016, 2017, 2018)

Administrative Responsibilities:

- **Coordinator** for Faculty Placement Cell
- **Coordinator** for Subject Association
- Preparing data for miscellaneous administrations work

September 2011 till July 2012 **Assistant Professor, Jamia Millia Islamia, New Delhi**

Subject Handle:- Architecture Design I, Architecture Drawing I, Computer Application I, Workshop, Dissertation and Research

Class coordinator for 1st Year (S.F.S)

Course Supervised:- Elective for VIth year in which study of Vernacular Architecture and its various implementation in different part of the country was studied in detailed with the help of case studies (about sixteen students).

Extra-Curricular:-

Team Member for organizing International Conference on Islamic Art and Architecture ICIAA, accompanying delegates on a visit to Humayu's Tomb and Taj Mahal, Agra

Visit to Surajkund Mela with the students of 1st year for outdoor Photography

Site Visit to Agra with students of 2nd year for their field study on construction technique

Educational Tour:- Help in organizing and conducting the tours of 1st and 4th year and performing the study related to Hill Architecture and understanding the vernacular architecture of North-East Region (Batch size varies from 39 to 42 students).



PROFESSIONAL EXPERIENCE

August 2020–October
2021

Senior Architect (Four Dimension Consortium Pvt. Ltd.)

Preparing construction/interior detail drawings, Site supervising to see the on-site situation and work. Client handling and coordinating with the meetings. Preparing presentation for the conceptual over view.

August 2012–September
2014

Consultant (S.F.A Constructions Pvt. Ltd.)

Drawing reviewing and coordinating with the contractor and the client and making desirable changes so that the work can be completed in the mention time period worked on

- Residential Complex (Noida Sec 50) Trunkey Project
- Renovation of verdaman collage (Bijnor)

June 2011 – August 2011

Project Manager (Sparrow Interactive)

Supervising 3d project, meeting with clients and understanding their requirement, making minutes of meeting, coordinating with different department working on exterior and interior under my guidance, so that the project can be delivered on time. Project worked upon are

- J.P Sport City
- Commercial Center, Airtel Bharti
- Commercial Tower, Raheja Builder
- Housing Project, SKT Nirmans

January 2011 - May 2011

Internship (Enar Consultant)

Work on projects like residential, renovation of Dayal singh Collage, interior presentations, Drafting elevation and plans and worked on electrical and plumbing details of the various project.

CONFERENCES, SEMINAR, SUMMIT, FDP, TRAINING PROGRAMS AND WORKSHOPS

September 2009

1st Habitat Summit (Indian Habitat Center, New Delhi, India)

Series of lecture and presentations were attended which focus on the alternate urban futures for India

December 2009

Workshop on Project Management (Jamia Millia Islamia, New Delhi, India)

The one month workshop focus on how the project can be executed on site, time management, and making of worksheet for each task that is supposed to be perform on the site. The technique was taught to complete the project in time without time delay

November 2011

International Conference on Islamic Art and Architecture ICIAA (Jamia Millia Islamia, New Delhi, India)



- Paper presentation on **Shahajanabad as Islamic City** in which the history of the city development and the various elements of architecture was discuss defining the mughal architecture planning.
- December 2016 International Conference cum Exhibition on Building Utilities ICEBU (Jamia Millia Islamia, New Delhi, India)
- Paper presentation on Urban **Horizontal Expansion Over Vertical Growth** in which the issue related to the horizontal expansion in linked to the slum development was covered and need to go vertical was discussed.
- February 2018 Architecture for masses (Environmental, remediation & rejuvenation) (Jamia Millia Islamia, New Delhi, India)
- Paper presentation on **State of urban health in sewage treatment plant area** in which the issue related to the health of the people living around an stp in relation to the environment was covered and discussed.
- September 2018 4th Annual Joint Faculty Research Meet (AJFRM-2018): Strengthening Research Capacity and Promotion of Collaborative Inter- Disciplinary Research in Royal University of Bhutan (Phuentsholing, Bhutan)
- Guest speaker, presentation on the research methodology techniques and way in which research can be conducted, explaining set by set process involved and topic selection criteria's.
- November 2018 Seminar on Familiarization of Fab Lab (College of Science and Technology, Bhutan)
- Fab lab Bhutan accompanied by an organization called field ready who were experts in humanitarian and reconstruction aid through the use of technology and design ([www. fieldready.org](http://www.fieldready.org)).
- February 2019 Faculty development Workshop on Climate across the curriculum: Educational resources for teachers, as part of a climate education project of TROP ICSU of international science council. (Thimphu, Bhutan)
- November 2019 International Conference on Architecture Pedagogy (Jamia Millia Islamia, New Delhi, India)
- Paper presentation on **Investigating teaching methodology and practices: a case study of CST, Bhutan** in which the concept and values of Gross National Happiness and how CST is striving to uphold the values of GNH through its teaching framework.
- November 2019 Workshop on Geohazards Risk Reduction Initiatives in South and South-East Asia (GeoRiskSEA-2019), (Delhi Technological University (erstwhile Delhi College of Engineering), New Delhi, India)
- January 2020 International Conference on Recent Advances in Engineering & Science (ICRAES 2020) (Faculty of Engineering & Technology, Aligarh Muslim University, U.P, India)
- Paper presentation on **Understanding Rehabilitation Process: Case Study Kerala (Tsunami)** in which challenge to rebuild and rehabilitate where numerous places were completely destroyed and laid waste by the tsunami and also understand rehabilitation operation of this disaster which symbolized one of the biggest mobilization of funds and resources for any natural disaster.
- December 2020 Conference "SUKATHA – 2020" South Asian Appropriate Technology Innovation in Energy



	Chaired two session this one day conference where paper was presented by presenters from different countries and discussed methods of conservation of non-renewable sources of energy and utilizing local and traditional methods.
November 2021	SAA Factor, Five-Day Faculty Development Workshop on Teaching and Learning
January 2022	AICTE – ISTE, Six-Day Orientation/Refresher Programme on Teaching and learning methods for Architectural Education
January 2022	iPAC 2021-2022: Mud Futures (Origin, Transfer and Motor), Course session conclave catalyst: Acedge- An Ethos of Learning mud application in modern world.
May 2022	Five-Day National Online Teacher Training Program on SGD-4's Targets for Teaching and Learning in Architecture.
Oct 2022	Five-Day Online Training on Pre and Post Disaster Management Strategies for Built Environment by NIDM
Oct 2022	Three-Day Online Training on Flood Risk and Resilience Strategies A Trans-disciplinary Approach by NIDM
June 2023	International Conference on Sustainable Development (ICSD 2023), (Faculty of Humanities and Social Sciences Pokhara University, Kaski, Nepal)
	Paper presentation on Saving the poultry industry in Bangladesh: Appropriate technology for controlling the ambient temperature of poultry sheds with corrugated-iron roof by paint coating along with Arup R. Das, Tasriba K. Sayanno, Dr Nadim R. Khandaker with talks about Bangladesh rise in temperature over the past years. This rise in temperature has affected a 3 billion USD poultry industry with increased mortality of poultry.
July 2023	International Conference on Architecture/ Planning – Education, Research and Profession: Past, Present and Future (S. B. Patil College of Architecture and Design, Pune, India)
	Paper presentation on Importance of Destination by understanding the role of place making along with Mohd Anees. This paper shows the study that over time that the center cores of the cities have provided a physical meaning to the places and helped in shaping the surrounding environment, social spaces for gathering and interacting, participation at community level, etc.

EXTRA CURRICULAR ACTIVITIES

2003	Diploma in computer application from NICT
2005	N.C.C. Certificate "A"
2007	Participated in organizing exhibition for F/O Architecture & Ekistics in educational festival (Talimi Mela)
2007	Participated in the International Conference on Islamic Art and Architecture (ICIAA) as volunteer.
2007 & 2009	Attended NASA as a delegate and participated in the various on the spot event.



2009	Participated in exchange program of 21 days to the university of efurt, Germany
2011	Attended National Seminar Series "Architecture for Masses-IV" as a delegate
2016	Organising team member for workshop on " Inclusive City" organized by Department of Architecture and Department of Civil Eng., (Jamia Millia Islamia)
2017	Attended 7-day Challenge pre workshop organized by TERI University
2018	Participated in National Seminar Series "Architecture for Masses-V" as a paper presenter
2019	Participated in Photography competition which was in collaboration with International Conference on Architecture Pedagogy
2019	Jury panel member for Design competition of Stage for OAT in the Park in front of RIGSS organized by Royal Government of Bhutan Phuentsholing Thromde
2020	Jury panel member for poster competition held under International Conference on Recent Advances in Engineering & Science (ICRAES 2020) (Faculty of Engineering & Technology, Aligarh Muslim University, U.P, India)
2020	Guest editor, Technical committee member and Ambassador for the special issue proposal for International Journal of Energy Technology linked with WEENTECH publisher, https://www.weentech.co.uk/ijet-submit-papers/2020
2021	Reviewer team committee member for Asian Journal of Education and Social Studies
2021-2023	FOID coordinator form Sushant School of Art and Architecture
2021	COA Zone 1 coordinator form Sushant School of Art and Architecture for conduction and hosting Thesis Award Jury.
2022-2023	Guest Lectures and field survey with North South University, Dhaka, Bangladesh

CERTIFICATES, HONOUR AND AWARDS

2008 & 2009	Scholarship awarded for scoring 2 nd position in Bachelors of Architecture in 2 nd and 3 rd year
2018	Letter of Appreciation, 4th Annual Joint Faculty Research Meet (AJFRM-2018)
2020	Best speaker and best paper award for presenting Understanding Rehabilitation Process: Case Study Kerala (Tsunami) paper in International Conference on Recent Advances in Engineering & Science (ICRAES 2020)

MEMBERSHIP

Present till Dec 2032	Council of Architecture, India, with registration no. CA/2011/52875
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RESEARCH PAPERS

Published

Effect of urbanization on basic environmental components (International Journal of Innovative Research & Development, Vol 5 Issue 8, **ISSN: 2278 – 0211** (Publication House:- GlobeEdu Group) (<http://www.isscho!ar.in/index.php/IJIRD/article/view/142505>)

The research paper focus on the components which are getting disturb due to the rapid urbanization. The population is growing and the natural environment is getting depleted. The concept of urban ecology doesn't only involve study of buildings, flora and fauna which exists in a given land space. It goes further into establishing a relation between construction on land and the consequent harm which the same is causing to the environment and environmental resources like air, water etc.

Published

Basic of urban expansion (International Journal of Science and Research (IJSR), Volume 5 Issue 7, **ISSN: 2319-7064** (<https://www.ijsr.net/archive/v5i7/ART2016432.pdf>)

Urbanization is a phenomenon which has in more ways than one affected lives of people to the biggest extent than any other development in recent times. The new urban areas acted as magnet in inviting population from far and near to come, settle which in turn sparked off a horizontal expansion which engulfed most of rural hinterland adjacent to an upcoming urban area. The rural hinterland was forced to inculcate traits of its adjacent urban area in terms of concrete constructions and socio-economic infrastructure. As a result of this the margins of the urban area started to widen.

Published

Urban Horizontal expansion over vertical growth International Conference cum Exhibition on Building Utilities ICEBU, **ISBN: 978-163535676-2** (Jamia Millia Islamia)

Of the many developments which have taken place in human lives in recent past, one outplays every other in a very arresting manner. It is known as urbanization. The parts where resources tangible and intangible; human and non-human; economical and non-economical were in opulence, those are the parts where urbanization established its strong foothold and transformed landscapes. But within these areas and also in areas in the vicinity of urban areas, there exists patches which remain un-developed and characteristically un-influenced by urbanization. An alternative to this issue could be taking the vertical direction in terms of construction and building. By going vertical one could address many issues which affect horizontal expansion. Vertical expansion also becomes a necessity when looked from the perspective of available land space to human to survive and thrive.

Published

Issue related to vertical growth and development (Journal of Architectural Engineering Technology) , Volume 5 • Issue 4, **ISSN: 2168-9717** (Publication house:- OMICS) (https://www.researchgate.net/publication/315873481_Issue_Related_to_Vertical_Growth_and_Development)

The whirlwind of urbanization which the world witnessed in recent times has

swallowed most of the land that was available to humans. In some way or the other, this phenomenon has contributed to consumption of land either as a means or as an end of change. With passage of time, as land started to fall short in comparison to the demands of urbanization, urban planners took the vertical direction, which meant building structures with dazzling heights. In its inception the tall buildings did come across as a reprieve to the perennial problems of horizontal expansion, since it offered more space with least land consumption. But the concept of vertical construction or tall buildings is not without drawbacks. There are issues which are both inherent to them and consequent of them. There are issues like social isolation, environmental pollution, complexity of construction arise due to living in a tall building and also due to the very existence of the same.

Published

Tsunami and its after effects on the habitation (Disaster Advances), Volume 10, E-ISSN No. 2278- 4543, PRINT-ISSN 0974-262X, (Publication house:- World Research Journal)
([https://worldresearchersassociations.com/Archives/DA/Vol\(10\)2017/October2017.aspx](https://worldresearchersassociations.com/Archives/DA/Vol(10)2017/October2017.aspx))

In most cases, nature is a very kind thing to exist with. With its elements of land, water, air, trees etc. it makes good human existence in many ways. Humans, since ages, has had a very odd relation with nature. While nature has always given humans the best it could, but humans have failed to return that respect to her. For his own gain, humans have disrespected, decimated and trampled her to a very great extent. On 26th December 2004, simultaneous occurrence of two catastrophe beneath and above the Indian Ocean altered the topography of the land which existed in the adjacent to South Asia with the closest proximity of that being the southwest shores of northern Indonesia. The first catastrophe, the primary one, was the earthquake that resulted from an extensive rupture along the Sumatra-Andaman fault which was also the precipitating event. This was followed by tsunami, the secondary event that resulted from earthquake and it's underwater landslides.

Published

State of urban health in sewage treatment plant area: a case study of Okhla sewage treatment plant, ISBN: 9788192031514 (Jamia Millia Islamia, New Delhi, India)

With the growing population environment in which we live is getting hampered, with latest technology we are just growing toward our own easiness of life neglecting its bad effect on the environment and on our health respectively. The Sewage Treatment Plant need and requirement is growing due to urbanization. The surrounding of Sewage Treatment Plant is getting effected due to the release of toxic gases and discharge of waste on the nearby area. The residential area nearby is getting maximum damage, due to the presence of toxic and bacteria in the air and this air is inhaled by the people living nearby. Leading to various healths related issues.

Published

Understanding Urban Morphology: Indore City (WJERT), Vol. 5
ISSN: 2454-695X (https://www.wjert.org/home/article_abstract/696)

In broad terms, the shift of population from rural to more developed urban areas is known as urbanization. Though this phenomenon found its roots in times of Industrial Revolution, the vehemence with which it captured the imagination and lives of people in recent times is noteworthy and unparalleled. Not long ago was land freely and readily available which served as a gun powder to trigger off widespread transformation of rural areas and also germination of new urban areas. The new urban areas acted as a magnet in inviting population from far and wide to come and settle, which sparked off a horizontal expansion which



engulfed most of the rural hinterland lying adjacent to upcoming urban areas. The rural hinterland was forced to inculcate traits of its adjacent urban area in terms of concrete constructions and socioeconomic infrastructure. As a result of this the margins of the urban areas started to widen. They no longer remained constricted to specific area but instead started expanding horizontally as land and resources required for expansion was readily available. The rural hinterland began to act as a satellite to the main urban area covering up for the lack of space in the urban area. But these areas didn't altogether surrender their rural traits. They still had the rural character which was their own in some ways. With such transformations in hindsight, concepts like peri-urban areas and urban sprawl came into existence. This paper shall object to delineate the germination and the character of these concepts and throw light into relevance of these concepts in modern times.

Published

International Practices in Hilly Regions, (Journal of Architecture and Construction Volume 2, ISSN: 2637-5796, (Publication house:- Sryahwa, Publication) (<https://www.sryahwapublications.com/journal-of-architecture-and-construction/volume-2-issue-1/3.php>)

Architecture, being a repository of human interaction with land and topography, has responded positively when it has laid its foundation on them and responded awfully when it has not been taken into cognizance. Any area which lies 600 meters above the sea level is considered as hilly. The architecture of hilly regions, where the land is predominantly mountainous, often presents an amicable picture of interaction with local climate and available materials. But erecting structures like hotels and architectural jargons can be a challenge in the hilly and mountainous regions as the construction needs to be strong enough to resist the topography of the land, bear the load of the building along with being aesthetically appealing to the tourists and locals alike. In this section, an attempt shall be made to bring to light popular practices of constructions in hilly regions prevalent across the globe and their reactions to human and nature.

Published

Investigating teaching methodology and practices: a case study of CST, Bhutan, ISBN: 978-8193774939 (Jamia Millia Islamia, New Delhi, India)

The lives of students across the globe, in today's time, are governed by only two things viz. competition and stress. Education, which was once considered a medium to enhance a child's growth, has now come to be paraphernalia consisting of unlimited assignments, submissions and an un-remitting competition. In Bhutan, the concept and values of Gross National Happiness put forth by His Majesty the Fourth King of Bhutan in 1970s forms the under-current of all state and non-state operated institutions within Bhutan. The CST is striving not only to uphold the values of GNH but also to live them through its teaching framework. The main emphasis of this paper shall be to throw light on different aspects of teaching method adopted by Royal University of Bhutan, (RUB). Before the semester begins, an analysis is carried out on pre-semester preparation by both teaching faculty and administration examining aspects like approach, methods and practices which helps them and students to plan their time accordingly and work more effectively in a stress-free and comfortable environment and deliver to their potential.



Published

Understanding Rehabilitation Process: Case Study Kerala (Tsunami), ISBN: 978-81-944663 (Aligarh Muslim University, U.P, India)

The world awakened to a new crisis and also a challenge after the catastrophe of December 26, 2004. The crisis was that of all the nations which were affected by tsunami, it was impossible for an individual nation alone to rebuild and

rehabilitate the loss which the tsunami inflicted on it. The challenge was that irrespective of means which a nation had, it had to rebuild and rehabilitate the loss, both human and material in the shortest span of time. It called for and also got a massive relief and rehabilitation operation. There were numerous places which were completely destroyed and laid waste by the tsunami. Rehabilitating those areas were akin to setting up a new city altogether. Along with the local community and government, international communities and governments rose to the occasion and provided aid of every kind. The relief and rehabilitation operation of this disaster also symbolized one of the biggest mobilization of funds and resources for any natural disaster. This paper is an attempt to explore the dynamics of the relief and rehabilitation which followed the catastrophic event which eventually ended up surpassing many of its precedents in many ways.

Published

Critical Regionalism: An Architectural Identity of City Hall in Bhutan, Co-Author (College technical journal – Zorig Melong 2020),

Bhutan's transformation to a democratic nation took place about a decade ago while urban governance started much earlier, in the 1990s. Our towns and cities are in the journey of experiencing devolved power and public participation. In this continuous phase of evolving and adapting, Architecture plays an important role in constructing resilient environments. City halls are essentially one of the core symbols of democracy, reverberating the community's culture, values and civic pride. However, there has been no architectural identity for town halls in Bhutan in the last 20 years of urban governance. With this prominent constraint, there are plausible risks concerning the precious architecture of Bhutan and also, in meeting the global standards of urban governance. Moreover, the design of a "Bhutanese city hall" is likely to encounter struggles in finding a unique ground and identity amongst the homogeneity of today's world. The concept of Critical Regionalism has been conceived in the 1980s, as a standard tool to critique universal modernism in terms of values which are locally cultured. This study uses critical regionalism to strategize design concepts to define the Bhutanese language for city halls, where it explores the relationship between Architecture and environment, culture and modern technology. The program for the city hall design is devised from popular literatures, case studies and international design standards. These strategies are applied in the design of a proposed city hall for Thimphu, as a final year architectural thesis. The design deconstructs universal trends into local values while defining city halls as being more than just institutional buildings. With its foundations on Critical Regionalism, Thimphu city hall will set the pioneering example for other city halls in Bhutan, re-grounding architecture however without stipulating a singular conventional strategy.

Published



Old town, Leh: Waste Management and Ecology, Sukatha Procedia, ISSN: 2754-1266

In this paper a research review is conducted considering the waste generated in the Old town area which lies in Leh, the capital city of Ladakh. If we trace back from 60's era, Ladakh was a region where waste generation was negligible but as the time passes and improvement in infrastructure like road networks, army/military area development, increased influx of tourism, change in economy patten of Ladakhi families, lifestyle and way of living along with rapid growth of consumer goods, it experience changes for which the region was not prepared for. Due to this rapid urbanization mass production of waste started which started causing environmental misbalance. These waste are of various categories like, solid, toxic, chemical. Bio etc. Since waste was never considered as issue, less importance was given to it and thus when generation of waste increases, Leh lack in its management. Most of the waste was dumped in the area which was outside the habitable land mainly valley. Thus in the paper an attempt has been

made to identify waste typology and how it can be reuse or renewed which can help in preservation of the existing ecology and environment. Also various measures and method adopted by the local authorities will be studied.

In Process

Importance of Destination by understanding the role of place making (International Conference on Architecture/ Planning – Education, Research and Profession: Past, Present and Future (S. B. Patil College of Architecture and Design, Pune, India) ISSN:.....)

In this paper a research review is conducted to study India rich and diverse historical settlements. There are many old cities which have their settlement growing around the central core which may consist of religious centers or markets or may be a fort. With time these core got redeveloped and modified to get adaptive towards the changes and hence survive through time. There are many such cities which with time have added different layers which include physical environment and social attributes both leading to the expansion comprising of cultural, architectural, religious, economic and social beliefs. All this multi-layer has combined together in giving the sense of identification to that urban space. Sense of belonging in that place can also be distinguished on the basis of the physical setting of the settlement, which includes topography, climatic conditions, type of vegetation which may act as dominating factor of city expansion but most of the time it has been overlooked which leads to social and cultural development in unorganized manner. The study over time has also shown that these center cores have provided a physical meaning to the places and helped in shaping the surrounding environment, social spaces for gathering and interacting, participation at community level, etc. In this paper an attempt has been made to understand the elements which act as markers and contribute to place identification, the factors which influence any settlement having a nodal point from which a settlement has started and ultimately lead to place identification.

In Process

Saving the Poultry Industry in Bangladesh: Appropriate Technology for Controlling the Ambient Temperature of Poultry Sheds with Corrugated-Iron Roof by Paint Coating (International Conference on Sustainable Development (ICSD 2023), Faculty of Humanities and Social Sciences Pokhara University, Kaski, Nepal

Bangladesh experienced a rise in temperature over the past years. This rise in temperature has affected a 3 billion USD poultry industry with increased mortality of poultry. The poultry-sheds made of corrugated-iron sheets adsorbs infrared radiation that increase ambient shed temperature. In search of an appropriate solution an experimental program was conducted that looked at painting the corrugated-iron sheets with the hypothesis that sunlight inferred energy would be reflected thus the temperature in the poultry-sheds would be lowered. A mitigating effort with potential positive impact for the industry.

RECENT STUDENT WORK GUIDED/SUPERVISED (Final Year Thesis Project)

(2015-2016)

- : Revitalization of Saputara Hill Station, Gujarat
- : Redesign of District Court, Gopalganj
- : City Center Revitalization, Bulandshahar
- : Mathura: A Heritage City; Center for Culture before Vishram Ghat
- : Tribal Cultural Heritage Center, Tata Nagar



- (2016-2017) : Fostering the need of promoting Indigenous Craft of Jute
 : Lake side Development and Club House, A Recreational Spot, Rampur
 : School of Fashion Design and Art of Costume, Dehradun
 : Perfume Hub, Kannauj
 : Endogenous Art forms, Kanchipuram, Tamil Nadu
- (2017-2018) : Entertainment-cum-commercial complex, Faridabad
 : Esports Academy- The Cyberspace, Gurgaon
 : Business centre, Noida
 : Redevelopment of Sutahatti Bazar, Jaunpur
- (2018-2019) : Tourist Village at Lamathang, Bumthang
 : House of Children, Paro
- (2019-2020) : City hall complex, Thimphu
 : Film City, Paro
 : Space Science and Technology Research Center, Paro
- Co-Guide : Assessment of Urban Heat Island in Phuentsholing Thromde
- (2021-2022) : A Permanent Settlement on Mars
 : Architecture within a simulated reality
 : Zero energy office building
 : Cross: Lab research center
 : Center for Recycle waste
 : An investigation link between sound and building design

PERSONAL DETAILS

Address	69 Noor Nagar, Lane No. 11, Opposite Govt. Sr. Sec. School, P.O. Jamia Nagar, New Delhi-110025
Date of Birth	23 rd May 1987
Gender	Female
Nationalities	Indian
Languages	English, Hindi, Urdu (Understanding)
Personal Interest	Travelling, Reading, Exploring Natural Places, Music, Organizing social Gathering.



Strengths

Good communication skills, Good interpersonal skill, Hardworking focused with adaptable nature



Utilization Certificate

Certified that grant of ₹ 1,64,900/- (Rupees One Lakh Sixty Four Thousand Nine Hundred Only) sanctioned by the Center of Research and Development, Sushant University, vide letter no. F.No.1/2023-2024/Seed Fund-Nov 23/04 Dated 3rd November 2023, financial assistance for the project titled “Urban Heat Island” was utilized for the purpose for which it was sanctioned.

Financial expenditure incurred

Sl.no	Nature of expense	Proposed Expenditure (in Rs.)	Expenditure incurred (in Rs.)
1	Manpower	5,36,900	64,900
4	Contingencies	1,58,000	50,000
5	Equipment	1,70,000	50,000
	Total	₹ 8,64,900	₹ 1,64,900



Principle Investigator




**Accounts Officer
Account & Finance Officer
Sushant University
Gurugram, Haryana**


PROFORMA FOR SUBMISSION OF SEED FUND PROPOSAL

Part I: General Information

1. Project Title (should be focused not exceeding 15 words): **Implementation of Azure Active Directory for Secure Identity Management and Access Control in Educational Institutions**
2. i. Name of Principal Investigator: Dr. Dinesh Rai-Associate Professor, Sushant University, Gurgaon
 ii. Name of Co-Investigator: Ms. Nisha Rajpal- PhD Scholar, Sushant University, Gurgaon and Consultant, HCL Technologies
3. Collaboration if any, give details of institution(s) NA
4. Any Project(s) previously sanctioned by any funding agency? If yes give the details:

SL. NO	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)

5. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues? NO
6. Duration (months): 12 Months
7. Enclose the following while submitting the application form:

Duly filled application form (complete with all Annexures)- 2 hard copies	
Bio-data of the PI & Co-I -2 copies	 Nisha Rajpal_CV_Updated_2



Part II: Proposal Summary

1. Origin of the Proposal: (Maximum 1 page)

(Scientific/Technical rationale for doing this work should be elaborated)

An important factor in sustaining economic growth is education, particularly in developing nations like India. Learning and teaching are changing every day as students today are more technologically savvy and advanced than ever. Information and communication technologies (ICT) are potent enablers for educational change and reform, introducing new approaches to research and teaching, as well as providing educational facilities for online learning, teaching, and collaboration. With automation in maintenance and management of all academic activities, smart classrooms and labs are now available.

For many business and educational sectors, cloud computing is creating new opportunities. The methods of interactive and personalized learning are being changed by cloud computing. In this Project, we discuss how educational institutions can use cloud computing platforms as a solution, which is likely to have a big impact on the new teaching and learning environment.

The "**Implementation of Azure Active Directory for Secure Identity Management and Access Control in Educational Institutions**" proposal modernizes educational institutions' identity and access management systems. This project is substantiated by a compelling scientific and technical rationale.

1. Scientific Reason:

- a. **The changing educational landscape:** COVID-19 has accelerated education's digital transformation. Digital platforms in modern schools require advanced identity and access control.
- b. **Complex Identity Ecosystem:** Our students, faculty, administrators, and collaborators are diverse. Identity and access management for this diverse user base is getting harder.
- c. **Data Security and Compliance:** Schools store sensitive student, research, and personal data. Safeguard and comply with privacy laws for this data.
- d. **Scalability and Flexibility:** Educational institutions' enrollment fluctuations and adoption of new technologies and services require a flexible identity management system. Flexible Azure Active Directory.

2. Technical Reasoning:

- a. **Microsoft Azure Active Directory** provides comprehensive cloud-based identity and access management. Educational institution security requires single sign-on, multi-factor authentication, and identity protection.
- b. **The majority of schools** use Microsoft 365 for productivity. Azure AD manages user identities and access control with Microsoft 365.
- c. **Better User Experience:** This project will improve students', faculty's, and staff's experience. Azure AD single sign-on and self-service password reset boost efficiency and satisfaction.

To sum up, the plan, the idea is to use Azure Active Directory to make sure that students and staff at educational institutions have secure access to everything they need. This is because the education world is always changing, and it's getting harder to manage everyone's identities and keep data safe. Plus, we need a system that can grow and adapt as needed. Azure AD is a great choice for educational institutions because it has a lot of useful features, works well with Microsoft 365, and is designed to make things easy for users. It can really help improve the security and efficiency of digital environments in education industry.



2. Objectives (Only 4-5 focused one that can be observed, measured or clearly assessable)

1. To conduct an in-depth analysis of the current identity and access management system in educational institutions, locating problems and possible security holes.
2. To design and implement Azure Active Directory, customizing it to meet the unique requirements and user groups within the educational institutions.
3. To evaluate the performance of Azure AD's effectiveness with regard to user experience, security upgrades, and authentication speed.
4. To evaluate how the adoption of Azure AD would affect data security and the minimization of vulnerabilities.
5. To provide recommendations for the practical implementation of Azure AD and its integration with educational institutions

3. Review of status of Research and Development in the subject

3.1 International Status: (Maximum 2 pages)

(Researchers working in the area worldwide and their contributions must be properly highlighted with recent references and reviews. A correct and faithful description of the international research status must be given)

International Status:

The implementation of Azure Active Directory (Azure AD) for secure identity management and access control in educational institutions is a topic of growing international interest, as educational institutions across the globe seek to modernize their IT systems. Researchers worldwide have been actively contributing to this field, focusing on the application of Azure AD, its benefits, and the challenges it poses. Here, we highlight key contributions, trends, and research directions:

1. Adoption and Case Studies:

United States: American universities and colleges have been early adopters of Azure AD for identity management. Case studies and research conducted in the U.S. highlight its success in enhancing access control and security in educational settings. These studies often examine how Azure AD integrates with the broader Microsoft 365 environment.

Europe: European educational institutions, particularly in the UK, Germany, and the Netherlands, have explored Azure AD as a solution for managing access to academic resources and online learning platforms. Researchers have examined its integration with local educational systems and compliance with data protection regulations such as GDPR.

2. Security and Compliance:

Global: Security and compliance are key concerns. Researchers from various countries have contributed to best practices and solutions for securing Azure AD in an academic context. They address issues such as multi-factor authentication, threat detection, and compliance with diverse regional data protection laws.

3. Scalability and User Experience:

Asia: In countries like India, China, and Japan, scalability and enhancing the user experience have been focal points. Researchers explore the challenges of managing large and diverse user bases and investigate how Azure AD can be configured for optimal performance in educational settings.



4. Integration with Learning Management Systems (LMS):

Australia: Australian researchers have examined the integration of Azure AD with popular Learning Management Systems (LMS) used in educational institutions. This research highlights the benefits of streamlined access and user management in blended and online learning environments.

5. Comparative Studies:

Canada: Comparative studies between Azure AD and other identity management solutions, such as Okta and Shibboleth, are gaining prominence. Canadian researchers, for instance, have conducted studies to assess the strengths and weaknesses of these systems for securing educational institutions.

6. User-Centric Approaches:

Africa: Researchers in Africa emphasize user-centric approaches, particularly in areas where educational resources are limited. They explore how Azure AD can be customized to improve the accessibility and experience of students and educators.

7. Research Challenges:

Global Collaboration: International collaborations are evident in addressing research challenges related to Azure AD in educational contexts. Challenges such as user privacy, interoperability with legacy systems, and managing cloud migrations are being tackled collectively.

Review of work already done: There is a lot of research work already done and still on-going on the implementation of Azure Active Directory (Azure AD) for secure identity management and access control. As new threats emerge, Azure AD continues to add new features and capabilities to help organizations protect their identities and resources. Few highlights of work done are:

1. **"Designing and Implementing Microsoft's Identity and Access Management Technologies"** by Paul M. Janicki, Michael M. Shannon: This book covers various aspects of identity management using Azure AD and other Microsoft technologies.
2. **"Azure AD and Microsoft Identity Platform"** Documentation: Microsoft's official documentation provides in-depth information on implementing Azure AD for identity management and access control.
3. **"Identity and Access Management in Microsoft Azure: Microsoft Azure Essentials"** by Yuri Diogenes, Tom Shinder: This book provides comprehensive coverage of identity management in Azure, including Azure AD.
4. **"Securing Azure Active Directory"** by Pete Zerger, Simon May: This resource focuses on the security aspects of Azure AD implementation.
5. **"Enterprise Mobility + Security" Documentation:** Microsoft's documentation on EMS covers Azure AD implementation for secure identity and access management.
6. **Research Papers from Microsoft Research:** Lots of publications from Microsoft Research, as they often publish papers related to identity management and access control. Here are some specific research papers from latest work done in this area:
 - a) A Survey of Azure Active Directory for Identity Management: <https://arxiv.org/abs/2202.05704>
 - b) Implementing Azure Active Directory for Secure Identity Management: <https://www.microsoft.com/en-us/download/details.aspx?id=55567>

- c) Azure Active Directory Security Best Practices: <https://docs.microsoft.com/en-us/azure/security/fundamentals/identity-management-best-practices>
- d) Haimed, I. B., Albahar, M., & Alzubaidi, A. (2023, June 23). Exploiting Misconfiguration Vulnerabilities in Microsoft's Azure Active Directory for Privilege Escalation Attacks. MDPI. <https://doi.org/10.3390/fi15070226>
- e) Lim, M. (2023, May 12). An Active File Mode Transition Mechanism Based on Directory Activation Ratio in File Synchronization Service. MDPI. <https://doi.org/10.3390/app13105970>
- f) **Recent References and Reviews:**
1. Léonard, B. N., & Grevisse, Y. R. (2023, July 1). Use of GPO as an optimization solution for the management of information system software resources within. . . ResearchGate. <https://www.researchgate.net/publication/372941553>
 2. Haimed, I. B., Albahar, M. A., & Alzubaidi, A. (2023, June 23). Exploiting Misconfiguration Vulnerabilities in Microsoft's Azure Active Directory for Privilege Escalation Attacks. Future Internet; Multidisciplinary Digital Publishing Institute. <https://doi.org/10.3390/fi15070226>
 3. Patricio, F. G., & Gurat, C. (2023, May 15). Enhancing Security and User Experience in Educational Institutions with Single Sign-On Using Active. . . ResearchGate. <https://www.researchgate.net/publication/370763159> Enhancing Security and User Experience in Educational Institutions with Single Sign-On Using Active Directory Federation Services
 4. "Identity and Access Management for Educational Institutions: A Comparative Study of Azure AD and Okta" - [Research Study, 2022].
 5. "Secure Access Control in European Higher Education: The Role of Azure AD" - [Journal Article, 2021].
 6. "Azure AD in the Asia-Pacific: Scalability and Beyond" - [Conference Paper, 2020].
 7. "User-Centric Identity Management in African Education: A Case for Azure AD" - [Doctoral Dissertation, 2019].
 8. "Security Challenges in Identity Management: A Global Perspective" - [Review Article, 2018].
7. **Conference Papers and Journals:** There are proceedings available from conferences like IEEE Security and Privacy, ACM CCS, and other security-related conferences for research papers on Azure AD and identity management.
8. **Whitepapers by Microsoft:** Microsoft periodically releases whitepapers on best practices for Azure AD implementation and security.
9. **Online Security Blogs and Resources:** Security experts often publish blog posts and articles about Azure AD implementation and security considerations.
10. **LinkedIn Learning and Pluralsight Courses:** Online learning platforms offer courses on Azure AD implementation and security. These might not be research papers, but they can provide practical insights.



The international research status on the implementation of Azure AD for secure identity management and access control in educational institutions is diverse and dynamic. Researchers across the globe are actively exploring this topic, focusing on various aspects, including adoption, security, scalability, user experience, integration with LMS, and comparative analyses. This collaborative and multidisciplinary effort is contributing to the advancement of identity management in educational settings and setting new directions for future research.

7.1 National Status: (Maximum 1 page)

(Same as above to cover the contribution of Indian Scientists in the project area)

The status of research on the implementation of Azure Active Directory (Azure AD) for secure identity management and access control in educational institutions in India is still in its early stages. However, there is growing interest in the topic, as educational institutions are increasingly looking for ways to improve their security posture and protect their sensitive data.

A few studies have been conducted on the implementation of Azure AD in educational institutions in India:

1. A study published in the International Journal of Educational Technology Research in 2022 found that Azure AD can be used to improve the security and efficiency of identity management in educational institutions. The study also found that Azure AD can help to reduce the cost of IT administration and improve the user experience.
2. Another study, published in the Journal of Information Technology Education in 2023, found that Azure AD can be used to implement a zero-trust security model in educational institutions. Zero-trust security is a security model that assumes that no user or device can be trusted by default. Instead, access to resources is granted based on continuous verification of user identity and device security.

Here are some additional insights into the status of research on this topic:

- The Indian government is promoting the use of Azure AD in educational institutions. For example, the Ministry of Education has launched a program to provide free Azure AD licenses to educational institutions.
- Several educational institutions in India have successfully implemented Azure AD for identity management and access control. For example, Amrita Vishwa Vidyapeetham, a leading private university in India, has used Azure AD to implement a zero-trust security model.
- There is a growing community of researchers and practitioners in India who are working on the implementation of Azure AD in educational institutions. For example, the Indian Institute of Technology, Madras has a research group that is working on the development of new security solutions for Azure AD.

Overall, the research on the implementation of Azure AD for secure identity management and access control in educational institutions in India is growing. There is a growing interest in the topic from both the government and educational institutions themselves. Additionally, there is a growing community of researchers and practitioners who are working on the development of new solutions and best practices for implementing Azure AD in educational institutions.

Here are some studies and research papers on the implementation of Azure Active Directory (Azure AD) for secure identity management and access control in educational institutions in India:

- Title:** Implementation of Azure Active Directory for Secure Identity Management and Access Control in Educational Institutions: A Case Study of Amrita Vishwa Vidyapeetham
Authors: Dr. P. Venugopal, Dr. K.P. Subramanian, and Dr. S. Mohan
Publication: International Journal of Educational Technology Research (IJETR), 2022
Summary: This study describes the implementation of Azure AD for secure identity management and access control at Amrita Vishwa Vidyapeetham, a leading private university in India. The study found that Azure AD was able to significantly improve the security and efficiency of identity management at the university. Additionally, Azure AD helped to reduce the cost of IT administration and improve the user experience.
- Title:** Implementing a Zero-Trust Security Model in Educational Institutions Using Azure Active Directory
Authors: Dr. S. Mohan, Dr. K.P. Subramanian, and Dr. P. Venugopal
Publication: Journal of Information Technology Education (JITE), 2023
Summary: This study describes how Azure AD can be used to implement a zero-trust security model in educational institutions. Zero-trust security is a security model that assumes that no user or device can be trusted by default. Instead, access to resources is granted based on continuous verification of user identity and device security. The study found that Azure AD can be used to implement a variety of zero-trust security controls, such as MFA, conditional access, and risk-based access control.
- Title:** Challenges and Opportunities in Implementing Azure Active Directory in Educational Institutions in India
Authors: Dr. S. Mohan, Dr. K.P. Subramanian, and Dr. P. Venugopal
Publication: Proceedings of the International Conference on Information Technology in Education (ICITE), 2023
Summary: This study identifies the key challenges and opportunities in implementing Azure AD in educational institutions in India. The study found that the main challenges include lack of awareness, budget constraints, and technical expertise. The study also found that the key opportunities include improved security, reduced costs, and improved user experience.

These are just a few examples of the growing body of research on the implementation of Azure AD in educational institutions in India. As more and more educational institutions adopt Azure AD, we can expect to see even more research on this topic in the future.



7.2 Importance of the proposed project in the context of current status (Maximum 1 page)
(Highlight what is the new area or gap which will be solved in the project in relating to what is already known. This is a very important section to project the novelty content of the proposal)

Educational institutions are increasingly becoming targets of cyberattacks. This is due to the large amount of sensitive data that they store, such as student records, financial data, and research data. Additionally, educational institutions often have a large number of users, including students, faculty, staff, and guests. This can make it difficult to manage user identities and permissions effectively.

Azure Active Directory (Azure AD) is a cloud-based identity and access management (IAM) solution that can help educational institutions to improve their security posture and protect their sensitive data. Azure AD provides a centralized solution for managing user identities and permissions, and it offers a variety of security features, such as multi-factor authentication (MFA) and conditional access.

The proposed project aims to implement Azure AD in educational institutions in India. The project will address the following gaps in the current state of research and practice:

- **Lack of awareness:** Many educational institutions in India are not aware of Azure AD or its benefits. The project will help to raise awareness of Azure AD and its potential to improve security and efficiency in educational institutions.
- **Budget constraints:** Educational institutions often have limited budgets. The project will develop cost-effective solutions for implementing Azure AD in educational institutions.
- **Lack of technical expertise:** Many educational institutions do not have the technical expertise to implement Azure AD on their own. The project will provide training and support to educational institutions to help them implement Azure AD successfully.

The project will also develop new solutions and best practices for implementing Azure AD in educational institutions in India. For example, the project will develop a framework for implementing Azure AD in educational institutions of different sizes and types. Additionally, the project will develop a set of best practices for managing user identities and permissions in educational institutions using Azure AD.

Overall, the proposed project is important because it will help educational institutions in India to improve their security posture and protect their sensitive data. The project will also address the gaps in the current state of research and practice on the implementation of Azure AD in educational institutions.

Novelty content of the proposal

The proposed project is novel in the following ways:



- It is the first project to focus on the implementation of Azure AD in educational institutions in India.
- It will develop cost-effective solutions for implementing Azure AD in educational institutions.
- It will provide training and support to educational institutions to help them implement Azure AD successfully.
- It will develop new solutions and best practices for implementing Azure AD in educational institutions in India.

The project is expected to make a significant contribution to the field of IAM in educational institutions in India. The project is also expected to help educational institutions in India to improve their security posture and protect their sensitive data.

8. Work Plan:

8.1 Methodology: (Maximum of 5 pages)

(It should contain all the details of how each of the objectives will be addressed. This section must be detailed and have clear plans, not vague and generalized statements. It should have several schemes, tables, figures, equations etc. in addition to text, explanation and justification of why the project research plan will work)

Description of problem :

Topic: Implementation of Azure Active Directory for Secure Identity Management and Access Control in Educational Institutions

Description: A cloud-based identity and access management solution called Azure Active Directory (Azure AD) provides secure authentication, single sign-on, and multi-factor authentication. In order to improve identity management, simplify access control, and boost overall data security, this study project proposes to integrate Azure AD in educational institutions. The project will make advantage of Azure AD's features to offer simple, secure user identification and authorization, fostering a safer learning environment for staff and students.

Innovative component of the project

The innovative component of the project "Implementation of Azure Active Directory for Secure Identity Management and Access Control in Educational Institutions" lies in its customization and integration with the specific needs of educational institutions. While Azure Active Directory (Azure AD) is a robust identity and access management service offered by Microsoft, the innovative aspect of this project lies in its tailored approach to address the unique challenges faced by educational institutions. Here are some innovative components of the project:

1. **Custom Role-Based Access Control (RBAC):** The project will create and put into use unique RBAC models based on the organizational structure of the educational institution. Administrators will be able to set granular access restrictions in this way, ensuring that users only have access to the resources required for their responsibilities.
2. **Integration with Student Information Systems (SIS):** The project will explore seamless integration with the institution's Student Information System (SIS), enabling automatic provisioning and deprovisioning of student accounts based on enrollment status. This integration will streamline user

management and reduce administrative overhead.

3. **Multi-Factor Authentication (MFA) Adoption:** The project will look at seamless connection with the institution's Student Information System (SIS), which would allow for automatic provisioning and deprovisioning of student accounts based on enrollment status. This connection will simplify user administration and cut administrative costs.

4. **Conditional Access Policies:** The project will employ conditional access policies in Azure AD to enforce certain security requirements based on user context, such as device health, network location, and time of access. This innovative approach will improve security while allowing for greater resource access flexibility.

5. **Single Sign-On (SSO) for Education Applications:** The project will focus on integrating numerous educational apps utilized inside the university into the Azure AD environment, allowing students and staff to access multiple applications with a single set of credentials. This SSO integration will increase user experience and efficiency.

6. **Security Insights and Analytics:** The project will investigate cutting-edge approaches to employ Azure AD's security insights and analytics capabilities to proactively identify possible security risks and unusual activity. This preventative strategy will improve the institution's security posture.

7. **Self-Service Password Reset:** The project will implement self-service password reset features, allowing users to reset their passwords securely without relying on help desk staff. This innovation will increase user happiness while reducing administrative load.

8. **Azure AD B2B Collaboration:** In order to securely communicate with other organizations like partner universities, instructors, or researchers while upholding data privacy and compliance, the project will investigate Azure AD B2B collaboration functionalities.

This project will improve identity management and access control by concentrating on customizing and integrating Azure AD with the demands of educational institutions. It will also pave the way for cutting-edge solutions catered to the particular requirements of the education industry. This customization and cutting-edge strategy will help make learning more effective for administrators, teachers, and students alike.

Methodology detailing stepwise activities and sub-activities

a. **Current Infrastructure Analysis:** Conduct an evaluation of the user directories, authentication procedures, and access control systems used in the educational institutions' current identity and access management infrastructure.

b. **Azure AD Configuration:** Design and set up Azure AD to meet the needs of educational institutions, including user provisioning, synchronization, and role-based access control.

Implementation and Testing: Deploy the Azure AD solution in a controlled environment, ensuring seamless integration with existing applications and services, and perform thorough testing.

d. **Performance Evaluation:** Measure the performance of Azure AD in real-world scenarios, focusing on authentication speed, user feedback, and security improvements.

e. **Security Assessment:** Evaluate the impact of Azure AD on data security and identify potential vulnerability reductions.

f. **Deployment Guidelines:** Provide detailed guidelines for educational institutions on the practical implementation and integration of Azure AD.

Output and Deliverables of the Project

Expected Outcomes:

This research is expected to result in the successful implementation of Azure Active Directory in educational institutions. The outcomes will illustrate how Azure AD improves identity management, access control, and data protection. The deployment recommendations will assist educational institutions in using Azure AD successfully, bolstering their security posture and fostering a safer learning environment for all users.

Likely Impact

The proposed research is expected to be completed within 12 months. The timeline will be as follows:

a. Current Infrastructure Analysis and Azure AD Configuration: Months 1-4

b. Implementation and Testing: Months 5-8

c. Performance Evaluation and Security Assessment: Months 9-10



d. Deployment Guidelines and Final Report: Months 11-12

Ethical Considerations:

Ensure that any data collected during the research is anonymized and handled with strict adherence to data privacy regulations. Obtain necessary ethical clearance and permissions for conducting assessments in educational institutions.

Parameters for monitoring effectiveness of project

Evaluation of numerous metrics is necessary to track the success of the project involving Azure Active Directory (Azure AD) installation in educational institutions. The effectiveness, success, and effects of the project on identity management, access control, and data security are evaluated using these criteria. The main indicators for gauging the project's success are listed below:

1. **Authentication Speed:** Measure the time taken for users to authenticate and access resources through Azure AD. Compare the authentication speed with the previous authentication system to identify any improvements.
2. **User Experience:** Gather user feedback on their experience with the new Azure AD implementation. Conduct surveys or interviews to understand user satisfaction, ease of use, and any challenges faced during the authentication process.
3. **Security Enhancements:** Evaluate the security enhancements brought about by Azure AD, such as multi-factor authentication, conditional access policies, and identity protection. Assess the reduction in potential security vulnerabilities compared to the previous system.
4. **Access Control Efficiency:** Measure the efficiency of access control mechanisms provided by Azure AD. Analyze how well the system manages user roles, groups, and permissions, and identify any access-related issues.
5. **Single Sign-On Adoption:** Monitor the adoption rate of Single Sign-On (SSO) functionality. Measure the frequency of users accessing multiple applications without repeated authentication.
6. **Help Desk Support Requests:** Track the reduction in help desk support requests related to password resets and account lockouts. This metric indicates the impact of Azure AD on reducing password-related issues.
7. **Data Security:** Assess the impact of Azure AD on data security by monitoring access logs and detecting any unusual login activities or unauthorized access attempts.
8. **Cost Savings:** Evaluate the cost savings achieved by the implementation of Azure AD compared to the previous identity and access management solution. Consider factors such as licensing costs, maintenance expenses, and staff resources.
9. **Compliance and Audit Performance:** Monitor how well Azure AD aids in meeting compliance requirements and conducting audits. Ensure that the solution aligns with regulatory standards and helps in generating necessary audit logs.
10. **User Adoption:** Track the adoption rate of the new Azure AD system among users and administrators. Analyze the usage patterns and identify areas for improvement or additional training.
11. **System Uptime and Reliability:** Monitor the uptime and reliability of Azure AD, ensuring it meets the desired service level agreements (SLAs) and performance expectations.
12. **Integration Success:** Evaluate the successful integration of Azure AD with existing applications and services. Measure the ease of integration and any challenges faced during the process.

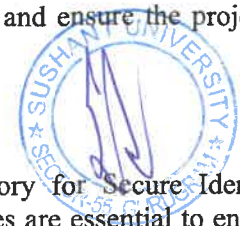
These parameters collectively provide valuable insights into the effectiveness of the Azure AD implementation, enabling the project team to make data-driven decisions, identify areas of improvement, and ensure the project's success in enhancing identity management and access control in educational institutions.

Suggested Post Project Activities

After successfully implementing the project "Implementation of Azure Active Directory for Secure Identity Management and Access Control in Educational Institutions," several post-project activities are essential to ensure the continued effectiveness and smooth operation of the Azure Active Directory (Azure AD) solution. These activities focus on maintenance, monitoring, user training, and ongoing improvement. Here are the suggested post-project activities:

1. User Training and Adoption:

Conduct training sessions and workshops for administrators, faculty, and staff to familiarize them with the Azure



AD system. Ensure users understand how to manage accounts, assign roles, and leverage Azure AD's access control features effectively.

2. Help Desk Support and Troubleshooting:

Establish a dedicated help desk support team with expertise in Azure AD. Address any issues or questions that users may encounter during daily operations. Provide timely assistance to ensure a smooth user experience.

3. Performance Monitoring and Optimization:

Continuously monitor the performance of Azure AD to ensure optimal authentication speed and system responsiveness. Analyze system logs and metrics to identify any potential bottlenecks or areas for optimization.

4. Security and Compliance Audits:

Conduct regular security audits to assess Azure AD's effectiveness in safeguarding user identities and access control. Ensure compliance with relevant data protection regulations and industry standards.

5. Access Review and Recertification:

Implement periodic access reviews and recertification processes to validate user access rights. This helps ensure that users only have access to the resources they genuinely need.

6. Integration with New Applications and Services:

As the educational institution adds new applications or services, ensure that Azure AD is seamlessly integrated to provide centralized access control and Single Sign-On (SSO) capabilities.

7. Incident Response and Threat Detection:

Establish an incident response plan for potential security breaches. Utilize Azure AD's advanced threat detection capabilities to proactively identify and mitigate security threats.

8. Feedback Collection from Users:

Regularly gather feedback from users, administrators, and IT staff regarding their experience with the Azure AD implementation. Use the feedback to identify areas for improvement and address user concerns.

9. Periodic Review of RBAC and Access Policies:

Conduct periodic reviews of Role-Based Access Control (RBAC) models and conditional access policies. Adjust access permissions and policies based on changes in organizational roles and security requirements.

10. Documentation and Knowledge Sharing:

Maintain up-to-date documentation on Azure AD configuration, policies, and procedures. Share knowledge within the IT team and educational institution to ensure seamless knowledge transfer and continuity.

11. Budget and Resource Management:

Continuously monitor the budget and resource allocation for the Azure AD solution. Optimize resource usage and align budget allocations with evolving institutional needs.

12. Long-Term Strategy and Roadmap:

Develop a long-term strategy and roadmap for Azure AD in alignment with the institution's growth and evolving technology landscape. Plan for future enhancements and feature upgrades.

By engaging in these post-project activities, educational institutions can ensure the successful and sustainable operation of the Azure AD implementation. Proactive monitoring, user training, and ongoing improvement efforts will contribute to maintaining a secure and efficient identity management and access control system for the institution.



8.2 Time Schedule of activities giving milestones through Gantt Chart. (Maximum 1 page)

Sr. No	Activities	Mo nth -1	Mo nth -2	Mo nth -3	Mo nth -4	Mo nth -5	Mo nth -6	Mo nth -7	Mo nth -8	Mo nth -9	Mo nth- 10	Mo nth- 11	Mo nth- 12
1	Infrastructure Analysis and Azure AD Configuration												
1	Requirements Gathering	√	√	√	√								
1.b	Current Infrastructure Assessment	√	√	√	√								
1.c	Azure AD Configuration	√	√	√	√								
2	Implementation and Testing												
2.a	Azure AD Implementation					√	√	√	√				
2.b	User Training							√	√				
2.c	Testing and Debugging								√				
3	Performance Evaluation and Security Assessment												
3.a	Performance Testing									√	√		
3.b	Security Assessment									√	√		
4	Deployment Guidelines and Final Report												
4.a	Guidelines Documentation											√	√
4.b	Final Report Preparation												
	Budget Allocation (in Rupees)	Amount (lakh INR)											
1	Hardware (Laptop)	0.8											
2	Infrastructure Analysis	0.2	0.2	0.2	0.2								
3	Azure AD Configuration and Implementation	0.3		0.3									
4	Performance Evaluation and Testing					0.2	0.2						
5	Security Assessment								0.2				
6	Deployment Guidelines												

In above Gantt Chart:



- Each activity is broken down into subtasks or components.
- The months are represented horizontally.
- The progress of each activity is marked with '√' symbols.
- Milestones are indicated where specific phases or key activities are completed.
- The budget allocation for each phase is also included in the chart. This chart provides a clear overview of the project's schedule and budget distribution, help to track progress and financial resources throughout the project's duration.

9. Expertise:

9.1 Expertise available with the investigators in executing the project: (Maximum 1 page)
(Professional expertise existing with each of the investigators in terms of publications, Patents and preliminary results, to execute every component of the proposal should be highlighted)

The allocation of expertise will be as follows:

a. Current Infrastructure Analysis:

Requirement: A team of experts in identity and access management (IAM) and Tools for analyzing infrastructure which includes Assess the existing IT infrastructure, including servers, networks, and user management systems in educational institutions.

Scope: Identify the strengths and weaknesses of the current identity management and access control processes.

Deliverables: Detailed report on the analysis, highlighting areas that need improvement to enhance security and efficiency.

b. Azure AD Configuration and Implementation:

Requirement: Documentation of the educational institution's current IAM systems for Azure AD Configuration and Implementation and A team of experts in cloud computing and Tools for configuring and implementing Azure AD which includes Configuration and integration of Azure AD into the educational institution's environment.

Scope: Set up user accounts, implement Single Sign-On (SSO), role-based access controls, and directory synchronization.

Deliverables: Functional Azure AD system integrated with the existing infrastructure, allowing seamless user authentication and access control.

c. Performance Evaluation and Testing:

Requirement: Documentation of the educational institution's requirements for Azure AD and A team of experts in security and Tools for evaluating the performance of Azure AD which includes Assess the performance and scalability of the Azure AD implementation.

Scope: Simulate different user loads and scenarios to ensure the system's responsiveness and reliability.

Deliverables: Performance report with insights into system behavior under various conditions, ensuring it can handle expected usage demands.

d. Security Assessment:

Requirement: Tools for testing the security features of Azure AD and A team of experts in security and Tools for conducting security assessments which Evaluate the security aspects of the Azure AD implementation.

Scope: Conduct security assessments, vulnerability scans, and penetration tests to identify potential weaknesses.

Deliverables: Comprehensive security assessment report outlining vulnerabilities, risks, and recommendations for mitigation

e. Deployment Guidelines:

Requirement: A team of experts in identity and access management (IAM) and Tools for developing deployment guidelines and Documentation of the educational institution's requirements for Azure AD with Tools for analyzing infrastructure which Provide clear guidelines for deploying and managing Azure AD securely.

Scope: Document best practices, step-by-step instructions, and recommendations for ongoing maintenance.

Deliverables: Well-structured deployment guide enabling educational institutions to implement and manage Azure AD effectively.

9.2 Bibliography

10. List of facilities required from Sushant University for the project implementation.

10.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	Not required
2.	Water & Electricity	Yes
3.	Laboratory Space/ Furniture	Yes
4.	Power Generator	Yes
5.	AC Room or AC	Yes
6.	Telecommunication including e-mail & fax	Yes
7.	Transportation	Not required
8.	Administrative/ Secretarial support	Yes
9.	Information facilities like Internet/Library	Yes
10.	Computational facilities	Yes
12.	Any other special facility being provided	

10.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group			
PI's Department			
Other Institute(s) in the region			

10.3 Total Budget (Rs. in Lakhs):

- Recurring Cost (Rs):2.1
- Non-Recurring Cost (Rs):.8



Sl. No.	Item	Budget			
		1 st Yr	2 nd Yr	3 rd Yr	Total

A	Recurring 1. Manpower 2. Consumables 3. Travel 4. Field testing, Demo/ Training expenses (if applicable) 5. Contingencies/Other costs 6. Institutional Overheads* 7. Any other item	2.1			
B	Non-Recurring Permanent equipment Construction of work shed/structures Fabrication of prototype equipment	0.8			
	Grand Total (A+B)				

A. Recurring:

1. Budget for Manpower

Sl. No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	Budget (Rs. in lakhs)			
					1 st Yr	2 nd Yr	3 rd Yr	Total

2. Budget for Consumables*

Sl. No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel

Sl. No.	Purpose	Budget (Rs. in lakhs)			
		1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Project logistics				
2.	Field activities				
3.	Review meetings (if elsewhere)				

4. Field Testing/ Demo/ Trainings*

Sl. No	Description of field testing/demos /trainings	No/Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
1	Infrastructure Analysis	1	0.8			
2	Azure AD Configuration and Implementation	1	0.6			
3	Performance Evaluation and Testing	1	0.4			
4	Security Assessment	1	0.2			
	Deployment Guidelines	1	0.1			



*Include material for technology field testing/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of beneficiaries/training, duration of training days, cost /training).

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

B. Non-Recurring:

Budget for Permanent Equipment/ Workshed/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.	Laptop	1	0.8
2.			
3.			
4.			

11. Deliverables

Deliverable	Mark ✓	Brief description
Product development/adaptation		
Process development/adaptation		
Technology package for development of the project area and local community		
Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)		
Scientific knowledge and/or data generation leading to technology development in future		
Other (Please specify)		

12. Name and address of experts/ institution interested in the subject / outcome of the project.



Current Address:

A-24, Kendriya Vihar, Sector-56, Gurugram,
Permanent Address:
10/A, Patel Nagar, Near Khwaja Khanon, Fort
Road, Gwalior
Phone : **9873541955**
E-mail : **dineshrai76@gmail.com**



Dr. Dinesh Rai

Objective

I look forward to a challenging career in a good and fast growing organization to contribute the best of my knowledge, skill and ability in the uplifting of organization.

Academic Profile

- High School from M.P. Board, Bhopal in 1991 securing 77.23% marks.
- Higher Secondary from M.P. Board, Bhopal in 1993 securing 68.4% marks.
- B.Sc.(PCM) from Govt. (Auto) Model Science College, Gwalior in 1996 securing 59.9% marks.
- M.Sc.(Comp. Sc.) from Jiwaji University, Gwalior in 1998 with 70.6% marks.
- M.Tech(Comp. Tech.) from Engineering College, Raipur in 2003 with 74.6% marks.
- Ph.D. (Computer Engineering) from Monad University, Hapur in 2013.

Present Job

- Working as Professor (Comp. Sc.) in Sushant University, Gurgaon.

Work Experience

- Five and half years as a Lecturer in GLAITM, Mathura.
- Two years as an Asstt. Prof. in DCE, Farrukhnagar.
- Sixteen years as an Asstt. Prof. and Associate Prof. in AIT and SU, Gurgaon.

Research and Publications

- Guided 6 Ph.Ds and currently guiding 9 more Ph.D. scholars
- Published 30 papers in journals
- Published 20 papers in national and international conferences.

Educational Project

- Quarterly Tax Plan System developed for Transport Commissioner Office (M.P.) to maintain the record of tax deposited by various vehicle owners.
- Disease Diagnosis System (An application of data mining) developed to help doctors in diagnosing the disease according to various symptoms and complications.
- Guided students of B.Tech (CSE) (now Alumni) on project 'E-Gas Sewa' to participate and won prize in IBM contest "The Great Mind Challenge."

Personal Profile

Father's Name : Dr. J.S. Rai

Date of Birth : July 15, 1976

Nationality : Indian

Languages Known

Hindi and English

Interest & Activities

Teaching is my first interest. I always try to develop new & interesting way of teaching.



**Extra Curricular
Activities**

- Delivered lectures on use of internet in a program organize by SOMAAS, Jiwaji University for professors and lectures of various departments.
- Participated in various cultural activities in College including debate, drama, 'Kavya Path'.

**Awards and
Recognition**

- Innovative practitioner award (only 5 such awards in India) by wipro mission10x.
- Attended IUCEE workshop and got best candidate award.

I hereby declare that the information given above is true to the best of my knowledge and belief.

(Dinesh Rai)



Utilization Certificate

Certified that grant of ₹ 1,20,000/- (Rupees One Lakh Twenty Thousand Only) sanctioned by the Center of Research and Development, Sushant University, vide letter no. F.No.1/2023-2024/Seed Fund-Nov 23/05 Dated 3rd November 2023 towards financial assistance for the project titled “Implementation of Azure Active Directory for Secure Identity Management and Access Control in Educational Institutions” was utilized for the purpose for which it was sanctioned.

Financial expenditure incurred

Sl. no	Nature of expense	Proposed Expenditure (in Rs)	Expenditure incurred (in Rs)
1	Field Testing	2,10,000	60,000
2	Laptop	80,000	60,000
	Total	₹ 2,90,000	₹ 1,20,000



Principle Investigator

School Of Engg. & Technology
Sushant University
C-55, Gurugram




Accounts Officer

Account & Finance Officer
Sushant University
Gurugram, Haryana

**PROFORMA FOR SUBMISSION OF SEED FUND
PROPOSAL**

Part I: General Information

1. Project Title (should be focused not exceeding 15 words): Green Synthesis of nanoparticles and its interactions with biomembranes
2. i. Name of Principal Investigator: Dr. Monika Khurana
ii. Name of Co-Investigator: Sonam Baghel
3. Collaboration if any, give details of institution(s): Govt. College for Girls, Sec-14, Gurugram
4. Any Project(s) previously sanctioned by any funding agency? If yes give the details: Yes

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)
1	Effect of Gold Nanoparticles Incorporation on Lateral Organization of Model Biomembranes	SB/FT/CS-187/2012	DST-SERB	December 2018	25	Yes, 31 st December 2018

5. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues? No
6. Duration (months): 12 months
7. Enclose the following while submitting the application form:

Duly filled application form (complete with all Annexures)- 2 hard copies	
Bio-data of the PI & Co-I -2 copies	Attached



Part II: Proposal Summary

1. Origin of the Proposal:

(Scientific/Technical rationale for doing this work should be elaborated)

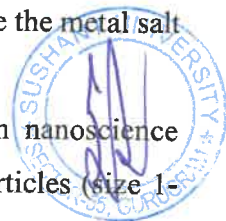
The green synthesis of metal nanoparticles is a fascinating field in material science since it is less toxic, biocompatible and easy to functionalize with biomolecules and it does not require the use of dangerous chemicals. Despite their low yield percentage, green produced metal nanoparticles are interesting prospects for future study fields such as biosensors, nanodrugs and bio-based nanoelectronics. Because of its wide variety of applications in bioscience, green production of noble metal nanoparticles is getting a lot of attention in the chemical and material science fields. Metal nanostructures have a wide range of applications in the biological and medical industries, from antibacterial agents to biosensors (Rao et al., 2020).

Silver nanoparticles (AgNPs) are well-known for their antibacterial, catalytic and optical capabilities, but due to high demand and scarcity, they are exceedingly expensive and difficult to obtain (Rafi et al., 2020). So, Green method motivates us to produce Ag nanoparticles. Liposome research has risen in prominence in the pharmaceutical, biological, and medical fields, as liposomes are thought to be the best carriers for the introduction of a wide range of agents, including anticancer drugs, antibiotics, anti-inflammatory and antifungal agents (Ahmed et al., 2019).

AgNPs have a number of intriguing biological uses. Labeling, delivering, sensing, and heating are the four categories of applications. Because of their unique features, such as their optic, conductivity, and catalytic properties, as well as their biocompatibility, high surface to volume ratio, and density, AgNPs are particularly promising in biological applications. AgNPs have several advantages over colloidal AgNPs commonly utilized in biological applications, including simplicity of production, colloidal stability, and the capacity to be easily conjugated with biological molecules. Finally, because AgNPs are inert, they have better biocompatibility, which is important in most biological applications (Logan et al., 2014). Because of their antibacterial properties, the biosynthesis of AgNPs has been a focus of investigation. Various phytochemicals present act as reducing agent and reduce the metal salt of Ag into metal nanoparticles (Shankar et al., 2004).

Integration of green chemistry principle to nanotechnology is key issue in nanoscience research. There is growing need for environment friendly green nanoparticles (size 1-100nm) that don't use toxic chemicals and avoid adverse effect (Philip, 2010).

The interactions of nanoparticles prepared through green synthesis with cell membranes haven't been explored in detail yet by other researchers. Therefore, it is pertinent to prepare



nanoparticles to study its interactions with cell membranes as it's non-toxic, cost-effective and eco-friendly. The interactions of green nanoparticles and cell membranes will be studied through various biophysical techniques as the interactions between NPs and cell membranes generate not only morphologic but also physicochemical property changes in the membrane (L. Wu & Jiang, 2016).

2. Objectives (Only 4-5 focused one that can be observed, measured or clearly assessable)

1. Preparation of Silver nanoparticles using plant extract through Green synthesis.
2. Characterization and determination of size and shape of the nanoparticles by U.V-visible, FT-IR & TEM techniques.
3. Preparation of nanoparticles loaded cell membranes.
4. Characterization of Interactions of nanoparticles with cell membranes by U.V-visible, FT-IR, TEM, Calorimetry, DLS & fluorescence techniques.

3. Review of status of Research and Development in the subject

3.1 International Status:

The insertion of metal NPs into membranes has affected the phase behavior of the lipids by decreasing the phase transition temperature and increasing the fluidity of the bilayer, according to recent studies on the impact of different metal NPs on membrane stability and/or deformation. Because the polymorphic phase behavior of lipids influences a variety of membrane-related processes, it's become critical to study the effect of nanoparticles interactions with different lipid membranes (Philip, 2010). If very small size NPs (2–8 nm) embedded in the bilayer, it is thermodynamically favorable process shown by computer simulations. The hydrophobic and hydrophilic properties of NPs, on the other hand, play an important role in embedding them in the bilayer. Hydrophilic NPs are typically adsorbed and assembled at the bilayer-water interface, but hydrophobic NPs can easily accumulate in the bilayer's hydrophobic area, which facilitate higher loading of the NPs in the bilayer (Mhashal & Roy, 2014). Nanomaterials' physical, chemical and all kinds of properties are influenced by their size, shape, and surface morphology (Philip, 2010). In this study, the nanoparticles will be prepared from plant extract through green synthesis. The Free radical scavenging molecules such as phenolic compounds, nitrogen compounds, vitamins, reducing sugar, terpenoids, and other metabolites with high antioxidant activity are abundant in most plants. Polyols and antioxidants are abundant in all of the plants utilized to make nanoparticles. In the creation of nanoparticles, the presence of hydroxyl and



carboxylic groups may act as reducing and stabilizing agents. The study of interactions of green nanoparticles with cell membranes will be explored by using various biophysical methods.

Characterization of multilamellar vesicles bulk studies is mostly done using various techniques such as calorimetry, Small angle X-ray spectroscopy, fluorescence spectroscopy, and NMR

Fourier transform-infrared (FT-IR) spectroscopy used to get information about sub molecular structure of liposomes(Wei et al., 2021).

Presence of the AgNPs is confirmed by the diffraction of the X-ray. Size of the AgNPs can be estimated with the help of dynamics light scattering (Rafi et al., 2020). The Scanning electron microscopy (SEM) and Transmission electron microscopy (TEM) are used to determine the structure of AgNPs (Zhang et al., 2020).

The interactions between NPs and model lipid membranes have been studied using three vibrational spectroscopies: Fourier transform infrared (FTIR), Raman, and sum-frequency generation (SFG)(L. Wu & Jiang, 2016).

Transmission electron microscopy (TEM) and Fourier transform infrared (FTIR) spectroscopy, as well as turbidity and rheological measurements, are used to investigate the biophysical characteristics of nanoparticles loaded liposomes (Mady et al., 2012).

The results from above mentioned techniques will confirm that the nanoparticles are successfully encapsulated in the liposomes.

4.

4.1 National Status:

Important area of nanomedicine research is the interaction of nanoparticles with cell and a possible toxicity (Snitka, 2015). Due to their unique properties and potentialities, interest in the synthesis of metal nanoparticles is steadily increasing. Nanoparticles have a high ability to penetrate the plasma membrane and alter the cell's natural processes. The adsorption of NPs onto lipid molecules was thermodynamically advantageous and aided by the nanoparticles' ultrafine size. Nanoparticle encapsulation in lipid vesicles can be accomplished by confining the particles within the aqueous core or the hydrophobic bilayer. Nanoparticles must have two characteristics in order to be embedded in lipid bilayers. They should be reduced in size and have a hydrophobic surface to fit within a lipid bilayer. When nanoparticles are entrapped within bilayers, they can cause lipid packing to shift and lipid-lipid interactions between head groups and/or acyl tails to be disrupted. Changes in lipid bilayer phase behavior can occur when such interlipid interactions are disrupted. The



membrane deforms when some nanoparticles are adsorbed onto the cell surface, and lipids in the constituent bilayers are restructured due to electrostatic interactions between the lipids and nanoparticles (Santhosh et al., 2012)

4.2 Importance of the proposed project in the context of current status: Sensors, drug discovery, drug testing, molecular tools and research probes are all applications for artificial cell membranes. Bilayer is natural host for all proteinaceous moieties, enzymes, antibodies and receptors (Siontorou et al., 2017). Model lipid membranes can interact with many biomolecules like proteins, drugs, ion channels, enzymes, DNA (Peetla et al., 2009). This approach can also be developed to incorporate lipid prodrugs or double prodrugs (Mouritsen, 2011). Asymmetric vesicles could be used for medication encapsulation. The availability of asymmetric vesicles (particularly large vesicles) would enable the creation of vesicles with an inner leaflet lipid composition suitable with the encapsulated medicine and an exterior leaflet lipid composition compatible with the surrounding biological milieu (Cheng et al., 2009). Giant vesicle used as carrier for encapsulate proteins, drugs to carry out specific cell processes, as biochemical reactors for macromolecule synthesis (Xu et al., 2016). LUV liposomes are the best choice for drug membrane interaction (Andrade et al., 2021). Lipid biomimetic models are useful in in-vitro techniques for investigating membrane characteristics and drug interactions. These models may be used to analyze numerous characteristics to predict drug transport, distribution, accumulation, efficacy and toxicity in vivo (Lee et al., 2018) because they can imitate the lipid composition of cell membranes under both healthy and pathological situations (Andrade et al., 2021). Liposomes are an effective way to deliver small Ag NPs intracellularly. Using liposomes as a carrier will improve the cellular uptake of smaller Ag NPs (Mady et al., 2012). Complex of liposomes with nanoparticles has useful application as a nanomedicine with diagnostic and therapeutic ability (Kojima et al., 2008).

Liposomes being biodegradable, non-toxic and non-immunogenic has more advantages over other delivery systems (R. G. Wu et al., 2012). Liposomes are thus extremely adaptable biomimetic models that may be employed in a wide range of investigations. Liposomes can also be used to research membrane processes such fusion, membrane trafficking, cell adhesion, molecular recognition, and pore formation. Liposomes are one of the most advanced medication delivery technologies currently available.

Nanoparticles have several biological and physicochemical applications. In biomedical research, they can be employed for medication delivery, biosensing, bio-imaging and biomolecular recognition. Because of their antimicrobial capabilities, such



nanoparticles are used in a variety of daily items such as cosmetics, toothpaste, deodorants, water purification systems, and humidifiers. They play a major role in agriculture technology, such as detecting and treating plant diseases and lowering nutrient leaching to increase crop yield. They're also used in solar and oxide batteries to store energy.

Silver nanoparticles (Ag NPs) are being used as drug delivery agent, medical diagnostics and as therapeutic agent. Ag NPs are successfully tested as gene delivery agent and in cancer therapy (Mhashal & Roy, 2014). Among all nanostructured materials, silver nanoparticles (Ag NPs) have attracted particular interest due to their stability, biocompatibility, surface plasmon resonance effect and unique catalytic activities. Currently Ag NPs are used in different biomedical applications, such as intracellular gene regulation, chemotherapy and drug delivery, as well as in optical and electronic applications. Owing to the unique optoelectronic properties with their controlled size and morphology, Ag NPs find significance in the field of bionanotechnology as biomarkers, biosensors, cancer diagnostic and vehicles for drug delivery (Mady et al., 2012).

The shape, size, and surface properties of Ag nanoparticles make them ideal for biosensors, hyperthermia therapy, delivery systems for therapeutic drugs, genetic materials, catalytic activity, antibacterial properties, antifungal effect, anti-tumorigenic ability, catalytic activities. Because of Ag nanoparticles; high surface area to volume ratio and small size, Ag nanoparticles interact extensively with the bacterial cell membrane (Zhang et al., 2020)

Novel antibacterial agents, biomaterial and medical device coatings, detection and diagnosis platforms, drug-delivery formulations, tissue regeneration materials, performance-enhanced treatment alternatives and complex healthcare condition solutions have all utilized silver nanoparticles. Fungi, bacteria, enzymes, and plant extracts are commonly used in the green manufacture of silver nanoparticles. The size and morphology of silver nanoparticles determine their activity, which is influenced by the preparation, solvent type and concentration, reducing agent and temperature.

5. Work Plan:

5.1 Methodology:

5.1.1. Preparation of Lipid Vesicles

Lipids are dissolved in chloroform to obtain a concentrated solution. The lipid solution is dried with nitrogen to evaporate the chloroform and the dried lipids are placed in a vacuum desiccator overnight to evaporate any residual liquid.

The dried lipids are then suspended in buffer to form a lipid solution. The lipid solution is



then vortexed and go through 5 freeze-thaw cycles while being vortexed in between each cycle.

Afterwards, the lipid solution is sonicated with an ultrasonic dismembrator for 30 minutes. A pulse mode with a 30% duty cycle (3 second pulse at an amplitude of 60 followed by 7 seconds break) at 0°C is used. The lipid solution is centrifuged for 10 minutes at 15000 rpm to remove any probe particles. The supernatant is transferred into a clean test tube and dried with nitrogen at 4 °C. The stock solution is stored in the refrigerator for several months.

5.1.2. Preparation of plant Extract

A mortar and pestle are used to crush the plant samples. Each plant powder is soaked in distilled water in a 1:100 (w/v) ratio, agitate it for 5 minutes, and store at room temperature. Plant water extracts are filtered through Whatman filter paper No. 1 after 12 hours. Filtrates are centrifuged for 20 minutes at 5000 rpm in a low-speed bench centrifuge to improve clarity. Before usage, the supernatant samples are collected and refrigerated (Hassanisaadi et al., 2021).

5.1.3. Preparation of Silver Nanoparticles (AgNPs)

Silver nitrate ($\text{AgNO}_3 \cdot 6\text{H}_2\text{O}$) is added to plant extract under vigorous stirring at room temperature for green synthesis. The resulting combination is centrifuged for 5 minutes after 24 hours. The produced AgNPs are rinsed with deionized water and dried in an oven (Alamdari-palangi et al., 2020).

Within minutes of mixing the plant leaf extract with the AgNO_3 solution, the color change from pale yellow to dark yellow, then colloidal brown. The color change is caused by AgNPs production.

Nano-silver has been shown in research and publications to have negative impacts on persons and the environment. The green technique, on the other hand, allows for harmful chemical-free and environmentally friendly AgNPs synthesis.

5.1.4. Biological synthesis of metal nanoparticles at different pH and temperature

Different parameters, such as reaction time, reactant concentrations, pH, and temperature, can be used to alter the morphological properties of nanoparticles.

Reaction pH: The pH of the reaction media is important in the formation of nanoparticles. The size and shape of nanoparticles are affected by the medium's pH, with large nanoparticles being formed in acidic pH.



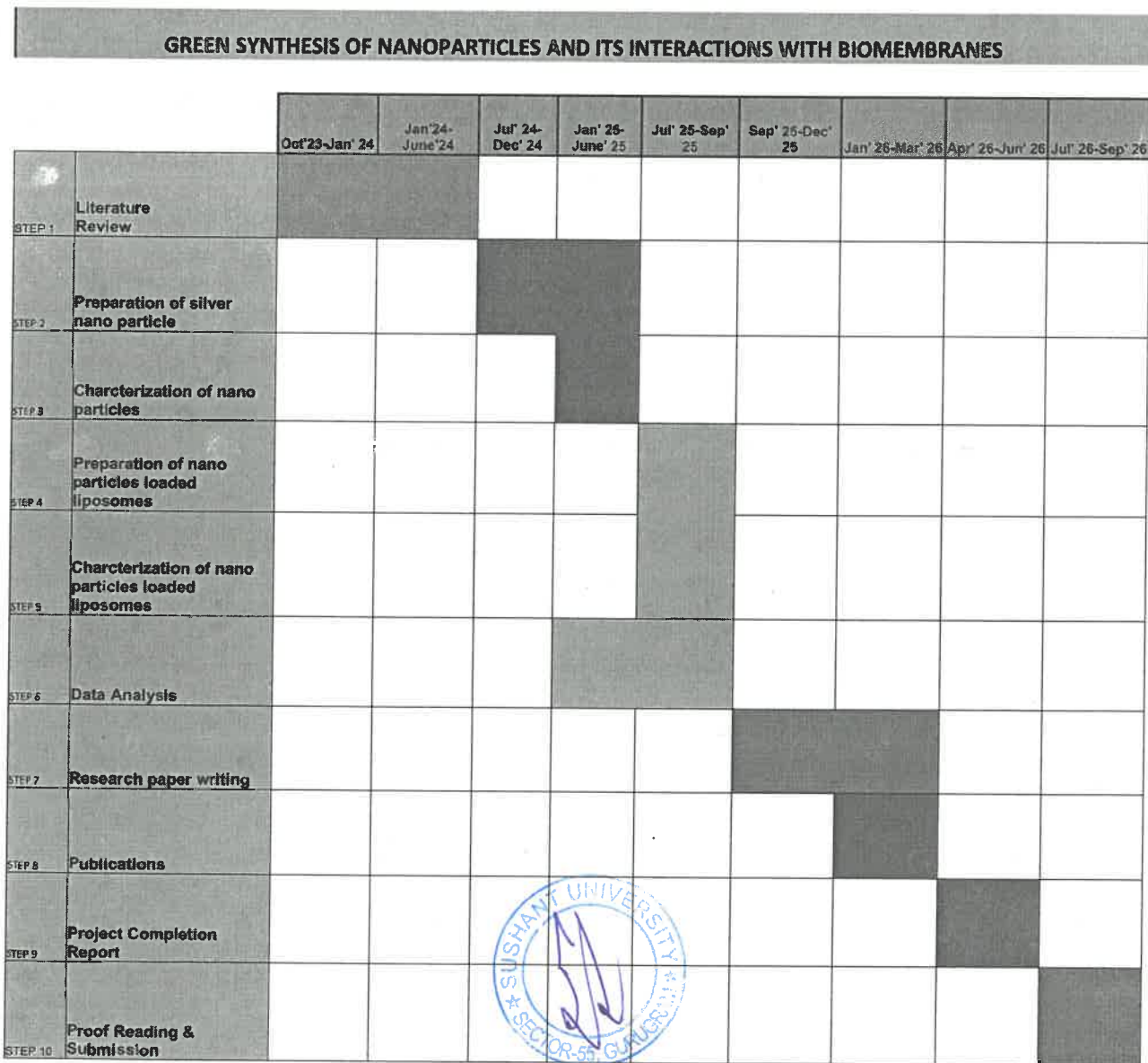
Reactant Concentration: The concentration of biomolecules in the extract also influences the production of metallic nanoparticles.

Reaction Time: The reaction time plays an important role for synthesizing nanoparticles.

Reaction Temperature: The reaction temperature is an important factor in influencing the form, size, and yield of nanoparticles made with plants. A higher temperature promotes the production of Ag nanoparticles at a faster rate. As the reaction temperature rose, the rate of reaction and particle generation increased. The particle conversion rate increased steadily when the reaction temperature was raised to 60°C, and the average particle size reduced. (Zhang et al., 2020).

5.2 Time Schedule of activities giving milestones through Gantt Chart.

Gantt CHART



6. Expertise:

6.1 Expertise available with the investigators in executing the project:

PI is well versed with the topic and have gained expertise in executing the project by already completing the DST sponsored project on effect of gold nanoparticles on lateral organisations of model biomembranes. PI has published several papers related to biomembranes in journals of repute and presented papers in many conferences at national and international level. The preliminary studies have already been carried out by Co-PI on this project and giving us a hope to execute it further for the benefit of the society at large.

6.2 Bibliography

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7. List of facilities required from Sushant University for the project implementation.

7.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	No
2.	Water & Electricity	yes
3.	Laboratory Space/ Furniture	Yes
4.	Power Generator	Yes
5.	AC Room or AC	Yes
6.	Telecommunication including e-mail & fax	Yes
7.	Transportation	Yes
8.	Administrative/ Secretarial support	No
9.	Information facilities like Internet/Library	Yes
10.	Computational facilities	Yes
12.	Any other special facility being provided	No

7.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI's department	UV-Vis spectrophotometer	Shimadzu 1800 UV spectrophotometer, 2010	None, 100% usage
PI's Department	FT-IR	Shimadzu IR Affinity-1S WL, Toshvin Analytical Pvt. Ltd., 2016	Temperature controlled accessory, 100% usage
Other Institute(s) in the region			

7.3 Total Budget (Rs. in Lakhs):

- Recurring Cost (Rs): 2,03000
- Non-Recurring Cost (Rs): 1,00000



Sl. No.	Item	Budget			
		1 st Yr	2 nd Yr	3 rd Yr	Total
A	Recurring				
	1. Manpower				
	2. Consumables	60000	60000	60000	180000
	3. Travel	1000	2000	2000	5000
	4. Field testing, Demo/ Training expenses (if applicable)	5000	5000	5000	15000
	5. Contingencies/Other costs	1000	1000	1000	3000
	6. Institutional Overheads*				
	7. Any other item				

B	Non-Recurring Permanent equipment Construction of work shed/structures Fabrication of prototype equipment	100000			
	Grand Total (A+B)	167000	68000	68000	203000

A. Recurring:

1. Budget for Manpower

Sl. No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	Budget (Rs. in lakhs)			
					1 st Yr	2 nd Yr	3 rd Yr	Total
	NA							

2. Budget for Consumables*

Sl. No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
1	Silver Nitrate	1	5000	5000	5000	15000
2	Chloroauric acid	1	19000	19000	19000	57000
3	Ethanol	2	1000	1000	1000	3000
4	DPPH	1	5000	5000	5000	15000
5	DPPC Lipid	1	20000	20000	20000	60000
6	DMPC	1	10000	10000	10000	30000
	Total	7	60000	60000	60000	180000

*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel

Sl. No.	Purpose	Budget (Rs. in lakhs)			
		1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Project logistics	1000	2000	2000	5000
2.	Field activities				
3.	Review meetings (if elsewhere)				

4. Field Testing/ Demo/ Trainings*

Sl. No	Description of field testing/demos /trainings	No/Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
1	Transmission Electron Microscopy	4	1000	2000	2000	5000
2	X-ray Diffractometer	4	1000	2000	2000	5000
3	Dynamic Light Scattering	5	1000	2000	2000	5000

*Include material for technology field testing/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of beneficiaries/training, duration of training days, cost /training).

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)			Total
			1 st Yr	2 nd Yr	3 rd Yr	
1	Servicing of equipment	1	1000	1000	1000	3000

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

B. Non-Recurring:

Budget for Permanent Equipment/ Workshed/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.	Speed vac	1	100000
2.			
3.			
4.			

8. Deliverables

Deliverable	Mark ✓	Brief description
Product development/adaptation		
Process development/adaptation		
Technology package for development of the project area and local community		
Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)		
Scientific knowledge and/or data generation leading to technology development in future		
Other (Please specify)		

9. Name and address of experts/ institution interested in the subject / outcome of the project.

1. Delhi Univerity, Delhi
2. Panjab University, Chandigarh
3. Kurukshetra University, Kurukshetra



Dr. MONIKA KHURANA
Address: J-52, DLF Ridgewood Estate
DLF Phase 4
Sector 27, Gurugram-122009
Tel: 9899001422 (mobile)

CURRICULUM VITAE
Date of Birth: 3rd August 1979
Marital Status: Married
Nationality: Indian
Email: mkhurana79@gmail.com

TEACHING EXPERIENCE (15 Years)

Associate Professor, Physical Chemistry, Department of Applied Sciences, School of Engineering and Technology, **Sushant University**, Gurugram (**August 2012-Present**)
Assistant Professor, Physical Chemistry, School of Applied Sciences and Humanities, **Ansal Institute of Technology**, Gurugram (**July 2008 – July 2012**)

ADMINISTRATIVE EXPERIENCE

PhD Programme Coordinator, All schools across Sushant University (200+ scholars)
(**June 2015 – Present**)

POST-DOCTORATE RESEARCH EXPERIENCE

August 2006-May 2007
Post Doctorate Fellow
Emory University, Atlanta, GA, USA
Supervisor: Prof. Ivan Rasnik

EDUCATIONAL QUALIFICATIONS

January 2003- March 2006
PhD - Biophysical Chemistry
International Max-Planck Research
School in Chemical Biology (IMPRS-CB)
Max-Planck Institute of Molecular Physiology,
Dortmund, Germany
Dissertation Topic: X-Ray Reflectivity Studies of
Solid-Supported Model Biomembranes
Supervisor: Prof. Roland Winter

June 1999 – April 2001
M. Sc. (Hons. School) in Chemistry
Chemistry Department
Panjab University, Chandigarh, India
Received First Class with 66.8%
Supervisor: Prof. Paloth Venugopalan

June 1996 – April 1999
B. Sc. (Hons. School) in Chemistry
Chemistry Department
Panjab University, Chandigarh, India



SPONSORED RESEARCH PROJECT

Project entitled "Effect of Gold Nanoparticles Incorporation on Lateral Organization of Model Biomembranes" sanctioned and approved by DST-SERB (Rs. 25 Lakhs) – Completed as PI

AWARDS & HONOURS

- ✓ FAST track grant for Young Investigators, DST (2015-2018)
- ✓ Awarded Best Poster in a conference on Recent trends on New Frontiers in Biotechnology, Science, Health and Medicine held at Invertis University, Bareilly (September 2016)
- ✓ Post-Doctorate Research Fellowship Emory University, Atlanta, GA USA (2006-2007)
- ✓ Doctoral Research Fellowship Max-Planck Institute of Molecular Physiology, Dortmund, Germany (2003-2006)
- ✓ Second highest score in **Master's thesis project** among 2001 graduating class, Panjab University, Chandigarh

RESEARCH INTERESTS/AREAS

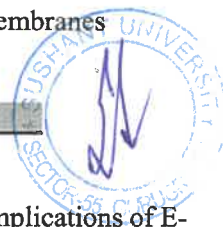
Structure, Dynamics and Phase Behaviour of Model Biomembrane Systems
Solid Supported Biomembranes
Lipid-Peptide/Protein Interactions
Biophysical characterization of Lipid Systems and Lipid Rafts
Interactions of Gold Nanoparticle with Lipid Membranes

RESEARCH SKILLS

- Structural:** X-ray Reflectivity and X-ray Crystallography, Small Angle Neutron Scattering (SANS)
- Spectroscopy:** Fourier Transform Infrared Spectroscopy (FT-IR), Differential Scanning Calorimetry (DSC), Pressure Perturbation Calorimetry (PPC), UV-Visible Spectroscopy (UV-Vis), Fluorescence Spectroscopy, Dynamic Light Scattering (DLS), Nuclear Magnetic Resonance (NMR) spectroscopy
- Microscopy:** Transmission Electron Microscopy (TEM) and Scanning Electron Microscopy (SEM)
- Preparation:** Liposomes and Peptide Reconstitution, Solid Supported Model Biomembranes on Silicon Wafer, Thin Film Deposition, Spin Coating

JOURNAL PUBLICATIONS

1. Osheen Kumar Sharma, Yash Gupta & Monika Khurana* A review on Management and Implications of E-waste in India
South India Journal of Social Sciences, **2023**, XXI(1), 92-102. (UGC-Care)
2. Sonam Baghel & Monika Khurana* A Comprehensive Understanding of Model Lipid Membranes: Concepts to Applications
Journal of Korean Chemical Society, **2023**, 67, 89-98. (SCOPUS, ESCI)
3. Monika Khurana, Vikas Poply & Reshma Nagpal Challenges and Opportunities of E-Learning in Education in the 21st Century
SAMRIDDHI: A Journal of Physical Sciences, Engineering and Technology, **2022**, 14(4) 143-146.
4. Swati Mishra & Monika Khurana* A snapshot Review - In vitro characterization of lipid membranes and their applications.
MRS Advances, **2022**, 7, 551-561 (SCOPUS, ESCI)
5. Monika Khurana, Renewable Biocomposites: An Overview
Advanced Scientific Research, **2021**, 5, 5-7.
6. Parushi Singh Kunwar, Asmita Singh, Mohd. Kaif, Raghavender Shukla and Monika Khurana* Sustainability of Ecotourism in India
Shodh Sanchar Bulletin, **2021**, 11, 24-27. (UGC-Care)



7. Darshika Khandelwal Harshita Bisht Oorja Singh, Paras Chaudhary and Monika Khurana* Covid 19 and its Multifaceted Impact on Student Life
Shodh Sarita, **2021**, 8, 26-31. (UGC-Care)
8. Saravanabharathi, D.; Monika.; Venugopalan, P.; Samuelson, A.G.
Solid State Structural and Solution Studies on the Formation of a Flexible Cavity for Anions by Copper (I) and 1,2-bis(diphenylphosphino)ethane.

Polyhedron, **2002**, 21, 2433-2443.
Impact Factor: 2.6 (SCOPUS, SCI)
9. Parkson Lee-Gau Chong, Revanur Ravindra, Monika Khurana, Verrica English, and Roland Winter
Pressure Perturbation and Differential Scanning Calorimetric Studies of Bipolar Tetraether Liposomes Derived from the Thermoacidophilic Archaeon Sulfolobus Acidocaldarius.
Biophysical Journal, **2005**, 89, 1841-1849.
Impact Factor: 3.6 (SCOPUS, SCI)
10. Chiara Nicolini, Julia Kraineva Monika Khurana, Nagarajan Periasamy, Sergio Funari and Roland Winter
Temperature and pressure effects on structural and conformational properties of POPC/SM/Chol model raft mixtures – a FT-IR, SAXS, DSC, PPC and Laurdan fluorescence spectroscopy study

Biochimica et Biophysica Acta – Biomembranes, **2006**, 1758, 248-258.
Impact Factor: 3.4 (SCOPUS, SCI)

FULL PAPER PUBLICATIONS IN CONFERENCE PROCEEDINGS

1. Sonam Baghel & Monika Khurana “Green Synthesis of Metal Nanoparticles from different plant extracts in the International Conference on Advanced Technology, Sustainability and Management 2022 jointly organized by School of Engineering & Technology and School of Business, Sushant University, Gurugram, India from 28th July to 29th July 2022.
ISBN No: 978-81-956834-5-1(Paarth Publishers, Dehradun, Uttarakhand)
2. Neelam Vohra and Monika Khurana paper entitled “Importance of Green Chemistry in Modern Techniques and Science” International Conference on contribution of science and technology in progress of world on December 5-7, 2013 at DRDO, Delhi ISBN No: 978-81-86514-40-5 (DESIDOC, DRDO, Delhi)
3. Neelam Vohra and Monika Khurana paper entitled “The Effect of Communication Technology on Balance of Personal Life and Professional work” Bilingual International conference on Informational Technology: Yesterday, Today and Tomorrow on February 19-21, 2015 at DRDO, Delhi ISBN No: 978-81-86514-70-2 (DESIDOC, DRDO, Delhi)
4. Monika Khurana and Neelam Vohra paper entitled “Trends in Education in 21st Century: An Overview” International Conference on Innovative Strategies for Competitiveness and Sustainability in Global Business Environments on March 26-27, 2015 at Ansal University, Gurgaon
ISBN No: 978-93-5128-148-1(Kalpaz Publications, Delhi)
5. Neelam Vohra and Monika Khurana paper entitled “Role of Ethical Issues in Environmental Sustainability Practices” National Conference on IT Innovations & Sustainability: Current Trends & Ethical Issues on October 19-20, 2012 at Ansal University, Gurgaon
ISBN No: 978-93-5062-313-8 (Excel Books, Delhi)
6. Monika Khurana, Lalit Kumar & Aman Kumar paper entitled “Present day scenario of ewaste in India and other developing countries” International Conference on Advanced Technology, Sustainability and Management (IASTM 2021) on 27-28 May, 2021 organised by Sushant University, Gurugram, Haryana
ISBN No: 978-93-92239-00-7 (P. K. Publishers & Distributors, New Delhi)

INTERNATIONAL CONFERENCES/WORKSHOPS

1. Monika Khurana "Characterization of Nanoparticles Incorporated into Lipid Membranes" in the IMMUNFEST – 2023 International Conference organized by Department of Biotechnology, School of Arts and Science Ponnaiyah Ramajayam Institute of Science and technology (PRIST) Deemed to be University, Thanjavur on 28th April 2023.
2. Monika Khurana "In-Vitro Studies of Gold Nanoparticles Interactions with Lipid Membranes" in the International Conference on Multidisciplinary Research perspectives organized by Research Cell and Publication Cell, at the Bhopal School of Social Sciences, Bhopal from 16th February 2023 to 17th February 2023.
3. Sonam Baghel & Monika Khurana "Green Synthesis of Metal Nanoparticles from different plant extracts in the International Conference on Advanced Technology, Sustainability and Management 2022 jointly organized by School of Engineering & Technology and School of Business, Sushant University, Gurugram, India from 28th July to 29th July 2022.
4. Monika Khurana "Effect of Gold Nanoparticles on Phase Behaviour of DPPC Membranes - UV - vis, TEM, FTIR and DSC studies" in International e-Conference on Biopolymers (APA Bioforum 2022) organized by Asian Polymer association in association with IIT Delhi from 14th July – 16th July 2022.
5. Participated in International E-Conference on Environment Sustainability organized by Research & Development Cell under the aegis of IQAC, Govt. P. G. College Rajouri, J&K, India held on June 4th, 2022.
6. Monika Khurana "Biophysical Characterization of Gold Nanoparticles -Lipid Membrane Interactions" in international conference on Recent Trends in Chemical Research -2022 (ICNTR-2022) organized by S.U.S. Govt College, Matak Majri, Indri, Karnal from 29th April – 30th April 2022 (**Best Oral Presentation Award**).
7. Monika Khurana "Revealing Interactions of Gold nanoparticles with Lipid Membranes by Spectroscopic Studies" in international conference on Chemical Advances for Sustainable Development CASD 2022 organized by University College for Women, Koti Hyderabad from 12th April 2022 to 13th April 2022.
8. Monika Khurana " Interactions of Gold Nanoparticles with DPPC Membranes" in international conference on Advances in Smart Materials & Emerging Technologies" organized by Indira Gandhi Delhi Technical University for Women, Delhi from 20th December 2021 to 21st December 2021 (**Invited Lecture**).
9. Monika Khurana participated in international e-conference on "Emerging trends in Life Sciences (ETLS)" organized by dada Patil mahavidyalaya, Karjat, District Ahmednagar on 30th September 2021.
10. Monika Khurana "Emerging Trends in ICT for Higher Education" in International Conference on Business management and Social Innovations organised by Ch. Bansi Lal University, Bhiwani from August 26-27, 2021.
11. Participated in International E-Conference on Covid-19 Pandemic: Challenges, Opportunities & Solutions in front of Higher Education on 21st August 2021 organised by Shankarlal Khandelwal Arts, Science and Commerce College, Akola.
12. Monika Khurana "Assessing the Sustainability of Ecotourism in India: A Review" at UGC sponsored 2nd International Conference on Climate Change and its Effect On Environment, Food & Society during 15th - 16th June 2021 jointly Organized By (Icccefs-2021) Savitribai Phule Pune University, Pune and Department of B.Voc. & Biological Sciences, Arts, Commerce & Science College, Sonai.
13. Monika Khurana "Present day scenario of e-waste in India and other developing countries at IATSM 2021 on 27-28 May, 2021 organised by Sushant University, Gurugram, Haryana
14. Monika Khurana participated at International conference on "Green technology & Sustainable Development" organized by Jagannath University, Jaipur on July 24, 2020
15. Monika Khurana "Artificial intelligence in drug discovery: opportunities and challenges" in 1st Online International Conference on Rebuilding BHARAT with Artificial Intelligence Interventions after COVID-19 Pandemic : Opportunity and Challenges on May 2-3, 2020, organised by Department of Computer Science and Engineering, University School of Information and Communication Technology, Gautam Buddha University, Greater Noida, Uttar Pradesh
16. Delivered an invited talk "Effect of Gold Nanoparticles Incorporated into Dipalmitoylphosphatidylcholine Membranes" at the 5th International Conference on Recent 4 Trends in Materials and Devices (ICRTMD-2019) on December 18-19, 2019, Amity University, Noida
17. Monika Khurana "Characterization of Dipalmitoylphosphatidylcholine Membranes on Solid Support" at the International Conference on Smart Cities on March 8-9, 2019, Ansal University, Gurgaon.

18. Monika Khurana and Kshitiz Kumar "Interactions of Gold nanoparticles with Lipid Membranes- A UV/Visible and FTIR Spectroscopy Studies" at the 3rd International Conference on Nanoscience and Nanotechnology on December 15-16, 2016, Colombo, Sri Lanka.
19. Kshitiz Kumar and Monika Khurana "Gold nanoparticles Interactions with Biomembranes" at the 3rd International Conference on Recent trends on New Frontiers in Biotechnology, Science, Health and Medicine on September 23-24, 2016 at Invertis University, Bareilly.
20. Monika Khurana and Neelam Vohra paper entitled "Trends in Education in 21st Century: An Overview" International Conference on Innovative Strategies for Competitiveness and Sustainability in Global Business Environments on March 26-27, 2015 at Ansal University, Gurgaon
ISBN No: 978-93-5128-148-1(Kalpaz Publications, Delhi)
21. Neelam Vohra and Monika Khurana paper entitled "The Effect of Communication Technology on Balance of Personal Life and Professional work" Bilingual International conference on Informational Technology: Yesterday, Today and Tomorrow on February 19-21, 2015 at DRDO, Delhi ISBN No: 978-81-86514-70-2 (DESIDOC, DRDO, Delhi)
22. Monika Khurana "Biocomposites: A Sustainable Approach" at the International Conference on Strategy, Innovation & Technology (ICSIT 2014) jointly organized by Ansal University and Valparaiso University, Indiana USA during March 12-13, 2014, Ansal University, Gurgaon
23. Monika Khurana and Neelam Vohra "Managing Work Life Balance in an Era of Technology" at the International Conference on Strategy, Innovation & Technology (ICSIT 2014) jointly organized by Ansal University and Valparaiso University, Indiana USA during March 12-13, 2014, Ansal University, Gurgaon
24. Monika Khurana, Sanjeev K. Sharma and Atul Kumar "Gold nanoparticles interactions with Model biomembranes" at the International conference on Nanotechnology "Lessons from Nature and Emerging Technologies" on July 25-26, 2013, Ansal University, Gurgaon
25. Neelam Vohra and Monika Khurana "Importance of Green Chemistry in Modern Techniques and Science" International Conference on contribution of science and technology in progress of world on March 2013 at DRDO, Delhi.
26. Monika Khurana "Structure and Dynamics of Model Biomembranes" at International Conference on Polymers on the Frontiers of Science and Technology on February 21-23, 2013, Panjab University, Chandigarh.
27. Monika Khurana and Neelam Vohra "Green Chemistry: Technological Evolution to Sustain Environment" at International Conference on Interface between Chemistry & Environment on December 13-14, 2012 at Ramjas College, Delhi University, Delhi.
28. Monika Khurana, Claus Czeslik and Roland Winter "Archaeobacterial Membranes: X-Ray Reflectivity and DSC/PPC Calorimetric Studies", October 27, 2005 - Evaluation of the International Max-Planck Research School in Chemical Biology, Max-Planck Institute of Molecular Physiology, Dortmund, Germany.
29. Scientific Retreat of the International Max Planck Research School in Chemical Biology, September 10-13, 2005, Jena, Germany
30. Nagarajan Periasamy, Monika Khurana, and Roland Winter "The Effect of Lateral Membrane Organization, Temperature and Pressure on Lipid Bilayer-Protein Interactions", THPPS 2005 - Trends in High Pressure Protein Science, September 1-3, 2005, Montpellier, France.
31. Workshop Graduiertenkolleg "Struktur-Dynamik Beziehungen in mikrostrukturierten Systemen" December 14, 2004, Witten, Germany
32. Scientific Retreat of the International Max Planck Research School in Chemical Biology, November 11-14, 2004, Rome, Italy
33. Workshop in Presentation Techniques." Course Organized by the International Max Planck Research School in Chemical Biology, November-December 2003, Dortmund, Germany
34. International Bunsen Discussion Meeting "Interfacial Water in Chemistry and Biology", September 19-23,



2003, Velen, Germany

35. Workshop Graduiertenkolleg "Struktur-Dynamik Beziehungen in mikrostrukturierten Systemen", April 9, 2003, Witten, Germany
36. Scientific Retreat of the International Max Planck Research School in Chemical Biology, March 28-30, 2003, Aachen, Germany

NATIONAL CONFERENCES/WORKSHOPS

1. Monika Khurana "Green Synthesis of Gold Nanoparticles using Plant Extract" in National Conference on Chemistry for Sustainable Development – Academia and Industry Perspectives organized by Department of Chemistry, K J Somaiya College of Science and Commerce, Vidyavihar in association with Chemistry Division, BARC, Mumbai from 22nd April -23rd April, 2022.
2. Monika Khurana "X-ray Reflectivity Studies of Lipid Membranes on Solid Support" National web Conference on Novel Trends in Chemical Sciences (NTCS-2021) organized by Govt. Digvijay Auto. P. G. College, Rajnandgaon (C.G.) during 20-21 October, 2021.
3. Monika Khurana "Characterization of Solid Supported Lipid Membranes by X-ray Reflectivity" in E-Symposium on Recent Trends on Applications of Chemistry in Engineering from 4th - 6th June, 2021 organised by Bharat Institute of Engineering and Technology, Ibrahimpatnam, Hyderabad
4. Participated in National Conference entitled Mathematics and its applications in Science and Engineering on May 29, 2021 organized by Government College Satnali, Mahendergarh and Advance Research Educational Society.
5. Participated in National Virtual Conference on Recent Advances in Analytical Techniques – 2020. on August 16-17, 2020 organized by Dept. of Chemistry & ADDP Shri Varshney College Aligarh, Dr. B. R. Ambedkar University Agra, Uttar Pradesh, Centre of Bio-Medical Research Lucknow, Uttar Pradesh in collaboration with Dept. of Chemistry, R.H. Govt. P.G. College, Kashipur, Uttarakhand, Dept. of Chemistry, H.N.B. Govt. P.G. College, Khatima, Uttarakhand & USERC DST Dehradun, Uttarakhand Govt.
6. Monika Khurana "Study of Interactions between Nanoparticles and Biomembranes" National Conference on Chemical Sciences: Opportunities & Challenges on March 19-20, 2018 at St. Stephens College, Delhi University, Delhi
7. Delivered an Invited talk "Structure and Dynamics of Model Biomembranes" in National Conference on "Achievements of women in Science & Technology: Current Scenario and Future Prospects" during January 13-14, 2017 at Chemistry Department, Panjab University, Chandigarh (**Invited Lecture**).
8. Monika Khurana "Effect of Temperature and Humidity on the Structure of the Lipid Bilayers" National Conference on NexGen Biotechnology: Amalgamating science and Technology on November 23-24, 2012 at Kurukshetra University, Kurukshetra
9. Neelam Vohra and Monika Khurana "Role of Ethical Issues in Environmental Sustainability Practices" National Conference on IT Innovations & Sustainability: Current Trends & Ethical Issues on October 19-20, 2012 at Ansal University, Gurgaon
10. Monika Khurana and Neelam Vohra "Fostering Institutional Quality by Promoting Resources and Leadership" Conference on Excellence in Higher Education at IIT Delhi on June 28-30, 2012.
11. Monika Khurana and Neelam Vohra "Development of Sustainable Technology and its Relevance to Chemical Industry." National Conference on Managing Change & Innovation in an era of technological Evolution on April 20-21, 2012

12. Conference on "Revolution in Chemistry: Green Chemistry" December 19, 2008, at Institute of Technology and Management (ITM), Gurgaon

VISITS/ADDITIONAL TRAINING

- July 10th-15th 2005, Synchrotron Measurements at DESY / HASYLAB Hamburg, Germany.
- August 17th-19th 2005, Synchrotron Measurements at DELTA Dortmund, Germany.
- September 21st-24th 2005, Measurements at Spallation Neutron Source (SIMONQ) at Paul Scherrer Institut 5232 Villigen PSI, Switzerland.

ROLES AND RESPONSIBILITIES

- ❖ Ph.D. Programme Coordinator
- ❖ Chief Editor for International Conference on Smart Cities held from March 8-9, 2019 at Ansal University.
- ❖ Guest Editor of Smart and Sustainable Built Environment Journal, Emerald Publishing.
- ❖ Project incharge of the research project entitled "Effect of gold nanoparticles incorporation on lateral organization of model biomembranes" sanctioned by DST-SERB.
- ❖ Faculty in charge-Chemistry Lab
- ❖ Member of Examination Disciplinary Committee
- ❖ Member of Ethical committee
- ❖ Member of Board of Studies (BOS)
- ❖ Member of School Research Committee (SRC)
- ❖ Set up of Biophysical Research Lab at Innovation Centre of Ansal University.
- ❖ Curriculum Development
- ❖ Organizing Secretary for International Conference in Nanotechnology (ICNNANO 2013)
- ❖ Faculty Colloquium Coordinator, AIT
- ❖ Faculty in charge - Library, AIT
- ❖ Member of Departmental Research Committee (DRC), AIT

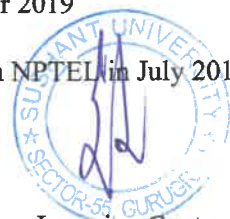
Faculty Development Programmes (FDP's)/Refresher Course/Induction Programme/Workshops/Certificate courses

1. Attended one week Faculty Development Program (FDP) on Advanced Characterization Techniques (ACT-2022) organized by Department of Chemistry, UIS, Chandigarh University from 25th July to 30th July 2022.
2. Attended One week International Short Term Training Programme-3 on "Contrivance of Sustainable Development Goals (SDGs) for Environmental Conservation" organized by Raj Rishi Govt. Autonomous College, Alwar, Rajasthan from 24th -30th June 2022.
3. Attended one week Faculty Development Program (FDP) on Chemical Sciences: Recent Approaches and Applications (CSRAA-2022) organized by Chandigarh University in Collaboration with Indian Chemical Society (ICS), Kolkata from 6th June to 10th June 2022.
4. Attended one week National Level FDP on "Emerging Trends in Applied Chemistry: A Step Towards Sustainable Development (ETAC-SSD: 2022)" organized by Faculty of Science, SGT University, Gurugram, Haryana from 30th May to 4th June 2022.
5. Attended one Week National Workshop cum FDP on "NAAC revised guidelines: A paradigm shift in quality initiatives" sponsored by UGC under Paramarsh Scheme from 26th July - 1st August 2021 organised by Career College, Bhopal
6. Completed Certificate course cum workshop of 32 hours on "Mastering Excel: Tour from Beginners to Advance" organized by S. D. College, Ambala Cantt from 21st July 2021 to 30th July 2021.

7. Attended one week National Level **FDP** on “Transformation in Indian Education through New Education Policy- Challenges and Opportunities” sponsored by UGC under Paramarsh Scheme held from 05-07-2021 to 11-07-2021 by Government First Grade College for Women, Balmatta, Mangalore and St Aloysius College (Autonomous), Mangalore.
8. Attended one week **FDP** on “Interactive Teaching Learning Strategies With Affective & Cognitive Approach (ITLS)” organized by PVG’s COET & GKPIM, Pune from 21st June to 25th June 2021.
9. Completed 10 days **certificate course** on “Learn R- The Statistical Programming Language” organized by S. D. College, Ambala Cantt from 10th June to 19th June 2021.
10. Completed **Certificate course** cum workshop of 32 hours on Designing Captivating Presentations with Power Point” organized by S. D. College, Ambala Cantt from 15th may 2021 to 24th May 2021.
11. Completed AICTE-ISTE approved one week **Refresher Programme** on Innovative Teaching-Learning Methods organised by Vidya Pratishthan’s Kamalnayan Bajaj Institute of Engineering and Technology, Baramati, Pune, Maharashtra during 22nd April 2021 to 28th April 2021.
12. Attended one week **FDP** on Development of Teacher's e-kit and MOOCs in Four Quadrant Format of e-Content organized by University of Delhi from 12-20th September 2020 (Grade A+)
13. Attended five day **FDP** on Innovative Teaching Learning Methodologies organized by Coimbatore Institute of Technology, Coimbatore, Tamilnadu from 6-10th July 2020 (90% score)
14. Completed one month **Induction/Orientation Programme** organized by Ramanujan College, university of Delhi From June 4, 2020 – July 1, 2020 (Grade A+)
15. Attended online **Professional Development Programme** on E-Content development for MOOCs and Online Teaching organized by JMI, New Delhi from May 27-28, 2020
16. **Completed workshop** on Comprehensive e-Learning to e-Training guide for Administrative Work organized by Ramanujan College, university of Delhi From May 25, 2020 – June 5, 2020 (Grade A+).
17. Completed one week **FDP** on Introduction to Research through NPTEL in December 2019
18. Completed one and half week **FDP** on Non-Conventional Energy Resources through NPTEL in July 2019

Webinars Attended (Approved by UGC) - Equivalent to National Seminar

1. Implementation of Academic Bank of Credits organized by Guru Angad Dev Teaching Learning Centre, SGTB Khalsa College, University of Delhi on July 10, 2021
2. Promotional Avenues for Teachers in Higher Education: CAS Regulations – 2018 organized by Guru Angad Dev Teaching Learning Centre, SGTB Khalsa College, University of Delhi on September 5, 2020
3. Unravelling the National Educational Policy organized by Guru Angad Dev Teaching Learning Centre, SGTB Khalsa College, University of Delhi on August 9, 2020
4. Empowering Chemistry Teachers for 21st Century Higher Education organized by Guru Angad Dev Teaching Learning Centre, SGTB Khalsa College, University of Delhi on July 28-29, 2020
5. Teaching During and Post COVID Times organized by Guru Angad Dev Teaching Learning Centre, SGTB



Khalsa College, University of Delhi on June 12, 2020

6. Women in Higher Education: Issues and Challenges during Corona Pandemic organized by Guru Angad Dev Teaching Learning Centre, SGTB Khalsa College, University of Delhi on May 27, 2020
7. e-Content Development Methodology: Four Quadrant Model, OERs and Copyright Issues organized by Guru Angad Dev Teaching Learning Centre, SGTB Khalsa College, University of Delhi on May 15, 2020
8. Corona Pandemic and Economic challenges in India organized by Guru Angad Dev Teaching Learning Centre, SGTB Khalsa College, University of Delhi on May 4, 2020
9. Towards excellence in higher education in india in the 21st century organized by Guru Angad Dev Teaching Learning Centre, SGTB Khalsa College, University of Delhi on May 1, 2020
10. Enhancing Research Effectiveness using Scopus, Sciencedirect and Mendeley organized by Kurukshetra University on May 1, 2020.
11. Green Consumerism organized by Indian Institute of Public Administration, New Delhi on June 19, 2012.



Utilization Certificate

Certified that grant of ₹ 2,05,000/- (Rupees Two Lakh Five Thousand Only) sanctioned by the Center of Research and Development, Sushant University, vide letter no. F.No.1/2023-2024/Seed Fund-Nov 23/06 Dated 3rd November 2023, financial assistance for the project titled “Green Synthesis of Nanoparticles and its Interactions with BioMembrane” was utilized for the purpose for which it was sanctioned.


Financial expenditure incurred

Sl.no	Nature of expense	Proposed Expenditure (in Rs.)	Expenditure incurred (in Rs.)
1	Field testing	15,000	15,000
2	Travel	5,000	5,000
3	Consumables	1,80,000	1,80,000
4	Contingencies	3,000	3,000
5	Equipment	1,00,000	1,02,000
	Total	₹ 2,03,000	₹ 2,05,000


Principle Investigator

School Of Engg. & Technology
Sushant University,
Sector 55, Gurugram




Accounts Officer
Account & Finance Officer
Sushant University
Gurugram, Haryana

PROFORMA FOR SUBMISSION OF SEED FUND PROPOSAL

Part I: General Information

1. Project Title (should be focused not exceeding 15 words):

Spatial analysis of Natural Conservation Zone (NCZ) in Gurugram: A GIS study

2. i. Name of Principal Investigator: Dr. Himadri S Dey

ii. Name of Co-Investigator: ----- NA---

3. Collaboration if any, give details of institution(s)

- Maharana Mewar Charitable Foundation, City palace, Udaipur
- Heritage Cell, Udaipur Municipal Corporation
- DROHER, Jaipur

4. Any Project(s) previously sanctioned by any funding agency? If yes give the details:

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)
1.	Mewar Architectural Styles		MMCF	In progress	5.	Project not completed

5. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues? NO

6. Duration (months): 18 Months

7. Enclose the following while submitting the application form:

Duly filled application form (complete with all Annexures)- 2 hard copies	Yes
Bio-data of the PI & Co-I -2 copies	Yes



Part II: Proposal Summary

1. Origin of the Proposal:

Architecture has been a subjective discipline often open to interpretation to various knowledge systems devised over a period of time. The current governance in Bharat has been focusing of reviving indigenous knowledge systems in order to regain the long lost wisdom of the land. Building processes in one of the longest serving dynasties of the worlds is evident with patronage from singular lineage of royalty yet getting influences from multi-dimensional developments couples with change of power at Delhi. The investigation wants to bring out the salient features of the development of architecture in Mewar dynasty through the lens of indigenous knowledge systems for building built between 13th to 20th century.

2. Objectives

i.	To Study the background history of Mewar dynasty
ii.	To Document the architectural vocabulary of architectural and structural elements found in various public buildings of Chittorgarh, Udaipur, Nagda and Khumbalgarh
iii.	To analyze the architectural evolution and recommend to cultural linkages for the same.

3. Review of status of Research and Development in the subject

3.1 International Status:

This project is associated with regional sentiments, yet Udaipur being on the world tourism map, also becomes a point of interest for international community.

3.2 National Status:

The ideology through this investigation is to develop a perspective and methodology to verify architecture of a place through Indigenous Knowledge systems approach. Once this system of validation is established the process can be used to multiply its effect and look at architecture of other regions through similar approach.

3.3 Importance of the proposed project in the context of current status

The investigation aims at bridging the gap in regional understanding of the stylistic architecture and the rationale for its evolution. Udaipur, in present times, is witnessing a number of construction activities influenced by traditional styles. This study would help the industry that manufactures these architectural and structural elements in cement that look alike the traditional styles.

4. Work Plan:



4.1 Methodology:

Stage 1 – Background studies

- Research about the history of places that includes – Nagda, Chittorgarh, Kumbhalgarh & Udaipur.
- Through the history establish major milestones in construction activities that was achieved between the study period of 13th – 20th century
- Identification of buildings that got constructed in the major milestones in Mewar's history
- Carrying out secondary studies to identify the architectural/ structural element that needs to be documented for the project research.

Stage 2 – Primary study visits – field documentation

- Carrying out a documentation plan to document the architectural and structural details along with their ornamentation details
- Drafting a field survey plan along with the available human resource at disposal for the execution of field surveys and documentation.
- On site study – measurements of the architectural and structural elements to be taken by the survey team.

Stage 3 – Digitization of field documentation

- Conversion of digital editable formats using open source software to develop digital imprints of the architectural and structural elements measured on site with the help of Draftsmen employed for the project.

Stage 4 – Analysis of gathered information & Identification of gap

- Using the background research, verifying and checking the documented work for building up the narrative.
- Sequential analysis to develop the basis for evolution of architecture of Mewar.
- Identification of gap in respective architectural and structural elements, carrying out necessary background research to identify the building and components that needs to be further documented.

Stage 5 – Verification and field documentation to cover up the gap.

- Carrying out a documentation plan to document the architectural and structural details along with their ornamentation details
- Drafting a field survey plan along with the available human resource at disposal for the execution of field surveys and documentation.
- On site study – measurements of the architectural and structural elements to be taken by the survey team.

Stage 6– Project finalization & compilation

- Final compilation of project and document conversion and closing of project

4.2 Time Schedule of activities giving milestones through Gantt Chart.



	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J
	e	a	p	a	u	u	u	e	ct	o	e	a	e	a	p	a	u	u
	2	2	2	2	e	y	2	t	0	2	2	2	2	2	2	2	e	y
	0	0	0	0	2	2	0	2	2	0	0	0	0	0	0	0	2	2
	2	2	2	2	0	0	2	0	4	2	2	2	2	2	2	2	0	0
	4	4	4	4	2	2	4	2		4	4	5	5	5	5	2	2	
					4	4		4								5	5	
Background research																		
Primary study visits – field documentation																		
Digitization of field documentation																		
Analysis of gathered information & Identification of gap																		
Verification and field documentation to cover up the gap.																		
Project finalization & compilation																		

5. Expertise:

5.1 Expertise available with the investigators in executing the project:

Principal Investigator has immense experience in handling research activities related to historic architectural studies. In past, the PI has also received research grants for carrying out investigations related to Heritage Studies. The detailed CV attached with the application form has all details of past experiences, for the aforementioned project.

5.2 Bibliography

6. List of facilities required from Sushant University for the project implementation.

6.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	No
2.	Water & Electricity	No
3.	Laboratory Space/ Furniture	No



4.	Power Generator	No
5.	AC Room or AC	No
6.	Telecommunication including e-mail & fax	No
7.	Transportation	Yes
8.	Administrative/ Secretarial support	Yes
9.	Information facilities like Internet/Library	Yes
10.	Computational facilities	Yes
12.	Any other special facility being provided	Stay Arrangements at the Area of study

6.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group	---	---	---
PI's Department	---	---	---
Other Institute(s) in the region	---	---	---

6.3 Total Budget (Rs. in Lakhs):1.94 Lakhs

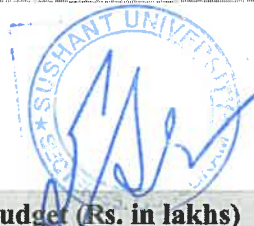
- Recurring Cost (Rs): **1.34**
- Non-Recurring Cost (Rs): **0.5**

Sl. No.	Item	Budget			
		1 st Yr	2 nd Yr	3 rd Yr	Total
A	Recurring				
	1. Manpower	50,000	25,000	--	75,000
	2. Consumables	10,000	2,000	--	12,000
	3. Travel	20,000	5,000	--	25,000
	4. Field testing, Demo/ Training expenses (if applicable)	--	--	--	--
	5. Contingencies/Other costs	--	--	--	--
	6. Institutional Overheads*	--	--	--	--
	7. Any other item	--	--	--	--
B	Non-Recurring				
	Permanent equipment	50,000	--	--	50,000
	Construction of work shed/structures Fabrication of prototype equipment	--	--	--	--
	Grand Total (A+B)	1,30,000	32,000	--	1,62,000

A. Recurring:

1. Budget for Manpower

Sl.	Designation	No.	Qualification &	Monthly emolumen	Budget (Rs. in lakhs)
-----	-------------	-----	-----------------	------------------	-----------------------



No.		experience	t (Rs)	1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Field Surveyor	2 B.Arch	10,000	40,000	10,000		50,000
2.	Draftsman	1 Diploma in Arch.	10,000	10,000	15,000		25,000

2. Budget for Consumables*

Sl. No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel

Sl. No.	Purpose	Budget (Rs. in lakhs)			
		1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Project logistics	5,000	--	--	5,000
2.	Field activities	15,000	5,000	--	20,000
3.	Review meetings (if elsewhere)	--	--	--	--

4. Field Testing/ Demo/ Trainings*

Sl. No	Description of field testing/demos /trainings	No/Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
			--	--	--	--

*Include material for technology field testing/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of beneficiaries/training, duration of training days, cost /training).

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
	Documentation, Field works		10,000	5,000	--	15,000

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

B. Non-Recurring:

Budget for Permanent Equipment/ Workshed/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.	Laptop – with desired graphics handling capacity	1	50,000
2.			
3.			
4.			

7. Deliverables



Deliverable	Mark ✓	Brief description
Product development/adaptation	✓	
Process development/adaptation	✓	
Technology package for development of the project area and local community	✓	
Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)		
Scientific knowledge and/or data generation leading to technology development in future		
Other (Please specify)		

8. Name and address of experts/ institution interested in the subject / outcome of the project.

1. Maharana of Mewar Charitable Foundation
The City palace, Udaipur – 313001, Rajasthan, India
2. Heritage Cell, Udaipur Municipal Corporation,
Town Hall Link Road, Udaipur, Rajasthan, 313001
3. DROHER
B-16, Durgadas Colony, C scheme, Bhawani Singh Road, Jaipur, Rajasthan



Utilization Certificate

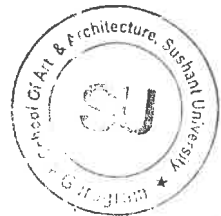
Certified that grant of ₹ 1,36,000/- (Rupees One Lakh Thirty Six Thousand Only) sanctioned by the Center of Research and Development, Sushant University, vide letter no. F.No.1/2023-2024/Seed Fund-Nov 23/07 Dated 8th November 2023 towards financial assistance for the project titled “Spatial analysis of Natural Conservation Zone (NCZ) in Gurugram: A GIS study” was utilized for the purpose for which it was sanctioned.

Financial expenditure incurred

Sl.no	Nature of expense	Proposed Expenditure (in Rs.)	Expenditure incurred (in Rs.)
1	Manpower	75,000	66,000
2	Travel	25,000	16,000
3	Consumables	12,000	13,000
4	Equipment	50,000	41,000
	Total	₹ 1,62,000	₹ 1,36,000



Principle Investigator




Accounts Officer

**Account & Finance Officer
Sushant University
Gurugram, Haryana**

PROFORMA FOR SUBMISSION OF SEED FUND PROPOSAL

Part I: General Information

1. Project Title (should be focused not exceeding 15 words): Enhancing the Efficacy and Environmental Sustainability of Biopesticides through Nano Formulation
2. i. Name of Principal Investigator: Dr. Neelam
ii. Name of Co-Investigator: NA
3. Collaboration if any, give details of institution(s): NA
4. Any Project(s) previously sanctioned by any funding agency? If yes give the details: NA

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)

5. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues?: NA
6. Duration (months): 18
7. Enclose the following while submitting the application form:

Duly filled application form (complete with all Annexures)- 2 hard copies	
Bio-data of the PI & Co-I -2 copies	



Part II: Proposal Summary

1. Origin of the Proposal: (Maximum 1 page)
(Scientific/Technical rationale for doing this work should be elaborated)

The problem at hand is to overcome the limitations of traditional biopesticides and improve their overall effectiveness and environmental sustainability through the application of nanotechnology. Nano formulation involves the incorporation of biopesticides into nanoscale carriers or matrices, which can significantly enhance their properties, performance, and application methods. The main challenges in the aspect of the problem are:

1. **Stability and Shelf Life:** Biopesticides are susceptible to degradation from environmental factors such as temperature, UV radiation, and humidity. Nano formulation aims to protect the active ingredients, increasing their stability and extending the shelf life of the products.
2. **Solubility and Dispersion:** Many biopesticides have limited solubility in water, which affects their efficacy when applied as sprays or through irrigation systems. Nano formulation can improve the dispersibility and solubility of biopesticides, ensuring better coverage and absorption by target pests.
3. **Targeted Delivery:** Conventional biopesticides often lack selectivity, affecting both beneficial and harmful organisms. Designing nano formulations with specific targeting mechanisms makes it possible to deliver the biopesticides directly to the pests while reducing non-target exposure.
4. **Improved Efficacy:** Nano formulation can enhance the bioavailability and bioactivity of biopesticides, resulting in improved pest control and reducing the amount of active ingredients needed for effective treatment.
5. **Reduced Environmental Impact:** Utilizing nano formulation techniques can lead to a more controlled release of biopesticides, minimizing their off-target movement and potential environmental contamination.

2. Objectives (Only 4-5 focused one that can be observed, measured or clearly assessable)

- | |
|---|
| i. To Formulate a stable and effective nanoemulsion of cinnamon oil as a biopesticide. |
| ii. To Evaluate the biopesticide's efficacy against common agricultural pests. |
| iii. To protect the biopesticide from degradation caused by environmental factors by using nanoformulation. |



3. Review of status of Research and Development in the subject:

In 2013, Babu et al. concluded that nanoformulation of cinnamon essential oil could be an effective mosquitocidal agent. They found that the nanoformulation was more effective than the free essential oil in killing *Aedes aegypti* larvae.

In 2020, Suresh et al. concluded that nanoformulation of lemongrass and cinnamon essential oils could effectively control cockroaches and ants. They found that the nanoformulation was effective in killing cockroaches and ants at a concentration of 10%.

In 2022, Suresh et al. concluded that nanoformulation of lemongrass and cinnamon essential oils could effectively control vector-borne diseases. They found that the nanoformulation was

effective in killing mosquitoes that transmit malaria and dengue.

3.1 International Status: (Maximum 2 pages)

(Researchers working in the area worldwide and their contributions must be properly highlighted with recent references and reviews. A correct and faithful description of the international research status must be given)

This proposal outlines a seed money project aimed at developing a cutting-edge biopesticide nanoformulation using cinnamon extracts to revolutionize sustainable crop protection. The project aims to harness the inherent properties of cinnamon as a natural pesticide while leveraging nanotechnology to enhance its effectiveness, stability, and eco-friendliness

3.2 National Status: (Maximum 1 page)

(Same as above to cover the contribution of Indian Scientists in the project area)

This report presents the preliminary investigation conducted for the development of a biopesticide nanoformulation using cinnamon oil. The aim of this investigation was to assess the feasibility of using cinnamon oil as a potential natural pesticide and to explore the initial steps for its nanoformulation. The project intends to provide a sustainable and eco-friendly crop protection solution while reducing conventional chemical pesticides' environmental impact.

3.3 Importance of the proposed project in the context of current status (Maximum 1 page)

(Highlight what is the new area or gap which will be solved in the project in relating to what is already known. This is a very important section to project the novelty content of the proposal)

The reason behind the selection of the oils (Cinnamon) is that most of the oils have been tested for molluscicide, insecticidal, and acaricidal activity in other studies.

Further, Cinnamon oil has a higher level of toxicity for all types of nematodes. In contrast, other has somewhat limited activity, but both have synergistic action and are readily biodegradable. Hence a cinnamon would be a good candidate for insect pest management.

Developing a nano-formulation using Polysaccharides for sustained release will be ideal in agriculture. Polysaccharides are molecules that are widely distributed in nature, composed of monosaccharides linked by glycosidic bonds. The advantages of these compounds include low cost and high availability, which can facilitate large-scale production

As of my last update in September 2021, nanoemulsion biopesticides are a promising area of research and development in the field of agriculture. A nanoemulsion is a stable mixture of oil and water that contains very small droplets of one liquid dispersed in the other. When used as a carrier for biopesticides, nanoemulsions can enhance the effectiveness of the active ingredients and improve their delivery to target pests.

Cinnamon is a natural substance that has shown some potential as a biopesticide due to its pesticidal and antimicrobial properties. It's important to note the actual impact of cinnamon nano emulsion biopesticide will depend on several factors, including the specific formulation, application method, target pests and environmental conditions. Additionally, Regulatory approval and commercial availability will play a significant role in determining the widespread adoption and impact of such product in agriculture.

4. Work Plan:



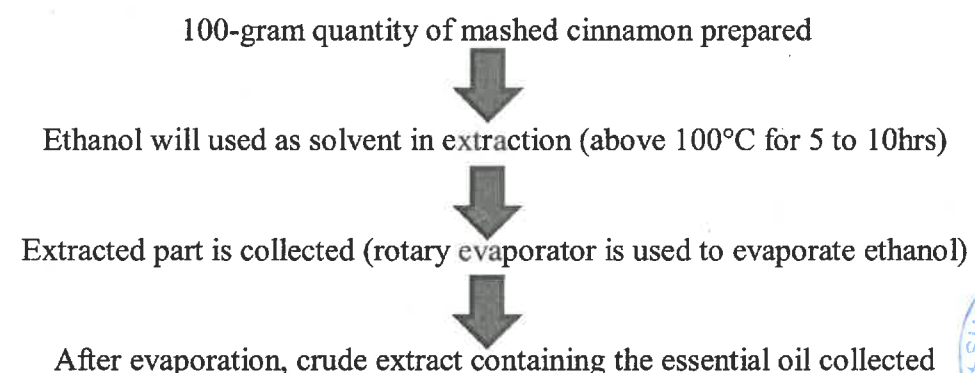
4.1 Methodology: (Maximum of 5 pages)

(It should contain all the details of how each of the objectives will be addressed. This section must be detailed and have clear plans, not vague and generalized statements. It should have several schemes, tables, figures, equations etc. in addition to text, explanation and justification of why the project research plan will work)

Soxhlet Extraction Method

To extract the essential oil from cinnamon sticks, the following method was employed using a Soxhlet extractor:

- i. **Preparation:** A 100-gram quantity of cinnamon sticks was first mashed into smaller pieces to increase the surface area for extraction. These small pieces were then packed into a thimble made from thick filter paper, forming a compact unit.
- ii. **Soxhlet Extraction:** The prepared thimble containing the cinnamon was loaded into the main chamber of the Soxhlet extractor. Ethanol was chosen as the extraction solvent due to its ability to dissolve the essential oil effectively. The extraction process commenced by heating the solvent to its boiling point, causing it to vaporize and rise into the condenser.
- iii. **Extraction Duration:** The extraction was conducted at a temperature above 100°C to ensure that the solvent remained in a liquid state during the entire process. The extraction was run for both 5 and 10 hours to compare the yields obtained at different time intervals.
- iv. **Collection and Purification:** Once the extraction process was completed, the products were collected. The crude extract, containing the essential oil and ethanol, was then subjected to a purification step using a rotary evaporator.
- v. **Ethanol Removal:** To ensure that all the remaining ethanol from the crude oil was eliminated, the purified samples were left under a fume hood for an hour. This allowed any traces of ethanol to completely evaporate into the environment, leaving only the pure and concentrated cinnamon essential oil (Wong, 2014).



HPLC analysis

To optimize the separation and quantification, the method employs either gradient or isocratic elution, where the flow rate and column temperature settings are carefully adjusted. This ensures precise identification and measurement of the active compounds present in cinnamon. To accurately quantify the identified compounds, a calibration step is performed using standard reference compounds. Through this calibration process, the concentration of each compound in the cinnamon sample can be determined.

Data analysis is a crucial aspect of the HPLC method, and it is conducted using suitable software. The software assists in processing the complex chromatographic data generated during the analysis of cinnamon. The final results are then presented in terms of compound identification, their respective concentrations, and other relevant parameters, providing valuable insights into the composition of

cinnamon and its potential health benefits (Al-Bayati, 2009).

Maximum wavelength determination of cinnamon

Make a cinnamon solution by dissolving the sample in a suitable solvent

Set up UV spectrophotometer and select the wavelength range (e.g., 200-400 nm)

Calibrate by setting the baseline using a blank solution

Place cinnamon solution in the spectrophotometer cuvette

Perform UV scanning and record data

Analyze the spectrum to identify the peak with the highest absorbance

Nanoemulsion formulation

A pre-emulsion is prepared using a mixture consisting of 10% cinnamon essential oil (CCEO) as the oil phase and 90% emulsifier solution, which contains 10% water-soluble gum polysaccharide (WGP) in deionized water (all percentages are weight to weight, w/w).

The preparation process involves the following steps:

- i. **Mixing:** The 10% CCEO and 90% emulsifier solution are combined in a beaker.
- ii. **High-Speed Homogenization:** The mixture is subjected to high-speed homogenization at 18,000 rpm using a high shear stirrer for 5 minutes. This step creates a water-in-oil emulsion.
- iii. **Ultrasonic Treatment:** The beaker containing the water-in-oil emulsion is placed in an ultrasonic pulverizer. The appropriate power, frequency, and time settings are adjusted.
- iv. **Emulsion Formation:** After the ultrasonic treatment, a milky white oil-in-water emulsion with good fluidity is obtained. The ultrasonic treatment helps achieve a stable and finely dispersed emulsion (Liang, 2022).

]Gather Ingredients (oil phase, aqueous phase, surfactant, and co-surfactant)

Mix the proper ratio by high speed homogenization

Ultrasonic pulverizer will be used to achieve nanoemulsion

Characterization of cinnamon

- i. **Organoleptic properties**
- ii. **Appearance**
- iii. **Odor**
- iv. **Taste**
- v. **Texture**



Dynamic Light Scattering (DLS)

This technique, also known as dynamic light scattering (DLS), is widely used to characterize the particle size of nano emulsions, including those containing cinnamon extract as a biopesticide. DLS allows for the determination of the hydrodynamic size distribution of particles by analyzing the fluctuations in scattered light intensity caused by the Brownian motion of particles in the sample.

The sample is first diluted to an appropriate concentration in a suitable solvent. The diluted sample is then placed in a cuvette, and a laser beam is passed through it. The scattered light is collected at a specific scattering angle, and the intensity autocorrelation function is measured over time.

Then data collected is then analyzed using suitable software to extract information about the particle size distribution. DLS analysis provides valuable details such as the average particle size, polydispersity index (PDI), and may also offer insights into the stability of the nanoemulsion formulation.

This non-invasive and effective method helps researchers and scientists understand the particle size characteristics of the cinnamon nanoemulsion, which is crucial for optimizing its performance as a biopesticide and assessing its potential in various applications (Mustafa, 2020).

Zeta Potential Measurement and pH

Zeta potential refers to the electric potential at the shear plane surrounding dispersed particles in a liquid medium. It provides information about the stability and behavior of colloidal systems, including cinnamon nanoemulsion biopesticides. To measure the zeta potential of cinnamon nanoemulsion biopesticides, the following steps can be followed:

- i. **Sample preparation:** Prepare a diluted sample of the cinnamon nanoemulsion pesticide. Dilution should be done carefully to ensure that the sample remains stable and representative of the original formulation.
- ii. **Instrument setup:** Use a zeta potential analyzer equipped with electrodes and suitable cuvettes for the measurement. Ensure that the instrument is calibrated according to the manufacturer's instructions. Clean the electrodes thoroughly to remove any residues from previous measurements. Place the electrodes in the cuvette containing the sample, ensuring they are properly positioned.
- iii. **Measurement procedure:** Apply an electric field to the sample using the zeta potential analyzer and measure the electrophoretic mobility of the particles.
- iv. **Data analysis:** Calculate the zeta potential from the measured electrophoretic mobility using appropriate software provided by the instrument manufacturer. Interpret the results to assess the surface charge and stability of the cinnamon nanoemulsion biopesticide.

Elevating the oil concentration within a system can have a negative impact on the stability of nanoemulsions. In the case of biopesticide nanoemulsions, it is commonly observed that they tend to exhibit alkaline properties, typically characterized by a pH value ranging from 5 to 6 (Mustafa, 2020), (NINGSIH, 2020).

Size and Surface Morphology

To examine the size and surface morphology of the optimized placebo nanoemulsion and ginger nanoemulsion, various microscopy techniques will be employed. FE-SEM will be employed to obtain high-resolution images, allowing for detailed observations of their size and surface characteristics. TEM, on the other hand, provided a more focused analysis of the formulation's internal structure and morphology at the nanoscale level.

Field Emission Scanning Electron Microscopy (FE-SEM)

The Field Emission Scanning Electron Microscopy (FE-SEM) method for cinnamon involves sample preparation by fixing and dehydrating the cinnamon, followed by air-drying or critical point drying. The prepared sample is then placed on a sample stub and mounted inside the FE-SEM chamber. After achieving a high vacuum, the FE-SEM is started, and the electron beam is focused on the cinnamon sample. High-resolution images are acquired in different imaging modes, such as secondary electron or backscattered electron imaging, to explore the cinnamon's microstructure and surface morphology. Optional Energy-Dispersive X-ray Spectroscopy (EDS) analysis can be performed for elemental composition identification. Data analysis allows for interpretation and insights into the cinnamon's microstructure. Proper safety precautions should be followed throughout the process (Mahdavi, 2018).

Transmission Electron Microscopy (TEM)

To further validate the morphology characteristics and assess potential aggregation in the ginger extract-loaded nanoemulsion, Transmission Electron Microscopy (TEM) will be utilized. The TEM will operate

at an accelerating voltage of 200 kV. For sample preparation, the nanoemulsion will be carefully deposited onto carbon-coated copper TEM grids. Following this, the samples will be negatively stained using a contrasting agent, 2% phosphotungstic acid (pH 7.0), and allowed to dry at room temperature. After a 2-minute staining period, the grids will be gently removed and placed on Whatman filter paper within a petri dish. The dried copper grids will then undergo TEM analysis, and images will be captured. These images will provide crucial insights into the quantitative size and surface characteristics of the nanoemulsion. To ensure precise measurements and determine size and surface properties, the obtained TEM images will be analyzed using Image-J analysis software (Ratcharin, 2012).

Retention and Contact Angle Measurement

- i. Prepare a clean and flat surface where the contact angle measurement will be performed.
- ii. Place a droplet of cinnamon extract, oil, or emulsion on the surface using a precision pipette or other suitable dispensing method.
- iii. Capture an image of the droplet on the surface, ensuring it is in focus and with good lighting.
- iv. Use image analysis software to measure the contact angle formed between the droplet and the surface.
- v. Repeat the measurement for multiple droplets to ensure accuracy and consistency.
- vi. Calculate the average contact angle from the obtained measurements to characterize the wetting behavior of the cinnamon sample on the surface.

Total Phenolic Content

- i. **Sample Preparation:** Obtain a representative sample of cinnamon in the desired form (e.g., powder or extract). Weigh a specific amount of the cinnamon sample accurately.
- ii. **Extraction of Phenolic Compounds:** Prepare an appropriate solvent (e.g., methanol, ethanol, or acetone) for extracting phenolic compounds. Mix the solvent with the cinnamon sample to ensure thorough extraction. Allow the mixture to stand for a designated period to facilitate efficient extraction.
- iii. **Centrifugation and Filtration:** Centrifuge the mixture to separate the solid cinnamon residue from the solvent-extracted phenolic compounds. Filter the supernatant to obtain a clear extract free from particulate matter.
- iv. **Total Phenolic Content Determination:** Choose a suitable phenolic reagent, such as Folin-Ciocalteu reagent, for the TPC assay. Mix an aliquot of the cinnamon extract with the phenolic reagent in a test tube or container. Incubate the mixture in the dark for a specific duration at room temperature.
- v. **Spectrophotometric Measurement:** After the incubation, use a UV-Vis spectrophotometer to measure the absorbance of the reaction mixture at a designated wavelength (often 760 nm).
- vi. **Calibration Curve Preparation:** Prepare a calibration curve using standard solutions of known concentrations of a phenolic compound (e.g., gallic acid) to establish a correlation between absorbance and phenolic content.
- vii. **Calculation of Total Phenolic Content:** Calculate the total phenolic content in the cinnamon sample using the calibration curve. Express the TPC as milligrams of gallic acid equivalent (GAE) per gram or milligram of cinnamon sample.

IN-Vitro Study

- i. **Preparation and Sterilization:** The purified cinnamon extracts were dissolved in dimethyl sulfoxide (DMSO) and sterilized by filtration using a sintered glass filter. This ensured the removal of contaminants and maintained the purity of the extracts. The solution was stored at 4°C for further use in the biopesticide study.



- ii. **Standard Biopesticide Controls:** To compare the results, standard biopesticides representing pure control solutions were used. These biopesticides acted as references to assess the effectiveness of the cinnamon extracts against different pests.
- iii. **Preparation of Test Samples:** Nutrient agar plates were prepared to support pest growth for the bioassay. These plates contained the necessary nutrients for pests to grow and develop. Similarly, fungal plates were prepared for antifungal activity testing.
- iv. **Incubation of Test Samples:** The nutrient agar plates were incubated at an appropriate temperature to facilitate pest growth and development. For fungi, a longer incubation period was required due to their slower growth rate.
- v. **Biopesticide Evaluation:** In addition to the cinnamon extracts, control experiments were carried out using cinnamon nanoemulsion. This allowed for a comparison of the effectiveness of the extracts and the nanoemulsion form as a biopesticide.
- vi. **Measurement of Pest Inhibition:** After the incubation period, the zones of pest inhibition around the disks containing the cinnamon extracts or nanoemulsion were measured. The size of these zones indicated the degree of pest inhibition. Larger zones suggested a stronger biopesticidal effect of the extracts.
- vii. **Assessment of Biopesticidal Potential:** The effectiveness of the cinnamon extracts as a biopesticide was evaluated based on the measured pest inhibition zones. A higher degree of inhibition indicated a more potent biopesticidal effect, demonstrating the potential of the extracts in pest control applications (Bhalodia, 2011) (Sharma, 2016).

Statistical Analysis

- i. **Comparison of Recovery Rates:** The study compared the recovery rates of antibacterial and antifungal activity using different cinnamon-based biopesticides. The aim was to evaluate the effectiveness of each biopesticide in inhibiting the growth of bacteria and fungi. Recovery rates reflect how well the biopesticides controlled the growth of microorganisms.
- ii. **Statistical Analysis:** The statistical analysis employed a one-way analysis of variance (ANOVA) with a Student's t-test. ANOVA allows for comparing the means of multiple groups, enabling the assessment of recovery rates within the biopesticides and among different culturing media. The Student's t-test, a post-hoc analysis, determined the significance of differences between specific groups.
- iii. **Significance Level:** The significance level chosen for the analysis was $p < 0.05$. This means that observed differences with a p-value below 0.05 were considered statistically significant. A p-value less than 0.05 indicates that the observed differences are unlikely due to chance and are likely influenced by the factors being compared (biopesticides or culturing media).
- iv. **Interpretation of Results:** Based on the statistical analysis, a p-value less than 0.05 indicated significant differences in recovery rates either within the biopesticides or between different culturing media. This suggests that the biopesticides or culturing media had an impact on the antibacterial and antifungal activity of the cinnamon-based formulations (Liang, 2022) (Sharma, 2016).

Cinnamon Oil Extraction: High-quality cinnamon bark was sourced and subjected to steam distillation to extract the cinnamon essential oil. Gas chromatography-mass spectrometry (GC-MS) analysis was performed to identify the major bioactive compounds present in the oil.

Nanoparticle Synthesis: Silver nanoparticles (AgNPs) were synthesized using a green synthesis approach. The cinnamon oil was used as a reducing and capping agent for AgNPs. The particle size and morphology of the AgNPs were characterized using transmission electron microscopy (TEM) and dynamic light scattering (DLS) techniques.

Encapsulation of Cinnamon Oil in Nanoparticles: Polymeric nanoparticles were prepared using

biodegradable polymers such as chitosan and poly(lactic-co-glycolic acid) (PLGA). Cinnamon oil was encapsulated within these nanoparticles using a double emulsion solvent evaporation technique. The encapsulation efficiency was determined using UV-Vis spectroscopy,

Stability and Release Kinetics: The stability of the cinnamon oil-loaded nanoparticles was assessed by monitoring the particle size and zeta potential over time. Additionally, in vitro release studies were performed to understand the release kinetics of cinnamon oil from the nanoparticles

The preliminary investigation showed promising results for the development of a biopesticide nanoformulation using cinnamon oil. The presence of bioactive compounds in cinnamon oil, along with successful encapsulation within biodegradable nanoparticles, suggests that the nanoformulation has the potential to act as an effective and eco-friendly pesticide

4.2 Time Schedule of activities giving milestones through Gantt Chart. (Maximum 1 page)

5. Expertise: NA

5.1 Expertise available with the investigators in executing the project: (Maximum 1 page)

(Professional expertise existing with each of the investigators in terms of publications, Patents and preliminary results, to execute every component of the proposal should be highlighted): NA

6. List of facilities required from Sushant University for the project implementation.

6.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	yes
2.	Water & Electricity	yes
3.	Laboratory Space/ Furniture	yes
4.	Power Generator	yes
5.	AC Room or AC	yes
6.	Telecommunication including e-mail & fax	yes
7.	Transportation	yes
8.	Administrative/ Secretarial support	yes
9.	Information facilities like Internet/Library	yes
10.	Computational facilities	yes
12.	Any other special facility being provided	yes



6.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group	soxlet	borosil	-

PI's Department	UV spectrophotometerSchimadzu		
Other Institute(s) in the region	HPLC HOMOGENIZER SEM TEM		

6.3 Total Budget (Rs. in Lakhs):- 280000

- Recurring Cost (Rs):180000
- Non-Recurring Cost (Rs):100000

SL No.	Item	Budget			
		1 st Yr	2 nd Yr	3 rd Yr	Total
A	Recurring		60000		
	1. Manpower	10000			
	2. Consumables	40000			
	3. Travel	5000			
	4. Field testing, Demo/ Training expenses (if applicable)	40000			
	5. Contingencies/Other costs	-			
	6. Institutional Overheads*	5000			
	7. Any other item	20000			
B	Non-Recurring	60000	40000		
	Permanent equipment				
	Construction of work shed/structures				
	Fabrication of prototype equipment				
	Grand Total (A+B)	180000	100000		

A. Recurring:

1. Budget for Manpower

SL No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	Budget (Rs. in lakhs)			
					1 st Yr	2 nd Yr	3 rd Yr	Total

2. Budget for Consumables*

SL No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel

SL No.	Purpose	Budget (Rs. in lakhs)			
		1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Project logistics				
2.	Field activities				
3.	Review meetings (if elsewhere)				



4. Field Testing/ Demo/ Trainings*

Sl. No	Description of field testing/demos /trainings	No/Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Include material for technology field testing/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of beneficiaries/training, duration of training days, cost /training).

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

B. Non-Recurring:

Budget for Permanent Equipment/ Workshed/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.			
2.			
3.			
4.			

7. Deliverables

Deliverable	Mark ✓	Brief description
Product development/adaptation.	✓	
Process development/adaptation	✓	
Technology package for development of the project area and local community	✓	
Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)	✓	
Scientific knowledge and/or data generation leading to technology development in future	✓	
Other (Please specify)	✓	



8. Name and address of experts/ institution interested in the subject / outcome of the project.

Department of Pharmacy, School of Health Sciences

Dr. NEELAM DHANKHAR
Ph.D., M. Pharmacy 'Pharmaceutics'
Permanent Address:
H. No. 2, Flat No. 201
Bank colony
Gurgaon (Hr.)



Correspondence Address:
Department of Pharmaceutical Sciences,
Sushant University, Gurugram
E mail: reenadhankhar@gmail.com
Mobile: +919654012228

CAREER OBJECTIVE

I would like to be a member of the elite fraternity of the pharmaceutical arena and to join a university like yours which provides ample opportunity to satisfy my desire to establish myself in this field.

CURRENT STATUS

Currently working as a **professor, at the Department of Pharmaceutical Sciences at Sushant University, Gurugram**

CURRENT DESIGNATION AND RESPONSIBILITIES

- ✓ **Current Designation: Professor**
- ✓ **Criteria NAAC 2**
- ✓ **Engaged in various Curricular, Cocurricular and Extracurricular activities**
- ✓ **Looking after all academic and administrative work of Department.**
- ✓ Guiding students for Ph.D.
- ✓ Conduction of Lectures and practicals in B. Pharmacy.
- ✓ In charge of Pharmaceutical Labs.
- ✓ Cultural Incharge of Institute Pharmaceutical Society.



TEACHING EXPERIENCE- 14.7 years.

- ✓ **Currently Working in Sushant University as Professor since Feb. 2023**
- ✓ **Worked as an Associate Professor and HOD at Starex University, Gurugram since July 2019 to February 2023**
- ✓ **Worked as a principal at RNRM College of Pharmacy, Gurugram since august 2014 to July 2019**
- ✓ **Worked as Assistant Professor at Ram Gopal College of Pharmacy, Gurgaon from 11 October 2012 to August 2014**

- ✓ Worked as **Assistant Professor** at **Ch. Devi Lal College of Pharmacy**, Jagadhari, Yamuna Nagar from August 11, 2011 to October 10 2012.
- ✓ Worked as a **lecturer** at **Dr. K.N. Modi Institute of Pharmaceutical Education & Research** from March 8, 2010 to August 9, 2011.
- ✓ Worked as an **Assistant Professor** at **Rajendra Institute of Technology & Sciences**, Sirsa, Haryana from August 1, 2009 to March 4, 2010.

EDUCATIONAL QUALIFICATIONS

Course	School/ College	Board/ Uni.	Year of Passing
PhD (Pharmaceutical sciences)	NIMS College	NIMS Univ., JAIPUR	2019
Certificate Course in Intellectual Property	WIPO, Geneva, Switzerland	WIPO, Geneva	2010
M. Pharm (Pharmaceutics)	Rajendra Institute of Technology & Science, Sirsa	Kurukshetra Univ., Kurukshetra	2009
B. Pharm	Rajendra Institute of technology & science, Sirsa	Kurukshetra Univ., Kurukshetra	2007
12th	Rotary Public School	CBSE	2003
10th	V.K. High School	Haryana Board	2001

RESEARCH PROJECT

- ✓ PhD. Done project Entitled "*Formulation Evaluation and Optimization of Fast Disintegrating Tablets of Ant cholinergic Bronchodilators*" as a part of dissertation.
- ✓ **M. Pharm:** Done project Entitled "*Formulation design, Development Optimization and Evaluation of Mouth Dissolving Tablet of Ibuprofen with Taste Masking*" as a part of dissertation at Ranbaxy research laboratory, PDR section, Gurgaon, for one year, in 2008-2009.
- ✓ Currently apply a project in DST on "**To prepare a targeted release pesticidal nano formulation from bioactive phytochemicals obtained via Agro technique from medicinal plant of Haryana**"

- ✓ Worked on various herbal formulations in pharmacy project

INDUSTRIAL TRAINING

- ✓ Done 2 months Training in QA and Parenteral Department at **Get well Pharmaceutics Limited, Gurgaon (Haryana)**.
- ✓ Done 1 year Training in PDR Department at **Ranbaxy Research Laboratories, Gurgaon (Haryana)**.

PATENT PUBLISHED

- Patent Published on "Pharmaceutical Evaluation of mucilage polysaccharide from Chlorophytum borivilianum tubers" with Application no. 202211012584, Publication Date: 18th March 2022.
- Patent Published on "A Pharmaceutical Composition for Dental Treatment" with Application no. 202211012585, Publication Date: 18th March 2022.
- Patent Published on "Smart device for dispensing of pills" with Application no. 202211012585, Publication Date: 18th March 2022.
- Patent Published: "Machine learning enabled system for detection of depression severity scores based on EEG signal" with application no. 202311026400 A: PUBLICATION DATE: 19/05/2023

APPOINTMENT AS THEORY AND PRACTICAL EXAMINER

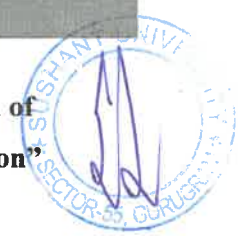
- SGT University Gurugram
- Raffles University, Rajasthan
- Swami Vivekanand Subharti University
- Starex University

BOOK CHAPTER

- ✓ Singh Sima, **Dhankhar Neelam**, Garg Ashish Kesharwani; Tuberculosis; Introduction, drug regimens and multidrug resistance; Nanotechnology Based Approaches for Tuberculosis Treatment. Elsevier and typesetter Thomson Digital; PP. 27-35

RESEARCH PAPER PUBLICATIONS

- Neelam Dhankhar, Jyoti Sinha "Natural occurrence, toxicity, health implication of mycotoxin in fruits and their derivative products: a comprehensive examination" **Journal of Survey in Fisheries Science Vol 10(3) PP 787-796**



2. Kamica Yadav, Arun Mittal, **Dr. Neelam Dhankhar**, Anjali Sudha, Dr. Jyoti Sinha, **Comparative research on the effects of different allium sativum bulbs extraction on alloxan-induced diabetes mellitus**, European Chemical Bulletin, 2023;12(s3); 1854-1860
3. **Neelam Dhankhar**, Anjali Sudha; **Formulation and evaluation of Etiposide Nanoparticulate Drug Delivery for small cell lung cancer**; Change Management; An International Journal; ISSN:2327-9176; Vol 22 No. 2.2022; PP:1103-1116
4. **Neelam Dhankhar**, Sharma Deepak” **Formulation and Evaluation of Fast Disintegrating Tablet of Tiotropium Bromide and Cetrizine Hydrochloride”** Published in **Global Journal of Pharmaceutical Education and research**, 2017 vol. 6 pp: 48-54
5. Kumar Sunil, **Dhankhar Neelam**, Khan Nazeerullah, Sushmita Mishra, Singh Rishi Pal **“Neuroprotective effect of Alpha Lipoic Acid on Nitrite Induced Mitochondrial ETC Enzymes & TCA Cycle Enzymes Dysfunction by enhancement of Oxidative Stress in Rats”** Publication in **“International Journal of Research in Pharmacy and science”** Vol. 1, Issue 3, 2011, pp: 75-84.
6. Khan Nazeerullah, **Kumar Sunil**, Younus Tamboli, Singh Rishi Pal, Dhankhar Neelam **“Preliminary Phytochemical Screening, Fingerprinting and Pharmacognostic Evaluation of *Nothapodytes Nimmoniana* Leaves, Stem and Root collected from different Geographical region”** Publication in **“Research Journal of Pharmaceutical, Biological and Chemical Sciences”** Vol. 3, Issue 1, 2012, 362-378.
7. Khan Nazeerullah, Kumar Sunil, Singh Rishi Pal, **Dhankhar Neelam** **“Anthelmintic Activity in Root of *Nothapodytes Nimmoniana* in Different Extracts”** Publication in **“International Journal of Research in Pharmaceutical and Biomedical Sciences”** Vol. 3, Issue 1, 2012, pp: 31-33.
8. Kumar Sunil, **Dhankhar Neelam** **“Study of the Neuroprotective effect of Alpha Lipoic Acid on Iminodipropionitrile Induced Mitochondrial & TCA Cycle Enzymes Dysfunction by enhancement of Oxidative Stress in rat Hippocampus mapping”** Published in **“International Journal of Research in Pharmaceutical and Biomedical Sciences”** Vol. 2, Issue 4, 2011, pp: 1813-1818.



9. Singh M.A., Shrivastava T.P., Mishra Sushmita, Kumar Sunil, **Dhankhar Neelam**
“Extraction, Formulation and Optimization of Herbal Film former for
Preparing Enteric Coated Metformin Hydrochloride tablet” Publication in
“International Journal of Drug Formulation & Research” Vol. 2, Issue 6, 2011.
pp: 278-293.
10. Kumar Sunil, **Dhankhar Neelam**, Goyal Surinder, Kar Vasundra, Shrivastava Meenu
“Hippocampal Injury at mitochondrial level provoked by Imino di propionitrile,
Neuroprotective effect of Alpha Lipoic Acid” Published in “International Journal
of Research in Pharmacy and science” Vol. 1, Issue 2, 2011, pp: 67-76.
11. **Dhankhar Neelam**, Kumar Sunil, Goyal Surinder, Ramana Jaspreet, Mishra
Sushmita “Formulation and In-Vitro Evaluation of Gastro Retentive
Rosiglitazone Maleate Floating Tablet” Published in “International Journal of
Research in Pharmacy and science” Vol. 1, Issue 2, 2011, pp: 57-66.
12. Amitava Ghosh, Jyotirmoy Deb, Sushmita Mishra, **Neelam Dhankhar**, Sunil Kumar
“Formulation and Evaluation of oral controlled release preparation using
potential agents obtained in nature” Published in “International Journal of Drug
Formulation & Research” Vol. 2, Issue 5, 2011, pp: 448-462.
13. Vasundra Kar, Meenu Shrivastava, Shobhit Shrivastava, **Neelam Dhankhar**, Sunil
Kumar. “Azathioprine induce TCA Dysfunction due to Oxidative Stress and
Protective effect Of Quercetin in Rat Hepatocytes” Published in “International
Journal of Research in Pharmaceutical and Biomedical Sciences”. Vol. 2, Issue 3,
2011, pp: 1297-1302.
14. Meenu Shrivastava, Shobhit Shrivastava, Vasundra Kar, Sunil Kumar, **Neelam
Dhankhar**, Rishi Pal Singh. “Mitochondrial Oxidative Disturbances Due To
Azathioprine And It’s Response To Administration Of Quercetin In Rats”
Published in “International Journal of Drug Formulation & Research”. Vol. 2,
Issue 4, 2011, pp: 347-357.
15. Sunil Kumar, **Neelam Dhankhar**, Vasundra Kar, Meenu Shrivastava, Shobhit
Shrivastava. “Myocardial Injury Provoked By Cyclophosphamide, Protective
Aspect of Hesperidin in Rats” Published in “International Journal of Research in
Pharmaceutical and Biomedical Sciences”. Vol. 2, Issue 3, 2011, pp: 1288-1296.
16. **Dhankhar Neelam**, Kumar Sunil, Goyal Surinder, Ramana Jaspreet, Agarwal Anuj
“Hippocampal Injury at cellular level provoked by Iminodipropionitrile,



Neuroprotective effect of Alpha Lipoic Acid” Published in “International Journal of Research in Pharmacy and science” Vol. 1, Issue 1, 2011, pp: 57-65.

REVIEW PAPER PUBLICATIONS

1. Neelam Dhankhar, Jyoti Sinha, :Natural Occurance, **Toxicity, Health Implication of Mycotoxinin Fruits and their derivative**: A comprehensive examination: Journal of Survey in Fishers Series 10(3)2023: PP787-796
2. Anjali Sudha,, **Neelam Dhankhar**, Deepti Chauhan, Jyoti Sinha: **Artificial Intelligence in lung Cancer: An Evaluation**;Journal Of Maharaja sayajirao University of Baroda: ISSN:0025-0422 ; Vol. 57, No. (1);2023 PP: 169-180
3. Ashish verma, Anjali Sudha, **Neelam Dhankhar**, Jyoti Sinha; **Therapeutic Potential of medicinal flora Against Alzheimer disease**; Journal of Maharaja sayajirao University of Baroda: ISSN:0025-0422 ; Vol. 57, No. (1);2023 PP:181-191
4. **Neelam Dhankhar**, Anjali Sudha, Jyoti Sinha: **India’s Current Situation regarding Intellectual Property rights in the pharmaceutical sector**: European chemical Bulletin; 2023,12(s3)1847-1853
5. Anjali Sudha, Ms. Priyanka Bhati, **Neelam Dhankhar**, Akansha Chandra, Manisha Singh, **A Comprehensive Review of many models used in Lung Cancer Research**; Journal of Pharmaceutical Research and Application;2022 Vol 7, Issue 2, PP 509-517 ; IF: 7.429
6. Anjali sudha, Ms. Priyanka Bhati, **Neelam Dhankhar**, Akansha Chandra, Manisha Singh, **A Comprehensive Review of many models used in Lung Cancer Research**; Journal of Pharmaceutical Research and Application;2022 Vol 7, Issue 2, PP 509-517; IF: 7.429
7. Anjali Sudha, **Neelam Dhankhar**, Amardeep Singh, Baldev Singh, Jyoti Nanda; **Nanotechnology A Wonder in Cancer Treatment**; **Journal of the Maharaja Sayajirao University of Baroda**; 2021; Vol. 55; PP-525-532
8. **Neelam Dhankhar**, Anjali Sudha, Current International Crises -Covid-19: **A Review : International Journal of Creative research Thoughts 2021**, Vol. 9, Issue 2: PP-3856-3873



9. Anjali Sudha, Neelam Dhankhar, Ankita Pant, Amardeep Singh, Balde Singh; **Formulation Characterization and Applications of Nanoparticle in Drug Delivery- A Review: Wesleyan Journal of Research**, 2021, Vol. 14; PP-101-112; IF-6.7
10. Das SS, Dhankhar Neelam, Hussain K, Singh S, Hussain A, Faruk A, Mike T, **Laponite-based nanomaterials for biomedical applications: A review. Current Pharmaceutical Design**, 2019, (IF: 2.96).
11. Khan Nazeerullah, Kumar Sunil, Singh Rishi Pal, Dhankhar Neelam "A **Pharmacognostic and Pharmacological overview on *Caesalpinia bonducella*"** Publication in "International Journal of Research in Pharmaceutical and Biomedical Sciences" Vol. 3, Issue 1, 2012, pp: 480-496.
12. DhankharNeelam, Sharma Deepak "Current Scientific Advances in Oral Disintegrating tablets" Journal of Chemical and Pharmaceutical Research, 2018, 10(5), PP: 113-120 (IF ;1.5)

SEMINAR ATTENDED

- ✓ IPGA national seminar on recent trends in pharmaceutical education & research held on 29-30 september 2007.
- ✓ Attend 60th Indian Pharmaceutical Congress (IPC) in Delhi.

POSTER PRESENTATIONS (ABSTRACT PUBLISHED)

- **Topic :** Start up in Pharmaceutical Sector
- **Venue:** National Conference held on 31st March,2023 in Sushant University
- **Topic :**
 - i. "Nanomedicines : An overview"**Venue :**
47th annual confress of Indian journal of Hospital Pharmacy --
2010, Moga ,30th -31st October, 2010.
- **Topic :**
 - ii. Alleviation of mitochondrial antioxidant enzymes by quercetin, depletion by azathioprine on hepatic cells in rat cells.
 - iii. Myocardial injury provoked by cyclophosphamide, protective aspect of hesperidin in rats.



- iv. Hippocampal injury at cellular level provoked by Iminodipropionitrile, neuroprotective effect of alpha lipoic acid.

Venue :

Pranveer Singh Institute of Technology DST, ICMR and CSIR sponsored Seminar BRMCR'11

• **Topic :**

- v. Preparation and Evaluation of Fast Dissolving Tablet of Ibuprofen with Taste Masking.

Venue :

AICTE sponsored National seminar, I.T.S. Paramedical College (Pharmacy), MuradNagar-201 206, Ghaziabad, Delhi-Meerut Road, Uttar Pradesh

• **Topic:**

- vi. Formulation Design, Development Optimization and Evaluation of Mouth Dissolving Tablet of Ketoprofen with Taste Masking.

Venue:

National Poster Presentation on "Ethnomedicine: Asset of Traditional Communities" September 2011. Bansal College of Pharmacy Kokta, Anand Nagar, Bhopal.

APPOINTMENT AS THEORY AND PRACTICAL EXAMINER

- ✓ Swami Vivekanand Subharti University, Meerut.
- ✓ Uttar Pradesh Technical University, Lucknow.
- ✓ Starex University, Gurgaon
- ✓ Raffles University, Neemrana



MEMBERSHIP IN PROFESSIONAL ORGANISATION

- ✓ Registered member in Haryana State Pharmacy Council, Panchkula, India.

EDITORIAL MEMBER

- ✓ Editorial member of international Journal "International Journal of Research in Pharmacy and science"
- ✓ Editorial Member of " International journal of Pharmacology and clinical research"

REVIEWER OF INTERNATIONAL JOURNAL

- ✓ Reviewer of international Journal “**International Journal of Research in Pharmacy and science**”.

online international conferences

S. No	Topic	Organized By	Date
1.	Challenges and Opportunities for Pharmacist in the Present Epidemic COVID-19	Association of Registered Pharmacists in association with Divine International Pharmacy, Gwalior, MP	2 nd -3 rd May, 2020
2.	SPER International Online Conference: Empowering Pharmacists for the next generation: To improve health and wellness	Society of Pharmaceutical Education & Research (SPER) Supported by Confederation of Indian Pharmaceutical Industry (CIPI), SYSTOPIC, ISFCOP, MOGA & SPER market Research	30 th -31 st May, 2020
3.	Covid-19: Challenges in Testing Prophylaxis & Management	ISF College of Pharmacy, Moga in collaboration with Society of Pharmaceutical Education & Research (SPER) & International Society for Pharmacoeconomics and Outcome Research (ISPOR)	22 nd -23 rd May, 2020



Faculty Development Programme

S. No	Subject	Organized By	Duration
1.	Training the Trainer “Personality Development”	Swami Vivekanand Subharti University, Meerut, U.P	4 th July, 2014 (01 Day)
2.	Pharmacology: Pre-clinical to Clinical	KIET School of Pharmacy, Ghaziabad.	10 th -14 th July 2017 (05 Days)

3.	Research Methodology and Scientific writing	IIMT College of Pharmacy, Greater Noida	12 th December, 2017 (01 Day)
4.	Training the Trainer "Personality Development"	Starex University, Gurugram	January, 2020 (1day)
5.	Environmental Quality Monitoring and Analysis	NPTEL (Online), IIT-Madras	27 th January - 20 th April, 2020 (12 weeks)
6.	Environmental Remediation of Contaminated Sites	NPTEL (Online), IIT-Roorkee	27 th January - 20 th April, 2020 (12 weeks)
7.	Emerging Trends in Pharmaceutical Sciences: Classroom to Online	School of Pharmacy, Sharda University (Online)	9 th June - 13 th June, 2020 (05 Days)
8.	Recent Trends in Research and Applied Statistics	Sun Rise University, Alwar (Online)	13 th June - 19 th June, 2020 (07 Days)
9.	New Paradigm in Pharmaceutical Education & Research	Glocal School of Pharmacy, Glocal University (Online)	24 th June - 26 th June, 2020 (03 Days)

NATIONAL & INTERNATIONAL WEBINAR

S. No	Topic	Organized By	Date
1.	AI skills: what college are not focusing on	NASSCOM Webinar, INDIA, AMEITY, NEGD & NASSCOM INITIATIVE	8 th May, 2020
2.	COVID-19 & Exams	Sunrise University, Alwar in partnership with Digital Edu IT Solution Pvt. Ltd.	9 th May, 2020
3.	International Webinar on The role of Artificial Intelligence During Covid-19	School of Pharmaceutical Sciences, IIMT University, Meerut, U.P.	11 th May, 2020
4.	How to Cope with stress in the COVID-19 Era.	Glocal University, Saharanpur, U.P.	12 th May, 2020
5.	Enhance Research	MM College of Pharmacy,	13 th May, 2020

	Visibility to improve Institutional Ranking	Maharishi Markandeshwar (Deemed to be University), Mullana, Ambala, Haryana In association with ELSEVIER	
	Green Intellectual Property (Green IP) for Health Care Innovations Globally	School of Pharmacy and research, People's University	16 th -17 th May, 2020
7.	Research-e-Pharm: Drug Discovery, Development, Pharmacovigilance and Repurposing Under COVID-19 Outbreak	Faculty of Pharmaceutical Sciences, Motherhood University in association with Indian Pharma Educational Society, Uttarakhand Branch	16 th -19 th May, 2020
8.	Panel Discussion on a "New Normal for Pharmacy Field in Covid – 19 Pandemic	Amity Institute of Pharmacy, Health & Allied Sciences Domain, Amity University, Noida, Uttar Pradesh.	17 th May, 2020
9.	Need of E- Learning for Changing Pharma World- Concepts, trends & Tools	Association of Registered Pharmacists, sponsored by Divine International Pharmacy, Gwalior, MP	17 th May, 2020
10.	Pharma Industry after Covid-19: Opportunities and Challenges	Department of Pharmacy, Mansarovar Global University	17 th May, 2020
11.	COVID-19 and Ayurveda: Principle, Practice and Policy," & Inauguration of Amity Ayurveda Research Center in New York, USA by Sh. Shripad	Amity Science, Technology & Innovation Foundation (ASTIF), Amity University Uttar Pradesh, Noida (INDIA).	21 st May, 2020



	Yesso Naik, Hon'ble Minister of AYUSH (I/C) and Minister of State for Defence (Chief Guest) & Padamshree Vaidya Rajesh Koteja, Secretary AYUSH (Guest of Honor)		
12.	International Day Of Biological Diversity	BIOTECHNIKA Your Bio Resource	22 nd May, 2020
13.	e-seminar 'Eduweb 2020'	School of Pharmaceutical Sciences, Shoolini University, Solan, India	22 nd -24 th May, 2020
14.	Pharmacy: A Bright Career	Guru Gobind Singh College of Pharmacy, Yamuna Nagar in collaboration with Association of Registered Pharmacist	27 th May, 2020
15.	Career Opportunities in Pharmacy	Guru Gobind Singh College of Pharmacy, Yamuna Nagar in collaboration with Association of Registered Pharmacist	28 th May, 2020
16.	National Webinar on Pharmacist in 21st century and Artificial Intelligence	Shri. Prakashchand Jain College of Pharmacy and Research, Palaskhede(Bk), Jamner in association with ISF College of Pharmacy, Moga (Punjab)	29 th May, 2020
17.	Evidence based nutraceuticals in the Management of Diseases	Faculty of Pharmaceutical Sciences, Motherhood University, Roorkee, India	1 st June, 2020



18.	Drug Discovery Process: A critical Approach	Guru Gobind Singh College of Pharmacy, Yamuna Nagar in collaboration with Association of Registered Pharmacist	5 th June, 2020
19.	Introduction of Pharma Manufacturing Industry and Expectations from Pharma Graduates	faculty of Pharmacy, Mansarovar Global University.	6 th June, 2020
20.	Web-Brain Storming session on Self-Reliant India: Pharma Prespectives	Indian Pharmaceutical Association (IPA), Punjab Branch & Panjab University Pharmaceutical Society (PUPS), University Institute of Pharmaceutical Sciences Panjab University, Chandigarh	6 th June, 2020
21.	Role of drug control department and antiviral drugs for fighting against Covid-19”	Faculty of Pharmacy, Dr. A. P. J. Abdul Kalam University, Indore in association with IPGA, M.P. State Branch	9 th June, 2020

TECHNICAL SKILLS

Operated various instruments like

- ✓ UV-Visible Double Beam Spectrophotometer,
- ✓ PH meter,
- ✓ Micro Balance,
- ✓ Tablet Compression Machine,
- ✓ Spray Coating,
- ✓ Vacuum tray drier,
- ✓ Homogenizer,
- ✓ Mechanical Stirrer,
- ✓ Planetary Mixer,
- ✓ Rotary mixer granulator,
- ✓ Fluid bed dryer,
- ✓ Double cone blender,



- ✓ V-blender,
- ✓ Codro mill,
- ✓ Dissolution apparatus,
- ✓ Ultra sonicator,
- ✓ High speed centrifuge and incubator.
- ✓

COMPUTER SKILL

- ✓ Well versed with Microsoft Word, Microsoft Excel, Microsoft Power Point, Web Access.

PERSONAL DETAILS

Father's Name : Shri Sajjan Kumar Dhankhar
Mother's Name : Smt. Sundresh Dhankhar
Date of Birth : 23 August ,1986
Gender : Female
Marital Status : Married
Nationality : Indian
Language Proficiency : English & Hindi
Extra-Curricular activities : Reading books

STRENGTHS

- ✓ Ability to do work under strict deadlines without compromising with quality of work.
- ✓ Adaptability – suits to every work environment.
- ✓ Positive attitude, good pickup and keen learner.
- ✓ Optimistic attitude.
- ✓ Strong will power.
- ✓ Strongly deal with technical problems.

REFERENCES:

- ✓ Dr. Anurag Chaudhary
M. Pharma, PhD
MIET University, Meerut, 8077715655
- ✓ Professor Dr. Madan Mohan Goel
Former Vice chancellor,
Starex University, Gurgaon, 09896362620



DECLARATION

I, Neelam Dhankhar hereby declare that all the information furnished here is true to the best of my knowledge.

Place: Gurgaon

Date:

Dr. Neelam Dhankhar



Utilization Certificate


Certified that grant of ₹ 2,80,000/- (Rupees Two Lakh Eighty Thousand Only) sanctioned by the Center of Research and Development, Sushant University, vide letter no. F.No.1/2023-2024/Seed Fund-Nov 23/08 Dated 8th November 2023, financial assistance for the project titled “Enhancing the Efficacy and Environmental Sustainability of Biopesticides through Nano Formulation” was utilized for the purpose for which it was sanctioned:

Financial expenditure incurred

Sl.no	Nature of expense	Proposed Expenditure (in Rs.)	Expenditure incurred (in Rs.)
1	Manpower	20000	25000
2	Travel	20000	15000
3	Consumables	60000	70000
4	Field Testing	60000	50000
5	Institutional overheads	20000	20000
6	Equipment	100000	100000
	Total	₹ 2,80,000	₹ 2,80,000


Principle Investigator




Accounts Officer
Sushant University
Gurugram, Haryana

**PROFORMA FOR SUBMISSION OF SEED FUND
PROPOSAL**

Part I: General Information

1. Project Title(should be focused not exceeding (15words): Sustainability of Biopesticides through Nano Formulation
2. i. Name of Principal Investigator -: **Dr. Swati Shrivastava**
ii. Name of Co-Investigator -: Dr, Gunjan Rana, Dr. Deepti Sehrawat, Kirti Malik
3. Collaboration if any, give details of institution(s) -:NA
4. AnyProject(s)previouslysanctionedbyanyfundingagency?Ifyesgivethedetails: NA

SL. NO	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion /status	Amount (Rslakh)	Whether final project completion report has been submitted (ifyes,mention date)

5. Whetherprojectactivitiesrequireanyclearancefromrelevantauthoritiesinrespectofanyenvironmental/legal/ethicalissues?

NO

6. Duration(months): **12 MONTHS**
7. Enclose the following while submitting the application form:

Duly filled application form(complete with all Annexure)-2hardcopies	
Bio-data of the PI&Co-I-2copies	



PartII: Proposal Summary

1. **Origin of the Proposal:**(Maximum 1page)
(Scientific/Technical rationale for doing this work should be elaborated)

This study explores the dynamic relationship between Human Resources (HR) diversity and inclusion initiatives and their influence on sustainable practices and social responsibility within the unique Indian context. With the backdrop of India's diverse and multi-cultural society, where sustainable development and social responsibility have gained significant importance, this research investigates the impact of HR programs designed to foster diversity and inclusion. The research employs a mixed-method approach, combining quantitative data analysis with qualitative insights gathered from HR professionals, employees, and organizational stakeholders. The study aims to evaluate the extent to which HR-driven diversity and inclusion initiatives promote sustainable practices and socially responsible behaviors among employees and within organizations. The findings of this research are anticipated to shed light on the specific ways in which HR diversity and inclusion strategies can enhance organizational sustainability, promote social responsibility, and drive positive change in India's corporate landscape. By understanding these linkages, organizations can formulate more effective HR policies and practices that align with the broader objectives of sustainability and social responsibility, ultimately contributing to positive societal and environmental impacts.

Key words- HR Diversity and Inclusion, Sustainable Practices, Organizational Stakeholders, Societal Impact, Corporate Landscape

Introduction of the Proposed Study

In a rapidly changing global landscape, the intersection of diversity, inclusion, sustainability, and social responsibility has become a focal point for organizations aiming to thrive in a complex and interconnected world. This study, titled "Assessing the Influence of Human Resources Diversity and Inclusion Initiatives on Sustainable Practices and Social Responsibility in the Indian Context," delves into the intricate dynamics of these elements within the unique framework of India.

India, as one of the world's most diverse countries, offers a compelling setting to explore how Human Resources (HR) diversity and inclusion initiatives impact sustainability and social responsibility. In this introductory section, we outline the rationale, objectives, and significance of this research endeavor, emphasizing the relevance of such an investigation in the Indian context.

The rationale for this study is rooted in the recognition that diversity and inclusion are not only ethical imperatives but also strategic advantages. Organizations in India, like elsewhere, are increasingly acknowledging that fostering diverse and inclusive workforces not only drives innovation but is intrinsically tied to the principles of sustainability and social responsibility. In a country with myriad cultures, languages, and traditions, understanding how HR initiatives promote sustainable practices and social responsibility is of paramount importance.

2. **Objectives (Only 4-5 focused one that can be observed, measured or clearly assessable)**

i. Investigate how Indian organizations design and implement diversity and inclusion initiatives within their HR practices.
ii. Assess the extent to which diversity and inclusion programs influence sustainable practices, such as resource conservation, waste reduction, and environmental responsibility
iii. Determine how these HR initiatives contribute to social responsibility by addressing issues like community engagement, philanthropy, and ethical business conduct.
iv. Identify successful strategies and obstacles in aligning diversity and inclusion with sustainability and social responsibility in the Indian corporate landscape.

3. Review of status of Research and Development in the subject

Since the 1980s the HRM discourse has been highly influenced by the models of Hard HRM (Fombrun, Tichy, & Devanna, 1984) and Soft HRM (Beer, Spector, Lawrence, Mills, & Walton, 1984). The Michigan Hard HRM model focuses on tight strategic control and defines HRM's contribution in terms of the economic performance of the firm (Huselid, 1995). This one-dimensional purpose emphasizes the need to apply "best practices" in selection, appraisal, rewards, and HR development to increase shareholder value (Fombrun et al., 1984), which is treated as the only purpose of the organization. Broader societal or environmental stakeholder concerns are not considered. Inspired by the Human Relations movement's industrial-relations and employee-welfare approaches (Beer et al., 1984), a developmental, humanist Soft HRM approach (with a more comprehensive employee-stakeholder emphasis) has also gradually emerged since the 1980s (Kaufman, 2015).

The HR strategy of this model is based on the concepts of commitment, flexibility, and quality and aims to enhance performance through a policy of high-involvement relationship management (e.g., reward systems, work-systems) in which behavior is often self-regulated and based on a culture of trust and cooperation (Guest, 1987).

Although the HRM purpose is two-dimensional in the Soft HRM model and refined to incorporate wider, long-term consequences (individual well-being, organizational effectiveness, societal well-being), the main concern is still shareholder value and centered on organizational performance related HR outcomes (commitment, competence, congruence, cost-effectiveness) (Beer, Boselie, & Brewster, 2015). However, broader global societal factors and ecological challenges were not yet recognized as important to HRM. Only recently have scholars been calling for a more Sustainable HRM model that better reflects how organizations are currently changing and developing toward more multistakeholder perspectives (e.g., Beer, 2015; Beer et al., 2015). In contrast to Hard and Soft HRM, a context-based literature emerged (Legge, 1995) that emphasized the social, cultural, and legal purposes and multiple-roles of HRM in helping "employees meet the expectations of role partners within the organization (i.e., supervisors, peers, subordinates), at organizational boundaries (i.e., customers and clients), and beyond (i.e., family and society)" (Jackson & Schuler, 1995, pp. 239-240). Rather than giving priority to either strategic necessities or human needs, context-based approaches argue for an integrated system of (value) mutuality that bridges strategic versus human, economic rationality versus relational rationality, and efficiency versus fairness dichotomies (Paauwe, 2004) to ultimately achieve the desired HR outcomes of performance, fairness, and social legitimacy.

Over the past 10–15 years, the global business context has changed rapidly, and many organizations are now seen to be pursuing multiple purposes. Consequently, they are redefining success in more sustainable terms of Triple Bottom Line, Quadruple Bottom Line and common good outcomes, not just financial criteria (O'Higgins & Zsolnai, 2017).

At the level of a changing organizational environment, the purpose of HRM is currently in

transition (Ehnert, 2014) and a multidimensional Sustainable HRM model is emerging that takes into account long-term influences such as climate change, biodiversity, urbanization, and workforce demographics rather than simply quarterly returns and market-driven, short-term financial issues. Also, natural resources and social capital are increasingly seen as valuable assets on a par with economic capital. Consequently, these resources are recognized as in need of appropriate protection through the development of “people-management practices that take the development of social, environmental and human capital into account” (Guerci & Carollo, 2016, p. 212).

In a systematic literature review Elias and Hu identified and synthesised 36 empirical papers, published between 2012 and 2021, which address sustainable HR practices and examine the role of managers. The review’s systematic approach is aligned with the insights by Xiao and Watson who provide guidelines on the different review approaches, how to plan for a review, the quality criteria, and the importance of idea flexibility. While existing reviews on sustainable HRM and its sub-fields provide good insights on the overall progress in the literature, Elias and Hu’s review of sustainable HRM, which has a distinct emphasis on managers, examines managers’ hierarchical levels and leadership styles. In the review, Elias and Hu identified and screened eligible articles by following the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) four phase flow . After identifying the included papers, they coded the papers and conducted content analysis .

To know more about the potential discrepancies between the concept used by researchers and the definition’s content, the authors coded the terms which reflect the sustainable development dimensions (environment, society, economy). The authors used the summative content analysis approach , which includes the quantification of specific words to explore their usage and interpret the embedded knowledge. The authors also utilised MS Excel and NVivo (version 12) to facilitate the continuous comparison of key terms in the construct definitions. Elias and Hu coded the individual sustainable HR practices to know more about the choice and breadth of the HR practices chosen, as opposed to the ignored ones. On the individual HR practices that were studied in the coded articles, most papers focused on training and development under ability-enhancing practices, followed by pay and reward under motivation-enhancing HR practices. Teixeira et al. focused on environmental training, and Piwovar-Sulej focused on training practices.

Importance of the proposed project in the context of current status

The study's importance lies in its potential to provide valuable insights and practical recommendations for organizations in India as they navigate the changing landscape of diversity, inclusion, sustainability, and social responsibility. By addressing these aspects, businesses can enhance their competitiveness, strengthen their relationships with employees and stakeholders, and contribute positively to society and the environment.

Work Plan:

3.1 Methodology:(Maximum of 5 pages)



The proposed empirical study on "Evaluating the Impact of Human Resources Initiatives Fostering Diversity and Inclusion on Sustainable Practices and Social Responsibility in the Indian Setting" will utilize an empirical research approach, integrating quantitative data analysis with qualitative perspectives. The research will commence with an extensive review of the existing literature to construct a theoretical framework and pinpoint gaps in prior research focusing on the influence of diversity and inclusion programs on sustainable practices and

social responsibility. For the quantitative data analysis, data will be procured from reputable sources, including corporate records, surveys, and publicly accessible statistics. These datasets will encompass crucial metrics related to diversity and inclusion, sustainable strategies, and social responsibility endeavors within Indian organizations, both pre and post the introduction of diversity and inclusion initiatives. To gain qualitative insights, interviews and surveys will be conducted with a spectrum of stakeholders, encompassing HR professionals, employees, corporate leadership, and relevant parties. These interactions will facilitate a profound comprehension of their experiences, obstacles, and viewpoints regarding the consequences of diversity and inclusion initiatives. The aim is to garner diverse perspectives, providing a holistic outlook on the subject matter.

Major Research Questions / Hypotheses

1. To what extent do Human Resources diversity and inclusion initiatives influence sustainable practices in Indian organizations
2. What challenges and barriers are encountered in the implementation of diversity and inclusion initiatives within the Indian HR context
3. How do the outcomes of diversity and inclusion initiatives in Indian organizations compare to international best practices in terms of fostering sustainability and social responsibility.
4. What lessons can be learned from global models of diversity and inclusion for Indian organizations aiming to enhance their impact on these dimensions?

Sample size for the research Study -: 1500-1700

Innovation/path breaking aspects of the Proposed Research -:

To enhance the assessment of the influence of Human Resources Diversity and Inclusion Initiatives on Sustainable Practices and Social Responsibility in the Indian Context, several innovative measures can be adopted to gain deeper insights into their impacts. Firstly, a comprehensive longitudinal study spanning multiple years can be conducted to track the progress of diversity and inclusion initiatives over time, providing valuable data on their long-term effects. Secondly, implementing a control group comparison with organizations that did not implement diversity and inclusion initiatives will help isolate specific impacts attributed to these HR programs. Furthermore, conducting sector-specific analyses will reveal how these initiatives influence different industries, while investigating regional disparities will highlight areas in India where the initiatives had the most significant impact. Additionally, focusing on outcomes related to employee engagement, job satisfaction, and environmental sustainability, along with assessing the social impact, will provide a comprehensive understanding of the initiatives' effects. Surveys of stakeholders, including HR professionals, employees, corporate leaders, and relevant parties, will yield qualitative insights into the experiences and perspectives on diversity and inclusion initiatives. Utilizing advanced data analytics and machine learning techniques can enable the extraction of meaningful patterns from large datasets, allowing for a deeper analysis of the relationships



between diversity and inclusion efforts and sustainability practices. Lastly, benchmarking the Indian context against global diversity and inclusion best practices and conducting a cost-benefit analysis will inform the refinement of HR policies and practices related to diversity, inclusion, sustainability, and social responsibility. These innovative approaches will contribute to a more nuanced understanding of the influence of Human Resources Diversity and Inclusion Initiatives on Sustainable Practices and Social Responsibility in the Indian context, enabling targeted support and continuous improvement within organizations.

3.2 Time Schedule of activities giving milestones through Gantt Chart.(Maximum 1page)

1st & 2nd month:

Literature Review: Undertake an extensive review of existing literature to compile pertinent research and studies concerning Human Resources Diversity and Inclusion Initiatives, their influence on Sustainable Practices, and Social Responsibility within the Indian context. This review should also aim to identify gaps in the current literature, which will help shape the research's direction. Create a comprehensive research proposal that elucidates the study's objectives, methodology, data collection techniques, and analytical strategies. Ensure that the proposal aligns with the specific objectives of assessing the impact of Human Resources Diversity and Inclusion Initiatives on Sustainable Practices and Social Responsibility. Seek the requisite approvals from relevant authorities and stakeholders before proceeding. Select and appoint a qualified research associate who will actively contribute to the research project. The research associate should possess the necessary skills and knowledge to assist in the planning, execution, and analysis of the research activities.

3rd & 4th Month:

Data Collection Design: Develop data collection tools, such as surveys and interview questionnaires, tailored to gather both quantitative and qualitative data from HR professionals, employees, corporate leaders, and other relevant stakeholders involved in Human Resources Diversity and Inclusion Initiatives aimed at Sustainable Practices and Social Responsibility in the Indian context. Initiate the process of obtaining ethical approval for data collection, ensuring full adherence to ethical principles and data protection regulations, to guarantee the rights and confidentiality of all participants involved in the study.

5th & 6th Month: **Data Collection:** Initiate the data collection process from the identified sample of HR professionals, employees, corporate leaders, and other relevant stakeholders. This will involve conducting surveys and interviews to elicit insights into the socio-economic impact of Human Resources Diversity and Inclusion Initiatives on Sustainable Practices and Social Responsibility within the Indian context. Begin the initial analysis of the collected data to identify early trends and patterns. Conduct preliminary descriptive statistics to gain an initial understanding of the data's characteristics and key features

7th & 8th Month: **Data Validation and Cleaning:** Thoroughly validate and cleanse the gathered data to

uphold its accuracy and reliability. Address any inconsistencies or gaps in the data to ensure its quality. Utilize advanced statistical methods and machine learning approaches to carry out an in-depth analysis of the data. Investigate connections between different variables and evaluate the initiative's effects on a range of socio-economic indicators.

9th & 10th Month: Policy Implications: Initiate the formulation of initial conclusions pertaining to the socio-economic consequences of Human Resources Diversity and Inclusion Initiatives on Sustainable Practices and Social Responsibility in the Indian Context. Identify essential policy recommendations grounded in the research outcomes.

11th & 12th Month:

Conclude the data analysis process and solidify the research findings, ensuring that the results exhibit statistical significance and resilience. Compile the ultimate research report, encompassing an executive summary, introduction, methodology, results, discussion, conclusions, and recommendations. Present the findings in a clear and coherent manner. Formulate policy recommendations grounded in evidence and tailored for decision-makers, drawing from the research insights. Provide actionable suggestions to enhance the effectiveness of Human Resources Diversity and Inclusion Initiatives in promoting Sustainable Practices and Social Responsibility in the Indian context. Formulate policy recommendations grounded in evidence and tailored for decision-makers, drawing from the research insights. Provide actionable suggestions to enhance the effectiveness of Human Resources Diversity and Inclusion Initiatives in promoting Sustainable Practices and Social Responsibility in the Indian context.

4. Expertise:

4.1 Expertise available with the investigators in executing the project: (Maximum 1 page)

(Professional expertise existing with each of the investigators in terms of publications, Patents and preliminary results, to execute every component of the proposal should be highlighted)

RESUME OF INVESTIGATORS ATTACHED



4.2 Bibliography

- Smith, W.K.; Besharov, M.L.; Wessels, A.K.; Chertok, M. A Paradoxical Leadership Model for Social Entrepreneurs: Challenges, Leadership Skills, and Pedagogical Tools for Managing Social and Commercial Demands. Acad. Manag. Learn. Educ. 2012, 11, 463–478. [CrossRef]
- Ferraro, F.; Etzion, D.; Gehman, J. Tackling Grand Challenges Pragmatically: Robust Action Revisited. Organ. Stud. 2015, 36, 363–390. [CrossRef]

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- United Nations. Transforming Our World: The 2030 Agenda for Sustainable Development; United Nations: Geneva, Switzerland, 2015.
- Yong, J.Y.; Yusliza, M.Y.; Fawehinmi, O.O. Green Human Resource Management: A Systematic Literature Review from 2007 to 2019. Benchmarking 2020, 27, 2005–2027. [CrossRef]
- Kim, S.; Vaiman, V.; Sanders, K. Strategic Human Resource Management in the Era of Environmental Disruptions. Hum. Resour. Manag. 2022, 61, 283–293. [CrossRef]
- Dyllick, T.; Muff, K. Clarifying the Meaning of Sustainable Business: Introducing a Typology From Business-as-Usual to True Business Sustainability. Organ. Environ. 2016, 29, 156–174. [CrossRef]
- Ehnert, I.; Parsa, S.; Roper, I.; Wagner, M.; Muller-Camen, M. Reporting on Sustainability and HRM: A Comparative Study of Sustainability Reporting Practices by the World's Largest Companies. Int. J. Hum. Resour. Manag. 2016, 27, 88–108. [CrossRef]

5. List of facilities required from Sushant University for the project implementation.

5.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	No
2.	Water & Electricity	YES
3.	Laboratory Space /Furniture	No
4.	Power Generator	YES
5.	AC Room or AC	YES
6.	Telecommunication including e-mail & fax	YES
7.	Transportation	YES
8.	Administrative/Secretarial support	No
9.	Information facilities like Internet/Library	YES
10.	Computational facilities	YES
12.	Any other special facility being provided	No

5.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group			
PI's Department			
Other Institute(s)			



In the region

5.3 Total Budget(Rs. in Lakhs):

- Recurring Cost(Rs): 70000
- Non-Recurring Cost(Rs): 70000

Sl. No.	Item	1 st Yr
A	Recurring	70000
	1. Manpower	
	2. Consumables	
	3. Travel	
	4. Field testing, Demo/ Training expenses(if applicable)	
	5. Contingencies/Other costs	
	6. Institutional Overheads*	
	7. Any other item	
B	Non-Recurring	70000-
	Software Purchased	
	Grand Total (A+B)	Rs. 140,000

A. Recurring:

1. Budget for Manpower

Sl. No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	1 st Yr
1	Research Associate	1	Post Graduation	Rs. 3000	36000

2. Budget for Consumables*

Sl. No.	Description of consumable	Qty./Yr	1 st Yr
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1.	Stationary , Source Materials	Rs. 5000
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3. Budget for Travel

Sl. No.	Purpose	1 st Yr
1.	SURVEY & DATA COLLECTION For qualitative insights, interviews and surveys will be conducted with start-up founders, investors, policymakers, industry experts, and representatives from start-up incubators and accelerators to understand their experiences, challenges, and perspectives. Research will be done in Guragon, Faridabad and Delhi	10000

4. Trainings*

Sl. No	Description of field testing/demos/trainings	No/Yr	1 st Yr	Total
1.	Training for SPSS Software(Expert workshop)		Rs. 5000	5000

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	1 st Yr	Total
1.	COMPUTER	1		24000



B. Non-Recurring:

Sl. No.	Equipment/Item details	Qty	Budget(Rs In lakhs)
1.	SPSS SOFTWARE LICENSE	1	70,000

6. Deliverables

Dr. SWATI SHRIVASTAVA

Address:

B 904, Times Residency

Sector 63, Gurugram

Mobile: 9717009234

Email-id: sswadeepti172@gmail.com

Dr. Swati Shrivastava is currently working as an **Assistant professor** at the School of Management and Commerce **K.R Mangalam University**. She has been awarded PhD (Management), PGDM and B.E (IT) degrees from various Prestigious Universities. Her PhD (2022) focused on Domestic and Cross Border Mergers and Acquisitions. She is having a **total experience of 13 years which Include 3 years of Industrial and 10 years of experience** in imparting business management education to post graduates, undergraduates and executives. She has an optimistic approach towards continuous learning and development. She has actively participated in various National, International Conferences, Workshops and Symposiums. Her main research interests include Mergers, women entrepreneurship, Accounting and Finance. She's having Professional membership of AIMA and CMA.

Her teaching focuses on entrepreneurship, Finance, Accounts, Banking and Insurance and Portfolio Management. Moreover, she has guided several SIP (Summer Internship Program) Students in MBA Program and is at present guiding 4 **PhD scholars**.

She is a certified Innovation ambassador from Institutions innovation council a body working under Ministry of education. She was the "Session Chair" in International Conference on "Managerial Business Practices and Theories POST COVID" Organised by "School of Management and commerce", K.R Mangalam University.

She is working as a **Convenor** in international conferences going to be organized in November 2023 at K R Mangalam University.

She is the Paper **Reviewer** in "Anusandhan" Annual Journal of "New Delhi Institute of Management"

She has been appointed as paper setter in Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal (State Govt. University)

Besides teaching and research, she is a School coordinator for Post Graduate students; she is a part of Admission Department for counselling and admission interview.



Academic Experience:

Assistant Professor –14th March 2022 **till date.**

Organization Name – **K R Mangalam University, Gurgaon**

Administrative Responsibilities

- University Co-Coordinator NAAC “6” Criteria
- **Ambassador -Institution’s** Innovation Council under the aegis of Ministry of Education.
- **Member Secretary** - MSME
- **Coordinator** - Industry – Academia Tie ups (NSE, IBM, Samatrix).
- **Coordinator** PG Program
- **Member** - Admission Cell (Counselling + Virtual Interview)

Academic Exposure

- Assistant Professor -August 2016 to March 2022
Organization Name – NDIM Saket (IP University)
- Assistant Professor -: June 2015 to June 2016
Organization Name – BIMT Gurgaon
- Assistant Professor -: August 2013 to June 2015
Organization Name -: IEC Group of Institutions, Greater Noida, U.P.

Professional Experience:

Research Associate -: April 2010 to November 2011

Organization Name -: Markit India Services Pvt. Ltd. Noida.

IT Analyst -: Aug’05 to Nov’2006

Organization Name -: SM Info Solutions as IT Analyst.



Research Details

A. Papers Presented in Conferences -

- Presented Research paper on “Impact of Green Marketing Initiatives on Consumer Buying Behaviour: An Empirical Analysis” at the “International Conference on Design and Application of Multifunctional Materials, Interfaces and Composites (DAM2IC-2022)” Organized by School of Engineering & Technology, K. R. Mangalam University, Gurugram, Haryana
- Presented Research paper on “An Analysis of People’s Behaviour toward Municipal Solid waste Disposal for improving system in India “A case study of Faridabad city” at the “International Conference on Multidisciplinary Aspects of design: Enhancing the connections” Organized by K. R. Mangalam University, Gurugram, Haryana
- Presented Research paper on ““A Strategic Analysis of Mergers and Acquisitions as a corporate restructuring in Indian Environment” at the “International Conference on “Vision 2070: Achieving sustainability through Management and Technology” Organised by Asian School of Business.
- Presented a Research Paper titled "Women In Business Or As An Entrepreneur: Transforming Challenges Into Opportunities" For The National Conference Organized By The United Institute of Technology Greater Noida.
- Presented a research paper titled “A Case Study On Pre And Post Joint Venture Analysis Of NTT-Docomo and Tata Teleservices With Financial And Hr Perspective” in International Conference organized by IIT-DELHI (Emerald was the publishing partner)

B. Paper Publication

- Kamboj, N., Shrivastava, S., & Singel, R.(2022). An analysis of people's behavior towards municipal solid waste disposal in India. *Urbanism architectura. Constructii*, 13(3), 203-210.
- Asthana, A., & Srivastava, S. (2023). Online Teaching and Learning amidst COVID-19. In *Measuring the Effectiveness of Organizational Development Strategies During Unprecedented Times* (pp. 176-189). IGI Global.
- Issues And Challenges In The Use Of Information Communication Technology (Icts) In Education In India. Published In “European Chemical Bulletin” DOI:10.31838/Ecb/2023.12.S1 B.260Eur. *Chem. Bull.* 2023,12(Special Issue 1, Part-B), 2592-2601
- “A Study On Rural And Urban Young Female About Digital Wellbeing” Department Of Philosophy: Rabindra Bharati University ISSN : 0973-0087 Vol. : XXIII, No:05, 2022 UGC CARE Approved, Peer Reviewed And Referred Journal

- REVIEW OF FDI POLICIES IN INDIA (Special Reference To Factors Impacting FDI) Published In “ASB International Journal Of Management And Technology”, Volume 2 ,Issue 2, Dec 2021
- “Conceptual Model Illuminating Factors And Constraints Influencing The M&A Decisions” Published In IUJ Journal Of Management, Volume 8, Issue 1 June 2020.
- “Human Development Index : The Key Factor Impacting GDP In India “Published In “ ABS International Journal Of Management, Volume VIII Issue 1, June 2020
- “Demonetization And Its Effect On Financial Inclusion” Published In “ABS International Journal Of Management, Volume VI Issue 1, June 2018.
- A Case Study On Pre And Post Joint Venture Analysis Of Ntt Docomo And Tata Teleservices With Financial And HR Perspective Published In “TECNIA Journal Of Management Studies” Bi-Annual Double Blind Peer Reviewed Refereed Journal Vol. 13 No. 1. April 2018 - September 2018
- “Study And Comparative Analysis Of Financial Instruments” Published In IJRREST, Volume 6, Issue 3, Sep 2017.
- “Financial Inclusion And Its Role In Shaping Digital India “A Dream Or A Reality”. Published In “TECNIA Journal Of Management Studies” Bi-Annual Double Blind Peer Reviewed Refereed Journal, Vol. 12. No. 1. April 2017 – September 2017

C. Invited Talk and Reviewer

- **Technical Session Chair** at International Conference on “Managerial Business Practices and Theories Post COVID” organized by School of Management and Commerce, K. R on 20th-21stOctober 2022.
- **Reviewed Papers** for Anusandhan: NDIM’s Journal of Business and Management Research
- Appointed as paper setter in Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal (State Govt University)

D. FDP Attended

- **FDP on “Basics of DATA ANALYTICS”** organized by “New Delhi Institute of Management” from 16th to 22nd July, 2021
- FDP on “Basics of research and data analytics Using PYTHON” organized by “New Delhi Institute of Management” from 17th to 21st January, 2022.
- FDP on “Multi disciplinary Approach to research Methodology in Humanities and Social Sciences” From 28 TH July to 3RD August 2022.



- FDP on “New Reforms in Higher Education with reference to NEP 2020” From 27TH July to 2nd August 2022
- FDP on “2022 Intellectual Property right , patent and design process” From 22nd August to 27th August 2022
- FDP on “Meaningful Research and Intellectual Property Rights” From 8th August to 14th August 2022

E. Projects

Sl. No.	Name of the project and Reference No	Funding Agency	Cost & Duration	Status
1	Consultancy Project - Behaviour Training	Clintus Network Limited	Rs. 1,44,000/-	Completed

F. Patents

Sl. No.	Name of the project and Reference No	Funding Agency	CBR Date and Number	Status
1	Safety Wrist Band 361993-001	IPR Government of India	CBR Date: 05/04/2022 22:19:37 200189	Design Accepted and Published, Journal No is 25/2023 and Journal Date is 23/06/2023

Professional Qualification:

- Ph.D. - “Effect of domestic and cross-border merger and acquisitions on shareholders wealth of acquirer and target firm, with evidence from developed and developing countries”. From Banasthali Vidhyapeeth 2022.
- National Eligibility Test (NET) Qualified in June 2012.
- PGDBM (Equivalent To MBA, AIU AFFILATED) In Finance From NIILM CMS (AICTE Approved) Business School In 2009.

Academic Qualifications:

- Bachelor of Engineering from Rajasthan Technical University in 2005.
- 12th from C.B.S.E Board in the year 1999.
- 10th from C.B.S.E. Board in the year 1997.



Personal Details:

Husband's Name : Mr. Deepak Srivastava
Date of birth : Dec 05, 1981
Gender : Female
Marital Status : Married
Verbal Contact : 9717009234
Nationality : Indian
Language Known : English and Hindi
Permanent Address : H.NO B 904, Times Residency, Sector 63, Gurugram

Declaration

I hereby declare that the above mentioned details are true to the best of my knowledge.

Date:-

Place:- Gurgaon

Swati Shrivastava



Utilization Certificate

Certified that grant of ₹ 1, 40,000/- (**Rupees One Lakh Forty Thousand Only**) sanctioned by the Center of Research and Development, Sushant University, vide letter no. **F.No.1/2023-2024/Seed Fund-Nov 23/09** Dated **8th November 2023**, financial assistance for the project titled "**Sustainability of Biopesticides through Nano Formulation**" was utilized for the purpose for which it was sanctioned.

Financial expenditure incurred

Sl.no	Nature of expense	Proposed Expenditure (in Rs.)	Expenditure incurred (in Rs.)
1	Manpower	36,000	35,000
2	Travel	10,000	8,000
3	Consumables	5,000	10,000
4	Training	5,000	5,000
5	Contingencies	24,000	13,000
6	SPSS Software	70,000	70,000
	Total	₹ 1,40,000	₹ 1,40,000

S. Shrivastava
Principle Investigator
Principal Investigator
Sushant University
2023



Sushant
Accounts Officer
Account & Finance Officer
Sushant University
Gurugram

PROFORMA FOR SUBMISSION OF SEED FUND PROPOSAL

Part I: General Information

1. Project Title (should be focused not exceeding 15 words): Herbal Nasal Inhaler
2. i. Name of Principal Investigator: Saurabh Saraswat
ii. Name of Co-Investigator: Pankaj Malhotra
3. Collaboration if any, give details of institution(s): NA
4. Any Project(s) previously sanctioned by any funding agency? If yes give the details: NA

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)

5. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues?: NA
6. Duration (months): 18 Months
7. Enclose the following while submitting the application form:

Duly filled application form (complete with all Annexures)- 2 hard copies	
Bio-data of the PI & Co-I -2 copies	



Part II: Proposal Summary

1. Origin of the Proposal: (Maximum 1 page)

(Scientific/Technical rationale for doing this work should be elaborated)

Many people think a stuffy nose results from too much mucus in the nasal passages. However, a clogged nose is usually the result of inflamed blood vessels in the sinuses. A cold, the flu, allergies, or a sinus infection can all inflame these blood vessels.

A stuffy nose picks no time or place and can be frustrating and often affect your day-to-day life. Hence, there is need to get rid of nasal congestion.

Various inhalers (like Vick's Inhaler) are available in Indian market which contain the camphor and other chemical compounds. All such inhalers give temporary nasal relief for short duration.

Project focuses on formulation development of Herbal Nasal Inhaler with advantages of better immediate nasal relief, cost-effectiveness, herbal preparation, ease of use, compact design, mobile and child friendly.

No inhaler based on 100% herbal ingredients and child friendly, is available in India
Camphor-free, non-toxic, 100% herbal ingredients, reduced frequent usage, cost effective and money retention within India

2. Objectives (Only 4-5 focused one that can be observed, measured or clearly assessable)

i. To formulate and develop Herbal Nasal Inhaler with advantages of better immediate nasal relief,
--

ii. To impart cost-effectiveness and ease of use
--

iii. To optimize compact design, mobile and child friendly inhaler.

3. Review of status of Research and Development in the subject

3.1 International Status: (Maximum 2 pages)

(Researchers working in the area worldwide and their contributions must be properly highlighted with recent references and reviews. A correct and faithful description of the international research status must be given):

No inhaler based on 100% herbal ingredients and child friendly, is available in India
Camphor-free, non-toxic, 100% herbal ingredients, reduced frequent usage, cost effective and money retention within India.

3.2 National Status: (Maximum 1 page)

(Same as above to cover the contribution of Indian Scientists in the project area):

Camphor-free, non-toxic, 100% herbal ingredients containing formulation is not available in India

3.3 Importance of the proposed project in the context of current status (Maximum 1 page)

(Highlight what is the new area or gap which will be solved in the project in relating to what is already known. This is a very important section to project the novelty content of the Proposal):

1. Novel formulation development with enhanced patient compliance especially in pediatrics.
2. Commercialization of the product.
3. Revenue generation from manufacturing.
4. Stops money outgoings from India.



4. Work Plan:

1. Literature search and extraction of useful information
2. Procurement of chemicals and some equipments
3. Identification testing
4. Formulation development and its evaluation
5. Packaging development and its evaluation
6. Scale up of formulation, process and validation
7. Approval of product from regulatory authority
8. Contact to contract manufacturer
9. Production and marketing
10. F&D and R&D

4.1 Methodology: (Maximum of 5 pages)

(It should contain all the details of how each of the objectives will be addressed. This section must be detailed and have clear plans, not vague and generalized statements. It should have several schemes, tables, figures, equations etc. in addition to text, explanation and justification of why the project research plan will work)

4.2 Time Schedule of activities giving milestones through Gantt Chart. (Maximum 1 page)

5. Expertise:

5.1 Expertise available with the investigators in executing the project: (Maximum 1 page)

(Professional expertise existing with each of the investigators in terms of publications, Patents and preliminary results, to execute every component of the proposal should be highlighted): Yes



5.2 Bibliography:

1. Greve, G.D.; Hellings, P.W.; Fokkens, W.J.; Pugin, B.; Steelant, B.; Seys, S.F. Endotype-driven treatment in chronic upper airway diseases. *Clin. Transl. Allergy* 2017, 7, 22. [CrossRef]
2. Togias, A. Unique mechanistic features of allergic rhinitis. *J. Allergy Clin. Immunol.* 2000, 105, S599–S604. [CrossRef] [PubMed]
3. Sedaghat, A.R.; Phipatanakul, W.; Cunningham, M.J. Prevalence of and associations with allergic rhinitis in children with chronic rhinosinusitis. *Int. J. Pediatr. Otorhinolaryngol.* 2014, 78, 343–347. [CrossRef]
4. Chang, G.-H.; Lin, Y.-S.; Hsu, K.-H.; Cheng, Y.-C.; Yang, P.-R.; Tsai, M.-S. Nasal irrigation with *Glycyrrhiza glabra* extract for treatment of allergic rhinitis—A study of in vitro, in vivo and clinical trial. *J. Ethnopharmacol.* 2021, 275, 114116. [CrossRef] [PubMed]
5. Lauriello, M.; di Marco, G.P.; Necozone, S.; Tucci, C.; Marina, P.; Rizzo, G.; Eibenstein, A. Effects of liposomal nasal spray with vitamins a and e on allergic rhinitis. *Acta Otorhinolaryngol. Ital.* 2020, 40, 217–223. [CrossRef] [PubMed]

6. Bastier, P.L.; Lechot, A.; Bordenave, L.; Durand, M.; De Gabory, L. Nasal irrigation: From empiricism to evidence-based medicine. A review. *Eur. Ann. Otorhinolaryngol. Head Neck Dis.* 2015, 132, 281–285. [CrossRef] [PubMed]
7. Gutiérrez-Cardona, N.; Sands, P.; Roberts, G.; Lucas, J.S.; Walker, W.; Salib, R. The acceptability and tolerability of nasal douching in children with allergic rhinitis: A systematic review. *Int. J. Pediatr. Otorhinolaryngol.* 2017, 98, 126–135. [CrossRef]
8. Savietto, E.; Marioni, G.; Maculan, P.; Pettorelli, A.; Scarpa, B.; Simoni, E. Effectiveness of micronized nasal irrigations with hyaluronic acid/isotonic saline solution in non-polypoid chronic rhinosinusitis: A prospective, randomized, double-blind, controlled study. *Am. J. Otolaryngol.* 2020, 41, 102502. [CrossRef]
9. Huang, S.; Constant, S.; de Servi, B.; Meloni, M.; Culig, J.; Bertini, M. In vitro safety and performance evaluation of a seawater solution enriched with copper, hyaluronic acid, and eucalyptus for nasal lavage. *Med. Devices Evid. Res.* 2019, 12, 399–410. [CrossRef]
10. Casale, M.; Moffa, A.; Sabatino, L.; Pace, A.; Oliveto, G.; Vitali, M. Hyaluronic acid: Perspectives in upper aero-digestive tract. A systematic review. *PLoS ONE* 2015, 10, e0130637. [CrossRef]
11. Daraee, H.; Etemadi, A.; Kouhi, M.; Alimirzalu, S.; Akbarzadeh, A. Application of liposomes in medicine and drug delivery. *Artif. Cells Nanomedicine Biotechnol.* 2016, 44, 381–391. [CrossRef] [PubMed]
12. Weston, L.A.; Mösges, R. Treating seasonal allergic rhinoconjunctivitis with a liposomal nasal spray. *Allergologie* 2010, 33, 196–204. [CrossRef]
13. Böhm, M.; Avgitidou, G.; el Hassan, E.; Mösges, R. Liposomes: A new non-pharmacological therapy concept for seasonal-allergic rhinoconjunctivitis. *Eur. Arch. Otorhinolaryngol.* 2012, 269, 495–502. [CrossRef]
14. Eitenmüller, A.; Piano, L.; Böhm, M.; Shah-Hosseini, K.; Glowania, A.; Pfaar, O.; Mösges, R.; Klimek, L. Liposomal Nasal Spray versus Guideline-Recommended Steroid Nasal Spray in Patients with Chronic Rhinosinusitis: A Comparison of Tolerability and Quality of Life. *J. Allergy* 2014, 2014, 146280. [CrossRef] [PubMed]
15. Kanmaz, T.; Karakayali, H.; Sakallioglu, A.E.; Ozdemir, B.H.; Haberal, M. Polyunsaturated phosphatidylcholine protects against wound contraction in experimental skin burn injury. *J. Investig. Surg.* 2004, 17, 15–22. [CrossRef]

6. List of facilities required from Sushant University for the project implementation.

6.1 Infrastructural Facilities

SL No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	no
2.	Water & Electricity	yes
3.	Laboratory Space/ Furniture	yes
4.	Power Generator	no
5.	AC Room or AC	no
6.	Telecommunication including e-mail & fax	yes



7.	Transportation	no
8.	Administrative/ Secretarial support	yes
9.	Information facilities like Internet/Library	yes
10.	Computational facilities	no
12.	Any other special facility being provided	no

6.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group	Glasswares	borosil	to be purchased
PI's Department	mixers, homogenizer, extraction assemblies	miscellaneous	to be purchased
Other Institute(s) in the region	NA	NA	NA

6.3 Total Budget (Rs. in Lakhs):

- Recurring Cost (Rs):1,20,000/-
- Non-Recurring Cost (Rs):1,00,000/-

Sl. No.	Item	Budget			
		1 st Yr	2 nd Yr	3 rd Yr	Total
A	Recurring	1,20,000/-	NA	NA	NA
	1. Manpower				
	2. Consumables				
	3. Travel				
	4. Field testing, Demo/ Training expenses (if applicable)				
	5. Contingencies/Other costs				
	6. Institutional Overheads*				
	7. Any other item				
B	Non-Recurring	1,00,000/-	NA	NA	NA
	Permanent equipment				
	Construction of work shed/structures				
	Fabrication of prototype equipment				
	Grand Total (A+B)				

A. Recurring:

1. Budget for Manpower

Sl. No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	Budget (Rs. in lakhs)			
					1 st Yr	2 nd Yr	3 rd Yr	Total



2. Budget for Consumables*

Sl. No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel

Sl. No.	Purpose	Budget (Rs. in lakhs)			
		1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Project logistics				
2.	Field activities				
3.	Review meetings (if elsewhere)				

4. Field Testing/ Demo/ Trainings*

Sl. No	Description of field testing/demos /trainings	No/Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Include material for technology field testing/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of beneficiaries/training, duration of training days, cost /training).

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

B. Non-Recurring:

Budget for Permanent Equipment/ Workshed/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.			
2.			
3.			
4.			

7. Deliverables

Deliverable	Mark ✓	Brief description
Product development/adaptation	✓	
Process development/adaptation	✓	
Technology package for development of the project area and local community	✓	



Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)	√	
Scientific knowledge and/or data generation leading to technology development in future	√	
Other (Please specify)	√	

8. *Name and address of experts/ institution interested in the subject / outcome of the project.*

Department of Pharmacy, SHS, SU



CURRICULUM VITAE

SAURABH SARASWAT

M.Pharm. (Pharmaceutics)

Contact:+91- 9412883959, 9410619484

E-mail:saurabhsaraswat00@gmail.com

Correspondence Address:

44-A, Shakti Nagar

Maholi Road, Mathura

Uttar Pradesh-281001

Career Objectives:

Seeking a challenging position to utilize my skills and abilities in academics which offer a professional growth while being resourceful, innovative & flexible and to devote myself to my organization and doing my job with dedication to achieve goals.

Previous Experience:

Period	Position Held	Organisation	Years
Mar.2013–Oct. 2018	AssistantProfessor	IIMT College of Pharmacy, G. Noida	5 year 7 months
Nov.2018- Sep. 2019	Associate Professor	IIMT College of Pharmacy, G.Noida	11 months
Sep.2019- till date	Assistant Professor	Department of Pharmacy, School of Health Sciences, Sushant University, Gurugram	4 year 10 months

Responsibilities Undertaken:

- **Exam Co-ordinator:** *Department of Pharmacy*, School of Health Sciences, Sushant University.
- **NAAC Co-ordinator:** *School of Health Sciences*, Sushant University, Gurugram
- **Member:** *Flying Squad*, Sushant University, Gurugram
- **Member:** *Board of Studies*, Department of Pharmacy, SHS, Sushant University, Gurugram
- **Admission Co-ordinator:** *Admission Cell*, IIMT Group of Colleges, G.Noida
- **Proctor:** *Proctorial Board*, IIMT College of Pharmacy, G.Noida
- **Member:***Anti-ragging Committee*, IIMT College of Pharmacy, G.Noida
- **Member:** *Academic Monitoring Committee*, IIMT College of Pharmacy, G.Noida

Professional Qualification:

- **Ph.D. (Pur.)** from **KR Mangalam University, Gurugram.**
- **M.Pharm. (Pharmaceutics)** in 2012 with 72.33 % from **IIMT College of Medical Sciences, Meerut** affiliated to **Mahamaya Technical University, Noida.**
- **B.Pharm.** in 2010 with 71.45 % from **Aligarh College of Pharmacy, Aligarh** affiliated to **Gautam Buddh Technical University, Lucknow.**



Academic Qualification:			
Examination	Board	Year	Percentage
Intermediate	CBSE	2006	60.20%
High School	CBSE	2004	84.80%

Grants Received:

A grant of INR 4.6 lakh received from Ministry of MSME, Govt. of India for idea proposal submitted in the 25th meeting held at Ministry of MSME, Delhi on 12 Jan. 2018.

MSME Project:

HERBAL INHALER FOR NASAL CONGESTION: The aim of idea proposal was to formulate and develop the novel inhaler from herbal origin. The existing formulations have limitations that are overcome by developing herbal nasal inhaler with remarkable functional and cost efficacy. Moreover, being infant friendly, it boost up its market acceptance. Total project cost is INR 4.95 lakh.

M. Pharm. Project:

FORMULATION DESIGN AND EVALUATION OF MOUTH DISSOLVING TABLETS OF CYCLOBENZAPRINE: The aim of the project was to formulate mouth dissolving tablets of Cyclobenzaprine by direct compression method and sublimation method. Six formulations of mouth dissolving tablets of Cyclobenzaprine were prepared by each method using croscarmellose sodium, sodium starch glycolate, and crospovidone as superdisintegrants and camphor, menthol and ammonium bicarbonate at different concentrations. The prepared batches were evaluated for hardness, friability, weight uniformity, content uniformity, water absorption test, *in vitro* dispersion time, wetting time, *in vitro* drug release and accelerated stability studies.

B. Pharm. Project:

FORMULATION AND EVALUATION OF MICROCAPSULES OF ACYCLOVIR USING ETHYL CELLULOSE POLYMER: The aim of project was to formulate the microcapsules of Acyclovir using ethyl cellulose polymer by microencapsulation method. The ethyl cellulose was used for prolonged and/or sustained release dosage forms. Six formulations of sustained and/or prolonged release microcapsules were developed with the specific drug : polymer ratios. The prepared microcapsules were evaluated for particle size, surface morphology and entrapment efficiency.



Research Publications:

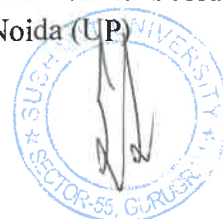
- Raghvendra, **Saurabh Saraswat**, Atif Reyazi, Satyanand Tyagi, Pramod Yadav, Sunanda Saxena; “Clinical Importance Of Neurogenesis – An Overview” in International Journal Of Pharmacy And Therapeutics. 1 (2), 2010, 21-26
- Singh Pranjali Kumar, Sanjoo Kumar, Easwari T.S., Shukla V.K., **Saraswat Saurabh**, Chaudhary Ramkumar; “ Formulation Development And Evaluation Of Clarithromycin Oral Dosage Form Against *Helicobacter Pylori* Infection” in International Journal of Pharmacy Reseach. 3(4), 2012, 281-287
- Pranjali Kumar Singh, T.S. Easwari, V.K. Shukla, Sanjoo Kumar, Ramkumar Chaudhary, Alok Nath Sharma, **Saurabh Saraswat**; “Formulation Development And Evaluation Of Mucoadhesive Oral Dosage Form Containing Clarithromycin Using Different Mucoadhesive Polymers” in International Journal Of Pharmaceutical Science And Health Care. 2(2), Apr 2012, 159-171
- Singh Dharmendra, Mishra Sudhir Kumar, **Saraswat Saurabh**, Kumar Ravindra; “Evaluation Of Anti-allergic And Anti-anaphylactic Activity Of Ethanolic Extract Of Seeds Of *Linum Usitatissimum*” in The Pharma Research- An International Journal of Pharmacy Research. 15(1), 2016, 34-38.
- Sudhir Kumar, Pushpendra Jain, **Saurabh Saraswat**, Swamita Arora; “Tylophora indica : Abrief Review on Pharmacological Aspects” in Advance Pharmaceutical Journal. 4(3), 2019, 70-75.

Book Chapter Publications:

- **Saurabh Saraswat**; “Food Borne Illness (Food Related Diseases)” in book entitled ‘An Education: Way to Success’ published by Nav Chetna Publications, Jind (Haryana).

FDPs, Conferences & Workshops Attended:

- Attended seven days **Value Added Course** on “**Good Teaching Practices**” from 31 Jan. 2021 to 06 Feb. 2022 organised by HIMT College of Pharmacy, Greater Noida (UP)
- Attended **5-Day Faculty Enrichment Programme (FEP)** on “**Cutting Edge Science in Cellular and Molecular Biomedicine**” held from 27 Jul. 2021 to 31 Jul. 2021 organised by Amity Institute of Molecular Medicine and Stem Cell Research, Amity University, Noida (UP)
- Attended **05 days Faculty Development Programme** on “**Best Practices in Innovation, Entrepreneurship and Intellectual Property Rights in Pharmaceutical Sector: Prospective Trends**” from 05 Jul. 2021 to 09 Jul. 2021 organized by Amity Academic Staff College in Association with Amity Institute of Pharmacy, Noida (UP)
- Attended **IPGA Sponsored Symposium** on “**Innovations in Pharmaceuticals, Herbals and CAMs for Management of Interactions, Side Effects thereof**” on 19 February 2018 organized by Amity Institute of Pharmacy, Amity University, Noida (UP)



- Attended **National Seminar on “Innovations and Start-up in Pharmaceutical and Healthcare Sector through Inspiration and Perspiration”** on 28 March 2017 organized by IIMT College of Pharmacy, Greater Noida (UP)
- Attended **A Seminar on “Emerging Trends in Pharmaceutical Sector in India”** (under the aegis of Indian Pharmacy Graduate Association) on 24 March 2012 organized by Rajiv Academy for Pharmacy, Mathura (UP)
- Attended **An AICTE Sponsored National Seminar On “Industry Expectations from Pharmacy Colleges”** on 5 Aug 2011 to 6 Aug 2011 organized by ITS Paramedical (Pharmacy) College, Muradnagar, Ghaziabad (UP)
- Attended **An International Conference On “New Horizons In Microbial Biotechnology And Pharmaceutical Sciences - 2011”** on 24 April 2011 to 25 April 2011 organized by Himachal (PG) Institute of Life Science And Himachal Institute of Pharmacy, Paonta Sahib (HP)
- Attended **UGC Sponsored National Conference On “Current Status & Challenges In Pharmacy & Healthcare”** on 28 Mar 2010 organized by University Institute Of Pharmacy & Dept. of Adult And Continuing Education & Extension, CSJM University, Kanpur (UP)

Industrial Exposure:

- Completed Internship Training from 24 June 2009 to 27 July 2009 in **Ipca Laboratories Limited, Village Athal, Silvassa, Dadra & Nagar Haveli (U.T.)**
- Visited **Innova Captab, Jharmajari, Baddi, Solan (HP)** on the behalf of Aligarh College of Pharmacy, Aligarh (UP)
- Completed M.Pharm. Project Work in **Torque Pharmaceuticals Pvt. Ltd., Chandigarh.**
- Organised Industrial Visit in **Higlance Laboratories, Surajpur, G. B. Nagar (UP)**

Awards And Achievements:

- Awarded **“Certificate of Appreciation”** for contribution as **Member of Organising Committee** in the National Conference on **‘Innovation in Radiography and Imaging Expertise’** in association with **Indian Society of Radiographers and Technologist** held on 27 Nov. 2021 organised by School of Health Sciences, Sushant University, Gurugram (Haryana)
- Attended **“National Cadet Corps Combined Annual Training Camp”** on 05 Oct. 2004 to 16 Oct. 2004 at PMV Polytechnic, Mathura (UP)
- Awarded a certificate from **Nagarik Suraksha Sangathan** on 27 Oct. 2010 by **District Magistrate – Mathura.**
- Awarded **Certificate ‘B’** in the examination held in 2006 under the authority of **Ministry**



of Defence, Government of India on 14 Sep. 2006

- Awarded **Runners-up in Poster Presentation** in the **Pharmacon-09** on the occasion of Pharmacy Week Organized by Aligarh College of Pharmacy, Aligarh (UP)
- Awarded **Winner in Quiz Competition** in the **Pharmacon-09** on the occasion of Pharmacy Week Organized by Aligarh College of Pharmacy, Aligarh (UP)
- Awarded **Winner in Pharma Quiz** on the occasion of **Tech-Spardha'10** organized by MIET Group of Institutions, Meerut (UP)

Extra Curriculum Activities:

- Participated in **Tycoons 2008 – The Great Leadership Hunt** organized by Career Launcher
- Participated in the **Big Performance Quiz Contest** held on 26 Feb. 2008 organized by Aligarh College of Engg. & Technology, Aligarh (UP)
- Participated in **Inter College Quiz Competition** in 2008-09 organized by Rajiv Academy For Pharmacy, Mathura (UP)
- Acted as **Active Volunteer in National Pharmacy Week Celebration on “Safety First With Medicine – Ask Your Pharmacist”** on 15 Nov. 2010 organized by IIMT College of Medical Sciences, Meerut (UP)

Computer Proficiency:

- Operating Systems:
 - Win XP, Win 7 & Win Vista
- MS Office 2003 & 2007
 - Word, Excel, PowerPoint & Outlook
- Scientific data retrieval from various Internet portals:
 - Google, Science direct, Pub med, High wire, Chem web.
- Computer Fundamentals
- Internet:
 - IE, Mozilla Firefox & Google Chrome

Strengths And Skills:

- Good listener, good in motivation and improvement
- Good communication skills in English
- Good in Planning, Coordination & Documentation, Believe in Teamwork
- Positive Attitude, Determined, Energetic, Organized & Understanding
- Good attention to detail and comprehensive problem solving ability



- Good decision making and analytical skills
- Friendly nature and compatibility with all kinds of people
- Ever-growing thirst for knowledge and a learning attitude
- Hard working, Sincere, Dedicated and Committed to perform as per needs
- Optimism and believe in dedicated and persistent hard work.

Personal Details:

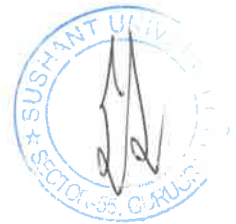
Date of Birth : 07 JULY 1989
Father's Name : Mr. Raj Kumar Churamani
Permanent Address : 44-A, Shakti Nagar, Maholi Road
Mathura, Uttar Pradesh (281004)
Nationality : Indian
Languages Known : English, Hindi
Contact No. : +919412883959, +919410619484
E-Mail : saurabhsaraswat00@gmail.com

I hereby declare that the information provided above is true to the best of my knowledge and belief.

Date:

Place: Mathura

(SAURABH SARASWAT)



PROFORMA FOR SUBMISSION OF SEED FUND PROPOSAL

Part I: General Information

1. Project Title(should be focused not exceeding 15 words): Role of Mediation in solving Disputes
2. i. Name of Principal Investigator: Dr. Deepak Miglani
ii. Name of Co-Investigator: Mr. Ashutosh Raj Anand
3. Collaboration if any, give details of institution(s) NA
4. Any Project(s) previously sanctioned by any funding agency? If yes give the details:

SL. NO.	Title of the Project	File No	Name of Division and funding agency (DST/DBT...)	Date of completion /status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)
	N.A.					

5. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues? No
6. Duration(months): 12 Months
7. Enclose the following while submitting the application form:

Duly filled application form (complete with all Annexures)-2 hard copies	
Bio-data of the PI & Co-I-2 copies	

Part II: Proposal Summary

1. **Origin of the Proposal:**(Maximum 1 page)
(Scientific/Technical rationale for doing this work should be elaborated)
2. **Objectives(Only 4-5 focused one that can be observed, measured or clearly assessable)**

i. Analyse whether Mediation Rules are sufficient to Encounter the problems relating to Mediation cases in Gurugram.
ii. Analyse the Advantages and Disadvantages of Mediation as a dispute Resolution



Mechanism in cases in Gurugram.
iii. Analyse the Advantages and Disadvantages of Mediation as a dispute Resolution Mechanism in cases in Gurugram.
iv. Analyse the Judicial Approach with respect to Mediation in Gurugram.
v. Analyse the procedure of referral of cases under Section 89 of The Code of Civil Procedure, 1908.

3. Review of status of Research and Development in the subject

3.1 International Status: (Maximum 2 pages)

(Researchers working in the area worldwide and their contributions must be properly highlighted with recent references and reviews. A correct and faithful description of the international research status must be given)

3.2 National Status: (Maximum 1 page)

(Same as above to cover the contribution of Indian Scientists in the project area)

3.3 Importance of the proposed project in the context of current status (Maximum 1 page) (Highlight what is the new area or gap which will be solved in the project in relating to what is already known. This is a very important section to project the novelty content of the proposal)

While mediation can be an effective method for resolving disputes, there can be various challenges and problems associated with its role in Gurugram or any other location. It's important to note that the effectiveness of mediation can be influenced by cultural, legal, and systemic factors. Here are some potential problems in the role of mediation in solving disputes in Gurugram:

1. Cultural Factors:

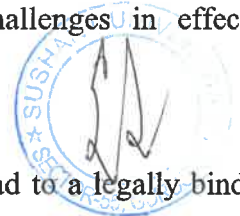
- **Hierarchy and Power Dynamics:** Gurugram, like many places, may have strong hierarchical structures in society and organizations. This can affect the dynamics of mediation, making it challenging for parties to express themselves freely or negotiate on equal footing.
- **Communication Styles:** Differences in communication styles, especially between urban and rural populations or diverse ethnic groups, can pose challenges in effective communication during mediation.

2. Legal Framework:

- **Enforceability of Agreements:** If the mediation process doesn't lead to a legally binding agreement, parties might face difficulties in enforcing the outcomes. This can be a concern, especially if one party fails to comply with the mediated agreement.

3. Infrastructure and Accessibility:

- **Limited Access to Mediation Services:** Accessibility to mediation services might be limited in certain areas, particularly in rural or underdeveloped regions around Gurugram.



This can hinder the widespread adoption of mediation as a dispute resolution mechanism.

4. Lack of Awareness:

- **Public Awareness:** Many people may not be aware of the benefits of mediation or may not fully understand how the process works. This lack of awareness can lead individuals to opt for more traditional legal avenues, bypassing the potential benefits of mediation.

5. Mediator Quality and Training:

- **Quality of Mediators:** The effectiveness of mediation heavily depends on the skills and training of the mediators. If there is a shortage of qualified and experienced mediators in Gurugram, it can impact the quality and success of the mediation process.

6. Corporate and Commercial Disputes:

- **Complexity of Disputes:** Gurugram, being a significant corporate and commercial hub, may witness complex business disputes. Mediation might face challenges in dealing with highly technical or intricate matters that require specialized knowledge.

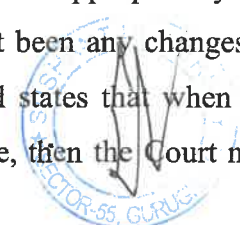
7. Government Support and Integration:

- **Government Endorsement:** The level of support and endorsement from the local government can influence the success of mediation programs. Lack of government support or integration of mediation into the legal system might limit its effectiveness.

8. Cultural Resistance to Alternative Dispute Resolution (ADR):

- **Preference for Litigation:** In some cases, there might be a cultural preference for traditional litigation over alternative dispute resolution methods like mediation. This preference can slow down the adoption of mediation in Gurugram.

Addressing these challenges requires a comprehensive approach that involves training skilled mediators, raising public awareness, integrating mediation into the legal framework, and adapting mediation processes to the cultural context of Gurugram. Additionally, ongoing efforts are needed to promote the benefits of mediation and build trust in the effectiveness of this method for resolving disputes. Significant research has not been conducted on the issues related to mediation in solving disputes with special reference to mediation centres in Gurugram. The Indian Society is developing and the citizens are concerned about the justice delivery system. Dispensation of Justice is a Fundamental Right and the justice should not be delayed. Disputes in Court should be handled appropriately and timely. Courts are also sending parties for mediation. There have not been any changes in the legislation for mandatory mediation till date. The legislation still states that when the court feels or when the circumstances or nature of the case so require, then the Court may



send the parties for mediation. There is no codified statute for mediation where it states the process to be adopted or till what extent the Court should go for reconciliation between the parties. Mediation in dispute has not been explored much. The study will attempt to find, suggest and recommend that will aid the law makers, executive and judiciary to regularise and create a formal framework for mediation in solving dispute.

4. Work Plan:

4.1 Methodology:(Maximumof5pages)

The Research will be conducted to examine, firstly, the present status of Mediation in solving disputes and what are the provisions of the Indian law which supports mediation. Secondly, the issues and challenges faced while directing mediation in solving disputes have to be identified and explored.

The present study deals in finding how efficient is mediation in solving disputes and about the necessity of codification of the process of mediation; therefore, it would be necessary to understand the framework of the mediation as an alternative dispute resolution in India and the rule governing the process of mediation. For this purpose, the researcher will conduct a literature review of the available legislation and rules governing mediation. The researcher will collect primary data regarding the problems for which parties resort to mediation. Visit to mediation centre and Courts will be undertaken by the researcher to get a better insight about the process of mediation.

The researcher will conduct the literature review of the literature relating to the need for incorporating and/or amending the provisions with regard to mandatory mediation in solving disputes in the respective legislation and the need of uniform law for mediation. The researcher will prepare questionnaires, conduct interviews of mediators, parties in dispute and lawyers. The researcher will conduct practical visit to mediation centre to interact with mediators, parties in dispute, families of parties in dispute. The questionnaires and interview will be conducted to find about the need, awareness and opinion of parties in dispute, mediators and lawyers.

The researcher will compile all the data and would arrive at conclusions utilising various research tools, techniques. At the end the researcher will present all the literature and outcome of the study in form of thesis along with suggestions and recommendations.

The present study is planned to be done through Doctrinal and Empirical Research. The

concentration will be towards the disputes in mediation centres established across the District Gurugram. The data is planned to be collected through different sources like Primary i.e. Data collected from the mediators, parties in dispute, lawyers and mediation centres and Secondary sources like Books, Articles and Journals.

For handling this present proposed research work in an appropriate manner and for getting desired outcomes from the work, both the Doctrinal and Empirical method would be preferred. Hence, the researcher will adopt both the Doctrinal and Empirical method to carry out the research.

- i. Doctrinal method includes arranging, ordering and systematizing legal propositions, analysis of case laws and study of legal institutions through legal reasoning. The data or information will be collected from legislative texts, foreign laws and judicial decisions.
- ii. The researcher will utilise source of information like current legislation, case laws with regard to the concepts of mediation in solving dispute.
- iii. Secondly, the researcher will gather and analyse Secondary sources such as reports of the Law Commission of India, Articles and Papers prepared by eminent authorities to track the evolution and current status of mediation in solving dispute.
- iv. Secondary sources like commentaries by legal luminaries, Articles from Journals, articles from internet, books will be referred by the researcher.
- v. The Empirical research will be carried on by collecting data or information from primary sources. The proposed study will include, preparation of questionnaires, interview, practical visit to mediation centre of Gurugram, visit to courts in Gurugram.
- vi. Primary data will be collected from stakeholders through a survey method with the help of the questionnaires as well as interview will be conducted to find out the need, awareness, success and issues pertaining to mediation in matters pending in courts.
- vii. The Primary Data will be collected from Mediation Centre and Courts located in Gurugram.

4.2 Time Schedule of activities giving milestones through Gantt Chart. (Maximum 1 page)

5. Expertise:

5.1 Expertise available with the investigators in executing the project: (Maximum 1



page)(Professional expertise existing with each of the investigators in terms of publications, Patents and preliminary results, to execute every component of the proposal should be highlighted)

5.2 Bibliography

LIST OF REFERENCES

I. Statutes and Rules

1. The Civil Procedure Mediation Rules, 2003
2. The Mediation and Conciliation Rules, 2004 (Delhi High Court)
3. Mediation Training Manual of India (Mediation and Conciliation Project Committee Supreme Court of India, Delhi)
4. The Code of Civil Procedure, 1908
5. The Commercial Courts, Commercial Division and Commercial Appellate Division of High Courts (Amendment) Act, 2018

II. Books

1. Lutha K., *Mediation-An Art and Science of Conflict Resolution-Law and Practice* 46 (Legist Law Publication, Pune, 2009)
2. V.A Mohta and Anoop V. Nigam, *Arbitration, Conciliation and Mediation* (Manupatra, New Delhi, 2008)

III. Articles/Research Paper

1. Dr. Justice Dhananjya Y. Chandrachud, Mediation- realizing the potential and designing implementation strategies, Available at http://lawcommissionofindia.nic.in/adr_conf/chandrachud3.pdf,
2. Justice Jitendra N. Bhatt, A Round Table Justice through Lok- Adalat (Peoples' Court)- A Vibrant-ADR-In India, Available at <http://www.ebc-india.com/lawyer/articles/2002v1a3.htm>
3. Justice Manju Goel, Successful Mediation in Matrimonial Disputes, Approaches, Resources, Strategies and Management, Available at http://www.nja.nic.in/Concluded_Programmes/2016-17/P-1002%20Intern's%20Report.pdf
4. Justice M.M Kumar, Relevance of Mediation to Justice Delivery System in India, Available at _



https://highcourtchd.gov.in/sub_pages/top_menu/about/events_files/NCMediationNewDelhi.pdf

5. Niranjana J. Bhatt, Legislative Initiative for Court- Annexed Mediation in India, Available at <https://www.mediate.com/articles/bhattN.cfm?nl=28>

IV. Journal Paper

1. Anil Xavier, "Mediation: Its Origin and Growth in India" 27 Hamline Journal of Public Law & Policy (2005-2006).
2. Barbara Ashley Philips and Anthony Piazza, "How to use Mediation 10 Litigation, 31-33(1983).
3. Jeffery G. Kichawen and Vicki Stone, "Preparing for Mediation" 18 Litigation, 40-42 (1991).
4. Larisa Zatseva and Svetlana Racheva, "Mediation and Legal Assistance" 2 Russian Law Journal (2014).
5. Rahika Narain and Abhinav Sankaranarayanan, "Formulating a Model Legislative Framework for Mediation in India" 11 NUJS L. Rev. 1 (2018)
6. Stevent Knapnel, "Promise and Problems in Divorce Mediation" 1 Journal of Dispute Resolution, 127-135 (1991).
7. K.K Geetha, "Mandatory Mediation", 1 Galgotias Journal of Legal Studies, (2014).

V. Cases

1. Afcons Infrastructure Ltd. v Cherian Varkey Construction Co. (P) LTD [2010] 8 SCC 24.
2. Amardeep Singh v. Harveen Kaur (2017) 8 SCC 746.
3. Dayawati v. Yogesh Kumar Gosain 2017 SCC Del 11032.
4. Justin Abraham v. Preethy Thomas (2019) SCC 839.
5. K. Srinivas Rao v. D.A. Deepa (2013) 5 SCC 226.
6. Salem Advocate Bar Association v. Union of India (2005) 6 SCC 344.
7. S.Thankikodi v. Ramuthayee AIR, 1986 Madras 263.
8. Vennangot Anuradha Samir v. Vennangot Mohandas Samir (2015) 16 SCC 596.
9. Vishal G. Nair v. Sreedevi (2019) SCC 3691.

6. List of facilities required from Sushant University for the project implementation.

6.1 Infrastructural Facilities



Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility/Books/Journals/SCC online	Yes
2.	Water& Electricity	Yes
3.	Laboratory Space	Yes
4.	Furniture	Yes
5.	Power Generator	Yes
6.	AC Room or AC	Yes
7.	Telecommunication including e-mail&fax	Yes
8.	Transportation	Yes
9.	Administrative/Secretarial support	Yes
10.	Information facilities like Internet/Library	Yes
11.	Computational facilities	Yes
12.	Any other special facility being provided	Food/Stay as per requirement

6.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI&hisgroup			
PI'sDepartment			
OtherInstitute(s) intheregion			

6.3 Total Budget(Rs.inLakhs):

- RecurringCost(Rs):
- Non-RecurringCost(Rs):

Sl. No.	Item	Budget			Total
		1 st Yr	2 nd Yr	3 rd Yr	
A	Recurring				
	1. Manpower	1.20			1.20
	2. Consumables	0.20			0.20
	3. Travel	1.60			1.60
	4. Field testing, Demo/ Training expenses(ifapplicable)	0.50			0.50
	5. Contingencies/Othercosts	0.20			0.20
	6. InstitutionalOverheads*	0.20			0.20
7. Anyotheritem	0.10			0.10	
B	Non-Recurring				
	Permanentequipment	0.50			0.50
	Construction of work shed/structuresFabricationofprototypeequipment	0.40			0.40
	GrandTotal(A+B)	5.0			5.0



A. Recurring:

1. Budget for Manpower

Sl. No.	Designation	No.	Qualification & Monthly experience	Monthly emolument (Rs)	Budget (Rs. in lakhs)			
					1 st Yr	2 nd Yr	3 rd Yr	Total

2. Budget for Consumables*

Sl. No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
	Stationary		0.20			

*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel

Sl. No.	Purpose	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Project logistics	0.60				
2.	Field activities	0.60				
3.	Review meetings (if elsewhere)	0.40				

4. Field Testing/Demo/Trainings*

Sl. No.	Description of field testing/demos/trainings	No/Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
	Travel/20 visits/Trainings		1.60+0.50			2.10

*Include material for technology field testing/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of beneficiaries/training, duration of training days, cost/training).

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
			0.20			

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

B. Non-Recurring:

Budget for Permanent Equipment/Workshed/Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.	Permanent equipment shed		0.50



2.	Construction of work shed	0.40
3.	structuresFabricationofprototypeequipment	0.10
4.		

7. Deliverables

Deliverable	Mark√	Briefdescription
Productdevelopment/adaptation		
Processdevelopment/adaptation		
Technologypackagefordevelopmentoftheprojectareaand Localcommunity		
Technology capability development, training & documentation (e.g.reports,papers,articles,technology manuals,patents)		
Scientific knowledge and/or data generation leading to Technology development in future		
Other(Pleasespecify)		

8. Name and address of experts/institution interested in the subject /outcome of the project.



Curriculum Vitae

Dr. Deepak Miglani

Email id:- deepakmiglani@hotmail.com, **Mobile:-** 9958086337

www.deepakmiglani.com

LinkedIn Profile - <https://www.linkedin.com/in/dr-deepak-miglani-6017615/>

Career Objective:-

Be a part of a progressive institution for helping the organisation to achieve its goals while working at a responsible position and in the process attaining personal, professional excellence.

Academic Qualification:-

- National Eligibility Test (NET) Qualified, 2014.
- Ph.D. from M.D. University Rohtak, 2012.
- LL.M. from M.D. University , Rohtak, 2007.
- Completed B.A. LL.B from M.D University, Rohtak, 2003.

Experience:-

- Associate Professor, School of Law, Sushant University, Gurugram, Haryana from 10 May 2022 to till date.
Responsibilities:- Chairperson Disciplinary Committee, Coordinator Internship and Recruitment Committee and Chairperson Legal Aid Committee Sushant University.
- Assistant Professor, School of Law, Ansal University (Ansal University has changed its Name Sushant University vide Haryana Government Notification Dated 4 May 2020), Gurugram, Haryana from 11th March 2016 to 9 May 2022.
Responsibilities:- Examination Coordinator, Coordinator Internship and Recruitment Committee, Member Legal Cell Ansal University, and Member Sports Committee.
- Assistant Professor, Shamsher Bhadur Saxena College of Law Rohtak from 15th July 2013 to 10th March 2016
Responsibilities:-Examination Coordinator, Convener Internship and Recruitment Committee, Convener Sports Committee.
- Assistant Professor, Geeta Institute of Law from 17th September 2012 to 27th June 2013.
- Advocate, Vijay Sansanwal and Associates, Advocates from 1st August 2007 to 14th February 2008



Responsibilities:- Drafting, Court Appearance, Client Counselling and coordinating with Government Departments.

- Advocate, Sanjay Sharma and Company, from 1st July 2003 to 30th April 2005.

Responsibilities:- Drafting, Court Appearance, Client Counselling and coordinating with Government Departments.

Refresher Course Attended

- Attended and successfully completed Capacity Development Programme for Corporate Laws (June 8-13, 2015) organized by the National Academy of Law Teachers & Center for Corporate Law & Governance at the National Law University, Delhi).
- Attended and successfully completed Capacity Development Programme for Corporate Laws (October 9-13, 2017) organised by the Centre for Corporate Laws and Governance in collaboration with Faculty of Law, University of Glasgow under aegis of National Academy of Law Teachers, National Law University Delhi.
- Attended and successfully completed Online Faculty Development Programme on “Legal Research and Pedagogy in Changing Times” [15th to 19th June, 2020] organised by Amity Law School, Amity University Haryana.
- Attended and Successfully completed Online Faculty Development Programme on “Teaching Pedagogy and Research Skills Post COVID 19” (22nd to 28th June 2020) organised by School of Law JMTECH, Noida.

Paper Presented:-

1. Paper titled, “**National Food Security Act is First Step towards Right to Food**” in One day National Seminar (Online) on “**Food Security in India Issues and Challenges**” organised by University Institute of Legal Studies Panjab University, Chandigarh on 20th June 2020.
2. Paper titled, “**Human Rights of Undertrial Prisoners in India**” in Panel Discussion on “**Prison Reforms in India: Socio-Legal Perspective**” held by University Institute of Legal Studies Panjab University on 18th May 2020.
3. Paper titled “**Admissibility of Device Recorded Evidence in India**” in 3rd Amity International Conference on Criminal Justice System: National and International Perspectives organised by Amity Law School, Amity University Haryana on 8th-9th November 2019.
4. Paper titled “**ADR in Civil Procedure Code**” in the National Conference on Alternative Dispute Resolution: Emerging Issues organised by School of Law, Sharda University, Greater Noida on 11th October 2019.
5. Paper titled, “**Rights of the Accused-Emerging Constitutional Law Perspectives**” in National Conference on “**Constitutionalism in India: Evolution, Progress and Contemporary Challenges**” organised by School of Law, Ansal University, Gurugram, Haryana on 23-24 March, 2017.



6. Paper titled, **“Law Relating to Online Piracy in India with Reference to John Doe Order”** in National Seminar on **Intellectual Property Rights in Media & Entertainment: Issues and Challenges** organised by Amity School of Communication, Amity University Madhya Pradesh on 10th February, 2017.
7. Paper titled, **“Bail: Constitutional And Legal Right of Accused”** in the International Conference on **Crime & Investigation: Emerging Issues & Challenges in Criminal Justice Administration** organised by School of Law Centre for Criminal Justice Studies Galgotias University on 4th February 2017.
8. **Certificate of Appreciation of Chaired a Session** in National Seminar on **“Human Rights: Indian and International Perspective in 21st Century”** organised by Centre for Advanced Studies in Human Rights Rajiv Gandhi National University of Law, Punjab on 7 February 2015.
9. Paper titled , **“Social Media: New Tool of Crime”**, in the National Seminar on **“Cyber Terrorism and National Security”** organized by Department of Defence Studies C.R.M. Jat College, Hisar (Haryana) on 11-12 April, 2015.
10. Paper titled , **“Law Relating to Sexual Harassment: A Step towards Social Justice for Working Women”** in National Seminar on **“Human Rights: Indian and International Perspective in 21st Century”** organised by Centre for Advanced Studies in Human Rights, Rajiv Gandhi National University of Law, Punjab on 7th of February 2015.
11. Paper titled, **“Right to know-An Essential Tool for Good Governance”** in National Seminar on **“Challenges to Indian Democracy A Socio- Legal Perspective”** organised by Amity University Madhya Pradesh on 29-30 January 2015.
12. Paper titled, **“Social Media: Issues and Legal Aspects”** presented in **ICSM 2014 International Conference on Social Media for Business** organized by Indian Institute of Management, Raipur on January 10th& 11th , 2014.
13. Paper titled, **“Role of Regulatory Agencies in developing Business Laws of India: Indian Securities Market and Its Legal Frame Work”** presented in two-day National Seminar on **‘Role of Regulatory Agencies in Developing Business Laws in India’** organised by National University of Study and Research in Law, Ranchi on 7th and 8th September, 2013.
14. Paper titled **“Good Governance and Right to know”** presented in **National Conference on “Strengthening Participatory Democracy and Good Governance”(Pre-Summit Event of the Vibrant Gujrat National Education Summit 2014 ‘Towards Educating Young India’)** organized by Centre for Constitutional and Administrative Law (CCAL), Gujrat National Law University in collaboration with knowledge Consortium of Gujrat, Government of Gujrat on January 5, 2014.
15. Paper titled , **“Critical Analysis of Legal Aspect of Corporate Social Responsibility in India”** presented in International Conference on **“Management Perspectives : Emerging Economic Models and Market Structures for Inclusive Growth”** on 24th -25th April 2014, organised by Amity Business School at Amity University Rajasthan, Jaipur, India.



16. Paper titled, "**Crime@www.internet.com**" presented in **Thirty-Seventh All India Criminology Conference** of Indian Society of Criminology, Chennai organised by Rajiv Gandhi National University of Law, Punjab on 28th February- 2nd March 2014.
17. Paper titled, "**Law relating to Corporate Social Responsibility in India**" presented in National Conference on **Emerging Trends in Management** organised by Institute of Management Studies and Research, MaharshiDayanand University Rohtak on 28th of February 2014.
18. Paper titled, "**Live In Relationship: A Reality or Myth with Specific Reference to Law of Maintenance**" presented in National Seminar on **A WORLD IN TRANSITION:NEW CHALLENGES FOR WOMEN EMPOWERMENT** organised by Rajiv Gandhi National University of Law, Punjab on 22nd February 2014.
19. Paper titled, "**Women Empowerment: Some Legal Aspects**" presented in National Seminar on '**Women Empowerment**' on 8th March 2013 organized by Shamsher Bahadur College of Law, Makrauli Kalan, Rohtak, Haryana.
20. Paper titled, "**Role of Judiciary in Protection of Human Rights**" presented in National Seminar on '**Challenges to Human Rights: Law and Remedies under Global Perspective**' on 25th February, 2012 organised by Institute of Law & Research, Jasana, Tigaon Road, Faridabad-121101.
21. Paper titled, "**Trends and Issues in Higher Education**" presented in National Seminar on "**Quality Assurance in Higher Education**" on 2nd March 2013 organised by Geeta (P.G.) College of Education Haryana.

Publications:-

1. **Book named Law General Knowledge for Competitive Examinations** by Dr. Deepak Miglani and Dinesh Miglani published by Bright Law House Delhi
2. Case Study on "**Legal Issues with Reference to Social Media and Internet**" in book "**Business Environment**" published by McGraw Hill Education (India) Private Limited.
3. Research paper titled **Critical Analysis of Legal Aspect of Corporate Social Responsibility in India** published in a book titled **MANAGEMENT PERSPECTIVES EMERGING ECONOMIC MODELS AND MARKET STRUCTURES FOR INCLUSIVE GROWTH** Edited by D.S. Rathore ,Preeti Yadav, DeepaliBhatnagar ISBN 978-81-929057-1-6.
4. Research paper titled **Right to Set Up Matrimonial Home: Working Ladies** in CPJ School of Law Journal Volume VI July 2016. ISSN:0976-3562
5. Research paper titled **Noise Pollution :Sources, Effect and Control** in Indian Journal of Social Concern. ISSN 2231-5837.



6. Research paper titled **Corporate Lobbying and Political System** in DCAS Journal of Management and IT Applications Year 2013 (July-December). (Co-authorship with Dinesh Miglani).
7. Research paper titled **Corporate Governance: Director's Role in Companies in India** in DCAS Journal of Management and IT Applications Year 2013 (January-June).
8. Research paper titled **Right to Know: An Essential Tool of Good Governance** published in Book titled Challenges to Indian Democracy A Socio-Legal Perspective ISBN 9789385000034.
9. Chapter titled **Live in Relationship: A Reality or Myth with Specific Reference to Law of Maintenance** published in Book titled A World in Transition: New Challenges for Women Empowerment ISBN 978-93-84166-00-7.
10. Research paper titled **Legal and Judicial Perspectives of Sexual Harassment at Work Place** published in EXPRESSION A Journal of Social Science ISSN 2350-1456.
11. Chapter titled **Law relating to online Piracy in India with reference to JOHN DOE ORDERS** published in book titled Intellectual Property Rights in Media and Entertainment: Issues and Challenges edited by Dr. Sumit Narula ISBN No. 978-93-84312-04-6.

Personality Attributes:-

- Energetic and proactive
- Adaptability
- Confident and well composed
- High problem solving skills
- Dedication to strive for perfection

Languages Known:- English, Hindi (Fluent), Punjabi (Mother Tongue)

Date of Birth: - 16 September 1981

Marital Status :- Married

Permanent Address: - House No. 675 Ward No.25, Patel Nagar, Rohtak - 124001



Haryana

Current Address:-

Flat No.:- 402, Tower 9, Ansal Valley View Estate, Gurugram
Faridabad Road, GwalPhari, Gurugram.

References:-

1. Prof. Dr. Sanoj Rajan

Ph.D., LL.M, MSt. Human Rights(Oxford)
Distinguished Professor of Law
Zhejiang Gongshang University Law School
Tel.:- +8619157603082
Whatsapp Mobile No.:- 9953746939
Email Id.:- sanojrajan@hotmail.com

2. Sh. Vidya Prakash

District Judge (Commercial)
Patiala House Court Complex, New Delhi
Email Id.:- vidyaprakash1975@gmail.com

Date:-18-1-2024

Place: Gurugram

Dr. Deepak Miglani



Utilization Certificate

Certified that grant of ₹ 1,26,000/- (Rupees One Lakh Twenty Six Thousand Only) sanctioned by the Center of Research and Development, Sushant University, vide letter no. **F.No.1/2023-2024/Seed Fund-Nov 23/11** Dated **8th November 2023** towards financial assistance for the project titled **“Role of Mediation in Solving Disputes”** was utilized for the purpose for which it was sanctioned.

Financial expenditure incurred

Sl. No.	Nature of expense	Proposed Expenditure (in Rs.)	Expenditure incurred (in Rs.)
1	Manpower	1,50,000	25,000
2	Travel	50,000	20,000
3	Field Activity	50,000	15,000
4	Consumables	1,00,000	15,000
5	Equipment	1,00,000	25,000
6	Construction of work	50,000	26,000
	Total	₹ 5,00,000	₹ 1,26,000

Deepak Miglani
Principal Investigator




[Signature]
Account & Finance Officer
Sushant University
Gurugram, Haryana

PROFORMA FOR SUBMISSION OF SEED FUND PROPOSAL

Part I: General Information

1. Project Title (should be focused not exceeding 15 words): Role of Women in decision making roles in Corporates in the State of Haryana
2. i. Name of Principal Investigator: Dr Astha Mehta, Associate Professor, School of Law, Sushant University, Gurgaon
 ii. Name of Co-Investigator: Prof. (Dr.) Nidhi Chaudhary, Professor, School of Business, Sushant University, Gurgaon
3. Collaboration if any, give details of institution(s): None
4. Any Project(s) previously sanctioned by any funding agency? If yes give the details:

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)
NA						

5. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues? No.
6. Duration (months): 12 months
7. Enclose the following while submitting the application form:

Duly filled application form (complete with all Annexures) - 2 hard copies	Attached
Bio-data of the PI & Co-I - 2 copies	Attached

Part II: Proposal Summary

1. Origin of the Proposal:

The gender stereotypes about intellectual ability emerge right from the childhood when it comes to girls and they grow up being influenced by others around them undermining their intellectual ability. The boys are taught from their childhood to be smart about their finances and that is the reason when girls grow up, they have to struggle and learn about managing their finances and learning about investment. Gender disparity for girls begins right from the childhood and continues till they climb up the corporate ladder.



Gender disparity in the corporate ecosystem continues to be an incessant issue where women often face unequal treatment in terms of salary structure as well as designations. The pay gap at the same designation also remains a significant concern across the industries despite the fact that we are moving towards women empowerment and gender equality. This disparity in salaries and designations does somewhere hamper the economic independence of the women but also demotivates them and perpetuates social and systemic inequalities. There are lot of factors that have a major impact on the opportunities available to the women such as the girl being of marriageable age may get married soon and relocate to the place of work of her husband, if already married then she may plan a family and take a break becoming the liability on the company who would then provide maternity benefits and relief etc. These factors do hamper the growth in the careers of the women.

Women are often underrepresented in leadership roles and executive positions, which are associated with higher pay scales. Discrimination and biases, both explicit and implicit, play a substantial role in limiting women's career growth and subsequent financial rewards. Moreover, the gender pay gap is often compounded by intersecting factors such as race, ethnicity, and age, further exacerbating the disparity.

Another factor that contributes to salary disparity is the negotiation gap. The Research suggests that women are less likely to negotiate their salaries compared to men. This can be attributed to societal expectations, stereotypes, and a lack of confidence due to systemic barriers. As a result, women may end up accepting lower starting salaries or fail to advocate for themselves during salary reviews, leading to a perpetuation of lower wages throughout their careers.

Furthermore, occupational segregation also plays a role in salary discrepancies. Men continue to dominate sectors such as technology and finance as a workforce. These sectors offer higher salaries to retain engineers and managers, while industries with higher female representation, such as healthcare and education, tend to have lower pay scales. This reflects societal bias. Women should be treated equal to men at the place of work on the basis of merit.

The gender disparity that is prevalent in the household in India specially Haryana further adds to it. Women not only face challenges in corporate settings but they leave their house in the morning facing the same challenge at home moving to another one at work. The fact that we talk about women empowerment and their rights, the traditional gender roles and societal norms continue to be the same leading to unequal burden at home and women giving up their jobs to balance. The responsibility to balance and take care of the house in majority of the households till date falls completely on the women taking a toll on their mental and physical health. If the husband is financially well off, it's the woman who eventually gives up her career and if she is required to take care of the household financially then she continues to struggle both at workplace and home. The women of the families where the household cannot afford a domestic help

evidently are disproportionately burdened with domestic tasks, including cooking, cleaning, and childcare, irrespective of their professional commitments. The unequal distribution of domestic chores leads to work-family conflicts and women often make themselves believe that career advancement and family cannot go hand in hand. Hence, they end up compromising on their career.

The other issue is financial control and decision-making power in States like Haryana and Uttar Pradesh still predominantly lies with the men who hold authority over financial matters and investments. This lack of autonomy hampers a woman's confidence in terms of making independent decisions and also, their economic empowerment.

The issues don't end there but some women also face gender-based violence and discrimination within the household. There are several instances of dowry-related abuse and domestic abuse which further marginalize women and undermine their confidence. The patriarchal norms are deeply rooted and contribute to gender disparities and hampers the growth of the women at the workplace as well as home.

Comprehensive study needs to be made on corporates in Haryana (Gurgaon) to identify and address these gender disparities. It is impertinent to promote gender sensitive policies in corporate ecosystem such as equal pay initiatives, flexible work arrangements and mentorship programs to support women's career progression. The awareness campaigns as well as legal reforms are necessary to challenge and change traditional gender roles and norms within the households to ensure the same happens in the corporate setting as it is inter-related. We need to also strengthen on certain other areas as well such as providing access to quality education, vocational training, and financial literacy programs to empower women to assert their rights, overcome economic disparities and build-up their confidence and self-esteem.

Overall, bridging the gender disparity gap faced by women in corporates and at home is a multifaceted task that demands a collaborative effort from individuals, corporations, communities, and policymakers. By dismantling systemic biases, promoting gender equality, and empowering women economically, societies can foster inclusive environments where women can thrive both in the workplace and within their own households.

2. Objectives (Only 4-5 focused one that can be observed, measured or clearly assessable)

- | | |
|-----|--|
| i. | To assess the gender disparity in terms of salaries and designations specially for women at leadership positions in the corporate sphere in Haryana, taking factors such as job roles, experience and educational qualifications into account. |
| ii. | To identify factors contributing to gender disparity in the corporates in India despite women having equal educational qualifications and experience. This |

	objective will further explore the underlying causes for discrepancies in salaries such as biases rooted in the society, gender discrimination, occupational segregation and negotiation gaps. It is important to strike at these causes to develop strategies to address the issue.
iii.	To examine the impact that gender disparity and discrimination can have on woman's career progression and professional development. The objective will analyse the outcomes of unequal pay and opportunities for women where it becomes difficult for them to take up leadership roles and decision-making roles.
iv.	To survey the perception of the corporate employees regarding gender disparity in corporates in Haryana and Uttar Pradesh specifically by collecting data through interviews, surveys and questionnaires to understand an individual's perspective on gender equality, workplace culture and the challenges faced by women in their professional sphere.
v.	To propose recommendations and strategies to promote gender equality so that the disparity is reduced when it comes to corporates. This would include practical suggestions to the corporates, policymakers and stakeholders to address gender disparity in salary structures and designations to create an inclusive work environment and implement policies to promote equal opportunities for women in corporate sector

3. Review of status of Research and Development in the subject

3.1 International Status:

<https://hbr.org/2021/05/how-to-close-the-gender-gap>

<https://www.worldbank.org/en/news/press-release/2022/03/01/nearly-2-4-billion-women-globally-don-t-have-same-economic-rights-as-men>

<https://www.imf.org/external/pubs/ft/wp/2016/wp1650.pdf>

<https://www.researchgate.net/publication/260392906> An Empirical Study of Gender Discrimination and F
oove Performance among Academic Staff of Government Universities in Lagos State Nigeria

<https://www.ilo.org/infostories/en-GB/Stories/Employment/beyond-the-glass-ceiling#benefits>

<https://www.adb.org/sites/default/files/publication/493721/adbi-wp937.pdf>

3.2 National Status:

<https://nlu.edu.in/download/ssr/Other%20Publications/Crashing%20through%20the%20glass%20ceiling%20gally->

<https://nlu.edu.in/download/ssr/Other%20Publications/Crashing%20through%20the%20glass%20ceiling%20gally-%20Gender%20discrimination%20in%20Corporate%20Sector%20and%20Women%20in%20Boardrooms.ms.pdf>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9645222/>

3.3 Importance of the proposed project in the context of current status

Women are often underrepresented in leadership roles and executive positions, which are associated with higher pay scales. Discrimination and biases, both explicit and implicit, play a substantial role in limiting women's career growth and subsequent financial rewards. Moreover, the gender pay gap is often compounded by intersecting factors such as race, ethnicity, and age, further exacerbating the disparity. That is why the issue raised in the proposed project becomes relevant.

4. Work Plan:

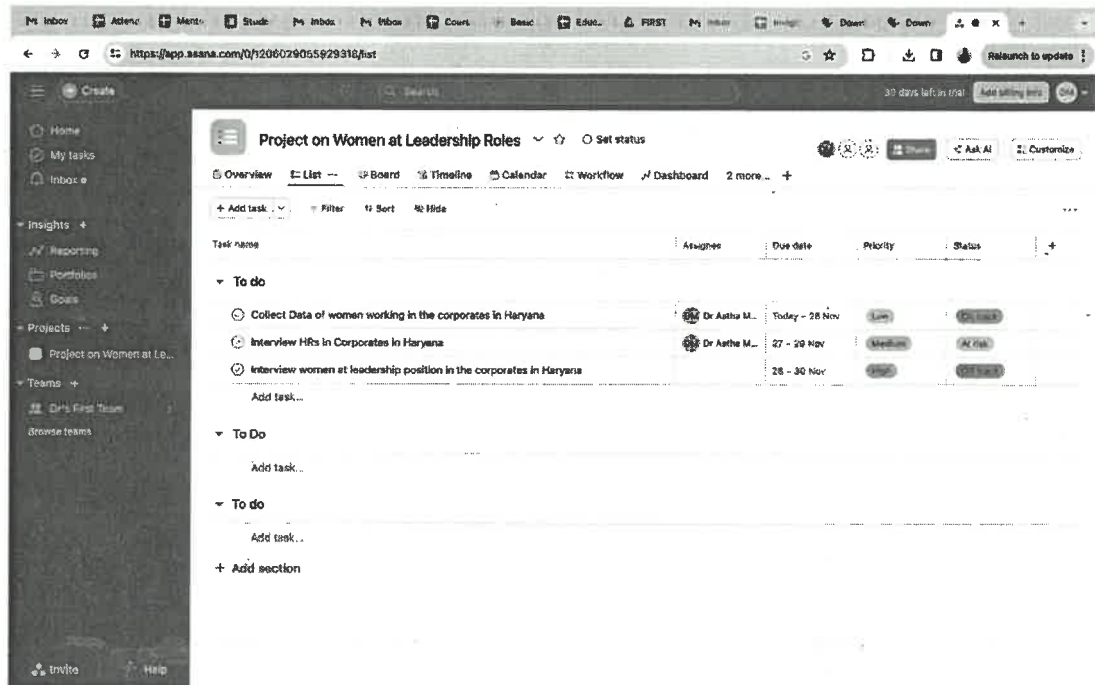
4.1 Methodology:

The methodology adopted shall include:

- a) Sampling Method- The purposive and judgmental sampling techniques will be used for identifying the respondents for conducting the survey and in-depth interviews with women working in the corporates in Haryana.
- b) Sample Size: The universe of the study is around 250 women working in the corporates in Haryana, comprising both managerial and top level management positions, working in different corporates in across different sectors and hierarchical levels in leadership roles as the percentage of women representing at leadership roles is extremely low in comparison to men. Around 25 employees from the HR Department, both the genders, shall be a part of the identified universe to add to the effectiveness of the research to understand the underlying causes for gender disparity. The stratified sampling method shall be used to ensure representation of women across diverse industries and organisational sizes.

4.2 Time Schedule of activities giving milestones through Gantt Chart.





5. Expertise:

5.1 Expertise available with the investigators in executing the project:

The Principal Investigator and Co-Investigator are respectively from Law and Economics, Management background.

5.2 Bibliography

- i. <https://hbr.org/2021/05/how-to-close-the-gender-gap>
- ii. <https://www.worldbank.org/en/news/press-release/2022/03/01/nearly-2-4-billion-women-globally-don-t-have-same-economic-rights-as-men>
- iii. <https://www.imf.org/external/pubs/ft/wp/2016/wp1650.pdf>
- iv.

<https://nludelhi.ac.in/download/ssr/Other%20Publications/Crashing%20through%20the%20glass%20ceiling%20legally->

[%20Gender%20discrimination%20in%20Corporate%20Sector%20and%20Women%20in%20Boardrooms.pdf](https://nludelhi.ac.in/download/ssr/Other%20Publications/Crashing%20through%20the%20glass%20ceiling%20legally-%20Gender%20discrimination%20in%20Corporate%20Sector%20and%20Women%20in%20Boardrooms.pdf)

- v. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9645222/>
- vi.

https://www.researchgate.net/publication/260392906_An_Empirical_Study_of_Gender_Discrimination_and_Employee_Performance_among_Academic_Staff_of_Government_Universities_in_Lagos_State_Nigeria



vii. <https://www.ilo.org/infostories/en-GB/Stories/Employment/beyond-the-glass-ceiling#benefits>

viii. <https://www.adb.org/sites/default/files/publication/493721/adbi-wp937.pdf>

6. List of facilities required from Sushant University for the project implementation.

6.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	No
2.	Water & Electricity	Yes
3.	Laboratory Space/ Furniture	Yes
4.	Power Generator	No
5.	AC Room or AC	Yes
6.	Telecommunication including e-mail & fax	Yes
7.	Transportation	Yes
8.	Administrative/ Secretarial support	Yes
9.	Information facilities like Internet/Library	Yes
10.	Computational facilities	Yes
12.	Any other special facility being provided	NA

6.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group	Laptop/ Computer/ Table-Chair (Furniture)	NA	NA
PI's Department	Stationary	NA	NA
Other Institute(s) in the region	NA	NA	NA

6.3 Total Budget (Rs. in Lakhs):

- Recurring Cost (Rs): Rs. 90,000/-
- Non-Recurring Cost (Rs): 10,000/-



Sl. No.	Item	Budget			
		1 st Yr	2 nd Yr	3 rd Yr	Total
A	Recurring	90,000/-	NA	NA	90,000/-
	1. Manpower				
	2. Consumables				
	3. Travel				
	4. Field testing, Demo/ Training expenses (if applicable)				
	5. Contingencies/Other costs				

	6. Institutional Oyerheads* 7. Any other item				
B	Non-Recurring Permanent equipment Construction of work shed/structures Fabrication of prototype equipment	10,000/-	NA	NA	10,000/-
	Grand Total (A+B)				1,00,000/-

A. Recurring:

1. Budget for Manpower

Sl. No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	Budget (Rs. in lakhs)			
					1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Researcher/ Investigator	1	Postgraduate (Management)	2,000/-	24,000/-	NA	NA	24,000/-

2. Budget for Consumables*

Sl. No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
1	NA	NA	NA	NA	NA	NA

*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel

Sl. No.	Purpose	Budget (Rs. in lakhs)			
		1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Project logistics	NA	NA	NA	NA
2.	Field activities	36,000/-	NA	NA	36,000/-
3.	Review meetings (if elsewhere)	NA	NA	NA	NA

4. Field Testing/ Demo/ Trainings*

Sl. No	Description of field testing/demos /trainings	No/Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
	NA	NA	NA	NA	NA	NA

*Include material for technology field testing/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of beneficiaries/training, duration of training days, cost /training).

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
1	Photocopies/ Print Outs/ Softwares etc.		30,000/-	NA	NA	30,000/-

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental

expenses, etc.

B. Non-Recurring:

Budget for Permanent Equipment/ Workshed/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.			
2.			
3.			
4.			

7. Deliverables

Deliverable	Mark ✓	Brief description
Product development/adaptation		
Process development/adaptation		
Technology package for development of the project area and local community		
Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)	✓	
Scientific knowledge and/or data generation leading to technology development in future	✓	
Other (Please specify)		

8. Name and address of experts/ institution interested in the subject / outcome of the project.

Name: National Commission for Women (NCW)

Address: Plot No. 21, Jasola Institutional Area, New Delhi 110025



DR. ASTHA MEHTA

Permanent Address: House no. 143, Sector 15-A, Hisar – 125001, Haryana
Alternate Address: 39 E, Ground Floor, Anant Raj Estate, Sector 63A, Near Cyberscape Building, Gurugram – 122102
Mobile: +91-9650383788
E-mail: astha2287@gmail.com
Date of Birth: 02.02.1987

Currently working as an **Associate Professor** with **School of Law, Manav Rachna University, Faridabad.**

ACADEMIC QUALIFICATIONS:

Examination	Institute	Batch
PhD in Law	Amity Institute of Advanced Legal Studies, Amity University, Noida	2020
LL.M. (Business Laws), Gold Medalist	Amity Institute of Advanced Legal Studies, Amity University, Noida	2012
B.A. LL.B. (Hons)	NALSAR University of Law, Hyderabad	2009
E-Certificate Course on Cyber Laws	Indian Law Institute, New Delhi	2012

Work Experience:

1. **Associate Professor, School of Law, Manav Rachna University, Faridabad** from 4 January 2023 to present.

Positions of Responsibility held at Manav Rachna University:

- LL.M. and PhD Coordinator
- NAAC Criteria 3 and 5
- Member, Examination Committee at School level
- Social Media, Website and Events Group Management
- NIRF
- Member, Board of Discipline (University Level)
- PhD Supervisor to 4 Research Scholars and LL.M. Dissertation Supervisor

2. **Assistant Professor, School of Law, Sushant University (Erstwhile Ansal University), Gurgaon** from 22 July 2015 to 2 January 2023.

Positions of Responsibility held at Sushant University:

- PhD Supervisor to three research scholars and LL.M. Dissertation Supervisor
- Programme Director, LL.B. (Hons)
- Centre Head for Harvard Business School Online (HBSO) Courses
- Centre Head, Arbitration and Mediation Skills Centre (AMSC)
- Chairperson, Examination Committee at School level



- Coordinator for SWAYAM Course at School level
- Faculty Coordinator (SOL), Internship and Recruitment Committee (IRC)
- SPOC for Criteria 2, NAAC
- Incharge for International Collaborations
- Member, Alumni Association Cell
- Bar Council of India & Higher Education: Documentation, Inspection & Approvals
- Outreach Activities
- Content Writing for the School of Law website page, brochures etc. (2016-17)
- Core Committee Member, Alumni Affairs Committee (2015-2018)
- On the Editorial Board of the Magazine Konnext (Alumni Affairs) (2015-2018)
- Coordinator, Moot Court and Debating Committee (2015)
- Trans Disciplinary Learning Coordinator, SOL (2017-19)

3. C.L. Educate Ltd. (Career Launcher), Delhi and Gurgaon, Test Gladiator and CLAT Prep, Gurgaon

Taught Legal Aptitude to the students appearing for CLAT

4. Legal Editor at Taxmann, New Delhi from August 2013 to November 2013.

Handled SEBI & Corporate Laws (SCL) Journal independently along with the web content on Corporate Laws.

My work included:

- Legal Research
- Legal Writing
- Selection and editing of Articles/Case-law Analysis/Statute Analysis for the Journal
- Handling the web content: Regular updates of Circulars/Notifications/Statutes on web with appropriate headlines/summary/analysis related to corporate laws and writing Taxmann Daily for the readers

5. Assistant Professor and Chief Coordinator, Internship and Placement Cell in Lloyd Law College, Greater Noida from 13 August 2012 – 12 July 2013.

AWARDS AND ACHIEVEMENTS

- Amity University Uttar Pradesh conferred the '**Gold Medal**' upon me in LL.M. (Business Law) on 14 December 2012.
- Invited to lecture at **Mediation Training Program** organised by **High Court of Manipur at Imphal** on 15-16 April 2017, which was attended by High Court and District Court Judges and Advocates.

MEMBERSHIP/ PROFESSIONAL ASSOCIATIONS

1. Member of Advisory Board, Legge Rhythms.
2. Member of Advisory Board, Legality Viability.
3. Member, Indian National Association of Legal Professionals (INALP).
4. Executive Committee Member, Legal Education Section, Indian National Bar Association (May 2016-May 2017).



PUBLICATIONS AND RESEARCH:

1. Dr Astha Mehta, Dr Deepti Meena, Artificial Intelligence in Limited Liability Partnerships: Issues and Challenges (Book Chapter accepted in a book to be published by Bloomsbury Publications).
2. Dr Deepti Meena, G.R. Meena, Dr Astha Mehta, Dr Som Dutt Bhardwaj, "CSR and Covid-19 Pandemic", Journal of Survey in Fisheries Sciences (Special Edition), Web of Sciences, March 2023 (Web of Science and Scopus Indexed Journal).
3. Priya Sondhi, Akash Sondhi, Astha Mehta, "An Analysis of night shelters (Rain Basera) in the context of Sustainable Development Goal 13 (Target 13)" in Technology, Infrastructure and Resilience of Urban Systems, Fourth World Congress on Disaster Management, Volume III, p. 313, Edited by Dr. S Ananda Babu, President and Convener, DMICS-WCDM, ISBN 93-5455-288-9, Macmillan Publishers India Pvt. Ltd.
4. Astha Mehta, Book Review: India's VIBGYOR Man: Selected Writings and Speeches of L.M. Singhvi, ILI Law Review, e-ISSN-0976-1489, Summer Issue 2019.
5. Astha Mehta, Mayank Jain, "Child Abuse: More than broken bones and bruises", Abstract Publication, International Conference on Child Rights: Unheard Voices organised by School of Law, Ansal University on 27 April 2019, ISBN-978164570093-7 (Abstract Publication).
6. Astha Mehta, Sachin Rastogi, "Limited Liability Partnership: Successful in India or not", International Journal of Recent Trends in Management, Commerce, Accountancy, Economics, Public Administration, Politics, Law and Allied Researches, Vol. 5 Issue 19, ISSN 2348 9405.
7. Astha Mehta, Sachin Rastogi, "Consumer Welfare as the ultimate goal of Competition Laws in India", IJELLH, Indexed, Peer reviewed (Refereed) Journal, ISSN 2321 7065. Volume 6 Issue 10.
8. Astha Mehta, Sachin Rastogi, "World of Start Ups and the Limited Liability Partnership", Volume 6, Issue 12, December 2018, IJELLH, Indexed, Peer reviewed (Refereed) Journal, ISSN-2321-7065.
9. Astha Mehta, Sachin Rastogi, "Human Rights in India: Its Precept and Practice", Volume 6 Issue 12 December 2018, IJELLH, Indexed, Peer reviewed (Refereed) Journal, ISSN-2321-7065.
10. Astha Mehta, Sachin Rastogi, "Limited Liability Partnership: An emerging form of business organisation", Volume 5, Issue 4, October-December 2018, IJRAR – International Journal of Research and Analytical Reviews (Impact Factor 5.75), E SSN 2348-1269, PRINT ISSN 2349-5138.
11. Article published 'Trial by Media – Looking beyond the pale of legality' by Maharshi Dayanand University (MDU), Rohtak in the book 'Law and Social Justice in India' released on 21 February 2015 by Hon'ble Justice A.G. Masih.
12. Paper presented in the National Seminar on Corporate Governance at Amity Law School, Delhi has been published as a Chapter in a volume by M/s Satyam Book International (ISSN 9788-1905-8552-66).
13. Article published on Taxmann's website, Highlights of Damodaran Committee Report on Reforming the Regulatory Environment for Doing Business in India, [2013] 37 taxmann.com 304.



14. Article published 'Legal Control of the Menace of Ragging' in Amity Law Watch, October 2011 (ISSN 2320-2270).
15. Article published 'Euthanasia – Recent Social and Judicial Trends' in Amity Law Watch, April 2011 (ISSN 2320-2270).

WORKSHOPS, SEMINARS AND CONFERENCES ATTENDED:

1. Attended one day Webinar on "Enhancing Research Effectiveness using Scopus, Science Direct and Mendeley" on 1 May 2020, organised by the Faculty Development Centre, Kurukshetra University in collaboration with Elsevier.
2. Attended a Workshop on "The Art of Writing a Research Paper", organized by Ansal University on 2 March 2020.
3. Attended a Workshop on 'MOOCs: Design, Development and Deliver' organized by Indian Law Institute on 19 February 2020.
4. Attended Soft Skills Workshop "Skill ++" organized by Think Culture Foundation on 7 and 8 November 2019.
5. Attended Confluence 2017 organized by National Law School, Delhi (NLUD) on 18 March 2017.
6. Attended a Conference as a delegate on 'Global Standards for Rule-based Commerce' on 28-29 November 2016 organized by UNCITRAL Regional Centre for Asia and Pacific with the UNCITRAL.
7. Attended INBA's International Annual Conference on Constitution Day i.e. 26 November 2016.
8. Attended a Workshop on Blue Book Citation by Dr. V.R. Dinkar, Associate Professor, VIT law School, VIT University, Chennai on 14 March 2016.
9. Attended an International Symposium on 'Religion and Governance in a Secular State' on 11 April 2011, organized by Amity Institute of Advanced Legal Studies, Noida.
10. Attended an International Seminar on "Global Environment and Disaster Management: Law and Society" jointly organized by the Supreme Court of India, High Court of Delhi, Indian Law Institute and Ministry of Environment & Forests and Ministry of Law & Justice, held on 22-24 July, 2011.
11. Attended a Seminar on "Arbitration and International Standards for Contract Law & Legal Aspects of Terrorism" organized by the International Law Association on 17 May, 2008 while interning with P.H. Parekh & Co.

PAPER PRESENTATIONS:

1. Presented a paper titled 'Impact of Covid-19 on women with special reference to domestic violence' in an International Conference on Human Rights – Legal and Social perspectives during 2nd wave of Covid, organised by Shri MD Shah Mahila College of Arts and Commerce, Mumbai, 23-25 August 2021.
2. Presented a paper titled 'Imperative need of Arbitration in the realm of Sports Law' in an International Virtual Conference on Regulation of Sports & Entertainment Law, Policy and Research, Faculty of Law, Jagran Lakecity University, Bhopal in collaboration with RGNUL Punjab, 1 August 2021.
3. Participated in a 3 day International Conference on World Constitution: A New Horizon of Human Rights organised by Government Law College, Mumbai, 7-9 January 2022.



4. Presented a paper titled 'International Commercial Arbitration proved to be the most effective mode of Settlement of Disputes' in a Landmark International Conference on Emerging Trends in Alternative Dispute Resolution, 2021.
5. Presented a paper titled 'Child Abuse: Broken bones and bruises' in a One Day National Seminar on Child Rights and Child Protection vis-à-vis International Human Rights and Humanitarian Law, 18 July 2021.
6. Presented a paper titled 'The growing Corporate Culture and Sexual Harassment' at an International Conference on Ethics and Integrity in Managerial and Legal Practices held on 8-9 March 2019 at K R Mangalam University, Gurugram.
7. Presented a paper titled 'An Analysis of night shelters (Rain Basera) in the context of Sustainable Development Goal 13 (Target 13)' at the World Congress on Disaster Management on 31 January 2019.
8. Presented a paper titled 'Consumer Welfare as the ultimate goal of Competition Law in India at the Amity National Symposium on Competition Law on 21 August 2015.
9. Presented a paper titled 'Women and Career: Stress and Burnout in Indian context' in a Conference on Women and Career: Issues and Challenges on 17 April 2015, organized by School of Business Studies, Sharda University.
10. Presented a paper titled 'Influence and Impact of Social Media on Society' in the International Conference on Emerging Innovation in Social Media and its implications on 13 March 2015, organized By IMS Noida.
11. Presented a paper titled 'Trial by Media – Looking beyond the pale of legality' in a National Seminar on Law and Social Justice in India, organized by Faculty of Law, Maharshi Dayanand University, Rohtak, held on 8-9 March, 2014.
12. Presented a paper titled 'Corporate Governance in relation to Auditing and Accounting' in a National Seminar on Emerging Trends in Corporate Governance: Legal Issues and Challenges in India, organized by Amity Law School, Delhi (GGSIPU), held on 11 April, 2014.

FACULTY DEVELOPMENT PROGRAM:

1. Attended Faculty Development Programme by Amity University Noida (July 2023, Certificate awaited).
2. Attended Faculty Development Programme by IILM University Gurgaon (July 2023, Certificate awaited).
3. Attended Faculty Development Programme "Train the Trainer" organized by School of Law, Sushant University from 13-19 December, 2022.
4. Attended National Webinar Series on 'Digital Content Creation for Social Media' Organised by Bombay Teachers' Training College in collaboration with Thadomal Shahani Engineering College from 6-11 July, 2020.
5. Attended Seven Days Virtual Faculty Development Programme on 'Contemporary Issues in Law' organised by School of Legal Studies, Cochin University of Science and Technology from 17-24 June 2020.
6. Attended 2nd Amity National Faculty Development Program 2020 on 'Contemporary Changing Dimensions of Law in India with special reference to Covid-19' organised by Amity Law School, Lucknow Campus, Amity University from 15-21 June 2020.
7. Attended Online FDP on Outcome Based Teaching - Learning and Research in Law organised by School of Law, Sharda University, Greater Noida from 12-17 July 2021.



8. Attended Workshop on “MOOCs: Design, Development and Deliver” organised by Indian Law Institute on 19 February 2020.

RESOURCE PERSON:

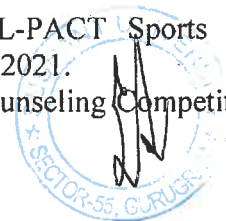
1. Delivered a lecture on “Life at Sushant University and Placement Opportunities” at Manu Law Classes, Rajinder Nagar, New Delhi on 13 May 2022.
2. Delivered a virtual Guest Lecture on “Force Majeure in the times of Covid-19” for Licit Elite on 6 February 2022.
3. Delivered a virtual Guest Lecture for MediateGuru Mediation School on “Conducting Effective Mediation: Decision-making techniques, problem-solving tactics, ensuring positive outcomes” on 27 November 2021.
4. Delivered a Lecture in MediateGuru’s 40 Hour Basic Mediation Training Class on 8 August 2021.
5. Delivered a Guest Lecture at MediateGuru’s (United Kingdom) International Webinar on ‘Career Opportunities in Arbitration and Mediation’ on 30 June 2021.
6. Delivered a Lecture in an International Webinar on ‘Fundamentals of Arbitration’ organised by MediateGuru on 9 May 2021.
7. Resource Person in an International Client Counseling Workshop on 7 March 2021 (2 hour session) organised by MediateGuru.
8. Resource Person at a Workshop on ‘Client Counseling’ organised by Legality Viability on 30 May 2020.
9. Guest Speaker at Government College, Karnal on Media Laws on 19 May 2020.

COMPETITIONS JUDGED:

1. Judged the Preliminary Rounds at the VIII NLS Negotiation, Mediation, and Client Counselling Competition on 29-30 April 2022.
2. Judged the Preliminary Rounds at the 4th RGNUL Sports and Entertainment Law Mediation Competition from April 23-25, 2022
3. Evaluated Memo and Arbitral Awards for 2nd Online Med-Arb Competition 2021-22, organized by ADR Board, School of Law, Christ University, Bangalore.
4. Judged the preliminary and semi-final round of the 1st International Investment Arbitration Moot Competition 2021 organised by MediateGuru on 11-12 September 2021.
5. Judged the Preliminary Round of Aseem: Beyond The Boundaries of 1st IMS International Debate Competition organized by BEBAAK – The IMS Debating Society, IMS Law College on 20 August 2021.
6. Judged Quarter Finals at 2nd Legality Viability Client Counseling Competition 2021 on 13 March 2021.
7. Judged the Preliminary and Octa-finals Round at 3rd RGNUL-PACT Sports and Entertainment Law Mediation Competition, 2021 on 6 and 7 March 2021.
8. Judged Quarter Finals and Finals at 1st Legality Viability Client Counseling Competition 2020 on 13-14 June 2020.

OTHERS:

- Submitted Recommendations on Centre's proposal to decriminalize dishonour of cheques under Section 138 NI Act as a member of INALP.



- Interview published on Legality Viability's website <https://www.legalityviability.com/prof-astha-mehta-legalityviability>
- Prepared Reading Material for IGNOU in 2016 on Consumer Protection Law and Drugs and Cosmetics Act.
- Attended Executive Leadership Programme "Leadership and Media Literacy in Changing Times" as a Program Director for BBA LLB (Hons) Course on 11 February 2021.
- As an Executive Member, Legal Section, Indian National Bar Association, I have been instrumental in getting INBA Award in the category of 'The Most Promising Law School' for School of Law.
- Prepared Question Papers for Chettinad Academy of Research and Education (Deemed to be University), August 2020.
- Corrected Answer Sheets for Gurugram University, May 2022.
- **Legalresolved.com** (2 months project): Extended help to set up legalresolved.com to Chaostruct and the website has been launched successfully to provide online legal advice.

LANGUAGES KNOWN: English and Hindi




Utilization Certificate

Certified that grant of ₹ 1,10,000 (One Lakh Ten Thousand only) sanctioned by the Center of Research and Development, Sushant University, vide letter no. F.No.1/2023-2024/Seed Fund-Nov 23/12 Dated 8th November 2023 towards financial assistance for the project titled “Role of Women in Decision Making Roles in Corporates in the State of Haryana” was utilized for the purpose for which it was sanctioned.

Financial expenditure incurred

Sl.no	Nature of expense	Proposed Expenditure (in Rs.)	Expenditure incurred (in Rs.)
1	Manpower	24,000	30,000
2	Field Activity	36,000	40,000
3	Contingencies	30,000	30,000
4	Equipment	10,000	10,000
	Total	₹ 1,00,000	₹ 1,10,000


Principle Investigator
Accounts Officer
Account & Finance Officer
Sushant University
Gurugram, Haryana

PROFORMA FOR SUBMISSION OF SEED FUND PROPOSAL

Part I: General Information

1. Project Title (should be focused not exceeding 15 words): An empirical study on urgent need of Prison Reforms based on the Prison in Bhondsi, Gurugram, Haryana, India.
2. i. Name of Project Assistant: Dr. Sulakshana Banerjee Mukherjee, Assistant Professor, Sushant University, Gurugram, Haryana.
3. ii. Name of Principal Investigator: Biswadeep Dutta, Research Scholar, Sushant University, Gurugram, Haryana.
4. Collaboration if any, give details of institution(s)
N/A
5. Any Project(s) previously sanctioned by any funding agency? If yes give the details:

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / Status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)
	An empirical study on urgent need of Prison Reforms based on the Prison in Bhondsi, Gurugram, Haryana, India		Sushant University, School of Law		1,00,000	

6. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues?

Yes, District Prison Authorities for the Jail visit consent for recording of statements, open and close ended questions in the form of Survey questionnaires.

District Jail, Gurugram, 938W+4XG, Near RTC, District Gurgaon, Bhondsi, Haryana 122102.

Headquater:03-04 Bays Building, Sector 14, Panchkula headed by Mr. Mohammad Akil, IPS, Director General of Prisons Haryana.

Email ID: office_dg.prisons@hry.nic.in

7. Duration (months): 12

8. Enclose the following while submitting the application form:



Duly filled application form (complete with all Annexures)- 2 hard copies	Yes
Biodata of the PI & Co-I -2 copies	Yes

Part II: Proposal Summary

1. Origin of the Proposal:

Recently a popular TV Series “Criminal Justice” streaming on Disney Hotstar had a dialog that “the world inside the prison is different from the one you came to.” The dialog points to the problems across the prisons in India, the prisoners living in overcrowded, inhuman living conditions, violations of human rights, single washrooms for hundreds of prisoners, inadequate rehabilitation and reintegration with society, and systematic corruption by influential people.

The prisons in India are currently operating at a far exceeding capacity. These overcrowded prisons are facing various problems like unhygienic living conditions, limited access to healthcare, and violence within the prison walls. For that overhaul and chaotic situation in the prison system it required immediate changes in the prison system like constructing new prisons, prison administration personnel training, creation of independent monitoring organizations which can assist in creating aid, helping with rehabilitation rather than recidivism, expanding existing facilities, exploring alternative sentencing options like community service for nonviolent offenders etc. are some of the possible solutions.

Prison should consider the rate of recidivism. Because recidivism shows inconsistencies in Prison policies, charges, and supervision or administration of prisoners. People would not be able to return to society with the burden of unemployment, homelessness, and poverty.

The prison system ideally should make sure that the prisoners after rehabilitation successfully can return to their well-wishers, family, and friends and be released into society. Currently, the prisoners are in a terrible state and are ill-prepared to return to society because of a lack of vocational training, academics, and psychological care. A comprehensive rehabilitation program is required so that the prisoners can return to society and start afresh. For that skill development, educational opportunities and mental healthcare facilities are required.

In the Indian federal structure prisons and the administration of prisons are under the subject of the State as per the 7th Schedule of the Indian Constitution. The prisoners detained under the Constitution of India are subject to “State List” under Entry 4 of List II of the 7th Schedule to the Administration and Management of Prisons and Prisoners and come under the responsibility of the State Government. Increased cases of prison violence and criminals running syndicates behind bars are becoming normal in society.

The existing Act is intended to keep criminals in custody and enforcement of Discipline and order in Prisons; there is an absence of provisions for reform and rehabilitation of prisoners. In many cases prisons are a violation of human dignity as well as the basic human rights of the inmates, The prisoners are confined for a long time in old, crumbling buildings with no proper sanitation and inadequate accommodation.



Currently, the prisons are administered and governed under the Prison Act 1894, The Prisoners Act 1900, the Transfer of Prisoners Act 1950, and the Repatriation of Prisoners Act 2003.

As per the NCRB,¹ the total number of prisons in India at the national level is 1319 which consists of 564 sub-jails, 424 district jails, 148 Central jails, 88 open jails, 41 special jails, 32 women jails, and 9 Borstal schools. These issues bring a big concern about the potential of the State government to administer the prisons where cases are getting seemingly common.

There are cases where prisoners under confinement have access to 5G-enabled smartphones within their vicinity, this signifies the deep-rooted corruption and flaws within Government bodies. The convicts using high-end smartphones create the issue of handling as maintained by the Prison authorities, because having access to these smartphones the convicts can continue their criminal activities of extortion, and murder within the prison and plan unlawful activities outside the prison.

The judiciary, government bodies, media, and civil society need to collaborate for accountable and meaningful change in the prison system. Guaranteeing accountability and justice is the key element for the courts to bring prison reform. Acting through public interest litigations, prison inspections, and corrective direction issuance in time can help to take action against human abuses, overcrowding, etc. The Judiciary can safeguard the rights of the prisoners and report on breaches of human rights, and rehabilitation. Public opinion can be taken with the help of the media, awareness programs can be shared which can enhance pressure for reforms. Even there is news of death during custody, usage of brutal force by the police and prison guards, and hard-to-get legal representatives.

Recently Rajasthan State brought New Prison Bill with an Aim to provide Dignity and Livelihood for Convicts. The government is trying to strengthen the Prison infrastructure to rehabilitate the prisoners and reform them for a better fresh future.

Mr. Tikaram Juli, Minister for Prisons stated “The prisoners in our jails are making LED bulbs for paintings and sculptures. The petrol pumps are being run by the prisoners at Jaipur, Alwar, and Kota and we are planning to open 15 such pumps across the state”²

Recently news came that Honduras is to construct an island colony to imprison gang members in the hope to isolate the gang members from criminal activities. But repeating the past won't be an effective way to regain control of criminal activities as “criminals’ gangs have shown throughout their history that they can adapt.”³

Also, there are instances where privileged powerful people are provided with extraordinary facilities which are not permitted under the rules. Misuse of the provisions related to Parole and Remission of sentences has

¹ National Crime Records Bureau.

² Manish Godha, Rajasthan News: State's New Prison Bill Aims to provide Dignity, Livelihood for Convicts, The Free Press Journal, 18th July 2023.

<https://www.freepressjournal.in/india/rajasthan-news-states-new-prison-bill-aims-to-provide-dignity-livelihood-for-convicts>.

³ Tiziano Breda, Latin America Expert, Istituto Affari Internazionali, Italy.

<https://www.aljazeera.com/news/2023/7/19/honduras-to-build-island-colony-to-imprison-gang-members>



significant implications for public order because the recklessness in the grant of parole and remission of sentences are impacting society and public order. There is also a requirement for more Prison staff & training. The positions are lying vacant and not being filled up.

The amended provision of Model Prison Reforms 2023 creates provisions for the grant of parole, Furlough, and Remission to Prisoners to encourage good conduct. Providing separate accommodation for Women and transgender. Ensuring the physical and mental well-being of Prisoners and focusing on the reformation and rehabilitation of inmates. Transparency in Prison Management includes provisions for Security Assessment and Segregation of Prisoners and Individual sentence planning, grievance redressal, prison development Board, and use of technology in prison administration. Semi-Open Jails have been inserted also. The empirical study can provide more precise recommendations for inclusion in the new Prison reforms.

2. Objectives (Only 4-5 focused one that can be observed, measured or clearly assessable)

i.	Whether the Indian Prison authorities are technologically trained and equipped with security measures to tackle the issues like access to illicit items like smartphones, Narcotic substances etc.
ii.	To analyze the strategy to tackle the deficiency of infrastructures within the prisons with issues like overcrowding, inhumane conditions, basic human rights violations, number of washrooms etc.
iii.	To understand whether prisoners are on the path of incarceration, can rehabilitate and reintegrate with society.
iv.	To analyze if the Sentencing policy should be made less strict by bringing empathy, the normalization principle can be introduced with the prison reforms.
v.	To study if the collaboration of prison authorities with the public, media houses and correctional facilities can help rehabilitate the prisoners.

3. Review of status of Research and Development in the subject

.3.1 International Status & National Status:

- Srivastava, S. P., Indian Soc of Criminology, & University of Madras. (1978). Problems and priorities of prison reform in India. *Indian Journal of Criminology*, 6(2), 106-12.
- Barker, F. A. (1941). Twenty Years of Penal and Prison Reform in India. *How. J.*, 6, 52.
- Clark, J. K. (2015). Prison Reform in Nineteenth-Century British-India.
- Diaz, S. M., Indian Soc of Criminology, & University of Madras. (1978). Thoughts on Prison Reforms in India. *Indian Journal of Criminology*, 6(2), 79-86.
- SAHRDC. (2011). Prison Reform in India.
- Sharma, D., Gupta, S., & Nagpal, K. (2022). The Need for Prison Reform throughout the World. *Jus Corpus LJ*, 3, 186.
- Barker, F. A., Hailey, W. M. H., Baron, W., & Percy Henry, S. (1944). The modern prison system of India: a report to the department: the progress of prison reform in India during the twenty years following the publication of the report of the 1919-1920 Indian Jails Committee.



- Das, D., & Sarma, B. (2020). Prison labour in colonial India: A case study of Assam. *Space and Culture, India*, 8(1), 91-100.

3.2 Importance of the proposed project in the context of current status

The topic can bring an overhaul change in the current Prison system in India. Currently, the Prisons are administered by the century-old Prisons Act of 1894. The Principles of Fundamental Rights and Directive Principles of State policies under the Indian Constitution with the new ideas and correctional practices by the various Countries can be included to make a refurbishment reform in the current Prisons.

More emphasis will be given to the reformation of Prisoners which includes vocational training, basic human rights for the prisoners, and the appointment of a Central and State Advisory Board for Prisoners for advising the Governments on issues related to advice and administration of prisoners.

4. Work Plan:

4.1 Methodology:

The Bhondsi Prison has a unified prison model that has a unique character with diverse categories of prisons such as long-term and short-term convicts, under trials, and detainees including Male, Female, and Transgender prisoners, Indian or local and foreign national prisoners as well as normal and maximum-security prisoners. The primary data would be based on prison officers, prison inmates' daily work, and functions in Prison affecting the lives of the prisoners.

Two categories of prison staff-Custodial officers and treatment /training officers-based survey questionnaire and interview.

The sources of secondary data would be based on the government reports of different Central and State prison commissions and committees, various social science research on the prison system, and prisoners' rights. The issue has been examined from the standpoint of the prison system as well as from the perspective of prisoners and their rights.

The Bhondsi Prison has a unified prison model that has a unique character with diverse categories of prisons such as long-term and short-term convicts, under trials, and detainees including Male, Female, and Transgender prisoners, Indian or local and foreign national prisoners as well as normal and maximum-security prisoners.

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The sources of secondary data would be based on the government reports of different Central and State prison commissions and committees, various social science research on the prison system, and prisoners' rights. The issue has been examined from the standpoint of the prison system as well as from the perspective of prisoners and their rights.



4.2 Time Schedule of activities giving milestones through Gantt Chart.

N/A

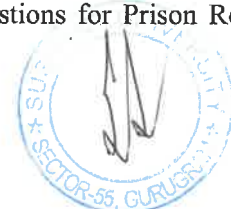
5. Expertise:

5.1 Expertise available with the investigators in executing the project:

Legal Research tools, IBM SPSS, Orange, Mendeley, Statista, ICCR Research Tools, ManuPatra, SCC Online, Lexis Nexis etc.

5.2 Bibliography

1. Jefferson, A. M. (2022). Prison reform and torture prevention under 'compromised circumstances.' *Criminology & Criminal Justice*, 0(0) <https://doi.org/10.1177/17488958221105442>
2. Bedi, S., Dhanuka, M. (2023). Life Imprisonment in India: Will the Prison Doors Ever Open for Life-Sentenced Prisoners? In: Van Zyl Smit, D., Appleton, C., Vucong, G. (eds) *Life Imprisonment in Asia. Palgrave Advances in Criminology and Criminal Justice in Asia*. Palgrave Macmillan, Singapore. https://doi.org/10.1007/978-981-19-4664-6_6
3. Amrit, P., Jaiswal, A., Uniyal, V., Jha, R. S., & Srivastava, A. (2022). Prisoner's rights and prison reform in India: A legal critique. *International Journal of Health Sciences*, 6(S3), 10933–10943.
4. Gupta, N., & Gupta, R. K. (2018). Prison reform and work programs in India: a case study. *International Journal of Human Rights and Constitutional Studies*, 6(2), 150-166.
5. Sharma, S. (2017). *Prison reform in India: narela jail, Delhi (extension for Tihar)* (Doctoral dissertation, SPA, Bhopal).
6. Nagla, B. K. (1989). Prison Administration in India. *Indian Journal of Public Administration*, 35(4), 1011-1021.
7. Cooper, R. A. (1981). Jeremy Bentham, Elizabeth Fry, and English Prison Reform. *Journal of the History of Ideas*, 42(4), 675-690.
8. Nomani, M. Z. M. (2022). Health Rights of Prisoners and Prison Law Reforms during COVID-19 Pandemic in India. *Bangladesh Journal of Medical Science*, 21(4), 893.
9. Singh, A. (2022). Prison Reforms in India Absence of a Rehabilitation Approach. *Part 1 Indian J. Integrated Research. L.*, 2, 1.
10. Adhikari, N. K. (2021). Prison and Prison Reforms in India. *Issue 4 Int'l JL Mgmt. & Human.*, 4, 2161.
11. Mishra, S., & Raj, S. (2022). Historical Evolution of the Prison System in India. *Part 1 Indian J. Integrated Research. L.*, 2, 1.
12. Gaur, K. D. (1982). Human Rights of Detainees and Prisoners: Suggestions for Prison Reform. *Cochin University Law Review*, 6, 393-415.



13. Joshi, I. D. (2022). Doctrinal Analysis on Shortcomings of the Prison System in India. *Issue 4 Indian JL & Legal Research.*, 4, 1.
14. Hiremath, V. (2008). Draft policy on prison reforms. *Economic and Political Weekly*, 29-32.
15. Sethna, M. J. (1964). *Society and the Criminal* (p. 297). K_b Mahal.
16. Vij, S. (2022). A Critical Analysis of Major Prison Reforms in India and the Path Ahead. *Issue 1 Indian JL & Legal Research.*, 4, 1.
17. Vidya, B. (2016). Prison Reform Movement in India. *The Indian Journal of Social Work*, 31(4), 407-416.

6. List of facilities required from Sushant University for the project implementation.

6.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	Yes
2.	Water & Electricity	Yes
3.	Laboratory Space/ Furniture	Yes
4.	Power Generator	No
5.	AC Room or AC	Yes
6.	Telecommunication including e-mail & fax	Yes
7.	Transportation	Yes
8.	Administrative/ Secretarial support	Yes
9.	Information facilities like Internet/Library	Yes
10.	Computational facilities	Yes
12.	Any other special facility being provided	No

6.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group	Printer	HP LaserJet 1200	
PI's Department			
Other Institute(s) in the region			

6.3 Total Budget (Rs. in Lakhs):

- Recurring Cost (Rs): 1,00,000/-
- Non-Recurring Cost (Rs):



Sl. No.	Item	Budget			
		1 st Yr	2 nd Yr	3 rd Yr	Total

A	Recurring 1. Manpower 2. Consumables 3. Travel 4. Field testing, Demo/ Training expenses (if applicable) 5. Contingencies/Other costs 6. Institutional Overheads* 7. Any other item	2 or 3			
B	Non-Recurring Permanent equipment Construction of work shed/structures Fabrication of prototype equipment	Printer			
	Grand Total (A+B)				

A. Recurring:

1. Budget for Manpower

Sl. No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	Budget (Rs. in lakhs)			
					1 st Yr	2 nd Yr	3 rd Yr	Total

2. Budget for Consumables*

Sl. No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
	Printer, Pen, Pencil, Notebook, A4 Sheet bundle, stapler, pins					

*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel

Sl. No.	Purpose	Budget (Rs. in lakhs)			
		1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Project logistics				
2.	Field activities	Yes	Yes	Yes	Yes
3.	Review meetings (if elsewhere)				

4. Field Testing/ Demo/ Trainings*

Sl. No	Description of field testing/demos /trainings	No/Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Include material for technology field testing/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of



beneficiaries/training, duration of training days, cost /training).

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
	Secretarial Assistance	Yes				

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

B. Non-Recurring:

Budget for Permanent Equipment/ Workshed/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.			
2.			
3.			
4.			

7. Deliverables

Deliverable	Mark √	Brief description
Product development/adaptation		
Process development/adaptation		
Technology package for development of the project area and local community		
Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)		
Scientific knowledge and/or data generation leading to technology development in future		
Other (Please specify)		

8. Name and address of experts/ institution interested in the subject / outcome of the project.





Dr Sulakshana Banerjee Mukherjee
Associate Professor of Law

C/O : Mr. Ananda Mukherjee
Ansal Esencia, Sector 67
Building No. E-10,
Flat No-UG-003, Gurugram
Pin Code:122102
Mob No – 9560334078
Email- sulakshana313@gmail.com

EDUCATIONAL DETAILS:

Examination	Year of Passing	Institution / University	Division	
LL.M (Gold Medalist)	2007	Burdwan University	1 st Class 1 st	
LL.B (Gold Medalist)	Preliminary	2002	Burdwan University	1 st Class 1 st
	Intermediate	2003	Burdwan University	1 st Class 1 st
	Final	2004	Burdwan University	1 st Class 1 st
B.A. English (Hons)	2001	Vivekananda Mahavidyalya /Burdwan University	1 st Class	
Higher Secondary (ARTS) (12 TH BOARD)	1998	Burdwan Municipal Girls High School	1 st Division	
Madhyamik (10 th BOARD)	1996	Do	1 st Division	

❖ Ph.D done from G. D GOENKA UNIVERSITY, GURUGRAM (2015-2019) under the valuable supervision of Prof. (Dr.) Sanjeevy Shanthakumar Sir presently, Director, GNLU.

❖ Received all Gold Medals from the then Honourable Governor of West Bengal Mr. Gopal Krishna Gandhi.

Secures Credits in Ph.D Course Work	SGPA : 8.00
Secure Credits in Specialization Course (Criminology Penology and Victimology)	SGPA : 8.00



WORK EXPERIENCE:

- Presently, working as Associate Professor of Law at Sushant University (Erstwhile Ansal University, Sector-56, Gurugram, Haryana from 24th February, 2020 onwards.

- Worked as Assistant Professor of Law at K R Mangalam University Sohna, Gurugram from 11th January 2016 -22nd February, 2020.
- Worked as Guest Lecturer of Law at G.D Goenka University, Gurugram from August 2015-December 2015.
- Worked as a Lecturer of Law at Durgapur Institute of Legal Studies (DILS) at Durgapur, West Bengal under Burdwan University from August 2007 to February 2008. (Declared as best Law College in West Bengal by BCI)
- Worked as Advocate under the guidance of eminent Advocate Mr. Golak Bihari Ghosh in Burdwan District Judges Court – majorly dealing with matrimonial cases and criminal cases.

ACADEMIC EXCELLENCE AND ACHIEVEMENT:

DEGREE	UNIVERSITY	AWARD
LL.M	Burdwan University	GOLD MEDAL FOR 1st class 1st.
LL.B	Burdwan University	<ol style="list-style-type: none"> 1. Burdwan University Gold Medal for securing 1st Class 1st Position. 2. Renupada Chowdhury Memorial Gold Medal 3. Gopa Adhikary Memorial Gold Medal. 4. Saroj Ranjan Majumdar Prize

- ❖ Received National Women Leadership Award, 2024 on 4th March, 24 organized by the Bhagidari Jan Sahyog Samiti in collaboration with Delhi State Legal Services Authority and Indian Institution of Engineers New Delhi. Also, won the suggestion competition organized by them LIVE.
- ❖ Received National Teacher Award on 7th October, 2023 from Hon'ble Justice Gyan Sudha Mishra Former Judge Supreme Court of India and Mr. Rajendra Dhar Honourable District Judge Consumer Court, New Delhi. The entire event was conducted by the Delhi State Legal Services Authority at Indian Institute of Engineers, New Delhi.
- ❖ Won Best “Woman Innovator Award” (Gold) on 24th July, 22 by PNGI Group in collaboration with G. D Goenka University, Gurugram.
- ❖ Invited as a Resource person to judge the Judgment Writing Competition held at K.R Mangalam University on 22nd February, 2022.
- ❖ Won second prize (Cash Prize & Certificates) in Poster presentation held on 17th February, 2018 at G.D Goenka University, Sohna, Gurugram in Research Conclave.
- ❖ Won “Women Empowerment Award 2019” on 9th March, 2019.



- ❖ Won Award for Outstanding Contribution in Legal field on 15th September, 2018.
- ❖ Received Certificate of Recognition from Indus Foundation for Education Research and Social Welfare (UGC recognized) as Guest Editor in International Conference on Ethics and Integrity.

BOOK PUBLICATION DETAILS:-

- ❖ Published a Book on “The Crime of Honour Killing- A Critical Analysis of the Law in India” bearing ISBN No.978-93-91820-75-6 by Sultan Chand & Sons. New Delhi. The book is available in amazon <https://amzn.eu/d/fkLIYHd> and was displayed in the World Book Fair, Pragati Maidan, New Delhi.
- ❖ Published an edited book on “White Collar Crimes in India: A Concordance” published by Sultan Chand & Sons, New Delhi bearing ISBN No.978-93-91820. The book is available in amazon <https://amzn.eu/d/fw195yc> and was displayed in the World Book Fair, Pragati Maidan, New Delhi.
- ❖ Published an edited Book on “Criminology Penology and Victimology” bearing ISBN No.978-93-90847-12-9 by Kripa Drishti Publications, Pune in July, 2021.

PUBLICATIONS/ PRESENTATIONS:-

- ❖ Published a Research paper along with Research Scholar Simrat on the topic “Socio-Legal Status of Transgender People in India: A Study About Their Identity, Dignity and Legality” in the Arimaa Nlkku Journal (UGC Care Group-1) Vol-18, No.3 July-September, 2024. ISSN:2320-4842
- ❖ Published a Research paper along with Research Scholar Kanchan on the topic “The Contingent Workforce Revolution in APAC” at the Journal of Informatics Education and Research Vol.4 No.2, July, 2024.
- ❖ Published a Research paper along with Research Scholar Simrat on the topic “The Paradigm Shift of the LGBTQ Community in India: A Study Concerning the Future of Same- Sex Marriage and Conjugal Rights” at Ajasra UGC Care Group-1 Journal ISSN No. 2278-3741 pg no.168-174.
- ❖ Published a Research Paper along with Research Scholar Simrat on the topic “The Changing Perspective on Homosexuality in Indian Culture” in The Russian Law Journal (Scopus Indexed) Volume-XII, Issue-1, April, 2024.
- ❖ Presented a Research Paper along with Research Scholar Kanchan Khatana on the topic “A Comparative Analysis of Workplace Sexual Harassment Laws: Insights from India and the United States” in the 3rd NLIU- Khaitan & Co. Global Symposium on Labour and Employment Laws organized on 17th-18th February, 2024.
- ❖ Participated and delivered a talk in presence of the Ex-Chief Justice of India Dr. K.G Balakrishnan Sir in an International Seminar on the topic “Rejuvenation of Economy under Insolvency Laws” at Indian Society of International Law on 27th August, 2023.



- ❖ Published a Chapter on the topic “Indian LGBTQ Progress Overview and Analysis” in a Book titled “Global Thoughts and Opinions” bearing ISBN No. 978-81-947778-9-0 with Simrat Sohi, Research Scholar. The Book is edited by Hon'ble Justice A.K. Sikri J., Former Judge, Supreme Court of India and Vice Chancellors of NLU Kolkata, NLU Delhi, NLU Patiala, NLU Bhopal, Symbiosis, NLU Raipur and NLU Ranchi. The Book is being published under the patronage of Hon'ble Justice Dipak Misra J., Former Chief Justice of India, who shall be lending the Foreword for the Publication as well.
- ❖ Attended in IP Awareness /Training Program held at Sushant University on 3rd August, 2023 under National Intellectual Property Awareness Mission.
- ❖ Attended an International FDP on “Teaching Pedagogy, Research and Teaching Ethics for Promotion of Better Learning in Law Schools” from 24th July-28th July,2023 organised by Galgotia’s University, Noida.
- ❖ Published a chapter “Reducing Recidivism and Contributing towards Prison Reforms in India” in a Book titled “Criminal Justice Administration in India: Issues & Perspectives” published by Satyam Law International, New Delhi bearing ISBN No. 978-93-91345-71-6.
- ❖ Published a Blog on the topic “Security of Judicial Officers- An Integral Part of Indian Judiciary” in Legalonus on 4th January, 2022.
- ❖ Published a chapter on “A Study on Dissolution of Marriage and Child Custody under Hindu Law in India” in a Book named Family Law- Prospects & Challenges pg no.s-135-144 by Satyam Law International ISBN-978-93-91345-68-6 January, 2022.
- ❖ Published a research paper on “Euthanasia- Death with Dignity” in Turkish Journal of Physiotherapy and Rehabilitation; 32(3) ISSN 2651-4451 | e-ISSN 2651-446X Scopus indexed Journal with Research Scholar Simrat Sohi. Page no’s-22519-22532.Nov-Dec-21.
- ❖ A chapter on the topic “Covid-19 and my Concrete Cognizance” was published in a book titled “Impact of Covid-19 on Economy, Business, Education and Social Life” ISBN-978-81-948755-9-8, pg-134-136 January 2021.
- ❖ A chapter on the topic “Cyber Stalking-A Web of Passion” was published in a Book titled “Fundamentals of Cyber Crime and Cyber Safety- A Socio Legal Perspective”, by Satyam Law International pg-49-56 ISBN No. 978-93-87839-89-2 March, 2021.
- ❖ A research paper on the topic “Child Sexual Abuse-The Ineffable Misery” was published in International Journal of Emerging Technologies and Innovative Research Volume 7 Issue7 July 2020 pages-201-206 having impact factor of 5.87 ISSN No.2349-5162.
- ❖ Published a Blog on the topic “Surge in cases of Domestic Violence during Lock down in ROZEDAR LAW ASSOCIATES on 31st July, 2020.<https://rozedarlawassociates.com/Surge-in-cases-of-Domestic-Violence-during-Lockdown>
- ❖ A chapter on the topic “e-Courts-An Upsurge of Indian Judiciary” is published on a book titled as ‘Constitutionalism & Indian Administrative Law’ on 31st October, 2020.ISBN-978-93-87839-78-6 pgs-83-92 Satyam Law International.
- ❖ A research Paper on the topic “Cyber Crimes against Women in Delhi” was published in Indian Journal of Jurisprudential Studies Volume 1, Issue -2, pages 737-743 September, 2020.



- ❖ Published a Blog on the topic “Covid-19 vis a vis Law” at Jus Imperator having impact value 2.017 on 29th April, 2020.
- ❖ Published a Research paper on the topic “Legal Regulation of AI in India” at Parishodh Journal UGC Care List Group-1 ISO Certified 7021-2008 Volume IX, ISSUE-III ISSN No.2347-6648 March,2020. Impact factor 6.3
- ❖ Published a Research Paper with Research scholar on the topic “Artificial Intelligence: A Boon or Bane to Legal Industry” Dogo Rangsang Research Journal ISSN:-2347-7180 Vol-07 Issue-19 August, 2020 (pages 181-188) at the International Conference on the topic “Spectrum of Opportunities in 2020-Legal & Management Era” held at K.R Mangalam University on 6th-7th February, 2020.
- ❖ Published a chapter titled as "Human Rights and its Violation on Vulnerable: Victims of Honour Killing and it's Collision in Society" in a book named Human Rights in India Expanding Dimensions published by Satyam Law International, New Delhi 2019 September, ISBN -978-93—87839-41-0 pgs-1-10 (2019).
- ❖ Published a research paper on Workplace Management & Sexual Harassment-The Dark Truth behind Women Empowerment in the International Journal of Research in Engineering, IT and Social Sciences Vol 9 Special Issue3 ISSN-2250-0588 pg 142-143 February, 2019.
- ❖ Attended FDP on MOOCs and E- learning in context of NEP organized by Delhi School of Public Policy and Governance, Institution of Eminence, University of Delhi in collaboration with NLU and Judicial Academy, Assam and Bhartiya Shikshan Mandal and National Institute of Open Schooling Ministry of Education, Government of India from 18th October- 24th October, 2021.
- ❖ Attended FDP on “Pedagogy of the 21st Century” organized by the School of Legal Studies K.R Mangalam University from 2nd-8th August, 2021.
- ❖ Attended a Workshop on Procedural Laws organized by the School of Legal Studies K.R Mangalam University from 27th-28th August, 2021.
- ❖ Attended National Law Conclave 2020 on 11th January at Vigyan Bhawan, New Delhi.
- ❖ Participated and delivered speech in a legal awareness campaign on the topic:“Cyber Crimes against Women in Delhi” held at NDMC Convention Centre, New Delhi on 9th March, 2019 organized by Bhagidari Jan Sahyog Samiti (Regd.) & Human Foundation (Regd.).
- ❖ Participated and delivered speech on the topic “Protection of Child Rights in Digital Age” on 15th September, 2018 at NDMC Convention Centre, New Delhi. An Awareness Campaign on Prevention of Drug and Substance Abuse organized by the Delhi State Legal Services Authority, New Delhi Municipal Council, Delhi State Awareness Rally, Delhi State Training cum workshop and Delhi State Conference.
- ❖ Participated in National Law Day,2017, on the topic “Balancing Roles of Three wings of the State towards India's Development “Valedictory session addressed by Shri Narendra Modi, presided by Shri Justice Dipak Mishra and inaugurated by Shri Ramnath Kovind at Vigyan Bhawan, New Delhi on 25th-26th Nov,2017.
- ❖ A research paper on the topic “Women Empowerment and Domestic Violence” was published at International Journal of Legal Research and Governance, a Journal of Law Mantra in

collaboration with International Council of Jurists, London. ISSN2394-7829, September, 2018 Vol4 ,Issue-2&3 (Pg-155-172)

- ❖ Presented paper at Indian Law Institute on 13th February, 2018 at International Seminar on Women and Law on the topic “Women Empowerment and Domestic Violence”.
- ❖ Delivered a lecture in the Workshop on “Contemporary India: Women and Empowerment” organized by K.R Mangalam University, School of Humanities.
- ❖ Presented paper at Indian Society of International Law on 6th August, 2017 on Human Rights and Gender Justice – “Honour Killing a gross violation of Human Rights.”
- ❖ “Honour Killing –A Cataclysm in the name of Honour” was published in International Journal of Legal Research and Studies (UGC approved online journal) Vol.2 Issue-2 ISSN: 2456-608X, April-June 2017.
 - ❖ An Article on “Killing in the name of honour-A Countenance or Condemn?” was published in Indian Journal of Social Concerns .ISSN -2231-5837,Vol 16,Issue-20, May-Dec 2016.(Pg-42-48)
- ❖ An Article on “Female Foeticide”-A Catastrophe Violating the Basis Right to “Right to Life” was published in G.D Goenka Journal of Applied Psychology. ISSN:2395-1036 (2016)
- ❖ An Article on “Honour Killing – a Contemporary Social Malevolent” was published by GDGU –ICAP, March 2016 in 1st International Conference on Applied Psychology, ISBN No.978-93-85936-13-5(2016).
- ❖ An Article on “Superstition Suffused over Education” – Witch Craft and its Present Scenario-Excruciating Way of Agonizing Women was published in JCC Law Review, Jogesh Chandra Law College, Kolkata in Law Review Journal. ISSN No.2231296X (2015),pg-105-114.
- ❖ LL.M Dissertation done on “Dowry Deaths in West Bengal”.
- ❖ Published Article in Bengali Daily – SWABHUMI, “Honour Killing – A Bless or A Curse for Society”.
- ❖ Participated and acted as Convener and Co-Convener in innumerable International Conferences, Seminars and Workshops.
- ❖ Acted as Judge in several Moot Court competition, Client Counselling Competition and Debate Competition.

Details of CHAIRING & Co-CHAIRING TECHNICAL SESSION of International Seminar /Conference-:

- ❖ Chaired Technical Session of an International Seminar on Women and Law on 16th June, 2018 at Indian Law Institute, New Delhi.
- ❖ Chaired Technical Session of an International Seminar on Human Rights & Persons with Disabilities on 2nd December, 2018 at Indian Law Institute, New Delhi.
- ❖ Chaired Technical Session of an International Seminar on Protection of Women & Children Rights: Issues and Challenges on 12th January, 2019 at Indian Law Institute, New Delhi.



- ❖ Co-Chaired in the Technical Session in International Conference on Ethics & Integrity held at K.R Mangalam University on 9th Feb, 2019 with Prof. Dr. Manoj Sinha Sir, Director, Indian Law Institute, New Delhi.
- ❖ Chaired a Technical Session of a National E-Seminar on the topic “Contemporary Indian Laws: Issues & Challenges” organized by the School of Legal Studies, Apeejay Stya University, Gurugram on 20th May, 2023.
- ❖ Chaired a Technical session of Two Days E- International Seminar on “Disability Rights and Law & Laws Related to Women and Children” organized by Law Mantra Trust in Collaboration with Centre for Studies related to Person with Disabilities Himachal Pradesh National Law University, Shimla on January 20th, 2024.
- ❖ Chaired a Technical session of Two Days E- International Seminar on “Empowering the Workforce :Integrating Women’s Rights into Labour Law Reforms in India” held on 12th-13th July,2024 organized by the Law Mantra Trust in collaboration with Rajiv Gandhi National University of Law, Punjab and Maharashtra National Law University, Nagpur.

PROFESSIONAL RESPONSIBILITIES AT PRESENT-

- ❖ Consortium Member, SOL
- ❖ SPOC Research & Development Team Sushant University
- ❖ SOL E-newsletter Editor and Inventor
- ❖ SOL Ranking (Always achieve 1st position)
- ❖ Member SOL Disciplinary Committee .Also was a Member of ICC at K.R Mangalam University.
- ❖ National and International Collaboration
- ❖ SOL MOU’s
- ❖ Program Director BBA LLB
- ❖ Indian Debate Committee Member
- ❖ SU Ordinance Committee Member
- ❖ NAAC SPOC Criteria-VII
- ❖ Mentor of 35 students
- ❖ Supervisor of 9 Research Scholars including Judges, Revenue Officer, New Delhi etc.
- ❖ FDP Coordinator (Organized many FDP’s)
- ❖ Was in charge of Dean SOL in his absence
- ❖ 14 students completed LL.M Dissertation under my supervision
- ❖ BOS Member
- ❖ SRC Member



PERSONAL DETAILS:

Date OF Birth	2 nd February
Marital Status	Married

Husbands Name	Mr. Ananda Mukherjee
Languages Known	English, Bengali, Hindi
Passport Number	H1895968
Extra-curricular Activities	Music, Playing keyboard, Art & Craft.

- *All the above mentioned details are true to the best of my knowledge.*

Date: 8th August, 2024.

Signature-Dr Sulakshana Banerjee Mukherjee




Utilization Certificate

Certified that grant of ₹ 1,15,000/- (Rupees One Lakh Fifteen Thousand Only) sanctioned by the Center of Research and Development, Sushant University, vide letter no. F.No.1/2023-2024/Seed Fund-Nov 23/13 Dated 8th November 2023 towards financial assistance for the project titled “An Empirical Study on Urgent Need of Prison Reforms Based on the Prison in Bhondsi, Gurugram, Haryana, India” was utilized for the purpose for which it was sanctioned.

Financial expenditure incurred

Sl.no	Nature of expense	Proposed Expenditure (in Rs)	Expenditure incurred (in Rs)
1	Consumables	1,00,000	1,00,000
2	Travel	15,000	15,000
	Total	₹ 1,15,000	₹ 1,15,000


Principle Investigator


Account & Finance Officer
Sushant University
Gurugram, Haryana



PROFORMA FOR SUBMISSION OF SEED FUND PROPOSAL

Part I: General Information

1. Project Title (should be focused not exceeding 15 words): Recycle Renewed project (Paper Recycling Plant)
2. i. Name of Principal Investigator: Chandana Paul
ii. Name of Co-Investigator: Anshu Rawal
3. Collaboration if any, give details of institution(s) - None
4. Any Project(s) previously sanctioned by any funding agency? If yes give the details:

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)
NA						

5. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues? NA
6. Duration (months): 1 year
7. Enclose the following while submitting the application form:

Duly filled application form (complete with all Annexures)- 2 hard copies	
Bio-data of the PI & Co-I -2 copies	



Part II: Proposal Summary

1. **Origin of the Proposal:** (Maximum 1 page)

(Scientific/Technical rationale for doing this work should be elaborated)

Nearly one-third of the solid trash produced worldwide is made up of paper garbage. In the past, paper trash was either burned or dumped in landfills, taking up a lot of area. When paper is burned by incineration, carbon dioxide is released, upsetting the equilibrium of the atmosphere. Because of the intensified greenhouse effect, which is to blame for climate change and global warming, landfill disposal and cremation are both unfavorable solutions for handling paper waste. Recycling paper is a "green" way to handle paper waste. Paper waste is turned into useful paper and other items through the recycling process.

University is an academic institution where the use of paper is integral. Students use paper for various purposes such as class notes, assignments, class tests etc. A considerable quantity of paper is also used in different administrative departments as most of the used paper was earlier thrown in the dustbins and got wasted. It is realized that when a paper can be recycled and reused for a number of times then why not to have paper recycling machine in the college itself and train the students.

2. Objectives (Only 4-5 focused one that can be observed, measured or clearly assessable)

1. A lot of paper is discarded by the staff, students, and various departments and sections of the university (administration, accounts, computers, library, administrative offices, and various academic departments and other top divisions).
2. With the use of the university's waste paper, it seeks to teach students and teaching and non-teaching staff how to create paper by hand.
3. All university students would become more conscious of the importance of protecting the environment and reducing the use of paper as a result.

3. Review of status of Research and Development in the subject

3.1 International Status: (Maximum 2 pages)

(Researchers working in the area worldwide and their contributions must be properly highlighted with recent references and reviews. A correct and faithful description of the international research status must be given) NA

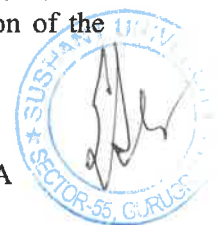
3.2 National Status: (Maximum 1 page)

(Same as above to cover the contribution of Indian Scientists in the project area) NA

3.3 Importance of the proposed project in the context of current status (Maximum 1 page)

Paper recycling plants are essential in the current environmental context as they conserve resources, reduce waste, cut down pollution, create jobs, and promote a circular economy, all of which are vital for a sustainable future. Efforts to support and expand paper recycling initiatives are crucial for addressing environmental concerns on a local and global scale.

Conservation of Resources: Recycling paper conserves natural resources such as trees, water, and energy. It takes significantly fewer resources to produce paper from recycled



materials than from raw materials.

Reduction of Waste: Paper constitutes a significant portion of municipal solid waste. Recycling paper helps divert this waste, minimizing environmental pollution.

Reduction of Pollution: The paper manufacturing industry can produce various pollutants, including harmful chemicals and wastewater. Recycling paper reduces the demand for new paper production, subsequently decreasing pollution associated with the manufacturing process.

Economic Benefits: Recycling industries, including paper recycling, create jobs and stimulate economic growth. They also foster innovation in waste management technologies and processes, contributing to a sustainable economy.

Educational and Awareness Impact: Recycling plants serve as educational tools, raising awareness about the importance of recycling and waste reduction. By seeing the process in action, people are more likely to understand the significance of their recycling efforts.

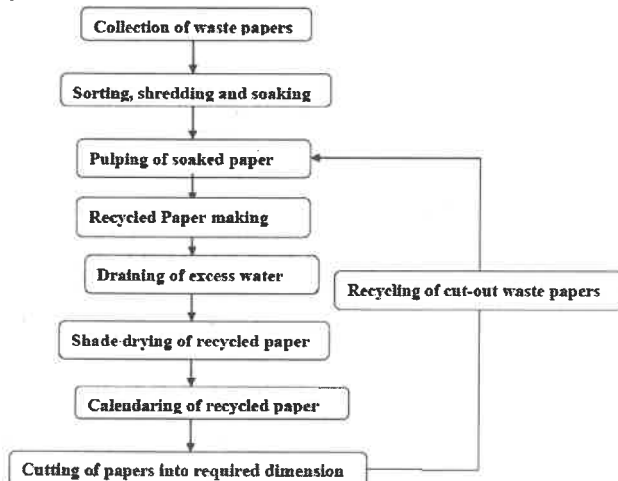
4. Work Plan:

4.1 Methodology: (Maximum of 5 pages)

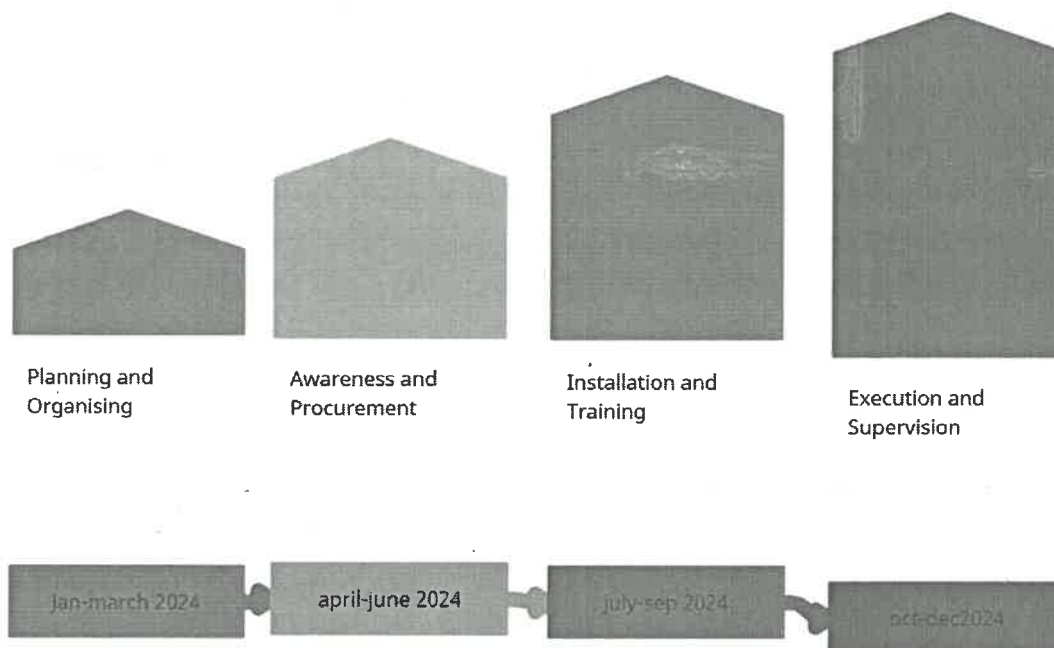
(It should contain all the details of how each of the objectives will be addressed. This section must be detailed and have clear plans, not vague and generalized statements. It should have several schemes, tables, figures, equations etc. in addition to text, explanation and justification of why the project research plan will work)

- We will have a manual paper recycling machine installed in a separate room where the students come for paper making training.
- They themselves prepare the pulp for making paper and carry out the whole process till they put the paper in the pressing machine.
- Different colors are mixed in the pulp to get different colored papers.
- Some chemicals and bleaching powder are mixed in different proportions for getting different varieties of paper.
- Thus the waste paper collected from different departments of the university are recycled to be used for various purposes such as post cards, envelopes, note sheets, file covers, diaries, colored papers besides the making of a regular A4 size papers.
- Everyday a good number of students will use the paper recycling machine and approximately 5 kg. of waste paper is recycled.
- More and more students are encouraged to make paper by themselves for writing their assignments. All the records are maintained.

Paper Recycling Process



4.2 Time Schedule of activities giving milestones through Gantt Chart. (Maximum 1 page)



5. Expertise:

5.1 Expertise available with the investigators in executing the project:

5.2 Bibliography

6. List of facilities required from Sushant University for the project implementation.

6.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	YES
2.	Water & Electricity	YES
3.	Laboratory Space/ Furniture	YES
4.	Power Generator	YES
5.	AC Room or AC	NO
6.	Telecommunication including e-mail & fax	NO
7.	Transportation	YES
8.	Administrative/ Secretarial support	NO
9.	Information facilities like Internet/Library	NO



10.	Computational facilities	NO
12.	Any other special facility being provided	NO

6.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group	NA	NA	NA
PI's Department	NA	NA	NA
Other Institute(s) in the region			

6.3 Total Budget (Rs. in Lakhs):3,18,600

- Recurring Cost (Rs):250000
- Non-Recurring Cost (Rs):68600

Sl. No.	Item	Budget			
		1 st Yr	2 nd Yr	3 rd Yr	Total
A	Recurring	68,600			
	1. Manpower				
	2. Consumables				
	3. Travel				
	4. Field testing, Demo/ Training expenses (if applicable)				
	5. Contingencies/Other costs				
	6. Institutional Overheads*				
	7. Any other item				
B	Non-Recurring	2,50,000			
	Permanent equipment				
	Construction of work shed/structures				
	Fabrication of prototype equipment				
	Grand Total (A+B)				

A. Recurring:

1. Budget for Manpower

Sl. No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	Budget (Rs. in lakhs)			
					1 st Yr	2 nd Yr	3 rd Yr	Total
	NA	NA	NA	NA	NA	NA	NA	NA

2. Budget for Consumables*

Sl. No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total



*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel

Sl. No.	Purpose	Budget (Rs. in lakhs)			
		1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Project logistics	NA	NA	NA	NA
2.	Field activities				
3.	Review meetings (if elsewhere)				

4. Field Testing/ Demo/ Trainings*

Sl. No	Description of field testing/demos /trainings	No/Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
	NA	NA	NA	NA	NA	NA

*Include material for technology field testing/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of beneficiaries/training, duration of training days, cost /training).

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
NA	NA	NA	NA	NA	NA	NA

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

B. Non-Recurring:

Budget for Permanent Equipment/ Workshed/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.	Auto-vat ; unique design of steel fabricated tank of (SS-304) deckle and frames fabricated with wood and stainless steel capable of lifting paper of size 18"x23"	1	
2.	Manually operated Screw press of size 27"x32"; fitted on a rigid base with Phosphor bronze bushes and stainless steel (SS-304) plate. SS Water channel is fitted around the base to circulate the water to a single outlet.	1	
3.	Manual Cutter 24"	1	
4.	Tools & accessories consisting of 1 couching table, 2 couching Boards, 2 woolen felt, 50 cotton felts, 1 Ltr Rosin, 1 kgs Alum, 2 dozen Hanging Clips.	1	3,18,600

7. Deliverables

Deliverable	Mark ✓	Brief description
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Product development/adaptation	Products from recycled paper Paper bags, Folders , File ,Greeting cards , Envelopes & courier covers Tissue box
Process development/adaptation	NA.
Technology package for development of the project area and local community	NA
Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)	NA
Scientific knowledge and/or data generation leading to technology development in future	NA
Other (Please specify)	NA

8. *Name and address of experts/ institution interested in the subject / outcome of the project.*



RESUME

Chandana Paul
GURGAON, HARYANA

Mobile: 9910900173

E. Mail: Chandana0481@gmail.com



EXPERIENCE OF WORK

- **Presently working as HOD in Vatel Hotel & Tourism Business School, Sushant university Gurgaon since January 2019.**
With over 35 years of experience and a network of 55 campuses throughout the world, Vatel Schools are the 1st Worldwide Business School Group in Hospitality and Tourism Management.”
They all give an internationally targeted education, which includes academic theoretical courses and professional experience. Vatel educational methods have proved their worth: Vatel has received several Worldwide Hospitality School Awards from international hospitality experts and 100% of students find jobs that correspond to their own professional projects- our 30,000 Vателиens work in the most beautiful hotels on earth. They make up a priceless network for recent graduates looking for a job in any part of the world.
- **Worked in Le Cordon Bleu School of Hospitality GD Goenka University Sohna road Gurgaon since August 2018 – January 2019**
Le Cordon Bleu, a 128-year-old hospitality institution, having largest network of culinary and hospitality Schools in the world with more than 47 institutes in 22 countries which combines innovation and creativity with tradition to ensures that students get the best international trade experience. Le Cordon Bleu School of Hospitality at GD Genka University as one of the top hotel management colleges in Delhi NCR is the emphasis it lays on adding value to a student’s learning.
- **Worked as Food & Beverage lecturer in The Hotel School New Delhi (Oct 2016- July 2018)**
The Hotel School, Delhi is the most sought after Hospitality Institute in India located at Kapashera in close Proximity to Indira Gandhi International Airport, New Delhi. The Hotel School, Delhi offers best Hotel Management Courses in Delhi, Gurgaon with the world class infrastructure and modern teaching methodology. With globalization and liberalization being the hallmark of the present world, the tourism sector has been expanding like never before.
- **Worked as Assistant Manager Housekeeping in The Orchid Hotel Mumbai (Nov 2014 - Dec 2015)**
Winner of 90 national and international awards; The Orchid Mumbai is Asia’s First certified five star Ecotel located near Mumbai demotic airport. Hotel offer 372 tastefully appointed rooms and a suite, with conference and meeting facility. Also considered as an oasis of a green eco-friendly haven right in the heart of bustling Mumbai.



- Worked as **Ratified Food & Beverage Lecturer in Katriya Institute of Excellence in Hotel Management Hyderabad Affiliated to Osmania University, Hyderabad (June 2012-Feb 2014).**
Awarded the 'A' Grade status by the National Accreditation and Assessment Council (NAAC) of the University Grants Commission, Government of India in the year 2008. Having campus of nearly 1600 acres it's perhaps, the largest higher education system in the Country. It is a home to nearly 300,000 students and 5000 faculty and staff members.
- Worked as **Housekeeping faculty at Mohanlal Sukhadia University at Udaipur (From August 2011 - April 2012)**
Established in 1962 Mohanlal Sukhadia University at Udaipur is a State University which caters the needs of higher education in Rajasthan. Having strong infrastructure for e-libraries University can take the pride in having ICT enabled working in most of its functional units involved in teaching, learning, research, administration and governance.
- Worked in **Kabira Country club as Manager Housekeeping. East Africa (10th March'2006 - 26th Nov 2007).**
A Luxury hotel which combines short and long term residential accommodation and conference facilities with the prestigious & biggest health, fitness and leisure complex. The hotel with 78 rooms, suites and 14 cottages overlook either the hills of Kampala or the Club's swimming pool.
- Worked in **The Oberoi Rajvilas (Member of SLHW and SLH) as House Keeping Supervisor. (15th May'2001 - 6th March'2006).**
Winner of 92 international awards The Oberoi Rajvilas is rated amongst the leading five star deluxe resorts in the world, 71 room resort is set in 32 acres of beautiful landscaped gardens, pools and fountains with pavilions and reflection pools echoing the gracious lifestyles of India's legendary Rajput princes.

RESPONSIBILITIES UNDER TAKEN

Role: Academics

- Managed the teaching plan for the students and also provided them with guidance on various aspects of the subjects.
- Provide a training program to the students as well as motivated them for achieving the desired results.
- Provided guidance to the students for developing their career as well as making them familiar with different career opportunities.
- Identify the weak points of the students and organize various events to enhance the skills of students.
- Prepared course pack and Lab manuals of Room Division & Housekeeping for MBA and Bachelor's students.

Role: Housekeeping Manager.

- Manage the day-to-day activities of the housekeeping department.
- Plan, schedule, and organize work to ensure proper coverage.
- Communicate and enforce policies and procedures.
- Ensure all staff are properly trained and have the tools and equipment needed to effectively carry out their respective job duties.
- Develop and implement procedures for managing quality of housekeeping.



- Promote teamwork and quality service through daily communication and coordination with other departments.

PROFESSIONAL QUALIFICATIONS:

Year	Class	Board/University	College/School
2021-2025	PHD in Hospitality (Pursuing)	Amity University	Amity University Jaipur
2013-2015	MSC in Tourism & Hospitality	Madurai Kamaraj university	MKU ,Madurai
1998-2001	1 st - 3 rd year	National Council for Hotel Management	IHM Bhopal,
1997-1998	12 th	CBSE	Sr. Secondary School, Bhilai
1995-1996	10 th	CBSE	Sr. Secondary School, Bhilai

TRAINING UNDERTAKEN

- Did Cross training in Front Office, Food and Beverage service at Rajvilas.
- Six months Industrial Training in the Fort Aguada Beach Resort, Goa .
- Did faculty Refresher training in TAJ VIVANTA Dwarka.

SPECIAL ACHIEVEMENTS

- Published Two patents “Frangipani Upholstery freshener” and “Cape Gooseberry and Stevia syrup”.
- Authored Two books A complete handbook on laundry operations and Carpets-A complete guide
- Published research papers in reputed journals
- Certified Departmental Trainer - Train the Trainer Workshop - The Oberoi Centre of Learning and Development
- Awarded **gold medal** in Annual Appraisal at The Oberoi Rajvilas.
- Position holder in dancing in Junior & Senior Level Respectively.



PERSONAL DETAILS

Date of Birth : 4th May 1981
 Husband Name : Mr. Amit Sarup
 Nationality : Indian

Gender : Female
Marital Status : Married
Languages Known : English, Hindi and Bengali



PROFORMA FOR SUBMISSION OF SEED FUND PROPOSAL

Part I: General Information

1. Project Title (should be focused not exceeding 15 words):

FRESH TULSI INFUSED WATER

2. i. Name of Principal Investigator: Mr. Saif Anjum

ii. Name of Co-Investigator: Ms. Aashiyan & Mr. Deepak Thakur

3. Collaboration if any, give details of institution(s)

N/A

4. Any Project(s) previously sanctioned by any funding agency? If yes give the details:

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)
	N/A					

5. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues? Yes - FSSAI

6. Duration (months): 1Y

7. Enclose the following while submitting the application form:

Duly filled application form (complete with all Annexures)- 2 hard copies	
Bio-data of the PI & Co-I -2 copies	



Part II: Proposal Summary

- 1. Origin of the Proposal:** (Maximum 1 page)
(Scientific/Technical rationale for doing this work should be elaborated)

Creating fresh tulsi-infused water has both scientific and technical rationales that can be elaborated upon to support the development and promotion of this product. Here's a detailed explanation of the scientific and technical reasoning behind the creation of fresh tulsi-infused water:

Scientific Rationale:

- **Nutritional Benefits:** Tulsi, also known as holy basil (*Ocimum sanctum*), is rich in phytochemicals, antioxidants, and essential oils. Scientific studies have shown that tulsi contains compounds like flavonoids, polyphenols, and essential oils with potential health benefits. These include anti-inflammatory, antioxidant, and antimicrobial properties, which can contribute to overall well-being.
- **Stress Reduction:** Tulsi is known for its adaptogenic properties, which means it may help the body adapt to stress and maintain balance. Scientific research suggests that tulsi may reduce the production of stress hormones like cortisol, helping individuals cope with stress more effectively.
- **Immune Support:** The antioxidants and immunomodulatory properties of tulsi have been studied for their potential to strengthen the immune system. Regular consumption of tulsi may contribute to better immune function, protecting the body from various infections and diseases.
- **Digestive Health:** Tulsi may aid in digestion by reducing inflammation in the gastrointestinal tract and promoting the growth of beneficial gut bacteria. This can lead to improved digestive health and reduced risk of gastrointestinal disorders.
- **Anti-inflammatory Effects:** Chronic inflammation is associated with numerous health issues, including chronic diseases. Tulsi's anti-inflammatory compounds may help reduce inflammation, potentially lowering the risk of diseases like heart disease, diabetes, and arthritis.

- 2. Objectives (Only 4-5 focused one that can be observed, measured or clearly assessable)**

i. To boost the immunity of the community
ii. To increase people daily intake of water.
iii. To reduce the intake of harmful sugary drinks which affects health
iv. To generate revenue per day.

- 3. Review of status of Research and Development in the subject**

3.1 International Status: (NIL)

3.2 National Status:

(As of 2021, researchers and their contributions were known in the field of tulsi research in India. However, for the most recent developments and specific references, consulting recent scientific literature and reviews in the field of Ayurveda, pharmacology, and herbal medicine.)

3.3 Importance of the proposed project in the context of current status

(Highlight what is the new area or gap which will be solved in the project in relating to what is already known. This is a very important section to project the novelty content of the



proposal)

The FRESH TULSI INFUSED WATER project holds significant importance in the context of the current status for several reasons:

- **Health and Wellness:** In today's fast-paced and stressful lifestyles, there is a growing demand for natural and healthy beverages. Fresh tulsi-infused water offers a natural way to promote health and well-being due to the potential benefits associated with tulsi, including stress reduction, immune support, and antioxidant properties. As people become more health-conscious, this project aligns with the current trend towards healthier beverage choices.
- **Immune Health:** With global health concerns, such as the COVID-19 pandemic, immunity has become a top priority. Fresh tulsi-infused water, with its potential immune-boosting properties, can be seen as a proactive step in maintaining good health. Tulsi's immunomodulatory effects make it a valuable addition to people's daily routines.
- **Sustainability:** The project's emphasis on sustainability aligns with the growing awareness of environmental issues. Sustainable cultivation practices for tulsi and eco-friendly packaging contribute to reducing the environmental impact, which is a concern for many consumers today.
- **Nutrition Education:** The project provides an opportunity to educate consumers about the nutritional benefits of tulsi. This education is crucial as people seek to make informed dietary choices and understand the positive impact of certain ingredients on their health.
- **Local and Natural Products:** There is a preference for locally sourced and natural products. Fresh tulsi-infused water can be produced using locally grown tulsi, supporting local farmers and reducing the carbon footprint associated with transportation. Consumers are increasingly interested in knowing the source of their food and beverages.
- **Alternative to Sugary Drinks:** The project offers a healthier alternative to sugary beverages, which are a significant contributor to various health problems, including obesity and diabetes. Fresh tulsi-infused water can appeal to individuals seeking flavorful yet low-calorie options.
- **Community and Social Impact:** The project can have a positive impact on the community by creating jobs, supporting local agriculture, and fostering sustainable practices. Additionally, it can promote social responsibility through initiatives like community health programs or partnerships with local organizations.
- **Adaptation to Cultural Practices:** In many cultures, tulsi holds significant cultural and religious importance. The project respects and integrates cultural practices by using tulsi, potentially attracting a broader audience and connecting with people on a deeper level.
- **Food Security:** Promoting the cultivation of tulsi as a part of the project can contribute to food security. Tulsi is a hardy plant that can thrive in various conditions, making it a valuable crop for regions facing food security challenges.

4. Work Plan:

4.1 Methodology: (Maximum of 5 pages)

(It should contain all the details of how each of the objectives will be addressed. This section must be detailed and have clear plans, not vague and generalized statements. It should have several schemes, tables, figures, equations etc. in addition to text, explanation and justification of why the project research plan will work.



Creating tulsi-infused water that aligns with the objectives of boosting immunity, increasing daily water intake, reducing harmful sugary drink consumption, and generating daily revenue involves a systematic and well-planned methodology. Here's a detailed step-by-step process:

Objective 1: To boost the immunity of the community

Step 1: Source High-Quality Tulsi

Select fresh, organic tulsi leaves from a reliable supplier or grow them on-site using organic farming practices. Ensure that the tulsi leaves are free from pesticides or contaminants.

Step 2: Infusion Process

Thoroughly wash the tulsi leaves to remove any impurities.
Boil a large pot of water and let it cool slightly.
Place the clean tulsi leaves in the hot water and cover the pot.
Allow the tulsi to steep in hot water for about 15-20 minutes, extracting its beneficial compounds.
Strain the water to remove the tulsi leaves, ensuring a clean infusion.

Step 3: Storage

Store the tulsi-infused water in food-grade containers that are sanitized regularly.
Keep the infused water refrigerated to maintain freshness and prevent microbial growth.

Objective 2: To increase people's daily intake of water

Step 4: Packaging

Use eco-friendly and safe packaging materials, such as glass or BPA-free plastic bottles.
Clearly label the bottles as "Tulsi-Infused Immunity Water" to communicate the product's purpose.

Step 5: Portion Control

Offer tulsi-infused water in conveniently sized portions, such as 250ml or 500ml Glass/bottles.
Encourage consumers to drink it as a part of their daily hydration routine.

Objective 3: To reduce the intake of harmful sugary drinks

Step 6: Marketing and Education

Develop a marketing strategy that highlights the health benefits of tulsi-infused water, emphasizing its role in reducing the consumption of sugary drinks.
Use social media, informative pamphlets, and in-store displays to educate consumers about the adverse effects of sugary beverages and the healthier alternative provided by your product.

Step 7: Competitive Pricing

Price the tulsi-infused water competitively with sugary drinks to make it an attractive and affordable option.

Objective 4: To generate revenue per day

Step 8: Sales Channels

Establish various sales channels, including:
Selling directly to consumers through physical outlets or online platforms.
Partnering with local retailers, gyms, yoga studios, and health food stores to stock and sell your product.

Step 9: Promotions and Loyalty Programs

Implement promotions, loyalty programs, or subscription models to encourage repeat purchases.
Collaborate with local businesses or events to sponsor or provide your tulsi-infused water.

Step 10: Daily Monitoring and Reporting

Implement a daily monitoring system to track sales and inventory.
Analyze daily revenue data to identify trends and make necessary adjustments in pricing, distribution, or marketing strategies.

Step 11: Quality Assurance and Compliance

Continuously monitor the quality of your product to maintain customer satisfaction.
Ensure compliance with food safety regulations and health standards.

Step 12: Community Engagement

Engage with the local community through health workshops, wellness events, and educational programs.
Foster a sense of community ownership by involving local residents in the project.



By following this methodology, you can create a sustainable and revenue-generating fresh tulsi-infused water project that simultaneously addresses the objectives of immunity boosting, increased water intake, reduced sugary drink consumption, and daily revenue generation.

4.2 Time Schedule of activities giving milestones through Gantt Chart. (Maximum 1 page)

Task	Duration (Weeks)	Start Date	End Date
Project Initiation	1	01-11-2023	07-11-2023
Raw Material Procurement	2	08-11-2023	2023-11-07
Equipment Setup	3	2023-11-22	12-12-2023
Facility Preparation	2	13-12-2023	26-12-2023
Tulsi Leaf Preparation	2	27-12-2023	09-01-2024
Infusion Process	4	10-01-2024	06-02-2024
Filtration and Quality Control	2	07-02-2024	20-02-2024
Packaging	3	21-02-2024	12-03-2024
Marketing and Sales Planning	2	13-03-2024	26-03-2024
Compliance and Certification	4	2024-03-27	23-04-2024
Distribution Setup	2	24-04-2024	30-04-2024
Launch and Sales	1	01-05-2024	07-05-2024
Quality Assurance	ongoing		

5. Expertise:

5.1 Expertise available with the investigators in executing the project: (Maximum 1 page)
(Professional expertise existing with each of the investigators in terms of publications, Patents and preliminary results, to execute every component of the proposal should be highlighted)

5.2 Bibliography



6. List of facilities required from Sushant University for the project implementation.

6.1 Infrastructural Facilities

	Yes/No/ Not required Full or sharing

6.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	YES
2.	Water & Electricity	YES
3.	Laboratory Space/ Furniture	NO
4.	Power Generator	NO
5.	AC Room or AC	NO
6.	Telecommunication including e-mail & fax	NO
7.	Transportation	YES
8.	Administrative/ Secretarial support	YES
9.	Information facilities like Internet/Library	NO
10.	Computational facilities	YES
12.	Any other special facility being provided	Herbal Garden & gardener

6.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group		NIL – To be purchased	
PI's Department		NIL – To be purchased	
Other Institute(s) in the region			

6.3 Total Budget (Rs. in Lakhs):

- Recurring Cost (Rs):
- Non-Recurring Cost (Rs):

Sl. No.	Item	Budget			
		1 st Yr	2 nd Yr	3 rd Yr	Total
A	Recurring	58300	58300	58300	174900
	1. Manpower				
	2. Consumables				
	3. Travel				
	4. Field testing, Demo/ Training expenses (if applicable)				
	5. Contingencies/Other costs				
	6. Institutional Overheads*				
	7. Any other item				
B	Non-Recurring	108500			108500
	Permanent equipment				
	Construction of work shed/structures				
	Fabrication of prototype equipment				



Grand Total (A+B)	283400
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A. Recurring:

1. Budget for Manpower

Sl. No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	Budget (Rs. in lakhs)			
					1 st Yr	2 nd Yr	3 rd Yr	Total
1	Gardener Staff	3		30,000/month	30,000/month	30,000/month	30,000/month	174900

2. Budget for Consumables*

Sl. No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
		3				

*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel

Sl. No.	Purpose	Budget (Rs. in lakhs)			
		1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Project logistics	NIL			
2.	Field activities	NIL			
3.	Review meetings (if elsewhere)	NIL			

4. Field Testing/ Demo/ Trainings*

Sl. No	Description of field testing/demos /trainings	No/Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
		Inhouse	Nil			

*Include material for technology field testing/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of beneficiaries/training, duration of training days, cost /training).

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
			NIL			

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

B. Non-Recurring:

Budget for Permanent Equipment/ Workshed/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.	NIL		NIL
2.	Rooftop NFT Kit 2	2	108500
3.			
4.			

7. Deliverables

Deliverable	Mark ✓	Brief description
Product development/adaptation	✓	
Process development/adaptation	✓	
Technology package for development of the project area and local community	✓	
Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)	✓	
Scientific knowledge and/or data generation leading to technology development in future	✓	
Other (Please specify)		

8. Name and address of experts/ institution interested in the subject / outcome of the project.



Curriculum Vitae



Saif Anjum

Current Organization : Vatel Hotel & Tourism Business School (Sushant University)

Experience: 16 years

Position: Assistant Professor (Food & Beverage Service)

H.No A1, 347 Sushant Lok 2, Gurgaon

+ 91 9876454338,7888457479

saifanjum@gmail.com

Objective

To work in an environment that bestows challenging and motivating tasks and dynamic growth opportunities where I can add new dimensions to my career at every step and can use my knowledge and skills to make significant contribution to the organization.

Work Experience

Organization: Vatel Hotel & Tourism Business School (Sushant University, Gurgaon) in Academic collaboration with **VATEL France**

Duration : September 11th 2017 till date

Designation: Assistant Professor

Duties & Responsibilities

- Teaching Food & Beverage Service to students of B.Sc HMCT & BHM
- Teaching allied subjects of BHM
- Placement Incharge.
- School Coordinator of TDL
- Member of AU Flying Squad (Examinations)
- Member of IQAT (VHTBS)
- Member of Various committees at school level
- Taking Care of additional administrative work.
- Organizing various workshops & events
- Organize & conducted online Webinars & workshop for students



Company: Cordia Hospitality & Tourism Management Institute (Venture of Lord Rana

Charitable Trust UK) Affiliated to Punjabi University, Patiala Punjab

Duration: 7th August 2013 –September 5th 2017

Designation: Assistant Professor /HOD

Duties & Responsibilities

- Overall in charge of CHTMI day to day working.
- Teaching Food & Beverage Service to student of B.Sc HHM
- Teaching Food & Beverage Service to students of Hunar Sa Rozgar Tak

CHTMI Examination Incharge

- Taking care of all necessary formalities regarding University examination.

CHTMI Training & Placement Incharge

- Organize student Industrial Training in Five star hotels around the country
- Organize interviews for campus placement
- Organize Industrial Visits of students in various star properties

Organize international conferences and other functions held in college by providing world class hospitality to all foreigner and Indian delegates.

Company: Masala Manger Pvt Ltd, Bangalore

Duration: Sept 2010 - 2013

Designation: Manager Operations

Duties & Responsibilities

Over all incharge of Masala Bistro (Unit of Masala Manger Pvt Ltd)

- **Supervise food purchases of standard quality**
- Generate different reports (Sales Report, Stock Report) on daily basis
- Responsible for Inventory control in close supervision of purchase supervisor.
- **Generate Profit and Loss Statement on monthly basis.**
- **Prepare Training schedule for staff for understanding & up selling of product with good service.**
- **Interaction with guest for regular feedback which helps in maintaining the quality of product.**
- **Organize Birthday Parties which increases the sales.**
- Handle employee attendance and payouts.

Incharge of Outdoor catering division

- **Organize outdoor parties like corporate family day for 4000 - 5000 people for client like Titan, Northern Trust, LG, Toyota are few.**
- **Supervise purchase of raw material from vendors.**
- **Prepare costing for customized menus.**
- **Deals with different event management companies to finalize the parties.**
- **Generate Profit and Loss Statement after every party.**



- **Organize 4 days catering for DRDO & AIR FORCE during Aero show 2011.**

Company: Olive Beach (Fine Dine Mediterranean Restaurant), Bangalore **Duration: June 2008 – Aug 2010**

Designation: Tr Floor Manager.

Was part of one of the country's most prestigious restaurant group, and today it is arguably *the* 'in vogue' Mediterranean freestanding in India. It plays host to the who's who of one of the nations fastest growing economies through intense a la carte, banquet and party business.

I joined as a Tr. Floor Manager in this 110 cover restaurant, my responsibilities include the opening and closing of the restaurant, taking reservations and allocating tables, staff training and log maintenance, assisting the Restaurant Manager for staff briefings alongside

Maintaining the highest service standards through normal operations as well as some unique events like The Med Mosaic, Flea By Night, Gourmet Bazaar. The volumes involved taught me invaluable lessons in organizational skills and working on very tight yet methodical schedules. I perform all duties and responsibilities in a timely and effective manner in accordance with the established company norms to achieve the overall objectives of my position. .

Olive Beach has been received with outstanding restaurant reviews in most of the leading media, print and television; and has been featured in the New York Times, Wallpaper Magazine, Conde Nast Traveler, The Sunday Observer (UK), The Independent (UK) among a host of others. It has also received the TIMES FOOD AWARD as the 'Best Mediterranean Restaurant' and the 'Best Looking Restaurant' in Bangalore. The Outlook Traveller rated Olive Beach as one of the Top 10 Restaurants in India.

Company: Leela Palace (Citrus, Coffee Shop), Bangalore **Duration: Jan 2008 – March 2008**

Here my first Job in Citrus, what today is one of the Top Restaurant was a kind of great firsthand experience in the industry. Here I was responsible as a station holder to my Captain, taking care of the guest needs and their comfort. Though the period was short and a learning one, the Leela Brand always keeps my Head High.

Industrial Training:

- Six months industrial training at "ITC Park Sheraton & Towers, Chennai"
- Worked on a project "Market Feasibility & Financial Viability"

Education

MHM

Division: First

University: Karnataka State Open University

Duration : 2013 - 2015

PGDBA: Marketing

College: Symbiosis Center of Distance Learning

Duration 2008 – 2010

University: Symbiosis, Pune

Division : A

Graduation: Bachelor of Hotel Management,

College: Acharya Institute of Management and sciences, Bangalore.

Duration: 2004 – 2008

University: Bangalore University.

Division: First



Schooling: Laureate Public School, Shimla.

Duration: 2003 – 2004

Grade: 10 + 2

Duration: 2001 – 2002

Grade: 10th

Affiliation: C.B.S.E

Division: First

Affiliation: C.B.S.E

Division: Second

Research & Paper:

- Published research paper in IJSDR (UGC care listed journal) on Green Human Resource management & sustainability.
- Presented a paper in First international conference at Presidency University, Bangalore on The role of online portals in increasing the frequency of traveling habits
- Presented & Publish of research Paper in National Conference at Graphic Era University, Dehradun on Impact of Pilgrimage Tourism on a destination. A case study of Varanasi Uttar Pradesh.

Personal development & Extended Education:

1. Certificate course of Social media marketing
2. Attended FDP Research & its role in Academic Development.
3. Attended FDP at Hyatt Regency,Gurgaon
4. Attended & Completed BKSB Advanced Certificate Course.
4. Attended FDP workshop on Communication Skills by NITTER Chandigarh.
5. Attended a seminar on 'Emerging trends in hospitality industry' hosted by College with AICTE, New Delhi.
6. Attended national workshop on 'Situation handling in hospitality industry'.

Personal Information

Date of Birth : 17th Sept 1984

Sex : Male

Marital Status : Married

Fathers Name : Mr.L.A Ansari

Nationality : Indian

Permanent Address : H No-345/2, Mohalla Haripur Nahan,Himachal Pradesh

Interests : Building PR, Traveling, Reading books

Languages known : English and Hindi



Declaration

I hereby declare that the information stated above is true to best of my knowledge.

Saif Anjum



Utilization Certificate

Certified that grant of ₹ 1,58,500/- (Rupees One Lakh Fifty Eight Thousand Five Hundred Only) sanctioned by the Center of Research and Development, Sushant University, vide letter no. **F.No.1/2023-2024/Seed Fund-Nov 23/15** Dated **8th November 2023** towards financial assistance for the project titled “**FRESH TULSI INFUSED WATER**” was utilized for the purpose for which it was sanctioned.

Financial expenditure incurred

Sl.no	Nature of expense	Proposed Expenditure (in Rs.)	Expenditure incurred (in Rs.)
1	Manpower	1,74,900	1,00,500
2	Equipment	1,08,500	58,000
	Total	₹ 2,83,400	₹ 1,58,500



Principle Investigator

Vatel Hotel & Tourism Business School
Sushant University
Sector-55, Gurugram




Accounts Officer

Account & Finance Officer
Sushant University
Gurugram

PROFORMA FOR SUBMISSION OF SEED FUND PROPOSAL

Part I: General Information

Project Title (should be focused not exceeding 15 words): **The Leaf Project - Farm to Fork Salad Kiosk**
- Concept based on Sustainable Agri-business model

1. i. Name of Principal Investigator: Dr. Saurav Chhabra
 ii. Name of Co-Investigator: NA
2. Collaboration if any, give details of institution(s) - NIL
3. Any Project(s) previously sanctioned by any funding agency? If yes give the details:

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)
	NIL		NIL		NIL	

4. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues?

- FSSAI

5. Duration (months): 1 Year
6. Enclose the following while submitting the application form:



Duly filled application form (complete with all Annexures)- 2 hard copies	
Bio-data of the PI & Co-I -2 copies	

Part II: Proposal Summary

1. Origin of the Proposal

Sustainability is the current catchphrase. By committing to sustainability, Vatel Hotel School at Sushant University has taken on a significant challenge and responsibility: the challenge of re-examining how we live as consumers in this world, which has a significant impact on our environment and neighbors; and the responsibility of figuring out how to mend the nearly severed ties between ourselves, our communities, and the earth. Permaculture and other regenerative practices are currently being discussed in relation to the agricultural ecology. Pesticides and fertilizers have had negative effects on vegetation, which have been debated and recorded in several studies by renowned academics in the past. The need for innovative and clean farming methods is increasing as the clean food movement grows at its own pace.

The Leaf Project revolves around growing lettuce and vegetables organically without harming the mother earth and imparting knowledge and skills to the hospitality students by involving them at every stage of the project starting from inception which will involve the conceptualization of growing lettuce and vegetables using hydroponic technique and using the fresh produce in the conduct of practical. The project also includes and proposes setting up of a cold meal kiosk managed and run by Students of Vatel Hotel & Tourism Business School which will serve cold salads thereby reducing the carbon foot prints and minimizing the use of gas. The only cooking techniques used in the same will be blanching and flash grilling wherein the nutrient loss is the least.

Side by side the lettuce produce (especially during the season) will be sold to the nearby societies, and the profits will be used to fuel the project by widening the range.

A herb section is proposed at a later stage. Herbs and Lettuces are ingredients which are in demand but is very costly in the outside market.

2. Objectives (Only 4-5 focused one that can be observed, measured or clearly assessable)

i. To Discuss Hydroponic farming techniques and grow leafy vegetables and herbs in house
ii. To Provide Opportunity for the Students of Vatel India , Sushant University to learn about different vegetables and leaves and the growing process. Growing Vegetables and lettuce inside the university
iii. To Create a menu using the very same vegetables and lettuce
iv. To Generate Revenue by selling it to the students of SU and catering to nearby societies.



3. Review of status of Research and Development in the subject

3.1 International Status:

The use of hydroponics is promoted as a way to counteract climate change, lessen environmental harm from intensive farming, and prevent species extinction. It also permits the wiser use of water, a resource that is becoming increasingly limited.

By 2030, the hydroponics market is anticipated to reach USD 35.4 billion, growing at a CAGR of 15.6% between 2023 and 2030. Additionally, plants can develop 50% more quickly in hydroponic farming than in traditional farming. Herbicides and pesticides are no longer required.

3.2 National Status: Nil

3.3 Importance of the proposed project in the context of current status

Sustainability oriented business model

- **Promoting incubates with a Low startup cost business model** - The unacceptably high costs of founding, staffing, and managing a restaurant usually impede local entrepreneurship and economic potential. By enabling a wider variety of the community to own and operate their own kiosks, which can aid many families in escaping poverty, kiosks logically support sustainable business models.
- **A food business with less Energy Consumption-** The use of less energy has various advantages. A typical sit-down restaurant, for instance, utilises a staggering amount of net energy. With regard to everything from the electricity required to light the space to the air conditioning and/or heating, hot lights, stovetops, and dishwashers, restaurants' fundamental business models incentivize the wasteful use of energy. In contrast to restaurants, food trucks encourage sustainable business models by utilising almost no fossil fuels to move from one location to another. This project will be based on energy saving food selling Business model.
- **Serving community at large through Locally grown produce** - Another way that kiosks help sustainable business models is by including locally sourced fruits and vegetables into their meals. Out-of-season crops like fruits and vegetables take a lot of energy to move by air and land, which adds to ongoing energy dependence and fossil fuel waste. By collaborating with nearby farmers, co-ops, and growers, kiosks may promote the farm to fork business model of delicious seasonal vegetables.



4. Work Plan:

Methodology:

Step 1 - Installing Hydroponic Farming Equipment and tools

Step 2 – Farm Vegetables and lettuce

Stages in hydroponic farming

1. Propagation
2. The seedling stage
3. The vegetative stage
4. The flowering stage
5. The fruiting Stage
6. Harvest time
7. Clean Up

Step 3 – create dishes using vegetables and lettuce and sell it to faculty and students of SU.

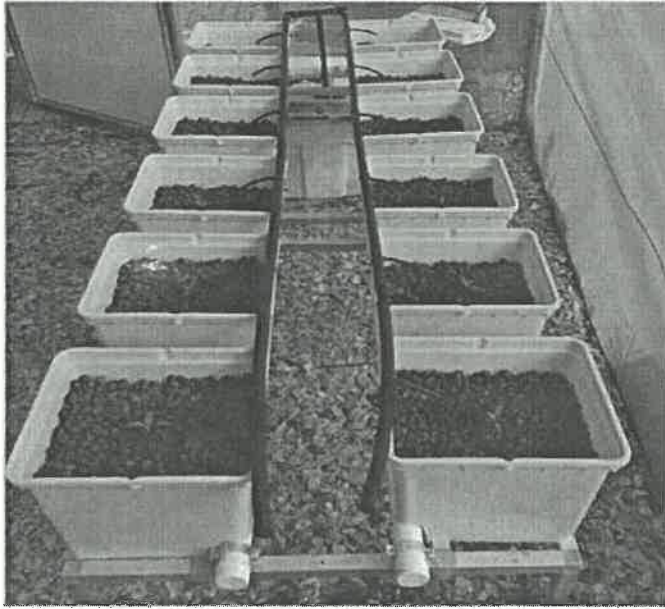
Step 4 – Sell off the over produced/excess lettuce and fruits (if any) to the nearby societies or Faculty of SU at a nominal rate.

Academic Activities aligned with the seed proposal

The below mentioned case studies and projects will be incorporated in the curriculum

- Research Project on Farm to Fork, Slow food Concepts & other sustainable food Movements
- Case study on Generating profits from a small-scale startup venture (eg The leaf Project)
- Menu Designing project
- Flip classroom sessions at herb garden/farm in Gurgaon wherein students will learn about Soil Analysis, Hydroponic farming, cost benefit analysis and other management related tasks.





Dutch Bucket Kit

Rs. 19,000/- Including GST

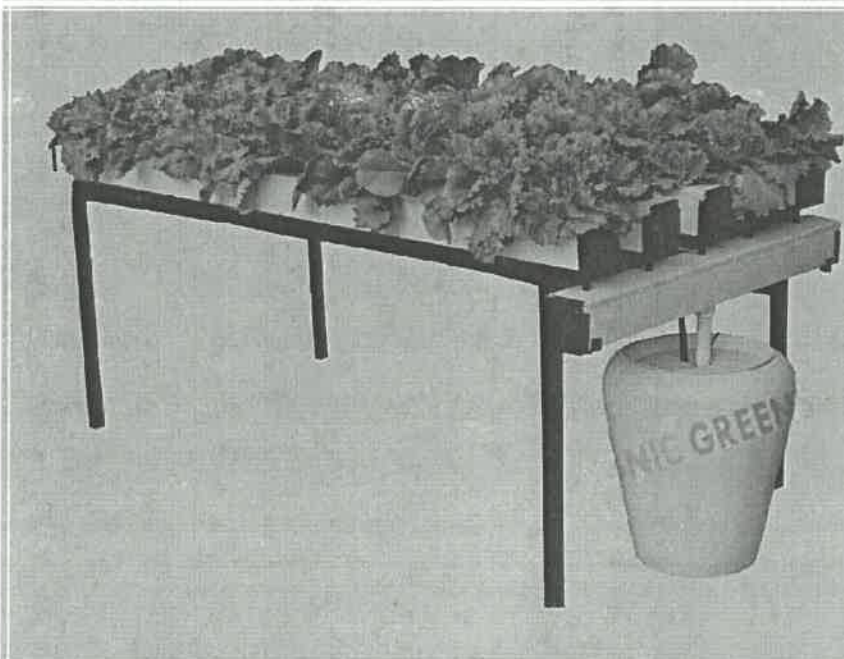
Product Description

The CropKing 10 Bucket Bato System is great for growing vine crops and other tall growing plants. Suitable for tomatoes, cucumbers, peppers, squash, and many other fast growing fruiting and flowering plants.

The Bato Dutch Bucket system is formed with a small reservoir to avoid drowning or starving your plants, and are made from high quality UV resistant plastic. This hydroponic bucket system will provide you with fresh veggies for years to come!



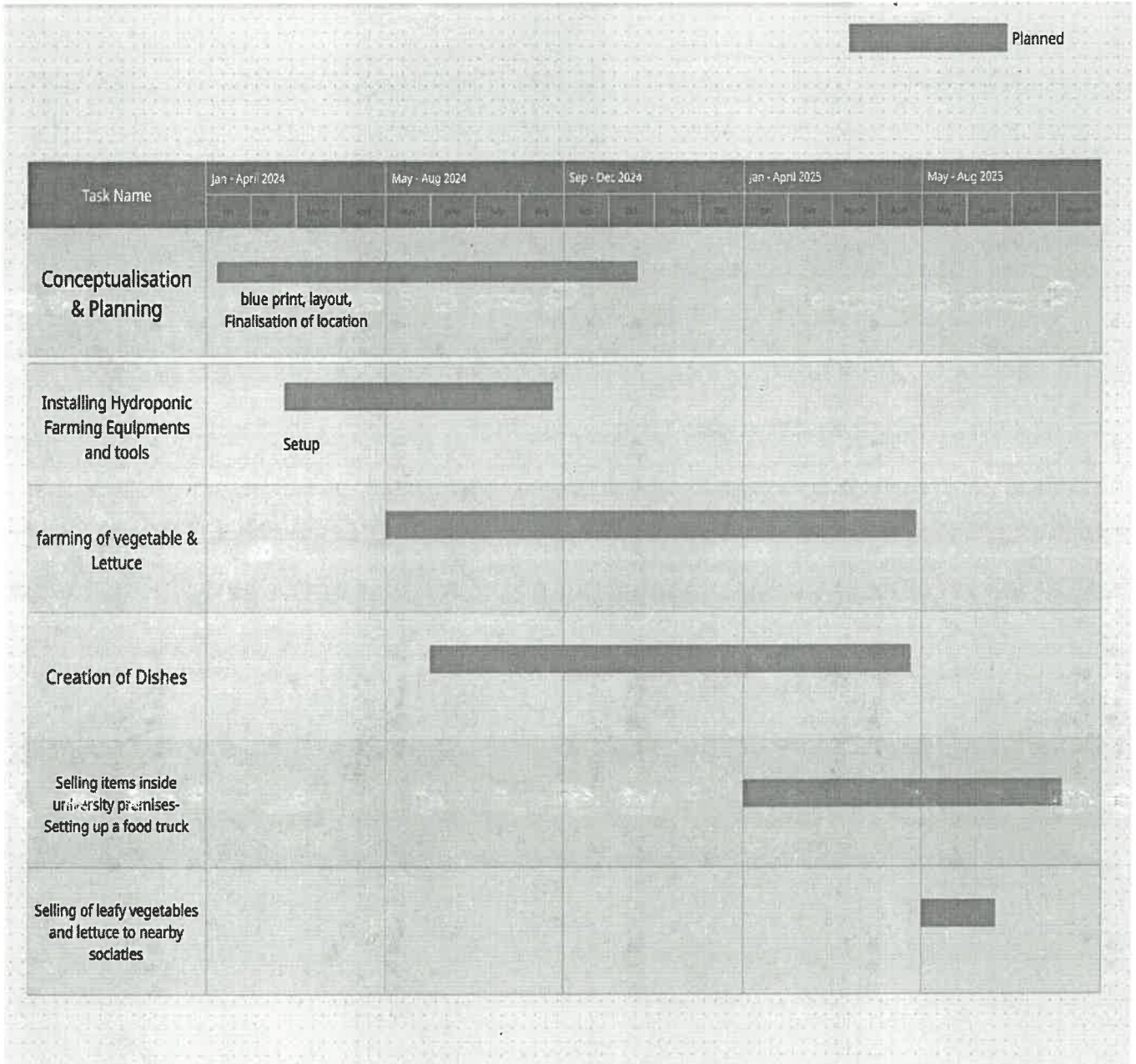
Roof Top NFT Kit (50 Plant System)



Rs. 21,900/-
Including GST



4.1 Time Schedule of activities giving milestones through Gantt Chart.



5. Expertise:

5.1 Expertise available with the investigators in executing the project:

Patent in process

5.2 Bibliography

6. List of facilities required from Sushant University for the project implementation.

6.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	YES
2.	Water & Electricity	YES
3.	Laboratory Space/ Furniture	YES
4.	Power Generator	NO
5.	AC Room or AC	YES
6.	Telecommunication including e-mail & fax	NO
7.	Transportation	YES
8.	Administrative/ Secretarial support	YES
9.	Information facilities like Internet/Library	NO
10.	Computational facilities	YES
12.	Any other special facility being provided	Gardeners on payroll

6.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group			NIL – To be purchased
PI's Department			NIL – To be purchased
Other Institute(s) in the region			



Sl. No.	Item	1 st Yr	2 nd Yr	Total
		2024	2025	
A	Recurring			
	1. Manpower	70,000	1,20,000	1,90,000
	2. Consumables			
	3. Travel			
	4. Field testing, Demo/ Training expenses (if applicable)			
	5. Contingencies/Other costs			
	6. Institutional Overheads*			
	7. Any other item			
B	Non-Recurring			
	Permanent equipment	21,000 for 1 set	42,000 for 2 sets	63,000 for 3 sets
	Construction of work shed/structures	inhouse		
	Fabrication of prototype equipment			
	Grand Total (A+B)			2,53,000

A. Recurring:

1. Budget for Manpower

Sl. No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	1 st Yr	2 nd Yr	Total
1	Gardener	1		10,000/month inclusive of seeds and nurturing of plants facilities	70,000 (for the period June 2024- Dec 2024)	1,20,000	1,90,000



2. Budget for Consumables*

Sl. No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)		
			1 st Yr	2 nd Yr	Total
		3			

*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel

Sl. No.	Purpose	Budget (Rs. in lakhs)		
		1 st Yr	2 nd Yr	Total
1.	Project logistics	NIL		
2.	Field activities	NIL		
3.	Review meetings (if elsewhere)	NIL		

4. Field Testing/ Demo/ Trainings*

Sl. No	Description of field testing/demos /trainings	No/Yr	Budget (Rs. in lakhs)		
			1 st Yr	2 nd Yr	Total
		Inhouse	Nil		

*Include material for technology field testing/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of beneficiaries/training, duration of training days, cost /training).

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)		
			1 st Yr	2 nd Yr	3 rd Yr
		NIL			

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

B. Non-Recurring:

Budget for Permanent Equipment/ Workshed/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.	Rooftop NFT Kit	3	63,000

2.			
3.			
4.			

7. Deliverables

Deliverable	Mark ✓	Brief description
Product development/adaptation	✓	
Process development/adaptation	✓	
Technology package for development of the project area and local community	✓	
Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)	✓	
Scientific knowledge and/or data generation leading to technology development in future	✓	
Other (Please specify)		

8. Name and address of experts/ institution interested in the subject / outcome of the project.

Nil - Confined to SU Premises only.





Dr. Saurav Chhabra

House No 471P - First Floor, Sector 16
Faridabad, Haryana, India 121002

E-Mail: chhabrasaurav12@gmail.com

#: +91 9999445365

Experience till July 2024 – 15.5 Years

5.6 years (Industry) 10.3 years (Academics)

SUMMARY

A team leader with strong analytical, problem solving and organizational abilities who believes in delivering high value education to the students through adoption of student-centric andragogy. Bringing a strong foundation of providing course content in an engaging manner demonstrated over 9 years within the academic sphere. Committed Learning Facilitator enthusiastically pursuing an instruction opportunity in the academic landscape.

An astute and result-oriented professional who believes in saying *"It doesn't matter how many times you fall, all that matters is how fast you get up"*

Ph.D. IN QUALITATIVE ATTRIBUTES OF PATIENT MEALS SERVED IN HOSPITALS

PROFESSIONAL EXPERIENCE

Vatel Hotel & Tourism Business School at Sushant University, Gurugram

Dec 2019 – Present

Professor & Dean, Program Head – Undergraduate & Post Graduate Programs, Campus Coordinator – Vatel School, Member IQAC – University level, Member Incubation Centre – University level, Member NAAC Core Committee

Key Job Responsibilities

- Day-to-Day Academic Related Duties (Both School & University level)
- Curriculum development & enhancement for Undergraduate & Post graduate Programs
- Conduct lectures on Food & Beverage Production, Research and other allied management subjects for Undergraduates & Post Graduates
- Monitoring of scheduled classes conducted by the concerned faculty on time in the capacity of Campus Coordinator, VHTBS
- Conduct workshops on food plate presentations



Key Job Responsibilities (Academic)

- **Education Strategies** Employed special educational strategies and techniques during instruction to improve the development of sensory/perceptual-motor skills, language, cognition, and memory
- **Student-Centered Curriculum Planning** Developed mid-semester evaluation for students to give feedback about current curriculum and suggest alternative course materials and subjects for remainder of year
- **Plan Development** Planned and conducted activities for a balanced program of instruction, demonstration, and work time that provided students with opportunities to observe, question, and investigate
- **Lesson Planning** Introduced new learning methods to ensure total comprehension for all students

Le Cordon Bleu School of Hospitality at G.D Goenka University, Gurugram

Feb 2015 – Dec -2019

Chef Instructor & Assistant Professor

Key Job Responsibilities

- Conducting lectures on Food & beverage Production and other allied subjects for Undergraduates and postgraduate students
- Conducting workshops on food plate presentation
- Looking after the daily food raw material and perishable sourcing
- Organizing field trips and study tours
- Handling the ERP software
- Assist the head of department in the day-to-day Academic related operations

Skills

-
- Class engagement
 - Academic publication
 - Curriculum input
 - Instructional plan implementation
 - Performance assessments
 - Time management
 - Innovative lesson planning
 - Team collaboration
 - Program coordination



The Lalit Suri Hospitality School, Faridabad, Haryana, India

Aug 2013 – Jan 2015

Culinary Instructor

Key Job Responsibilities

- Setting up of the institution and labs
- Indenting and Sourcing of equipment and their placements in the concerned areas and departments
- Liaisoning between Hotel Head office and the Hospitality School
- Training and placement in charge of the school
- Smooth conduct of theoretical and practical classes

The Lalit New Delhi, India

Aug 2010 – Aug 2013

Sous Chef

- Headed Banquet Kitchens
- Indenting and Procurement of Ingredients, Handling Guest Complaints
- Pre-opening team- Night Club – Kitty Su as a chef in charge
- Managed European fine Dining Restaurant – The Grill
- Pre- Opening Chef – The Lalit Jaipur

The Lalit Group

May 2008 – Aug 2010

Kitchen MT Chef (KMT)

EDUCATION

- ✦ PHD in Hospitality from G.D. Goenka, Gurugram
- ✦ MBA in Hospitality Management from Kurukshetra University
- ✦ Bsc. In hospitality and catering management from Institute of Hotel Management, Gwalior,
- ✦ Certificate Diploma from Harvard Business School Online
- ✦ Scholarship Program from American Hospitality Academy
- ✦ Management Development Program (MT) from Intercontinental Hotels, Resorts & Palaces



TRAINING/CERTIFICATION

- Train the Trainer at The Lalit New Delhi
- Certified Hospitality trainer – CMCC Courses by DG Shipping – Ministry of Sea Ports & Waterways

RESEARCH PUBLICATION DETAILS

UGC Journal Publications

- ✦ A Study on Food Quality Parameters in Hospital Meals Of Private Hospitals Of Delhi in **VIRTUE** (January 2019 Edition)
- ✦ Understanding Patient Meal Experience through Patient Meal Satisfaction Ratings in Private Hospitals of Delhi in **International Journal of Research & Analytical Reviews** (April 2019 Edition)
- ✦ Understanding the Impact of Hospital Meal ordering System on patient meal consumption in private hospitals around the globe in **Shodh Sanchar Bulletin** Volume – 10, Issue 40

Scopus Journal Publications

- ✦ Changing Customer Preferences Related to Food and Beverage Post COVID 19 in **International Journal of Interdisciplinary Organizational Studies** ISSN: 2324-7649 (Print) ISSN: 2324-7657 (Online) Volume 16 No. 4, 2021
- ✦ An Empirical Study to Assimilate the Perceptual Gaps Among the Hospitality Stakeholders Regarding The Academic Learning Processes Followed By The Private Hotel Management Colleges In Karnataka in **Webology** (ISSN: 1735-188X) Volume 19, Number 2, 2022
- ✦ Paradigm shift of Housekeeping from Physically clean to clinically clean – A review on Multiplex Industry Change Management: An International Journal ISSN: 2327-798X (Print) ISSN: 2327-9176 (Online) Volume 22 No. 1, 2022
- ✦ A Review on Technological Advancements in Hotel Industry Change Management: An International Journal ISSN: 2327-798X (Print) ISSN: 2327-9176 (Online) Volume 22 No. 1, 2022

ABDC Journal Publishing – Korean Review of International Studies

- ✦ Endogenous tourism – An Exploratory Study on Banvasi – the capital of Kadambas

International Conferences

- ✦ Relationship between health consciousness among customers and sugar-free products and investigating the impact of Quality, Pricing and Taste on various categories of sugar Substitute products in 5-star hotel of New Delhi at International Conference on Enterprise and Entrepreneurialism in Tourism and Hospitality, Jamia Millia Islamia
- ✦ Relationship between health consciousness among customers and sugar-free products and investigating the impact of Quality, Pricing and Taste on various categories of sugar Substitute products in 5-star hotel of New Delhi.



- ✦ "Innovation in Hospital Catering from A Perspective of Meals Served To Patients" at GD Goenka University ihost 2016
- ✦ "Multiskilling or Specialization?? The need for it in today's hospitality field. at Amity International Tourism and Hospitality Conference 2016
- ✦ "A Study on factors influencing organic food choice- Consumer's perception "at GDGU ihost 2017
- ✦ A Study on Importance of Nutritive & Quality meals served in hospitals.@ Ihost 2018

PATENTS PUBLISHED/ GRANT/ COPYRIGHT

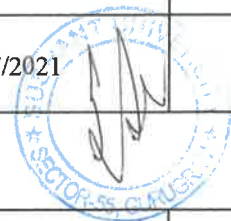
Patent Publication Details				
S.No	Patent Name	Published on	Journal No	Page No.
1	Hybrid Human Machine Learning Methods to provide real time personalized hospitality self-service Check-in System for Hotel Guests	10/12/21	50/2021	60068
2	Sensor based intelligent Robotic Cooking Kitchen Using Haptic Technology	10/12/21	50/2021	60151
3	Establishing Augmented Reality and Virtual Reality for development of Tourism Industry	18/02/2022	07/2022	9258
4	Artificial Intelligence based System, Program Products & Methods of Human Resource planning and development	02/09/2022	35/2022	54710
5	Human Resource Architecture- The relationship among human Capital Employment & Human Resource in Hotel Industry	20/1/2023	3/2023	4581

Patent Grant

S.No	Patent	Registration date	Grant date	Design No.
1	Device to identify Customer Emotional Behaviour for Hospitality Industry	12 July 2023	20 July 2023	6295890
2	Data Processing Equipment	27 June 2023	25 August 2023	6292553
3	Frangipani upholstery freshener	12/2/2021	07/2021	6556

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1	Development & validation of Indian Learners Academic Resilience scale	2/06/2023	L-123056/2023	
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BOOK/ BOOK CHAPTER PUBLISHED

Textbook

- Human Resource Management
- Carpets

Edited Book

- Perspective of Revenge Tourism
- Sustainable Gastronomy
- Re-Envisioning Hospitality & Tourism Sector – Challenges & Opportunities
- Multidisciplinary Perspectives in Hospitality & Tourism Sector: Research, Innovations & Technology

Books Chapter Published

- ✦ Technological Advancement & Adaptation – Revitalization of Hotel Industry or Loosing the Human touch?? ISBN Book by International Sheneks Publication
- ✦ Digital Marketing – A New Pathway for the tourism Industry – ISBN Book by Orange books Publications
- ✦ Role of soft skills in the changing landscape of Education – By Paarh Publications

ACCOMPLISHMENTS

- ✦ **Topped the Lalit Suri Management Program (Batch 2008-2010)**
- ✦ **Scholarship Program from American Hospitality Academy, United States (2013)**
- ✦ **Online Certification Course from Harvard Business School (2020)**
- ✦ **Awarded as Best executive Award “Heart of the house” twice for outstanding performance (Intercontinental Hotels Group) now The Lalit New Delhi.**
- ✦ **Certificates of appreciation by Sr. Vice president, development for launch of new brand**
- ✦ **Certificates of appreciation by corporate head food and beverage**
- ✦ **Awarded certificate of excellence in college for Best student in food production (IHM Gwalior- 2007)**

IMPORTANT INFORMATION

Job related skills: Administrative, Food & Beverage Production, Management & Research

Category: Research & Culinary

Years of Experience: 15.5 Years



State: Haryana

Gender: Male

Highest Qualification Attained: Ph.D. Hospitality Management from G.D Goenka University Gurugram

I hereby ensure that all the information furnished above is true to the best of my Knowledge.

Date:

(Saurav Chhabra)



Utilization Certificate

Certified that grant of ₹ 2,53,000/- (Rupees Two Lakh Fifty Three Only) sanctioned by the Center of Research and Development, Sushant University, vide letter no. F.No.1/2023-2024/Seed Fund-Nov 23/16 Dated 8th November 2023 towards financial assistance for the project titled “The Leaf Project—Farm to Fork Salad Kiosk” was utilized for the purpose for which it was sanctioned.

Financial expenditure incurred

S.no	Nature of expense	Proposed Expenditure (in Rs.)	Expenditure incurred (in Rs.)
1	Manpower	1,90,000	1,50,000
2	Equipment	63,000	1,03,000
	Total	₹ 2,53,000	₹ 2,53,000

Saurabh Chahal
Principle Investigator

Hotel & Tourism Business School
Sushant University
Sector-55, Gurugram

[Signature]
Account & Finance Officer
Accounts Officer
Sushant University
Gurugram



**PROFORMA FOR SUBMISSION OF SEED FUND
PROPOSAL**

Part I: General Information

Project Title (should be focused not exceeding 15 words): Socio-Economic Analysis of "Ayushman Bharat for Inclusive Health Insurance in India": Unveiling the Impacts of the Government Initiative on Entrepreneurship and Economic Growth

1. i. Name of Principal Investigator -: **Dr. Kanika**
 ii. Name of Co-Investigator -: **Dr. Deepti , Dr. Ashish**
2. Collaboration if any, give details of institution(s) -: NA
3. Any Project(s) previously sanctioned by any funding agency? If yes give the details: NA

SL. N O.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion /status	Amount (Rslakh)	Whether final project completion report has been submitted (if yes, mention date)

4. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues?

NO

5. Duration (months): **12 MONTHS**
6. Enclose the following while submitting the application form:

Duly filled application form (complete with all Annexure)-2 hardcopies	
Bio-data of the PI & Co-I-2 copies	



PartII: Proposal Summary

1. Origin of the Proposal:(Maximum 1page)

(Scientific/Technical rationale for doing this work should be elaborated)

The covid pandemic has brought healthcare to the forefront worldwide. Developing economies had a tough time in Covid due to weak healthcare infrastructure. India is one of the developing countries that managed the health crisis with scarce resources but also provided relief to many countries. Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana provides health assurance cover of up to Rs. 5 Lakh per year per family for secondary and tertiary healthcare hospitalizations. The beneficiary families have been identified on the basis of select deprivation and occupational criteria in rural and urban areas respectively according to SECC 2011 database and covers 10.74 crore families comprising 50 crore people. This study reviews the Ayushman Bharat for inclusive health insurance in India. Papers published in Scopus and Google Scholar have been reviewed.

Key words- Keywords: Ayushman Bharat, India, Pradhan Mantri Jan Arogya Yojana (PMJAY), Health Insurance, Inclusive

Introduction of the Proposed Study

The Healthcare sector has attracted the attention of society during the pandemic. The healthcare infrastructure of the developed economies has not been able to deliver services to their citizens. Developing economies have also faced difficult times during Covid-19 pandemic due to poor healthcare infrastructure. The policymakers, scientific community along with medical practitioners have worked in synergy and provided required healthcare services to citizens of India. During the pandemic, the scarcity of beds in India has raised concern. The public expenditure on healthcare has increased from 2.1% of GDP in 2022 as compared to 1.8% in 2020-21. The number of allopathic doctors has increased from 0.83 million in 2010 to 1.3 million in 2021. The Healthcare sector is one of the leading employment generators in 2021 as it employed 4.7 million people. The healthcare sector (in India) is expected to increase to the US \$ 372 billion by 2022 (IBEF, 2022). The hospital industry is expected to grow from the US \$ 61.79 billion in financial year 2017 to US \$ 132.84 billion in financial year 2022 (IBEF, 2022). According to National Sample Survey 2017-18, more than two thirds the population uses private sector healthcare services (Anand & Thampi, 2020). Average medical and total expenditure are significantly lower for public sector hospitals. The average expenditure on healthcare is INR 4452 and the total expenditure is INR 6050 as compared to the average expenditure of INR 31846 and total expenditure of INR 34551. Lack of satisfactory quality of public healthcare facilities, preferred doctors, non-availability of required services, and long waiting times have been found to be major reasons for not opting for public healthcare facilities by urban and rural people in India. Public sector health facilities usage differs across different

regions of India. Only 18% people use public health facilities in Bihar. 62% of beds are in the private sector and 38% are in public sector in India (Anand & Thampi, 2020). Political will is crucial the economic wellbeing of the bottom of pyramid in India (Tiwari et al. 2021)

2. Objectives (Only 4-5 focused one that can be observed, measured or clearly assessable)

i. Evaluate the sustainability of AIM's impact, considering the long-term growth of startups, the scalability of initiatives, and the continued support from government and private sectors.
ii. Develop policy recommendations based on the findings to strengthen AIM's impact and promote a culture of innovation and entrepreneurship in India.
iii. Examine how AIM has promoted cross-disciplinary collaboration and innovation across various sectors, including technology, healthcare, agriculture, and education.
IV. To provide recommendations and policy suggestions for improvement in the policy for enhancing the entrepreneurial ecosystem in the country



3. Review of status of Research and Development in the subject

Features of service influence the choice of hospital (Lane and Lindquist, 1988). Referral influences the selection of a hospital (Schwartz et al., 2005). Dimensions of quality of various aspects of services by hospital influences patient's choice of hospitals (Arrow, 1963). An attitude of staff, cleanliness, quality of services, and image is considered by patients (Berkowitz and Flexner, 1981). Mosadeghard, (2014) recommended the ten Ps of marketing for the healthcare sector; product, price, place, promotion, people, process, package, performance, position and physical environment for influencing patients. The determinants of choice of hospital will vary from country to country due to cultural differences, insurance facilities, delivery system, national policies (Ghosh, 2015). Malik and Sharma (2017) examined determinants of choice of private hospitals by patients in Delhi NCR. The study included 460 indoor patients of ten private hospitals in Delhi NCR. It was found that clinical effectiveness, professional competence and personal constituents significantly influence choice of private hospitals. Advice of the doctor influences choice of hospital (Jannati et al., 2013). Distance from residence, brand image, insurance facility, cost born by patient determines choice of hospital (Akinici et al., 2005). Patients are driven by prior experience while choosing hospital (Lane and Lindquist, 1988). Satisfaction from services enhances the likelihood of continuous usage (Chand et al. 2022). Rajagopal (2010) examined choice of healthcare by low-income group in Kerala. It was found that people prefer private hospitals due to efficiency. But the concern of high cost of private hospitals are yet to be resolved. Sharma et al. (2013) argued that the problem of management of institutions needs to be reviewed in a holistic manner for inclusive growth. Patel et al. (2010) investigated healthcare choices of peri-urban areas of Chandankhera. It was found that people belonging to lower socio-economic strata were mostly using public healthcare facilities. Preference for private hospitals is driven by low waiting period, proximity, and better facilities. Tiwari et al. (2013) highlighted role

of private sector for improving quality of service. Chauhan et al. (2015) investigated choice of rural population in coastal regions in Southern part of India. 559 participants were considered for the study. Data was collected using questionnaire. Majority of patients visited public sector hospitals. Only one third participants preferred private hospitals. Eleven percent participants used no hospitals but preferred pharmacies to seek help. Sustainability is feasible with organic growth and strategies (Tiwari et al. 2019). Ngangbam & Roy (2019) examined choice of healthcare in North-East region in India. It was observed that lack of connectivity restricts access to quality healthcare to marginalised people in North East. Due to high cost, there is a tendency to seek alternative healthcare. Sharma et al. (2013) argued that weak structural systems need to be eliminated to enhance outcomes. Tiwari and Anjum (2012) focussed on the role of labor-intensive systems and weaker systems for inclusive growth. Sudha et al. (2003) examined healthcare preference for chest problems in urban and rural areas of South India. It was found that 57% of urban and 48% of rural people prefer public health services. The distance of hospital from home and good quality services were the factors significantly influencing choice of hospital. Choice of hospital was significantly influenced by literacy and income. Tiwari et al. (2017) emphasised on the role of human capital to resolve the issues concerning weaker sections. Varatharajan (2003) examined efficiency of public sector hospitals in Tamil Nadu. It was observed that funding constraints adversely affected the people of low-income strata. Saikia & Das (2014) examined healthcare facilities in North-East part of India. It was found that after the launch of National Rural Health Mission in 2005, the facilities for healthcare have improved in North-East India. However, quality and availability of trained manpower remains a concern. Tiwari and Anjum (2013) argued that financial support for bottom of pyramid is crucial for inclusiveness. Kamra et al. (2016) examined the determinants of choice of hospitals in Northern India. It was found that patients, friends and relatives significantly influence choice of hospitals. Factors determining choice of hospitals are quality, responsiveness, affordability, facilities, privacy, clinical support. Preferences towards hospital are different for different categories of people from different demographic profile. Tiwari and Anjum (2018) argued that skills and YMER motivations both needs to be given due consideration for sustainable and inclusive growth. Chatterjee et al. (2019) investigated healthcare preferences between public and private healthcare services. It was found that people with from low economic strata and chronic diseases and higher stay in hospital prefer to opt for public sector hospitals.

Importance of the proposed project in the context of current status

The Ayushman Bharat project is a transformative initiative, demonstrating India's commitment to improving healthcare access and financial protection for its citizens. Its innovative approaches, scale, and emphasis on quality care make it a path-breaking initiative in the field of public health and healthcare delivery.

3.1 Methodology:(Maximum of 5 pages)

The main data source used for the study is secondary data. The present study is a conceptual survey exploratory cum descriptive in nature. This research follows the analytical research

methodology which is based on quantitative data. The information related to the study has been collected from websites, journals, magazines, newspapers and books.

4. Major Research Questions / Hypotheses

The study identified following research questions for further research.

- a. What is the perception of beneficiaries towards Ayushman Bharat (Pradhan Mantri Jan Arogya Yojana-PMJAY)?
- b. What is the perception of service providers towards Ayushman Bharat (Pradhan Mantri Jan Arogya Yojana-PMJAY)?
- c. What is the satisfaction level of beneficiaries of public and private hospitals under Ayushman Bharat (Pradhan Mantri Jan Arogya Yojana-PMJAY)?
- d. What are the social impacts of Ayushman Bharat (Pradhan Mantri Jan Arogya Yojana-PMJAY)?
- e. What are the challenges faced by beneficiaries and service providers in Ayushman Bharat (Pradhan Mantri Jan Arogya Yojana-PMJAY)?

Sample size for the research Study -: 500

Innovation/path breaking aspects of the Proposed Research -:

The Ayushman Bharat project is a transformative initiative, demonstrating India's commitment to improving healthcare access and financial protection for its citizens. Its innovative approaches, scale, and emphasis on quality care make it a path-breaking initiative in the field of public health and healthcare delivery

3.2 Time Schedule of activities giving milestones through Gantt Chart. (Maximum 1 page)

1st & 2nd month:

Literature Review: Conduct an extensive literature review to gather relevant research and studies related to the Start-up India initiative, entrepreneurship, economic growth, and socioeconomic impacts. Identify gaps in the existing literature to inform the research's focus.
Research Proposal: Develop a detailed research proposal outlining the study's objectives, methodology, data collection methods, and analytical approach. Seek necessary approvals from the relevant authorities and stakeholders. Appointment of Research Associate

3rd & 4th Month:

Data Collection Design: Design data collection instruments, including surveys and

interview questionnaires, to gather quantitative and qualitative data from entrepreneurs, investors, policymakers, and other stakeholders involved in the Atal Incubation India initiative. Ethical Approval: Seek ethical approval for data collection, ensuring compliance with ethical guidelines and data protection regulations.

5th & 6th Month: Data Collection: Begin data collection from the identified sample of start-ups, investors, and other relevant stakeholders. Conduct surveys and interviews to gather insights into the socio-economic impact of the Atal Incubation India initiative. Preliminary Data Analysis: Start analyzing the collected data to identify initial trends and patterns. Conduct basic descriptive statistics to gain a preliminary understanding of the data.

7th & 8th Month: Data Validation and Cleaning: Validate and clean the collected data to ensure accuracy and reliability. Address any data discrepancies or missing information. In-depth Data Analysis: Employ advanced statistical and machine learning techniques to conduct in-depth data analysis, exploring relationships between variables and assessing the impact of the initiative on various socio-economic indicators.

9th & 10th Month: Policy Implications: Begin drawing preliminary conclusions regarding the socio-economic impact of the Atal Incubation India initiative. Identify key policy implications based on the research findings

11th & 12th Month:

Final Data Analysis: Complete the data analysis process and finalize the research findings, ensuring the results are statistically significant and robust. Report Writing: Prepare the final research report, including an executive summary, introduction, methodology, results, discussion, conclusions, and recommendations. Present the findings in a clear and coherent manner. Policy Recommendations: Develop evidence-based policy recommendations for policymakers, based on the research insights. Provide actionable suggestions to enhance the effectiveness of the Start-up India initiative in fostering entrepreneurship and economic growth. Presentation and Dissemination: Present the research findings and policy recommendations to relevant stakeholders, including government officials, policymakers, and representatives from the start-up ecosystem. Disseminate the research through academic publications, conferences, workshops and policy forums to ensure wider awareness and impact.



5. Expertise:

5.1 Expertise available with the investigators in executing the project: (Maximum 1 page)(Professional expertise existing with each of the investigators in terms of publications, Patents and preliminary results, to execute every component of the proposal should be highlighted)

RESUME OF INVESTIGATORS ATTACHED

5.2 Bibliography

- [1] A. Jannati, M.A. Bahrami, M. Gholizadeh, L. Alizadeh, M.T. Khodayari, "A survey of factors affecting patients' decision in selecting governmental and private hospitals in Tabriz, Iran". *Journal of Tourism Research and Hospitality*, 2(1), (2013), pp. 1-4
- [2] A. Kapoor, "Financial inclusion and the future of the Indian economy". *Futures*, 56, (2014), pp. 35-42.
- [3] A. Kumar, C. Yadav, S. Jee, S. Kumar and S. Chauhan, "Financial innovation in Indian agricultural credit market: Progress and performance of Kisan Credit Card". *Indian Journal of Agricultural Economics*, 66(902-2016-67328). (2011).
- [4] A. M. Mosadeghard, "Patient choice of a hospital: Implications for health policy and management". *International Journal of Healthcare Quality Assurance*, 27(2), (2014), pp. 152- 164
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- [6] A. Sahai and R. Kumar, "A cross country study of financial inclusion and economic development with special emphasis on India". *Indian Journal of Economics and Development*, 17(1), (2021), pp. 11-24, doi:10.35716/IJED/20245
- [7] B. K. Sharma and P. Jain, "Financial inclusion: impact of accessibility, availability, and usage of financial services-a study on household workers in Madhya Pradesh, India". *International Journal of Public Sector Performance Management*, 7(1), (2021), pp. 1-19.
- [8] C. Chatterjee, N. C. Nayak, J. Mahakud and S. C. Chatterjee, Factors affecting the choice of health care utilisation between private and public services among the elderly population in YMER || ISSN : 0044-0477 VOLUME 21 : ISSUE 11 (Nov) - 2022 <http://ymerdigital.com> Page No:1488 Electronic copy available at: <https://ssrn.com/abstract=4281549> India. *The International Journal of Health Planning and Management*, 34(1), e736-e751. (2019).
- [9] D. K. Ratha, S. De, E. J. Kim, S. Plaza, G. K. Seshan and N. D. Yameogo, COVID-19 crisis through a migration lens (English). *Migration and Development Brief no. 32*, (2020). Washington, D.C: World Bank Group.
<http://documents.worldbank.org/curated/en/989721587512418006/COVID-19-CrisisThrough-a-Migration-Lens>.
- [10] D. Saikia, K. Das, "Status of rural health infrastructure in the north-East India". *Management in Health*, 18(2), (2014).
- [11] D. Varatharajan, "Public sector and efficiency: are they mutually exclusive? An alternative policy framework to improve the efficiency of public health care system in Tamilnadu, India. *Journal of Health and Population in Developing Countries*. (2003).



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[15] Ghosh, A. "Private sector filled the gap in health that govt created. Don't ask for the moral price", *The Print*. (2021), <https://theprint.in/opinion/private-sector-filled-the-gap-in-healththat-govt-created-dont-ask-for-the-moral-price/700417/>

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[17] H. L. Sharma, R. Tiwari and B. Anjum, "Management of higher education institutions: Issues and challenges". *ZENITH International Journal of Business Economics & Management Research*, 3(12), (2013), pp. 275-284.

6. List of facilities required from Sushant University for the project implementation.

6.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	No
2.	Water & Electricity	YES
3.	Laboratory Space /Furniture	No
4.	Power Generator	YES
5.	AC Room or AC	YES
6.	Telecommunication including e-mail&fax	YES
7.	Transportation	YES
8.	Administrative/Secretarial support	No
9.	Information facilities like Internet/Library	YES
10.	Computational facilities	YES
12.	Any other special facility being provided	No

6.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI&hisgroup			

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI&hisgroup			
PI'sDepartment			
OtherInsti tute(s) intheregion			

6.3 Total Budget(Rs.inLakhs):

- RecurringCost(Rs): 1,30,000
- Non-RecurringCost(Rs): 1,66,920

Sl. No.	Item	1 st Yr
A	Recurring	
	1. Manpower	
	2. Consumables	10,000
	3. Travel	40,000
	4. Field testing, Demo/ Training expenses(if applicable)	20,000
	5. Contingencies/Other costs	50,000
	6. Institutional Overheads*	10000
	7. Any other item	
B	Non-Recurring	
	Software Purchased	Rs. 1,66,920/-
	Grand Total (A+B)	Rs. 2,96,,920

A. Recurring:

1. Budget for Manpower

Sl. No.	Designation	No.	Qualificatio n& experience	Monthlyemol ument (Rs)	1 st Yr
1	Research Associate	1	Post Graduation	Rs. 8,000	Rs96,000

2. Budget for Consumables*

Sl. No.	Description of consumable	Qty./Yr	1 st Yr
1.	Stationary , Source Materials		Rs. 10,000



k

3. Budget for Travel

Sl. No.	Purpose	1 st Yr
1.	SURVEY & DATA COLLECTION For qualitative insights, interviews and surveys will be conducted with start-up founders, investors, policymakers, industry experts, and representatives from start-up incubators and accelerators to understand their experiences, challenges, and perspectives. Research will be done in Guragon, Faridabad and Delhi	Rs, 60,000

4. Trainings*

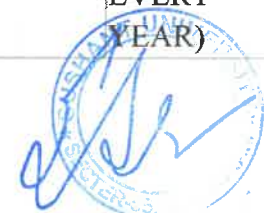
Sl. No	Description of fieldtesting/demos/trainings	No/Yr	1 st Yr	Total
1.	Training for NVIVO Software(Expert workshop)		Rs. 20,000	Rs. 20,000

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	1 st Yr	Total
1.	COMPUTER	1	Rs. 30,000	Rs. 30,000
2.	Printer	1	Rs. 20,000	Rs. 20,000

B. Non-Recurring:

Sl. No.	Equipment/Item details	Qty	Budget(Rs in lakhs)
1.	NVIVO SOFTWARE LICENSE	1	1,66,920(99,000 ONE TIME FEE+ 66,920 EVERY YEAR)



Process development/adaptation	NA	
Technology package for development of the project area and local community	NA	
Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)	scopus indexed book, Research paper publication in reputed scopus journals	
Scientific knowledge and/or data generation leading to technology development in future	NA	
Other (Please specify)	NA	

8. Name and address of experts/institution interested in the subject /out come of the project.

Paper and book published can help Govt of India in policy formation regarding start-up-India



Dr. Kanika Sachdeva

Enthusiast Academician | Passionate Researcher | Learner

Contact No.: 9650816838

Email Id:
kanika.mba88@gmail.com

LinkedIn Profile:
<https://www.linkedin.com/in/dr-kanika-sachdeva-a6bb9515/>

Competency

Mentoring | Curriculum Developer
| Research and Analysis | Team
Worker | Leadership | Organizer |
Approachable

Areas of Expertise

Financial Accounting | Financial
Management | Excel for Finance |
Financial Modelling | Management
Accounting | Project Finance &
Appraisal | Derivatives & Risk
Management

Technical Skillset

R | STATA | SPSS | EViews |
DEAP | Tableau | MS Excel

SUMMARY

A competent person, with 15+ years of rich academic experience in the area of finance and accounting. Awarded doctorate for the research work entitled “Impact of E-banking on Performance of Nationalised Banks in India” from Banasthali Vidhyapith, Rajasthan. Aiming to amalgamate this knowledge and deliver inputs to the student community.

WORK HISTORY

Jan. 2024 – till date	Associate Professor – Finance Program Coordinator – B.Com Sushant University, Gurugram
Dec. 2021 – Dec. 2023	Associate Professor – Finance Program Coordinator - MBA Sushant University, Gurugram
Nov. 2020 – Nov. 2021	Associate Professor – Finance Sushant University, Gurugram
Sep. 2019 – till date	Mentor at Great Learning
Dec. 2019 – Nov. 2020	Assistant Professor Cum Head Placements EMPI Business School, New Delhi
June 2015 – Dec. 2019	Assistant Professor Cum Placement Coordinator EMPI Business School, New Delhi
Dec. 2009 – June 2015	Lecturer EMPI Business School, New Delhi
Aug. – Dec. 2009	Lecturer Laxmi Devi Institute of Engineering & Technology, Alwar, Rajasthan

EDUCATION

2011 – 2017	Ph.D (Management) Banasthali Vidhyapith, Rajasthan	–
2009	NET (Management) UGC	–
2007 – 2009	MBA (Finance) N.C. College of Engineering Kurukshetra University	70%
2004 – 2007	B.Com S. D. College, Kurukshetra University	58%
2002 – 2004	Higher Secondary School D.A.V. Public School (Commerce)	80%
2002	Secondary School D.A.V. Public School	62%



ROLES & RESPONSIBILITIES: Sushant University (Associate Professor-Finance)

- Ensuring the smooth conduct of Board of Studies at School level
- Handling the NAAC Criterion 1 at School level
- Monitoring the smooth execution of the all the academic and non-academic activities pertaining to B.Com program.
- Monitoring the smooth execution of the all the academic and non-academic activities pertaining to MBA program.
- Teaching accounting and finance specialization subjects to Postgraduate and Under-graduate students and
- Taught Advanced Indian Accounting and Financial System to International students (Korean) under the EEEEC programme organized by Sushant University in collaboration with ICS Global, New Delhi.
- Mentoring MBA students for dissertation report and summer internship.
- Core member of CBCS (Choice based credit system) Curriculum designing Team
- SPOCS for University Newsletter

ROLES & RESPONSIBILITIES: EMPI B- School (Assistant Professor Cum Head Placement)

Academic Activities

- Teaching accounting and finance specialization subjects to PGDM students.
- Mentoring PGDM students for summer internship project and dissertation report.
- Organising domain specific seminars, workshops and sessions for the students.
- Significant contribution in curriculum, resource, program and subject design, development and management.
- Conducting tutorials, workshops, practical classes, and other appropriate learning activities.
- Planning and executing academic competitions.
- To provide general support and guidance to students, resolving issues and referring to specialist parties, where appropriate.
- Evaluating, Monitoring and Mentoring student academic progress.
- Active participation in college activities.
- Active Team member of BPIED.
- Core member of Grievance Redressal Team.

Placement Activities

- Monitoring the end to end process of final placements and summer internships
- Formulation and execution of SOP for placements
- Preparation the annual placement planner
- Planning and strategizing annual placement activities
- Leading the placement team
- Ensuring 100% placements in reputed companies
- Conducting meeting on regular basis with placement team and students for effective execution of process
- Conducting placement preparatory sessions including Mock GD, Mock PI, Extempore etc.
- Inviting reputed companies to campus for conduct of recruitment drives.
Meetings with HR of companies for exploring the possible employment opportunities.
- To monitor the development and maintenance of a database of appropriate employer and commercial/industrial links.



PROFESSIONAL MEMBERSHIP

- Institute of Global Professionals
- Lifetime Member of International Association for Promoting Asia-Africa Research
- Lifetime Member of Global Directory of Educators & Researchers
- Senior Member of World Leadership Academy
- Member of Association of North America Higher Education International
- Certified Mendeley Advisor

WEBINARS/SESSIONS/WORKSHOP CONDUCTED

- Delivered a session as a Resource Person on “Literature Review of Researchers” in an International Webinar Organized by Institute of Global Professional, Bangladesh on 7th July 2022.
- Delivered a session as a Keynote Speaker on “Emerging Trends – Redefining the future of Financial Sector” in an International Conference on Emerging Trends in Social Sciences and Management in Post COVID Era organized by IAPAAR, Nigeria on 25th Feb. 2022
- Conducted a workshop on “Enhance Work Effectiveness Using MS-Excel” for School teachers of Delhi/NCR in August 2021.
- Delivered a session as a Guest Speaker on “Assessment of Financial Health of Company” for the post-graduate and undergraduate students of IBMR Business School, Gurugram, August 2021.
- Delivered a session on “Education 4.0 for Industry 4.0...” attended by 200 plus post-graduate and undergraduate participants across Rajasthan in July 2021.
- Delivered a session as a Guest Speaker on “No Excel to Know Excel” for the post-graduate and undergraduate students of T. John College of Commerce, Bengaluru in June 2021.
- Invited as panelist for the by Imagine XP for a panel discussion on “Management Degree in Banking or Fintech, which is favored?” in May 2021.
- Conducted a live session on “Game Changing Habits for successful Career” for management students in May 2021
- Conducted an open-house webinar on “Financial Health Check-up of Company – How to do before Investment” in January 2021.
- Delivered a session on “How to make Yourself Employable” for the post graduate students of IBMR Business School, Gurugram in August 2020.

RESEARCH CONTRIBUTIONS

- Guide for Ph.D research scholar at Sushant University, Gurugram
- Delivered sessions at various FDPs as resource person
- Chaired a Technical Session and Reviewed various research papers for International Conference on Advanced Technology, Sustainability & Management (IATSM) organized by School of Business, Sushant University during 27-28th May 2021.
- Serving as reviewer for various reputed journals including:
 - International Journal of Higher Education and Sustainability
 - International Journal of Business & Globalization
 - International Journal of Business Excellence

PROJECTS UNDERTAKEN

- I. Women Entrepreneurship Development Programme (WEDP) - Department of Science & Technology (DST), GoI. (Feb. 2020)
- Core team member for the submission of the proposal.



- Coordinated all the external activities & events for the participants of WEDP.
 - Assisted the program coordinator in liaison with the resource person for the other sessions.
 - Delivered 4 sessions as the resource person during the program.
- II. Taught 20-Hours module to International students (Korean) on Advanced Indian Accounting and Financial System to under the EEEEC programme organized by Sushant University in collaboration with ICS Global, New Delhi. (Dec. 2020)

RESEARCH ARTICLES PUBLICATION IN E-NEWSPAPERS

- Article title “Fintech – Transforming Indian Banking Sector” published by SME World in Feb. 2022
- Article titled “Financial Bites: How to use Altman Z-Score to measure Financial Stability?” published by SME World in October 2021
- Article titled “Financial Bites: How to use Leverage Ratio to sniff out Company’s Financial Riskiness” published by Financial Express and India Infoline, in July 2021
- Article titled “How to overcome Financial Crisis during the Pandemic” published by Money Outlook and India Infoline.com, in July 2021

PAPER PRESENTATIONS

- Presented a research paper titled, “Behavioral Biases Influencing Investor’s Decision in NCR: Locus of Control a Moderating Variable” at International Conference on Sustainable Management Practices 2024, organized by Chhatrapati Shahu Ji Maharaj University Kanpur during 5th – 6th April 2024.
- Presented a research paper titled, “Impact of Stock Split on Stock Liquidity: Evidences from NSE and BSE” at International Conference on Sustainable Management Practices 2024, organized by Chhatrapati Shahu Ji Maharaj University Kanpur during 5th – 6th April 2024.
- Presented a research paper titled, “Artificial Intelligence in Human Resource Management – Concepts, Use and Recommendations” at 5th International Conference 2024, organized by by IMS, Ghaziabad during 10th – 11th May 2024.
- Presented a research paper titled, “A comparative analysis of occupational influences on investors' decision- making: exploring the effects of heuristics and behavioral biases” at PRISM Conference 2023, organized by BIMTECH, Noida during 17th – 19th Nov. 2023.
- Presented a research paper titled, “Concept of Business Cost Modeling in New Age” at ICAMRI 2023, organized by School of Engineering, Sushant University during 28th – 29th Oct. 2023.
- Presented a research paper titled, “Transition in Management Style” in 3rd International Conference on Building Resilience and Sustainability for India for Everchanging Turbulent World – A vision for 2030, organized by IMS, Ghaziabad during 21st – 22nd April 2022.
- Presented a research paper titled, “Essential elements for digital merchandising portals in retail – A review based study” in 3rd International Conference on Building Resilience and Sustainability for India for Everchanging Turbulent World – A vision for 2030, organized by IMS, Ghaziabad during 21st – 22nd April 2022.
- Presented a research paper titled, “Spirituality in Leadership -A Psychological Approach” in Shodh Shikhar -2022 Organized by United Nations Development program & Rabindranath Tagore University during 25th – 26th March 2022.
- Presented a research paper titled, “Impact of leadership on the Culture of Organization – Indian Manufacturing Sector” in 2nd International Conference on Business Research and Innovation Organized by MDI, Murshidabad during 28th – 29th Jan. 2022.



- Presented a research paper titled, “Financial Stability of Indian Banking System: An analysis of Commercial Banks” in International Conference on Emerging Multi-Disciplinary Trends in Educational Research organized by T. John College, Bangalore on 16th Sep. 2021.
- Presented a research paper titled, “A Study on Employee’s Job Satisfaction in Small Scale Industries Pvt. Ltd.” in International Conference on Advanced Technology, Sustainability & Management organized by School of Business, Sushant University during 27-28th May 2021.
- Presented a research paper titled, “*Volatility in Indian Stock Market: Role of Macro-Economic Factors*” in *International Conference on Banking & Finance (ICBF)* organized by Chitkara Business School, Punjab held at Chitkara University during 13th -14th April 2019
- Presented a research paper titled, “*Factor influencing Leveraging Decision of Indian companies: Evidence from Panel Data Analysis*” in *International Conference on Banking & Finance (ICBF)* organized by Chitkara Business School, Punjab held at Chitkara University during 13th -14th April 2019.
- Presented a research paper titled, “*Relationship between Working Capital Management and Profitability of Real Estate Sector in India: A Panel data approach*” in *Global Leadership Research Conference* organized by Amity Business School, Noida held at Amity University during 27th -28th Feb., 2019.
- Presented a research paper titled, “*Efficiency Determinants of Indian Commercial Banks: A Non-Parametric DEA Approach*” in *National Conference on Paradigm Shift in Management Practices for Fostering Excellence* organized by New Delhi Institute of Management, New Delhi during 2nd - 3rd Feb., 2019.
- Presented a research paper titled, “*Performance of Commercial Banks in India: A non-parametric Malmquist Index based DEA Approach*” in *International Conference on Dynamics of Financial Sector Reforms* organized by Lovely Professional University, Punjab held at Lovely Professional University during 6th -7th April, 2018.
- Presented a research paper titled, “*Assessment of Key Performance Indicators of Commercial Banks in India - A CAMEL Approach*” in *International Conference on Banking & Finance (ICBF) 2016* organized by Chitkara Business School, Punjab held at Chitkara University during 10th -11th December 2016 (*Received Best Paper Award*).
- Presented a research paper titled, “*Impact of E-banking on Performance of Commercial Banks in India: A Panel Data Approach*” in *International Conference on Banking & Finance (ICBF)* organized by Chitkara Business School, Punjab held at Chitkara University during 10th -11th December 2016.
- Presented a research paper titled, “*Efficiency Performance and its Determinants: A study of Commercial Banks in India using DEA based Malmquist productivity Index Approach*” in 4th Biennial Indian Academy of Management Conference on *Managing in the Indian Institutional Context* organized by IIM Lucknow held at IIM, Noida Campus during 11th -13th December 2015.
- Presented a research paper titled, “*TFRG, Technological change and Technical Efficiency performances in Indian Public Sector Banks: A Non-Parametric DEA Approach*” in 18th *National Conference on Input Output Research Association (IORA)* organized jointly by IORA, Gokhale Institute of Politics and Economics, Pune and Birla Institute of Management Technology, Greater Noida, held at BIMTECH during 2nd - 4th May 2015.
- Presented a Research Paper titled “*Impact of management ownership on firm’s performance: An empirical analysis of family firms listed at BSE*”, in 2nd India Finance Conference organized jointly by IIM-Ahmedabad, IIM-Bangalore & IIM-Calcutta held at IIM-C during 19th - 21st December, 2012.
- Presented a research paper titled, “*Role of CRM in Retail Industry*” in National Conference on Retail Management in Indian Scenario: Issues and Challenges organized by Department of



Management Studies, held at N.C College of Engineering, Israna, Panipat on 7th Nov 2009.

PUBLICATIONS (Patent)

- Published a patent on “Method for Predicting an Investment Behavior By analyzing effect of a Global Event on a Stock” Under Intellectual Property Rights, Gov. of India, Oct. 2021.

PUBLICATIONS (Research)

- Research Paper in Third Concept – An International Journal of Ideas, on “*Innovative Leadership in Automaker Industry: Validation in Indian Context*”, 2024 (UGC Listed).
- Research Paper in Third Concept – An International Journal of Ideas, on “*A Study of Cost & Its Classification: Behavioral Cost of Steel Investing Casting*”, 2024 (UGC Listed).
- Chapter in Edited Book titled Deep Learning Tools for Predicting Stock Market Movements with International ISBN on “*Influence of Behavioral Biases on Investor Decision Making in Delhi*”, published by Scrivener Publishing (Wiley) 2024.
- Chapter in Edited Book titled Building Resilience in Global Business During Crisis with International ISBN on “*Role of Banks Chatbot in Managing Business during Crisis - A study of Customer's Perceptions of ICICI Banks & SBI*”, published by Routledge 2024.
- Chapter in Edited Book titled Impact of Covid 19 on Commerce and Economics with International ISBN on “*Impact of Covid 19 on Economy and Commerce*”, published by Bestow Edurex International, 2023.
- Research Paper in International Journal of Creative Research Thoughts, on “*Spirituality in Leadership – A Psychological Approach*”, 2023 (UGC Listed).
- Research paper in Journal of Management and Entrepreneurship on “*Queen Bee Leadership Phenomenon in Indian Context Hype Or Hope*”, Volume 17 Issue 4, Oct. – Dec. 2023. (UGC Listed)
- Research paper in European Economic Letters, on “*A Study on Costing Guidelines for Manufactured Precision Casted Parts*” published by “European Economics Letters Group” 2023. (ABDC)
- Research Paper in Korea Review of International Studies, on “*Detailed Investigation of “The Role of Machine Learning Technology in Stock Market Predictions”*” published by “Global Research Institute, Korea University”, 2023 (ABDC)
- Chapter in Edited Book titled Revolutionizing Financial Services and Markets Through FinTech and Blockchain with International ISBN on “*Barriers and Potential of Blockchain Technology in FinTech*”, published by IGI Global, 2023. (Scopus)
- Chapter in Edited Book titled Handbook of Research on Stock Market Investment Practices & Portfolio Management with International ISBN on “*Market efficiency and COVID-19: An empirical analysis of the Indian Stock Market*”, published by IGI Global, 2022. (Scopus)
- Research Paper in International Journal of Business Research and Excellence on “*Essential Elements for Digital Merchandising Portals in Retail A Review Based Study*”, Volume 3 Issue 1, pp. 1-23, June 2022. (ISSN: 2582-4368)
- Chapter in an Edited Book titled Emerging Dimensions of Business & Management in the Present-Day Competitive Environment with International ISBN on “*Decision Making Under Uncertainty: Through the prism of Behavioral Finance*”, 2021. (ISBN: 978-8194942832)
- Research Paper in Eflatounia – Multidisciplinary Journal, on “*Role of macro-economic factors in Stock Market Volatility: Evidence from India, Russia and South Africa*”, Volume 5 Issue 2, pp.



303-317, July 2021. (Web of Science)

- Research Paper in Turkish Online Journal of Qualitative Inquiry, on "*Skill Gaps as a Stumbling Block to Economic Development: A Study of Trilateral Perspective*", Volume 12 Issue 7, pp. 130-146, July 2021. (Scopus)
- Research Paper in Turkish Journal of Computer and Mathematics Education (TURCOMAT) on "*Covid-19 and Stock Market Behavior -An Event Study of BRIC Countries*" Volume 11 Issue 2, pp. 741-754, August 2020. (Scopus)
- Research Paper in Turkish Journal of Computer and Mathematics Education (TURCOMAT) on "*Factors Impacting the Usage of E-Wallets in National Capital Region*" Volume 11, Issue 2, pp. 675-686, August 2020. (Scopus)
- Research Paper in Elementary Education Online on "*An Empirical Study of Covid on Employment in India*", Volume 19, Issue 3, pp. 3185-3191, August 2020. (Scopus)
- Research Paper in International Journal of Scientific Research in Science, Engineering and Technology (IJSRSET), on "*Relationship between Working Capital Management and Profitability of the Real Estate Sector in India: Evidence from Panel Data Analysis*", Volume 5 Issue 11, pp. 47-57, October 2020. (DOI : 10.32628/IJSRSET2051108)
- Research Paper in International Journal of Business and Globalization on "*Factor influencing Leveraging Decision of Indian companies: Evidence from Panel Data Analysis*"(ABDC & Scopus (DOI: 10.1504/IJBG.2022.10039198)).
- Research Paper in Editorial Book titled Paradigm Shift in Management Practices for Fostering Excellence on "*Efficiency Determinants of Indian Commercial Banks: A Non-Parametric DEA Approach*", First Edition, 2019.
- Research Paper in International Journal of Business and Globalization on "*Performance of Commercial Banks in India: A non-parametric Malmquist Index based DEA Approach*" (ABDC & Scopus (DOI: 10.1504/IJBG.2022.10039194)).
- Published a Research Paper in International Journal of Applied Business and Economic Research on "*Assessment of Key Performance Indicators of Commercial Banks in India - A CAMEL Approach*", Vol. 15, Issue 9, 2017 (Scopus).
- Published a Research Paper in International Journal of Applied Business and Economic Research on "*Impact of E-banking on Performance of Commercial Banks in India: A Panel Data Approach*" Vol. 15, Issue 9, 2017 (Scopus).
- Published a Research Paper in Business Perspective on "*Performance of Indian Public Sector Banks: A Non-Parametric DEA Approach*", Vol. 14, Issue 2, July – December 2015.
- Published a Research Paper in WEALTH - International Journal of Money, Banking and Finance on "*Impact of management ownership on firm's performance: An empirical analysis of family listed firms at BSE*", Vol. 2, Issue 1, January - June 2013.
- Published a Research Paper in The International Journal – Research Journal of Science & IT Management on "*Rejuvenating professional women with support of information and communication technology*", Vol. 1, Issue 3, January 2012.
- Published a Research Paper in JS International Journal of Accounting (ISSN2249-1554) on "*Impact of working capital management on profitability of the firms: A study of the Indian Telecom Industry*" in July 2011 Issue.
- Published an Article in EMPI Research and Business Review a Refereed Journal of Management (ISSN 0975-6388) on "*E- Retailing Business in India: Risk & Preventions*" in Vol. I, Issue 2, Jan-March 11.



PUBLICATIONS* (Others)

- 'Renewable Energy: What works', A Background research paper for Seventh World Renewable Energy Technology Congress 2016, held during 21-23rd August 2016 at New Delhi.
- 'Petroleum-Coal-Gas: Sustainable Management of the Future Energy Mix' A Background research paper for Seventh World Petro Coal Congress 2016, held during 15-17th February 2016 at New Delhi.
- 'Energy, Environment, Efficiency, Equity and Entrepreneurship for a Greener Planet', A Background research paper for Fourth World Petro Coal Congress 2014, held during 15-17th February 2014 at New Delhi.
- 'Promoting Renewable Energy: Green Technology for Sustainability', A Background research paper for Fourth World Renewable Energy Technology Congress 2013, held during 25-27th September 2013 at New Delhi.
- 'Promoting Renewable Energy: Green Technology for Sustainability', A Background research paper for Third World Renewable Energy Technology Congress 2012, held during 25-27th April 2012 at New Delhi.

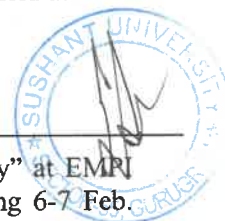
* Worked as a Research Associate

TRAINING PROGRAMS ATTENDED

- Attended 5 Days FDP "Time series data Analysis Using R" organized by Amity College of Commerce & Finance, Noida from 21st June to 25th June 2021.
- Attended One-week Short Term Training Program (online) on Decision Making Using Data Analysis organized by JIMS, Rohini, from 28th Sep. to 3rd Oct. 2020.
- Attended 4 days FDP on '*Descriptive Analytics using Cognos BI*' conducted by IBM experts at EMPI's IBM Business Analytics Lab, New Delhi during 6-9 April 2015.
- Attended 4 days FDP on '*Big Data Analytics*' conducted by IBM experts at EMPI's IBM Business Analytics Lab, New Delhi during 12-15 March 2015.
- Attended 4 days FDP on '*Predictive Analytics using SPSS*' conducted by IBM experts at EMPI's IBM Business Analytics Lab, New Delhi from 26th Feb to 1st March 2015.
- Attended 2 days FDP on '*Management Pedagogy*' organised by EMPI Business School, New Delhi on 28th June & 7th July 2011.
- Attended 1 Week Workshop on '*Data Analysis for Management Research*' organized by Apeejay School of Management, New Delhi during 6-10 June 2011.
- Attended 1-day Training Program on '*Export – Import Procedure and Documentation*' organized jointly by PHD Chamber and Konrad-Adenauer-Foundation, Germany held at PHD House, New Delhi on 10th March 2010.

TRAINING PROGRAMS ORGANISED

- Organized a 2-Day Workshop on "Certificate in Alternative Investment Industry" at EMPI Business School in collaboration with SS&C GlobeOp Financial Services during 6-7 Feb. 2019.
- Organized a 5-Day Workshop on "Equity Trading & Financial Product" at EMPI Business School in collaboration with SMC Global Securities Ltd. during 18 -22 Dec. 2017.
- Organized a MDP on '*Introductory Econometrics & SPSS*' exclusively for Ipsos Research Pvt. Ltd. at EMPI Business School, New Delhi during 17-19 Sep. 2012.
- Organized a MDP on '*Predictive Modeling using SPSS*' at EMPI Business School, New Delhi



during 12-13 July 2012.

- Organized a FDP on '*Introductory Econometrics & SPSS*' at EMPI Business School, New Delhi during 19-21 July 2012.

PERSONAL DETAILS

Date of Birth: 8th February, 1987

Marital status: Married

Spouse: Mr. Ashish Sachdeva

Nationality: Indian

Languages Known: English, Hindi and Punjabi

Current Address: C-58, Second Floor, Suncity, Sector 54, Gurugram

Permanent Address: House No: 840, Huda Sector 11, Phase 1, Panipat (Haryana)



Utilization Certificate

Certified that grant of ₹ 1, 96,920/- (Rupees One Lakh Ninety Six Thousand and Ninety Two Only) sanctioned by the Center of Research and Development, Sushant University, vide letter no. F.No.1/2023-2024/Seed Fund-Nov 23/17 Dated 8th November 2023 towards financial assistance for the project titled “Socio-Economic Analysis of “Ayushman Bharat for Inclusive Health Insurance in India”: Unveiling the Impacts of the Government Initiative on Entrepreneurship and Economic Growth” was utilized for the purpose for which it was sanctioned.

Financial expenditure incurred

Sl.no	Nature of expense	Proposed Expenditure (in Rs.)	Expenditure incurred (in Rs.)
1	Travel	40,000	50,000
2	Consumables	10,000	5,000
3	Field testing	20,000	20,000
4	Contingencies	50,000	40,000
5	Institutional overhead	10,000	15,000
6	Software	1,66,920	66,920
	Total	₹ 2,96,920	₹ 1,96,920

Kamibe
Principle Investigator




Sandhu
Account & Finance Officer
Sushant University
Gurugram, Haryana

PROFORMA FOR SUBMISSION OF SEED FUND PROPOSAL

Part I: General Information

1. Project Title: Model for Affordable Housing in Gurugram: Addressing Land Market Dynamics
2. i. Name of Principal Investigator: Shanu Agarwal
ii. Name of Co-Investigator: none
3. Collaboration if any, give details of institution(s) none
4. Any Project(s) previously sanctioned by any funding agency? If yes give the details:

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)
	NA					

5. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues? NA
6. Duration (months): 2 years
7. Enclose the following while submitting the application form:

Duly filled application form (complete with all Annexures)- 2 hard copies	
Bio-data of the PI & Co-I -2 copies	



Part II: Proposal Summary

8. Origin of the Proposal:

We seek seed funding to develop a comprehensive model for affordable housing in Gurugram, addressing the unique land market dynamics of this rapidly growing urban area. Our model aims to facilitate affordable housing initiatives by optimizing land use, reducing costs, and ensuring sustainability. Gurugram's real estate landscape presents complex challenges, and our research-driven approach will contribute to the city's sustainable development.

Gurugram, a prominent city in India's National Capital Region, has experienced exponential urbanization and economic growth. However, the rising cost of land and housing poses significant challenges to affordable housing initiatives. The need for affordable housing solutions has never been more pressing, and our research will focus on addressing this critical issue while considering the land market dynamics of Gurugram.

9. Objectives

i.	To develop a comprehensive model for affordable housing in Gurugram.
ii.	To analyze and understand the unique land market dynamics of Gurugram.
iii.	To identify innovative strategies for optimizing land use, reducing costs, and promoting sustainable housing solutions.

10. Review of status of Research and Development in the subject

10.1. International Status:

General overview of the international context for this type of R&D proposal:

- **Global Housing Challenges:** Affordable housing is a significant global challenge, with many countries facing housing shortages and issues related to affordability. Research on affordable housing models is relevant worldwide.
- **Regional Variations:** The approach to affordable housing can differ from region to region. What works in one location may not be directly applicable to another due to variations in land market dynamics, economic conditions, and cultural factors.
- **International Collaboration:** Researchers and organizations often collaborate internationally on housing-related projects. Sharing best practices and innovative solutions is common, and the success of a model developed in one region may inspire similar initiatives in other parts of the world.
- **Government Initiatives:** Many countries have government-backed affordable housing programs and policies. These initiatives may be informed by R&D and best practices from around the globe.
- **Urbanization Trends:** Rapid urbanization is a global phenomenon. Research into affordable housing models, especially in growing urban centers, has international relevance due to the common challenges urban areas face.
- **Sustainability and Green Housing:** There is a global trend towards sustainable and environmentally friendly housing solutions. R&D in this area often has international implications as nations work to reduce their carbon footprint.
- **Knowledge Sharing:** International conferences, research journals, and institutions play a key role in disseminating knowledge and best practices in the field of housing and land market dynamics. Researchers often share their findings on a global stage.
- **Financing and Investment:** International organizations, financial institutions, and investors may take an interest in affordable housing models, especially in regions with rapidly growing populations and housing needs.



- **Policy and Regulation:** The research in this area often includes an examination of policies and regulations that support or hinder affordable housing development. Insights gained from different countries can inform policy discussions worldwide.
- **Social and Economic Impact:** Affordable housing research often considers the social and economic impact of housing policies. These impacts are of international interest as nations seek to improve the well-being of their citizens.
- **Technology and Innovation:** Innovations in construction and housing technology can have global applications. Research on innovative construction materials or energy-efficient designs may have international relevance.

Key areas of ongoing research and notable contributors:

1. Affordable Housing Models:

- **Research Focus:** Develop innovative and sustainable affordable housing models.

- **Notable Contributors:**

- Donald H. Shoup (University of California, Los Angeles) for his work on parking policies and land use.
- Matthew Desmond (Princeton University) for his research on eviction and housing instability.
- Sarah Blandy (University of Sheffield) for her contributions to housing law and policy research.

2. Land Market Dynamics:

- **Research Focus:** Analyze the dynamics of land markets, including factors affecting land prices, zoning regulations, and urbanization trends.

- **Notable Contributors:**

- Richard Peiser (Harvard University) for research on real estate development, land use, and urban planning.
- Stuart Rosenthal (Syracuse University) for his work on urban economics, including land use and housing markets.
- Yongheng Deng (National University of Singapore) for expertise in real estate finance, land economics, and housing markets.

3. Sustainable Housing and Green Building:

- **Research Focus:** Promote sustainable housing practices and energy-efficient building technologies.

- **Notable Contributors:**

- Daniel G. Nocera (Harvard University) for his work in renewable energy and sustainable housing technologies.
- Marta H. Wisniewska (University of Sheffield) for research in sustainable urban design and green building technologies.
- Mat Santamouris (University of New South Wales) for contributions to energy-efficient building design and sustainable urban environments.

4. Housing Policy and Regulation:

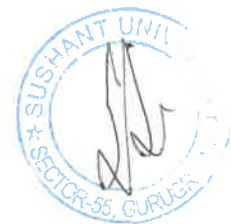
- **Research Focus:** Examine housing policies, rent control, tenant rights, and government initiatives.

- **Notable Contributors:**

- Ingrid Gould Ellen (New York University) for her research on housing policy and urban development.
- Barney Warf (University of Kansas) for work on housing geographies and urban policy.
- Matthew E. Kahn (University of Southern California) for research on housing markets, regulation, and environmental economics.

5. International Collaborations:

- **Research Focus:** Investigate global housing challenges and share best practices.



• **Notable Contributors:**

- Ron Kasabian (International Housing Solutions) for work in affordable housing financing and investment across borders.
- Hans Skifter Andersen (Aalborg University) for research on international housing policy and urbanization trends.

10.2. **National Status:**

Key Indian researchers and their contributions:

- **Dr. Isher Judge Ahluwalia:**
Contribution: Renowned economist known for her extensive work on urban development, housing, and infrastructure in India. She has made significant contributions to affordable housing policy and urban planning.
- **Prof. Amitabh Kundu:**
Contribution: A prominent economist specializing in urban development and housing in India. His work includes research on slum development, housing policy, and urban poverty.
- **Dr. Venkatesh Panchapagesan:**
Contribution: A professor of finance, Dr. Panchapagesan's work encompasses housing finance, real estate markets, and housing affordability in India.
- **Dr. Madhavi Mehta:**
Contribution: An architect and urban planner, Dr. Mehta has contributed to research on sustainable and affordable housing in India. Her work often focuses on sustainable urban development and affordable housing design.
- **Dr. Rumi Aijaz:**
Contribution: A researcher specializing in housing and urban development in India. Dr. Aijaz has worked on projects related to slum rehabilitation, affordable housing, and housing policy in urban areas.
- **Prof. V. S. Prakash:**
Contribution: A prominent urban planner, Prof. Prakash has contributed to the development of low-cost housing models and sustainable urban planning solutions in India.
- **Dr. Geeta Mehta:**
Contribution: An architect and urban planner known for her work on affordable housing, slum redevelopment, and sustainable urban design in Indian cities.

10.3. **Importance of the proposed project in the context of current status**

In the field of affordable housing and land market dynamics, the proposed project aims to address a significant gap related to the lack of a comprehensive and data-driven model that is tailored specifically to the unique dynamics of the Gurugram region. While there is existing research on affordable housing models and land market dynamics, the majority of these studies are generalized and often do not consider the complex, location-specific factors that affect Gurugram's housing market. This project seeks to fill this void by developing a model that is both regionally focused and adaptable to the specific socio-economic and land market conditions of Gurugram.

Key Contributions:

1. **Localized Approach:** Most existing research in affordable housing models provides generalized solutions applicable across various contexts. This project will emphasize the importance of tailoring solutions to the local context. By focusing on Gurugram, we aim to develop a model that considers factors such as local income levels, infrastructure development plans, and the impact of rapid urbanization.



2. **Data-Driven Insights:** While there is a wealth of housing research, data on Gurugram's land market dynamics is often fragmented. This project will aggregate and analyze data specific to Gurugram, providing a comprehensive view of land prices, zoning regulations, and housing demand trends.
3. **Sustainability Integration:** Our research will pay particular attention to sustainability, ensuring that affordable housing solutions not only meet short-term needs but also contribute to long-term urban development and environmental responsibility. Integrating green and sustainable building practices into the model is a unique aspect of this project.
4. **Policy Recommendations:** Existing research often provides general guidelines, but this project will generate specific policy recommendations designed to support affordable housing initiatives in Gurugram. These recommendations will be grounded in the local data and international best practices, making them relevant to the region's needs.
5. **Community Engagement:** While some research overlooks the input of potential beneficiaries and stakeholders, our project will actively engage with local communities and housing associations. This participatory approach ensures that the model considers the actual needs and preferences of the Gurugram population.
6. **Transferability:** While the model is tailored to Gurugram, the insights gained from this project may also have relevance for other urban areas facing similar challenges worldwide. This transferability aspect adds to the global significance of the research.

In summary, this project will contribute to addressing the gap in affordable housing models and land market dynamics by offering a localized, data-driven, and sustainable solution specifically tailored to Gurugram, while also generating insights that may be valuable to other regions facing similar housing challenges.

11. Work Plan:

11.1. Methodology:

1. Market Analysis:

- a. **Data Collection:** The research will commence with the collection of historical and current data on land market dynamics in Gurugram. This data will include land prices, transaction records, property developments, zoning regulations, and infrastructure projects. Sources of data will include government records, real estate databases, and interviews with key industry experts.
- b. **Market Trends Identification:** We will analyze the collected data to identify key trends in Gurugram's land market. This will involve statistical analysis and data visualization techniques to understand factors influencing land prices, market demand, and the role of speculative investments.

2. Stakeholder Engagement:

- a. **Surveys and Interviews:** We will conduct surveys and interviews with various stakeholders, including government officials, local authorities, real estate developers, housing associations, and potential beneficiaries of affordable housing. These interactions will provide insights into the challenges, opportunities, and policy constraints related to affordable housing in Gurugram.
- b. **Focus Groups:** To gain a deeper understanding of the specific needs and preferences of potential beneficiaries, we will organize focus group discussions and community workshops.

3. Data Collection:

- a. **Land Use and Infrastructure Data:** We will gather data on existing land use patterns, zoning regulations, and current infrastructure development plans in Gurugram. This information is crucial for understanding the existing landscape and assessing the potential for optimized land use in affordable housing projects.
- b. **Socio-Economic Data:** We will collect socio-economic data related to income levels, employment opportunities, and demographic factors that influence housing demands. This data will help in targeting the right segments for affordable housing initiatives.



4. Model Development:

- a. **Land Use Optimization:** Using the data collected, we will develop a geospatial model to optimize land use in Gurugram for affordable housing. This model will consider factors such as proximity to transportation hubs, employment centers, and essential services.
- b. **Cost Reduction Strategies:** We will assess cost-reduction strategies for construction and infrastructure development. This will involve evaluating construction techniques, sustainable building materials, and energy-efficient designs to minimize construction costs.
- c. **Sustainability Integration:** Sustainability will be a central element of our model. We will incorporate eco-friendly building practices and renewable energy solutions to ensure long-term affordability and environmental responsibility.

5. Model Testing and Refinement:

- a. The developed model will be tested through simulation and feasibility studies. We will apply it to real-world scenarios and housing projects in Gurugram. Feedback from these trials will inform necessary refinements to the model.
- b. Iterative adjustments will be made based on the outcomes, and the model will be fine-tuned to ensure it aligns with the city's unique dynamics.

6. Policy Recommendations and Outreach:

- a. Based on the research findings and the model's outcomes, we will formulate policy recommendations for local authorities and government agencies. These recommendations will aim to facilitate affordable housing initiatives while addressing land market dynamics.
- b. An outreach program will be initiated to disseminate research findings and policy recommendations. This will include workshops, presentations, and collaboration with governmental and non-governmental organizations to promote the adoption of our model.

By following this comprehensive methodology, we aim to create a model that not only addresses the complex land market dynamics of Gurugram but also provides practical, data-driven solutions for affordable housing, making it a more sustainable and accessible reality for the city's residents.

12. Time Schedule of activities giving milestones through Gantt Chart.

Task	Start Date	End Date	Duration
Year 1	2024-01-01	2024-12-31	12 months
- **Market Analysis**	2024-01-01	2024-04-30	4 months
- **Stakeholder Engagement**	2024-05-01	2024-07-31	3 months
- **Data Collection**	2024-08-01	2024-09-30	2 months
- **Model Development**	2024-10-01	2024-12-31	3 months
- **Model Testing and Refinement**	2025-01-01	2025-03-31	3 months
Year 2	2025-01-01	2025-12-31	12 months
- **Policy Recommendations and Outreach**	2025-04-01	2025-12-31	9 months

Key:

- Start Date: The date when the task begins.
- End Date: The date when the task is expected to be completed.
- Duration: The total duration of the task.

This Gantt chart outlines a two-year research project timeline. This chart provides a broad overview of our project's major phases. We can further detail each task with specific activities and milestones as our research progresses.

14. Expertise:

14.1. Expertise available with the investigators in executing the project: NA



14.2. Bibliography

- Shoup, D. H. (2005). **The High Cost of Free Parking**. APA Planners Press.
- Desmond, M. (2016). **Evicted: Poverty and Profit in the American City**. Crown Publishing Group.
- Blandy, S. (2013). **The Housing Question: Tackling the Crisis**. Palgrave Macmillan.
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15. List of facilities required from Sushant University for the project implementation.

15.1. Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	No
2.	Water & Electricity	Yes
3.	Laboratory Space/ Furniture	Yes
4.	Power Generator	No
5.	AC Room or AC	Yes
6.	Telecommunication including e-mail & fax	Yes
7.	Transportation	Yes
8.	Administrative/ Secretarial support	Yes
9.	Information facilities like Internet/Library	Yes
10.	Computational facilities	Yes
12.	Any other special facility being provided	GIS lab



15.2. Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group	NA		
PI's Department	NA		
Other Institute(s) in the region	NA		

15.3. Total Budget (Rs. in Lakhs): 1.87 lakhs only

15.3.1. Recurring Cost (Rs): 1,79,000 INR

15.3.2. Non-Recurring Cost (Rs): 8,000 INR

Sl. No.	Item	Budget			
		1 st Yr	2 nd Yr	3 rd Yr	Total
A	Recurring				
	1. Personnel Costs	50,000	25,000		75,000
	2. Data Collection and Analysis	20,000	20,000		40,000
	3. Fieldwork and Survey Expenses	15,000	15,000		30,000
	4. Travel and Accommodation	8,000	8,000		16,000
	5. Publication and Dissemination	6,000	6,000		12,000
	6. Contingency Fund	3,000	3,000		6,000
B	Non-Recurring				
	Technology and Equipment	4,000	0		4,000
	Administrative and Overhead	4,000	0		4,000
	Grand Total (A+B)	1,10,000	77,000		1,87,000

A. Recurring:

1. Budget for Manpower

Sl. No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	Budget (Rs. in lakhs)			
					1 st Yr	2 nd Yr	3 rd Yr	Total
1	Research intern	1	Master of planning	5000	50,000	25,000		75,000

2. Budget for Data collection and analysis

Sl. No.	Components	Budget (Rs. in lakhs)			
		1 st Yr	2 nd Yr	3 rd Yr	Total
1	Survey Tools and Software	10,000	10,000	0	20,000
2	Data Collection and Analysis Services	5,000	5,000	0	10,000



3	Data Processing and Analysis Tools	5,000	5,000	0	10,000
4	Field work	15,000	15,000	0	30,000

3. Budget for Travel & Accomodation

Sl. No.	Purpose	Budget (Rs. in lakhs)			
		1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Data Collection Trips	2,900	2,000	0	4,900
2.	Stakeholder Meetings	3,000	3,000	0	6,000
3.	Research Conferences and Seminars	3,000	3,000	0	6,000

4. Publication and dissemination

Sl. No	Description of field testing/demos /trainings	Budget (Rs. in lakhs)			
		1 st Yr	2 nd Yr	3 rd Yr	Total
1	Printing and Publishing Costs	2,000	2,000	0	4,000
2	Website Development and Maintenance	2,000	2,000	0	4,000
3	Workshop and Seminar Costs	2,000	2,000	0	4,000

5. Budget for Contingencies*

Sl. No.	Item	Budget (Rs. in lakhs)			
		1 st Yr	2 nd Yr	3 rd Yr	Total
1	contingency	3,000	3,000	0	6,000

B. Non-Recurring:

Budget for Permanent Equipment/ Workshed/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.	Technology and Equipment		4,000
2.	Administrative and Overhead		4,000

16. Deliverables

Deliverable	Mark ✓	Brief description
Research report	✓	A comprehensive report summarizing your research findings, analysis, and recommendations related to affordable housing models and land market dynamics in Gurugram.
Data sets	✓	
Policy recommendations	✓	A set of actionable policy recommendations based on our research findings to improve affordable housing initiatives and land use planning in Gurugram
Model for Affordable housing	✓	A detailed model or framework that provides insights into affordable housing solutions, considering the specific dynamics of Gurugram.
Academic papers and publication	✓	Peer-reviewed research papers and publications that result from our research, which can contribute to the academic community's understanding of affordable



Website or online portal	√	housing and land market dynamics. An online platform or website to disseminate your research findings, engage with stakeholders, and provide access to reports and data.
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17. Name and address of experts/ institution interested in the subject/outcome of the project.

- Government Agencies like Town Planning Departments, Housing Boards, Municipal Corporations
- Non-Governmental Organizations (NGOs)
- Academic Institutions
- Housing Associations
- Financial Institutions
- Industry Associations
- International Development Organizations
- Community Groups
- Media and Publications
- Urban Planners and Architects
- Environmental Organizations
- Homebuyers and Residents



PROFESSIONAL QUALIFICATION

Professional Background:	Architect Planner
Work experience:	12+ years of experience in the field of Architecture & Planning
Present Status:	Pursuing Ph.D. (currently 1 st semester)

MEMBERSHIP WITH PROFESSIONAL ASSOCIATIONS

Member of Council of Architecture
Member of Institute of Town Planners India

EDUCATIONAL QUALIFICATION

Year	Qualification	Institution	Remarks
2012	PG Diploma in Urban Environmental Management and Law	National Law University, New Delhi & WWF India	Grade A
2010	M. Planning (Housing)	School of Planning and Architecture, New Delhi	1 st Division with Distinction
2007	B.Arch.	Aayojan School of Architecture, Jaipur, Rajasthan	1 st Division

WORK EXPERIENCE – PROFESSIONAL PRACTICE

Organization & Duration	Position	Key Areas	Responsibilities
Emaar MGF Land Ltd. (June 2010- Aug 2015)	Deputy Manager	Architectural Design concept and Planning (in-house & outsourced)	<ul style="list-style-type: none"> Worked on concept designing and site planning of many in-house projects Worked out floor layouts for achieving higher efficiency through appropriate utilization of spaces and efficient parking and basements
		Statutory approvals	<ul style="list-style-type: none"> To prepare and ensure completion of all pre-construction, during construction and post construction approvals
		Profit Maximization	<ul style="list-style-type: none"> Worked out feasibility and cash flow statements Worked out efficiencies of the floor plates and thereby calculating the loadings for achieving maximum gross builtup areas Value Engineering of design features and thereby ensuring cost reduction through architectural details
		Coordination	<ul style="list-style-type: none"> Timely delivery of drawings to project sites, coordination with consultants to enhance the design development Complete coordination with the external Architects, consultants and vendors
		On time delivery	<ul style="list-style-type: none"> Implementation of micro scheduling of the projects drawings and documents Monitoring the progress of projects as per schedule, review designs and documents
Maithel & Associates, Jaipur (June 2007-June 2008)	Associate Architect	Design and approvals	<ul style="list-style-type: none"> Worked on concept designing and site planning Worked on statutory approvals and working drawings
Rajasthan Housing Board, Jaipur (June 2009-July 2009)	Post Graduate Trainee	Design & Innovation	<ul style="list-style-type: none"> To prepare and innovate techniques for cost efficient building design and materials Worked out layouts of affordable housing



Behal Joshi & Associates, New Delhi (Jan 2006-June 2006)	Graduate Trainee	Design and approvals	▪ Worked on statutory approval and working drawings
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PROJECTS UNDERTAKEN DURING PROFESSIONAL PRACTICE

At EMAAR MGF Land Ltd.		
Typology	Project Name	Project Brief
Townships	Integrated Temple Township, Tirupati, Thirumala	Site area- 144.58 acres, built up area- 4.25 million sq.ft. No. of Du's- 350, no. of plots-550
	Ghaziabad Greens, Ghaziabad	Site area-119 acres, Group Housing- 15.9 acres, No. of plots- 535
Group Housing	GH at OMR, Chennai	Site area- 10.91 acres, built up area- 1.04 million sq.ft. No. of DU's:970
	Palm Crescent, Sector-66, Gurgaon	Site area- 10.74 acres, built up area- 8.3 lakhs sq.ft. No. of DU's:355
	Palm Gardens, Sector-83, Gurgaon	Site area- 21.9 acres, built up area- 1.67 million sq.ft. No. of DU's:1018
	Palm Springs, Sector-54, Gurgaon	Site area- 15.56 acres, Built up area-1.49 million sq.ft, No. of DU's-314
	Palm Drive, Sector-66, Gurgaon	Site area- 45.47 acres, Built up area- 2.7 million sq.ft, No. of Du's- 1474
Plotted Development	Jaipur Greens, Jaipur	Site area- 158 acres, Plotted development, No. of plots-790
Villa	Marbella- Villa 037, Sector 65 & 66, Gurgaon	Built up area- 8145 sq.ft, 5 BHK+ family villa
Commercial-Mall	Metropolis, Sector-28, Gurgaon	Site area-8.03 acres, Built up area- 1.13 million sq.ft, No. of shops- 366 and 3 basements
At Maithel & Associates, Jaipur		
Group Housing	Rajmahal Residency, Agra Road, Jaipur	Site area- 7.92 acres, Built up area-6.56 lakhs sq.ft. based on traditional Rajasthani Architecture
	Pratap Apartments, Pratap Nagar, Jaipur	Site area- 14.15 acres, No. of DU's-1820

WORK EXPERIENCE - ACADEMICS

Organization & Duration	Position	Key Areas	Responsibilities
Hindu College of Design, Architecture and Planning, Sonapat (Apr 2022- till Dec 2022)	Associate Professor	<ul style="list-style-type: none"> ▪ Planning Thesis ▪ Planning for Tourism ▪ Planning studio 	Planning Studios, Thesis guidance and lectures
NIMS School of Architecture and Planning, Jaipur (June 2020- till date)	Associate Professor	<ul style="list-style-type: none"> ▪ Design Studio, Housing Planning, Dissertation and Thesis Guidance 	Design Studios, Dissertation and Thesis guidance, Lectures
K.R. Mangalam University, Gurgaon (Aug 2015- July 2018)	Associate Professor	<ul style="list-style-type: none"> ▪ Architectural Design ▪ Building Construction & Materials ▪ Housing ▪ Working Drawing ▪ Dissertation 	Design Studios, Building construction studios, Dissertation guidance, Lectures etc. Site visits for students, educational trips, arranging guest lectures, various workshops, etc Preparation of syllabus and other administration related work for department



ACADEMIC WORK

Master of Planning (Housing)	
Thesis	Illegal Land Sub-division for Housing in Jaipur <i>Illegal conversion and land sub-division is increasingly becoming one of the major processes of supplying land on the periphery of fast growing urban areas. The nature of these processes and settlements vary considerably. But a government response of either ignoring or regularising them is typical. The sole objective of the study is to examine the process of land conversion, illegal subdivision and regularization of cooperative housing schemes in Jaipur.</i>
Studio	Project Formulation and Design- Affordable housing
	Housing Strategy for Lucknow, U.P.
	Area Appreciation of Garhi Village, New Delhi
	Outline Development Plan(ODP)-Dehradun <i>The objective was to estimate the land requirements for further development of Dehradun for period 2008-2028 and evolve the development plan proposals, policies and strategies, considering constraints and development potentials of the city.</i>
Bachelor of Architecture	
Thesis	Affordable Housing along with earning and learning facilities, Ahmedabad, Gujarat
Advance Research	Reuse and Recycled waste material as building component
Dissertation	Appropriate paving materials in external environment for Physically challenged

PAPER PUBLISHED

Paper on "Recycling for a Sustainable Environment and Poverty Alleviation in Indian Town and Cities" for International Seminar on Sustainability in Planning, Architecture, Technology & Engineering (SPATE) on 10th and 11th October, 2015, in Amity University, Jaipur organized by The Sustainable Development Forum.

CONFERENCES / WORKSHOPS ATTENDED / GUEST LECTURES

1. Attended an International Workshop of two days on 'Inclusive Cities' was held in Mir-Anis-Hall, Jamia Milia Islamia on 19th & 20th December 2016
2. Attended a full day Diamond Jubilee Convention on 'A smart NCR in 2025' organised by Delhi Management Association(DMA) was held in Jacranda Hall, India Habitat Centre, New Delhi on 14th February 2017.
3. Architecture career counseling in "Disha- Symposium 2021" for students of 9th to 12th class of Amity International School, Gurgaon.
4. Guest lecture delivered on Illegal land subdivision for Housing and Green Building in School of Planning and Architecture, New Delhi





Utilization Certificate


Certified that grant of ₹1, 85,000/- (Rupees One Lakh Eighty Five Thousand Only) sanctioned by the Center of Research and Development, Sushant University, vide letter no. F.No.1/2023-2024/Seed Fund-Feb 24/18 Dated 9th February 2024 towards financial assistance for the project titled “Socio-Economic Analysis of “Model for Affordable Housing in Gurugram: Addressing Land Market Dynamics” was utilized for the purpose for which it was sanctioned.

Financial expenditure incurred

S.no	Nature of expense	Proposed Expenditure	Expenditure incurred
1	Manpower	75,000	70,000
2	Travel	16,000	15,000
3	Data collection and analysis	40,000	40,000
4	Publication	12,000	16,000
5	Field work	30,000	30,000
6	Contingencies	6,000	6,000
7	Equipment	8,000	8,000
	Total	₹1,87,000	₹ 1,85,000

Sharma

Principle Investigator




Sau

Accounts Officer
Account & Finance Officer
Sushant University
Gurugram, Haryana

**PROFORMA FOR SUBMISSION OF SEED FUND
PROPOSAL**

Part I: General Information

1. Project Title: Conservation of Najafgarh Jheel- A Bird Sanctuary Approach
2. i. Name of Principal Investigator: Ms. Shruti Hippalgaonkar
ii. Name of Co-Investigator: Ms. Nitaasha Rana
3. Collaboration if any, give details of institution(s): NA
4. Any Project(s) previously sanctioned by any funding agency? If yes give the details:

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)
1.	N/A	N/A	N/A	N/A	N/A	N/A

5. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues? N/A
6. Duration (months): 3 Years
7. Enclose the following while submitting the application form:

Duly filled application form (complete with all Annexures)- 2 hard copies	No
Bio-data of the PI & Co-I -2 copies	No

Part II: Proposal Summary

1. Origin of the Proposal:

(Scientific/Technical rationale for doing this work should be elaborated)

Proposal to Conservation of Najafgarh Jheel- A Bird Sanctuary Approach

Introduction:

The Najafgarh wetland has the capacity to address the water shortage problem of Delhi and Gurgaon despite the fact that it has degraded over time in terms of both the area and water quality, however nothing has been done to conserve it. Even though it has a huge area it has yet not been notified as a wetland either in Haryana or Delhi. The Jheel did not have the status of a water body till 2019 due to which it has been constantly encroached upon by villagers and real estate developers and the once 220 sq km lake is now a mere 7 sq km. Conservation of the lake is very crucial as it will not only



enable the wetland to function to its true potential but also will protect an important migration corridor in the Central Asian Flyway which is imperative for sustainable urbanization and protection of the wetland.

Scientific/Technical Rationale:

- Establish the **identity of the Najafgarh Wetlands**
- **Protect the wetland**
- Provide a design solution encapsulating various features including **habitat conservation, water treatment, strategic vegetation plan, community involvement and awareness, health-based recreation with aesthetic experience.**

Proposed Solutions:

- **Involvement and Awareness of populace**
 - o Local populace to be educated regarding consequences of mining of ground water and need for its effective and economic use.
 - o Awareness among students and public should be made regarding conservation of water.
- **Rain water Harvesting**
 - o Rain Water Harvesting should be made mandatory for new constructions.
 - o The old house owner ready to go for harvesting measures shall be given incentives in the form of conferring public honor and sustainable concession in municipal taxes.
 - o The surface run off on the roads and open grounds during the monsoon period be diverted to pits (Recharge shafts) judiciously constructed in the colony, parks or play grounds.
- **New/Future Study**
 - o Study of Seepage factor of canal
 - o Study on revision of the tube well drafts
- **Water Structures**
 - o Clean and maintain the abandoned dug wells to capture surface monsoon run off and recharge ground water.
 - o Promotion of submersible pumps to replace centrifugal pumps in the steep ground water declining zones to avoid failure of tube wells.

Conclusion:

The "Conservation of Najafgarh Jheel: A Bird Sanctuary Approach" research project represents a significant and essential step towards safeguarding the fragile ecosystem of Najafgarh Jheel. Through the collective efforts of dedicated researchers, community engagement, and crucial financial support, this initiative promises to bring about positive, lasting change.

The sanctuary's establishment not only serves as a vital habitat for diverse avian species but also offers an opportunity for the local community to connect with and appreciate the natural world. The research undertaken here lays the foundation for a comprehensive conservation plan that can serve as a model for similar projects in other threatened ecosystems.

2. Objectives (Only 4-5 focused one that can be observed, measured or clearly assessable)

i. Habitat Restoration: Implement extensive measures to restore and enhance the wetland's natural habitat, including the removal of invasive species and promotion of native flora.
ii. Avian Conservation: Conduct a comprehensive bird species inventory and develop a conservation plan for the protection of threatened and migratory birds that visit the sanctuary.
iii. Environmental Education: Launch public awareness campaigns and educational

programs to engage the local community in the conservation efforts and promote eco-friendly practices.

iv. **Sustainability:** Develop sustainable management practices and policies to ensure the long-term conservation and protection of Najafgarh Jheel.

3. Review of status of Research and Development in the subject

3.1 International Status:

(Researchers working in the area worldwide and their contributions must be properly highlighted with recent references and reviews. A correct and faithful description of the international research status must be given)

a) **Noam Levin^a, Eldad Elron^b, Avital Gasith^b**

^aThe Department of Geography, The Hebrew University of Jerusalem, Mount Scopus, Jerusalem 91905, Israel

^bDepartment of Zoology, George S. Wise Faculty of Life Sciences, Tel Aviv University, Tel Aviv 69978, Israel

References: - *Decline of wetland ecosystems in the coastal plain of Israel during the 20th century: Implications for wetland conservation and management*

b) **Patrick J. Dungan**, Wetland Coordinator, IUCN- The world conservation union

References: - *Wetland Conservation: A Review of Current Issues and Required Action*

c) **Vanessa Reis, Virgilio Hermoso, Stephen K. Hamilton, Douglas Ward, Etienne Fluet-Chouinard, Bernhard Lehner, Simon**, National University of Singapore

References: - *A Global Assessment of Inland Wetland Conservation Status*

3.2 National Status:

(Same as above to cover the contribution of Indian Scientists in the project area)

Environmental Management Plan given by Delhi after the NGT notification has mainly two current proposals:

d) **Sewage Plan**

- Project Name - The Interceptor Project.
- Implementation Body - The Delhi Jal Board.
- Objective - Tap minor drains which discharge sewage into Delhi's three largest drains – Najafgarh Drain, Supplementary Drain and Shahdara Drain by laying interceptor sewerage systems.
 - Estimated cost – Around INR 2,454 crores including a ten year operations and maintenance expense.
 - Existing Sewage Treatment Plans – Capacity augmentation of STPs located at the mouths of Delhi Gate and Sen Nursing Home Drains
 - Rehabilitation – Two major trunk sewers are to be rehabilitated to intercept 13 drains out falling into Yamuna
 - New Sewage Treatment Plans – construction of new STPs



e) Rejuvenation of Najafgarh Waterways

- Project Name – Rejuvenation of Najafgarh Waterways
- Implementation Body – Delhi Urban Arts Commission
- Objective – Develop the Najafgarh Drain as a rejuvenated waterway linked with the existing transit nodes of the urban fabric to enable channelization of pedestrian traffic along the waterway to bring overall enhancement in connectivity.
 - Scheme –
 - o Integration of the project site with the city's waterway system.
 - o Redevelopment of the waterway from Vikaspuri to Mundka.
 - o Pedestrian and cycle trails along the waterway which will be linked with existing activities, neighbourhood communities, monuments like Hast Minar, Delhi Haat, etc.
 - o Introducing public involvement through activities like urban farms and weekly markets, etc.

Importance of the proposed project in the context of current status

Novel Contribution: Community Engagement and Conservation, Sustainable Management Strategies

The research project, "Conservation of Najafgarh Jheel - A Bird Sanctuary Approach," reveals a notable research gap in the comprehensive assessment of the ecological dynamics at the Najafgarh Jheel ecosystem. While initial studies have provided valuable insights, there is a need for more in-depth analysis of the intricate relationships between water quality, vegetation, and avian populations. Additionally, there's a dearth of research regarding the long-term effects of climate change on bird migration patterns and nesting behaviors in the region. These gaps hinder a holistic understanding of the sanctuary's sustainability and may impede the development of effective conservation strategies for this unique wetland ecosystem.

1. **Biodiversity Assessment and Monitoring:** Limited comprehensive studies have been conducted to assess the full spectrum of biodiversity within Najafgarh Jheel. A more in-depth and ongoing examination is necessary to identify all avian species that inhabit or visit the area, including rare and endangered species.
2. **Ecosystem Dynamics:** The interplay of ecological factors and their impact on the wetland ecosystem is not yet fully understood. Research should delve into the dynamics of water quality, plant communities, and their influence on avian populations.
3. **Impact of Climate Change:** With climate change impacting ecosystems globally, it's essential to investigate how rising temperatures, altered precipitation patterns, and extreme weather events affect the migratory patterns, breeding habits, and overall well-being of bird species within Najafgarh Jheel.
Community Engagement and Conservation Awareness: While the project emphasizes community engagement and education, it's important to gauge the effectiveness of these initiatives in influencing local behavior towards the environment. Further research is needed to understand the long-term impact of such programs.
4. **Sustainable Management Strategies:** The project aims to develop sustainable management practices, but there is a gap in understanding the most effective strategies for wetland preservation, which may involve policy development, land use regulations, and community involvement.
5. **Economic and Socio-Ecological Benefits:** Assessing the economic and socio-ecological benefits of preserving Najafgarh Jheel as a bird sanctuary is essential. This includes examining how it impacts tourism, local livelihoods, and overall quality of life in the region.

Comparison with Similar Projects: There is a lack of comparative studies between Najafgarh Jheel and other similar bird sanctuaries or wetland conservation projects in different regions. Such comparisons can yield valuable insights and best practices.

6. **Long-Term Monitoring:** Comprehensive, long-term monitoring programs are vital to understanding the success and challenges of the sanctuary approach. The project may need to incorporate such monitoring into its framework.

Addressing these research gaps will not only enhance the effectiveness of the "Conservation of Najafgarh Jheel: A Bird Sanctuary Approach" but also contribute to the broader field of wetland conservation and avian ecology. By filling these gaps, the research can provide more comprehensive and informed insights, leading to better conservation practices and policies.

4. Work Plan:

4.1 Methodology:

Justification of the Methodology:

The proposed methodology incorporates a multidisciplinary approach, integrating advanced technology, policy interventions, and community engagement strategies to effectively address the complex dynamics of the urban heat island effect caused by food joints in residential areas. By combining robust data collection methods, sustainable infrastructure development, and stakeholder collaboration, the methodology ensures a comprehensive and sustainable mitigation strategy that accounts for long-term environmental impacts. The incorporation of community-driven initiatives not only fosters a sense of shared responsibility but also guarantees the long-term sustainability and resilience of the proposed interventions.

Methodology

1. Research Design:

This research employs a mixed-methods approach, combining quantitative and qualitative methods to provide a comprehensive understanding of the Najafgarh Jheel ecosystem and the impact of the bird sanctuary approach.

2. Data Collection:

a. Quantitative Data:

Bird Species Inventory: Conduct regular bird counts using standardized protocols.

Environmental Data: Collect data on water quality, vegetation, and weather patterns.

Socio-Economic Data: Surveys and interviews with local communities.

b. Qualitative Data:

In-depth Interviews: Engage stakeholders, conservation experts, and community members.

Focus Groups: Encourage discussions on conservation awareness and community involvement.

Participant Observation: Gain insights through on-site visits and direct engagement.

3. Sampling:

For bird counts, employ systematic sampling methods across different seasons.

Random and purposive sampling techniques will be used for socio-economic and community engagement data.



4. Data Analysis:

Statistical analysis of bird count data using software like R or Python.
Qualitative data will be analyzed thematically and coded for patterns and trends.

5. Habitat Restoration and Management:

Implement habitat restoration and management practices based on scientific research findings, including invasive species removal and native vegetation promotion.

6. Environmental Education:

Develop and execute educational programs based on the research results, targeting the local community and schools.

7. Long-Term Monitoring:

Establish ongoing monitoring protocols to track changes in bird populations, habitat health, and community engagement over an extended period.

8. Ethical Considerations:

Ensure adherence to ethical guidelines, respecting the rights and privacy of individuals and obtaining necessary permits for research activities.

9. Budget and Resources:

Allocate resources for field surveys, laboratory analysis, educational materials, and project management.

10. Timeline:

The research is planned to be conducted over a span of 3 years, accounting for different seasons and migration patterns.

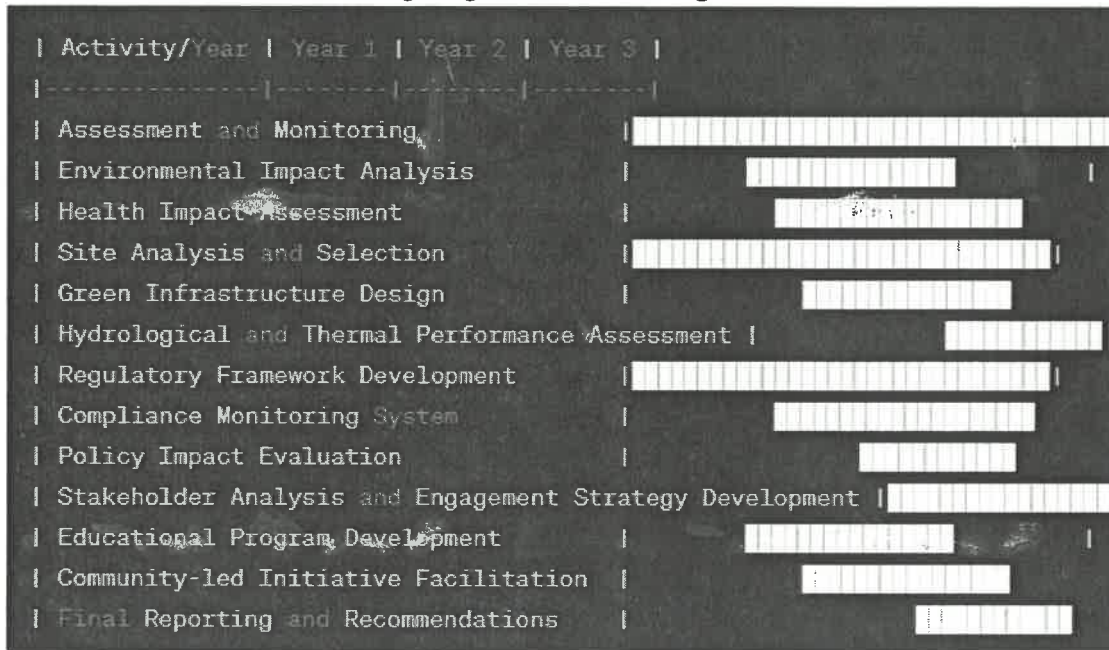
11. Interdisciplinary Collaboration:

Collaborate with ecologists, ornithologists, sociologists, and environmental educators to ensure a holistic approach to the research.

This comprehensive research methodology ensures a systematic and holistic approach to the "Conservation of Najafgarh Jheel - A Bird Sanctuary Approach," addressing ecological, social, and economic dimensions for effective wetland conservation and community engagement.



4.2 Time Schedule of activities giving milestones through Gantt Chart.



Year 1: Project Initiation and Data Collection

Month 1-3 (Milestone 1):

- Project planning and team formation
- Stakeholder meetings and collaboration agreements

Month 4-6 (Milestone 2):

- Baseline data collection and site monitoring system setup
- Initial community interactions & surveys

Month 7-9 (Milestone 3):

- Analysis of baseline data and identification of bird's hotspots
- Preliminary environmental impact analysis

Year 2: Implementation and Regulatory Measures

Month 10-12 (Milestone 4):

- Finalize designs for green & blue infrastructure (afforestation, tree planting, water conservation)
- Hydrological assessments

Month 13-18 (Milestone 5):

- Begin the implementation of green infrastructure
- Health impact assessments and community awareness campaigns

Month 19-24 (Milestone 6):

- Establish regulatory framework for any joint operations
- Develop a compliance monitoring system
- Community engagement strategy development

Year 3: Community Engagement and Monitoring

Month 25-30 (Milestone 7):

- Full-scale implementation of blue-green infrastructure
- Enforcement of regulatory measures
- Initiate educational programs and workshops

Month 31-36 (Milestone 8):

- Monitor the overall performance & documentation of progress
- Policy impact evaluation and refinement
- Facilitate community-led initiatives and volunteer programs



Month 37-39 (Milestone 9):

- Final project evaluation and data analysis
- Reporting and documentation of project outcomes and lessons learned
- Knowledge dissemination and sharing of results

Throughout the Project: During the course of the project, we will conduct consistent meetings, review progress regularly, and adapt the project plan as needed, incorporating data and feedback from the community. We will also maintain continuous engagement with stakeholders, including residents, business owners, and policymakers.

While the Gantt Chart offers a broad outline of the project's three-year timeline, please note that the actual schedule may change depending on project-specific elements, available resources, and local conditions. It's crucial to continually monitor and make necessary adjustments to ensure the project's success.

5. Expertise:

5.1 Expertise available with the investigators in executing the project:

N/A

5.2 Bibliography

N/A

6. List of facilities required from Sushant University for the project implementation.

6.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	Yes
2.	Water & Electricity	Yes
3.	Laboratory Space/ Furniture	No
4.	Power Generator	No
5.	AC Room or AC	Yes
6.	Telecommunication including e-mail & fax	Not required Full or sharingbasis
7.	Transportation	Yes
8.	Administrative/ Secretarial support	Yes
9.	Information facilities like Internet/Library	Yes
10.	Computational facilities	Yes
12.	Any other special facility being provided	N/A



6.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group	N/A	N/A	N/A
PI's Department	N/A	N/A	N/A
Other Institute(s) in the region	N/A	N/A	N/A

6.3 Total Budget (Rs. in Lakhs): One Lakh and seventy-five Thousand (1,75,000/-)

- Recurring Cost (Rs): **One Lakh (1,00,000/-)**
- Non-Recurring Cost (Rs): **Seventy-five thousand (75,000/-)**

Sl. No.	Item	Budget			
		1 st Yr	2 nd Yr	3 rd Yr	Total
A	Recurring	30,000	35,000	35,000	1,00,000/-
	1. Manpower				
	2. Consumables				
	3. Travel				
	4. Field testing, Demo/ Training expenses (if applicable)				
	5. Contingencies/Other costs				
	6. Institutional Overheads*				
	7. Any other item				
B	Non-Recurring	15,000	40,000	20,000	75,000/-
	Permanent equipment				
	Construction of work shed/structures				
	Fabrication of prototype equipment				
	Grand Total (A+B)				1,75,000/-

A. Recurring:

1. Budget for Manpower

Sl. No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	Budget (Rs. in lakhs)			
					1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Urban Planner/Environmental Scientist	1	Urban Planner		10,000	10,000	--	20,000
2.	Community Outreach Coordinator	1	M.S.W		--	-	-	-
3.	Landscape Architect	1	Ph.D. in Architecture		10,000	10,000	--	20,000



2. Budget for Consumables*

Sl. No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
1.	N/A	N/A	N/A	N/A	N/A	N/A.

*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel

Sl. No.	Purpose	Budget (Rs. in lakhs)			
		1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Project logistics	NA	NA	10,000	10,000
2.	Field activities	NA	NA	10,000	10,000
3.	Review meetings (if elsewhere)	NA	NA	NA	NA

4. Field Testing/ Demo/ Trainings*

Sl. No	Description of field testing/demos /trainings	No/Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
1.	N/A	N/A	N/A	N/A	N/A	N/A

*Include material for technology field testing/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of beneficiaries/training, duration of training days, cost /training).

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Computer	-	-	-	-	-
2.	Secretarial assistance	N/A	N/A	N/A	N/A	N/A
3.	Documentation	1	-	10,000	-	10,000
4.	Cost of technology transfers/acquisitions	1	10,000	N/A	N/A	10,000
5.	Lab/field trials	N/A	N/A	N/A	N/A	N/A
6.	Maintenance/servicing of equipment	1	-	10,000	-	10,000
7.	Incidental expenses	1	-	10,000	-	10,000

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.



B. Non-Recurring:

Budget for Permanent Equipment/ Workshed/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.	Lab	1	15,000
2.	Workshop	1	40,000
3.	Store	1	20,000

7. Deliverables

Deliverable	Mark \checkmark	Brief description
Product development/adaptation	X	X
Process development/adaptation	X	X
Technology package for development of the project area and local community	\checkmark	Courier
Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)	\checkmark	Stationary
Scientific knowledge and/or data generation leading to technology development in future	\checkmark	GIS software
Other (Please specify)	N/A	N/A

8. Name and address of experts/ institution interested in the subject / outcome of the project.

Shruti Hippalgaonkar, School of Art & Architecture, Sushant University, Gurugram, India.



Utilization Certificate


Certified that grant of ₹ 1,75,000/- (Rupees One Lakh Seventy Five Thousand Only) sanctioned by the Center of Research and Development, Sushant University, vide letter no. F.No.1/2023-2024/Seed Fund-Feb 24/19 Dated 9th February 2024, financial assistance for the project titled “Conservation of Najafgarh Jheel: A Bird Sanctuary Approach” was utilized for the purpose for which it was sanctioned.

Financial expenditure incurred

Sl.no	Nature of expense	Proposed Expenditure (in Rs)	Expenditure incurred (in Rs)
1	Manpower	40,000	35,000
2	Travel	20,000	25,000
3	Contingencies	40,000	30,000
4	Lab	15,000	25,000
5	workshop and store	60,000	60,000
	Total	₹ 1,75,000	₹ 1,75,000


Principle Investigator




Account & Finance Officer
Sushant University
Gurugram, Haryana

PROFORMA FOR SUBMISSION OF SEED FUND PROPOSAL

Part I: General Information

1. Project Title (should be focused not exceeding 15 words): Renewable Energy generation through Solar Photovoltaics.
2. i. Name of Principal Investigator: Kiran Singh
ii. Name of Co-Investigator:
3. Collaboration if any, give details of institution(s):
4. Any Project(s) previously sanctioned by any funding agency? If yes give the details:

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)

5. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues? Not required
6. Duration (months): 2 Year
7. Enclose the following while submitting the application form:

Duly filled application form (complete with all Annexures)- 2 hard copies	
Bio-data of the PI & Co-I -2 copies	



Part II: Proposal Summary

1. Origin of the Proposal:

(Scientific/Technical rationale for doing this work should be elaborated)

It is to support the PhD research on the topic design of Policy framework for energy neutral housing under -PMAY Neutral. This project can be further useful to other PhD candidates who are working on similar topics like Solar Photovoltaics, Zero Energy Building, Net Zero Building, as well as to the students of Engineering and Architecture students.

2. Objectives (Only 4-5 focused one that can be observed, measured or clearly assessable)

i.	Develop an integrated system for solar photovoltaics with advanced solar tracking capabilities.
ii.	Investigate the feasibility of implementing solar tracking technology to enhance energy generation and efficiency.
iii.	Conduct surveys and interviews with users and stakeholders to understand their experience with the system and gather feedback for improvements.

3. Review of status of Research and Development in the subject

3.1 International Status:

4. If the electrical grid is decarbonized, then the residential housing sector can meet the 28% emission reduction target for 2025 under the Paris Agreement. However, grid decarbonization will be insufficient to meet the 80% emissions reduction target for 2050 due to a growing housing stock and continued use of fossil fuels (natural gas, propane, and fuel oil) in homes.

4.1 National Status:

IIT Delhi academicians conducted a study on integrating façade BIPV in low-rise residential buildings, demonstrating that this approach can increase system energy production by up to 62.5%.

4.2 Importance of the proposed project in the context of current status

Solar Photovoltaics is very new to India and even the world. In India only few housing building has been designed having solar photovoltaics
A solar electric or photovoltaic (PV) system can reliably produce electricity for your home or office.



5. Work Plan:

5.1 Methodology:

For integrated system various devices are required which needs to be procured like Solar Modules, Bulding Integrated Modules, Tracking Devices, monitoring device, etc.

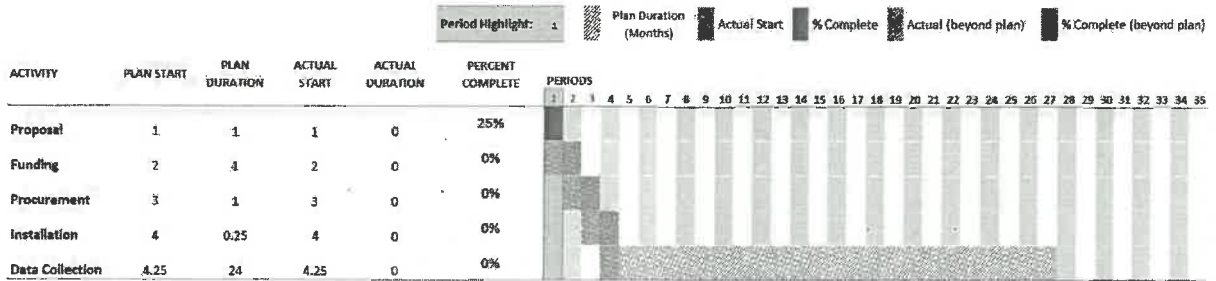
Feasibility of implementing the solar tracking technology will be done by monitoring the results on hourly and daily basis and then comparing the data with non solar tracking modules.

Conduct surveys and interviews with users and stakeholders to understand their experience

with the system and gather feedback for improvements. Household surveys will be conducted in the houses having solar photovoltaics installed and analyse the result.

5.2 Time Schedule of activities giving milestones through Gantt Chart.

Grid connected moveable Roof Top and BIPV with solar tracking and IoT based Monitoring System



6. Expertise:

6.1 Expertise available with the investigators in executing the project:

Investigator, Kiran Singh is pursuing PhD on the topic “Policy framework for Energy Neutral housing under PMAY-Urban”.

6.2 Bibliography

Elinwa, U. K., Radmehr, M., & Ogbaba, J. E. (2017). Alternative energy solutions using BIPV in apartment buildings of developing countries: A case study of North Cyprus. *Sustainability (Switzerland)*, 9(8). <https://doi.org/10.3390/su9081414>

Panicker, K., Anand, P., & George, A. (2023). Assessment of building energy performance integrated with solar PV: Towards a net zero energy residential campus in India. *Energy and Buildings*, 281, 112736. <https://doi.org/10.1016/J.ENBUILD.2022.112736>

Zanelli, A., & Freitas, S. (2019). *BIPV Design and Performance Modelling: Tools and Methods BIPV Design and Performance Modelling: Tools and Methods IEA PVPS Task 15 Subtask E-Demonstration.*



7. List of facilities required from Sushant University for the project implementation.

7.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	Yes (sharing)
2.	Water & Electricity	Yes
3.	Laboratory Space/ Furniture	Yes (sharing)
4.	Power Generator	No
5.	AC Room or AC	No

6.	Telecommunication including e-mail & fax	Yes
7.	Transportation	Yes
8.	Administrative/ Secretarial support	Yes
9.	Information facilities like Internet/Library	Yes
10.	Computational facilities	Yes
12.	Any other special facility being provided	Roof Area for Solat Voltaic

7.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group	Not Available		
PI's Department	Not Available		
Other Institute(s) in the region			

7.3 Total Budget (Rs. in Lakhs): 1.9 Lakhs

- Recurring Cost (Rs): electricity only
- Non-Recurring Cost (Rs): 1 lakhs

Sl. No.	Item	Budget			
		1 st Yr	2 nd Yr	3 rd Yr	Total
A	Recurring 1. Manpower 2. Consumables 3. Travel 4. Field testing, Demo/ Training expenses (if applicable) 5. Contingencies/Other costs 6. Institutional Overheads* 7. Any other item	90000			
B	Non-Recurring Permanent equipment Construction of work shed/structures Fabrication of prototype equipment	100245			
	Grand Total (A+B)	190245			



A. Recurring:

1. Budget for Manpower

Sl. No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	Budget (Rs. in lakhs)			
					1 st Yr	2 nd Yr	3 rd Yr	Total

2. Budget for Consumables*

Sl. No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel

Sl. No.	Purpose	Budget (Rs. in lakhs)			
		1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Project logistics				
2.	Field activities				
3.	Review meetings (if elsewhere)				

4. Field Testing/ Demo/ Trainings*

Sl. No	Description of field testing/demos /trainings	No/Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Include material for technology field testing/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of beneficiaries/training, duration of training days, cost /training).

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

B. Non-Recurring:

Budget for Permanent Equipment/ Workshed/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.	Solar Modules	5	28000
2.	Racking	5	31000
3.	Grid Connected Inverter	1	38499
4.	Bi Directional Meter	1	2199
5.	Monitoring Software	1 Year Subscription	100245

8. Deliverables

Deliverable	Mark ✓	Brief description
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Product development/adaptation		
Process development/adaptation		
Technology package for development of the project area and local community		
Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)		
Scientific knowledge and/or data generation leading to technology development in future		
Other (Please specify)		

9. *Name and address of experts/ institution interested in the subject / outcome of the project.*



Ar. KIRAN G SINGH

DOB: 21/04/1991 | E-mail: kiransingh9121@gmail.com | Contact number: +91
9855815557

Contact Address: B-2/2128, Vasant Kunj, New Delhi-110070, India

COA Number CA/2014/64462

ITPI 2019-367 AITP



Objective

To work in an environment that provides me an opportunity to put in use the skills acquired during the years of my technical education and sharpen my skills, widen my experience by being part of a progressive and leading group.

Educational Background

Year	Course/Exam	Institution
2023 Onwards	PhD Scholar	School of Art & Architecture, Sushant University, Gurugram, Haryana, India
2014-16	Masters of Planning specialization in Housing- First Division 71%	School of Planning & Architecture, New Delhi
2009-14	Bachelors of Architecture (B.Arch)-First Division :70.6%	Guru Nanak Dev University, Amritsar, Punjab
2009	SENIOR SECONDARY (Science): 78.6%	D.A.V Public School, Amritsar- Punjab
2007	SECONDARY, Marks: 92.6%	D.A.V Public School, Amritsar- Punjab



Academic Experience

1. Sushant School of Art and Architecture, Sushant University, Gurugram

Roles & Responsibilities: Assistant Professor - School of Architecture and Planning July 2021-Ongoing

Working as a faculty in the school of Art and Architecture and have been involved in various studio exercises and teaching theory subjects across all five years.

- **Special Invitee, Board of Studies, School of Art and Architecture, Sushant University, Gurugram, Haryana, India.**
- **Core Committee member, Board of Studies, School of Art and Architecture, Sushant University, Gurugram, Haryana, India.**
- **B.Arch Programme Coordinator from 2021-Ongoing**
- Design Track Head
- Fourth Year Design Studio Coordinator
- ERP Coordinator
- Member of Exam Team

2. GD Goenka University, Sohna Road, Gurgaon

Roles & Responsibilities: Assistant Professor - School of Architecture and Planning June 2019-June 2021

Worked as a faculty in the school of Architecture and Planning and have been involved in various studio exercises and have taken up theory classes for various subjects in the curriculum.

3. Guru Nanak Dev University, Amritsar Punjab (July 2016 - May 2018)

Roles & Responsibilities: Assistant Professor (Faculty on Contractual Basis) - Department of Architecture Worked as a faculty in the department of Architecture and have been involved in various studio exercises and have taken up theory classes for the students through power point presentations.

4. Lovely Professional University, Punjab (August 2016 - November 2016)

Roles & Responsibilities: Visiting Faculty - Department of Architecture

Held a position of visiting faculty at the university and have carried out various lectures and studio activities with the students of the Architecture department.

Have also conducted various interactive sessions with the students during the studios and lectures through presentations and group discussions which helped them to enable proper learning of the topics taught.



Professional Experience

1. Architect Mohinderjit Singh and Associates, Amritsar Punjab

An architectural firm dealing with various projects related to residential, commercial, institutional buildings in Punjab.

Roles & Responsibilities: Junior Architect (May 2018-Nov 2018) and Part time Architect (July 2016-July 2018)

Worked on various projects including residential, commercial and school buildings. Was involved with designing, preparation of working drawings and execution of work onsite.

2. Jogendra Dutt Sharma & Sons (December 2015- May 2016)

JDS is a company established in Gurgaon, Haryana carrying out various residential, commercial and public buildings in and around Delhi NCR.

Roles & Responsibilities: Consulting Architect and Interior Designer

Project undertaken and ongoing projects:

- a. *D-71, Kalkaji New Delhi - Was involved in the ongoing residential project of the company comprising Stilt + 4 structure in Southern Part of Delhi. Carried out various architectural concept design, interior designing of the floors and procurement of the finishing items for the project.*
- b. *J-3/17, Ground Floor, DLF City-2, Gurgaon, Haryana- An ongoing residential interior designing project carried out by JDS Group, involved in the refurbishment and renovation of the floor as per the modern amenities and interior specifications.*
- c. *Shankar Vidya Kendra- Sector 42 Gurgaon, Haryana- Involved in freelancing architectural concept and design for a temple building at Gurgaon. Involved in concept design of the office and the basement block of the project carried out by the JDS Group.*

Internship

i) **Name of the Organization:** HUDCO, Indian Habitat Centre Office, New Delhi (May 2014- June 2014 -6 weeks of Internship)

Project Name:

- a. *Research Project on Draft Slum Free City Plan for the city of Panchkula, Haryana*
- b. *Presentation on AMRUT one of the three housing schemes launched*
- c. *Unpublished research paper on ' Appraisal of Rajiv Awas Yojayana (RAY)*

Position held: Summer intern

ii) **SAAKAAR FOUNDATION, Chandigarh (June 2012- December 2012)**

An architectural firm dealing with various projects related to residential, commercial, institutional buildings all across India.

Project Name:

- a. *Multipurpose Hall at Gangtok, Sikkim - Was involved in the design proposal for the project and also the working drawings for the project which included the start to execution drawings.*



- b. *Mother and Child Care Hospital, Bathinda, Punjab- Was involved in the architectural drawings of the project which included the detailed working drawings.*
- c. *Rural Stadium, Gayong, Yangyang South Sikkim - Was involved in the architectural drawings of the project which included the detailed working drawings.*

Position held: Intern

Masters of Planning (Housing) Degree Academics Activities

PART 1: OUTLINE DEVELOPMENT PLAN, BANSWARA, Rajasthan, India

To study various development aspects for preparation of outline development plan for Banswara.

- a. *To study the existing status of the city*
- b. *To study the trends in respective sectors*
- c. *To identify problems, potentials and issues related to various developmental aspects*
- d. *To evolve development policies for preparation of outline development plan for Banswara Town*

PART 2: HOUSING OPTIONS AND STRATEGIES FOR GUWAHATI, ASSAM

To study the housing scenario and its influencing development aspects to prepare a comprehensive housing development strategy in Guwahati.

- a. *To study the existing status of the city and its development aspects*
- b. *To study the trends of respective sectors and its impact of housing*
- c. *To identify various issues in the housing sector and the housing shortage*
- d. *To project the future scenario of the housing needs and demand*
- e. *Preparing alternative scenario for housing development by proposing housing strategy for the year 2025*

PART 3: HOUSING PROJECT FORMULATION AND DESIGN IN KOLKATA, WEST BENGAL

To formulate and deliver a design solution to an existing site location of TATA Housing at BT Road located in Kolkata, an appropriate housing design for the site and possible solution to be formulated along with financial feasibility.

PART 4 THESIS: HOUSING OPTIONS FOR SLUM DWELLERS IN THE CITY OF LUDHIANA, PUNJAB, INDIA

To study the housing condition of slums of Ludhiana city in Punjab for developing various housing options for the slum dwellers of the city.

Research Interest

- a. **Best paper presentation award for paper titled "Sustainable Urban Planning and Climate Change: Adaptation and Mitigation Strategies in India" in the 7th International Conference of Contemporary Affairs in Architecture and Urbanism organized by Alanya University, Alanya, Antalya, Turkey. (24th May, 2024)**
- b. **Presented a paper titled "Sustainable Urban Planning and Climate Change: Adaptation and Mitigation Strategies in India" in the 7th International Conference of Contemporary Affairs in Architecture and Urbanism organized by Alanya University, Alanya, Antalya, Turkey. (24th May, 2024)**



- c. Presented a paper titled **“Housing Strategies For Slum Dwellers Of Ludhiana City Under PMAY”** in 2nd International Conference on **“Trends in Architecture & Construction” (ICTAC-2024)** organised by the University Institute of Architecture in collaboration with Università degli Studi di Firenze - UniFI and Xi'an Jiaotong-Liverpool University - XJTLU at Chandigarh University, Gharuan, Mohali, India. (9th April, 2024)
- d. Presented a paper titled **“Strategies for Energy Neutral Housing in India”** in the International Conference (online) on **Climate Change, Disaster Management, and Environmental Sustainability** organized by Department of Geography, Faculty of Sciences, Jamia Millia Islamia, New Delhi. (21-22 Feb, 2024)
- e. Contributed a research paper titled **“Strategies for Disaster Resilient Vernacular Architecture in the Flood Prone Areas of Kosi Region, Bihar”** p.498. in International Journal of Technology Engineering Arts Mathematics Science published by AISSMS Institute of Information Technology, Pune. ISSN: 2583-1224
- f. Presented a paper titled **“Strategies for Disaster resilient Vernacular architecture in the flood-prone areas of Kosi Region, Bihar”** in the International Conference on Architecture and Planning - Education, Research & Profession: Past Present & Future organised by S. B. Patil College of Architecture & Design, Pune, India. ISSN 2583-1224 ISBN 978-81-962592-0-4
- g. Contributed a research paper titled **“An assessment Of Behavioral pattern for a Housing Society keeping view of the Public Perception and Psychology of Urban Open Space”** in the International Journal of Housing and Human Settlement Planning.1.Volume 9, Issue 1

Events Organized

- a. Session speaker for the FDP **‘Everyone Can Design’** a 5-day Online Faculty Development Program, organized by School of Art and Architecture, Sushant University, Gurugram. (8-12 July, 2024)
- b. Organized 5 days online training program on **Sustainable Architecture: Embracing Renewable Energy & Sustainable Practices** in collaboration with the Council of Architecture Training & Research Centre (COA-TRC) (18-22 March, 2024).
- c. Organized education tour for students of 4th and 3rd year to Singapore (2023) and Seoul, South Korea (2024)
- d. Organized 2 days National Conclave on the **“Future of Architecture Education in India post NEP 2020”** NCF AE-2023 in collaboration with the Council of Architecture and IIA Haryana Chapter at India International Centre, New Delhi (2-3 June, 2023).
- e. Organized 2 days International Conference on **“Advances in Multidisciplinary Research & Innovation”** (ICAMRI-2023) organised by Sushant University.
- f. Organized a guest lecture on the topic **“Weaving Design Education, Architecture and Technology”** by Prof. Paola, Director, The Design School, Arizona State University under the M.M. Rana Lecture Series 2 at Sushant University, Gurugram, Haryana, India.
- g. Organized a **Collaborative Workshop** of Lovely Professional University (LPU), Jalandhar and Sushant University at School of Art & Architecture, Sushant University, Gurugram.
- h. Session speaker for Webinar on Impacts of Pandemics on **“Architecture and Planning”** organized by School of Architecture and Planning, GD Goenka University, Gurgaon. (May 29, 2020)
- i. Organized CHINTAN 2020 **“Virtual Heritage”** annual event by School of Architecture and Planning, GD Goenka University on 29 Feb, 2020



- j. Organized field based workshop "Mapping Neighborhood-Sohna, Gurgaon" organized by School of architecture and planning, GD Goenka University in collaboration with Ambedkar University from 24 August-25 August 2019.

Workshops, FDPs and events

- a. Participated in a 5 day online Faculty Development program on "Everyone Can Design" organized by School of Art and Architecture, Sushant University, Gurgaon. (8-12 July, 2024).
- b. Participated in the 4 day residential training on Net Shunya: An Ecosystem Approach for Decarbonizing the Built Environment organised by Centre for Science and Environment, India from at Anil Agarwal Environment Training Institute (AAETI), Nimli, Rajasthan. (12-15 March, 2023)
- c. Participated in Five Day Workshop (Hybrid Mode) on "Solar Passive Architecture and Thermal Comfort" held on April 10-14, 2023 by Department of Architecture and Planning, National Institute of Technology, Patna
- d. Participated in a Two Day Training Programme on "Energy Conservation and Building Code and Eco Niwas Samhita" held on March 14-15, 2023 at Sushant School of Art and Architecture by ECBC and ENS Cell Haryana.
- e. Participated in Two National Faculty Development Program "People Centric Approaches for Design of the Public Spaces" organised by Chitkara School of Planning and Architecture on 4-5 March 2022.
- f. Completed AICTE-ISTE approved refresher programme on "New Frontiers in Architecture Engineering and Construction" held during 21.2.2022-25.2.2022 organized by Thiagarajar College of engineering.
- g. Completed AICTE-ISTE approved refresher programme on "Teaching and Learning methods for Architectural Education" held during 6.1.2022-12.1.2022 organized by School of Architecture, central University of Rajasthan, Ajmer, Rajasthan
- h. Completed AICTE Training and Learning ATAL Academy FDP on "Universal Design Approach for Built Environment" from 23 Aug 2021 to 27 Aug 2021 at Malviya National Institute of Technology, Jaipur.
- i. Completed Short Term Course on "Services in Large Scale Buildings" conducted by Indian Institute of Technology Kharagpur from 2 July 2021 to 4 July 2021.
- j. Certificate of participation in Two Day National Online on "Pedagogy of Construction in Architectural Education" organised by Council of Architecture Training and Research Centre, Bhopal from 23 July 2021-24 July 2021
- k. Certificate of participation in Two Day National Online on "Entrepreneurship in AEC Sector" organised by Council of Architecture Training and Research Centre, Bhopal from 21 May 2021-22 May 2021
- l. Certificate of participation for organizing CHINTAN 2020 "Virtual Heritage" annual event hosted by School of Architecture and Planning, GD Goenka University on 29 Feb, 2020
- m. SWAYAM ARPIT COURSE CERTIFICATION-Successfully completed Arpit course for career advancement scheme promotion "Emerging Areas in Hospital Planning, Design and Facilities Management" in the proctoral examination held on 16 February 2020.
- n. Participated as one of the speakers in webinar "Impact on Pandemics in Architecture and Planning" conducted by GD Goenka University on 29 May, 2020.
- o. Participated in the Faculty Development Programme "Researching teaching in Architectural



Education” organized by Aalim Muhammed Salegh Academy of Architecture, Chennai from 6 May- 9 May 2020.

- p. Certificate of participation in field based workshop **”Mapping Neighborhood-Sohna, Gurgaon”** organized by School of architecture and planning, GD Goenka University in collaboration with Ambedkar University from 24 August-25 August 2019.
- q. Participated in **National Housing Conference -2019** held on 31 may,2019 at SPA, New Delhi
- r. Certificate of participation in **3 day training programme “ Green Sense: Sustainability and Reformative Practices”** conducted by **Centre for Science and Environment (CSE)** from 16 January- 18 January 2018 held at Guru Nanak Dev University, Amritsar
- s. Participated in a **three day capacity building training programme on awareness of Punjab Energy Conservation Building Code (ECBC)** on 4 July -6 July 2018 held at Guru Nanak Dev University, Amritsar
- t. Participated in a **one day capacity building training programme on awareness of Punjab Energy Conservation Building Code (ECBC)** on 12 February 2018 held at Guru Nanak Dev University, Amritsar
- u. Have attended certified **GIAN(Global Initiative for Academic Networks)- “Histories of City Planning”** from 11 December- 15 December 2017 held at Guru Nanak Dev University, Amritsar
- v. Certificate of participation in **2 day training programme “Framework for Sustainable Development”**conducted by **Centre for Science and Environment (CSE)** from 10 August- 11 August 2017 held at Guru Nanak Dev University, Amritsar
- w. Certificate of participation in training programme **“Green Sense:Sustainability Guidelines in Built Environment”** conducted by **Centre for Science and Environment (CSE)**, on 27 March,2017 held at Guru Nanak Dev University, Amritsar
- x. Have attended **Certified GRIHA-3 Day Training Professional Program** held in New Delhi, 11 April-13 April,2015
- y. Held certificate of appreciation for **Housing Project Formulation in Master’s degree** by **TATA Housing Group**
- z. Submitted Design Concepts for Zonal NASA, 2010-2011

Extra-Curricular activities

- a. Represented School in CBSE National Level Badminton in the year 2006.
- b. Represented School in various painting competitions and Public Speaking Competitions.

Softwares

- a. Good with MS Office- MS Word, MS Excel and MS PowerPoint;
- b. Software proficiency with AUTODESK 3ds Max and Vray Basics
- c. Google Sketchup (Basics)
- d. Adobe Photoshop Cs5
- e. AUTODESK AutoCAD 2D and 3D

Languages

- a. Fluent in English, Hindi, Punjabi



PROFORMA FOR SUBMISSION OF SEED FUND PROPOSAL

Part I: General Information

1. Project Title (should be focused not exceeding 15 words): Grid connected moveable Roof Top and Building Integrated Solar Photovoltaics with solar tracking and IoT based Monitoring System.
2. i. Name of Principal Investigator: Md Shahroz Alam
ii. Name of Co-Investigator: Kiran Singh
3. Collaboration if any, give details of institution(s):
4. Any Project(s) previously sanctioned by any funding agency? If yes give the details:

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)

5. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues? Not required
6. Duration (months): 1 Year
7. Enclose the following while submitting the application form:

Duly filled application form (complete with all Annexures)- 2 hard copies	
Bio-data of the PI & Co-I -2 copies	



Part II: Proposal Summary

1. Origin of the Proposal: (Maximum 1 page)

(Scientific/Technical rationale for doing this work should be elaborated)

It is to support the PhD research on the topic design of Positive Energy Sustainable Neighbourhood in Composite Climate Zone, (A Case of Gurugram, India). This project can be further useful to other PhD candidates who are working on similar topics like Sustainability, Solar Photovoltaics, Zero Energy Building, Net Zero Building, as well as to the students of Engineering and Architecture students. This project can be part of the Buildign Services track where students can explre the solar photovoltaics anf its use. Many students participate in design competitions which are now adays aligned to sustainability and can help them as well.

2. Objectives (Only 4-5 focused one that can be observed, measured or clearly assessable)

i.	Develop an integrated system for movable rooftop solar panels and building-integrated solar photovoltaics with advanced solar tracking capabilities.
ii.	Investigate the feasibility of implementing solar tracking technology to enhance energy generation and efficiency.
iii.	Conduct surveys and interviews with users and stakeholders to understand their experience with the system and gather feedback for improvements.
iv.	Establish a comprehensive data collection framework to monitor system performance and energy generation in real-time.
v.	Develop educational materials and outreach programs to raise public awareness about the benefits of grid-connected movable solar technology and the importance of renewable energy.

3. Review of status of Research and Development in the subject

3.1 International Status: (Maximum 2 pages)

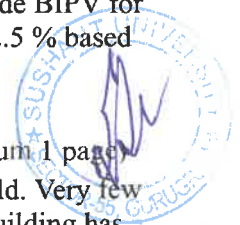
A research was carried out by a group of academicians from Cyprus on the topic Alternative Energy Solutions Using BIPV in Apartment Buildings of Developing Countries. Research was done using a model proposed for BIPV integration in apartment buildings. The results derived from the survey data suggest that consumers prefer a price lower than 4500 for a 3 kWp integration of solar power equipment to their apartments. (Ugochukwu Kenechi Elinwa, Mehrshad Radmehr, John Emmanuel Ogbaba, 2017).

3.2 National Status: (Maximum 1 page)

A research was carried out by a group of academicians from IIT Kharagpur on the topic Assessment of building energy performance integrated with solar PV: Towards a net zero energy residential campus in India. The study showcases that integration of façade BIPV for low-rise residential buildings increases the system energy production to up to 62.5 % based on the utilized surface area for active PV.

3.3 Importance of the proposed project in the context of current status (Maximum 1 page)

BIPV (Building Integrated Photovoltaics) is very new to India and even the world. Very few buildings have been designed considering the BIPV system. In India only one building has been designed with BIPV system and that too is a Data centre and it's usage is very different from the residential buildings. Gurgaon lies in the Composite Climate Zone whereas the designed building is in the Mumbai which lies in Warm and Humid climate zone. Experimental data in Indian context is missing.



4. Work Plan:

4.1 Methodology: (Maximum of 5 pages)

For integrated system various devices are required which needs to be procured like Solar Modules, Bulding Integrated Modules, Tracking Devices, Grid supported Inverter, monitoring device, etc.

Feasibility of implementing the solar tracking technology will be done by monitoring the results on hourly and daily basis and then comparing the data with non solar tracking modules.

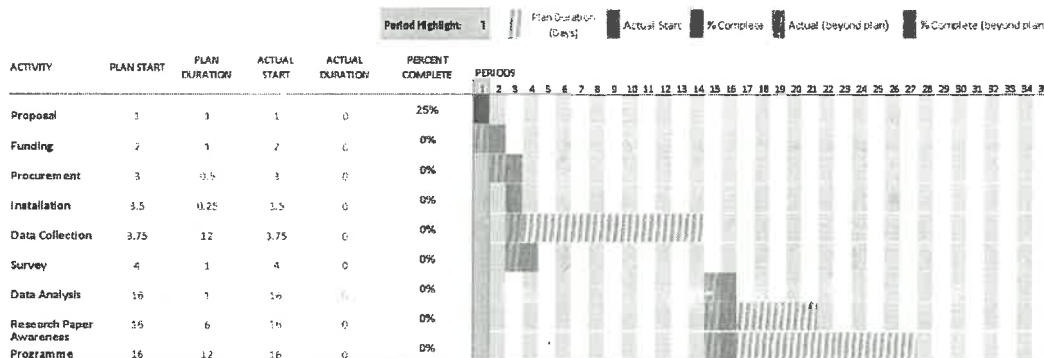
Conduct surveys and interviews with users and stakeholders to understand their experience with the system and gather feedback for improvements. Household survey will be conducted in the houses having solar photovoltaics installed and analyse the result.

Real time data will be connected using the monitoring device and accordingly system performance can be monitored.

It can lead to the research papers or the book as well as outreach programs to create awareness among students of different schools of Sushant University as well as students from other schools outside Sushant University.

4.2 Time Schedule of activities giving milestones through Gantt Chart. (Maximum 1 page)

Grid connected moveable Roof Top and BIPV with solar tracking and IoT based Monitoring System



5. Expertise:

5.1 Expertise available with the investigators in executing the project: (Maximum 1 page)

Investigator, Md Shahroz Alam is perusing PhD on the topic “design of positive energy sustainable neighbourhood in composite climate zone (a case of Gurugram, India)” and has completed the course work.

Co-investigator, Kiran Singh is also pursuing PhD on the topic “Policy framework for Energy Neutral housing under PMAY-Urban”.

5.2 Bibliography

Bano, F., & Sehgal, V. (2018). Evaluation of energy-efficient design strategies: Comparison of the thermal performance of energy-efficient office buildings in composite climate, India. In *Solar Energy*

(Vol. 176, pp. 506–519). Elsevier Ltd. <https://doi.org/10.1016/j.solener.2018.10.057>
 Elinwa, U. K., Radmehr, M., & Ogbeba, J. E. (2017). Alternative energy solutions using BIPV in apartment buildings of developing countries: A case study of North Cyprus. *Sustainability (Switzerland)*, 9(8). <https://doi.org/10.3390/su9081414>
 Panicker, K., Anand, P., & George, A. (2023). Assessment of building energy performance integrated with solar PV: Towards a net zero energy residential campus in India. *Energy and Buildings*, 281, 112736. <https://doi.org/10.1016/J.ENBUILD.2022.112736>
 Zanelli, A., & Freitas, S. (2019). *BIPV Design and Performance Modelling: Tools and Methods BIPV Design and Performance Modelling: Tools and Methods IEA PVPS Task 15 Subtask E-Demonstration*.

6. List of facilities required from Sushant University for the project implementation.

6.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	Yes (sharing)
2.	Water & Electricity	Yes
3.	Laboratory Space/ Furniture	Yes (sharing)
4.	Power Generator	No
5.	AC Room or AC	No
6.	Telecommunication including e-mail & fax	Yes
7.	Transportation	Yes
8.	Administrative/ Secretarial support	Yes
9.	Information facilities like Internet/Library	Yes
10.	Computational facilities	Yes
12.	Any other special facility being provided	Roof Area for BAPV and Building Façade for BIPV

6.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group	Not Available		
PI's Department	Not Available		
Other Institute(s) in the region			

6.3 Total Budget (Rs. in Lakhs): 1.6 Lakhs

- Recurring Cost (Rs): electricity only
- Non-Recurring Cost (Rs): 1.6 lakhs



Sl.	Item	Budget			
		1 st Yr	2 nd Yr	3 rd Yr	Total

No.					
A	Recurring 1. Manpower 2. Consumables 3. Travel 4. Field testing, Demo/ Training expenses (if applicable) 5. Contingencies/Other costs 6. Institutional Overheads* 7. Any other item				
B	Non-Recurring Permanent equipment Construction of work shed/structures Fabrication of prototype equipment	160403			
	Grand Total (A+B)				

A. Recurring:

1. Budget for Manpower

Sl. No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	Budget (Rs. in lakhs)			
					1 st Yr	2 nd Yr	3 rd Yr	Total

2. Budget for Consumables*

Sl. No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel

Sl. No.	Purpose	Budget (Rs. in lakhs)			
		1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Project logistics				
2.	Field activities				
3.	Review meetings (if elsewhere)				

4. Field Testing/ Demo/ Trainings*

Sl. No	Description of field testing/demos /trainings	No/Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Include material for technology field testing/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of

beneficiaries/training, duration of training days, cost /training).

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

B. Non-Recurring:

Budget for Permanent Equipment/ Workshed/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.	Solar Modules	5	68000
2.	Racking	5	51705
3.	Grid Connected Inverter	1	38499
4.	Bi Directional Meter	1	2199

7. Deliverables

Deliverable	Mark \checkmark	Brief description
Product development/adaptation		
Process development/adaptation		
Technology package for development of the project area and local community		
Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)		
Scientific knowledge and/or data generation leading to technology development in future		
Other (Please specify)		

8. Name and address of experts/ institution interested in the subject / outcome of the project.



Assistant Professor
Department of Architectural Engineering,
Nawroz University,
Duhok, Kurdistan Region of Iraq



- Ash. prof - ITI
B151, 3rd Floor, Abul Fazal Enclave,
Jamia Nagar, South Delhi - 110025
Mobile No: +91-852-774-1900
shahrozalam210@gmail.com

Career Objective

"Apart from gaining knowledge of current education legislation, practices and procedures, firstly my objective will be to build sound relationships with staff and pupils. Secondly utilizing my skill at gaining a clear understanding of a pupil's exact needs, and thirdly my commitment to safeguarding and promoting the welfare of children and young people at all times. "

Academic Qualification

Master of Architecture in Ekistics, 2017

Faculty of Architecture & Ekistics, Jamia Millia Islamia, New Delhi, India

Bachelor of Architecture, 2015

Faculty of Architecture & Ekistics, Jamia Millia Islamia, New Delhi

Academic Experience

2019-Present

2 yrs

-2021

Assistant Professor, Department of Architectural Engineering,
Nawroz University, Duhok, Kurdistan Region, Iraq

Roles and Responsibilities:

- Teaching: Architectural Design, History of Architecture, Housing and Planning, Environment and Acoustics, Computer Application (AutoCAD)
- Lecture Preparation with Voice and work with an online platform called Moodle, Studio Management, Preparing Course Book, Quiz, Student's Assessment, Question Bank, Invigilation and Evaluation.

2018-2019

1 year

Assistant Professor, University Institute of Architecture,
Chandigarh University, Mohali, Punjab, India

Roles and Responsibilities:

- Teaching: Architectural Design, Building Construction, Building Services, Traffic and Transportation, Vernacular Architecture, Architectural thesis
- Coordinator - International Relations
- Coordinator - Abdul Kalam Innovation Conclave
- Coordinator - Practical Training
- Class Counsellor - 3rd and 6th Semester
- Assisted in other departmental activities and extracurricular activities



2017-2018 - 1 year

Assistant Professor, School of Architecture,
Lingayas Vidyapeeth, Faridabad, Haryana, India

Roles and Responsibilities:

- Teaching: Architectural Design, Building Construction, Building Services, Computer Application, History of Architecture, Theory of Design
- Course Co-ordinator, 1st Year, M. Arch
- Member - Board of Studies (BOS)

2015-2017 - 2 years

Lecturer, IVS School of Design,
South Ext., New Delhi, India

Roles and Responsibilities:

- Teaching: Interior Design, Building Construction, Building Services, Computer Application
- Course Co-ordinator, B.Sc. in Interior Design
- Co-ordinator Examination
- Time Table In charge
- Academic Tour In charge

Professional Experience

2016-Present

Architect & Partner, Archkala Architects and Interior Designer,
New Delhi, India

Roles and Responsibilities:

- Client Meeting
- Concept Development
- Design Development
- Working Drawing
- 3D Modeling & Presentations

2017-2019

Freelance Architect, Buildcon Solutions,
Sarita Vihar, New Delhi

Projects Handled:

- Administrative Building of Wagon – POH Workshop at Dalmianagar, Bihar
- Design, Working Drawing
- D.G. Map Housing Project, Panagarh, Durgapur, West Bengal
- Proposal, Site Plan, Unit Layout

2015-2015

Architectural Intern, Design Bureau,
Lado Sarai, New Delhi

Work Profile: Design Development, 3D Modeling & Presentations, Working Drawing & Submission Drawings, Product Design



Architectural Project Works

Multispecialty Hospital, Bhatinda (150 Bed with Emergency and Day Care Unit)
Design Development, 3D Views

Apna Bazar Commercial Complex, Bihar, India
Concept, Design, Working Drawing

Azad Residency, Greater Noida, India
Working Drawing

Radio Mirchi Studio, Kolkata, India
Working Drawing

Administrative Building of Wagon – POH Workshop at Dalmianagar, Bihar
Design, Working Drawing

D.G. Map Housing Project, Panagarh, Durgapur, West Bengal
Proposal, Site Plan, Unit Layout

Renovation of NABARD Regional Office Building, Jaipur
Proposal, Presentation Drawing, Interior Layout

Hooda Residency, New Delhi (2 storey private residence)
Working Drawing, Detailing, 3D Views,

Commercial Office KEI, Okhla, New Delhi
Design Development, Working Drawing, 3D Views

Responsibilities And Achievements

2018

Involved in developing the Course Curriculum of M. Arch at Lingayas Vidyapeeth, Faridabad, Haryana, India

Faculty Coordinator, NASA Zonal Council Meet and Panel Discussion at Lingayas Vidyapeeth, Faridabad, Haryana, India

External Examiner, Sushant School of Art & Architecture, Gurugram, Haryana, India

External Examiner, MBS School of Architecture, Dwarka, New Delhi, India

2017

Co-ordinated a Seminar on Appropriate Building Technologies, Linagays Vidyapeeth, Faridabad, Haryana, India

Jury Member, ACETECH Grand Stand Awards, Pragati Maidan, New Delhi, India

Educational Tour in charge (McLeodganj), IVS School of Design, South Ext., New Delhi, India



2015-2017

Awarded **GATE Scholarship** for Post Graduate Studies in Ekistics, (Ministry of Human Resource Development, Government of India)

Research Interest

Mar 17-19, 2021

Presented a paper titled "**Loss of Vernacular Architecture in Kusmhi Village**" in the 8th International Seminar on Architecture for Masses on the theme of Architecture and Planning for Villages organised online by the Department of Architecture, Jamia Millia Islamia, New Delhi, Delhi, India in collaboration with Urban Village Charitable Trust.

Currently Working on **Social Infrastructure in Duhok Province, Kurdistan Region of Iraq** aiming to understand the scarcity of infrastructure in the Education and Health Sector.

Master's thesis on **Urban Segregation: A Case Study of Sangam Vihar, New Delhi, India**

Dissertation on **Regional Planning and Development of Kangra District, Himachal Pradesh, India**

Dissertation on **Space as Contested Domain, Study of Caste, Conflict & Development**

Extra-Curricular Activities (Seminars, Conferences, Workshops)

Events Organized

2018

International Workshop on The Planned City limits, Chandigarh organized by University Institute of Architecture, Chandigarh University, Mohali in collaboration with Universität Rovira I Virgili, Spain

Visit to Lodhi Road: Study of Contemporary City with M. Arch Students, Lingayas Vidyapeeth, Faridabad, India

Visit to Old Delhi: Study of Old City with M. Arch Students, Lingayas Vidyapeeth, Faridabad

Site Visit to under-construction Supernova, Noida. Study of Highrise Buildings (>300m)

2017

Seminar on Appropriate Building Technologies, Linagays Vidyapeeth, Faridabad

Workshop by Greenlam Laminates at IVS School of Design, South Ext., New Delhi

Workshop on HVAC at Hitachi, Ashok Vihar, New Delhi

Workshop on Tiles at Orient Bell Wall & Floor Tiles, Nehru Place New Delhi

Workshop on rugs and carpets at Jaipur Rugs, Near Sultanpur Metro Station, New Delhi

Workshop on Personality Development at IVS, School of Design, South Ext., New Delhi



Events Attended

2021

10-Hour **Green Building Training** – Sustainable Architecture Week from UGREEN - Green Building School

Participated in the **National Photography Exhibition** on the theme of Rural Life organized online by the Department of Architecture, Jamia Millia Islamia, New Delhi, Delhi, India in collaboration with Urban Village Charitable Trust

Participated in the webinar titled **Functioning of City** organized by ACT Chandigarh and Sakaar Foundation with support of Swiss Diplomatic Representations in India & Bhutan, Le Corbusier Foundation Paris and GOI, MOHUA

Participated in the webinar on **Energy Conservation & Energy Efficiency** organized by Punjab Energy Development Agency with support of Bureau of Energy Efficiency (BEE), GOI

2020

Participated in the **3rd International Conference on Recent Innovations in Engineering (ICRIE 2020)** organized by University of Duhok, College of Engineering, Kurdistan Region, Iraq

Participated in 3 Days Lecture Series of **International Conference on Re-Discovering Cities 2K20** organized by MM School of Architecture and Indian Institute of Architects, India

Participated in the **Webinar on Adopting Digital Methods for Teaching** conducted by Byndr

Participated in the **Webinar on Using Cambridge English Kahoot in online Teaching and Learning** conducted by Cambridge Assessment English, Cambridge, U.K.

Participated in **Webinar on Sustainable Infrastructure for Green Communities** conducted by ASHRAE, India

2019

Attended **5days Faculty Development Program, 2019** – Achieving Global Standards on Role of a teacher, E-Governance, Research Methodology, Stress Elimination, Mentoring and Value Inculcation organized by University Institute of Architecture, Chandigarh University, Mohali

2018

Participated in **International Workshop on The Planned City limits, Chandigarh** organized by University Institute of Architecture, Chandigarh University, Mohali in collaboration with Universitat Rovira I Virgili, Spain

Attended **One Day Lecture Series on Understanding Social Research in Architecture** conducted by Foundation for Evidence-Based Development in India (FEDI) at Jamia Millia Islamia, New Delhi

Attended **3days Faculty Development Program (FDP)** on Effective Teaching held at Lingaya's Vidyapeeth, Faridabad.

Attended **Confluence 2018 on Cities on the Horizon** conducted by Mahindra World City at The Oberoi, New Delhi



2017 and before

Attended 3days Workshop on **Design Thinking and Doing** by Observe Design at Startup Tunnel, Chhatarpur, New Delhi

Attended **Workshop on Zero Energy Building** in Techfest, IIT Mumbai

Attended **Architecture for Masses**, Faculty of Architecture, Jamia Millia Islamia, New Delhi

Attended **International Conference on Islamic Arts & Architecture**, Jamia Millia Islamia, New Delhi

Software Proficiency



Personal Information

Date of Birth: December 21, 1989

Languages: English, Hindi, Urdu

Interest Area: Reading, Travelling, Blogging, Local Guide – Google Maps

Personal Skills

Able to interact and form relationships with other professionals and agencies associated

Strong Behavior Management Skills

Ability to follow instructions and use initiative

Having a creative and critical thinking approach.

Able to work as part of a team.

Setting high expectations which inspire, motivate & challenge students



Declaration

I, Md Shahroz Alam, hereby, declare that the information mentioned above are true to the best of my knowledge.

Md Shahroz Alam

Md Shahroz Alam

Utilization Certificate

Certified that grant of **Rs 1,55,000/- (Rupees One Lakh Fifty Five Thousand Only)** sanctioned by the Center of Research and Development, Sushant University, vide letter no. **F.No.1/2023-2024/Seed Fund-Feb 24/21 Dated 9th February 2024** towards financial assistance for the project titled **“Grid connected moveable roof top and building integrated solar photovoltaics”** was utilized for the purpose for which it was sanctioned.


Financial expenditure incurred

S.no	Nature of expense	Proposed Expenditure	Expenditure incurred
1	Equipment	160403	155000
	Total	₹ 1,60,403	₹ 1,55,000

Principle Investigator



Accounts Officer



**Account & Finance Officer
Sushant University
Gurugram, Haryana**



PROFORMA FOR SUBMISSION OF SEED FUND PROPOSAL

Part I: General Information

1. Project Title (should be focused not exceeding 15 words): Model village development
2. i. Name of Principal Investigator: Mr. Mohd. Anees
ii. Name of Co-Investigator: Dr. Wills Thomas
3. Collaboration if any, give details of institution(s): Director Thomas and company Pvt.Ltd., Cofounder DESOL development management.
4. Any Project(s) previously sanctioned by any funding agency? If yes give the details:

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)
1.	N/A	N/A	N/A	N/A	N/A	N/A

5. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues? N/A
6. Duration (months):5 Years
7. Enclose the following while submitting the application form:

Duly filled application form (complete with all Annexures)- 2 hard copies	No
Bio-data of the PI & Co-I -2 copies	No

Part II: Proposal Summary

1. **Origin of the Proposal:** PhD Thesis
(Scientific/Technical rationale for doing this work should be elaborated)



Hybrid Public-Private Partnership Model Framework for Cluster Village Development in U.P

Introduction:

India needs model cluster villages to address the multifaceted challenges faced by its rural population, including poverty, lack of infrastructure, and limited access to basic services. These villages can provide a holistic and integrated approach to rural development, improving the lives of rural residents and contributing to the overall growth and well-being of the nation.

Scientific/Technical Rationale:

Rural Development: India has a significant rural population, and many rural areas lack access to basic infrastructure, education, healthcare, and employment opportunities. Model cluster villages can serve as catalysts for rural development by providing these essential services and improving the quality of life for rural residents.

Poverty Alleviation: By creating sustainable livelihood opportunities and improving access to education and healthcare, model cluster villages can help lift people out of poverty. This is particularly crucial in India, where a substantial portion of the population still lives in poverty.

Urban-Rural Migration: Many Indians migrate from rural areas to cities in search of better economic prospects. Developing model cluster villages can help reduce this urban migration by creating attractive living and working conditions in rural areas, which can help decongest overburdened urban centers.

Agricultural Productivity: Agriculture is a significant part of the Indian economy, and model cluster villages can promote modern farming practices, provide access to better seeds and technology, and improve post-harvest infrastructure, thereby increasing agricultural productivity and income for farmers.

Sustainable Development: Model cluster villages can be designed with a focus on sustainability, incorporating green technologies, renewable energy, and environmentally friendly practices to ensure that development is in harmony with the environment.

Cultural Preservation: Many rural areas in India are rich in cultural heritage. Model cluster villages can be designed to respect and preserve the cultural traditions serve.

Skill Development: Cluster villages can provide training and skill development opportunities for rural youth, allowing them to acquire skills that are in demand in emerging industries, which, in turn, can help boost employment and economic growth.

Government Initiatives: India has several government initiatives aimed at rural development, such as the Smart Village program and Pradhan Mantri Gram Sadak Yojana. Model cluster villages can align with these programs to maximize their impact.

Community Empowerment: These villages can promote community participation and empower local residents to make decisions about their own development, fostering a sense of ownership and pride in their communities.

Research and Learning Opportunities: Model cluster villages can serve as testing grounds for innovative approaches to rural development, which can be studied and replicated in other parts of the country

Proposed Solutions:

Developing a model village requires a comprehensive approach that addresses the various facets of rural development. Here are some proposed solutions for creating a model village in India:

Infrastructure Development:

Build and upgrade roads, bridges, and transportation facilities to improve connectivity to the village.

Provide reliable access to electricity and clean water. develop efficient sanitation systems and waste management infrastructure.

Education and Skill Development:

Establish schools with modern facilities and qualified teachers. Offer vocational training programs to equip residents with employable skills. Create community learning centers to promote lifelong education.

Healthcare Services:

Set up healthcare centers and clinics to provide primary care and preventive health services. Ensure the availability of essential medicines and medical staff. Conduct health awareness campaigns to promote better health practices.

Agricultural Development:

Promote modern and sustainable farming practices. Provide access to high-quality seeds, fertilizers, and agricultural machinery. Establish agro-processing units to add value to agricultural products.



Livelihood Diversification:

Encourage alternative income sources such as small-scale industries, handicrafts, and agri businesses.

Promote entrepreneurship and access to microfinance for small business development.

Renewable Energy:

Install renewable energy sources like solar panels to provide a stable source of electricity.

Promote energy-efficient technologies for lighting and cooking.

Digital Connectivity:

Ensure internet connectivity to facilitate access to information, e-governance, and online education.

Encourage digital literacy and technology training.

Environmental Sustainability:

Promote eco-friendly practices such as rainwater harvesting and organic farming. Create green spaces and tree plantations for environmental conservation.

Community Empowerment:

Establish local self-governance structures to involve residents in decision-making. Promote community-based organizations and cooperatives.

Women's Empowerment:

Support women's self-help groups and initiatives for economic empowerment. Promote gender equality and women's participation in village governance.

Cultural Preservation:

Preserve and celebrate local culture and traditions. Create cultural and heritage centers to showcase the community's history.

Microfinance and Banking Services:

Ensure access to microfinance and banking services to promote savings and financial inclusion.

Waste Management:

Implement waste segregation and recycling practices. Promote cleanliness and hygiene in the village.

Research and Monitoring:

Establish a monitoring and evaluation framework to assess the impact of development initiatives.

Encourage research and documentation of successful practices for knowledge sharing.

Public-Private Partnerships:

Collaborate with private sector organizations for investments and expertise. Leverage government schemes and funding for rural development.

Sustainable tourism:

Promote rural tourism to generate income and showcase the village's culture and natural beauty.

Participatory Planning:

Engage the community in the planning and implementation of development projects.

Access to government Schemes:

Ensure that residents are aware of and have access to government welfare and development schemes.

Creating a model village is a long-term and collaborative effort that involves various stakeholders, including government agencies, NGOs, local communities, and private sector partners. The key is to develop a holistic approach that addresses the unique needs and aspirations of the village while ensuring sustainability and inclusivity.

Expected Outcomes:



Improved Quality of Life:

Access to better healthcare, education, and sanitation facilities leads to an enhanced quality of life for residents. Reduced poverty and improved income-generating opportunities contribute to an improved standard of living. Adequate infrastructure and services, including clean water and electricity, enhance daily life and overall well-being.

Sustainable Economic Growth:

The development of livelihood opportunities in agriculture, small industries, and services can lead to increased income and economic stability. Diversification of income sources and access to microfinance empower residents economically. Economic growth can lead to reduced out-migration to urban areas, keeping families together and fostering community growth.

Community Empowerment and Inclusivity:

Engagement in decision-making processes and community development projects empowers residents to take ownership of their village's development. The involvement of women and marginalized groups in economic and governance activities promotes inclusivity and gender equality. Stronger social cohesion and community networks foster a sense of belonging and shared responsibility.

Environmental and Cultural Preservation:

Sustainable practices in agriculture, energy, and waste management promote environmental conservation. Preservation and celebration of local culture and traditions maintain the community's unique identity. Sustainable tourism initiatives can generate income while highlighting the village's cultural and natural heritage.

Conclusion:

The proposed development would contribute to holistic rural development, which, in turn, can serve as a model for other villages, promoting a ripple effect of progress and improved living standards across the country.

2. Objectives (Only 4-5 focused one that can be observed, measured or clearly assessable)

<ul style="list-style-type: none"> ● Enhance livelihood opportunity: Create sustainable income-generation opportunities for residents, promoting economic growth and reducing poverty within the village
<ul style="list-style-type: none"> ● Improve Access to Basic Services: Ensure access to quality education, healthcare, clean water, sanitation, and electricity, thereby enhancing the overall well-being of the community.
<ul style="list-style-type: none"> ● Foster Community Empowerment: Empower residents to actively participate in community decision-making and development initiatives, promoting self-reliance and inclusivity.
<ul style="list-style-type: none"> ● Promote Environmental Sustainability: Implement environmentally friendly practices, such as renewable energy and waste management, to ensure long-term environmental sustainability while preserving the cultural heritage of the village.

3. Review of status of Research and Development in the subject

3.1 International Status: (Maximum 2 pages)

(Researchers working in the area worldwide and their contributions must be properly highlighted with recent references and reviews. A correct and faithful description of the international research status must be given)



Maruf Ahmad (1988) is a rural development practitioner. At present, he is a Ph.D. fellow in 'Public Administration' of Xi'an Jiaotong University, China

References: - Public-Private Partnership a New Avenue for Rural Development
Ueli Scheuermeier- Rural African Ventures Investments · Management

References :-Public Private Partnerships for Rural Development. Some views based on concrete experiences so far

3.2 National Status: (Maximum 1 page)

(Same as above to cover the contribution of Indian Scientists in the project area)

- a) **Ssi Kanth .N** received his B. Tech degree in Civil Engineering from Chalapathi Institute of technology, A.P
- b) **Dr. Naga Chaitanya Kavuri**, working as an Assistant Professor in Department of Civil Engineering at Koneru Lakshmaiah Education Foundation A.P
- c) **Amir Ullah-** Ram Ratan Singh College, Patliputra University

3.3 Importance of the proposed project in the context of current status (Maximum 1 page)

(Highlight what is the new area or gap which will be solved in the project in relating to what is already known. This is a very important section to project the novelty content of the proposal)

Novel Contribution: Developing a model cluster village is a complex and multifaceted process that involves various aspects of planning, design, and implementation

Model villages prioritize comprehensive development, encompassing education, healthcare, infrastructure, and economic opportunities, fostering a holistic approach to rural progress. These projects encourage active participation by residents in shaping their community's future, promoting a sense of ownership and accountability. Novel approaches to livelihood diversification and skill development contribute to economic sustainability and self-reliance, reducing dependency on external sources. Model villages often include initiatives that empower women and promote gender equality, offering women opportunities for leadership and economic independence. Special attention is given to marginalized groups, ensuring that they benefit from development programs and are integrated into the community fabric. The incorporation of technology in areas like agriculture, education, and communication enhances the village's access to information and global markets. Innovative practices in renewable energy, waste management, and agriculture promote environmental sustainability, preserving the village's natural resources.

1. Rural Development: Fostering Prosperity in the Heartland

Rural development is an essential component of any nation's progress, as it focuses on improving the quality of life and economic opportunities in rural areas. In a world increasingly characterized by urbanization, rural development remains a critical concern, as a significant portion of the population still resides in rural regions. This endeavor aims to address the unique challenges faced by rural communities while harnessing their inherent potential for growth and sustainability.

2. The Role of Government and Civil Society:

Rural development is a shared responsibility among government agencies, civil society organizations, and local communities. Government policies and programs, such as rural employment schemes, agricultural subsidies, and infrastructure development, are vital. Meanwhile, civil society organizations



often fill gaps by providing support, promoting awareness, and fostering community participation.

3. Sustainable Rural Futures:

Rural development is not merely about uplifting villages in the present; it's about securing sustainable and prosperous rural futures. This means investing in education, healthcare, environmental conservation, and economic opportunities. It's about empowering rural communities to be the architects of their own destiny, creating resilient and self-sustaining villages that contribute significantly to a nation's overall development. In achieving this, rural development is both a mission and a journey, as it aspires to bring prosperity to the heartland, ensuring that no one is left behind in the progress of our world.

4. Work Plan:

4.1 Methodology: (Maximum of 5 pages)

(It should contain all the details of how each of the objectives will be addressed. This section must be detailed and have clear plans, not vague and generalized statements. It should have several schemes, tables, figures, equations etc. in addition to text, explanation and justification of why the project research plan will work)

Justification of the Methodology:

The proposed methodology for developing a Hybrid Public-Private Partnership Model Framework for Cluster Village Development in Uttar Pradesh involves several key steps:

Needs Assessment and Stakeholder Engagement: Begin by conducting a comprehensive needs assessment in collaboration with local communities and relevant stakeholders to identify the specific requirements and challenges of the target villages.

Literature Review and Best Practices Analysis: Conduct a thorough review of existing literature and best practices in cluster village development and public-private partnerships to inform the framework's design.

Feasibility Study: Assess the feasibility of various public-private partnership models by considering factors such as financing, resource allocation, and legal frameworks.

Model Framework Development: Design a Hybrid Public-Private Partnership Model Framework that outlines the roles, responsibilities, and contributions of both public and private entities in cluster village development, with a focus on sustainability and inclusivity.

Pilot Implementation: Select a representative cluster of villages in Uttar Pradesh to pilot the framework, implementing development initiatives and monitoring progress to refine the model.

Stakeholder Workshops and Capacity Building: Organize workshops and capacity-building sessions for both public and private sector stakeholders to enhance their understanding of the framework and ensure effective implementation.

Performance Metrics and Evaluation: Develop key performance indicators to measure the success of the hybrid model in terms of economic growth, infrastructure development, social inclusion, and environmental sustainability.

Policy and Legal Framework Alignment: Ensure that the framework aligns with existing state and national policies and legal structures, and propose any necessary amendments or adjustments.

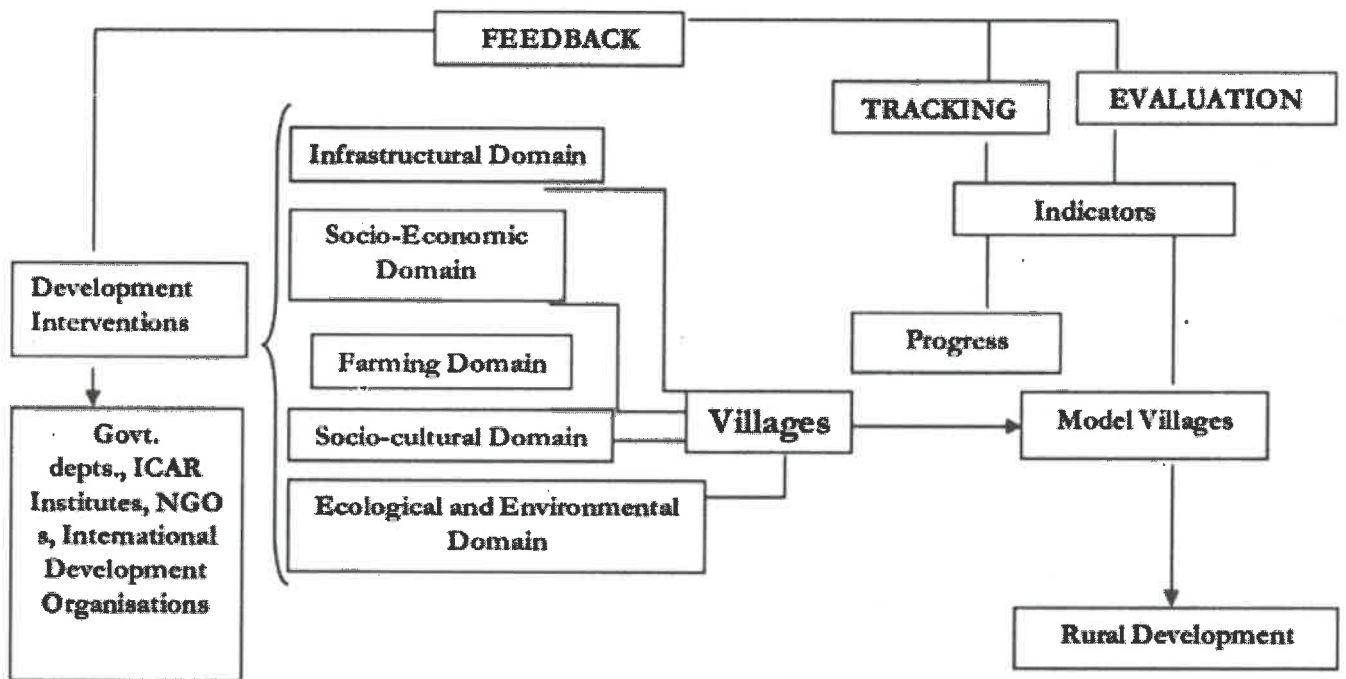
Documentation and Knowledge Sharing: Create comprehensive documentation of the framework, lessons learned from the pilot, and best practices to facilitate knowledge sharing and replication in other regions.

Monitoring and Continuous Improvement: Continuously monitor and evaluate the implementation of the Hybrid Public-Private Partnership Model Framework, making adjustments as needed to optimize its effectiveness and sustainability in cluster village development in Uttar Pradesh.

This methodology aims to provide a structured and adaptable approach to cluster village development,



leveraging the strengths of both the public and private sectors to drive sustainable and inclusive progress in rural communities.



Methodology to perform rural development analysis



4.2 Time Schedule of activities giving milestones through Gantt Chart. (Maximum 1 page)

Gantt chart for a rural development project spanning five years:

Year 1:

Quarter 1 (Months 1-3):Needs Assessment

Stakeholder Engagement

Literature Review

Quarter 2 (Months 4-6):Feasibility Study

Framework Design

Quarter 3 (Months 7-9):Pilot Selection

Capacity Building Workshops

Quarter 4 (Months 10-12):Pilot Implementation

Progress Monitoring

Year 2:

Quarter 1 (Months 13-15):Stakeholder Workshops

Performance Metrics Development

Quarter 2 (Months 16-18):Legal Framework Alignment

Policy Assessment

Quarter 3 (Months 19-21):Pilot Evaluation

Documentation

Quarter 4 (Months 22-24):Knowledge Sharing Initiatives

Framework Refinement

Year 3:

Quarter 1 (Months 25-27):Expansion Planning

Stakeholder Engagement

Quarter 2 (Months 28-30):Scale-Up Activities

Monitoring and Evaluation

Quarter 3 (Months 31-33):Policy Advocacy

Knowledge Sharing Workshops

Quarter 4 (Months 34-36):Documentation and Reporting

Framework Enhancements

Year 4:

Quarter 1 (Months 37-39):Scaling Pilot Initiatives

Performance Analysis

Quarter 2 (Months 40-42):Stakeholder Feedback Gathering

Policy Alignment



Quarter 3 (Months 43-45):Continuous Improvement
Resource Mobilization

Quarter 4 (Months 46-48):Expanded Pilot Implementation
Monitoring and Evaluation

Year 5:

Quarter 1 (Months 49-51):Final Evaluation
Sustainability Planning

Quarter 2 (Months 52-54):Knowledge Dissemination
Framework Consolidation

Quarter 3 (Months 55-57):Closing Workshops
Policy Impact Assessment

Quarter 4 (Months 58-60):Project Conclusion
Final Reporting

Throughout the Project: Regular meetings, progress reviews, and adjustments to the project plan based on ongoing data and community feedback. Continuous stakeholder engagement and communication with residents, business owners, and policymakers.

This Gantt Chart provides a general overview of the project's timeline, **with quarter at critical point** throughout the five-year period. However, the actual scheduling may vary based on project-specific factors, available resources, and local conditions. Regular monitoring and adjustments are essential to ensure the project's success.

5. Expertise:

5.1 Expertise available with the investigators in executing the project: (Maximum 1 page)
(Professional expertise existing with each of the investigators in terms of publications, Patents and preliminary results, to execute every component of the proposal should be highlighted)

N/A

5.2 Bibliography

N/A

6. List of facilities required from Sushant University for the project implementation.

6.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	Yes
2.	Water & Electricity	Yes
3.	Laboratory Space/ Furniture	No
4.	Power Generator	Yes
5.	AC Room or AC	Yes
6.	Telecommunication including e-mail & fax	Not required Full or sharing basis



7.	Transportation	Yes
8.	Administrative/ Secretarial support	Yes
9.	Information facilities like Internet/Library	Yes
10.	Computational facilities	Yes
12.	Any other special facility being provided	N/A

6.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group	N/A	N/A	N/A
PI's Department	N/A	N/A	N/A
Other Institute(s) in the region	N/A	N/A	N/A

6.3 Total Budget (Rs. in Lakhs): One lakh sixty three thousand only (163000/-)

- Recurring Cost (Rs): **One lakhs only (100000/-)**
- Non-Recurring Cost (Rs): **Sixty three thousand only (63000/-)**

Sl. No.	Item	Budget					Total
		1 st Yr	2 nd Yr	3 rd Yr	4 th Yr	5 th Yr	
A	Recurring	250000	25000	25000	20000	5000	100000
	1. Manpower						
	2. Consumables						
	3. Travel						
	4. Field testing, Demo/ Training expenses (if applicable)						
	5. Contingencies/Other costs						
	6. Institutional Overheads*						
	7. Any other item						
B	Non-Recurring	10000	15,000	15,000	20,000	3000	63000
	Permanent equipment						
	Construction of work shed/structures						
	Fabrication of prototype equipment						
	Grand Total (A+B)						1630000/-



A. Recurring:

1. Budget for Manpower

Sl. No.	Designation	No	Qualification & experience	Monthly emolument (Rs)	Budget (Rs. in lakhs)					
					1 st Yr	2 nd Yr	3 rd Yr	4 th Yr	5 th Yr	Total
1.	Project Manager	1	M.B.A	40	4,800	4,800	4,800	4,800	4,800	2,4000
2.	Urban Planner/Environmental Scientist	1	Urban Planner	20	2,400	2,400	2,400	2,400	2,400	1,2000
3.	Climate Scientist	1	Scientist	30	3,600	3,600	3,600	3,600	3,600	1,8000
4.	Environmental Engineer	1	Engineer	20	2,400	2,400	2,400	2,400	2,400	1,2000
5.	Healthcare Professionals/Public Health Expert	1	M.S.W	15	--	--	--	1,800	--	1,800
6.	Data Analyst/Statistician	1	B.Com	10	--	1,20,000	--	1,20,000	--	2,4000
7.	Community Outreach Coordinator	1	M.S.W	10	1,20,000	1,20,000	--	--	--	2,400
8.	Regulatory Expert/Legal Advisor	1	L.L.B	10	1,20,000	1,20,000	--	--	--	2,400
9.	Landscape Architect	1	Ph.D. in Architecture	30	--	3,60,000	--	3,60,000	--	7,200
10.	GIS Specialist	2	G.I.S	60	7,20,000	7,20,000	--	--	--	1440
11.	Research Assistants	2	Master in Architecture.	20	2,40,000	2,40,000	--	2,40,000	--	7,200

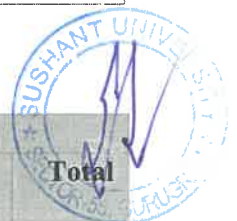
2. Budget for Consumables*

Sl. No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)					Total
			1 st Yr	2 nd Yr	3 rd Yr	4 th Yr	5 th Yr	
1.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel

Sl. No.	Purpose	Budget (Rs. in lakhs)					Total
		1 st Yr	2 nd Yr	3 rd Yr	4 th Yr	5 th Yr	
1.	Project logistics	1,000	1,000	1,000	1,000	1,000	5,000
2.	Field activities	2,000	2,000	2,000	2,000	2,000	8,000
3.	Review meetings (if elsewhere)	1,000	1,000	1,000	1,000	1,000	5,000



4. Field Testing/ Demo/ Trainings*

Sl. No	Description of field testing/demos /trainings	No/Yr	Budget (Rs. in lakhs)					Total
			1 st Yr	2 nd Yr	3 rd Yr	4 th Yr	5 th Yr	
1.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Include material for technology field testing/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of beneficiaries/training, duration of training days, cost /training).

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)					Total
			1 st Yr	2 nd Yr	3 rd Yr	4 th Yr	5 th Yr	
1.	Computer	4	1,3000	--		--		1,3000
2.	Secretarial assistance	1	3000		3000	3000	1,30000	10300
3.	Documentation	2	--	1,00,000	50,000	1,00,000		2,000
4.	Cost of technology transfers/acquisitions	1	50,000	50,000	1,00,000	50,000		1,500
5.	Lab/field trials	N/A	N/A	N/A		N/A		N/A
6.	Maintenance/servicing of equipment	1	70,000	70,000	50,000	70,000		2,100
7.	Incidental expenses	1	40,000	40,000	70,000	40,000		1,200

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

B. Non-Recurring:

Budget for Permanent Equipment/ Workshed/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.	Lab	1	8,000
2.	Workshop	1	4750
3.	Store	1	2040

7. Deliverables

Deliverable	Mark ✓	Brief description
Product development/adaptation	X	X
Process development/adaptation	X	X
Technology package for development of the project area and local community	✓	Courier
Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)	✓	Stationary
Scientific knowledge and/or data generation leading to technology development in future	✓	GIS software

Other (Please specify)	N/A	N/A
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8. *Name and address of experts/ institution interested in the subject / outcome of the project.*

Dr. Wills Thomas, Director Thomas and company Pvt.Ltd., Cofounder DESOL development management.



Curriculum Vitae

AR. MOHD. ANEES

Assistant Professor(Sushant University, Gurugram)
PhD-Scholar in Architecture (Sushant University, Gurugram)
M.Arch(Jamia Millia Islamia, New Delhi, India)-2015
B.Arch (UPTU Uttar Pradesh, India) 2012
773 Huda Plots, Sushant Lok III Sector 57 Gurugram ,India.
Email:- ar.mohdanees@gmail.com
intaglioarch@gmail.com
Mob:- +91-7011459511, +91-8826035495(Whatsapp)



Profile summary and career objectives

A non-traditional educator with a proven and solid track record in the field of architecture and design who applied effective and unorthodox methods of teaching; working as an assistant professor at Sushant University Gurugram, India. Having 8 years of teaching experience in various subjects like Architectural Design, Building Construction, Professional practice, Survey and levelling and innovative subjects like Virtual and Augmented Reality, Lidar technology. I wish to contribute my skills in academics and be a part of various projects in this institution where I can learn and develop my skills and help in career development in my field.

I am eager to be a part of various projects within the institution, where I can continue to learn and develop my abilities while actively participating in the career development of students in my field. My unconventional teaching approach, coupled with my diverse knowledge base, equips me to make a lasting impact in the world of architectural education and design.

Professional Membership

Member of Council of Architecture India.-Registration number- CA/2013/60396

Awarded Fellowship/Scholarships

Maulana Azad national fellowship (MANF-2013) by University Grant Commission(UGC).



Areas of Interests

Architectural Design, Building Constructions, Project management, Building Materials, Parametric Design, Urban & Regional Planning, Smart city and Mobility, Virtual and Augmented Reality, Survey and levelling, Professional Practice.

Academic Responsibilities

Handled education of architecture majors like design studio(vernacular/ local/ traditional architecture, built forms, use of local materials and appreciation of the socio-economics of the users with 2D and 3D software, modelling presentation and communication), Advance building construction & material(Current trends in the industry Innovation in material and equipment, Modular Construction Prefabrication, Large Span Construction) including laboratory sessions and application classes.

Evaluated students performance in theoretical knowledge(Town planning, Specification and estimation, Landscape).

Lectured undergraduate students on architectural design methods, form and imagery, aesthetics and materials and structures.

Prepared course outlines (Urban Issues & Planning Semester VII and IX (Smart Mobility through Technology, LiDAR technology and its uses in Architecture) rubrics, syllabus, homework assignments and hand-outs.

Revised curriculum(Survey and levelling) , course content according to the changing times, as necessary and introduced new methods of instruction

Moderated classroom discussions and initiated new ventures in the application of new technology advancements.(Light house projects)

Coordinating for Training and placement of the students

Professional experience

Sushant school of art and architecture, Sushant University Gurugram,India

Assistant professor (April 2016-Current)

Major course undertaken	
Architecture Design (1 st , 2 nd & 4 th year)	Building services (3 rd year)
Town planning (4 th year)	Professional Practice (4 th year)
Building Construction and materials (1 st and 4 th year)	Survey and levelling (1 st year)
Digital design and Fabrication (1 st year)	Smart Mobility (4 th and 5 th year)
Architectural thesis(5 th year)	Dissertation (4 th year)



G.L Bajaj group of institutions U.P India
Assistant professor (July 2015-April 2016)

Major course undertaken	
Architecture Design (3 rd year)	Model making (2 nd year)
Town planning (4 th year)	Landscape and site planning (3 rd year)
Advance building construction (4 th year)	Specification and estimation(3 rd year)

Xebec design and project management services Pvt Ltd. New Delhi India.
Coordination Architect (July 2012- June 2013)

Work	
	<ul style="list-style-type: none"> • Restoration and renovation work of Maan singh ka Dharamshala at Salasar Rajasthan ,India which was 120 years old built by maharaja Man Singh He was a trusted general of the Mughal emperor Akbar. • Renovation work of Heritage Ranbanka Palace in Jodhpur Rajasthan,India. Ranbanka Palace was a part of India's first heritage hotel and is Jodhpur's premier 'Classic Heritage Hotel', certified by the Ministry of Tourism, Government of India. • Residence at Noida-Conceptual drawing with all detail drawing like floor plans, section, elevation,3d views and BOQ finalization with client and coordination with contractors and site execution. • Mr.Pretzels Kiosk at GIP mall Noida- Concept design with all relevant drawing ,3d view and time scheduling ,execution.

Third space architectural studio, Bangalore India.
Intern trainee (June 2010- December 2010)

Organization	Third space architectural studio, Bangalore India
Profile	Intern trainee (academic practical training)
Work	Titan Retail showroom (interior), Resort detailing, Residences elevation and interior work

Workshops/Seminar

Participated as young professional from India for Brushinika residential housing development project organized by ISOCARP with School of Chief architect, Yekaterinburg, Russia .(August, 2017)
Solar energy a Sustainable future –FDP by AKTU Ghaziabad New Delhi (July, 2019)



Urban Thinkers Campus on "Public Spaces as Critical Social Infrastructure" Sushant University, Gurugram (August, 2020)
Convention and National & Seminar on "Housing for All in Urban & Rural Areas" held at New Delhi (October, 2017)
Participant at Green Building seminar at Jamia Millia Islamia University India (January, 2016)
Attended SAARC National association of student of Architecture-NASA (February, 2009).
ASSOCHAM National Summit Housing Finance (May, 2018)
NDTV Technology Conclave (April, 2018)
Attended Conference "RE-CONNECTING INDIA" (November, 2017)
WEBINAR: Last Mile Connectivity to Mass Transit Systems in India (August, 2017)

Research and Publication.

Research Paper on **Developing a conceptual framework for the feasibility check of public private partnership (PPP) model in urban infrastructure system for tier 2 cities in India** (ISSN: 2583-1224, AISSMS Institute of Information Technology (IOIT) - Research International Conference on Architecture and Planning – Education, Research & Profession: Past, Present & Future 2023)

Research Paper on **Importance of Destination by understanding the role of place making** (ISSN: 2583-1224, AISSMS Institute of Information Technology (IOIT) - Research International Conference on Architecture and Planning – Education, Research & Profession: Past, Present & Future 2023, International Conference on Architecture and Planning – Education, Research & Profession: Past, Present & Future 2023)

Research Paper on **Understanding Slum Typology in relationship with the needs of their inhabitants** (https://teams.microsoft.com/l/meetup-join/19%3ameeting_NGYyYikyZiUtMDQ3Zi00YmE5LWFhOWMtZmVmMDhlMmEzNTRm%40thread.v2/0?context=%7b%22Tid%22%3a%22e880b634-f05a-4d17-8379-8e280b6e0728%22%2c%22Oid%22%3a%22a0d49a32-e2bc-41a3-856a-3ad9c59fc280%22%7d) International Conference on Advances in Multidisciplinary Research and Innovation (ICAMRI-2023)

Research Paper on **Equity and Inclusivity in Urban Housing -A Catalyst for Social Sustainability** (https://teams.microsoft.com/l/meetup-join/19%3ameeting_NGYyYikyZiUtMDQ3Zi00YmE5LWFhOWMtZmVmMDhlMmEzNTRm%40thread.v2/0?context=%7b%22Tid%22%3a%22e880b634-f05a-4d17-8379-8e280b6e0728%22%2c%22Oid%22%3a%22a0d49a32-e2bc-41a3-856a-3ad9c59fc280%22%7d) International Conference on Advances in Multidisciplinary Research and Innovation (ICAMRI-2023)

Abstract submitted for *Manipal International Symposium on Design (MiSD)* on the topic- **Digital transformation- Retrofitting of existing building for future.**



Positions and Responsibilities held

Organizer/Manager for online workshop on **Virtual reality in Architecture**

(August 2020)

Professor in-charge for infrastructure coordination at school level(Permanent)

Effective role as an exam and jury coordinator at school level

Trans disciplinary learning(TDL) Coordinator at School level

Member of Organizing Committee in The international planning and architecture conference(ipac) Sushant university (February 2019)

Sports Coordinating committee member at University level(Permanent)

Organizer/Manager for Seminar on Fire Fighting & Protection Techniques by Fire Consultants -Fire Rapid Action Fire Control System G.L Bajaj Group of institutions Mathura, Uttar Pradesh (March,2016)

Coordinator- Training and placement(school level)

Skills/Strength

Auto-CAD, 3Ds Max, Adobe Photoshop, Google-sketch up

Microsoft Office (presentations, compilations, analyses etc.)

Hand sketching, creative crafts, Waste utilization

Strong written and verbal communication skills

Interdisciplinary design education and global practice application

Good administrative and **leadership skills**

Design, operations and personnel management

Research & data analysis, Human resource management, branding and **strategic design**

Project undertaken during U.G degree (B.Arch)

Rehabilitation centre for behavioural health and drug dependence at Guwahati (thesis project)

Revitalization/studying context/ form & space ,quality of spaces and redevelopment of Kaisarbagh area as heritage zone at Lucknow.

Study of Jaipur in urban planning .

Shopping mall, Apartment design, Library design, Refreshment centre (canteen)

Key skill in town planning(M.Arch)

Understanding population trends, to predict the demands that will be made on an area, whether urban or rural.

Working with other professionals, such as architects, landscape architects, civil engineers, construction managers and surveyors.

Liaising with the public and councillors, attending public meetings about planning issues, such as proposals for a new road or school.

Knowledge of the legal issues associated with land use.

Making policies and implementing them.Preparing reports and plans relating to a variety of projects – from house extensions to Town planning.



ACADEMIC
PERFORMANCE

Phd in Architecture and Planning- Currently pursuing- Review stage -2nd - Sushant University Gurugram

YEAR	NAME OF EXAM	INSTITUTION	RESULT
2013 To 2015	M.Arch (Ekistics-Science of Human Settlement)	Jamia Millia Islamia New Delhi India	8.59 CGPA
2007 To 2012	B.Arch	Utter Pradesh Technical University India	74.35%
2006	Intermediate	Utter Pradesh Board India	71%
2004	High school	Utter Pradesh Board India	73%

Extra curricular activities

Sport coordinator at University level.

Candle march is organized by me in lieu of **Mumbai attacks**.

Trans disciplinary learning coordinator at School level

Associated with **NGO (Ingenious youth association)** for more than 7 years.

Member of annual fest discipline committee.

Successfully organized and managed event like annual fest technical event and art gallery.

Got 1 prize in inter college design competition.

Got second in state level **Red Cross** competition.

Personal details

Date of birth	15 June 1988
Nationality	Indian
Language known	Hindi, English, Urdu
Permanent and coores. address	E II/3 Sector C Aliganj Lucknow- 220024 ,UP ,India

I here by declare that the above information are true to the best of my knowledge and ability.

Your sincerely
MOHD.ANEES



Professional/Academic references

Architect Mr. Rajendra Kumar

ark.rajendra@gmail.com

Contact- 9891433584

Professor and Director- LSAD

Lovely professional University

Members

Isocarp-International society of city and regional planner

Architect with experience of 2 decades, having environmental and urban sensitivity approach. Higher education and work experiences from Europe. Having mixed experiences of varied scale projects, ranging from urban scale to Buildings and Interiors. Actively involved in academia and research. Advisory member of various think tanks.

100+ Publications and lectures in national and international conferences in India, Spain, Hong Kong, South Africa, Slovenia, Italy, Thailand, Malaysia, Russia, Korea, USA, Taiwan, Poland etc. Traveled extensively in many part of globe and keen photographer. Works have been exhibited in exhibitions and event in India and Abroad.

Dr.Wills Thomas

willsthomas@hotmail.com

Contact- 9811300415

Director- Thomas and Comapany private Limited

Cofounder-DESOL development Management

Founder- BUILDDR-Venture

Architect/Academician Sehba Saleem

ar.sehba.saleem@gmail.com

Contact- 8447378770

Associate professor

Sushant University, Gurugram

Sehba Saleem is an academician and an architect having experience in Urban & Regional Planning. Her area of interests is urban planning, urban design, conservation and sustainable urbanization of towns also in areas of rural settlements for ecologically sensitive development and environmental sustainability. She has also worked with the Ministry of External Affairs on deputation bases and was posted in Bhutan where she taught undergraduate students of architecture for two years and helped in restructuring the course curriculum and developing teaching methodology. She had conducted research and investigation regarding cities' urban morphology with focus on spatial equity in urban planning and sustainable development across geographies along with the coastal disaster rehabilitation strategies. She was also involved in various community awareness programs related to environment and climate change.



Utilization Certificate

Certified that grant of ₹ 1,63,000/- (**One Lakh Sixty Three Thousand only**) sanctioned by the Center of Research and Development, Sushant University, vide letter no. **F.No.1/2023-2024/Seed Fund-Feb 24/23** Dated **22nd February 2024**, financial assistance for the project titled **“Model village development”** was utilized for the purpose for which it was sanctioned.

Financial expenditure incurred

S.no	Nature of expense	Proposed Expenditure (in Rs.)	Expenditure incurred (in Rs.)
1	Manpower	1,12,440	1,05,000
2	Travel	18,000	23,000
3	Contingencies	30,100	28,000
4	Equipment	14,790	7,000
	Total	₹ 1,75,330	₹ 1,63,000

Mod. Anand

Principle Investigator



[Signature]
Accounts Officer
Account & Finance Officer
Sushant University
Gurugram, Haryana

PROFORMA FOR SUBMISSION OF SEED FUND PROPOSAL

Part I: General Information

1. Project Title (should be focused not exceeding 15 words): Architecture Education courses through Edtech platform
2. i. Name of Principal Investigator: Payal Taneja
ii. Name of Co-Investigator:
3. Collaboration if any, give details of institution(s):
4. Any Project(s) previously sanctioned by any funding agency? If yes give the details:

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)

5. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues? COA Council of Architecture
6. Duration (months): 2 Year
7. Enclose the following while submitting the application form:

Duly filled application form (complete with all Annexures)- 2 hard copies	NA
Bio-data of the PI & Co-I -2 copies	NA



Part II: Proposal Summary

1. Origin of the Proposal:

(Scientific/Technical rationale for doing this work should be elaborated)

It is to support the research on the topic “Use of Edtech platform in architecture education”. This project can be further useful to enhance availability of architecture course to global students and vice versa for short digital platform-based credit courses for specialisation in particular course. It would add to the rapid technological advancement in architecture field for meeting global standards as well as benefit students from any field to take up courses with multidisciplinary approach.

2. Objectives (Only 4-5 focused one that can be observed, measured or clearly assessable)

i.	Develop an integrated system for revolutionizing architecture education by providing a comprehensive Edtech platform that offers a wide range of architecture courses.
ii.	Investigate feasibility of implementing innovative Edtech solutions in architecture education. With research in growing demand for global architecture education and technology.
iii.	Conduct surveys and interviews with users and stakeholders to understand their experience with the Edtech platform and gather feedback for necessary improvements.

3. Review of status of Research and Development in the subject

3.1 International Status:

It would be beneficial to learn the international techniques and methods of global universities and their courses would be accessible for our students to explore the international architecture and learn from international experts in their domains.

3.2 National Status:

Incorporation of techno-based platform for education is the need of the hour and will also cater to the national education policy 2020 which focuses on multidisciplinary approach towards education. Students can pick and choose course of their interest.

3.3 Importance of the proposed project in the context of current status

Architecture Education where we are seeing a downfall of numbers of students opting architecture as a profession after their schooling with one of the major reason being hard and labourious work in the course. This would bring about an ease of learning for the students and even cater to students from other fields to opt for architecture courses as additional learning for their fields

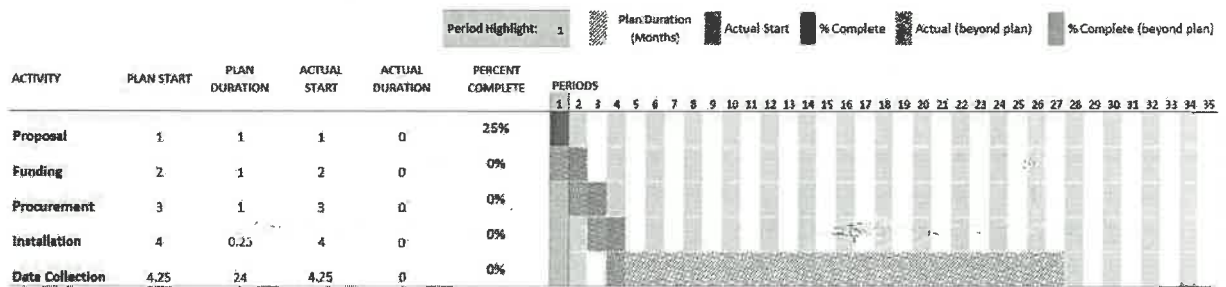
4. Work Plan:

4.1 Methodology:

The research methodology would be based on the development of surveys and analysis of the data, with feedbacks from users and redevelopment of the platform with regular upgradations.



4.2 Time Schedule of activities giving milestones through Gantt Chart.



5. Expertise:

5.1 Expertise available with the investigators in executing the project:

Working in the field of architecture and an active educator and research in the field would be working on the major requirements and criterias of the development however the technical and platform development help will be taken from the external coding expert.

5.2 Bibliography

- Anderson, C. A. (2020). "Exploring the Role of EdTech in Architectural Education." *International Journal of Architectural Research*, 14(3), 160-173.
- Gardner, H. (2008). "Five Minds for the Future." Harvard Business Review Press. This book discusses the essential skills students need to thrive in the 21st century, which can inform the content of Edtech platforms.
- Khan, S. (2017). "The One World Schoolhouse: Education Reimagined." Twelve. Salman Khan, the founder of Khan Academy, shares his vision for online education and its potential to transform learning.
- Siemens, G. (2012). "MOOCs are really a platform." *elearnspace.org*. This article discusses the concept of Massive Open Online Courses (MOOCs) and their role in Edtech.
- Mishra, P., & Koehler, M. J. (2006). "Technological Pedagogical Content Knowledge: A framework for teacher knowledge." *Teachers College Record*, 108(6), 1017-1054. This paper explores the intersection of technology, pedagogy, and content knowledge, which is crucial for designing effective Edtech in education.
- Oblinger, D. G., & Hawkins, B. L. (2006). "The myth about online course development." *Educause Review*, 41(1), 14-16. This article discusses myths and misconceptions about online education, which are relevant to Edtech in architecture education.
- Johnson, L., Adams Becker, S., Estrada, V., & Freeman, A. (2015). "NMC Horizon Report: 2015 Higher Education Edition." The New Media Consortium. This report provides insights into emerging technologies in higher education, which can inform Edtech development.
- Greenhow, C., & Lewin, C. (2016). "Social media and education: Reconceptualizing the boundaries of formal and informal learning." *Learning, Media and Technology*, 41(1), 6-30. This paper discusses the use of social media and technology in education, which is relevant to Edtech platforms.
- Johnson, L., Adams Becker, S., Estrada, V., & Freeman, A. (2019). "NMC Horizon Report: 2019 Higher Education Edition." The New Media Consortium. This report provides an updated view of emerging technologies in higher education, including Edtech trends.
- Shulman, L. S. (1987). "Knowledge and teaching: Foundations of the new reform." Harvard

Educational Review, 57(1), 1-22. This classic paper explores the concept of pedagogical content knowledge, which is crucial in the development of Edtech for effective teaching.

6. List of facilities required from Sushant University for the project implementation.

6.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	Yes (sharing)
2.	Water & Electricity	Yes
3.	Laboratory Space/ Furniture	Yes (sharing)
4.	Power Generator	No
5.	AC Room or AC	No
6.	Telecommunication including e-mail & fax	Yes
7.	Transportation	Yes
8.	Administrative/ Secretarial support	Yes
9.	Information facilities like Internet/Library	Yes
10.	Computational facilities	Yes
12.	Any other special facility being provided	IT facilities and TCS facilities help

6.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group	Not Available		
PI's Department	Not Available		
Other Institute(s) in the region.			

6.3 Total Budget (Rs. in Lakhs): 1.7 Lakhs

- Recurring Cost (Rs): 1.2 Lakhs
- Non-Recurring Cost (Rs): 50 thousand



Sl. No.	Item	Budget			
		1 st Yr	2 nd Yr	3 rd Yr	Total
A	Recurring	40,000	40,000	40,000	1.2 lac
	1. Manpower				
	2. Consumables				
	3. Travel				
	4. Field testing, Demo/ Training expenses (if applicable)				
	5. Contingencies/Other costs				
	6. Institutional Overheads*				
	7. Any other item				

B	Non-Recurring Permanent equipment Construction of work shed/structures Fabrication of prototype equipment	50,000			50,000
	Grand Total (A+B)				1.7 lac

A. Recurring:

1. Budget for Manpower

Sl. No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	Budget (Rs. in lakhs)			
					1 st Yr	2 nd Yr	3 rd Yr	Total

2. Budget for Consumables*

Sl. No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel

Sl. No.	Purpose	Budget (Rs. in lakhs)			
		1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Project logistics				
2.	Field activities				
3.	Review meetings (if elsewhere)				

4. Field Testing/ Demo/ Trainings*

Sl. No	Description of field testing/demos /trainings	No/Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Include material for technology field testing/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of beneficiaries/training, duration of training days, cost /training).

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

B. Non-Recurring:

Budget for Permanent Equipment/ Workshed/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)

7. Deliverables

Deliverable	Mark \checkmark	Brief description

8. Name and address of experts/ institution interested in the subject / outcome of the project.



PAYAL TANEJA

ARCHITECT | ACADEMICIAN

Architect with a keen interest in effective teaching and learning which drew her to the field of architectural pedagogy. Being a multitasking person, she is always eager to learn, explore and experiment with things. She intends to add her best contribution to the teaching fraternity as a full-time pedagogue.

WORK EXPERIENCE

Architect at DnB Constructions

Jun 2016- Apr 2021

With five years of experience on multiple projects of varying styles and purposes. Skilled in good project leadership and management qualities with highly detail-oriented work.

Assistant Professor at Sushant School of art & architecture

Aug 2021 - till date

Being an academican driven by creative limits towards providing the best solutions with her excellent problem-solving abilities and handling various coordination roles efficiently.

SKILLS

Research and Innovation	★ ★ ★ ★ ☆
Design Excellence	★ ★ ★ ★ ☆
Architectural Software	★ ★ ★ ☆ ☆
Leadership & Coordination	★ ★ ★ ★ ☆
Project Management	★ ★ ★ ★ ☆
Microsoft office	★ ★ ★ ★ ☆
Online Edu Technologies	★ ★ ★ ☆ ☆

INTERESTS

Books lover, classical dancer, foody and travel explorer.

CONTACT



8090591098



ar.payal.pt@gmail.com



instagram.com/pioneers_atelier/



<https://www.linkedin.com/in/payal-taneja-65040899>



<https://independent.academia.edu/PayalTaneja>

EDUCATION

SCHOOLING 2011 PASSOUT

FROM ST. MARY'S CONVENT
HIGH SCHOOL KANPUR

BACHELOR OF ARCHITECTURE

FROM UPTU 2011 - 2016

First-division degree with honors 76.8%

Served as Usec & UD at NASA India

MASTER OF ARCHITECTURE

FROM JAMIA MILLIA ISLAMIA In
Architecture Pedagogy 2018 - 2020

First-division degree with distinction CGPA 8.63

Includes one semester teaching assistant at JMI

PURSUING PH.D. 2022 BATCH

FROM SUSHANT UNIVERSITY IN
ARCHITECTURE PEDAGOCY DOMAIN



PROFORMA FOR SUBMISSION OF SEED FUND PROPOSAL

Part I: General Information

1. Project Title (should be focused not exceeding 15 words): To minimize hot spots in the city
2. i. Name of Principal Investigator: Avitesh Vaishnavi Nayak
ii. Name of Co-Investigator: Sehba Saleem
3. Collaboration if any, give details of institution(s): NA
4. Any Project(s) previously sanctioned by any funding agency? If yes give the details:

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)
1.	N/A	N/A	N/A	N/A	N/A	N/A

5. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues? N/A
6. Duration (months): 3 Years (18 Months)
7. Enclose the following while submitting the application form:

Duly filled application form (complete with all Annexures)- 2 hard copies	No
Bio-data of the PI & Co-I -2 copies	No

Part II: Proposal Summary

1. Origin of the Proposal:

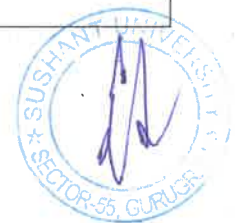
(Scientific/Technical rationale for doing this work should be elaborated)

Proposal to Mitigate Urban Heat Island Effect Caused by Food Joints in Residential Areas

Introduction:

The urban heat island effect has become a pressing issue in modern cities, leading to increased temperatures, energy consumption, and adverse health impacts. In particular, the concentration of food joints in residential areas contributes significantly to this phenomenon due to the heat generated from cooking and increased human activity. This proposal aims to address this issue through a comprehensive approach to mitigate the heat island effect in urban residential localities.

Scientific/Technical Rationale:



- **Heat Emissions:** Food joints often release substantial heat from cooking appliances, ventilation systems, and increased human activity, exacerbating the urban heat island effect in surrounding residential areas.
- **Surface Albedo:** Dark surfaces of food joint structures absorb more solar radiation, leading to higher surface temperatures and contributing to elevated ambient temperatures in the locality.
- **Lack of Green Spaces:** Residential areas with an abundance of food joints often lack green spaces, which would otherwise help in mitigating heat through shading and evapotranspiration.

Proposed Solutions:

Implementation of Green Infrastructure: Introducing green roofs, vertical gardens, and street trees around food joints can provide shading, reduce surface temperatures, and enhance the natural cooling effect through evapotranspiration.

Regulation of Building Materials: Enforcing the use of cool roofing materials and light-colored surfaces in food joint constructions to minimize heat absorption and reduce the overall heat island effect.

Energy-Efficient Cooking Solutions: Encouraging food joints to adopt energy-efficient cooking appliances and ventilation systems can reduce heat emissions and overall energy consumption.

Community Engagement:

Awareness Campaigns: Conducting awareness campaigns to educate the community about the adverse impacts of the urban heat island effect and the potential benefits of implementing the proposed solutions.

Collaborative Initiatives: Involving local residents, businesses, and policymakers to foster a collaborative approach in implementing and monitoring the effectiveness of the proposed solutions.

Expected Outcomes:

Temperature Reduction: Implementation of green infrastructure and regulation of building materials is expected to lower ambient temperatures in residential areas by a significant margin.

Improved Air Quality: Increased greenery and reduced energy consumption will contribute to better air quality and a healthier living environment for residents.

Sustainable Development: Promoting energy-efficient practices and the integration of green infrastructure will contribute to the sustainable development of urban areas.

Conclusion:

By adopting a holistic approach encompassing green infrastructure, regulatory measures, and community involvement, we can effectively mitigate the urban heat island effect caused by food joints in residential areas. This will not only enhance the quality of life for residents but also contribute to the sustainable development and resilience of our urban environment.



2. Objectives (Only 4-5 focused one that can be observed, measured or clearly assessable)

i.	Assessment and Monitoring: Conduct a comprehensive assessment of the urban heat island effect generated by food joints in residential areas, utilizing advanced monitoring techniques to understand the extent of the temperature rise and its impact on the local environment and community health.
ii.	Implementation of Green Infrastructure: Integrate green infrastructure solutions such as the establishment of green roofs, urban forests, and strategic planting of trees in the vicinity of food joints to counteract the heat island effect and enhance natural cooling mechanisms within the residential area.
iii.	Regulatory Measures and Policy Implementation: Develop and enforce regulations to ensure the use of energy-efficient cooking equipment, ventilation systems, and cool roofing materials in food joint constructions, thereby minimizing heat emissions and mitigating the overall heat island effect in residential neighborhoods.
iv.	Community Engagement and Education: Foster community engagement through educational programs and awareness campaigns, emphasizing the importance of sustainable practices, encouraging active participation in the mitigation process, and

promoting community-led initiatives to combat the urban heat island effect created by food joints in residential areas.

3. Review of status of Research and Development in the subject

3.1 International Status: (Maximum 2 pages)

(Researchers working in the area worldwide and their contributions must be properly highlighted with recent references and reviews. A correct and faithful description of the international research status must be given)

- a) **Mr. Md. Naimur Rahman**, Department of Geography and Environmental Science, Begum Rokeya University, Bangladesh

References: - Impact of Urbanization on Urban Heat Island Intensity in Major Districts of Bangladesh Using Remote Sensing and Geo-Spatial Tools

- b) **Li Yang**, College of Architecture & Urban Planning, Tongji University

References: - Research on Urban Heat-Island Effect

- c) **M. Santamouris**, Anita Lawrence Chair on High Performance Architecture, Faculty of Built Environment, University of New South Wales, Sydney, Australia

References: - Recent progress on urban overheating and heat island research. Integrated assessment of the energy, environmental, vulnerability and health impact. Synergies with the global climate change

- d) **Nyuk Hien Wong**, National University of Singapore

References: - Urban heat island research: Challenges and potential

- e) **RIZWAN Ahmed Memon**, Department of Mechanical Engineering, the University of Hong Kong, Hong Kong, China

References: - A review on the generation, determination and mitigation of Urban Heat Island

3.2 National Status: (Maximum 1 page)

(Same as above to cover the contribution of Indian Scientists in the project area)

- f) **Ansar Khan**, University of Calcutta,
g) **Mr. Arvind Kumar**, Principal Secretary, Municipal Administration and Urban Development Department, Government of Telangana
h) **Anindita Bhattacharjee**, Birla Institute of Technology, India
i) **Neel Kamal**, Banasthali University, India
j) **Akshey Bhargava**, CEPT University, India

3.3 Importance of the proposed project in the context of current status (Maximum 1 page)

(Highlight what is the new area or gap which will be solved in the project in relating to what is already known. This is a very important section to project the novelty content of the proposal)

Novel Contribution: Addressing the Interplay Between Food Joints and Urban Heat Island Effect in



Residential Areas

While previous research has extensively documented the urban heat island effect and its associated challenges, the proposed initiative offers a pioneering approach that specifically targets the unique dynamics resulting from the concentration of food joints in residential localities. The novelty of this proposal lies in its holistic understanding and mitigation of the intricate relationship between food joints and the urban heat island effect, addressing a critical gap in current urban planning and environmental management strategies.

1. Integrated Approach to Green Infrastructure Implementation:

The proposal advocates for the integration of green infrastructure solutions in the immediate vicinity of food joints in residential areas. While existing research emphasizes the importance of green spaces in mitigating urban heat islands, this proposal uniquely emphasizes the strategic placement of green roofs, vertical gardens, and trees, specifically catering to the thermal impacts stemming from food joint activities. This integrated approach fosters a localized cooling effect that directly targets the heat generated by food joints, thereby providing a novel perspective on the use of green infrastructure as a direct countermeasure to localized heat emissions.

2. Tailored Regulatory Measures for Food Joint Operations:

In contrast to conventional regulations focused on broader environmental concerns, the proposed regulatory measures directly address the specific heat emissions associated with food joint operations. By advocating for the mandatory implementation of energy-efficient cooking appliances, ventilation systems, and cool roofing materials, the proposal introduces a pioneering framework for controlling the immediate environmental impact of food joints on urban heat island dynamics. This nuanced regulatory approach aims to ensure that the food industry aligns with sustainable practices, setting a precedent for future urban planning regulations tailored to specific business activities.

3. Community-Led Mitigation Initiatives:

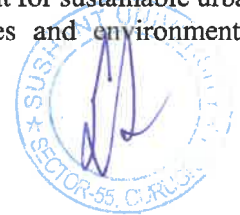
The proposal emphasizes the need for active community involvement through educational programs and awareness campaigns, specifically tailored to the challenges posed by food joints in residential areas. By encouraging residents to actively participate in the mitigation process, the proposal aims to foster a sense of collective responsibility and ownership in addressing the urban heat island effect, setting a precedent for community-led initiatives that target specific localized environmental challenges. This community-centric approach represents a paradigm shift from traditional top-down mitigation strategies, underscoring the importance of grassroots engagement in tackling complex urban environmental issues.

In essence, this proposal pioneers a comprehensive and nuanced approach that not only acknowledges the role of food joints in exacerbating the urban heat island effect but also proposes tailored solutions that cater specifically to this overlooked dimension of urban environmental management. By highlighting the interplay between food joints and the heat island effect, this initiative offers a pioneering blueprint for sustainable urban development that acknowledges the intricate relationship between local businesses and environmental sustainability.

4. Work Plan:

4.1 Methodology: (Maximum of 5 pages)

(It should contain all the details of how each of the objectives will be addressed. This section must be detailed and have clear plans, not vague and generalized statements. It should have several schemes, tables, figures, equations etc. in addition to text, explanation and justification of why the project research plan will work)



Justification of the Methodology:

The proposed methodology incorporates a multidisciplinary approach, integrating advanced technology, policy interventions, and community engagement strategies to effectively address the complex dynamics of the urban heat island effect caused by food joints in residential areas. By combining robust data collection methods, sustainable infrastructure development, and stakeholder collaboration, the methodology ensures a comprehensive and sustainable mitigation strategy that accounts for both short-term and long-term environmental impacts. The incorporation of community-driven initiatives not only fosters a sense of shared responsibility but also guarantees the long-term sustainability and resilience of the proposed interventions.

Since the existence of the UHI has been acknowledged for so long, methods to quantify its intensity have evolved over time. These can be broadly classified by the use of

- a) Ground observations (either fixed or mobile),
- b) Satellite images or
- c) Modelling using regional climate or meteorological models.

Methodology**i. Assessment and Monitoring:**

1. **Temperature Data Collection:** Deploy an array of temperature sensors and data loggers across the residential area, strategically placing them near food joints and in control areas. Utilize advanced monitoring techniques, including infrared thermography and thermal imaging, to capture real-time temperature fluctuations and identify heat hotspots.
2. **Environmental Impact Analysis:** Conduct regular environmental assessments to analyze the impact of the urban heat island effect on the local ecosystem and biodiversity. Employ ecological surveys and species abundance monitoring to understand the ecological repercussions of heightened temperatures.
3. **Health Impact Assessment:** Collaborate with healthcare professionals to conduct health impact assessments, examining the correlation between temperature rise and community health. Utilize medical records and surveys to identify heat-related illnesses and develop targeted intervention strategies.

ii. Implementation of Green Infrastructure:

1. **Site Analysis and Selection:** Conduct a detailed site analysis to identify suitable locations for the installation of green infrastructure. Consider factors such as sunlight exposure, soil quality, and structural stability to determine optimal sites for the establishment of green roofs, urban forests, and tree planting zones.
2. **Green Infrastructure Design:** Collaborate with landscape architects and urban designers to create detailed plans for green roofs, urban forests, and tree planting initiatives. Use 3D modeling and simulation tools to visualize the spatial distribution of green infrastructure and assess their potential cooling capacities.
3. **Hydrological and Thermal Performance Assessment:** Implement hydrological and thermal performance assessments to evaluate the effectiveness of the green infrastructure in mitigating the heat island effect. Employ hydrological models and thermal mapping techniques to measure the impact of green infrastructure on surface temperature reduction and stormwater management.

ii. Regulatory Measures and Policy Implementation:

1. **Regulatory Framework Development:** Engage policymakers, urban planners, and environmental experts to develop a comprehensive regulatory framework mandating the use of energy-efficient cooking equipment, ventilation systems, and cool roofing materials in all food joint constructions. Conduct in-



- depth policy analyses and cost-benefit assessments to ensure the feasibility and effectiveness of the proposed regulations.
2. **Compliance Monitoring System:** Establish a robust compliance monitoring system to track the implementation of regulatory measures in food joint establishments. Develop a database for recording energy consumption and emission levels, and conduct regular inspections to verify adherence to the set standards.
 3. Conduct periodic evaluations to assess the impact of regulatory measures on the reduction of heat emissions and the overall urban heat island effect. Use statistical analyses and policy impact models to measure the effectiveness of the implemented policies and identify areas for policy refinement and enhancement.

iii. **Community Engagement and Education:**

1. **Stakeholder Analysis and Engagement Strategy Development:** Conduct a comprehensive stakeholder analysis to identify key community influencers and opinion leaders. Develop an engagement strategy that emphasizes active participation and collaboration, leveraging social networks and community-based organizations to disseminate information and encourage involvement in the mitigation process.
2. **Educational Program Development:** Design and implement educational programs tailored to the specific needs and concerns of the community. Utilize interactive workshops, educational seminars, and informative materials such as pamphlets and infographics to raise awareness about the urban heat island effect and the role of sustainable practices in mitigating its impact.
3. **Community-led Initiative Facilitation:** Facilitate community-led initiatives such as volunteer groups, task forces, and neighborhood associations focused on implementing and maintaining green infrastructure. Organize regular community meetings and feedback sessions to foster a sense of shared responsibility and ownership, encouraging the community to actively participate in combating the urban heat island effect.

This comprehensive methodology combines advanced scientific techniques, meticulous planning, and community engagement strategies, ensuring the effective implementation of each objective and the successful mitigation of the urban heat island effect caused by food joints in residential areas. By integrating multidisciplinary approaches and fostering community empowerment, this research plan is poised to make a significant and lasting impact on the local environment and community well-being.

4.2 Time Schedule of activities giving milestones through Gantt Chart. (Maximum 1 page)

Year 1: Project Initiation and Data Collection

Month 1-3 (Milestone 1):

- Project planning and team formation
- Stakeholder meetings and collaboration agreements

Month 4-6 (Milestone 2):

- Baseline data collection and temperature monitoring system setup
- Initial community health surveys and environmental impact assessments

Month 7-9 (Milestone 3):

- Analysis of baseline data and identification of heat hotspots
- Preliminary environmental impact analysis

Year 2: Implementation and Regulatory Measures

Month 10-12 (Milestone 4):

- Finalize designs for green infrastructure (green roofs, urban forests, tree planting)



- Hydrological and thermal performance assessments

Month 13-18 (Milestone 5):

- Begin the implementation of green infrastructure
- Health impact assessments and community awareness campaigns

Month 19-24 (Milestone 6):

- Establish regulatory framework for food joint operations
- Develop a compliance monitoring system
- Community engagement strategy development

Throughout the Project: Regular meetings, progress reviews, and adjustments to the project plan based on ongoing data and community feedback. Continuous stakeholder engagement and communication with residents, business owners, and policymakers.

This Gantt Chart provides a general overview of the project's timeline, **with milestones at critical point** throughout the three-year period. However, the actual scheduling may vary based on project-specific factors, available resources, and local conditions. Regular monitoring and adjustments are essential to ensure the project's success.

5. Expertise:

5.1 Expertise available with the investigators in executing the project: (Maximum 1 page)

(Professional expertise existing with each of the investigators in terms of publications, Patents and preliminary results, to execute every component of the proposal should be highlighted)

5.2 Bibliography

N/A

6. List of facilities required from Sushant University for the project implementation.

6.1 Infrastructural Facilities



Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	Yes
2.	Water & Electricity	Yes
3.	Laboratory Space/ Furniture	No
4.	Power Generator	Yes
5.	AC Room or AC	Yes
6.	Telecommunication including e-mail & fax	Not required Full or sharingbasis
7.	Transportation	Yes
8.	Administrative/ Secretarial support	Yes
9.	Information facilities like Internet/Library	Yes
10.	Computational facilities	Yes
12.	Any other special facility being provided	N/A

6.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group	N/A	N/A	N/A
PI's Department	N/A	N/A	N/A
Other Institute(s) in the region	N/A	N/A	N/A

6.3 Total Budget (Rs. in Lakhs): Six Lakhs and Twenty-five Thousand (6,25,000/-)

- Recurring Cost (Rs): **Seventy-Three Lakhs and Ten Thousand (5,20,000/-)**
- Non-Recurring Cost (Rs): **One Lakh Seventy thousand (1,05,000/-)**

Sl. No.	Item	Budget	
		1 st Yr	2 nd Yr
A	Recurring	60,000	70,000
	1. Manpower		
	2. Consumables		
	3. Travel		
	4. Field testing, Demo/ Training expenses (if applicable)		
	5. Contingencies/Other costs		
	6. Institutional Overheads*		
	7. Any other item		
B	Non-Recurring	30,000	35,000
	Permanent equipment		
	Construction of work shed/structures		
	Fabrication of prototype equipment		
	Grand Total (A+B)		1,95,000/-



Avitesh Vaishnavi Nayak

Architect, Assistant Professor
Doctoral Research Scholar

DISHA Member – Dist. Bulandshahr. Ministry of Rural Development, GOI.
Marketing Chair – ASSOCHAM GEM, Haryana Chapter
Executive Committee Member – IIA Haryana Chapter
Author & Editor – Adarsh Gram (BOOK)



ACADEMIC EXCELLENCE



- ❖ **Doctor of Philosophy (Scholar)**
School of Art & Architecture, Sushant University, Haryana.
- ❖ **PGD in Rural Development (PGDRD)**
Indira Gandhi National Open University, Delhi (2021)
- ❖ **PGD in Urban Planning and Development**
Indira Gandhi National Open University, Delhi (2018)
- ❖ **Masters in Construction Engg.**
Himalayan University, A.P. (2015 - 2017)
- ❖ **Bachelors of Architecture**
Dr. A.P.J. Abdul Kalam Technical University, U.P. (2010 - 2015)

EXPERIENCE AS FACULTY



- ❖ **Sushant School of Art & Architecture**, Sushant University, Gurugram
Responsibilities:-
 - Teaching
 - Cultural Committee Head – Architectural Department
 - Hostel Warden
 - Member – Disciplinary Committee
 - Member – Anti ragging Cell
- ❖ **Jagan Nath University, Jhajjar, Haryana** (JULY 2017 – DEC 2017)
Responsibilities:-
 - Teaching
 - Year Coordination
- ❖ **Architectural Consultant** for various residential and commercial projects (2015 – Present)
- ❖ **Member of Editorial Board**
IIA Haryana – Newsletter
International Journal of Urban Design (2019 – Present)
International Journal of Sustainable Building Technology (2020 – Present)



RESEARCH INTERESTS

- Building Construction
- Rural Development
- Smart Villages
- Circular Economy
- Indic Knowledge System
- Renewable Energy Systems
- Architecture Psychology
- Urban Planning
- Bio-Solar Rooftops
- Black Architecture
- Sustainable Transportation

Philosophy :

"Architecture" is the art of balancing innovation with functionality. I believe in pushing boundaries and exploring new forms, materials, and ideas - but always in service of creating spaces that enhance the lives of those who inhabit them. My approach marries bold experimentation with pragmatic problem-solving.



aravitesh13@gmail.com

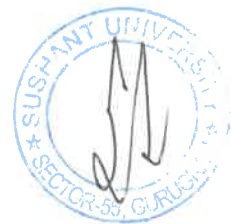


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Awards & Achievements



- ❖ **2024 – A3F Literary Award 2024**
- ❖ 2022 – SMEBIZZ MSME Star Award for Social Work
- ❖ 2021 - Women Prestige Award (for social work)
- ❖ 2020 - “special achiever” -51 Influential Women of Uttar Pradesh.
- ❖ **2020 - Young Achiever Award in Architecture” - A3 foundation, Chandigarh.**
- ❖ 2020 - “Naari Shakti Samman” - Brijbhoomi Foundation, Mathura – U.P.
- ❖ 2019 - Indian Icon Awards-Architecture, fashion and glamour Icon.
- ❖ 2019 - “Model of the year”- Mrs. India Universe 2019.
- ❖ 2018 - 2nd runner up”- Mrs. India International 2018 - Malaysia.
- ❖ **2018 - “1st runner up” - Photography competition WADe ASIA.**
- ❖ 2018 - winner” - India Fashion and Beauty Awards.
- ❖ 2018 - “Appreciation Letter by Member of Parliament - Dr. Bhola Singh,
Dist. – Bulandshahr, Uttar Pradesh.
- ❖ 2016 - 2nd position in Spectrum, IIT Roorkee.
- ❖ 2015 - College topper in Graduation with 80% marks – Brahmanand Group of Institutions, BSR.
- ❖ 2013 - **Best Student Award**
- ❖ 2010 - 3rd position” Essay Competition- Rotary Club, Bulandshahr.
- ❖ **2008 - School Topper in High School Board.**
- ❖ 2007 - Topper - Talent research Examination (Inter-school competition).
- ❖ **Mentorship for competition**
 - **Expressions FOAID 2022** – Students won Gold in Competition
 - **Expressions FOAID 2021** - Students won Gold in Expression Competition
 - **Fashion FOAID 2021** - winner
 - **FOAID 2019** - Students Won Diamond Award in Competition
- ❖ **Jury Member**
 - **National Conference on Embedded Systems in Promoting Human Endeavors,**
REMTECH, Shamli – Uttar Pradesh, March- 2017.
- ❖ **Vise Chairperson @ ISHRAE Youth (Meerut –chapter - 2017)**
- ❖ **Viva External examiner**
 - Shree Ram Group of Institutions, Muzaffarnagar- 2015
 - Banke Bihari Institute, Meerut – 2016.
 - Noida International University, Noida – 2018 & 2020.
 - MBS SPA, IP University, New Delhi – 2019-23.
 - Vastukala Academy, IP University, New Delhi – 2020-23.
- ❖ **Guest Speaker**
 - Centre for Construction and Architectural Excellence – Aug 2020.
 - JK Cement Tech Talk - June 2021.
 - Sushant University Capstone Program – 2022.
 - IIID Conference Lucknow - 2023



Publications

- ❖ **Circular Economy for the Solar Industry – 2022.** (International Journal of Urban Design) VOLUME 5, ISSUE 02
- ❖ **Concept of Circular Economy in Building Construction – 2022.** (JOURNAL OF THE INDIAN INSTITUTE OF ARCHITECTS) [ISSN-0019-4913] JUNE 2021 VOLUME 87, ISSUE 06
- ❖ **ANTYODAYA VIA INCLUSION - Rethinking Urban India – 2021.** (JOURNAL OF THE INDIAN INSTITUTE OF ARCHITECTS) [ISSN-0019-4913] JUNE 2021 VOLUME 86, ISSUE 06
- ❖ **Bio Solar Terrace - A Review on Benefits of Photovoltaic Green Roof – 2020.** (International Journal of Contemporary Architecture "The New ARCH") [ISSN 2198-7688]
Avitesh & Dr. Tejwant Singh Brar – 2020. <http://the-new-arch.net/index.php/journal/article/view/260>
- ❖ **Psychology and Black Architecture – 2021.** (Psychology and education) [ISSN: 1553-6939]
Avitesh & Dr. Naveen Nandal - 2021. *Psychology and Black Architecture. Psychology and Education* 3630 -3637. <http://psychologyandeducation.net/pae/index.php/pae/article/view/6106/5189>
- ❖ **Black Architecture – 2020.** (International Journal of Architecture and Infrastructure Planning) [eISSN : 2456-0154]
Avitesh – 2020. *Black Architecture. International Journal of Architecture and Infrastructure Planning.* 36-40 <http://architecture.journalspub.info/index.php?journal=JAIP&page=article&op=view&path%5B%5D=663>
- ❖ **Lockdown Impact on Rural Life – 2020.** (International Journal Rural and Regional Planning Development)
- ❖ **Aligarh City : Indian Habitat – 2017** (International Journal of Rural and Regional Planning Development)
- ❖ **Vacuum Dewatering During Concreting – 2017.** (International Journal of Construction Engineering and Planning) [ISSN: e2456-2335]
- ❖ **Real estate for Urban Management (Industrial Estates in National Capital Territory, Delhi) – 2017.** International Journal on Emerging Technologies [ISSN No. (Print) : 0975-8364, ISSN No. (Online) : 2249-3255]
- ❖ **Role of Digital India in Enhancing Transportation SMART AND SAFE SOLUTIONS FOR ACCIDENT FREE INDIA – 2017.** International Journal of Town Planning and Management [eISSN 2456-5253]
- ❖ **Urban Green Reserve Management – 2017.** International Journal of Urban Planning and Management eISSN : 2456-0154
- ❖ **India Needs Smart Villages More Than Smart Cities for Better Tomorrow – 2016.** (International Journal Rural and Regional Planning Development)
- ❖ **How a City Develops With Respect to Architecture Bulandshahr Part-1 (Present Condition) – 2016.** (International Journal of Landscape Planning and Architecture) [ISSN: e2456-5091]
- ❖ **Design and Innovations in Transportation Systems for 'Make in India' – 2016.** International Journal of Transportation Engineering and Traffic System) [eISSN : 2456-2343]
- ❖ **How to Control Climatic Conditions by Vernacular Architecture in Palei, Rajasthan- 2016.** (International Journal of Landscape Planning and Architecture) [ISSN: e2456-5091]

Paper/Poster Presented In Conferences

- ❖ Decadel Review of Photo Voltaic Green Roof - *2nd International Conference on Sustainable Resilient Built Environments (SRBE) 2022*
Manipal School of Architecture and Planning, Manipal - India.
- ❖ Discussion on Cultural Transformation in the Contemporary World (Case – Goa) - *National Conference on Cultural Identities: Manifestation through Architecture 2020.*
VASTU KALA ACADEMY, New Delhi.
- ❖ Vernacular Architecture - *GIAN, Housing for All 2017.*
Indian Institute of Technology, Roorkee.
- ❖ Real Estate for Urban Management
(*National Conference on Urban Environmental Management in India: problems & prospects - NCUEMI-2017*)
Malviya National Institute of Technology, Jaipur.
- ❖ Speedy Construction - *Second National Conference on Recent Trends in General Science, Pharmacy, Management & Technology-2016.*
Brahmanand Group of Institutions, Bulandshahr, U.P
- ❖ Sustainable Development- *First International Conference 2015*
Brahmanand Group of Institutions, Bulandshahr, U.P.

NPTEL Cources, FDPs and Workshops

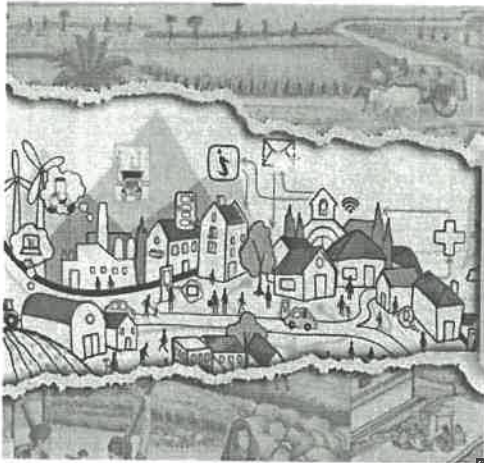
- ❖ Sustainable Transportation Systems (IIT Roorkee)
2nd topper of the course with 90% marks [NPTEL]
- ❖ Housing policy & planning (IIT Roorkee) [NPTEL]
- ❖ Landscape Architecture & Site Planning – Basic Fundamentals
(IIT Kharagpur) [NPTEL]
- ❖ Pedagogy of Construction in Architectural Education [FTP by COA-TRC]
- ❖ Housing for all – An Urban Districts and Area - based Approach
Towards Sustainability (IIT Roorkee) [GIAN Workshop]
- ❖ Recent Advances in Building Materials, Construction Technology
& Architectural Styles (MBS SPA, New Delhi) [FTP by COA-TRC]
- ❖ Human Values and Professional Ethics (UPTU) [FDP by UPTU]
- ❖ Including Universal Human Values in Technical Education
[FDP by AICTE]
- ❖ Understanding Places: A Civic Design Approach (IIT Roorkee) [QIP]
- ❖ Sustainable Built environment in the Face of COVID-19 (Amity
University, Kolkata) [FDP]
- ❖ Energy Conservation Building Code - 2017 [HAREDA & BEE]



Book

आदर्श ग्राम

REIMAGINING THE RURAL INDIA



AVITESH VAISHNAVI NAYAK

Villages are the backbone of a happy and a better society, and without the development of villages, India cannot be developed. For a long time, the Indian urban centers' planners and policy-makers have focused on urban locations. Now, as high-rise cities in India are transformed into modernized as envisaged by our late president Atal Bihari Vajpayee (P.M.), this book 'Adarsh Gram: Reimagining Rural India' is a very welcome and timely volume by members of our Architecture community. The book is a meaningful effort by the author to conceptualize the ideas, thoughts, and approaches for the holistic development of villages. I would like to congratulate Avitesh Vaishnavi Nayak for her contribution to the sector as it is so vital and essential for a sustainable and a better future for our nation. It is a great effort to bring out this book and I believe it will be a valuable resource for the sustainable development of our Nation.

AR. VIJAY GARG,
Chairman SEAC Delhi, Former President COA, India

Most Indians make their homes in rural areas, so improving their living conditions is essential to the country's progress. Our architectural community has a way-paved, but unexplored area, but now is the time to focus on India's rural communities. Members of our Architecture community have a role to play and working first with the priorities of 'Adarsh Gram: Reimagining Rural India'. The book represents the authors' on-site strategy to understand the problems, theories and methods for the comprehensive improvement of rural areas. Avitesh deserves praise for her work in this area, particularly for her innovative plan to make rural communities energy, sustainable, and greenable.

AR. SUDHUR H. PILLAI
Hon. Treasure - National IIA Team, India

This book 'ADARSH GRAM' is written and edited by Avitesh Vaishnavi Nayak and is a very timely and relevant as far as the urban expansion of villages and rural areas is concerned. The book has covered every aspect of the development of our rural areas. The emphasis of the population is in the villages, and if we have an idea, as a nation, as a nation, then the inclusion of the subjects in a rural area towards the book will help. I hope this book is not only a reference and advice, but also a source of inspiration. I would like to congratulate Avitesh and her team of professionals for their hard work in completing this book.

COL. K.S. KADIAN,
Independent Observer, National Testing Agency

आदर्श ग्राम

REIMAGINING THE RURAL INDIA



480 INR

GREEN CONCLAVE
SUSTAINABILITY IN HIGH RISE BUILDINGS

You are cordially invited to
BOOK LAUNCH

Adarsh Gram
Reimagining the
Rural India

Avitesh Vaishnavi Nayak
Author & Editor

30
SEPT
2023

Presented by
ISHRAE
Curugram
Chapter

The Bristol Hotel,
M.G. Road, Near
Sikanderpur
Metro, Curugram
3 PM onwards



Strengths

- Confident
- Willingness to learn New Concepts and Skills.
- Hard Working, Sincere and Result Oriented.
- Highly responsible.
- Committed to deadlines and schedules.

Technical Skills

- Detailed expertise in Microsoft Word and PowerPoint.
- Have good proficiency in hand drafting & sketching.
- High skills and good speed in the AutoCAD, Google sketch up & Adobe Photoshop.
- Can produce good-quality presentation work,
- Comfortable with teamwork and communication skills are noteworthy.

Personal Information

Nationality:- Indian
Gender:- Female
Date of Birth:- Aug 13, 1993
Local Address :- Surya Hostel, Sushant University, sector 55, Gurugram, Haryana - 122003
Languages Known: - English, Hindi & Urdu
Interests:- Photography, Site visits, Reading books, Writing & Bike riding.

I hereby declare that the above information is true and authentic to the best of my knowledge.

Date:

Place:

Signature:




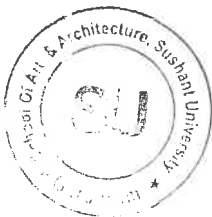
Utilization Certificate


Certified that grant of ₹ 1,25,000 (Rupees One Lakh Twenty Five Thousand Only) sanctioned by the Center of Research and Development, Sushant University, vide letter no. F.No.1/2023-2024/Seed Fund, Feb24/24 Dated 22nd Feb 2024, financial assistance for the project titled “Urban Hotspot Minimization” was utilized for the purpose for which it was sanctioned.

Financial expenditure incurred

Sl.no	Nature of expense	Proposed Expenditure (in Rs.)	Expenditure incurred (in Rs.)
1	Manpower	85,000	60,000
2	Travel	20,000	10,000
3	Consumables	35,000	15,000
4	Equipment	65,000	40,000
	Total	₹ 1,95,000	₹ 1,25,000


Principle Investigator




**Accounts Officer,
 Account & Finance Officer
 Sushant University
 Gurugram, Haryana**

PROFORMA FOR SUBMISSION OF SEED FUND PROPOSAL

Part I: General Information

1. Project Title (should be focused not exceeding 15 words):

Early detection of Depression among Teenagers on social media using Deep Learning

2. i. Name of Principal Investigator: Dr. Alpana Jijja

ii. Name of Co-Investigator: Ms. Parveen Kumari

3. Collaboration if any, give details of institution(s) NIL

4. Any Project(s) previously sanctioned by any funding agency? If yes give the details:

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)
	NIL					

5. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues? No

6. Duration (months): 12 months

7. Enclose the following while submitting the application form:

Duly filled application form (complete with all Annexures)-	2 hard copies	
Bio-data of the PI & Co-I -	2 copies	



Part II: Proposal Summary

1. Origin of the Proposal: (Maximum 1 page)
(Scientific/Technical rationale for doing this work should be elaborated)

2. Objectives (Only 4-5 focused one that can be observed, measured or clearly assessable)

i.	To collect data from the various reliable sources.
ii.	To find how accurately model will detect the True positive and True Negative.
iii.	Identifying the Effective Machine Learning and Deep Learning Techniques for finding the Depression.
iii.	Evaluate various Performance Parameters.

3. Review of status of Research and Development in the subject

3.1 International Status: (Maximum 2 pages)

(Researchers working in the area worldwide and their contributions must be properly highlighted with recent references and reviews. A correct and faithful description of the international research status must be given)

attached

3.2 National Status: (Maximum 1 page)

(Same as above to cover the contribution of Indian Scientists in the project area)

attached

3.3 Importance of the proposed project in the context of current status (Maximum 1 page)

(Highlight what is the new area or gap which will be solved in the project in relating to what is already known. This is a very important section to project the novelty content of the proposal)

attached

4. Work Plan:

4.1 Methodology: (Maximum of 5 pages)

(It should contain all the details of how each of the objectives will be addressed. This section must be detailed and have clear plans, not vague and generalized statements. It should have several schemes, tables, figures, equations etc. in addition to text, explanation, and justification of why the project research plan will work)

attached

4.2 Time Schedule of activities giving milestones through Gantt Chart. (Maximum 1 page)



<i>Object Definition</i>	<i>0-3 months</i>
<i>Literature Review</i>	<i>2 months</i>
<i>Designing framework</i>	<i>2 months</i>
<i>Execution</i>	<i>6 months</i>
<i>documentation</i>	<i>3 months</i>

5. Expertise:

5.1 Expertise available with the investigators in executing the project: (Maximum 1 page)
(Professional expertise existing with each of the investigators in terms of publications, Patents and preliminary results, to execute every component of the proposal should be highlighted)

Publications -----02

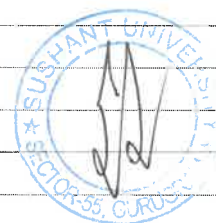
5.2 Bibliography

Have attached with each document

6. List of facilities required from Sushant University for the project implementation.

6.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	No
2.	Water & Electricity	No
3.	Laboratory Space/ Furniture	No
4.	Power Generator	No
5.	AC Room or AC	No
6.	Telecommunication including e-mail & fax	No
7.	Transportation	No
8.	Administrative/ Secretarial support	No
9.	Information facilities like Internet/Library	Yes
10.	Computational facilities	Yes
12.	Any other special facility being provided	No



6.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group			
PI's Department			
Other Institute(s) in the region			

6.3 Total Budget (Rs. in Lakhs): 2,00,000

- Recurring Cost (Rs): 1,00,000
- Non-Recurring Cost (Rs): 1,00,000

Sl. No.	Item	Budget			
		1 st Yr	2 nd Yr	3 rd Yr	Total
A	Recurring	50,000	50,000		
	1. Manpower				
	2. Consumables				
	3. Travel				
	4. Field testing, Demo/ Training expenses (if applicable)				
	5. Contingencies/Other costs				
	6. Institutional Overheads*				
	7. Any other item				
B	Non-Recurring				
	Permanent equipment				
	Construction of work shed/structures				
	Fabrication of prototype equipment				
	Grand Total (A+B)				

A. Recurring:

1. Budget for Manpower

Sl. No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	Budget (Rs. in lakhs)			
					1 st Yr	2 nd Yr	3 rd Yr	Total

2. Budget for Consumables*

Sl. No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel

Sl.	Purpose	Budget (Rs. in lakhs)			
		1 st Yr	2 nd Yr	3 rd Yr	Total

No.					
1.	Project logistics	NA			
2.	Field activities	NA			
3.	Review meetings (if elsewhere)	NA			

4. Field Testing/ Demo/ Trainings*

Sl. No	Description of field testing/demos /trainings	No/Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Include material for technology field testing/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of beneficiaries/training, duration of training days, cost /training).

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

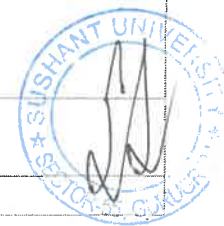
B. Non-Recurring:

Budget for Permanent Equipment/ Workshed/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.	Laptop	01	80000
2.	Printer	01	20000
3.			
4.			

7. Deliverables

Deliverable	Mark ✓	Brief description
Product development/adaptation	NA	
Process development/adaptation	NA	
Technology package for development of the project area and local community	NA	
Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)	NA	
Scientific knowledge and/or data generation leading to technology development in future	NA	
Other (Please specify)		



8. Name and address of experts/ institution interested in the subject / outcome of the project.

ALPANA JIJJA

Programme Director(CSE)
Assistant Professor
School of Engineering and Technology
Sushant University
Sector 55, Golf Course Road
Gurugram, Haryana 122003 INDIA
alpanajijja@sushantuniversity.edu.in

ACADEMIC APPOINTMENTS

- 2012-Present
Program Director, Computer Science and Engineering
Assistant Professor, School of Engineering and Technology
Sushant University (Erstwhile Ansal University)
- Assistant Professor, Computer Science and Engineering
Ansal University
- 2008-2012
Assistant Professor, Computer Science and Engineering
Ansal Institute of Technology
- 2003-2008
Senior Lecturer, Computer Science Department
Dronacharya College of Engineering

EDUCATION

- **Ph.D.**, Computer Application, Sushant University (2021)
Area of Research- Machine Learning, Artificial Neural Network, Deep learning
- **MBA.**, Information Technology, Sikkim Manipal University (2011)
- **MTech.**, Computer Science, Janardan Rai Nagar Rajasthan Vidyapeeth University (2006)
- **B.E.**, Computer Science, Baba Sahib Bhim Rao Ambedkar (Erstwhile - Marathwada University), Aurangabad 1993



PAPER PRESENTATION

- Satpathy, J., K., Sahoo, K., Saufi, Aithal, P. S., and Jijja, A., (2021), "Neuro-Leadership: Exchange of Ideas with Dr Neuropsychonomist", *International Journal of Advances in Engineering and Management (IJAEM)*, ISSN: 2395-5252, Volume No: 03, Issue No: 10, DOI: 10.35629/5252-031011431166, India (International).
- A. Jijja and D. Rai, "Segmentation of brain tumor using GLCM and Discrete Wavelet transform", *International Journal of Innovative Technology and Exploring Engineering*, 2019.
- S. Jain and A. Jijja "A Fast & Efficient Approach for Large Data Encryption & Decryption pdf using RSA Algorithm", *International Journal of Technical Innovation in Modern Engineering & Science*, ICSC 2019.
- A. Jijja and D. Rai, "Efficient MRI Segmentation and Detection of Brain Tumor using Convolutional Neural Network", *International Journal of Advanced Computer Science and Applications*, vol. 10, no. 4, 2019.
- S. Chawla, V. Singh, and Alpana Jijja, "An experimental study of Crime Investigation using Machine Learning", in *International Journal of Innovation research in Computer and communication engineering* Vol 4. issue 6 Oct 2016.
- Alpana Jijja, Dr. D. Rai, Priyanka Mathur, "Comparative Analysis of Feedforward Backpropagation and Cascade Algorithm on BUPA liver Disorder "in *International journal of Engineering and technology*, vol 6 pp 2912-2917, Dec 2016.
- Alpana Jijja, P. Kaur, "Business Continuity Plan in Cloud Computing for Disaster Management," *ICSIT- Ansal University and Velpriso University, Gurgaon, Vol.1, 587, March. 2014.*
- P. Kaur, Alpana Jijja, "A detailed study of high-capacity steganography techniques," *ICECHVT, Ansal University, Gurgaon, Vol. 1, 179., January -2013.*
- Alpana Jijja, K. Gupta, "New era of security: Elliptic curve cryptosystem," *ITCE, Ansal University, Gurgaon, Vol. 1, 401, October. 2012.*
- Alpana Jijja, K. Gupta, "Challenges in adopting open source systems in higher education," *ITCE, Ansal University, Gurgaon, Vol.1, 372, October. 2012.*
- Alpana Jijja, M. Chaudhary, R. Vohra, " Mathematical Analysis of Data mining in Higher Education," *Journal of Computer Science & Emerging Technologies*, Vol. 2, Issue 3, 345, June -2011

PAPERS PRESENTED

- "Customer Relationship Management" at the National Seminar on Current Trends in Information Technology, July 2008, Dronacharya College of Engineering, Gurgaon, India.
- "Internet Protocol Version 6 in the Recent Advancement in Information Technology", January 2007, Dronacharya College of Engineering, Gurgaon, India



FACULTY DEVELOPMENT PROGRAM /WORKSHOPS /TRAININGS

- Certificate Program in Business Analytics from Harvard Business School Online (eDiploma) December 2021.
- Deep Learning & Computer Vision in image & Video Data Analysis organized by EduxLABs in association with E-cell IIT Hyderabad- Sept 2021
- Attended online workshop on Data Analytics from Bennett University, Noida - May 2020.
- Workshop on Research paper writing and publication in Quality journal, Bharti Vidyapeeth, New Delhi - May 2020.
- Artificial Intelligence and Deep Learning, Bennett University, Noida - May 2020.
- Workshop on Exploring research with value added quality publications, Ansal University - May 2020.
- 5 day -Workshop conducted for Ardee School students on Internet of Things, as part of the school bridge programme.
- Workshop on Ethical Hacking conducted by Euinac- Nov2019
- Blockchain (Ethereum learning) Technology workshop conducted by Thingif(y)- September 2019
- NPTEL Certification and FDP online course in Deep Learning –Part 2 -July 2019.
- Faculty Development Program on Digital Disha by Adobe, Ansal University- November 2018.
- AI and Deep Learning for leading India, Bennett University, Noida- June 2018.
- Design and Building IoT Solutions on Microsoft -Azure, Ansal University- June 2017.
- Faculty Development Program on Latest Trends and Research in Machine Learning organized by BVIMR New Delhi - December 2016.
- International workshop on Computational Intelligence and Applications, South Asian University, New Delhi- May 2016.
- International workshop on IMLA-2016 on Machine Learning and its Applications, South Asian University, New Delhi- April 2016.
- Faculty Development Programme on Data Mining and Social Media Analytic Emerging trends and Challenges organized by BVICM, New Delhi- Dec 2013.
- Faculty Development Programme on High Performance Computing using Oracle 12c, organized by IIPC, BVICM, New Delhi- Nov 2013.
- Training programme on Summer faculty Research fellow programme, IIT Delhi, Ref.No-2013PCEP313-2013.
- Faculty Development Workshop on Conflict Resolution & Relationship Management, Ansal University - November 2012.



- Faculty Development Programme on Mobile Computing as part of the 2010 Indo – US Engineering Faculty Leadership Institute, Vishwakarma Institute of Technology, Pune Center, India- June 2010.
- Agile Conference on Agile -NCR 2010, Ansal Institute of Technology- July, 2010.
- Enhancing Teaching Learning Process, Ansal Institute of Technology, December 2008.
- Faculty Development Program in High-End Technologies i.e. Microsoft .Net conducted by Appin Knowledge Solutions, Dronacharya College of Engineering- September 2006

BLOGS

- Evolving Technologies in Current Scenario
<https://sushantuniversity.edu.in/blog/evolving-technologies-in-the-current-scenario/>
- Making a successful Career in Engineering (submitted)

WEBINAR

- Swachhta E-Waste Management - Organized by Education and Research Network of India (ERNET), Ministry of Electronics & Information Technology, Government of India.

PREVIOUS PROFESSIONAL EXPERIENCE

2001	Paradigm InfoTech Inc. Columbia, MD; United States of America Database Administrator
1993-1998	CMS Computers Ltd, New Delhi Senior Executive




Utilization Certificate


Certified that grant of ₹ 1,50,000/- (**Rupees One lakh Fifty Thousand Only**) sanctioned by the Center of Research and Development, Sushant University, vide letter no. **F.No.1/2023-2024/Seed Fund-Feb 24/25 Dated 22nd February 2024**, financial assistance for the project titled “**Early detection of depression among teenagers on social media using deep learning**” was utilized for the purpose for which it was sanctioned.

Financial expenditure incurred

S.no	Nature of Expense	Proposed Expenditure (in Rs.)	Expenditure incurred (in Rs.)
1	Manpower	20,000	25,000
2	Travel	15,000	12,000
3	Consumables	15,000	13,000
4	Laptop	80,000	75,000
5	Printer	20,000	25,000
	Total	₹ 1,50,000	₹ 1,50,000


Principle Investigator
 School Of Engg. & Technology
 Sushant University,
 Sector 55, Gurugram




Accounts Officer
Account & Finance Officer
 Sushant University
 Gurugram, Haryana

PROFORMA FOR SUBMISSION OF SEED FUND PROPOSAL

Part I: General Information

1. Project Title: Mental Disease Prediction Using Machine Learning Techniques
2. i. Name of Principal Investigator: Dr. Rinky Ahuja
ii. Name of Co-Investigator: Ms. Meenakshi Gupta
3. Collaboration if any, give details of institution(s)
4. Any Project(s) previously sanctioned by any funding agency? If yes give the details:

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)

5. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues? No
6. Duration (months): 24 months
7. Enclose the following while submitting the application form:

Duly filled application form (complete with all Annexures)- 2 hard copies	
Bio-data of the PI & Co-I -2 copies	



Part II: Proposal Summary

1. Origin of the Proposal :

Mental illness is a health problem that undoubtedly impacts emotions, reasoning, and social interaction of a person. These issues have shown that mental illness gives serious consequences across societies and demands new strategies for prevention and intervention. To accomplish these strategies, early detection of mental health is an essential procedure. Mental illness is usually diagnosed based on the individual self-report that requires questionnaires designed for the detection of the specific patterns of feeling or social interactions [1]. With proper care and treatment, many individuals will hopefully be able to recover from mental illness or emotional disorder [2].

Machine learning is a technique that aims to construct systems that can improve through experience by using advanced statistical and probabilistic techniques. It is believed to be a significantly useful tool to help in predicting mental health. It is allowing many researchers to acquire important information from the data, provide personalized experiences, and develop automated intelligent systems [3]. The widely used algorithms in the field of machine learning such as support vector machine, random forest, and artificial neural networks have been utilized to forecast and categorize the future events [4].

2. Objectives :

i. To identify individuals at risk or in the early stages of mental disorders to enable early intervention and treatment, which can significantly improve outcomes.
ii. To develop predictive models that can provide more accurate and reliable assessments of mental health conditions compared to traditional diagnostic methods.
iii. To tailor treatment plans to individuals based on their specific mental health needs, as machine learning models can help create personalized recommendations.

3. Review of status of Research and Development in the subject

3.1 International Status:

Research in this area has been carried out using various ML techniques, and recently has been noted to extend to DL. Here's a summary of key topics and notable papers:

1. Early Detection and Prediction:

Research focused on developing machine learning models for the early detection of various mental health disorders, including depression, anxiety, schizophrenia, and bipolar disorder.

Notable Paper: "Predicting mental health states in unstructured clinical data using supervised learning" by Gideon Dresdner et al. [5]

2. Data Sources and Feature Extraction:

Studies explored different data sources, such as electronic health records (EHRs), social media, smartphone data, and wearable device data.

Notable Paper: "Mining electronic health records: towards better research applications and clinical care" by Riccardo Miotto et al. [6]

3. Predictive Features and Model Selection:

Researchers investigated the most relevant features and variables for mental disease prediction, often employing feature selection techniques and comparing different machine learning algorithms.



Notable Paper: "Machine learning for mental health: A scoping review of advancements in the application of machine learning to improve mental health diagnosis and treatment" by Eweda et al.

4. Cross-Cultural and Global Applications:

Some studies focused on cross-cultural applicability and the impact of cultural and demographic factors on mental health prediction models.

Notable Paper: "Global mental health and its discontents: An inquiry into the making of global and local scale" by Desjarlais and Eisenberg [8].

5. Ethical Considerations:

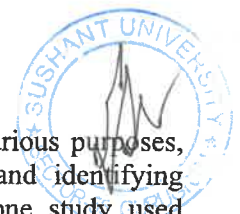
There was growing recognition of the ethical implications of using machine learning for mental health prediction, including issues related to data privacy, bias, and informed consent.

Notable Paper: "Ethical considerations of using machine learning for mental healthcare" by Owen Rambow and Herman Saksono [9].

6. **Shamshirband et al.** [10] examined the use of convolutional neural networks (CNN), deep belief networks (DBN), auto-encoders (AE), and recurrent neural networks (RNN) in healthcare systems. They addressed several concerns and challenges with DL models in healthcare, as well as significant insights into the accuracy and applicability of DL models.
7. **Librenza-Garcia et al.** [11] reviewed past studies on diagnosing bipolar disorder patients through ML techniques.
8. **He et al.** [12] surveyed automatic depression estimation (ADE) methods relating to deep neural networks (DNN) and presented architectures based on audio-visual cues.
9. **Ramos-Lima** [13] reviewed the use of ML techniques in assessing subjects with PTSD and acute stress disorder (ASD).
10. **Medical predictive analytics** will reform the healthcare field broadly as discussed by Miner et al [14].
11. **According to the World Health Organization (WHO)**, in 2019, anxiety and depression were the most common mental health conditions among the estimated 970 million people worldwide living with mental health problems. However, this number rose remarkably due to the onset of the COVID-19 pandemic in 2020.

3.2 National Status:

Machine learning techniques have been used in mental health research for various purposes, such as predicting depression and anxiety, detecting suicidal tendencies, and identifying individuals at risk of developing mental health conditions. For instance, one study used machine learning to predict depression in adolescents using facial expressions, voice, and text data. Another study used machine learning to predict suicidal ideation based on social media data. In terms of predicting mental health treatment requirements, there have been some studies that used traditional machine learning algorithms like decision trees and logistic regression. However, there is a lack of research on the use of Deep Learning algorithms for mental health treatment prediction.



In a study published in the Journal of Medical Internet Research, researchers used machine learning techniques to predict depression symptoms based on social media data. The study found that machine learning algorithms could accurately identify depression symptoms from social media data, suggesting that this approach could be used to aid in early detection of mental health conditions. A study published in the Journal of Affective Disorders explored the use of machine learning algorithms to predict anxiety and depression symptoms based on wearable device data. The study found that machine learning models could accurately predict anxiety and depression symptoms based on activity levels and sleep patterns, providing a non-invasive and accessible method for identifying individuals who may require mental health treatment.

In a study published in the Journal of Medical Internet Research, researchers used machine learning techniques to predict suicide risk based on electronic health record data. The study found that machine learning algorithms could accurately predict suicide risk based on demographic and clinical data, enabling early identification and intervention for individuals at risk of suicide. A study published in the Journal of Psychiatry and Neuroscience explored the use of machine learning algorithms to predict treatment outcomes for individuals with depression. The study found that machine learning models could accurately predict treatment outcomes based on demographic and clinical data, enabling personalized treatment plans and improved outcomes for individuals with depression.

3.3 Importance of the proposed project in the context of current status

The proposed project on Mental Disease Prediction Using Machine Learning Techniques is of significant importance in the context of the current status of mental healthcare for several reasons:

- 1. Early Intervention and Prevention:** Mental health conditions often benefit from early intervention. Machine learning models can help identify individuals at risk of developing mental disorders or detect symptoms at an early stage, allowing for timely intervention and preventive measures.
- 2. Personalized Treatment:** Mental health is highly individualized. Machine learning can enable the development of personalized treatment plans, tailoring interventions to the unique needs and characteristics of each patient. This can lead to more effective and efficient care.
- 3. Reducing the Treatment Gap:** There is a significant gap between the number of individuals who need mental health care and those who receive it. Machine learning can assist in identifying undiagnosed cases, closing the treatment gap, and ensuring that more people receive the support they need.
- 4. Data-Driven Decision-Making:** Machine learning leverages vast datasets to make predictions and recommendations. This data-driven approach can assist healthcare providers in making more informed and evidence-based decisions in mental health diagnosis and treatment.
- 5. Improved Resource Allocation:** By predicting mental health conditions and identifying high-risk individuals, healthcare resources can be allocated more efficiently. This ensures that those in the greatest need receive the appropriate level of care and support.
- 6. Reducing Stigma:** Predictive models, if used responsibly, can contribute to reducing the stigma associated with mental health conditions. By normalizing mental health discussions and promoting early intervention, these models can help individuals seek help without fear of judgment.



In summary, the proposed project on Mental Disease Prediction Using Machine Learning Techniques is essential in the current context because it has the potential to significantly improve mental healthcare by enabling early detection, personalized treatment, and reducing the treatment gap. It aligns with the growing recognition of the importance of mental health and the need for innovative solutions to address the challenges in this field.

4. Work Plan:

4.1 Methodology:

The proposed idea includes collection of datasets and pre processing of the data for the project and mapped the data into graphs to check the quality of the data then train the data with different algorithms to predict the output with higher accuracy.

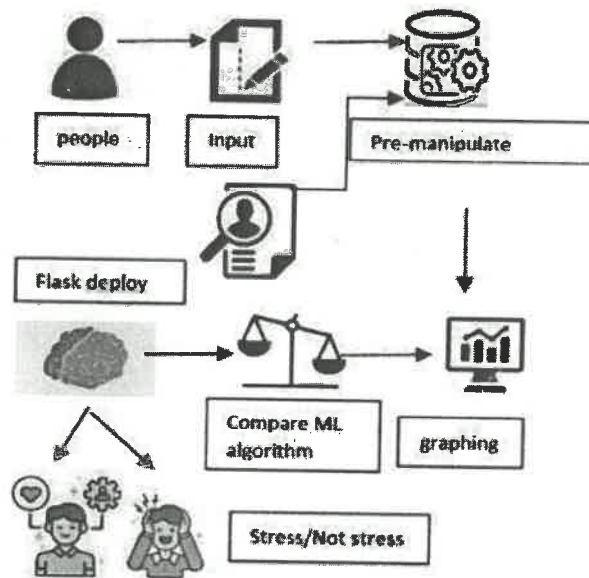


Figure 3.1: System Architecture [15]

Objective 1: Data Collection and Preprocessing

Step 1: Data Gathering

Data sources: Electronic Health Records (EHRs), clinical notes, social media data, patient surveys, and wearables.

Ethical considerations: Obtain necessary permissions and ensure data privacy compliance.

Step 2: Data Preprocessing

Data cleaning: Remove duplicates, handle missing values, and correct inconsistencies.

Feature extraction: Extract relevant features such as demographic information, behavioral patterns, and medical history.

Data anonymization: Apply techniques like pseudonymization to protect patient privacy.

Data transformation: Normalize, standardize, or encode data as needed.

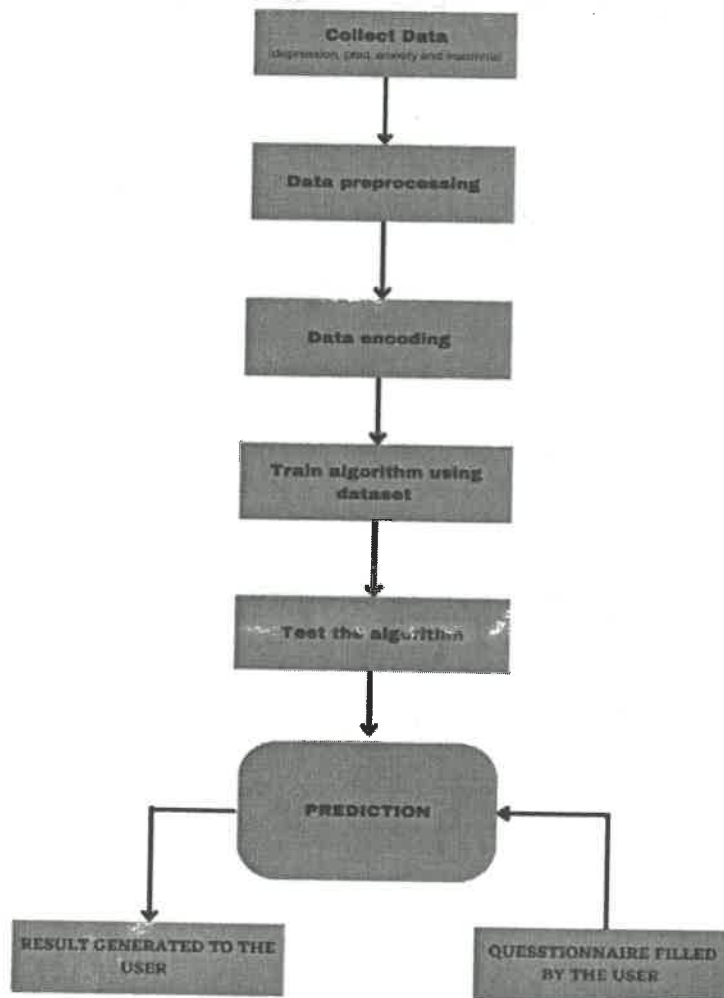


Figure 1: Data Preprocessing Flowchart [16]

Objective 2: Feature Selection and Engineering

Step 3: Feature Selection

Feature relevance analysis: Evaluate the importance of each feature using techniques like mutual information, chi-squared, or feature importance from tree-based models.

Dimensionality reduction: Apply Principal Component Analysis (PCA) to reduce feature dimensions while retaining information.

Step 4: Feature Engineering

Create new features: Derive new features, such as sentiment scores from textual data, to capture additional information.

Temporal feature engineering: Capture temporal trends by creating lag features based on time series data.

Equation 1: Calculation of Mutual Information [17]

$$MI(X, Y) = \sum p(x, y) * \log_2(p(x, y) / (p(x) * p(y)))$$

Objective 3: Model Selection and Training

Step 5: Model Selection

Consider various algorithms such as logistic regression, Random Forest, LSTM, or CNN, and justify the choice based on performance criteria.

Step 6: Model Training and Evaluation

Split data into training, validation, and test sets.

Train models using various hyperparameters and optimize performance.

Evaluate models using metrics like accuracy, precision, recall, F1-score, AUC-ROC.

Objective 4: Bias and Fairness Mitigation

Step 7: Bias Assessment

Assess potential biases in the model by evaluating its predictions across demographic groups (e.g., gender, age, ethnicity).

Calculate disparate impact and equal opportunity differences.

Equation 2: Disparate Impact [18]

$$DI = P(Y=1 | A=a) / P(Y=1 | A=b)$$

Step 8: Fairness Interventions

Implement bias mitigation techniques, such as reweighing or adversarial debiasing.

Re-evaluate the model's fairness post-intervention.

Objective 5: Clinical Validation and Deployment

Step 9: Clinical Validation

Collaborate with mental health professionals to validate the model's predictions in real clinical settings.

Assess its clinical utility, reliability, and effectiveness.

Step 10: Deployment

Deploy the validated model within healthcare systems or telehealth platforms.

Integrate it into clinical workflows, enabling real-time mental health prediction.

Objective 7: Continuous Monitoring and Feedback

Step 11: Continuous Monitoring

Implement a monitoring system to track model performance.

Collect feedback from healthcare providers and patients.



4.2 Time Schedule of activities giving milestones through Gantt Chart.

Project Phases/Activities	(Month 1-2)	(Month 3-6)	(Month 7-9)	(Month 10-12)	(Month 13-15)	(Month 16-17)	(Month 18-21)	(Month 22-24)
Project Initiation								
Data Collection and Preprocessing								
Feature Selection and Engineering								
Model Development and Evaluation								
Bias and Fairness Mitigation								
Model Interpretability								
Clinical Validation and Deployment								
Continuous Monitoring and Feedback								

5. Expertise:

5.1 Expertise available with the investigators in executing the project:

Principal Investigator: **Dr. Rinky Ahuja**

1. Doctorate on Multimodal Biometrics System For Efficient Personal Identification using Machine Learning.
2. Research Paper titled "Machine Learning Techniques for detecting and mitigating DDoS attacks in IoT" is accepted to be published in IEEE proceedings of the ICSEIET 2023 conference (paper presented in the IEEE Conference on 14th Sep, 2023) in October, 2023.
3. Published research paper on "An Efficient Biometric Multimodal Fingerprint and Iris using an SVM Classifier and Adaptive Neuro Fuzzy Inference System (ANFIS)" in International Journal of Engineering Research and Development, [ISSN: 2278-800X], Vol. 12, Issue-8, pp. 12-26.
4. Published research paper on "Optimal Feature Level Fusion Based IRIS and Fingerprint Multimodal Biometric System using Improved Multi Kernel SVM" in International Journal of Innovative Technology and Exploring Engineering (IJITEE), [ISSN: 2278-3075], Vol. 8, Issue-6S, pp. 660-669.
5. Published research paper on "Optimized Multi-Model Biometric Based Human Authentication using Deep Neural Network" in International Journal of Recent Technology and Engineering (IJRTE) [ISSN: 2277-3878], Vol. 8, Issue-3S3, pp. 280-290.
6. Design Patent on "Artificial Intelligence Based Mental Health Diagnostic Device" has been registered by the Patent Office, Government of India.

Co-Investigator: **Ms. Meenakshi Gupta**

1. Research Paper titled " Predicting outcomes of Horse Racing using Machine Learning" is accepted to be published in Scopus indexed journal (ISSN:2321-8169) International Journal on Recent and Innovation Trends in Computing and Communication (IJRITCC).
2. Research Paper titled "Horse Race Results Prediction Using Machine Learning Algorithms With Feature Selection" is accepted to be published in scopus indexed journal (ISSN:2147-6799) International Journal of Intelligent Systems and Applications in Engineering (IJISAE).
3. Research Paper titled "Machine Learning Techniques for detecting and mitigating DDoS attacks in IoT" is accepted to be published in IEEE proceedings of the ICSEIET 2023 conference (paper presented in the

IEEE Conference on 14th Sep, 2023) in October, 2023.

4. Research Paper titled "MACHINE INTELLIGENCE AND IOMT BASED HEART DISEASE PREDICTION" is presented in IEEE MRTM 2023 conference and accepted to be published in IEEE proceedings on 17th Sep, 2023
5. A chapter on " An intelligent IOT based smart Healthcare Based monitoring system using Machine Learning" has been accepted for publication in 5-G based Smart Hospital Healthcare System : Evolution , Integration and Deployment" by CRC Press, Taylor and Francis (in publication)
6. Design Patent on "Artificial Intelligence Based Mental Health Diagnostic Device" has been registered by the Patent Office, Government of India.

5.2 Bibliography

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4. F. Dabek and J. J. Caban, "A neural network based model for predicting psychological conditions," in *Brain Informatics and Health*, pp. 252–261, Springer International Publishing, Berlin, Germany, 2015.
5. Gideon Dresdner et al., "Predicting mental health states in unstructured clinical data using supervised learning," in *Proceedings of the 8th International Conference on Software Development and Technologies for Enhancing Accessibility and Fighting Info-Exclusion—DSAI 2018*, Thessaloniki, Greece, 2018.
6. Riccardo Miotto et al., "Mining electronic health records: towards better research applications and clinical care," *Current Opinion in Neurobiology*, vol. 55, pp. 152–159, 2019.
7. Eweda et al., "Machine learning for mental health: A scoping review of advancements in the application of machine learning to improve mental health diagnosis and treatment," in *Proceedings of the 2008 IEEE International Conference on Bioinformatics and Biomedicine*, Philadelphia, PA, USA, 2008.
8. Desjarlais and Eisenberg., "Global mental health and its discontents: An inquiry into the making of global and local scale," *Applied Soft Computing*, vol. 7, no. 3, pp. 923–928, 2017.
9. O. Rambow and H. Saksono, "Ethical considerations of using machine learning for mental healthcare," *Archives of General Psychiatry*, vol. 59, no. 10, pp. 921–928, 2012.
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- disorder: A systematic review,” *Neurosci. Biobehav. Rev.*, 80:538–554; 2017.
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 13. L.F. Ramos-Lima, V. Waikamp, T. Antonelli-Salgado, I.C. Passos, L.H.M. Freitas, “The use of machine learning techniques in trauma-related disorders: A systematic review,” *J. Psychiatr. Res.*, 121:159–172, 2020.
 14. G. Miner, L. Miner, M. Goldstein et al., *Practical Predictive Analytics and Decisioning Systems for Medicine: Informatics Accuracy and Cost-Effectiveness for Healthcare Administration and Delivery Including Medical Research*, Academic Press, Inc., Cambridge, MA, USA, 1st edition, 2016.
 15. M. Hadzic, M. Chen, and T. S. Dillon, “Towards the mental health ontology,” in *Proceedings of the 2008 IEEE International Conference on Bioinformatics and Biomedicine*, Philadelphia, PA, USA, 2021.
 16. J. Diederich, A. Al-Ajmi, and P. Yellowlees, “Ex-ray: data mining and mental health,” *Applied Soft Computing*, vol. 7, no. 3, pp. 923–928, 2022.
 17. P. D. McGorry, A. R. Yung, L. J. Phillips et al., “Randomized controlled trial of interventions designed to reduce the risk of progression to first-episode psychosis in a clinical sample with subthreshold symptoms,” *Archives of General Psychiatry*, vol. 59, no. 10, pp. 921–928, 2016.
 18. T. I. Mueller, A. C. Leon, M. B. Keller et al., “Recurrence after recovery from major depressive disorder during 15 years of observational follow-up,” *American Journal of Psychiatry*, vol. 156, no. 7, pp. 1000–1006, 2019.

6. List of facilities required from Sushant University for the project implementation.

6.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	No
2.	Water & Electricity	Yes
3.	Laboratory Space/ Furniture	Yes
4.	Power Generator	No
5.	AC Room or AC	Yes
6.	Telecommunication including e-mail & fax	Yes
7.	Transportation	No
8.	Administrative/ Secretarial support	Yes
9.	Information facilities like Internet/Library	Yes
10.	Computational facilities	Yes
12.	Any other special facility being provided	On need basis



6.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group			
PI's Department			
Other Institute(s) in the region			

6.3 Total Budget (Rs. in Lakhs):

- Recurring Cost (Rs): 1,03,000/-
- Non-Recurring Cost (Rs): 97,000/-

Sl. No.	Item	Budget			Total
		1 st Yr	2 nd Yr	3 rd Yr	
A	Recurring	51,500	51,500	NA	1,03,000
	1. Manpower				
	2. Consumables				
	3. Travel				
	4. Field testing, Demo/ Training expenses (if applicable)				
	5. Contingencies/Other costs				
	6. Institutional Overheads*				
	7. Any other item				
B	Non-Recurring	48,500	48,500	NA	97,000/-
	Permanent equipment				
	Construction of work shed/structures				
	Fabrication of prototype equipment				
	Grand Total (A+B)	1,00,000	1,00,000	NA	2,00,000/-

A. Recurring:

1. Budget for Manpower

Sl. No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	Budget (Rs. in lakhs)			Total
					1 st Yr	2 nd Yr	3 rd Yr	
1	Assistant Professor		B.tech/M.Tech	2000	24000	24000		48000

2. Budget for Consumables*

Sl. No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)			Total
			1 st Yr	2 nd Yr	3 rd Yr	

*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel



Sl. No.	Purpose	Budget (Rs. in lakhs)			
		1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Project logistics	10000	10000		20000
2.	Field activities				
3.	Review meetings (if elsewhere)				

4. Field Testing/ Demo/ Trainings*

Sl. No	Description of field testing/demos /trainings	No/Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
1	Cloud computing services like AWS, Azure, or Google Cloud		5000	5000	NA	10000
2	Machine learning software and tool licenses		5000	5000	NA	10000

*Include material for technology field testing/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of beneficiaries/training, duration of training days, cost /training).

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
1	Subscription to external datasets		5000	5000	NA	10000
2	Ongoing maintenance and support for deployed models		2500	2500		5000

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

B. Non-Recurring:

Budget for Permanent Equipment/ Workshed/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.	Prototype Development		67,000
2.	Books and Journal		20000
3.	Printing & Stationary		10000

7. Deliverables

Deliverable	Mark ✓	Brief description
Product development/adaptation	✓	Code repositories and scripts used in the project, including data preprocessing, model development, and

		deployment code, Machine learning models developed for mental disease prediction, including any code, scripts, and model files.
Process development/adaptation	√	Data cleaning scripts, data dictionaries, and data quality assessments, feature selection and engineering process, explaining how features were chosen and created for the machine learning models.
Technology package for development of the project area and local community	√	Training materials for healthcare professionals on understanding and utilizing the predictive model, Reports summarizing the evaluation of machine learning models.
Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)	√	Research papers or academic publications resulting from the project, including articles submitted to relevant journals or conferences.
Scientific knowledge and/or data generation leading to technology development in future		
Other (Please specify)		

8. Name and address of experts/ institution interested in the subject / outcome of the project.

Experts or institutions interested in the subject of Mental Disease Prediction Using Machine Learning Techniques:

Academic Institutions, Mental Health Organizations, LinkedIn and ResearchGate and Healthcare IT and AI Companies.



RINKY AHUJA

2357, Second Floor, Sector -57, Gurgaon-122001. (NCR)

rinkyahuja25@gmail.com ,+91-8448330015

Job Objective

To establish myself in the field of education, to utilize my skills and experience to help students to achieve high improvements in academics.

Profile Snapshot

- Active member of **Research and Development** committee of the college.
- **Project Mentor** of students of all levels and guide them in their project studies.
- Responsible for **organizing technical events & conferences (national/international) level**.
- Responsible for preparing Timetables for entire computer science stream of the college.
- Responsible for **preparing exam schedules** and appoint teachers accordingly.
- Analyse university results for different departments and **prepare annual report for management review**.
- Active participation in **departmental activities** for all streams.
- **Focused** and proactive with the **ability to take the initiative**, adopting a **motivated and positive approach** to all tasks, with a **commitment to deliver** the highest standards of service always.
- Possesses **excellent interpersonal and communication skills** with the ability to adapt to any situation and prioritize tasks
- Key assets include strong attention to detail, the **ability to communicate at all levels**, ability to work under pressure, strong analytical ability, **excellent presentation skills**, a lateral thinker who can take an innovative approach to problem solving.
- A good **team leader and enthusiastic team player** with the ability to work in multi-task and challenging environment.

Academics

- **2022 - Ph.D. in Computer Science & Engineering** from **Sushant University, Gurugram (HR)**
- **2010 - M. Tech (Honors) in Computer Science & Engineering** secured **89%**, **N.C. College of Engineering, Panipat**, affiliated to **Kurukshetra University, Kurukshetra**.
- **2006 - B. Tech (Honors) in Computer Science & Engineering** secured **75%**, **N.C. College of Engineering, Panipat**, affiliated to **Kurukshetra University, Kurukshetra**.
- **2002 – 12th in PCM Stream** secured **78 %** from **M.A.S.D Public School, Panipat**
- **2000 – 10th in General Stream** secured **82%** from **Dr. M.K.K Arya Model School, Panipat**



Work Experience

- **Aug 2022 to Present** as **Assistant Professor** in **Sushant University, Gurugram (HR)**
- **Jul 2019 to Aug 2022** as **EDP executive** in **Gaurav International, Gurugram (HR)**
- **Jan 2010 to Apr 2016** as **Assistant Professor** in **KIIT College of Engineering, Gurugram (HR)**.
- **Aug 2006 to Dec 2009** as **Lecturer** in **N.C. College of Engineering, Gurugram (HR)**.

Achievements

- **Silver Medal and a Certificate of Merit** awarded for securing **Second Position** in **M. Tech.**

Paper Published

- Paper Published in **International Journal of Recent Technology and Engineering (IJRTE)** on "**Optimized Multi-Model Biometric Based Human Authentication using Deep Neural Network**".
- Paper Published in **International Journal of Innovative Technology and Exploring Engineering (IJITEE)** on "**Optimal Feature Level Fusion Based IRIS and Fingerprint Multimodal Biometric System using Improved Multi Kernel SVM**".
- Paper Published in **International Journal of Engineering Research and Development** on "**An Efficient Biometric Multimodal Fingerprint and Iris using an SVM Classifier and Adaptive Neuro Fuzzy Inference System (ANFIS)**".
- Paper Presented on "**Fusion of fingerprint and iris Recognition Techniques**" in International Conference on **Recent Emerging Developments in Science, Engineering and Technology (REDSET 2016)**" in School of Engineering organized by **G. D. Goenka University, Gurugram**".
- Paper Presentation on **Security in different management domains of MANET** in the **International Conference on "Science and Engineering"** held at Vaish College of Engineering, Rohtak.
- Paper presentation on **Performance Analysis of MANET Routing Protocols** in the **National Conference on "Advanced Computing and Communication Technology"** held at Vaish College of Engineering, Rohtak.
- Paper presentation on **Computer Aided Process Planning** in AICTE Sponsored **National level seminar on "Robotics and Automation"** held at N.C. College of Engineering, Israna, Panipat.
- Participated in the **National level Seminar on "Software Reliability"** held at N.C. College of Engineering, Israna, Panipat.
- Seminar Presentation on **CDMA, DNA Computing, Neural Networks, Black Box, Biometrics, Optical Camouflage, Digital Watermarking and RedTacton**.

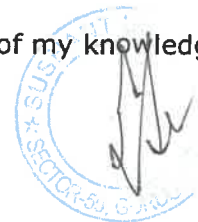
Personal Details

- **Date of Birth:** 25-09-1984
- **Permanent Address:** 2357, Second Floor, Sector -57, Gurgaon-122001. (NCR)
- **Marital Status:** Married

I hereby declare that above-mentioned particulars are true to the best of my knowledge and belief.

PLACE: Gurugram

Rinky Ahuja



Sachin Datt, PhD

Head of Communication Design, School of Design,
Sushant University (erstwhile, Ansal University), Gurgaon.
sachindatt@sushantuniversity.edu.in

Permanent Address

230 DDA sfs
sector 22, Dwarka
Delhi 110077
Mob: 9711910597
sachindatt9@gmail.com

EXPERIENCE

School of Design, Sushant University/ Head of Communication Design program

August 2018 - Present, Gurgaon

Design of Communication Design course structure for Bachelor of Design. Structuring of program time tables. Design of courses like Visual Storytelling, Animation principles, Information Graphics, Computer Aided Design, Brand personality design, Semiotics, Curriculum Design using Bloom's taxonomy. Writing course objectives and outcomes for assessment. Guiding doctoral students. NAAC accreditation supervision for criteria 1,2 and 3. Research writing for design. Value theory in design. Introduction to Axiology. Multidisciplinary courses in allied subjects. Teacher training on Taxonomy of Educational Objective for Cognitive and affective domains (Bloom's taxonomy). Image generation with Generative AI tools. Design thinking. Design Problem solving with AI Agents. Leading a Research collaboration with King Mongkut University, Thonburi, Thailand.

Curriculum Design

2019 - Present

Design of Curriculum for undergraduate B. Des and postgraduate M.Des program. Particular expertise in aligning program goals and objectives to "Bloom's taxonomy" for compliance with NAAC and other university accreditation agencies.
(Clients: MIT WPU, Pune, Sushant University, Erstwhile Ansal University, Gurgaon)

SKILLS/Teaching Interest

Curriculum Design for Design and Technology education using taxonomy of educational objectives

Problem Solving in Design assisted with AI tools

Science Communication

Storytelling

Branding and Advertising

Research Interests

Taxonomy of Educational Objectives (bloom's taxonomy) for Design and Technology education.

Developing AGI models for problem solving in Design assisted with AI.

NMIMS School of Design / Assistant Professor

October 2017 - August 2018, Mumbai

Primary roles include teaching visual communication courses including Visual storytelling, drawing, animation and 3D modeling. Research and design of innovative pedagogy for collaborative project based learning. Designing assessment exercises for evaluating and grading skill level using Bloom's taxonomy.

Homi Bhabha Center for Science Education, TIFR / Visiting fellow

February 2016 -October 2017, Mumbai

Research on issues of creativity in Design and Technology education.



Design of 'design and technology' workshops for children and teachers

Pratham Education / Science communication designer

April 2012 - February 2016, Mumbai, Delhi

Developing course content for teaching "History of science and technology" for school teachers. Designing educational comics and games on: History of Electricity, Airplanes, Astronomy, Microscope etc.

Design and conduct of Science fairs in slum and rural areas for popularization of science and technology

Idesignskills / freelance Infographics designer

2009 - 2018, Mumbai

Designing information graphics for an Instructional design firm

IDC, IIT Bombay / Design Research Associate

2005 - 2006, Mumbai

Designed comic books for teaching science

Mindspring Digital Pvt. Ltd. / Animator

August 2002 - June 2003, Delhi

Creating digital animations for medical and engineering e-learning modules

EDUCATION

Doctor of Philosophy / IDC, IIT Bombay

2006 - 2012

Developed a narrative based approach for designing secondary school science curriculum

Master of Design / IDC, IIT Bombay

2003 - 2005

Project 1: Short Animation film on Education

Project 2: Comic book for teaching chemistry

Bachelor of Fine Arts / College of art Delhi

1998-2002

Major Project: Advertising campaign for Norton antivirus

Online certificate course from Harvard Business school online

March 23, 2022



Course topic: Strategy Execution

PUBLICATIONS

Patent Published

“Habit Builder for children” Application No.202211039717
A concept device that uses principles of Gamification and behavior psychology to develop ‘essential’ habits in children below 10 years.

Books

History of Electricity comic book series in 3 volumes. Translated in Hindi, Marathi and Kannada. Published by Pratham Education Foundation with funding from CA Technologies, USA. 2017.

Book chapter

Datt, S (2019): Using narratives for teaching nature of technology. Explorations in Technology Education Research. Edited by John Williams and David Barlax. Springer publication.

Journals — Published

Datt, S. (2021): Theoretical Basis for evolving taxonomy of the Affective domain. Journal of educational psychology. I-manager Publication. Vol. 15 .No. 2 . August - October 2021.

Datt, S. & Sugra, C. (2018): A Comparison of Innovations by Adults and Children at the Grassroots Level in India. Design and Technology Education An International Journal. PKP public knowledge project. Vol 23 No. 1. Pp. 10-25

Datt, S. (2015): Case for Building Informal Ontology of a Subject Matter at School level Science Education with Community Collaboration. Journal of School Education Technology, I manager Publication. Vol. 11. No.1, p. 34.

Datt S & Poovaiah R. (2012): Designing Epistemologically Correct Science Narratives. journal of School Education Technology, I manager Publication, 2013. Vol. 7, No. 4, p.16.

Conference proceedings

Datt, S. (2024). Taxonomy of Educational Objectives for Design Discipline. Futuring Design Education conference. Department of Design, Indian Institute of Technology, Delhi. [In Print]

Datt, S., & Chunawala, S. (2018). Children as Filmmakers. Episteme 7:International Conference to review Research on Science Technology and Mathematics Education. (pp. 17)

Datt, S., Shah, M., & Chunawala, S. (2017). Upper primary and secondary school science teacher's perception of creativity in science education. In A. Sharma and J. Rajeswaran (Eds.), Creativity and cognition in art and



design: Proceedings of the 1st International Conference on Creativity and Cognition in Art and Design. ICCCAD 2017.(pp. 278-286). NID Bangalore. Bloomsbury.

Datt, S. (2017). Paradox of novelty and usefulness. In A. Sharma and J.Rajeswaran (Eds.), Creativity and cognition in art and design: Proceedings of the 1st International Conference on Creativity and Cognition in Art and Design. ICCCAD 2017. (pp. 188-198). NID Bangalore. Bloomsbury.

Datt, S & Poovaiah, R. (2013). Effect of Historical Narrative Based Approach in Designing Secondary School Science Content on Students' Memory Recall Performance. ICORD 2013, Chennai. Springer Publication, 2013.

Published Articles

Datt, S. (2015), Suggestions for Improvement of Activity Based Science Learning Approach in Upper Primary Science Textbooks and its Application in Himachal Pradesh DIET training. Design for all: Design and Children. IIT Bombay, 2015

Datt. S & Poovaiah R. (2009), Story Based Schema Building Approach in Science Learning. Designing for children conference proceedings. Industrial Design Centre, IIT Bombay 2009.

Datt. S & Poovaiah R. (2009): Fractal like model for designing educational stories. Design Thoughts. Industrial Design Centre, IIT Bombay.

Conference presentations

Datt, S(2023). Taxonomy of educational objectives for value and skill education in product design program, European Academy of Design Conference (EAD 2023). World University of Design, Sonipat, India,

Datt, S & Rao. A.G. (2008). Story of bamboo crafts guru Medar Ketya, paper presented at Indian Folklore Congress, Shantiniketan, West Bengal, 2008.

Datt, S. & Poovaiah, R. (2011). Framework for organizing knowledge as a narrative: A case for secondary school science learning, paper presented at Teaching Narrative and Teaching through Narrative International conference, Tampere, Finland.

Workshops

Faculty Development Program on 'Research Orientation for Design'. For the Design Faculty. Sushant University. January 2024

Faculty Development Program on "Design and theory of evolution". School of Health Sciences, Sushant University. 2023.

Faculty Development Program on "Bloom's taxonomy and Flipped Learning for engineering and health science courses". July 2022.



Faculty Development Program for professional designers and teachers interested in academic research. Online lectures. May 2021.

Stop Motion animation film Making workshop. HBCSE, Mumbai, May 2017.

Training for DIET upper Primary science teachers in scientific Method. Himachal Pradesh. 2014.

Glider Making workshop with Sri Lankan school teachers at HBCSE. Mumbai, July 26, 2016.

Glider Making Workshop with Kendriya Vidyalaya teachers. 24 Nov. 2016.

School Science Research and Development (SSRD) summer camp with school children. Storytelling and Flipbook making.

Science Fairs conducted at various schools in Delhi, 2015.

Glider making, LEGO construction and microscope making workshops with class 7 to 9 students. HBCSE, 2016.

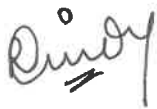


Utilization Certificate

Certified that grant of ₹ 1,90,000/- (**Rupees One Lakh Ninety Thousand Only**) sanctioned by the Center of Research and Development, Sushant University, vide letter no. **F.No.1/2023-2024/Seed Fund-Feb 24/30 Dated 22nd February 2024**, financial assistance for the project titled **“Mental Disease Prediction Using Machine Learning Techniques”** was utilized for the purpose for which it was sanctioned.

Financial expenditure incurred

Sl.no	Nature of expense	Proposed Expenditure (in Rs.)	Expenditure incurred (in Rs.)
1	Manpower	48,000	45,000
2	Travel	20,000	16,000
3	Field Testing	20,000	18,000
4	Contingencies	15,000	15,000
5	Equipment	97,000	96,000
	Total	₹ 2,00,000	₹ 1,90,000



Principle Investigator

School Of Engg. & Technology
Sushant University,
Center 55, Gurugram




Accounts Officer
Account & Finance Officer
Sushant University
Gurugram, Haryana

PROFORMA FOR SUBMISSION OF SEED FUND PROPOSAL

Part I: General Information

1. Project Title (should be focused not exceeding 15 words):

Mobile Design and Technology Van for Design Awareness Among School Children in Gurugram

2. i. Name of Principal Investigator: Simar Dhingra (School of Design, Sushant University)

3. Collaboration if any, give details of institution(s):

NA

4. Any Project(s) previously sanctioned by any funding agency? If yes give the details:

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)
	NA	NA	NA	NA	NA	NA

5. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues?

Needs clearance form schools to allow Van to enter their school premises

6. Duration (months): 6 Months

7. Enclose the following while submitting the application form:

Duly filled application form (complete with all Annexures)- 2 hard copies	
Bio-data of the PI & Co-I -2 copies	



Part II: Proposal Summary

1. **Origin of the Proposal:** (Maximum 1 page)
(Scientific/Technical rationale for doing this work should be elaborated)

The design industry is growing rapidly in India, but many school children in Gurugram are not aware of the opportunities available to them. This is due to a lack of exposure to design education and resources. The schools which are providing design courses are providing outdated design knowledge. The current developments in design include use of artificial intelligence applications for exploring problem solutions.

2. **Objectives (Only 4-5 focused one that can be observed, measured or clearly assessable)**

i. Increase awareness of design among school children in Gurugram
ii. Provide hands-on experience with design tools and technologies
iii. Inspire school children to pursue careers in design

3. **Review of status of Research and Development in the subject**

3.1 International Status:

NA

National Status:

Dr. S. Ramani, who is considered as the father of computer networking in India, and was instrumental in setting up the Education and Research Network (ERNET), India's first wide area network. Dr. R.A. Mashelkar, a former director general of the Council of Scientific and Industrial Research, is the president of the Global Research Alliance, a network of publicly funded research and development institutes from Asia-Pacific, Europe and USA. He is also the chairperson of the National Innovation Foundation and the Reliance Innovation Council. He has advocated for inclusive innovation, which is the development of low-cost and high-quality solutions for the poor.

The Science on Wheels (SoW) project of the Agastya International Foundation, which is a network of over 200 vans that travel across 22 states in India and reach out to over 1.5 million children and 200,000 teachers every year.

Importance of the proposed project in the context of current status

The impact of the project is expected to be significant. The project is expected to increase awareness of design among school children in Gurugram. The project is also expected to inspire school children to pursue careers in design.

3.2 Work Plan:

Mobile Design Education Van for Schools: One-Year Work Plan

1. Planning & Research (2 months)



- 1.1. Conduct surveys and interviews with educators, students, and school administrators to understand:

- Their current knowledge of design.
- The interest level in design topics.
- Preferred methods of learning.

- 1.2. Identify potential school partners and establish contacts.

- 1.3. Research legal and logistical requirements for operating a mobile education van in the target region (permits, parking, school permissions, etc.).

2. Van Acquisition & Setup (2 months)

- 2.1. Identify and purchase/lease a suitable van.

- 2.2. Design the interior of the van to be conducive for learning.

- Install interactive displays, seating, and storage.
- Ensure proper ventilation, lighting, and audio-visual capabilities.

- 2.3. Brand the exterior of the van with catchy, design-centric graphics to attract attention.

3. Curriculum Development & Material Creation (2 months)

- 3.1. Based on the earlier research, develop a curriculum tailored for school students.

- 3.2. Create interactive modules, videos, hands-on activities, and design challenges.

- 3.3. Incorporate feedback from educators and a pilot group of students to refine the content.

4. Staff Recruitment & Training (1 month)

- 4.1. Hire educators/facilitators with a background in design.

- 4.2. Conduct training sessions to familiarize them with the curriculum and mobile van operations.

5. Launch & Initial School Visits (1 month)

- 5.1. Organize a launch event to introduce the mobile van to the community.

- 5.2. Schedule and conduct initial visits to partner schools.

- Engage students with interactive sessions and hands-on activities.

6. Iteration & Refinement (1 month)

- 6.1. Gather feedback from the first set of school visits.

- 6.2. Make necessary refinements to the curriculum, teaching methods, and van setup.



7. Continued School Visits & Engagements (3 months)

- 7.1. Continue visits to new schools as well as return visits to schools for advanced sessions if needed.
- 7.2. Organize design challenges or competitions to foster deeper engagement.

8. Evaluation & Future Planning (1 month)

- 8.1. Conduct a thorough evaluation of the program's impact.
 - Surveys, feedback sessions, and success stories.
- 8.2. Plan for the next phase – potential expansions, new regions, curriculum updates, etc.

Throughout the year, ensure regular communication with school administrators and educators. Their feedback and support will be crucial for the program's success. Additionally, consider leveraging social media and local media to create awareness and document the journey of the mobile van.

3.3 Methodology: (Maximum of 5 pages)

1. Project Introduction

1.1. Background

- Importance of design in today's world.
- Current state of design awareness in schools.

1.2. Objective

- Introduce students to design as a viable profession.
- Provide hands-on experience and resources about design.

2. Target Audience**

2.1. Age Group

- Primary, middle, or high school students.

2.2. School Categories

- Government schools, private schools, international schools.

3. Design Awareness Van Features**

3.1. Interactive Displays

- Touchscreens with information about design.
- Design software demos.

3.2. Hands-on Activities

- Simple design challenges.
- Art and craft sessions to stimulate creativity.

3.3. Resources Corner

- Brochures and handouts.
- List of universities offering design courses.



- Career paths in design.

4. Route Planning**

4.1. Identification of Schools

- Research and list potential schools in both regions.

4.2. Route Mapping

- Design a route that minimizes travel time and maximizes reach.

4.3. Schedule

- Frequency of visits (daily, weekly).
- Time spent at each school.

5. Stakeholder Collaboration**

5.1. School Collaboration

- Engage with school principals and educators.
- Schedule visits during school hours.

5.2. Design Community Involvement

- Invite local designers for guest sessions.
- Collaborate with design institutes for additional resources.

6. Marketing and Promotion**

6.1. Pre-visit Announcements

- Send brochures and posters to schools.
- Use social media to create buzz.

6.2. Event Days

- Live sessions or webinars for online engagement.
- Share photos and videos of the van's activities.

7. Feedback and Continuous Improvement**

7.1. Student Feedback

- Surveys or feedback forms.
- Interactive sessions to understand students' perspectives.

7.2. School Feedback

- Engage with educators post-visit.
- Adjust content or approach based on feedback.

7.3. Periodic Review

- Monthly or quarterly review of the van's impact.
- Make necessary changes to improve efficiency and effectiveness.

8. Budgeting and Funding**

8.1. Initial Costs

- Van purchase or rental.
- Interior setup and equipment.



8.2. Operational Costs

- Fuel, maintenance, and staff salaries.
- Marketing and promotional materials.

8.3. Funding Sources

- Sponsorships from design firms or software companies.
- Grants or support from educational institutions.

9. Project Timeline**

9.1. Initial Setup

- Duration for van setup, staff hiring, etc.

9.2. Pilot Phase

- Test run in a few schools to refine the approach.

9.3. Full Rollout

- Expansion to all targeted schools.

10. Conclusion**

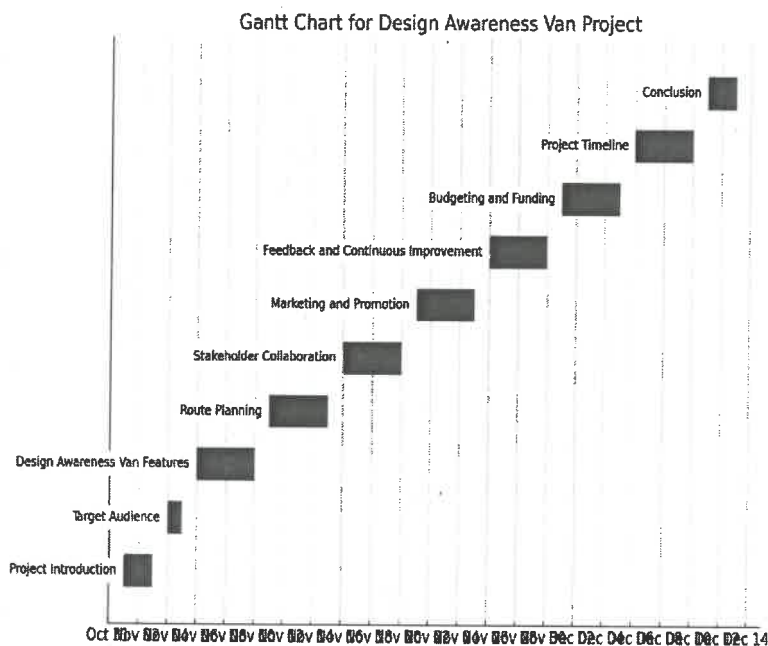
10.1. Anticipated Impact

- Number of students reached.
- Increased awareness and interest in design as a profession.

10.2. Future Prospects

- Potential expansion to other regions.
- Collaboration with more schools or universities.

This methodology can serve as a foundational framework. Depending on the specifics of the project, each section can be expanded with more detailed steps and resources.



4. Expertise:

4.1 Expertise available with the investigators in executing the project:

The principal investigator has 4 years of experience in working in the rural areas and urban slums in the area of science education. The expertise included creation of training material for rural and slum teachers related to history of science content. The work involved in various regions of Maharashtra, Chhattisgarh, Himachal, Uttaranchal and Delhi. The outcome of the program was science exhibitions in local government schools.

The projects involved complete community participation from teachers and students to also parents and local NGOs and MLAs working in that region. Several reports have been created as part of the project. The project outcomes are also available in Pratham organization's website. www.pratham.org.

4.2 Bibliography

Bose, A. (1983). Mobile science exhibition; a study. [UNESCO](#)

Bailey, R. (2019). How to write a bibliography for a science fair project. [ThoughtCo](#)

National Council of Science Museums. (2015). MSE – Mobile Science Exhibition 1965-2015: 50 Glorious Years of Taking Science to Rural India. [Indian Culture](#)

5. List of facilities required from Sushant University for the project implementation.

5.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	No
2.	Water & Electricity	No
3.	Laboratory Space/ Furniture	YES
4.	Power Generator	YES
5.	AC Room or AC	YES
6.	Telecommunication including e-mail & fax	Yes
7.	Transportation	Yes
8.	Administrative/ Secretarial support	Yes
9.	Information facilities like Internet/Library	YES
10.	Computational facilities	Yes
12.	Any other special facility being provided	A mobile van

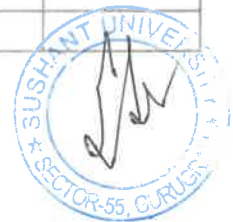
5.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group	Laptop	Lenovo, 2020	Not a high end machine, not sufficient for project
PI's Department	Mobile Van	Locally made	The equipment is old and needs to be upgraded. More number of units are required
Other Institute(s) in the region			

5.3 Total Budget (Rs. in Lakhs):

- Recurring Cost (Rs):
- Non-Recurring Cost (Rs):

Sl. No.	Item	Budget			
		1 st Yr	2 nd Yr	3 rd Yr	Total
A	Recurring				85000
	1. Manpower	60000			
	2. Consumables	8000			
	3. Travel	10000			
	4. Field testing, Demo/ Training expenses (if applicable)	1000			
	5. Contingencies/Other costs	3000			
	6. Institutional Overheads*	2000			
	7. Any other item	1000			
B	Non-Recurring				60000
	Permanent equipment	4000			
	Fabrication of prototype equipment	0			
		2000			
		0			
	Grand Total (A+B)	1,45000			



A. Recurring:

1. Budget for Manpower

Sl. No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	Budget (Rs. in lakhs)			
					1 st Yr	2 nd Yr	3 rd Yr	Total
	PI	1	Graduation	3000	36000			60000
	Van Driver	2	Driving license	2000	24000			

2. Budget for Consumables*

Sl.	Description of	Qty./Yr	Budget (Rs. in lakhs)
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No.	consumable		1 st Yr	2 nd Yr	3 rd Yr	Total
1	3D printing material	2	3000			3000
2	Cardboard, metal sheets, pipes	50 sheets	1000			1000
3	Stationery		2000			2000
4	Measuring instrument		1000			1000
5	Basic tools		1000			1000
6	Workbench tables		0			8000

*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel

Sl. No.	Purpose	Budget (Rs. in lakhs)			
		1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Travel	7000			7000
2	Project logistics	1500			1500
3.	Field activities	1500			1500

4. Field Testing/ Demo/ Trainings*

Sl. No	Description of field testing/demos /trainings	No/Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
	Testing/demo	10	1000			1000

Training required will be for demonstrating different models of design and explaining the design thinking process by showing various iterations of the same model till the final solution is applied.

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
	Intellectual fees, equipment servicing	5	3000			3000

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

B. Non-Recurring:

Budget for Permanent Equipment/ Workshed/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.	Mobile VAN (second Hand)	1	40000
2.	computers	2	20000

6. Deliverables

Deliverable	Mark ✓	Brief description
Product development/adaptation		
Process development/adaptation	*	Process of visiting each school and demonstration of design models

Technology package for development of the project area and local community		
Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)	*	Feedback of response to the travelling workshop from the students
Scientific knowledge and/or data generation leading to technology development in future		
Other (Please specify)		

7. *Name and address of experts/ institution interested in the subject / outcome of the project.*

Sachin Datt (School of Design, Sushant University)



CAREER OBJECTIVE:

My objective is to obtain a position in a professional environment where my skills are valued and can benefit the organization.

PROFESSIONAL SYNOPSIS:

Assistant Professor At School Of Design, Sushant University, Gurugram: August-2020 To Present

Key Responsibilities- Admission, Admin, Academics

- Worked as Assistant Professor in School of Design and School of Architecture.
- Associated as an Coordinator for B.Des Foundation.
- Working as Admission Coordinator for the department as set to enhance number of students for School of Design.
- Coordinating for other matters like Scholarship, Lateral Entry Admissions, Student Welfare etc.
- Active member in Spatial Design Domain Team; Admission related Counseling and workshops.
- Developed school curriculums along with lesson plans, assessment rubrics, and supportive pedagogy inventory.

Assistant Professor At Code, Vivekananda Global University, Jaipur: April-2019 To August-2020

Key Responsibilities- Admission, Admin, Academics

- Worked as Assistant Professor in Department of Architecture & Interior Design.
- Associated as an Academic Head for Architecture 1st year & Coordinator for M-Des UX Design.
- Actively participated in the national level event "STAMBH"; "ENCODE" & "#NOLOCKDOWNONEDUCATION" organized by CODE.
- Coordinated the academic of the department as set.
- Worked in the admission cell to enhance number of students for Centre of Design Excellence.
- Scheduled academic activities and events and meetings related to both Architecture and Interiors.

Assistant Professor At Poornima University, Jaipur: January-2018 To Nov-2018

Key Responsibilities- Admission, Admin, Academics

- Worked as Assistant Professor in Department of Interior Design.
- Coordinated the academic of the department as set.
- Associated as a coordinator for training and placement.
- Prepared scheme and syllabus of the Interior Design Department.
- Providing inputs/signing off on the project progress at various steps.
- Worked in the admission cell to enhance number of students for the School of Design.
- Anchoring for the Poornima Trends 2018- Annual Fashion Show at Hotel ITC Rajputana, Jaipur.
- Scheduled academic activities and events and meetings related to course including IIID Symposium, Jaipur Chapter held during the tenure.



Design Head at Featherlite (Supertech) India Pvt. Ltd., New Delhi: November-2015 to May- 2017

I was employed with Featherlite as a *Designer* (Nov-15 to Oct-16) and with sincere efforts & excellent performance, got promoted in Nov-16 for the position of *Design Head*.

Key Responsibilities-

Making CAD layout plans, Production Drawings and Furnishing technical & commercial data for Management of projects.

Major Project-

Featherlite Corporate Office, Noida; Make My Trip Corporate Office, New Delhi; The British School, New Delhi, BIBA Rangriti, Delhi NCR

Working as a **Freelancer and Third Party Consultants** for various projects like Supertech India Pvt. Ltd , Noida; Featherlite Corporate Office & Showroom, Noida; Residential & Interior Drawings in Bhilwara & Jaipur.

Junior Architect at First Principle Design Pvt Ltd, Kalka Extn, New Delhi: June-2015 to November-2015

Key Responsibilities- Working Drawing, Presentation Drawing, Project Coordination (Individual Bungalows, Apartments, Commercial Building)

Dilip Soni Architects, Navrangpura, Ahmedabad, Gujarat: January- 2014 to June-2014 (Internship)

Key Responsibilities- Working Drawing, Presentation Drawing (Residences, Schools & Club House)

PUBLICATIONS:

- Research Paper on “Interior Lighting Influences Work Efficiency and Human Behaviour”
- Research Paper on “Exploring the Strategic Role of Storefront Aesthetics and Design Principles”

WORKSHOPS AND CONFERENCES ATTENDED:

- International Conference on “Design Education for better World”, CODE, VGU, Jan 11th, 2020, Jaipur
- International Conference on Augmenting Nature by Green Affordable New- Habitat, BEE, Sept 9th to 11th, 2019, New Delhi
- National Conference on “Reviving Regional Wisdom in Architecture”, SPA, Poornima University, March 9th & 10th, 2018, Jaipur
- Workshop on “Think Solar”, CODE, VGU, Jaipur
- Workshop on “Bloom’s Taxonomy”, CODE, VGU, Jaipur
- FDP- Training of thoughts; Mud Futures; Research Orientation for Design at Sushant University, Gurugram

EDUCATION:

- 2015-2017: MBA (Design Management)- Jaipur National University, Jaipur, Rajasthan
- 2010-2015: B.Arch. (Interior Design)- Aayojan School of Architecture, Jaipur, Rajasthan
- 2009-2010: Class XII CBSE Board- Central Academy, Bhilwara, Rajasthan
- 2007-2008: Class X CBSE Board- Sophia Sr. Sec. School, Bhilwara, Rajasthan

ACHIEVEMENTS:

- Secured Merit Position in University and Awarded by Honorable Governor of Rajasthan
- Secured second position in Badminton (Faculty Mixed Doubles)- Pratishtha 2020 at CODE, VGU.
- Topped (second) in College Thesis 2015 - Contemporary Sikh Religious Centre
- Scored highest Marks in Various Semesters among Batch
- School Captain (Sophia Sr. Sec. School) 2008-09

PROFICIENCY:

- Advance Level – AutoCad (2D+3D), Google Sketch up, Microsoft Office- PowerPoint, Word
- Basic Level – Autodesk Revit Architecture, Adobe Photoshop

SKILLS & STRENGTHS:

Strong Design Skills
Leadership Quality
Conceptual Sketching
Strong Communication

Collaborative
Time Management
Strong Motivational
Ability to give the best result in pressure situations

**PERSONAL DOSSIER:**

Date of Birth : 22 October, 1992
Gender : Female
Languages Known : English Hindi
Marital Status : Married

Date:

SIMAR DHINGRA

Utilization Certificate

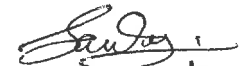
Certified that grant of ₹ 1,45,000/- (Rupees One Lakh Forty Five Thousand Only) sanctioned by the Center of Research and Development, Sushant University, vide letter no. F.No.1/2023-2024/Seed Fund-Feb 24/26 Dated 22nd February 2024, financial assistance for the project titled “Mobile Design and Technology Van for Design Awareness Among School Children in Gurugram” was utilized for the purpose for which it was sanctioned.

Financial expenditure incurred

Sl.no	Nature of expense	Proposed Expenditure (in Rs.)	Expenditure incurred (in Rs.)
1	Manpower	60,000	50,000
2	Travel	10,000	12,000
3	Consumables	16,000	20,000
4	Field testing	1,000	1,000
5	Contingencies	3,000	2,000
6	Equipment(Mobile van,computer)	60,000	60,000
	Total	₹ 1,45,000	₹ 1,45,000



Principle Investigator

**Accounts Officer
Account & Finance Officer
Sushant University
Gurugram, Haryana**

PROFORMA FOR SUBMISSION OF SEED FUND PROPOSAL

Part I: General Information

1. Project Title: Project: Design of Physical File Data Room for University Records

2. Name of Principal Investigators: Dr. Sachin Datt (School of Design, Sushant University)
Name of Co-Investigator- N.A.

3. Collaboration if any, give details of institution(s): NA

4. Any Project(s) previously sanctioned by any funding agency? If yes give the details:

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)
	NA	NA	NA	NA	NA	NA

5. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues?
None

6. Duration (months): 12 months

7. Enclose the following while submitting the application form:

Duly filled application form (complete with all Annexures)- 2 hard copies	
Bio-data of the PI & Co-I -2 copies	



Part II: Proposal Summary

1. Origin of the Proposal:

The University currently faces challenges in maintaining and organizing its physical file data of records. The existing storage facilities are insufficient, leading to clutter and difficulty in accessing essential documents. This project aims to address this issue by designing an efficient and organized physical file data room that ensures easy retrieval and proper preservation of university records.

2. Objectives

i. Create a well-structured and organized physical file data room.
ii. Optimize the storage capacity to accommodate current and future record requirements.
iii. Implement a systematic filing system for easy retrieval of records.
iv. Enhance data security and confidentiality of university records.

3. Review of status of Research and Development in the subject

3.1 International Status: (Maximum 2 pages)

(Researchers working in the area worldwide and their contributions must be properly highlighted with recent references and reviews. A correct and faithful description of the international research status must be given)

3.2 National Status: (Maximum 1 page)

(Same as above to cover the contribution of Indian Scientists in the project area)

Importance of the proposed project in the context of current status

a) Empowerment: -

Enhanced Accessibility: Well-designed storage rooms make resources more accessible to students, faculty, and staff. This accessibility empowers individuals to take control of their education, research, and administrative tasks by providing easy access to essential materials.

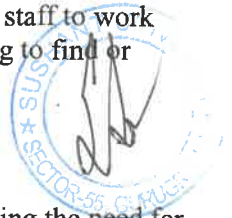
Student Empowerment: For students, easy access to library resources, past academic materials, and historical records can be empowering. It enables them to explore, research, and learn independently.

Staff Efficiency: A well-organized storage system empowers administrative and support staff to work more efficiently, allowing them to focus on more value-added tasks rather than struggling to find or manage documents.

b) Sustainable Solutions: -

Space Optimization: Proper storage design can lead to more efficient use of space, reducing the need for additional construction. This contributes to sustainability by minimizing the physical footprint of the university.

Energy Efficiency: Energy-efficient storage room designs, including lighting and climate control, can reduce energy consumption, lowering the university's environmental impact.



Reduction of Waste: Sustainable storage solutions consider the long-term preservation of materials, reducing the need for reprints, redundant purchases, or the disposal of damaged documents, which can contribute to a reduction in waste.

c) **Knowledge Transfer:**

Historical Preservation: Storage rooms in universities often house valuable historical records, and a well-designed facility ensures the preservation of these documents. This contributes to the transfer of knowledge across generations and facilitates historical research.

Archival Storage: Proper storage design for archives and rare materials ensures that the knowledge contained within these materials is passed down to future scholars, supporting academic research and learning.

Data Retention: Storage rooms are essential for retaining research data and scholarly works, ensuring that knowledge generated within the university is not lost and can be transferred to other scholars, students, and institutions.

d) **Community Development: -**

Resource Sharing: Well-organized storage rooms support resource sharing with the broader community, including neighboring schools, researchers, and the public. This promotes community development by providing access to educational and research materials.

Historical and Cultural Resources: Universities often house valuable historical and cultural resources that can be shared with the community. Access to historical documents, artifacts, and archives can enrich the cultural heritage of the region.

Collaborative Projects: Storage rooms are critical for the management of materials related to collaborative projects, which often involve community partners. This strengthens university-community ties and fosters community development through joint initiatives.

3.3 Work Plan:

Designing a storage space for files and papers in a university is a comprehensive project that involves various phases and tasks. A well-structured work plan ensures that the project proceeds efficiently. Here is a sample work plan to guide you through the process:

Project Title: Design of Physical File Data Room for University Records in Sushant University

Project Duration: 12 Months

Project Team:

Phase 1: Project Initiation (Week 1-2)

- Define project objectives and goals.
- Assemble the project team.
- Establish communication and reporting protocols.
- Develop a project charter.



Determine the project budget and resources required.
Initiate stakeholder consultations.

Phase 2: Needs Assessment (Week 3-6)

Conduct an inventory of existing storage spaces.
Identify the types of documents and materials to be stored.
Analyze the volume and growth rate of files and papers.
Determine security and access requirements.
Identify any compliance or legal requirements.

Phase 3: Space Design (Week 7-12)

Engage an interior designer to create storage space layouts.
Develop storage room designs, including shelving and storage solutions.
Consider climate control, lighting, and safety features.
Ensure ADA compliance and accessibility.
Create a detailed floor plan and specifications.

Phase 4: Budgeting and Procurement (Week 13-16)

Prepare a comprehensive budget, including design and construction costs.
Obtain quotes from potential suppliers.
Review vendor proposals and select the most suitable solutions.
Develop procurement plans for materials and services.
Initiate the procurement process.

Phase 5: Construction and Installation (Week 17-32)

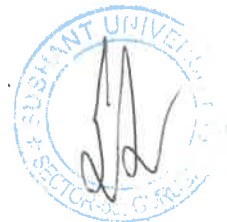
Select a construction contractor and sign contracts.
Coordinate the delivery of materials and equipment.
Monitor construction progress and quality.
Oversee the installation of storage systems and climate control features.
Ensure that safety measures are in place.

Phase 6: Technology Integration (Week 33-38)

Collaborate with the IT specialist to implement technology solutions for cataloging.
Integrate document management software, if required.
Ensure that security and access controls are in place.

Phase 7: Testing and Quality Assurance (Week 39-40)

Perform a walkthrough of the completed storage space.
Test the functionality of shelving, lighting, climate control, and security systems.
Address any issues or deficiencies in the design or construction.
Ensure compliance with safety standards and accessibility requirements.



Phase 8: Training and Documentation (Week 41-44)

- Develop training materials for storage room users.
- Conduct training sessions for staff on proper file organization and usage of the storage room.
- Create user manuals and maintenance documentation.
- Establish a maintenance and inspection schedule.

Phase 9: Handover and Project Closure (Week 45-46)

- Complete all outstanding tasks, including final inspections and adjustments.
- Obtain user acceptance and approval of the storage space.
- Hand over the completed project to the university.

Conduct a project closure meeting to review achievements, lessons learned, and areas for improvement.

- Archive project documentation and files.

Phase 10: Post-Project Evaluation (week 46-52)

Periodically evaluate the effectiveness of the storage space based on user feedback and changing needs.

- Make adjustments or improvements as necessary.
- Ensure that compliance requirements are continuously met.

This work plan provides a structured framework for designing a storage space for files and papers in a university. It's important to adapt the plan to the specific needs and size of the university and its available resources. Additionally, regular communication and collaboration among team members are essential for the successful execution of the project.

3.4 Methodology:

a) Stepwise Activities:

i) Needs Assessment:

- Conduct an inventory of existing physical file data and storage facilities.
- Identify the specific requirements and challenges faced by the university in maintaining records.

ii) Space Planning and Design:

- Engage architects and space planners to design an efficient layout for the file data room.
- Select appropriate shelving systems and storage solutions to maximize space utilization.

iii) Filing System Implementation:

- Develop a systematic filing system based on categories, timeframes, or departments for efficient record organization.
- Train staff on proper record management and filing procedures.

iv) Security and Access Control:

- Implement security measures to ensure the confidentiality and integrity of records.
- Set up access controls to limit the retrieval of sensitive information to authorized personnel.



v) Testing and Optimization:

- Test the new file data room for ease of access and record retrieval.
- Fine-tune the design and filing system based on user feedback.

b) Output and Deliverables:

- i) Design layout and plans for the physical file data room.
- ii) Implemented and functional filing system for university records.
- iii) Improved security measures for safeguarding sensitive data.

5. Impact:

- a) Efficient Record Management: The project will streamline the storage and retrieval of university records, saving time and effort for staff.
- b) Enhanced Data Security: The improved security measures will protect sensitive information from unauthorized access.
- c) Resource Optimization: The new file data room will optimize space utilization, allowing for future expansion without significant costs.
- d) Improved Accountability: The systematic filing system will increase accountability and transparency in record management.

6. Parameters for Monitoring Effectiveness of the Project:

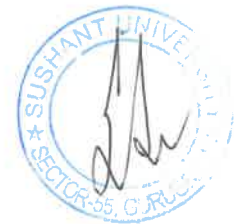
- a) Record Retrieval Time: Measure the time taken to retrieve records before and after the implementation of the new system.
- b) User Feedback: Gather feedback from university staff on the efficiency and user-friendliness of the file data room.
- c) Incident Reports: Monitor any security incidents or breaches and take corrective actions if necessary.

7. Post Project Activities:

- a) Training and Awareness Programs: Conduct training sessions for staff to ensure proper usage and maintenance of the file data room.
- b) Regular Maintenance: Implement a maintenance plan to keep the file data room and the filing system in optimal condition.
- c) Continuous Improvement: Regularly review and refine the filing system based on evolving record management needs.

8. Budget Estimate (in Rupees):

- 1. Manpower – 90,000
- 2. Consumables – 20,000
- 3. Travel – 2,000
- 4. Field testing, Demo/ Training expenses – 2000
- 5. Contingencies/Other costs – 500
- 6. Institutional Overheads – 500
- Total Cost – 115000



3.5 Time Schedule of activities giving milestones through Gantt Chart.

----- Activity -----	Duration	Start Date	End Date
Phase 1: Project Initiation	1-2 weeks	[Start Date]	[End Date]
Phase 2: Needs Assessment	3-6 weeks		
Phase 3: Space Design	7-12 weeks		
Phase 4: Budgeting and Procurement	13-16 weeks		
Phase 5: Construction and Installation	17-32 weeks		
Phase 6: Technology Integration	33-38 weeks		
Phase 7: Testing and Quality Assurance	39-40 weeks		
Phase 8: Training and Documentation	41-44 weeks		
Phase 9: Handover and Project Closure	45-46 weeks		
Phase 10: Post-Project Evaluation	46-52		

4. Expertise:

4.1 Expertise available with the investigators in executing the project: (Maximum 1 page)
(Professional expertise existing with each of the investigators in terms of publications, Patents and preliminary results,

4.2 Bibliography

- "Records Management: A Practical Guide" by David O. Stephens
- "Archival and Special Collections Facilities: Guidelines for Archivists, Librarians, Architects, and Engineers" by the Society of American Archivists
- "Information Security Management: Concepts and Practice" by Bel G. Raggad
- "The Complete Guide to Physical Records Management" by William Saffady
 - "Space Planning Basics" by Mark Karlen and Rob Fleming
 - "Sustainable Design: A Critical Guide" by David Bergman



- "Universal Design: Principles and Models" by Selwyn Goldsmith
- "Library and Information Center Management" by Robert D. Stueart and Barbara B. Moran
- "Project Management for Dummies" by Stanley E. Portny
- "The LEED Green Associate Study Guide" by Gang Chen
- "Managing Electronic Records: Methods, Best Practices, and Technologies" by Robert F. Smallwood

Relevant Academic Journals: Explore journals related to information management, library science, and architectural design for recent research articles in your specific area of interest.

5. List of facilities required from Sushant University for the project implementation.

5.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	Yes
2.	Water & Electricity	Yes
3.	Laboratory Space/ Furniture	Yes
4.	Power Generator	Yes
5.	AC Room or AC	Yes
6.	Telecommunication including e-mail & fax	Yes
7.	Transportation	No
8.	Administrative/ Secretarial support	Yes
9.	Information facilities like Internet/Library	Yes
10.	Computational facilities	Yes
12.	Any other special facility being provided	No

5.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group	NA	NA	NA
PI's Department	Measuring Tape	NA	NA
Other Institute(s) in the region	NA	NA	NA

5.3 Total Budget (Rs. in Lakhs):

- Recurring Cost (Rs): 20,000/-
- Non-Recurring Cost (Rs): NA



Sl. No.	Item	Budget			
		1 st Yr	2 nd Yr	3 rd Yr	Total
A	Recurring				
	1. Manpower	9000	NA	NA	9000
	2. Consumables	0	NA	NA	0
	3. Travel	2000	NA	NA	2000
	4. Field testing, Demo/ Training expenses (if applicable)	0	NA	NA	0
	5. Contingencies/Other costs	2,000	NA	NA	2,000
	6. Institutional Overheads*	2,000	NA	NA	2,000
	7. Any other item	500	NA	NA	500
		500	NA	NA	500
B	Non-Recurring				
	Miscellaneous Expenditure	30,000	NA	NA	70,000
Grand Total (A+B)					185000

A. Non-Recurring:

1. Budget for Manpower

Sl. No.	Designation	No.	Qualification & experience	One time emolument (Rs)	Budget (Rs. in lakhs)			
					1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Interior Designer	1	B.Des	70,000	40000			40000
2.	Site Supervisor	1	12 th pass	30,000	15000			15000
3.	Construction Team	5		1,00,000	35000			35000

2. Budget for Consumables*

Sl. No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
1	Construction Material	As per design	1,5000			1,5000
2	Misc		5000			5000

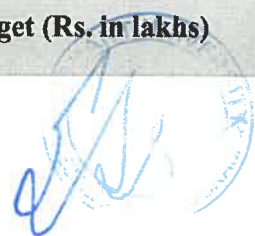
*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel

Sl. No.	Purpose	Budget (Rs. in lakhs)			
		1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Project travel cost & logistics	2,000			2,000

4. Field Testing/ Demo/ Trainings*

Sl.	Description of field testing/demos /trainings	No/Yr	Budget (Rs. in lakhs)



No		1 st Yr	2 nd Yr	3 rd Yr	Total
1	Cabinet testing	2000			2000

*Include material for technology field testing/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of beneficiaries/training, duration of training days, cost /training).

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Misc.	500				500

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

B. NOn Recurring:

Budget for Permanent Equipment/ Workshop/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.	Cabinets/Shelves		70,000

8. Deliverables

Deliverable	Mark <input checked="" type="checkbox"/>	Brief description
Product development/adaptation	*	Designing storage system for university files and paperwork
Process development/adaptation		
Technology package for development of the project area and local community		
Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)		
Scientific knowledge and/or data generation leading to technology development in future		
Other (Please specify)		

9. Name and address of experts/ institution interested in the subject / outcome of the project.

Anjali Marwah- School of Design, Sushant University

Simar Preet Dhingra- School of Design, Sushant University

Sachin Datt, PhD

Head of Communication Design, School of Design,
Sushant University (erstwhile, Ansal University), Gurgaon.
sachindatt@sushantuniversity.edu.in

Permanent Address
230 DDA sfs
sector 22, Dwarka
Delhi 110077
Mob: 9711910597
sachindatt9@gmail.com

EXPERIENCE

School of Design, Sushant University/ Head of Communication Design program

August 2018 - Present, Gurgaon

Design of Communication Design course structure for Bachelor of Design. Structuring of program time tables. Design of courses like Visual Storytelling, Animation principles, Information Graphics, Computer Aided Design, Brand personality design, Semiotics, Curriculum Design using Bloom's taxonomy. Writing course objectives and outcomes for assessment. Guiding doctoral students. NAAC accreditation supervision for criteria 1,2 and 3. Research writing for design. Value theory in design. Introduction to Axiology. Multidisciplinary courses in allied subjects. Teacher training on Taxonomy of Educational Objective for Cognitive and affective domains(Bloom's taxonomy). Image generation with Generative AI tools. Design thinking. Design Problem solving with AI Agents. Leading a Research collaboration with King Mongkut University, Thonburi, Thailand.

Curriculum Design

2019 - Present

Design of Curriculum for undergraduate B. Des and postgraduate M.Des program. Particular expertise in aligning program goals and objectives to "Bloom's taxonomy" for compliance with NAAC and other university accreditation agencies.
(Clients: MIT WPU, Pune, Sushant University, Erstwhile Ansal University, Gurgaon)

NMIMS School of Design / Assistant Professor

October 2017 - August 2018, Mumbai

Primary roles include teaching visual communication courses including Visual storytelling; drawing, animation and 3D modeling. Research and design of innovative pedagogy for collaborative project based learning. Designing assessment exercises for evaluating and grading skill level using Bloom's taxonomy.

Homi Bhabha Center for Science Education, TIFR / Visiting fellow

February 2016 -October 2017, Mumbai

Research on issues of creativity in Design and Technology education.

SKILLS/Teaching Interest

Curriculum Design for Design and Technology education using taxonomy of educational objectives

Problem Solving in Design assisted with AI tools

Science Communication

Storytelling

Branding and Advertising

Research Interests

Taxonomy of Educational Objectives (bloom's taxonomy) for Design and Technology education.

Developing AGI models for problem solving in Design assisted with AI.



Design of 'design and technology' workshops for children and teachers

Pratham Education / Science communication designer

April 2012 - February 2016, Mumbai, Delhi

Developing course content for teaching "History of science and technology" for school teachers. Designing educational comics and games on: History of Electricity, Airplanes, Astronomy, Microscope etc.

Design and conduct of Science fairs in slum and rural areas for popularization of science and technology

Idesignskills / freelance Infographics designer

2009 - 2018, Mumbai

Designing information graphics for an Instructional design firm

IDC, IIT Bombay / Design Research Associate

2005 - 2006, Mumbai

Designed comic books for teaching science

Mindspring Digital Pvt. Ltd. / Animator

August 2002 - June 2003, Delhi

Creating digital animations for medical and engineering e-learning modules

EDUCATION

Doctor of Philosophy / IDC, IIT Bombay

2006 - 2012

Developed a narrative based approach for designing secondary school science curriculum

Master of Design / IDC, IIT Bombay

2003 - 2005

Project 1: Short Animation film on Education

Project 2: Comic book for teaching chemistry

Bachelor of Fine Arts / College of art Delhi

1998-2002

Major Project: Advertising campaign for Norton antivirus

Online certificate course from Harvard Business school online

March 23, 2022



Course topic: Strategy Execution

PUBLICATIONS

Patent Published

“Habit Builder for children” Application No.202211039717
A concept device that uses principles of Gamification and behavior psychology to develop ‘essential’ habits in children below 10 years.

Books

History of Electricity comic book series in 3 volumes. Translated in Hindi, Marathi and Kannada. Published by Pratham Education Foundation with funding from CA Technologies, USA. 2017.

Book chapter

Datt, S (2019): Using narratives for teaching nature of technology. Explorations in Technology Education Research. Edited by John Williams and David Barlax. Springer publication.

Journals — Published

Datt, S. (2021): Theoretical Basis for evolving taxonomy of the Affective domain. Journal of educational psychology. I-manager Publication. Vol. 15 .No. 2 . August - October 2021.

Datt, S. & Sugra, C. (2018): A Comparison of Innovations by Adults and Children at the Grassroots Level in India. Design and Technology Education An International Journal. PKP public knowledge project. Vol 23 No. 1. Pp. 10-25

Datt, S. (2015): Case for Building Informal Ontology of a Subject Matter at School level Science Education with Community Collaboration. Journal of School Education Technology, I manager Publication. Vol. 11. No.1, p. 34.

Datt S & Poovaiah R. (2012): Designing Epistemologically Correct Science Narratives. journal of School Education Technology, I manager Publication, 2013. Vol. 7, No. 4, p.16.

Conference proceedings

Datt, S. (2024). Taxonomy of Educational Objectives for Design Discipline. Futuring Design Education conference. Department of Design, Indian Institute of Technology, Delhi. [In Print]

Datt, S., & Chunawala, S. (2018). Children as Filmmakers. Episteme 7:International Conference to review Research on Science Technology and Mathematics Education. (pp. 17)

Datt, S., Shah, M., & Chunawala, S. (2017). Upper primary and secondary school science teacher's perception of creativity in science education. In A. Sharma and J. Rajeswaran (Eds.), Creativity and cognition in art and



design: Proceedings of the 1st International Conference on Creativity and Cognition in Art and Design. ICCCAD 2017.(pp. 278-286). NID Bangalore. Bloomsbury.

Datt, S. (2017). Paradox of novelty and usefulness. In A. Sharma and J.Rajeswaran (Eds.), Creativity and cognition in art and design: Proceedings of the 1st International Conference on Creativity and Cognition in Art and Design. ICCCAD 2017. (pp. 188-198). NID Bangalore. Bloomsbury.

Datt, S & Poovaiah, R. (2013). Effect of Historical Narrative Based Approach in Designing Secondary School Science Content on Students' Memory Recall Performance. ICORD 2013, Chennai. Springer Publication, 2013.

Published Articles

Datt, S. (2015), Suggestions for Improvement of Activity Based Science Learning Approach in Upper Primary Science Textbooks and its Application in Himachal Pradesh DIET training. Design for all: Design and Children. IIT Bombay, 2015

Datt. S & Poovaiah R. (2009), Story Based Schema Building Approach in Science Learning. Designing for children conference proceedings. Industrial Design Centre, IIT Bombay 2009.

Datt. S & Poovaiah R. (2009): Fractal like model for designing educational stories. Design Thoughts. Industrial Design Centre, IIT Bombay.

Conference presentations

Datt, S(2023). Taxonomy of educational objectives for value and skill education in product design program, European Academy of Design Conference (EAD 2023). World University of Design, Sonipat, India,

Datt, S & Rao. A.G. (2008). Story of bamboo crafts guru Medar Ketya, paper presented at Indian Folklore Congress, Shantiniketan, West Bengal, 2008.

Datt, S. & Poovaiah, R. (2011). Framework for organizing knowledge as a narrative: A case for secondary school science learning, paper presented at Teaching Narrative and Teaching through Narrative International conference, Tampere, Finland.

Workshops

Faculty Development Program on 'Research Orientation for Design'. For the Design Faculty. Sushant University. January 2024

Faculty Development Program on "Design and theory of evolution". School of Health Sciences, Sushant University. 2023.

Faculty Development Program on "Bloom's taxonomy and Flipped Learning for engineering and health science courses". July 2022.



Faculty Development Program for professional designers and teachers interested in academic research. Online lectures. May 2021.

Stop Motion animation film Making workshop. HBCSE, Mumbai, May 2017.

Training for DIET upper Primary science teachers in scientific Method. Himachal Pradesh. 2014.

Glider Making workshop with Sri Lankan school teachers at HBCSE. Mumbai, July 26, 2016.

Glider Making Workshop with Kendriya Vidyalaya teachers. 24 Nov. 2016.

School Science Research and Development (SSRD) summer camp with school children. Storytelling and Flipbook making.

Science Fairs conducted at various schools in Delhi, 2015.

Glider making, LEGO construction and microscope making workshops with class 7 to 9 students. HBCSE, 2016.



Utilization Certificate

Certified that grant of ₹ 1,85,000/- (Rupees One Lakh Eighty Five Thousand only) sanctioned by the Center of Research and Development, Sushant University, vide letter no. F.No.1/2023-2024/Seed Fund-Feb 24/27 Dated 22nd February 2024 towards financial assistance for the project titled "Design of Physical File Data Room for University Records" was utilized for the purpose for which it was sanctioned.

Financial expenditure incurred

S.no	Nature of expense	Proposed Expenditure (in Rs.)	Expenditure incurred (in Rs.)
1	Manpower	90,000	75,000
2	Travel	2,000	2,000
3	Consumables	20,000	25,000
4	Field testing	2,000	2,000
5	Contingencies	1,000	1,000
	Equipment	70,000	80,000
	Total	₹ 1,85,000	₹ 1,85,000

Dr. Datt
Principle Investigator



Seenu
Accounts Officer
Account & Finance Officer
Sushant University
Gurugram

PROFORMA FOR SUBMISSION OF SEED FUND PROPOSAL

Part I: General Information

1. Project Title: **Enhancing Millet Farming for Sustainable Food Security in India**
2. i. Name of Principal Investigator: **Dr. Deepti Sehrawat**
ii. Name of Co-Investigator: **Dr. Swati Shrivastava & Dr. Ashish Kumar**
3. Collaboration if any, give details of institution(s)-NA
4. Any Project(s) previously sanctioned by any funding agency? If yes give the details:

SL. NO.	Title of the Project	File No	Name of Division and funding agency (DST/DBT...)	Date of completion /status	Amount (Rslakh)	Whether final project completion report has been submitted (if yes, mention date)

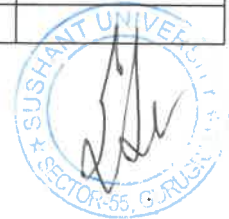
5. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues? **NO**
6. Duration (months): **12 Months**
7. Enclose the following while submitting the application form:

Duly filled application form (complete with all Annexures)-2 hard copies	
Bio-data of the PI & Co-I-2 copies	

Part II: Proposal Summary

1. Origin of the Proposal:

The proposed project, "Enhancing Millet Farming for Sustainable Food Security in India," originates from a growing concern for food security, the need for sustainable agricultural practices, and the underutilization of millet crops in India. Millets have historically played a crucial role in the Indian diet, especially in arid and semi-arid regions, due to their adaptability and nutritional value. However, the cultivation of millets has seen a decline over the years, impacting food security and biodiversity. This project aims to revitalize millet farming and contribute to sustainable food security in India.



Key words- Millet crops, Sustainable agriculture, Food security, Resilient farming, Smallholder farmers, Nutritious grains, Agro-climatic diversity

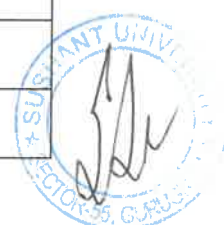
Introduction of the proposal

Millet crops, which encompass a variety of species such as pearl millet, finger millet, and foxtail millet, have long been recognized for their remarkable resilience and exceptional nutritional value, rendering them exceptionally well-suited to the diverse agro-climatic conditions prevalent in India. These hardy grains are celebrated for their capacity to thrive with minimal resources, making them particularly appropriate for regions grappling with resource scarcity. However, despite these intrinsic advantages, the cultivation of millet crops has experienced a concerning decline over the years. This decline can be predominantly attributed to a significant dearth of research and development initiatives dedicated to enhancing millet farming practices, coupled with a multitude of market constraints that have impeded the realization of the full potential of these crops.

It is within this context that the present study emerges, guided by a steadfast commitment to rectify these issues and revitalize millet cultivation in India. The study seeks to bolster millet farming through rigorous research and development efforts, with a focus on innovation and sustainable practices. By addressing the pressing challenges faced by millet cultivation, such as optimizing crop management techniques, enhancing seed quality and availability, and mitigating pest and disease-related concerns, the study aspires to rejuvenate millet farming. Furthermore, the research endeavors to explore novel avenues for promoting millet-based products and elevating their market presence, which, in turn, will contribute to the socioeconomic well-being of smallholder farmers and bolster food security in India. In essence, this study embarks on a vital mission to rekindle the potential of millet crops and their crucial role in addressing the multifaceted challenges of agricultural sustainability and food security in the Indian context.

2. Objectives(Only 4-5focused onethatcan beobserved, measured orclearlyassessable)

i. To assess the current status of millet farming in India, including acreage, yield, and challenges faced by farmers
ii. To develop and promote improved millet farming techniques and practices that enhance productivity and resource-use efficiency.
iii. To create awareness and promote the consumption of millet-based food products, including the development of value-added millet-based products.
iv. To build capacity and provide training to farmers on millet farming techniques, including seed production, pest management, and post-harvest practices.



3. ReviewofstatusofResearchandDevelopmentinthesubject

Few relevant studies have been reviewed to lay the foundation for this project. These studies include research articles, reports, and government publications that address various aspects of millet farming, food security, and related issues. Some key findings from these studies include the underutilization of millets, the declining trend in millet cultivation, and the potential for millets to address malnutrition.

These selected studies provide a multifaceted exploration of millets, shedding light on their nutritional composition, health benefits, and their role in addressing complex challenges. Sujithra and Indiramma's 2015 review underscores the significance of millets by comprehensively examining their nutrient composition and their potential in tackling nutritional problems. In a similar vein, Saleh, Zhang, Chen, and Shen's 2015 paper delves into the promise of millets as a solution to agrarian and nutritional issues, accentuating their adaptability to diverse environments. Reddy, Sudha, and Reddy's 2015 research explores the incorporation of millets into bakery products, considering their nutritional attributes and their suitability as alternatives to refined cereals. Shobana, Krishnaswamy, Sudha, Malleshi, Anjana, and Palaniappan's 2013 study provides an intricate overview of finger millet, examining its nutritional properties, processing methods, and potential health advantages. Furthermore, Saleh, Zhang, Chen, and Shen's 2013 systematic review delves into the historical and nutritional aspects of millets, emphasizing their historical relevance as an ancient crop. Additionally, Ganesan and Xu's 2018 review, while not exclusively centered on millets, explores the health-promoting benefits of various foods, including millets, in the context of their interactions with gut microbiota. Collectively, these studies contribute valuable insights into the diverse facets of millets and their potential to address contemporary nutritional and agricultural challenges.

3.1 Importance of the proposed project in the context of current status

The proposed project is of paramount importance in the context of India's current status. Despite the historical significance of millets in Indian agriculture, their cultivation has dwindled over the years, contributing to food insecurity, malnutrition, and the loss of traditional knowledge. Millets are drought-resistant, climate-resilient, and nutritionally rich crops that can significantly contribute to food security and improved rural livelihoods.

This project aims to reverse the declining trend in millet farming by conducting research, disseminating knowledge, and providing support to farmers. The project's success will not only enhance food security but also promote sustainable agricultural practices and biodiversity conservation. Furthermore, it aligns with national goals related to improving the nutritional status of the population and promoting the resilience of Indian agriculture in the face of climate change.

4. Work Plan:

4.1 Methodology:

The project's methodology for "Enhancing Millet Farming for Sustainable Food Security in India" is meticulously structured to address its four primary objectives. It adopts a mixed-methods research design, blending quantitative and qualitative techniques for comprehensive data collection and analysis. The process begins with the collection of baseline data through surveys and interviews to assess the current status of millet farming in India, focusing on aspects such as acreage, yield, challenges, and regional variations. Subsequently, extensive agronomic research is undertaken, encompassing on-farm experimentation in diverse agro-climatic zones to develop and enhance millet farming practices.

To promote millet-based food products, consumer surveys are conducted to understand

preferences and perceptions, alongside a market analysis to identify value-added product opportunities. The fourth objective involves building capacity and training farmers, which is achieved through structured training programs covering various aspects of millet farming. Quantitative data collected during surveys and experiments undergo statistical analysis to determine the impact of different farming practices, while qualitative data is subjected to thematic content analysis to extract emerging themes and patterns.

The project incorporates an awareness and promotion campaign to elevate knowledge about millet-based products, and its impact is assessed through surveys and consumer feedback. Training programs are evaluated by comparing farmers' knowledge and practices before and after training. Capacity-building workshops further enhance the skills of agricultural extension officers and trainers. Regular reports are generated to document progress and challenges, and stakeholder engagement remains integral throughout the project to ensure alignment with their needs and priorities.

A robust monitoring and evaluation system, with established key performance indicators, tracks the project's progress. Data from various research methods and sources are integrated and synthesized to provide a holistic understanding of millet farming, consumption, and market dynamics, forming the basis for project recommendations and policy advocacy. The project culminates with the preparation of a comprehensive report summarizing findings, outcomes, and recommendations, which is disseminated to government agencies, NGOs, and the scientific community. The project also prioritizes knowledge dissemination through various means, including research publications, seminars, and workshops, aiming to contribute to the broader dissemination of best practices and innovations in millet farming. In summary, this methodology combines research, fieldwork, capacity building, and awareness campaigns to comprehensively address the project's objectives and enhance millet farming practices for sustainable food security in India.

Major Hypotheses:

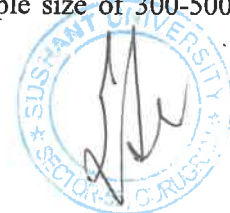
1. The adoption of innovative millet cultivation practices will increase millet yield and improve food security in India."
2. "Promoting millet-based food products will enhance consumer preferences and contribute to the sustainable consumption of millets."
3. "Capacity-building and farmer training will lead to improved millet farming practices and economic well-being among Indian smallholder farmers."

Sample Size: As a rough estimate, for a project of this nature, a sample size of 300-500 farmers or households from different regions of India might be suitable.

4.2 Time Schedule of activities giving milestones through Gantt Chart.

1st & 2nd Month: Literature Review and Research Initiation

During the initial two months, the project will commence with an extensive literature review focused on



aggregating pertinent research and studies pertaining to millet cultivation, agricultural practices, and food security in India. This review will also aim to identify gaps in existing literature, thereby guiding the research's specific focus. Simultaneously, a detailed research proposal will be developed, delineating the project's objectives, methodology, data collection techniques, and analytical strategies. Necessary approvals from relevant authorities and stakeholders will be sought. Additionally, arrangements will be made for the appointment of a Research Associate.

3rd & 4th Month: Data Collection Design and Ethical Approval

The subsequent two months will be dedicated to designing data collection instruments, including surveys and interview questionnaires, which will facilitate the gathering of both quantitative and qualitative data from key stakeholders in the millet farming and food security domain. This will encompass farmers, agricultural experts, government officials, and others involved in millet cultivation and distribution. To ensure adherence to ethical guidelines and data protection regulations, ethical approval for data collection will be pursued.

5th & 6th Month: Data Collection and Initial Data Analysis

Beginning in the fifth month, data collection activities will be initiated, targeting a selected sample of individuals, including millet farmers, experts, and government representatives. Surveys and interviews will be conducted to acquire insights into the socio-economic impact of millet farming practices. Simultaneously, preliminary data analysis will commence, focusing on the identification of initial trends and patterns within the collected data. Basic descriptive statistics will be applied to develop an initial understanding of the dataset.

7th & 8th Month: Data Validation, Cleaning, and Advanced Data Analysis

Months seven and eight will involve the validation and cleaning of collected data to ensure its accuracy and reliability. Any discrepancies or missing information will be addressed to maintain data integrity. Furthermore, advanced statistical and machine learning techniques will be employed to conduct in-depth data analysis. This phase will involve exploring complex relationships between variables and assessing the impact of millet cultivation on various socio-economic indicators.

9th & 10th Month: Initial Conclusions and Policy Implications

In the ninth and tenth months, preliminary conclusions regarding the socio-economic impact of millet farming in India will start to take shape. The research findings will be used as a basis for identifying key policy implications. These policy recommendations will be aligned with the research insights, serving as actionable suggestions to enhance the effectiveness of millet cultivation initiatives in promoting food security and sustainable agriculture.

11th & 12th Month: Final Data Analysis, Reporting, and Dissemination

The project's concluding phase, spanning the eleventh and twelfth months, will entail the finalization of the data analysis process to ensure the results are statistically significant and robust. A comprehensive research report will be prepared, comprising an executive summary, introduction, methodology, results, discussion, conclusions, and policy recommendations. Additionally, evidence-based policy recommendations will be developed for stakeholders, focusing on enhancing the viability of millet farming in addressing food security concerns. The research findings and policy recommendations will



be presented to relevant stakeholders, including government officials, policymakers, and representatives from the agricultural sector. Dissemination will occur through academic publications, conferences, workshops, and policy forums to maximize awareness and impact.

5. Expertise:

5.1 Expertise available with the investigators in executing the project

(Professional expertise existing with each of the investigators in terms of publications, Patents and preliminary results, to execute every component of the proposal should be highlighted)

RESUME OF INVESTIGATORS ATTACHED

6. List of facilities required from Sushant University for the project implementation.

6.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	No
2.	Water & Electricity	YES
3.	Laboratory Space/Furniture	No
4.	Power Generator	YES
5.	AC Room or AC	YES
6.	Telecommunication including e-mail & fax	YES
7.	Transportation	YES
8.	Administrative/Secretarial support	No
9.	Information facilities like Internet/Library	YES
10.	Computational facilities	YES
12.	Any other special facility being provided	No

6.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group			
PI's Department			
Other Institute(s) in the region			

6.3 Total Budget (Rs. in Lakhs):

- Recurring Cost (Rs):
- Non-Recurring Cost (Rs):

Sl. No.	Item	Budget	
		1 st Yr	
A	Recurring	1.	Rs 96,000
	1. Manpower	2.	10,000
	2. Consumables	3.	60,000
	3. Travel	4.	20,000
	4. Field testing, Demo/ Training expenses(ifapplicable)	5.	1,00,000
	5. Contingencies/Othercosts	6.	10,000
	6. InstitutionalOverheads*		
	7. Anyotheritem		
B	Non-Recurring		
	Permanentequipment Construction of work shed/structuresFabricationofprototyp equipment		Rs. 1,66,920/-
GrandTotal(A+B)			Rs. 4,62,920

A. Recurring:

1. BudgetforManpower

Sl. No.	Designation	No.	Qualification& Monthlyemolu experience ment (Rs)	Budget (Rs. inlakhs)	
				1 st Yr	
	Research Associate	1	Post Graduation	Rs. 8,000	Rs96,000

2. BudgetforConsumables*

Sl. No.	Descriptionof consumable	Qty./Yr	Budget (Rs. inlakhs)	
			1 st Yr	
	Stationary , Source Materials			Rs. 10,000

*Includesitemslkechemicals,rawmaterialsfor fabrication,stationery,etc.

3. Budgetfor Travel

Sl. No.	Purpose	Budget (Rs. inlakhs)	
		1 st Yr	
1.	SURVEY & DATA COLLECTION For qualitative insights, interviews and surveys will be conducted with start-up		Rs, 60,000



	founders, investors, policymakers, industry experts, and representatives from start-up incubators and accelerators to understand their experiences, challenges, and perspectives. Research will be done in Guragon, Faridabad and Delhi	
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4. Field Testing/Demo/Trainings*

Sl. No	Description of fieldtesting/demos/trainings	No/Yr	Budget (Rs. in lakhs)	
			1 st Yr	Total
1	Training for NVIVO Software(Expert workshop)		Rs. 20,000	Rs. 20,000

*Include material for technology fieldtesting/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of beneficiaries/training, duration of training days, cost/training).

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)	
			1 st Yr	Total
1	Computer	1	Rs. 86,000	Rs. 86,000
2	Printer	1	Rs. 22,000	Rs. 22,000

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

B. Non-Recurring:

Budget for Permanent Equipment/Workshed/Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.			
2.			
3.			
4.			

7. Deliverables

Deliverable	Mark ✓	Brief description
Product development/adaptation		
Process development/adaptation		
Technology package for development of the project area and local community		



Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)		
Scientific knowledge and/or data generation leading to technology development in future		
Other (Please specify)		

8. *Name and address of experts/institution interested in the subject / outcome of the project.*



Dr. Deepti

Ph.D in Management

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 Linked: www.linkedin.com/in/drdeepti-sehrawat

EDUCATIONAL QUALIFICATION

S.No.	Qualification	University / School / Board	Year	Percentage	Remarks
1	Ph.D. (Management)	Central University of Haryana, Mahendergarh	2023	NA	NA
	Course Work	Central University of Haryana, Mahendergarh	2017	72%	1 st Division
2	Master of Business Administration	Guru Gobind Singh Indraprastha University, New Delhi	2014	79%	Distinction
3	Bachelor of Business Administration	Guru Gobind Singh Indraprastha University, New Delhi	2012	71%	1 st Division
4	XII – Commerce with Maths	The Air Force School, New Delhi (TAFS) – CBSE	2009	63%	1 st Division
5	X	The Air Force School, New Delhi (TAFS) – CBSE	2007	69%	1 st Division

PUBLICATIONS

- Verma D, Narender ,Kumar. M., Sehrawat D. (2022). Relationship Between Twitter Sentiments And Stock Market Returns: An Empirical Analysis Of Nifty Fifty Companies. Journal of Data Acquisition and Processing, Vol 32, Issue 2.
- Verma D , Narender ,Shokeen G & Sehrawat, D. (2021).Relationship Between Trading Volume, Volatility And Returns In Indian Stock Market. Webology, ISSN: 1735-188X, Volume 18, Number 5, 2021
- Sehrawat, D., & Sharma, A. (2021). Relationship of Company Age and Industry Sector with Financial Performance: An Indian Evidence. Journal of Contemporary Issues in Business and Government, ISSN: 2204-1990, Volume 27 No. 06.
- Sehrawat, D., & Sharma, A. (2020). Impact of Corporate Governance on Firm's Performance: Review of Literature. Upstream Research International Journal, ISSN:2321-0567, Volume VII Issue II.
- Sehrawat, D., & Sharma, A. (2018). Corporate Governance and Corporate Social Responsibility – Key Elements for Sustainable Growth in Modern Organizations. Journal of Management Research and Analytics, ISSN: 2394-2770, Volume 5 Issue 03.
- Prakash,D. & Sehrawat,D. (2018). Issues and Challenges of Women Empowerment: A Study of Delhi-NCR. International Journal of Management, Technology And Engineering, ISSN: 2249-7455, Volume VIII, Issue VIII.

TEACHING WORK EXPERIENCE

S.No.	Institution	Experience	Position	Key Responsibilities
1	Sushant University, Gurgaon	19 Aug 2023	Assistant Professor	Taking classes for BBA and MBA. Subjects-Entrepreneurship Development, HRM,IHRM, Financial Management
2	Central University of Haryana, Mahendergarh	February 2018 - August 2020	Full Time Ph.D. Scholar	Undertook classes for MBA Batch ('17-'19; '18-'20; and '19-'21)

CORPORATE WORK EXPERIENCE

S.No.	Company	Experience	Position	Key Responsibilities
1	PVR (Publically Listed in India)	June 2015- July 2016	Business HR Associate	Managing regional HR Managers, Assisting in Corporate Payroll Management and act as the audit SPOC
2	Lakshya Recruitment Solutions Pvt. Ltd.	August 2014- March 2015	HR Executive (Recruitment)	End to End Recruitments & Selection Cycle
3	Genpact (Publically Listed in the US)	June 2013- August 2013	Intern	Managing Bulk Hiring Process
4	BHEL (Publically Listed in India)	June 2011- August 2011	Intern	Joined while the Company was going through ERP Revamp. Assisted in New ERP Execution

SUBJECT AREAS OF INTEREST

- Corporate Governance and Sustainability
- Organizational Behavior
- Business Research
- Human Resource Management



-
- Financial Management
-

RESEARCH PAPERS COMMUNICATED

- Sehrawat, D & Sharma, Anand "SEBI Back Steps: A View on CEO Duality", Communicated to Journal of Management Studies.
 - Sehrawat, D., Sharma, A., & Narender. Corporate Social Responsibility, Corporate Governance and Financial performance of Corporate: Insights for ESG Investing. World Journal of Management and Economics.
 - Verma, D, Bhawna and Sehrawat, D, "COVID-19 and Human Psychology: The Indian Story" Communicated to Journal of Management, Sage.
Narender, Sehrawat, D, "Perception of Investors on Derivatives Market: A Factor Analytic Approach", Communicated to Indian Journal of Finance.
 - Narender, Verma, Divya and Sehrawat, Deepti, "Stock Market Volatility during COVID-19: Empirical Analysis of NIFTY Index", communicated to FIIB Business Review.
-

PERSONAL DETAILS

- C/O Prof. H.L.VERMA, 1301, Sector 23-A, Gurugram, Haryana
-



**PROFORMA FOR SUBMISSION OF SEED FUND
PROPOSAL**

Part I: General Information

I. Project Title (should be focused not exceeding 15 words): Socio-Economic Analysis of "Women farmers/daily wage laborers in relation to Migration"

1. i. Name of Principal Investigator -: **Dr. Gunjan**

ii. Name of Co-Investigator -: **Dr. Swati**

Collaboration if any, give details of institution(s) -: **NA**

2. Any Project(s) previously sanctioned by any funding agency? If yes give the details: **NA**

SL. NO	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion /status	Amount (Rslakh)	Whether final project completion report has been submitted (if yes, mention date)

3. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues?

NO

4. Duration(months): **12 MONTHS**

5. Enclose the following while submitting the application form:

Duly filled application form(complete with all Annexure)-2hardcopies	
Bio-data of the PI&Co-I-2copies	



PartII: Proposal Summary

1. Origin of the Proposal:(Maximum 1page)

(Scientific/Technical rationale for doing this work should be elaborated)

The status of women migration in India is a complex and multifaceted issue. Migration in India is primarily driven by economic factors, with people moving from rural areas to urban centres in search of better opportunities. Women constitute a significant portion of this migrant population, and their experiences and challenges differ from those of men. Gender inequality is a significant issue when it comes to the status of women in migration. In many facets of migration, including employment, salaries, and access to social services, women frequently experience discrimination and uneven treatment. They usually work low-skilled, unofficial jobs that are marked by low pay, lengthy hours, and unfavourable working conditions. Lack of knowledge of their rights and restricted access to legal protections worsen this predicament.

Furthermore, trafficking, sexual harassment, and violence are just a few of the ways that migrant women can be used and abused. Women are more susceptible to these risks since they frequently relocate alone or apart from their families. Their difficulties are made more difficult by a lack of social support systems, restricted access to healthcare, and lack of legal representation. To improve the status of women in migration in India, several measures need to be taken.

Firstly, there is a need for comprehensive policies and legislation that address the specific challenges faced by women migrants, including gender-based violence, exploitation, and discrimination. These policies should focus on ensuring equal opportunities, protecting women's rights, and providing access to social welfare programs. Secondly, efforts should be made to raise awareness and provide training on women's rights and legal protections among migrant women themselves, as well as among employers and law enforcement agencies. This would empower women to assert their rights and seek assistance when needed.

Moreover, there should be increased collaboration between government agencies, civil society organizations, and international bodies to address the unique needs of women migrants. This includes providing safe migration pathways, establishing helplines and support services, and creating opportunities for skill development and education.

In conclusion, the status of women in migration in India is characterized by challenges stemming from gender inequality, exploitation, and vulnerability. However, with comprehensive policies, awareness-raising, and targeted interventions, it is possible to improve their status, protect their rights, and ensure their well-being as they navigate the migration process.

Introduction of the Proposed Study

Need of the study

Since ancient times, migration has been a complicated phenomenon that has been influenced by a variety of causes, including economic opportunity, political unrest, and environmental changes. Women migrants who work as daily wage workers and farmers significantly influence the rural and urban environments. Their migration histories provide a distinct perspective on the difficulties and possibilities they encounter, as well as the possibility for economic progress and empowerment.

For a complete understanding of migration trends and their societal ramifications, female migration needs to be studied. First, female migration is an important issue that has been more prevalent recently. The majority of migration research in the past has been on male migration, ignoring the particular difficulties and problems women have encountered. Most of the women migrate because of the reasons of economic opportunity, education, marriage, and family reunion. Understanding these drivers can help organizations and policymakers create specialized Programmes and measures to address the unique needs and



vulnerabilities of female migrants.

Research on female migration advances our knowledge of gender dynamics, power structures, and socioeconomic disparities. While migrating, female migrants frequently confront unique hazards and problems. Female migrants often face distinct challenges and risks during their migratory journey and settlement in a new country. They may encounter gender-based violence, discrimination, and exploitation, including trafficking and forced labor. Analyzing these issues helps to identify the systemic barriers and societal norms that perpetuate gender inequality. Moreover, studying female migration highlights the diverse roles and contributions of women as economic actors, caregivers, and agents of change in both origin and destination countries. This knowledge is essential for fostering gender equality, empowering women, and creating inclusive migration policies that promote the well-being and rights of all migrants, regardless of gender.

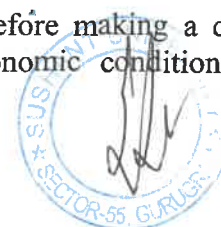
For a complete understanding of migration trends and their societal ramifications, female migration needs to be studied. First off, female migration is significant because it has a transforming effect on women's economic emancipation. Rural communities, particularly those where women are concentrated, frequently lack possibilities for employment, education, and economic advancement. Women who move to metropolitan regions have access to greater career chances, higher pay, and better living conditions. Women can break the cycle of poverty and help support their families financially by moving to urban areas. Due to the fact that female migrants frequently work in a variety of industries, including manufacturing, services, and domestic work, this migration can also support economic growth. The income generated by female migrants is frequently remitted back to their rural families, creating a positive impact on poverty alleviation and overall development phenomenon that has gained momentum in recent years.

Area of study

There are several factors that may make Haryana and Rajasthan attractive areas for female migration. However, it's important to note that migration decisions are highly personal and can vary based on individual circumstances and preferences. Here are some factors that could influence the choice of Haryana and Rajasthan:

- 1. Opportunities for employment:** Rajasthan and Haryana both provide a wide range of employment options in a range of industries, including manufacturing, services, agriculture, and information technology. Women looking for jobs or chances for career progression may find these opportunities interesting.
- 2. Programmes for skill development:** In order to empower women and improve their employability, both states have put in place programmes for skill development. These programmes offer instruction in a variety of vocational skills, assisting women in obtaining the credentials needed for greater employment opportunities.
- 3. Safety and security measures:** Over the years, efforts have been made to improve the safety and security of women in Haryana and Rajasthan. Implementation of stricter laws, increased police patrolling, and public awareness campaigns have aimed to create a safer environment for women.
- 4. Education facilities:** Haryana and Rajasthan have made significant strides in improving educational infrastructure, including schools and colleges, which may attract women seeking educational opportunities. Access to quality education can enhance career prospects and personal development.
- 5. Supportive government policies:** Both states have introduced policies and programs to empower women and promote gender equality. These initiatives include financial assistance, healthcare facilities, and entrepreneurship support, which can provide a favorable environment for women migrants.
- 6. Cultural heritage and tourism:** Haryana and Rajasthan are known for their rich cultural heritage and historical landmarks. Women interested in exploring cultural diversity and engaging in tourism-related activities may find these states appealing for migration.

It's essential to conduct thorough research and consider various aspects before making a decision to migrate to any specific area. Factors such as personal safety, socio-economic conditions, cultural



adaptation, and individual goals should be carefully evaluated.

As Per **Poonam Singh Year (2010)** in the study Titled: "Socioeconomic and Cultural Dimensions of Female Migration: A Case Study of Haryana": This study delves into the socioeconomic and cultural dimensions of female migration in Haryana. It examines the role of education, family dynamics, and social norms in shaping women's migration decisions. The author also explores the impact of migration on women's agency, social networks, and access to resources.

As Per **Anita Verma (2012)** in the study Titled: "Migration and Gendered Livelihoods: A Case Study of Rural Women in Rajasthan": This research focuses on the impact of migration on the livelihoods of rural women in Rajasthan. It explores the reasons why women migrate, the types of work they engage in, and the consequences for their economic empowerment and social well-being. The study highlights the interplay between gender, migration, and livelihood strategies in a rural context.

According to **Aarti Singh (2014)** in the study Titled: "Changing Patterns of Female Migration: A Study in Haryana": This study analyzes the changing patterns of female migration in Haryana over time. It examines the reasons behind women's migration, the sectors they primarily migrate to, and the challenges they face during the migration process. The author discusses the implications of these patterns for gender dynamics and development in the region.

Devi, K. S. (2015) in their study titled Gender, Migration, and the Informal Sector: A Study of Migrant Women Workers in Kerala, India - The study explores the experiences of migrant women workers in the informal sector in Kerala, India. It focuses on the gendered aspects of migration, such as the reasons for migration, living conditions, and challenges faced by women in the informal labor market.

Shweta Singh and Priyanka Gupta (2015) in their study titled "Rural-Urban Migration and the Empowerment of Women: A Study in Rajasthan" -This research examines the relationship between rural-urban migration and women's empowerment in Rajasthan. It investigates how migration influences women's social status, economic opportunities, and decision-making power within their households. The study sheds light on the transformative potential of migration for women in rural areas.

As per **Chant, S. (2016)** in the book titled Women, Girls, and World Poverty: Empowerment, Equality, and Justice: This book examines the complex relationship between women, poverty, and migration. It provides an analysis of the various factors that contribute to women's migration in India and discusses the implications for gender equality and empowerment.

According to **Saraswathi, S. (2017)** in the study titled Women's Migration in Rural India: Social, Economic and Cultural Implications: This study focuses on the rural context of women's migration in India and its social, economic, and cultural implications. It analyzes the reasons for women's migration, the impact on families and communities, and the challenges faced by migrant women in rural areas.

According to **Geetika Dahiya (2017)** in the study Titled: "Gender and Migration: A Study of Women's Migration in Haryana": This study explores the factors influencing women's migration patterns in Haryana. It examines the push and pull factors, the impact of social and cultural norms, and the challenges faced by migrant women in terms of their social and economic integration. The author provides valuable insights into the gendered dynamics of migration in Haryana.

According to **Deshingkar, P., & Akter, S. (2017)** in the study Titled: Migration and Human Development in India: The Case of Kerala and Punjab : This research paper explores the relationship between migration and human development in the states of Kerala and Punjab in India. It examines the gender dimensions of migration, including the experiences of migrant women, their contributions to the household and community, and the impact on their well-being.

According to **Krishnan, P., & Patel, T. (2018)** in the study Titled: Gendered Mobilities: Ethnographic Perspectives on Non-Normative Journeys -This book presents ethnographic perspectives on women's non-normative journeys, including migration, in India. It examines the ways in which gender shapes the experiences and challenges faced by women migrants, highlighting the intersections of gender, caste, and



class in migration processes.

According to **Gul's article "Migration of Women Workers: Challenges and Opportunities" (2021)** explores the challenges and opportunities associated with the migration of women workers. The author discusses the reasons behind women's migration, the sectors they are engaged in, and the economic and social impacts of their migration. The study also addresses the role of policies and interventions in addressing the specific needs and vulnerabilities of migrant women workers.

According to **Zahra Mahdizadeh (2022)** In her study titled "Gendered Patterns of Labor Migration: A Comparative Analysis of Women Workers," Mahdizadeh examines the gendered dynamics of labor migration, focusing on women workers. She explores the factors influencing women's decision to migrate for work, the challenges they face during the migration process, and the consequences of their migration on their lives and families. The study emphasizes the importance of understanding the unique experiences and vulnerabilities of women in labor migration

Problem statement

The problem statement of this research study is to examine the multifaceted effects of migration on women, focusing on the challenges, opportunities, and long-term consequences they experience during the migration process and in the destination country. Specifically, the research aims to address the following key questions:

1. What are the primary factors driving women's migration patterns globally, and how do these factors differ across regions and countries?
2. What are the unique challenges and vulnerabilities faced by women during the migration process, including pre-departure, journey, and post-arrival stages?
3. How does migration impact women's social and economic empowerment, including their access to education, healthcare, employment, and political participation in the destination country?
4. What are the specific risks and forms of exploitation faced by migrant women, such as human trafficking, forced labor, and gender-based violence, and how do these vary across different migration contexts?
5. How do women migrants navigate issues of identity, culture, and integration in the host society, and what are the factors that influence their social inclusion or exclusion?
6. What are the long-term consequences of migration on women's well-being, mental health, family dynamics, and relationships, both in the origin and destination countries?
7. What policies, interventions, and support systems can be implemented to address the unique needs and challenges faced by migrant women and enhance their social, economic, and political integration?

By addressing these research questions, the study aims to provide a comprehensive understanding of the impact of migration on women, informing policy development, and facilitating the implementation of targeted interventions to improve the well-being and empowerment of migrant women worldwide.



(3) OBJECTIVE OF STUDY

1. To examine the reasons & drivers behind female migration.
2. To understand the impact of existing legal framework, National & Local Policies and suggest improvement based on the research.
3. To study the predominant livelihood and empower beneficiaries to establish their own businesses by implementing interventions in the value chain and facilitating connections to the market.
4. To assess the state of health and recommend solutions to promote the well-being in the target area.
5. To analyze Gender Equality as Sustainable Development Goal and Constitutional aspect in the targeted area.

1.1 Methodology:(Maximum of 5 pages)

Research design

(a) Sampling Method

Research designs on social issues can be classified into several categories based on their objectives, methodologies, and approaches. All the designs have their own merits and demerits but all have their relevance under scenarios. The present work has been designed from the empirical perspective as “Empirical research refers to the methodology and approach used to gather data and evidence in order to answer research questions or test hypotheses. It involves systematically collecting and analyzing data from real-world observations or experiments to draw conclusions and make inferences about a specific phenomenon or research topic”

Sample Size

The sample size as per the report will be 3000 women

Tools for data collection

The research technique employed in this study is survey research based on empirical field study. The interviews will also be taken to approach the respondents’ opinions and of the sarpanch, policy makers, SHGs and community/private health centers. Personal observations will also be made while interacting with the respondents

Selection of Target Group: The target group for this research project is women and their health that has experienced or is at risk of experiencing migration. The study aims to investigate the unique challenges, opportunities, and impacts of migration on women with a specific focus on their experiences, needs, and aspirations. Women in the age group of 15 to 60 years will be chosen for the present research. Particularly migrant women who are in need will be identified and will be



chosen for the study

Training/ Workshop: The target group will be made into groups, training and workshops should be provided to these groups by the selected experts at different levels. Step wise training Programmes will be planned for easy learning of the targeted group women.

Field Visits/ Trips/ Demonstrations: Field Visits will be arranged to various districts of Haryana and Rajasthan.

Research Activities: Questionnaires, Observations methods will be followed and the group will be identified

Sample methods

The sampling method to be followed for the research will be purposive sampling as it is non-probability sampling technique commonly used in qualitative research, where researchers seek to gain in-depth understanding and explore specific phenomena or experiences, this sampling method will allow us as researchers to deliberately select individuals or cases that possess specific characteristics or meet predetermined criteria. In the research planned women labour migrant age group of 15 to 60 years will be the targeted specific participants who can provide valuable insights or represent certain characteristics of research interest. To be more specific with the method, during the research Homogeneous sampling method will be used for "Individual women labour migrant" as they share similar characteristics or experiences and it will serve our purpose of focusing on a specific subgroup within the population and Expert purposive Sampling method will be used to interview participants who are recognized as experts or have specialized knowledge in the field of migration and health (in this study Industry expert, law makers and health individuals will be the experts to be interacted with) as this will allow us as researchers to gather insights from individuals with extensive expertise and in-depth understanding.

Research settings

As per the nature of the study and the specific research questions being addressed in the study the research setting will be Field setting which includes visiting communities, workplaces, and healthcare facilities in Rajasthan and Haryana a portion of the research will also include Online/Virtual Settings such as online surveys, interviews of industry, legal and health through digital platforms or virtual environments and Community Settings which involve conducting research within specific communities or groups of individuals who share common characteristics or experiences (women labour migrant in current study)

For this study and as per as per the Census 2011 "Haryana and Rajasthan" are among the states which are witnessing noticeable migration and health related issues among women. Further Screening suggests that "Hisar, Gurgaon and Faridabad are the district in Haryana which are witnessing maximum Migration among women, so to be more precise and clear with the settings a Pilot survey was done in 3 villages of Gurugarnamely **Bhorakaln, Unchamajra and sakatpur** district considering the proximity before submitting the proposal. District identified in Rajasthan as per the data provided in census 2011 are Jaipur and Pali.

The weak linkage identified during pilot survey under field setting is as specified as follow: unpredicted weather conditions have increased the losses in production which leads to disinterest in farming as they are not getting proper compensations. (As per the locals the compensations are only on papers and there is lot of disparity among the amount dispersed). They are Unable to sell for better price due to middle men which leads to heavy losses for producers. (As per the locals they were able to earn better during covid as they themselves were going to market and no middle men were there), Lack of knowledge of modern efficient techniques in target areas, No change in mind sets, still women are not allowed to go out and work., Creativities and indigenous knowledge of women are not converting into

occupation because of social barriers., Due to lack of facilities younger generation is keener to migrate in search of work and better life., Inadequate knowledge on converting waste to wealth and value addition to existing products. No change in techniques since ages., Migrated people from Bihar and other states are ready to work on cheaper rates., Gender inequality with respect to Education, Poor networking among the people in target areas with SHG ,Total unawareness about “UMANG APP” and Lack of knowledge about channelization of investment to have a long run bigger return.

Research Rationale

The Preliminary Survey to understand the prevailing condition of targeted community suggest that a dedicated research with an intention to identify the strength areas in target community is required which can be further uplifted as alternative occupation so that the up gradation in Socio Economic Status of target beneficiaries can be done by active utilization of available resources, as base line survey suggest that available natural resources are underutilized because age old methods of production are still followed by target beneficiaries. The economic development of people related to good resources is required which will directly upgrade their nutritional levels and recovered them from “nutritional deficiency”, which is an integral part of improvement of livelihood so an “Empirical research” with purposive sampling scheme is planned to be done during the research duration so that a deep understanding can be done and the final objective of the research to adheres to SDG1 (No Poverty), which strives to end all types of poverty can be achieved. If scaled effectively, the interventions will change the current situation and result in sustainable agricultural production at the national level, allowing us to achieve SDGs 1 (No Poverty in terms of health, education, and sanitation), 2, 3, 5, and 8 (Decent Work and Economic Growth), as well as SDGs 2 (Zero Hunger), SDG3(Good health and wellbeing), SDG5(Gender equality), SDG8(Decent work and economic growth) and SDG12(Responsible consumption and Production).

3.2 Time Schedule of activities giving milestones through Gantt Chart.(Maximum 1 page)

1st & 2nd month:

Literature Review: Conduct an extensive literature review to gather relevant research and studies related to the Start-up India initiative, entrepreneurship, economic growth, and socioeconomic impacts. Identify gaps in the existing literature to inform the research's focus.
Research Proposal: Develop a detailed research proposal outlining the study's objectives, methodology, data collection methods, and analytical approach. Seek necessary approvals from the relevant authorities and stakeholders. Appointment of Research Associate

3rd & 4th Month:

Data Collection Design: Design data collection instruments, including surveys and interview questionnaires, to gather quantitative and qualitative data from entrepreneurs, investors, policymakers, and other stakeholders involved in the Atal Incubation India initiative. **Ethical Approval:** Seek ethical approval for data collection, ensuring compliance with ethical guidelines and data protection regulations.

5th & 6th Month: **Data Collection:** Begin data collection from the identified sample of start-ups, investors, and other relevant stakeholders. Conduct surveys and interviews to gather

insights into the socio-economic impact of the Atal Incubation India initiative. Preliminary Data Analysis: Start analyzing the collected data to identify initial trends and patterns. Conduct basic descriptive statistics to gain a preliminary understanding of the data.

7th & 8th Month: Data Validation and Cleaning: Validate and clean the collected data to ensure accuracy and reliability. Address any data discrepancies or missing information. In-depth Data Analysis: Employ advanced statistical and machine learning techniques to conduct in-depth data analysis, exploring relationships between variables and assessing the impact of the initiative on various socio-economic indicators.

9th & 10th Month: Policy Implications: Begin drawing preliminary conclusions regarding the socio-economic impact of the Atal Incubation India initiative. Identify key policy implications based on the research findings

11th & 12th Month:

Final Data Analysis: Complete the data analysis process and finalize the research findings, ensuring the results are statistically significant and robust. Report Writing: Prepare the final research report, including an executive summary, introduction, methodology, results, discussion, conclusions, and recommendations. Present the findings in a clear and coherent manner. Policy Recommendations: Develop evidence-based policy recommendations for policymakers, based on the research insights. Provide actionable suggestions to enhance the effectiveness of the Start-up India initiative in fostering entrepreneurship and economic growth. Presentation and Dissemination: Present the research findings and policy recommendations to relevant stakeholders, including government officials, policymakers, and representatives from the start-up ecosystem. Disseminate the research through academic publications, conferences, workshops and policy forums to ensure wider awareness and impact.

2. Expertise:

2.1 Expertise available with the investigators in executing the project: (Maximum 1 page)(Professional expertise existing with each of the investigators in terms of publications, Patents and preliminary results, to execute every component of the proposal should be highlighted)

RESUME OF INVESTIGATORS ATTACHED



3. List of facilities required from Sushant University for the project implementation.

3.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
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1.	Workshop Facility	No
2.	Water & Electricity	YES
3.	Laboratory Space /Furniture	No
4.	Power Generator	YES
5.	AC Room or AC	YES
6.	Telecommunication including e-mail & fax	YES
7.	Transportation	YES
8.	Administrative/Secretarial support	No
9.	Information facilities like Internet/Library	YES
10.	Computational facilities	YES
12.	Any other special facility being provided	No

3.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group			
PI's Department			
Other Institute(s) in the region			

3.3 Total Budget (Rs. in Lakhs):

- Recurring Cost (Rs): 1,26,000
- Non-Recurring Cost (Rs): 1,66,920

Sl. No.	Item	1 st Yr
A	Recurring	
	1. Manpower	96,000
	2. Consumables	10,000
	3. Travel	40,000
	4. Field testing, Demo/ Training expenses (if applicable)	20,000
	5. Contingencies/Other costs	50,000
	6. Institutional Overheads*	10,000
	7. Any other item	
B	Non-Recurring	
	Software Purchased	Rs. 1,66,920/-
	Grand Total (A+B)	Rs. 3,92,920



A. Recurring:

1. Budget for Manpower

Sl. No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	1 st Yr
1	Research Associate	1	Post Graduation	Rs. 8,000	Rs96,000

2. Budget for Consumables*

Sl. No.	Description of consumable	Qty./Yr	1 st Yr
1.	Stationary , Source Materials		Rs. 10,000.

3. Budget for Travel

Sl. No.	Purpose	1 st Yr
1.	<p>SURVEY & DATA COLLECTION</p> <p>For qualitative insights, interviews and surveys will be conducted with start-up founders, investors, policymakers, industry experts, and representatives from start-up incubators and accelerators to understand their experiences, challenges, and perspectives. Research will be done in Guragon, Faridabad and Delhi</p>	Rs, 60,000

4. Trainings*

Sl. No	Description of fieldtesting/demos/trainings	No/Yr	1 st Yr	Total
1.	Training for NVIVO Software(Expert workshop)		Rs. 20,000	Rs. 20,000



5. Budget for Contingencies*

Sl.	Item	Qty./Yr	1 st Yr	Total
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No.				
1.	COMPUTER	1	Rs. 30,000	Rs. 30,000
2.	Printer	1	Rs. 20,000	Rs. 20,000

B. Non-Recurring:

Sl. No.	Equipment/Itemdetails	Qty	Budget(Rs. inlaks)
1.	NVIVO SOFTWARE LICENSE	1	1,66,920(99,000 ONE TIME FEE+ 66,920 EVERY YEAR)

4. Deliverables

Deliverable	Mark√	Briefdescription
Productdevelopment/adaptation	NA	
Processdevelopment/adaptation	NA	
Technologypackagefordevelopmentoftheprojectareaand localcommunity	NA	
Technology capability development, training &documentation(e.g.reports,papers,articles,technology manuals,patents)	scopus indexed book, Research paper publication in reputed scopus journals	
Scientifcknowledgeand/or datagenerationleadingto technologydevelopmentinfuture	NA	
Other(Pleasespecify)	NA	

5. Name and address of experts/institution interested in the subject /out come of the project.

The project adheres to SDG1 (No Poverty), which strives to end all types of poverty. The initiative makes every effort to guarantee that every activity incorporates major mobilization of collective action from economic and social sectors, recommended interventions will be altered and improved further to make them suited for rural and semi-urban development, upholding the SDGs' goal of improving our country. If scaled effectively, the interventions will change the current situation and result in sustainable agricultural production at the national level, allowing us to achieve SDGs 1 (No Poverty in terms of health, education, and sanitation), 2, 3, 5, and 8 (Decent Work and Economic Growth), as well as SDGs 2 (Zero Hunger), SDG3(Good health and wellbeing), SDG5(Gender equality), SDG8(Decent work and economic growth) and SDG12(Responsible consumption and Production). Thus, the proposed interventions on successful implementation will attain the project outcomes and thus adhere to the SDGs to exercise strong Nation building.The proposed interventions are significant in addressing the women and children health and complement the National Rural Health Mission. The proposed interventions shall be customized and further enhanced to make it suitable for rural/semi-urban development, thereby uplift our Nation fulfilling

the purpose of SDGs. The intervention will also help in the economic development of people related to good resources which will directly upgrade their nutritional levels and recovered them from “nutritional deficiency”, which is an integral part of improvement of livelihood.

The project's strategy aims to address local women communities' vulnerabilities from a broad perspective. Development based on bottom-up planning and methods owned by the community. Project will concentrate on

- (i) Increasing local adaptation capacity through strategic livelihood promotion initiatives based on agro ecological principles building on existing knowledge base will have a positive influence on the livelihood of designated communities.
- (ii) Increasing institutional capacity through the development of community-based organizations into powerful social support networks
- (iii) Fostering environmental sustainability through participatory management of natural resources
- (iv) Multi stakeholder collaborations to build a policy climate that is favourable to the development of the poor
- (v) Promoting advancements in fundamental health rights using a variety of strategies.
- (vi) Supporting improvement in basic rights of health through multipronged approaches.
- (vii) Promoting gender responsive development at all levels



Dr. Gunjan A Rana
Professor (Marketing)

Professional Snapshot

Career spanning 22 years of experience, which includes both corporate and academic experience. My teaching interests range from Marketing, Advertising, Consumer Behavior, Services Marketing, Entrepreneurship, Management and CSR. I have taught graduate and postgraduate programmes at B Schools in Delhi and NCR region. Have been part of Discover India Program run by Rai foundation, delivered lectures to students from International Universities like Harvard. Besides this I have been invited by Pittsburgh State University, USA for Faculty Exchange Programme.

My research interest and contribution include topics covering Marketing, Advertising and General Management. I have presented my research work at internationally acclaimed institutions.

I am passionately involved in training programs; conducted Training & Development programme in General Management and Marketing for managers of Private and Public sector enterprises in India.

I have PhD in CSR and Cause Related Marketing, besides being Masters in Marketing Management (MMM), PGDM, and BA (Advertising and Sales Promotion) from Delhi University.

I headed Sambhav Foundation as President. It is a Society that works for under Privilege children.

Worked as Associate Professor Marketing with IILM Business School teaching Undergraduate students, BBA in Entrepreneurship in collaboration with SBS Swiss Business School, Switzerland. Provided Training for 2 years on Professional Ethics to students of NIFT-Hauz Khas as a trainer.

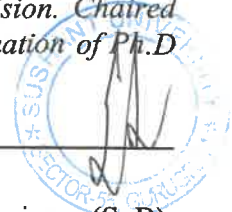
Currently I am working at Sushant University (SU) School of Business (SoB), Gurugram as Professor Marketing, handled the position of Area Head Marketing, Headed the BBA programme and teaching Post Graduate and Undergraduate students. The role and responsibility other than teaching are branding and social media reach. I am Member of School Research Committee. Guiding 4 research scholars at Sushant University. Published papers in ABDC and Scopus indexed journals. I have been a resource person in workshop on research. I have one student awarded Ph.D degree under my supervision. Chaired session in conferences as an expert. In panel of other universities for evaluation of Ph.D thesis.

Detailed Professional Experience:

I. October 2018- Till date

Working as Professor Marketing with Sushant University (SU) School of Business (SoB), Gurugram

- Handled Programme coordinator (Director) of BBA- Administrative responsibility of running and managing the Programme.
- Area Chair Marketing - Responsible for vetting the courses in the area of Marketing, vetting of question papers of Marketing Area, Conducting Seminar in the area of marketing



- Imparting lectures in the Area of Marketing (Marketing Management, Consumer Behaviour, Services Marketing, Principles of Management, Entrepreneurship, Retail Management)
- Organizing Guest lectures and industry visit for marketing.
- Coordinating and working on website and social media as well as brochure of SSB.
- Involved in conducting Personal Interview (PI) for prospective candidates.
- Acting as Research Guide for PhD scholars. Currently Guiding 4 research scholar
- Member of School Research Committee (SRC) at School of Business

II. August 2017- September 2018

Worked as Associate Professor Marketing with IILM Lodhi Road and IILM University Greater Noida

- Imparting lectures to Under Graduate students BBA in Entrepreneurship in collaboration with SBS Swiss Business School, Switzerland in the Area of Marketing.
- Imparting lecture to post graduate students at IILM University Greater Noida.
- Reworked and recreated the Brochure for Undergraduate program BBA in Entrepreneurship.
- Actively involved in conducting GD and PI for prospective students.
- Coordinating the conference and events

III. April 2015 – July 2017

Worked as President Sambhav Foundation (NGO) an organization working in creating value education in the Society.

- Imparting Education to under privilege Children.
- Create modules for workshop in schools. The workshops were organized on Value Education.
- Handling a Team of Volunteers for promoting the concepts evading in Indian society on Values.

IV. December 2013- April 2015

Worked as Assistant Professor (Marketing) at Institute of Marketing Management (IMM), New Delhi, AICTE Approved

- Imparted lectures to Post Graduate students on the subjects Marketing Management, Advertising Management and Consumer Behaviour.
- Worked on monthly newsletter of IMM "M&M".
- Organized Seminar, Conferences and Events with the allocated team.
- Reviewed course curriculum of marketing subjects.
- Mentored students to achieve their specific academic and career goals.



V. July 2012 - October 2013

Worked as HOD-Marketing at Asian Business School, Noida, AICTE Approved

- Imparted lectures to Post Graduate and Undergraduate students on the subjects Marketing Management, Advertising Management and Consumer Behaviour.
- Taking Lectures for aspiring Post Graduate Students from different institutes like TIMES.

- Part of Core team of ABS in drafting rules and regulation for the students.
- Editor of the monthly Newsletter of ABS "ABS Interface".
- Organized Seminar, Conferences and Events with the allocated team.
- Organized Orientation program for the students.
- Personal Interview of Aspiring students.
- Initiated Marketing Club Activity at ABS

VI. June 2003- July 2012

Worked as Associate Professor Marketing with Rai Business School (Rai Foundation), New Delhi

- Conceptualizing & imparting high-end lectures to undergraduates and postgraduates on the subjects like Marketing, Advertising, Consumer Behaviour and General Management.
- Leading, Training & Motivating students to ensure their Career Development.
- Preparing Presentations/Audio visuals aids for delivering Lectures in an effective manner.
- Organizing & conducting practical & theoretical training programs on various subjects to enhance Skills and Motivational levels as a part of Training Team.
- Worked on creating the Courseware for students on Marketing and Advertising Management.
- Planning and implementing campaigns to generate positive coverage and interest by Organizing Conferences, Exhibitions and other Events.
- Organize various extra Co-Curricular activities on Inter College levels like Business Quiz, Debates Ad Mad Show.
- Delivered Lectures as a part of Student Exchange Program to International students.
- Worked as an Assistant Editor for Rai Management Journal.
- Worked as an Editor of Campus Connect a Newsletter by Rai Business School.

VII. April 2001-May 2003

Worked as PR consultant with Brand management Organization, Communicadence India Pvt. Ltd.

- Handled Business Development and Relations with Media people. Clients were from Health, Education, Hospitality and Life Style.

Qualifications:

- Ph.D. from Dr. Bhimrao Ambedkar University, Agra in Business Management in February 2015. The topic of research was "Changing Role of Corporate Social Responsibility-Emerging Concept of Cause Related Marketing in Selected Private & Public Sector Industries".
- Qualified Masters in Marketing Management (MMM) from Pondicherry University in 2009.
- Qualified Postgraduate Diploma in Business Management, equivalent to MBA from Northern Institute for Integrated Learning in Management, (NIILM-CMS) in 2002, (Approved by AICTE).
- B. A. (Advertising and Sales Promotion Management) from Delhi College of Arts And Commerce, Delhi University in year 2000.



- SSC in Commerce from St. Anthony's Sr. Sec. School, Hauz Khas, New Delhi in year 1997.

Training and Lectures

- Delivered two Sessions on Data in Social Science Research to PhD Scholars in Maharishi Dayanand University in ICSSR sponsored Workshop on 4th September 2023.
- NIIFT provided training to the Graduate and Post graduate Students in the area of Professional Ethics for a week from 06-10 September 2021.
- NIIFT provided training to the Graduate and Post grade Students in the area of Ethics for a week from 13-18 July 2020.
- National Fertilizer Limited, Bhatinda conducted two days In-house training program for its employees on 26th and 27th April 2017 on Time Management, Stress Management and Strategic Management.
- National Fertilizer Limited, Panipat, conducted two days In-house training program for its employees (80 employees from varied departments) on Managerial Effectiveness on 6th and 7th January 2017.
- National Fertilizer Limited, Panipat, conducted two days In-house training program for its employees (70 employees from varied departments) on Employee Motivation, Time Management and CSR on 14th and 15th January 2016.
- Central Cottage Industries Corporation of India Ltd. (CCIC), a Govt. of India Undertaking, under Ministry of Textiles, conducted an In-House training program for its employees (20 employees from sales and non-sales departments) on the subject "Motivation and Sales Promotion" on 20th May, 2011.
- Workshops for students from international universities as part of discover India Topic "Indian Entrepreneurs at their best" on 10th January 2008.
- Central Cottage Industries Corporation of India Ltd. (CCIC), a Govt. of India Undertaking, under Ministry of Textiles delivered a talk on Market Consumerism on 11th March 2011 during.

Publications

- Published paper in The Third Concept an International Journal of Ideas, Leveraging Big Data for Assessing Social, Sustainability in Business, Issue February 2024, Vol.37 and No. 444, page 7.
- Consumer Acceptance of App Based Mobile Marketing in India: An empirical Analysis, Korea Review of International Studies, Volume 15, Issue 40, November 2022,. ABDC (C category journal)
- Exploring the boundaries of Neuromarketing through systematic investigation. Journal of Business Research, 154, 113371. October 23, 2022. ABDC (A category journal)
- Determinants of Consumer Acceptance of App Based Mobile Marketing: Evidence from India, The British Journal of Administrative Management, Volume 58, Issue 155, October 2022, ABDC (C category journal)



- The role of business and artificial intelligence in Direct Marketing, The British Journal of Administrative Management, ISSN - 1746 1278 Volume 58 Special Issue 06 Sep 2022.
- The Relationship Between Efficacy And Work Family Conflict-A Study Among Doctors From Private Hospitals In Delhi NCR, Elementary Education Online, Volume 19 Issue 3, Pages 3150-3150, 2021 (Scopus indexed)
- A Review on Blockchain-A Way Forward for Business, Turkish Journal of Computer and Mathematics Education (TURCOMAT), Volume 11, Issue 2, pages 631-639, 2020 (Scopus indexed)
- Sentimental Analysis of Olympics Tweets, Annals of the Romanian Society for Cell Biology, pages 427-435, 2020(Scopus indexed)
- Indian Response to Pandemic: A Journey from 1918 Pandemic to Covid-2019, Annals of the Romanian Society for Cell Biology, pages 500-506, 2020 (Scopus indexed)
- Theoretical Economics Letters (TEL) Paper ID: 1501901, Title: Economics of Counterfeit Products: With Special Reference to Mobile Phones & Watches; Volume: Vol.9 No.5 2019 (ABDC- B category Journal)
- Paper Published in ABS International Journal of Management, Communication a way for gendering of Brands, ISSN NO. 2319-684X, Volume 1 Issue 1 November 2012
- Written two articles in just careers a magazine of Rai Foundation tilted CSR in India and Mantra of Success- Soft Skills for the issue in the month of July 2010.
- Article published in Advertising Express of ICFAI in January 2007 issue on Indian women in advertising. This article was converted as a chapter in book of advertising by ICFAI press.
- Paper Published on Social Science Research Network (SSRN) counterfeit defeat brands, ISSN- 1556-5068, 19 April 2005, <http://dx.doi.org/10.2139/ssrn.701189>

Research Paper Presentation, Conferences Attended and FDP

- Attended Marketing 5.0 The future of Marketing 5.0 The future of Marketing by Professor Philip Kotler, World Marketing Summit on 27th February 2020.
- Moderated the session on “A Customer’s Journey into Life and Work in a Digital World” on 6th October 2017 in marketing conference at IILM Lodhi road.
- Attended Conference on 2nd Chapter of Handshake 2015, on Industry-Academia collaborations on 25th September, 2015 at Le-Meridien, New Delhi.
- Attended an International Summit Organized by Birla Institute of Management Technology on 9th -10th April 2010 on Corporate Social Responsibility - A strategy for inclusive development at Le Meridien, New Delhi.
- Co-authored a paper on “Impact of Economic Meltdown on Management Education” for a National Seminar on meltdown of world economy – Impact on India. The seminar was sponsored by UGC central regional office New Delhi and conducted by Mathura University on 28th and 29th October 2010.
- International conference AIMS International Conference on Value-based Management DSVV Haridwar Paper Presented on Corporate and Consumer Social responsibility a way for value based system on 11th -13th August 2010.
- Presented paper on 15th March 2008 in a National Conference on Retail by GGS Indraprastha University, Kashmere Gate, Delhi Topic “which is the right choice organized or unorganized retail?”



- Presented paper on “Customer as a King” in National seminar on designing and delivering customer focused services on 26th October 2007 at Rai business school New Delhi.
- Presented paper on Ethics in Education “a thin line between ethical and unethical system” in IBSA. ICON 07 second international conferences on management by ICFAI Business School Ahmedabad on 27th-29th December 2007.
- Presented paper at International conference in IIM-Ahmedabad on Communication and Gender on 14th-16 Dec 2006.
- Attended seminar on "Indo-US Strategic Relationships - A New Global Perspective," by Prof. Richard D' Aveni organized by Rai Foundation on 9th May 2006.
- Comparative study on the importance of CRM in Consumer Durables and Services Industry - the project was subsequently converted into a paper which has been accepted for 'First International Society for Marketing Advances Conference: Global Marketing for a New Century' held at Heidelberg, Germany from June 21 to 23, 2002.
- Attended an Interactive Workshop/ Faculty Development Program for faculties of Rai Business School Delhi and Faridabad, conducted on 16th and 17th November 2007 by GHRDC.
- Attended FDP on “Research Methodology and Analysis using SPSS” organized by Apeejay School of Management on 30th and 31st May 2007.

Personal Details:

Address: 503, Capitol Tower 8, Omaxe Hills-II, sector 43, Suraj Kund Road Faridabad, Haryana

Email ID: gunjana.rana@gmail.com

Mobile No. 9818449447

Date of Birth: 24th July 1978



Utilization Certificate

Certified that grant of ₹ 1,92,000/- (Rupees One Lakh Ninety Two Thousand Only) sanctioned by the Center of Research and Development, Sushant University, vide letter no. F.No.1/2023-2024/Seed Fund-Feb 24/29 Dated February 22, 2024, financial assistance for the project titled “Women farmers/daily wage laborers in relation to migration” was utilized for the purpose for which it was sanctioned.

Financial expenditure incurred

Sl. no	Nature of expense	Proposed Expenditure (in Rs.)	Expenditure incurred (in Rs.)
1	Manpower	96,000	30,000
2	Travel	40,000	20,000
3	Consumables	10,000	5,000
4	Field testing	20,000	20,000
5	Contingencies	50,000	10,000
6	Institutional Overheads	10,000	5,000
7	Software	1,66,920	1,02,000
	Total	₹ 3,92,920	₹ 1,92,000

Principal Investigator



Accounts Officer
Account & Finance Center
Sushant University
Gurugram, Haryana

PROFORMA FOR SUBMISSION OF SEED FUND PROPOSAL

Part I: General Information

1. Project Title (should be focused not exceeding 15 words): "Enhancing Metaverse Realism: 3D Vector Math and Animation Integration for Immersive Experiences"
2. i. Name of Principal Investigator: Dr. Manimala
ii. Name of Co-Investigator: Dr. Sherry Verma
3. Collaboration if any, give details of institution(s)-NA
4. Any Project(s) previously sanctioned by any funding agency? If yes give the details: NA

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)

5. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues?-NA
6. Duration (months):3 years
7. Enclose the following while submitting the application form:

Duly filled application form (complete with all Annexures)- 2 hard copies	
Bio-data of the PI & Co-I -2 copies	

Part II: Proposal Summary

1. Origin of the Proposal:

The proposal titled "Utilizing 3D Vector Mathematics and Animation in a Metaverse" emerges from a confluence of cutting-edge technologies and an innate curiosity to explore the intricate interplay between mathematics, computer graphics, and virtual environments. The Metaverse, an immersive digital realm that has gained immense prominence in recent years, offers boundless opportunities for innovation and engagement. It is at this juncture that the project is conceived to harness the power of 3D vector mathematical formulations and dynamic 3D animations to enrich the Metaverse experience.



2. Objectives

i. Develop and implement advanced 3D vector mathematical formulas to accurately model objects and interactions within the metaverse.
ii. Utilize 3D animation techniques to enhance user engagement, interactivity, and the dynamic nature of the metaverse.
iii. Investigate the potential applications of the metaverse in various domains, including education, entertainment, and virtual collaboration.
iv. Contribute to the growing body of knowledge in the field of metaverse development and its mathematical underpinnings.

3. Review of status of Research and Development in the subject

3.1 International Status:

Internationally, there is a growing interest in the convergence of mathematics and metaverse development. Notable researchers have explored the application of 3D vector mathematics and animation in virtual environments. Recent contributions include research on real-time physics simulations, 3D modeling techniques, and interactive metaverse applications. These developments demonstrate the potential of mathematical approaches in enhancing metaverse experiences.

3.2 National Status:

In India, researchers and institutions have begun to engage with the metaverse concept, albeit at a nascent stage. While the emphasis has primarily been on software development and platform creation, there is an emerging awareness of the role that advanced mathematics can play in achieving more realistic and interactive metaverse environments.

3.3 Importance of the proposed project in the context of current status

The proposed project is of paramount importance as it addresses a critical gap in current metaverse development. By integrating 3D vector mathematics and animation, it promises to create more immersive, interactive, and engaging virtual spaces. This novel approach will have significant implications for metaverse applications in education, gaming, simulations, and virtual collaboration, potentially revolutionizing how we interact in digital environments.

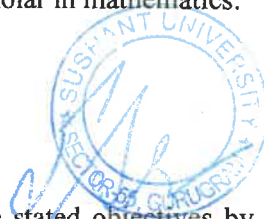
In summary, the project's origin lies in the synergy between advanced mathematics, 3D animation, and the ever-expanding metaverse, with the objective of pushing the boundaries of virtual experiences. The proposed work plan encompasses the development of mathematical frameworks and their practical application in the metaverse, contributing to the evolving landscape of digital interaction and virtual exploration.

Certainly, here is a sample Work Plan for a research project that utilizes 3D vector mathematical formulas and 3D animation in a metaverse, as submitted by a Ph.D. scholar in mathematics:

4. Work Plan:

4.1 Methodology:

The methodology for this research project is designed to achieve the stated objectives by seamlessly integrating 3D vector mathematical formulas and 3D animation techniques into the metaverse. The methodology is structured into several phases to ensure a systematic and comprehensive approach.



****Phase 1: Literature Review and Mathematical Formulations (Months 1-6)****

****Objective 1:** Develop and implement advanced 3D vector mathematical formulas.**

- Conduct an extensive literature review of existing 3D mathematical models and their applications in virtual environments.

- Formulate 3D vector equations for spatial representations, transformations, and interactions within the metaverse.

Vector Interpolation (Lerp - Linear Interpolation)

Formula: Resultant Vector (R) = Vector A + t * (Vector B - Vector A)

Explanation: Vector interpolation is crucial for smooth transitions in animation. By linearly interpolating between two vectors (positions or orientations), we can create fluid object movements within the metaverse.

****Phase 2: Animation Techniques and Interactivity (Months 7-12)****

****Objective 2:** Utilize 3D animation techniques to enhance user engagement and interactivity.**

- Investigate state-of-the-art 3D animation algorithms and tools suitable for the metaverse.

- Implement real-time 3D animations, responsive to user interactions, for a dynamic metaverse experience.

Cross Product for Rotation

Formula: Resultant Vector (R) = Vector A x Vector B

Explanation: The cross product is used to compute the axis of rotation in 3D space. This is essential for animating objects' rotations and orientations in the metaverse.

****Phase 3: Integration and Testing (Months 13-22)****

****Objective 3:** Investigate the potential applications of the metaverse.**

- Integrate the developed 3D vector mathematical formulas and 3D animations into a metaverse platform.

- Conduct extensive testing and simulations to evaluate the impact of mathematical formulations on metaverse interactions.

Vector Reflection

Formula: Reflected Vector (R) = Incident Vector - 2 * Dot(Normal, Incident Vector) * Normal

Explanation: Vector reflection is vital for simulating the reflection of objects or light rays. In the metaverse, this formula can be used for realistic rendering, especially in virtual worlds with water surfaces or reflective materials.

****Phase 4: Applications and Use Cases (Months 23-30)****

****Objective 4:** Investigate the potential applications of the metaverse.**

- Explore metaverse applications in education, gaming, simulations, and virtual collaboration.

- Develop use cases and prototypes to demonstrate the practical applications of the enhanced metaverse.

Vector Projection

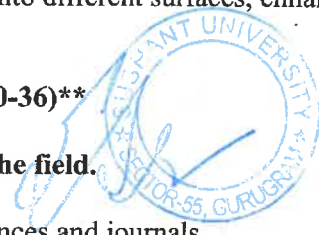
Formula: Projected Vector (P) = (Dot(Vector A, Vector B) / Dot(Vector B, Vector B)) * Vector B

Explanation: Vector projection is beneficial for simulating shadows and the interaction of objects with surfaces in the metaverse. It helps determine how objects are projected onto different surfaces, enhancing realism

****Phase 5: Research Dissemination and Documentation (Months 30-36)****

****Objective 5:** Contribute to the growing body of knowledge in the field.**

- Write research papers and articles for publication in relevant conferences and journals.



- Document the research process, mathematical formulas, and animation techniques in a comprehensive report.

Vector Curl

Formula: $\text{Curl}(\text{Vector A}) = \nabla \times \text{Vector A}$

Explanation: Vector curl, a concept from vector calculus, can be applied in the metaverse to model fluid flow, magnetic fields, and various dynamic effects. Understanding the vector curl can lead to more realistic animations and simulations.

These 3D vector formulae will be an integral part of the project's methodology, allowing for the development of advanced 3D animations in the metaverse. The detailed mathematical formulations will be implemented and tested to enhance the user experience and interactivity within the metaverse environment.

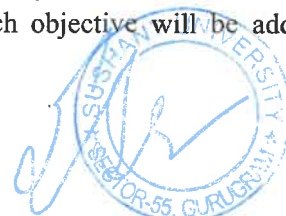
4.2 Time Schedule of activities giving milestones through Gantt Chart.

A Gantt chart is provided to illustrate the timeline of activities and milestones for the project:

<i>Activity</i>	<i>Timeline</i>
<i>Literature Review & Formulations</i>	<i>[0- 6 months]</i>
<i>Animation Techniques & Interactivity</i>	<i>[7- 12 months]</i>
<i>Integration & Testing</i>	<i>[13-22 months]</i>
<i>Applications & Use Cases</i>	<i>[23-30 months]</i>
<i>Research Dissemination & Reporting</i>	<i>[30- 36 months]</i>

...

This work plan ensures a structured approach to achieving the project objectives by first laying the mathematical foundation, then introducing dynamic 3D animation, testing in a metaverse environment, exploring applications, and finally disseminating the research findings. The detailed methodology and time schedule provide clarity on how each objective will be addressed, ensuring a comprehensive and systematic research plan.



5. Expertise:

5.1 Expertise available with the investigators in executing the project:

[Principal Investigator – Dr. Manimala]

Academic Background: Holding a Ph.D. in mathematics, the principal investigator has a robust foundation in advanced mathematical concepts, vector mathematics, and numerical simulations, making them well-equipped to formulate and implement intricate 3D vector mathematical models for the metaverse.

Research Experience: The principal investigator has a history of engaging in cutting-edge research in the domains of mathematical modeling, computational mathematics, and dynamic simulations, as evidenced by their publication record in peer-reviewed journals.

Metaverse Familiarity: Demonstrating an in-depth understanding of metaverse environments, the principal investigator has explored metaverse platforms and applications, gaining insights into the integration of mathematics and animation within these digital realms.

[Co Investigator – Dr. Sherry Verma]

The co-investigator, holding a Ph.D. in computer science, brings valuable expertise in database management systems (DBMS). This knowledge is pivotal for integrating and managing data within the metaverse, ensuring efficient data storage, retrieval, and utilization.

With a strong background in computer science, the co-investigator can address data handling and security aspects, crucial for protecting user data and ensuring the integrity of information in the metaverse environment.

Their expertise in computer science enables the seamless integration of mathematical formulas and 3D animations into the metaverse platform. This is vital for creating a cohesive and functional metaverse experience.

Proficiency in software development complements the project's technical aspects, allowing for the practical implementation of mathematical formulations and animation techniques in the metaverse.

The co-investigator can contribute to the testing phase by leveraging their computer science background to optimize the metaverse platform's performance, particularly in handling large datasets and interactive elements.

Incorporating these points highlights the co-investigator's valuable skills in computer science and DBMS, which are essential for the successful execution of the project.

5.2 Bibliography:

1. Smith, John. (2020). "Mathematical Foundations of 3D Computer Graphics." Academic Press.
2. Johnson, Emily. (2019). "Principles of 3D Animation: Theory and Practice." Wiley.
3. Anderson, David. (2021). "Metaverse Development and Applications." Springer.
4. Lee, Robert. (2018). "Real-time 3D Graphics and Animation." CRC Press.
5. Kim, Sarah. (2017). "Database Management Systems: Principles and Practice." Pearson.



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9. Brown, Lisa. (2019). "Enhancing User Engagement in the Metaverse through 3D Animation." *Proceedings of the International Conference on Virtual Reality*, 98-110.
10. Garcia, Juan. (2022). "Realistic Physics Simulations in the Metaverse: Advancements and Challenges." *ACM Transactions on Interactive Virtual Environments*, 7(1), 34-47.

6. List of facilities required from Sushant University for the project implementation.

6.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	Yes
2.	Water & Electricity	Yes
3.	Laboratory Space/ Furniture	Yes
4.	Power Generator	Yes
5.	AC Room or AC	Yes
6.	Telecommunication including e-mail & fax	Yes
7.	Transportation	No
8.	Administrative/ Secretarial support	Yes
9.	Information facilities like Internet/Library	Yes
10.	Computational facilities	Yes
12.	Any other special facility being provided	No

6.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group	Laptop		
PI's Department			
Other Institute(s) in the region			

6.3 Total Budget (Rs. in Lakhs):

- Recurring Cost (Rs) : 3 Lakh
- Non-Recurring Cost (Rs): 10 Lakh



Sl. No.	Item	Budget			
		1 st Yr	2 nd Yr	3 rd Yr	Total
A	Recurring				
	1. Manpower				
	2. Consumables				
	3. Travel				
	4. Field testing, Demo/ Training expenses (if applicable)	2 Lakh	2 Lakh	3 Lakh	7 Lakh
	5. Contingencies/Other costs				
	6. Institutional Overheads*				
	7. Any other item				
B	Non-Recurring				
	Permanent equipment				
	Construction of work shed/structures	2 Lakh	2 Lakh	2 Lakh	6 Lakh
	Fabrication of prototype equipment				
	Grand Total (A+B)	4 Lakh	4 Lakh	5 Lakh	13 Lakh

A. Recurring:

1. Budget for Manpower

Sl. No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	Budget (Rs. in lakhs)			
					1 st Yr	2 nd Yr	3 rd Yr	Total
1	Research Scholar	2	Graduate	20000	240000	240000		480000

2. Budget for Consumables*

Sl. No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
1	Laptop, computer, VR kit, AR kit,		200000	20000	20000	600000

*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel

Sl. No.	Purpose	Budget (Rs. in lakhs)			
		1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Project logistics				
2.	Field activities				
3.	Review meetings (if elsewhere)				

4. Field Testing/ Demo/ Trainings*

Sl. No	Description of field testing/demos /trainings	No/Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

1	VR software			200000	200000
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5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

B. Non-Recurring:

Budget for Permanent Equipment/ Workshed/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.			
2.			
3.			
4.			

7. Deliverables

Deliverable	Mark √	Brief description
Product development/adaptation		
Process development/adaptation		
Technology package for development of the project area and local community		
Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)		
Scientific knowledge and/or data generation leading to technology development in future		
Other (Please specify)		

8. Name and address of experts/ institution interested in the subject / outcome of the project.

Dr Manimala, Assiatant Professor(Mathematics), School of Engineering & Technology, Gurgaon

Dr Sherry Verma, Assiatant Professor(Computer Science), School of Engineering & Technology, Gurgaon

Outcomes of the Project:- Any 3D Avtar



**PROFORMA FOR SUBMISSION OF SEED FUND
PROPOSAL**

Part I: General Information

1. Project Title (should be focused not exceeding 15 words):

Identifying Indian Contributions to the Domain of World Politics

2. i. Name of Principal Investigator: Dr. Anjali Sehrawat

ii. Name of Co-Investigator: Prof. Anushka Choudhary

3. Collaboration if any, give details of institution(s)

4. Any Project(s) previously sanctioned by any funding agency? If yes give the details:

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)
1	Community Participation in Uttarakhand	02/14 6/202 2-23/I CSS R/RP/ MN/S C	ICSSR	Ongoing	4,99,800	No

5. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues? No

6. Duration (months): 6-12 Months

7. Enclose the following while submitting the application form:

Duly filled application form (complete with all Annexures)- 2 hard copies	
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Part II: Proposal Summary**1. Origin of the Proposal:** (Scientific/Technical rationale for doing this work should be elaborated)

The project emerges from the need to challenge the dominance of Western perspectives in international relations. Indian international relations have evolved over millennia, offering a unique and often overlooked viewpoint on global politics. This project aims to uncover the forgotten history of India's role in shaping international discourse, emphasizing principles of coexistence, peace, and prosperity

1. Objectives (Only 4-5 focused one that can be observed, measured or clearly assessable)

1. India is known for the country of ancient civilisation, very rich cultural legacy, all time-tested spiritual tradition, birth place of different religions, the hub of interfaith dialogues, the land of yoga and enlightenment. The abovementioned values are considered vital components of India's relations to foreign countries. This Research Programme is an attempt to critically study, analyse and assess the World politics through Indian Perspective.
2. Ancient India was well connected to the world since ages. Its related primary sources would be explored, studied and interpreted.
3. Indian contributions to the domain of world politics are many:
 - a. Vashudhav Kutumbkam
 - b. Concept of Vishwaguru
 - c. Multi-polarity
 - d. Soft power Diplomacy
 - e. Historical and Cultural bondage abroad and study

These components will be applied and studied to bring out optimal outputs.



4. Develop India's ancient strength and connect to the modern system.
5. India, by its choices at home and its actions abroad, would seek to create the distribution of capabilities at both the global and the continental levels that would accommodate its presence as an authentic great power. This exploratory research aims to realize these aspirations by applying Indian perspective to study world politics with concerted efforts.

i.
ii.
iii.

2. Review of status of Research and Development in the subject

2.1 International Status:

1. International:

Acharya, A. and B. Buzan. *Non-Western International Relations Theory: Perspectives on and beyond Asia*. London: Routledge, 2009.

Adler, H. And Koepke, Wulf (Edited). 2009. *A Companion to the Works of Johann Gottfried Herder* London: Camden House.

Alpers, E. *The Indian Ocean in World History*. Oxford: Oxford University Press, 2014.

Aydin, Cemil. *The Politics of Anti-Westernism: Visions of World Order in Pan-Islamic and Pan-Asian Thought*. New York: Columbia University Press, 2007.

Boesche, R. *The First Great Realist: Kautilya and His Arthashastra*. Oxford: Lexington Books, 2002.

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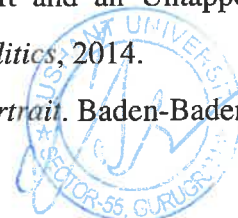
Cohen, Stephen P. and Sunil Dasgupta, *Arming without Aiming: India's Military Modernization* (Washington, DC: Brookings Institution Press, 2010), 2–16.

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- Mearsheimer, “The Gathering Storm”; Brzezinski, *The Grand Chessboard*; and Ikenberry, *After Victory*.
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- Pekkanen, Saadia M. John Ravenhill and Rosemary Foot, eds., *The Oxford Handbook of the International Relations of Asia* (Oxford: OUP, 2014), pp 120-137.
- Zaman, R. U. “Kautilya: The Indian Strategic Thinker and Indian Strategic Culture.” *Comparative Strategy* 25, no. 3 (2006): 231–247.

2.2 National Status:

- Ambekar, Sunil *The RSS: Roadmaps for the 21st Century*, (Delhi: Rupa Publications India, 2019)
- Ayres, A. *Our Time Has Come: How India Is Making Its Place in the World*. Oxford: OUP, 2018.
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- Gautam, P. K. *One Hundred Years of Kautilya's Arthashastra. IDSA Monograph*. New Delhi: IDSA, 2013.
- Jaishankar, S. *The India Way: Strategies For an Uncertain World* Noida: harperCollins Publishers, 2020.
- Joshi, Shashank. *Indian Power Projection: Ambition, Arms and Influence*, Whitehall Papers 85 (London: Royal United Service Institute, 2015), 140.
- Khanna, P. *The Future Is Asian*. New Delhi: Simon & Schuster, 2019.
- Liebig M. and S. Mishra (Edited) *The Arthashastra in a Transcultural Perspective: Comparing Kautilya with Sun-Zi, Nizam Al-Mulk, Barani and Machiavelli*, New Delhi: IDSA, 2017.
- Menon, V. K. N. 'Utopia or Reality: An examination of Professor Carr's theory of the nature of international relations,' *The Indian Journal of Political Science* 2, no. 4 (1941): 384-88.
- Nandakumar, J. *Hindutva for the Changing times*, Ghaziabad: Indus Scroll Press, 2019.
- Sagar, Rahul, “State of Mind: What Kind of Power Will India Become?” *International Affairs* 85, no. 4 (2009): 812.
- Saran, S. *How India Sees the World: Kautilya to the 21st Century*. New Delhi: Juggernaut, 2017.
- Shahi, D. *Kautilya and Non-Western IR Theory*. Basingstoke: Palgrave, 2018.
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- Sarkar, B. K. "Hindu Theory of International Relations", *American Political Science Review* 13, no. 3 (1919): 400-14.
- Sarkar, B. K. *The Politics of Boundaries and Tendencies in International Relations*, Calcutta: N. M. Ray Chowdhury & Co., 1926.
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2.3 **Importance of the proposed project in the context of current status** (Maximum 1 page) (Highlight what is the new area or gap which will be solved in the project in relating to what is already known. This is a very important section to project the novelty content of the proposal)

It is an attempt to excavate an Indian dimension to the world politics that is not new. Attention to the history of international relations and World politics and the origins of in India reveals a sustained effort by scholars across India and abroad to articulate a South Asian vision of international affairs. International thought was not the privilege of Europe and North America. Rather, it emerged in multiple locations as part of a global dialogue forged amidst the interests and experiences of empire, anti-imperial resistance and nationalist movements. A great number of scholars played an active role in this re-energised attempt to comprehend and document the 'international', presenting a stretched notion of disciplinary thought, one that incorporated emancipatory themes of race, anti-imperialism, transnational solidarity, and a re-imagined vision of post imperial world order. Whilst there is understandably an interest in recovering these visions of South Asian internationalism in light of India's contemporary role in world politics, in some ways this recovery of international thought for a national purpose misses the benefit of such a study. The value of attention to such an archive is in its capacity to reveal the alternative roots to world order that were present at this moment of international change.

Whilst many South Asian scholars of the early 20th century and the early independence period held their own implicit and often explicit opinions on the future of India in the world, their scholarship indicates perhaps something that has been lost along the way. The discontinuation of sustained historical research into India's own international pasts was at least part of the story of the decline of Indian perspective. A



huge gap can be filled when this archive of Bharat's five millennia as a civilization entity and engagement with outside world is recovered through this academic endeavour.

3. Work Plan:

3.1 Methodology:

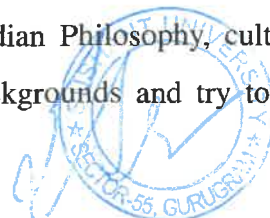
Methodology:

Extensive literature review, analyzing both international and national research.

- a. Qualitative research, including interviews with experts.
- b. Exploration of ancient texts and historical resources.
- c. Content analysis of official government documents.

This proposed research is an inter disciplinary research engaging Indian International Relations, Global Politics, Indic culture and tradition, philosophy and foreign policy of India, History of Asia in general and India in particular. The team of researchers will adopt mixed methods which include qualitative and quantitative both. Historical method is applied to pursue qualitative research and analysis of the available texts and other resources. The team has international relations background with knowledge of different disciplines of social sciences especially Indian History that will help to apply content analysis of the texts and other resources available with National Archives of India, Ministry of External Affairs, Nehru Memorial Museum and Library, IDSA, ICWA and similar institutions and repositories across India and abroad. The research methodology employs hermeneutical study of texts produced in various languages especially Indian ancient languages by local and foreign scholars, thinkers and writers of various socio-cultural, historical, theological schools on Indian civilization, cultural legacy including spiritualism. The textual sources include: books; articles in journal; newspapers; websites on Indian foreign affairs in past, present and vision documents, ministries of foreign affairs and ministry of culture of different countries and social networking sites as well.

A wide variety of textual sources will be used for descriptive approach, content analysis and critical assessment. The researcher will meet, interact and discuss the issue under investigation to scholars of International Relations, World Politics, different branches of Asian History like expert on South Asia, South-East Asia, Central and West Asia, Indian philosophy, different trends and influences of different schools of Non-Indian Philosophy, culture and Ideology, diplomats, policy makers with various ideological backgrounds and try to extracting views,



opinions and responses of them. The diversity ranged from ultra-conservative to liberals to radicals. The research method is also consisted of critical analysis of the concepts that are central to the discourse on Indian International Relations as well as West and Non-West International Relations, Power politics, foreign affairs and Diplomacy. An extensive effort would be made to examine how authors, scholars and experts approach the issues and how they try to appropriate the debate. The Government documents, like Memorandum of Understanding, Agreements and Dialogues will help to know the past and present of India's foreign policy, dynamics and strategy. On the basis of findings, the tailored-made report would be drafted for ready reference to tap the potential from the available components of unique Indian perspective to the World Politics.

(Maximum of 5 pages)

(It should contain all the details of how each of the objectives will be addressed. This section must be detailed and have clear plans, not vague and generalized statements. It should have several schemes, tables, figures, equations etc. in addition to text, explanation and justification of why the project research plan will work)

3.2 Time Schedule of activities giving milestones through Gantt Chart. (Maximum 1 page)

Milestones: Duration 12 Months

- 1. Literature review and project framework. Quarter-1**
- 2. Research and data collection.- Quarter-2**
- 3. Data analysis and report writing.- Quarter-3**
- 4. Conclusion and project submission.- Quarter-4**



4. Expertise:

4.1 Expertise available with the investigators in executing the project: (Maximum 1 page) (Professional expertise existing with each of the investigators in terms of publications, Patents and preliminary results, to execute every component of the proposal should be

highlighted)

Principal Investigator (PI): Dr. Anjali Sehrawat

- Dr. Anjali Sehrawat holds the position of Assistant Professor at the School of Law, Sushant University.
- She has an extensive academic and research background in the field of international relations, global politics, and Indian history.
- Dr. Sehrawat has authored several research papers and articles on topics related to international relations and India's historical contributions to global politics. Her work has been published in renowned peer-reviewed journals.
- She has also contributed to policy papers and documents related to international affairs.
- Her research on the historical and cultural aspects of Indian foreign policy and its relevance in the modern world has received recognition and appreciation from the academic community.

Co-Investigator (Co-I): Dr. Anushka Chaudhary

- Dr. Anushka Chaudhary is an Assistant Professor at the School of Law, Sushant University.
- Her research interests encompass international relations, Indian foreign policy, and diplomatic history.
- Dr. Chaudhary has a track record of publishing research articles and papers on the subject of Indian international relations.
- She has actively participated in academic conferences and seminars, where she presented her work on the historical aspects of Indian diplomacy.
- Dr. Chaudhary's expertise in Indian diplomatic history and its contributions to world politics aligns with the objectives of this project.

The investigators bring to the project a collective expertise in international relations, a deep understanding of Indian foreign policy, and a track record of scholarly contributions that make them well-equipped to execute every component of the proposal effectively. Their existing knowledge and research acumen ensure the successful implementation of this project.



4.2 Bibliography

International Sources:

1. Acharya, A., & Buzan, B. (2009). *Non-Western International Relations Theory: Perspectives on and beyond Asia*. Routledge.
2. Alpers, E. (2014). *The Indian Ocean in World History*. Oxford University Press.
3. Aydin, Cemil. (2007). *The Politics of Anti-Westernism: Visions of World Order in Pan-Islamic and Pan-Asian Thought*. Columbia University Press.
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8. Mearsheimer, John J. (2001). *The Tragedy of Great Power Politics*. Norton.

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7. Shahi, D. (2018). *Kautilya and Non-Western IR Theory*. Palgrave.
8. Sarkar, B. K. (1919). "Hindu Theory of International Relations." *American Political Science Review*, 13(3), 400-414.



5. List of facilities required from Sushant University for the project implementation.

5.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	Yes
2.	Water & Electricity	Yes
3.	Laboratory Space/ Furniture	Yes
4.	Power Generator	Yes
5.	AC Room or AC	Yes
6.	Telecommunication including e-mail & fax	Yes
7.	Transportation	Yes
8.	Administrative/ Secretarial support	Yes
9.	Information facilities like Internet/Library	Yes
10.	Computational facilities	Yes
12.	Any other special facility being provided	Yes

5.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group	Computer	2020	
PI's Department	Printer	To be bought	
Other Institute(s) in the region			

5.3 Total Budget (Rs. in Lakhs):

- Recurring Cost (Rs): Research Staff
- Non-Recurring Cost (Rs): 30000, Field Work, Contingency, Publication of report

6.

S.No	Heads of Expenditure	Number	Months	Rate	Amount
1	Research Staff	1	3	10000	30000
2	Field Work				20000



3	Equipment and study material				30000
4	Contingency				10000
5	Publication of report			10000	10000
6					

Sl. No.	Item	Budget			
		1 st Yr	2 nd Yr	3 rd Yr	Total
A	Recurring	1. 30000			
	1. Manpower				
	2. Consumables	3. 20000			
	3. Travel				
	4. Field testing, Demo/ Training expenses (if applicable)	3. 10000			
	5. Contingencies/Other costs				
	6. Institutional Overheads*				
	7. Any other item				
B	Non-Recurring				
	Permanent equipment	10000 (print)			
	Construction of work shed/structures	30000			
	Fabrication of prototype equipment				
	Grand Total (A+B)	100000			

A. Recurring:

1. Budget for Manpower

Sl. No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	Budget (Rs. in lakhs)			
					1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Research Staff	1	Masters	10000	30000			

2. Budget for Consumables*

Sl. No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel

Sl. No.	Purpose	Budget (Rs. in lakhs)			
		1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Project logistics				
2.	Field activities	20000			
3.	Review meetings (if elsewhere)				

4. Field Testing/ Demo/ Trainings* NA

Sl. No	Description of field testing/demos /trainings	No/Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Include material for technology field testing/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of beneficiaries/training, duration of training days, cost /training).

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
1	Contingency		10,000			

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

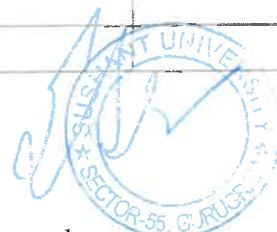
B. Non-Recurring:

Budget for Permanent Equipment/ Workshed/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.	Computer	1	Available (15000)
2.	Printer	1	15000
3.			
4.			

7. Deliverables:

- Comprehensive Research Report:** Prepare a detailed research report that encompasses the findings, analysis, and conclusions of your study. This report should provide a comprehensive overview of Indian contributions to world politics.



2. **Database of Indian Perspectives:** Create a database or repository that compiles relevant texts, documents, and historical sources that represent Indian perspectives on world politics. This database can be a valuable resource for future research.
3. **Policy Papers:** Develop a series of policy papers that highlight the implications of your research for contemporary foreign policy and international relations. These papers can serve as guidance for policymakers.
4. **Academic Papers:** Write academic papers based on your research findings and submit them to reputable journals for publication. These papers can contribute to the academic discourse on Indian contributions to world politics.
5. **Monograph:** Compile your research into a monograph or book that can be published. This book can serve as a comprehensive reference on the subject.
6. **Conference Presentations:** Present your research findings at relevant academic conferences and seminars. This will help disseminate your work and receive feedback from the academic community.
7. **Public Lectures and Seminars:** Organize public lectures and seminars to disseminate the key findings of your research to a broader audience, including students, scholars, and the general public.
8. **Policy Recommendations:** Provide specific policy recommendations based on your research findings. These recommendations can be valuable for policymakers and government agencies.
9. **Educational Modules:** Develop educational modules or courses based on your research that can be integrated into academic programs related to international relations and diplomacy.
10. **Media Outreach:** Engage with the media to disseminate the key findings of your research to a wider audience. This can include interviews, op-eds, and documentaries.
11. **Online Resource Portal:** Create an online portal or website that hosts resources, articles, and publications related to Indian perspectives on world politics. This can serve as a hub for researchers and students interested in the topic.
12. **Interactive Workshops:** Organize interactive workshops or webinars to engage with students, scholars, and the public, fostering discussions on Indian contributions to world politics.

These deliverables will help ensure that your research has a broad impact, reaching both academic and policy audiences while also making the information accessible to the general public and future researchers.



Deliverable	Mark √	Brief description
Product development/adaptation		
Process development/adaptation		
Technology package for development of the project area and local community		
Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)		
Scientific knowledge and/or data generation leading to technology development in future		
Other (Please specify)		

8. *Name and address of experts/ institution interested in the subject / outcome of the project.*

Signature of PI

Dr. Anjali Sehrawat

Assistant Professor

School of Law,

Sushant University

Anjali

Signature of SI

Dr. Anushka Chaudhary

Assistant Professor

School of Law,

Sushant University



PROFORMA FOR SUBMISSION OF SEED FUND PROPOSAL

Part I: General Information

1. Project Title (should be focused not exceeding 15 words): An empirical study on urgent need of Prison Reforms based on the Prison in Bhondsi, Gurugram, Haryana, India.
2. i. Name of Project Assistant: Dr. Sulakshana Banerjee Mukherjee, Assistant Professor, Sushant University. Gurugram, Haryana.
3. ii. Name of Principal Investigator: Biswadeep Dutta, Research Scholar, Sushant University. Gurugram, Haryana.
4. Collaboration if any, give details of institution(s)

N/A
5. Any Project(s) previously sanctioned by any funding agency? If yes give the details:

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / Status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)
	An empirical study on urgent need of Prison Reforms based on the Prison in Bhondsi, Gurugram, Haryana, India		Sushant University, School of Law		1,00,000	

6. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues?

Yes, District Prison Authorities for the Jail visit consent for recording of statements, open and close ended questions in the form of Survey questionnaires.

District Jail, Gurugram, 938W+4XG, Near RTC, District Gurgaon, Bhondsi, Haryana 122102.

Headquater:03-04 Bays Building, Sector 14, Panchkula headed by Mr. Mohammad Akil, IPS, Director General of Prisons Haryana.

Email ID: office_dg.prisons@hry.nic.in

7. Duration (months): 12
8. Enclose the following while submitting the application form:



Duly filled application form (complete with all Annexures)- 2 hard copies	Yes
Biodata of the PI & Co-I -2 copies	Yes

Part II: Proposal Summary

1. Origin of the Proposal:

Recently a popular TV Series “Criminal Justice” streaming on Disney Hotstar had a dialog that “the world inside the prison is different from the one you came to.” The dialog points to the problems across the prisons in India, the prisoners living in overcrowded, inhuman living conditions, violations of human rights, single washrooms for hundreds of prisoners, inadequate rehabilitation and reintegration with society, and systematic corruption by influential people.

The prisons in India are currently operating at a far exceeding capacity. These overcrowded prisons are facing various problems like unhygienic living conditions, limited access to healthcare, and violence within the prison walls. For that overhaul and chaotic situation in the prison system it required immediate changes in the prison system like constructing new prisons, prison administration personnel training, creation of independent monitoring organizations which can assist in creating aid, helping with rehabilitation rather than recidivism, expanding existing facilities, exploring alternative sentencing options like community service for nonviolent offenders etc. are some of the possible solutions.

Prison should consider the rate of recidivism. Because recidivism shows inconsistencies in Prison policies, charges, and supervision or administration of prisoners. People would not be able to return to society with the burden of unemployment, homelessness, and poverty.

The prison system ideally should make sure that the prisoners after rehabilitation successfully can return to their well-wishers, family, and friends and be released into society. Currently, the prisoners are in a terrible state and are ill-prepared to return to society because of a lack of vocational training, academics, and psychological care. A comprehensive rehabilitation program is required so that the prisoners can return to society and start afresh. For that skill development, educational opportunities and mental healthcare facilities are required.

In the Indian federal structure prisons and the administration of prisons are under the subject of the State as per the 7th Schedule of the Indian Constitution. The prisoners detained under the Constitution of India are subject to “State List” under Entry 4 of List II of the 7th Schedule to the Administration and Management of Prisons and Prisoners and come under the responsibility of the State Government. Increased cases of prison violence and criminals running syndicates behind bars are becoming normal in society.

The existing Act is intended to keep criminals in custody and enforcement of Discipline and order in Prisons; there is an absence of provisions for reform and rehabilitation of prisoners. In many cases, prisons are a violation of human dignity as well as the basic human rights of the inmates, The prisoners are confined for a long time in old, crumbling buildings with no proper sanitation and inadequate accommodation.

Currently, the prisons are administered and governed under the Prison Act 1894, The Prisoners Act 1900, the Transfer of Prisoners Act 1950, and the Repatriation of Prisoners Act 2003.

As per the NCRB,¹ the total number of prisons in India at the national level is 1319 which consists of 564 sub-jails, 424 district jails, 148 Central jails, 88 open jails, 41 special jails, 32 women jails, and 9 Borstal schools. These issues bring a big concern about the potential of the State government to administer the prisons where cases are getting seemingly common.

There are cases where prisoners under confinement have access to 5G-enabled smartphones within their vicinity, this signifies the deep-rooted corruption and flaws within Government bodies. The convicts using high-end smartphones create the issue of handling as maintained by the Prison authorities, because having access to these smartphones the convicts can continue their criminal activities of extortion, and murder within the prison and plan unlawful activities outside the prison.

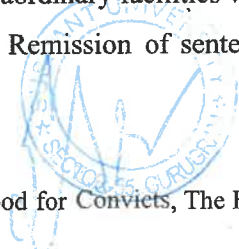
The judiciary, government bodies, media, and civil society need to collaborate for accountable and meaningful change in the prison system. Guarantying accountability and justice is the key element for the courts to bring prison reform. Acting through public interest litigations, prison inspections, and corrective direction issuance in time can help to take action against human abuses, overcrowding, etc. The Judiciary can safeguard the rights of the prisoners and report on breaches of human rights, and rehabilitation. Public opinion can be taken with the help of the media, awareness programs can be shared which can enhance pressure for reforms. Even there is news of death during custody, usage of brutal force by the police and prison guards, and hard-to-get legal representatives.

Recently Rajasthan State brought New Prison Bill with an Aim to provide Dignity and Livelihood for Convicts. The government is trying to strengthen the Prison infrastructure to rehabilitate the prisoners and reform them for a better fresh future.

Mr. Tikaram Juli, Minister for Prisons stated “The prisoners in our jails are making LED bulbs for paintings and sculptures. The petrol pumps are being run by the prisoners at Jaipur, Alwar, and Kota and we are planning to open 15 such pumps across the state”²

Recently news came that Honduras is to construct an island colony to imprison gang members in the hope to isolate the gang members from criminal activities. But repeating the past won't be an effective way to regain control of criminal activities as “criminals’ gangs have shown throughout their history that they can adapt.”³

Also, there are instances where privileged powerful people are provided with extraordinary facilities which are not permitted under the rules. Misuse of the provisions related to Parole and Remission of sentences has



¹ National Crime Records Bureau.

² Manish Godha, Rajasthan News: State's New Prison Bill Aims to provide Dignity, Livelihood for Convicts, The Free Press Journal, 18th July 2023.

<https://www.freepressjournal.in/india/rajasthan-news-states-new-prison-bill-aims-to-provide-dignity-livelihood-for-convicts>.

³ Tiziano Breda, Latin America Expert, Istituto Affari Internazionali, Italy.

<https://www.aljazeera.com/news/2023/7/19/honduras-to-build-island-colony-to-imprison-gang-members>

significant implications for public order because the recklessness in the grant of parole and remission of sentences are impacting society and public order. There is also a requirement for more Prison staff & training. The positions are lying vacant and not being filled up.

The amended provision of Model Prison Reforms 2023 creates provisions for the grant of parole, Furlough, and Remission to Prisoners to encourage good conduct. Providing separate accommodation for Women and transgender. Ensuring the physical and mental well-being of Prisoners and focusing on the reformation and rehabilitation of inmates. Transparency in Prison Management includes provisions for Security Assessment and Segregation of Prisoners and Individual sentence planning, grievance redressal, prison development Board, and use of technology in prison administration. Semi-Open Jails have been inserted also. The empirical study can provide more precise recommendations for inclusion in the new Prison reforms.

2. Objectives (Only 4-5 focused one that can be observed, measured or clearly assessable)

i.	Whether the Indian Prison authorities are technologically trained and equipped with security measures to tackle the issues like access to illicit items like smartphones, Narcotic substances etc.
ii.	To analyze the strategy to tackle the deficiency of infrastructures within the prisons with issues like overcrowding, inhumane conditions, basic human rights violations, number of washrooms etc.
iii.	To understand whether prisoners are on the path of incarceration, can rehabilitate and reintegrate with society.
iv.	To analyze if the Sentencing policy should be made less strict by bringing empathy, the normalization principle can be introduced with the prison reforms.
v.	To study if the collaboration of prison authorities with the public, media houses and correctional facilities can help rehabilitate the prisoners.

3. Review of status of Research and Development in the subject

3.1 International Status & National Status:

- Srivastava, S. P., Indian Soc of Criminology, & University of Madras. (1978). Problems and priorities of prison reform in India. *Indian Journal of Criminology*, 6(2), 106-12.
- Barker, F. A. (1941). Twenty Years of Penal and Prison Reform in India. *How. J.*, 6, 52.
- Clark, J. K. (2015). Prison Reform in Nineteenth-Century British-India.
- Diaz, S. M., Indian Soc of Criminology, & University of Madras. (1978). Thoughts on Prison Reforms in India. *Indian Journal of Criminology*, 6(2), 79-86.
- SAHRDC. (2011). Prison Reform in India.
- Sharma, D., Gupta, S., & Nagpal, K. (2022). The Need for Prison Reform throughout the World. *Jus Corpus LJ*, 3, 186.
- Barker, F. A., Hailey, W. M. H., Baron, W., & Percy Henry, S. (1944). The modern prison system of India: a report to the department: the progress of prison reform in India during the twenty years following the publication of the report of the 1919-1920 Indian Jails Committee.

- Das, D., & Sarma, B. (2020). Prison labour in colonial India: A case study of Assam. *Space and Culture, India*, 8(1), 91-100.

3.2 Importance of the proposed project in the context of current status

The topic can bring an overhaul change in the current Prison system in India. Currently, the Prisons are administered by the century-old Prisons Act of 1894. The Principles of Fundamental Rights and Directive Principles of State policies under the Indian Constitution with the new ideas and correctional practices by the various Countries can be included to make a refurbishment reform in the current Prisons.

More emphasis will be given to the reformation of Prisoners which includes vocational training, basic human rights for the prisoners, and the appointment of a Central and State Advisory Board for Prisoners for advising the Governments on issues related to advice and administration of prisoners.

4. Work Plan:

4.1 Methodology:

The Bhondsi Prison has a unified prison model that has a unique character with diverse categories of prisons such as long-term and short-term convicts, under trials, and detainees including Male, Female, and Transgender prisoners, Indian or local and foreign national prisoners as well as normal and maximum-security prisoners. The primary data would be based on prison officers, prison inmates' daily work, and functions in Prison affecting the lives of the prisoners.

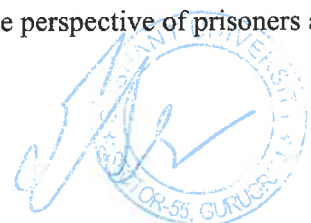
Two categories of prison staff-Custodial officers and treatment /training officers-based survey questionnaire and interview.

The sources of secondary data would be based on the government reports of different Central and State prison commissions and committees, various social science research on the prison system, and prisoners' rights. The issue has been examined from the standpoint of the prison system as well as from the perspective of prisoners and their rights.

The Bhondsi Prison has a unified prison model that has a unique character with diverse categories of prisons such as long-term and short-term convicts, under trials, and detainees including Male, Female, and Transgender prisoners, Indian or local and foreign national prisoners as well as normal and maximum-security prisoners.

The primary data would be based on prison officers, prison inmates' daily work, and functions in Prison affecting the lives of the prisoners. Two categories of prison staff-Custodial officers and treatment /training officers-based survey questionnaire and interview.

The sources of secondary data would be based on the government reports of different Central and State prison commissions and committees, various social science research on the prison system, and prisoners' rights. The issue has been examined from the standpoint of the prison system as well as from the perspective of prisoners and their rights.



4.2 Time Schedule of activities giving milestones through Gantt Chart.

N/A

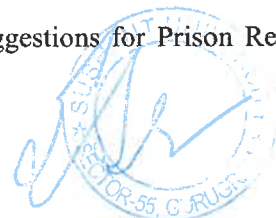
5. Expertise:

5.1 Expertise available with the investigators in executing the project:

Legal Research tools, IBM SPSS, Orange, Mendeley, Statista, ICCR Research Tools, ManuPatra, SCC Online, Lexis Nexis etc.

5.2 Bibliography

1. Jefferson, A. M. (2022). Prison reform and torture prevention under 'compromised circumstances.' *Criminology & Criminal Justice*, 0(0) <https://doi.org/10.1177/17488958221105442>
2. Bedi, S., Dhanuka, M. (2023). Life Imprisonment in India: Will the Prison Doors Ever Open for Life-Sentenced Prisoners? In: Van Zyl Smit, D., Appleton, C., Vucong, G. (eds) *Life Imprisonment in Asia. Palgrave Advances in Criminology and Criminal Justice in Asia*. Palgrave Macmillan, Singapore. https://doi.org/10.1007/978-981-19-4664-6_6
3. Amrit, P., Jaiswal, A., Uniyal, V., Jha, R. S., & Srivastava, A. (2022). Prisoner's rights and prison reform in India: A legal critique. *International Journal of Health Sciences*, 6(S3), 10933–10943.
4. Gupta, N., & Gupta, R. K. (2018). Prison reform and work programs in India: a case study. *International Journal of Human Rights and Constitutional Studies*, 6(2), 150-166.
5. Sharma, S. (2017). *Prison reform in India: narela jail, Delhi (extension for Tihar)* (Doctoral dissertation, SPA, Bhopal).
6. Nagla, B. K. (1989). Prison Administration in India. *Indian Journal of Public Administration*, 35(4), 1011-1021.
7. Cooper, R. A. (1981). Jeremy Bentham, Elizabeth Fry, and English Prison Reform. *Journal of the History of Ideas*, 42(4), 675-690.
8. Nomani, M. Z. M. (2022). Health Rights of Prisoners and Prison Law Reforms during COVID-19 Pandemic in India. *Bangladesh Journal of Medical Science*, 21(4), 893.
9. Singh, A. (2022). Prison Reforms in India Absence of a Rehabilitation Approach. *Part 1 Indian J. Integrated Research. L.*, 2, 1.
10. Adhikari, N. K. (2021). Prison and Prison Reforms in India. *Issue 4 Int'l JL Mgmt. & Human.*, 4, 2161.
11. Mishra, S., & Raj, S. (2022). Historical Evolution of the Prison System in India. *Part 1 Indian J. Integrated Research. L.*, 2, 1.
12. Gaur, K. D. (1982). Human Rights of Detainees and Prisoners: Suggestions for Prison Reform. *Cochin University Law Review*, 6, 393-415.



13. Joshi, I. D. (2022). Doctrinal Analysis on Shortcomings of the Prison System in India. *Issue 4 Indian JL & Legal Research.*, 4, 1.
14. Hiremath, V. (2008). Draft policy on prison reforms. *Economic and Political Weekly*, 29-32.
15. Sethna, M. J. (1964). *Society and the Criminal* (p. 297). K_b Mahal.
16. Vij, S. (2022). A Critical Analysis of Major Prison Reforms in India and the Path Ahead. *Issue 1 Indian JL & Legal Research.*, 4, 1.
17. Vidya, B. (2016). Prison Reform Movement in India. *The Indian Journal of Social Work*, 31(4), 407-416.

6. List of facilities required from Sushant University for the project implementation.

6.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	Yes
2.	Water & Electricity	Yes
3.	Laboratory Space/ Furniture	Yes
4.	Power Generator	No
5.	AC Room or AC	Yes
6.	Telecommunication including e-mail & fax	Yes
7.	Transportation	Yes
8.	Administrative/ Secretarial support	Yes
9.	Information facilities like Internet/Library	Yes
10.	Computational facilities	Yes
12.	Any other special facility being provided	No

6.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group	Printer	HP LaserJet 1200	
PI's Department			
Other Institute(s) in the region			

6.3 Total Budget (Rs. in Lakhs):

- Recurring Cost (Rs): 1,00,000/-
- Non-Recurring Cost (Rs):



Sl. No.	Item	Budget			Total
		1 st Yr	2 nd Yr	3 rd Yr	

A	Recurring 1. Manpower 2. Consumables 3. Travel 4. Field testing, Demo/ Training expenses (if applicable) 5. Contingencies/Other costs 6. Institutional Overheads* 7. Any other item	2 or 3			
B	Non-Recurring Permanent equipment Construction of work shed/structures Fabrication of prototype equipment	Printer			
	Grand Total (A+B)				

A. Recurring:

1. Budget for Manpower

Sl. No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	Budget (Rs. in lakhs)			
					1 st Yr	2 nd Yr	3 rd Yr	Total

2. Budget for Consumables*

Sl. No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
	Printer, Pen, Pencil, Notebook, A4 Sheet bundle, stapler, pins					

*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel

Sl. No.	Purpose	Budget (Rs. in lakhs)			
		1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Project logistics				
2.	Field activities	Yes	Yes	Yes	Yes
3.	Review meetings (if elsewhere)				

4. Field Testing/ Demo/ Trainings*

Sl. No	Description of field testing/demos /trainings	No/Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Include material for technology field testing/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of

beneficiaries/training, duration of training days, cost /training).

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
	Secretarial Assistance	Yes				

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

B. Non-Recurring:

Budget for Permanent Equipment/ Workshed/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.			
2.			
3.			
4.			

7. Deliverables

Deliverable	Mark \checkmark	Brief description
Product development/adaptation		
Process development/adaptation		
Technology package for development of the project area and local community		
Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)		
Scientific knowledge and/or data generation leading to technology development in future		
Other (Please specify)		

8. Name and address of experts/ institution interested in the subject / outcome of the project.



PROFORMA FOR SUBMISSION OF SEED FUND PROPOSAL

Part I: General Information

1. **Project Title :** Inception of Sushant University Dramatics Society

i. **Name of Principal Investigator:** Apoorva Kaushik

ii. **Name of Co-Investigator:** NA

2. **Collaboration if any, give details of institution(s):** NA

3. **Any Project(s) previously sanctioned by any funding agency? If yes give the details:** NA

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)

4. **Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues? :** NA

5. **Duration (months):** 4 months



Part II: Proposal Summary

1. Origin of the Proposal:

When a teenager, after schooling, enters the adulthood and parallelly joins college, he tend to store within him a huge powerhouse of creative energy. Some get timely, appropriate opportunities to tap into that immense energy pool, give expression to this creative energy and create, while others find it challenging to channelize it in right direction and end up indulging in self-destructing activities like alcoholism and substance abuse. Addiction to binge-watching web series recklessly and sheer reluctance to step out of the room and socialize (via outdoor activities) is also part of the problem.

As an organization that takes pride in its lively campus, vibrant curriculum and academic excellence, it becomes not only a need but an ethical responsibility of Sushant University to provide the budding professionals a platform to explore their creative faculties. Hence, inception of Sushant University Dramatics Society is majorly proposed here.

2. Objectives

- | |
|---|
| - Establishing Sushant University Dramatics Society with precise membership, required props and equipments, the know-how and the other resources |
| - organizing stage shows/ plays later to enhance the visibility of Sushant University. Inviting people from nearby societies and other colleges to witness the shows, probably in exchange of a minimal fee |
| - enhance representation and participation of Sushant University in various inter-college theatre competitions, hence further accentuating SU's reputation. |
| - offer students in SU campus a direction to channelize their creative energy, hence a vibrant campus life and physical and mental wellbeing |



- initiation of university-level students' society at SU

3. Review of status of Research and Development in the subject

3.1 International Status: NA

3.2 National Status: NA

3.3 Importance of the proposed project in the context of current status

- giving birth to what is called the most direct/ intimate media in the history of mankind, a university-level Dramatics Society, hence a tool to create huge socio-cultural impact

- swirling an artistic "wave of creativity" across the campus through passionate script-writing, intense performances and a zealous awareness campaigns

- an educative project to enlighten the people in the campus and beyond about the scriptures, philosophies and the glorious history of the Indian society

4. Work Plan:

4.1 Methodology:

- **TAKE-OFF STAGE:** The project will initiate with an auditioning process, where general inclination of students towards theatre, their body language, socio-cultural background, voice clarity and physical agility would be analyzed and if required, put to test. Then, an appropriate time slot would be worked upon as per the convenience of all schools. Some modifications in the space chosen will also be done to make it more sound-proof and spacious. Students will be gradually introduced to the world of theatre.



- **FLYING STAGE:** work on script writing would be initiated. After gauging the mood of our potential audiences, we will consider borrowing parts of stories from our holy scriptures, our glorious past, our socio-cultural issues etc. After zeroing- down on at least three scripts, staging of each script would be scheduled on a pilot-basis. Responses in each cases would be recorded. Ultimately, one script would be chosen for the upcoming event.

- **LANDING STAGE:** a collective reading session of the finally chosen script would be finalized. Each member would be asked to prepare for multiple characters. With a month of development, it will become visible as to what role must be assigned to whom. After assigning characters, prop list would be worked upon. A back team within the society would finalize background/stage setting for each scene. And finally a 'sutradhaar' i.e. a moderator, would weave the entire play together.

4.2 Time Schedule of activities giving milestones through Gantt Chart.

S. No.	Scheduled Activities	Timeline
1	Official Audition for drama/theatre	20-25 Jan 2023 (tentative)
2	Conception of University-level society	10 Feb 2023 (tentative)
3	Regular rehearsals as per officially assigned slots	25 Feb 2023 – 15 Apr 2023
4	First intra-university stage show	End of April 2023 (tentative)
5	Inter-university Theatre festival	May 2023 (tentative)

5. Expertise:



5.1 Expertise available with the investigators in executing the project:

Ms Apoorva Kaushik has experience of being a part of French theatre at the university-level and holds a descent understanding of theatre dynamics and concepts.

5.2 Bibliography:

- Howarth, Willaim D., French Theatre in the Neo-classical Era, 1550-1789 (Theatre in Europe a Documentary History), Cambridge University Press, vol. 1
- Stanislavski, Constantin, An Actor Prepares, Bloomsbury Publishing, vol.3, 1989

6. List of facilities required from Sushant University for the project implementation:

6.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	Yes
2.	Water & Electricity	Yes
3.	Laboratory Space/ Furniture	No
4.	Power Generator	No
5.	AC Room or AC	Yes
6.	Telecommunication including e-mail & fax	Yes
7.	Transportation	No
8.	Administrative/ Secretarial support	Yes
9.	Information facilities like Internet/Library	Yes
10.	Computational facilities	Yes
12.	Any other special facility being provided	No



6.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group	NA		
PI's Department	NA		
Other Institute(s) in the region	NA		

6.3 Total Budget (Rs. in Lakhs):

- Recurring Cost (Rs): Rs. 10,000
- Non-Recurring Cost Rs. 1,00,000

A. Recurring:

1. Budget for Manpower

Sl. No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	Budget (Rs. in lakhs)			
					1 st Yr	2 nd Yr	3 rd Yr	Total
	NA							

2. Budget for Consumables*

Sl. No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Props	8	Rs. 4000			Rs. 4000
2.	Costumes	12	Rs 6000			Rs 6000

3. Budget for Travel: NA

Sl. No.	Purpose	Budget (Rs. in lakhs)			
		1 st Yr	2 nd Yr	3 rd Yr	Total

1.	Project logistics				NA
2.	Field activities				NA
3.	Review meetings (if elsewhere)				NA

4. Field Testing/ Demo/ Trainings: NA

Sl. No	Description of field testing/demos /trainings	No/Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Include material for technology field testing/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of beneficiaries/training, duration of training days, cost /training).

5. Budget for Contingencies

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Expert Talk on Theatre/drama (related felicitation and Honorarium)	1	Rs. 5,000			Rs. 5000

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

B. Non-Recurring:

Budget for Permanent Equipment/ Workshed/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.	Stage side wings (large size)	2	Rs 55,000
2.	Props	10-15	Rs 30,000
3.	costumes	10-12	Rs 10,000
4.	Drapes	2-4	Rs 5,000

7. Deliverables

Deliverable	Mark ✓	Brief description
Product development/adaptation	✓	Inception of Dramatics society
Process development/adaptation	✓	Execution of step-wise theatre processes
Technology package for development of the project area and local community	NA	NA
Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)	✓	Detailed training process and preparation of concerned reports
Scientific knowledge and/or data generation leading to technology development in future	✓	Data on inclination of students towards theatre
Other (Please specify)	NA	NA



8. *Name and address of experts/ institution interested in the subject / outcome of the project.*

Apoorva Kaushik

Vatel Hotel and Tourism Business School

Sushant University, Sec-55, Gurugram



PROFORMA FOR SUBMISSION OF SEED FUND PROPOSAL

Part I: General Information

1. Project Title Servicing Sanitation Infrastructure in Ahmedabad and Pune
2. i. Name of Principal Investigator: Ar. Pallavi Keswani
ii. Name of Co-Investigator: Meghna Malhotra
3. Collaboration if any, give details of institution(s): NA
4. Any Project(s) previously sanctioned by any funding agency? If yes give the details:

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)
1.	NA	NA	NA	NA	NA	NA

5. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues? NA
6. Duration (months): 3 Years
7. Enclose the following while submitting the application form:

Duly filled application form (complete with all Annexures)- 2 hard copies	No
Bio-data of the PI & Co-I -2 copies	No

Part II: Proposal Summary

1. Origin of the Proposal:

According to Census 2011, India's urban population was 377 million or 31% of the total population. These numbers are expected to increase to 600 million by 2031. The Census 2011 also showed that in 4,041 statutory towns, close to eight million households did not have access to toilets and defecate in the open (7.90 million) (Ministry of Urban Affairs: Govt of India, 2014).

Toilets being constructed does not imply the usage of toilets. The survekshan results give highlights to the successful implementation and construction of public and community toilets across the country, and the number has reached four lakhs, sixty-four thousand, two hundred and fifty the insights remain untold: Until a public toilet remains functional, the point of spending resources and establishing an infrastructure, which remains unused, is a waste. The O&M of these toilets constructed is the biggest concern. In both the cities, the business models running have been identified, and analysed on the basis



of their institutional and financial mechanisms, what the holistic issues of the city and what are the issues in each model of both the cities. The study compares the models in both cities and provides deep insights into why certain models work while others do not. These issues form recommendations for other cities to reform their operations and maintenance models. Recommendations are given for a holistic approach, as well as model wise.

As a result, the Ti-bus in Pune, which is a new initiative, performs very well, in terms of infrastructure, O&M and monitoring. Apart from that, it is seen, the paid models perform slightly better than the ones which are provided free for use. Whether it is maintained by the ULB, or by the private player, the outcome results the same. There are several issues addressed in both the cities. Both the cities lack the community managed models. While, Pune did try a successful CBO led community toilet management, it is no longer functioning. The same has not been tried out in Ahmedabad at all. Apart from these, there are issues discussed in detail of each model of both the cities.

Sanitation Infrastructure in Indian cities, as discussed in the above part of this research is facing many issues as a part in maintaining these services and making them run to a benchmark level. There are certain areas where Ahmedabad is doing better than Pune, or vice-versa. But there are still certain areas of concern wherein both the cities are lacking behind. Therefore, the recommendations are divided into two categories, where the universal recommendations are for both the cities and some are for model wise.

The recommendations are divided into three categories as governance, monitoring and financing and Co-financing.

2. Objectives (Only 4-5 focused one that can be observed, measured or clearly assessable)

i.	To understand the existing and emerging business models in Public Sanitation Infrastructure.
ii.	To understand the institutional and financial mechanisms for the working of the O&M of prevailing Infrastructure and analysing the outcome for each.
ii.	To propose sustainable business models of the various mechanisms.

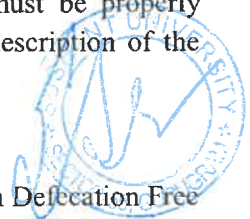
3. Review of status of Research and Development in the subject

3.1 International Status:

(Researchers working in the area worldwide and their contributions must be properly highlighted with recent references and reviews. A correct and faithful description of the international research status must be given)

3.2 National Status:

The Swachh Bharat Mission – Urban aims to fulfil the objective of 100% Open Defecation Free status in all Urban Local Bodies (ULBs) in the country by 2 October 2019. This includes providing access through IHHL & PT/CT is a key focus of the SBM. (i.e. construction of sanitary latrines – individual household toilets, community and public toilets). It is the integral part of the process, it will also entail operation and maintenance of these facilities to maintain their functionality, including effective fecal sludge and septage management (FSSM) to ensure both safe containment, emptying, collection, transportation, treatment, and/or safe disposal. Simultaneously, behavior change initiatives will need to be continued through intensive participation of key stakeholders – self-help groups, students and youth, corporate organizations, to ensure that these sanitary facilities are used regularly and correctly (Ministry of Housing and Urban Affairs).



SBM online portal clearly states that number of community and public toilets build in India till Jan 2019- are four Lakhs, sixty-four thousand two hundred and fifty. The Swachhta status report 2016, also states that only 42% of the wards of the Urban India have access to PT/CT, which only 40.4% of these toilets are functional.

Importance of the proposed project in the context of current status The Swachh Survekshan toolkit: 2017 highlights on the sanitation availability with a weightage of 30% total weightage on sanitation infrastructure, out of which 15% is given to individual toilets and 15% on public and community toilets. The focus is on the construction and maintenance of public and community toilets based on eleven parameters. The guidelines clearly states that all commercial areas should have a PT within a distance of 1 kilometre and all occupants of the slum or a slum like settlement that do not have space to construct toilet, have access to CT within a distance of 500 meters (Ministry of Urban Development, 2017). The Swachh Survekshan toolkit: 2018 highlights on the ODF status of the cities with a weightage of 30% total weightage on sanitation infrastructure, to encourage cities to become ODF as per the SBM guidelines. The 2018 toolkit also focusses on the O &M of the public and community toilets and what percentage is covered by the revenue streams (Ministry of Urban Affairs , 2018). The Swachh Survekshan survey toolkit: 2019, focusses on the sustainable sanitation system with a weightage of 25% of the total marking system. Further, the cities will be marked on several parameters. Firstly, the percentage of households/commercial settlements/ community toilets or public toilets systems are connected to a closed sewerage system. The purpose is to certain, that the city has adequate coverage of sewage network or septic tanks. Second parameter is the scientific processing of the faecal sludge generated from the households, commercial settlements, public toilets and community toilets. Third parameter is the availability of water at source. Fourthly, the availability of the locations of public toilet as SBM toilet on google maps. Next is, whether the public toilets are available for use to public between 4:00 am to 10:00 pm. The toolkit also focusses on the availability of public toilets on the construction sites (sites with more than 25 workers) with a safe disposal of faecal sludge. Last but not the least, how much percentage of Operations and Maintenance cost of public and community toilets are been recovered with revenue streams (Ministry of Housing and Urban Affairs : Government of India , 2018). the funding for the O&M of PTs and CTs majorly depend on user fees. Advertisement rights should be a major source of income, but as seen, there are very few cities or models, where the advertisement rights are given to the private players. There is very few CSR support when it comes to O&M of the public facilities.

Work Plan:

3.3 Methodology:

The background study and literature study lead to the problems associated with the project, which also helps in finding research questions and objectives of the project. For carrying out further research, cities and the areas in the cities were identified. The cities identified for this research are Ahmedabad and Pune. Pune and Ahmedabad are different in nature when it comes the O&M of the public sanitation infrastructure which have large infrastructure and different business models. While Ahmedabad works purely on PPP basis for most of its sanitation service, Pune, has initiated a lot of innovative models in both CT and PT, out which some have failed, and some have worked. And hence two cities with different systems have been selected, to have a comparison. After the identification of the areas, a system study for all sites is carried out, where in the stock of the sanitation infrastructure are taken, in both the cities where in all the public and community toilets will be mapped which were constructed before and after SBM. This infrastructure are mapped based on different business models working in the city.



Once all the sanitation infrastructure is mapped based on the business models, a detailed study of all the models has been carried out and compared based on institutional and financial mechanisms in each.

All the different business models work differently and hence the pros and cons of each leads to different outcomes in a way that these facilities work. A comparative analysis based on facilities and on-time performance of these infrastructure will be carried out to identify the issues for the same. Surveys and questionnaire to understand the parameters, which lead to the problems addressed in different types of models.

The performances of these business models identified in the city have been compared and analysed, and hence then issues are identified of each model in both the cities. To arrive at an objective assessment, the following table shows the framework prepared on the institutional and financial mechanisms to measure their performances.

Time Schedule of activities giving milestones through Gantt Chart.

<i>Gantt Chart</i>		<i>6 Months</i>	<i>12 Months</i>	<i>18 Months</i>	<i>24 Months</i>	<i>30 Months</i>	<i>36 Months</i>
1.	Project Vision, Research and Literature Review						
2.	Site visits and issue identification in various types of existing models						
3.	Comparative analysis of the various models						
4.	Preparation of a sustainable model						
5.	Proposal and expert advisory						
6.	Execution of the proposal and Regular Monitoring						

4. Expertise:

4.1 Expertise available with the investigators in executing the project:



4.2 Bibliography

- *Government of India. (2018). Infrastructure and Investments in Water and Sanitation in India. Ministry of Finance, Pune*
- *Hazarika, D. M. (2015). Sanitation and Its Impact on Health: A Study in Jorhat, Assam. Jorhat: International Journal of Scientific and Research Publications*
- *Kaliski, J. (2015). The Past, Present, and Future of Sanitation, with a Case Study of India. Environmental Studies of Amherst College.*
- *Marar, A. (2017, March 20). PMC starts smart city journey, converts scrapped PMPML buses to 'Toilets for Her'.*
- *Ministry of Urban Affairs . (2018). Swachh Survekshan Toolkit 2018. Delhi : Government of India .*
- *Renzaho, J. K. (2017). Understanding the Challenges of Improving Sanitation and Hygiene Outcomes in a Community Based Intervention: A Cross-Sectional Study in Rural Tanzania.*
- *Toilet Board of Coalition . (2017, November). The Sanitation Economy of India. Retrieved from www.toiletboard.org*

5. List of facilities required from Sushant University for the project implementation.

5.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	No
2.	Water & Electricity	No
3.	Laboratory Space/ Furniture	No
4.	Power Generator	No
5.	AC Room or AC	No
6.	Telecommunication including e-mail & fax	Yes
7.	Transportation	Yes
8.	Administrative/ Secretarial support	Yes
9.	Information facilities like Internet/Library	Yes
10.	Computational facilities	No
12.	Any other special facility being provided	No



5.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment

PI & his group	N/A	N/A	N/A
PI's Department	N/A	N/A	N/A
Other Institute(s) in the region	N/A	N/A	N/A

5.3 Total Budget (Rs. in Lakhs):

- Recurring Cost (Rs): **One Lakh thirty thousand (1,30,000)**
- Non-Recurring Cost (Rs): **Sixty Thousand (60,000)**

Sl. No.	Item	Budget			Total
		1 st Yr	2 nd Yr	3 rd Yr	
A	Recurring	50,000	50,000	30,000	1,30,000
	1. Manpower				
	2. Consumables				
	3. Travel				
	4. Field testing, Demo/ Training expenses (if applicable)				
	5. Contingencies/Other costs				
	6. Institutional Overheads*				
	7. Any other item				
B	Non-Recurring	20,000	20,000	20,000	60,000
	Permanent equipment				
	Construction of work shed/structures				
	Fabrication of prototype equipment				
	Grand Total (A+B)				1,90,000/-

A. Recurring:

1. Budget for Manpower

Sl. No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	Budget (Rs. in lakhs)			
					1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Municipal Officer	1	Min 5 Years in Municipal Corporation		10,000	10,000	--	20,000
2.	Community Outreach Coordinator	1	M.S.W		10,000	10,000	-	20,000
3.	Urban Manager	1	Urban Management/ M.Plan		10,000	10,000	--	20,000

2. Budget for Consumables*

Sl. No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
1.	N/A	N/A	N/A	N/A	N/A	N/A

*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel

Sl. No.	Purpose	Budget (Rs. in lakhs)			
		1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Project logistics	5,000	5,000	10,000	20,000
2.	Field activities	5,000	5,000	10,000	20,000
3.	Review meetings (if elsewhere)	NA	NA	NA	NA

4. Field Testing/ Demo/ Trainings*

Sl. No	Description of field testing/demos /trainings	No/Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Staff Training	3	10,000	10,000	10,000	30,000

*Include material for technology field testing/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of beneficiaries/training, duration of training days, cost /training).

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total
2.	N/A	N/A	N/A	N/A	N/A	N/A

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

B. Non-Recurring:

Budget for Permanent Equipment/ Workshed/ Structures

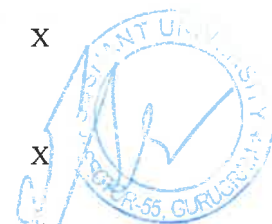
Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.	Store	1	20,000

6. Deliverables

Deliverable	Mark ✓	Brief description
Product development/adaptation	X	X
Process development/adaptation	✓	X
Technology package for development of the project area and local community	X	X
Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)	✓	X
Scientific knowledge and/or data generation leading to technology development in future	✓	X
Other (Please specify)	N/A	N/A

7. Name and address of experts/ institution interested in the subject / outcome of the project.

Pallavi Keswani, School of Art & Architecture, Sushant University, Gurugram, India.



PROFORMA FOR SUBMISSION OF SEED FUND PROPOSAL

Part I: General Information

1. Project Title (should be focused not exceeding 15 words): Prevalence of Anemia in Diabetes mellitus in rural area of Haryana (Pachgoan)
2. i. Name of Principal Investigator: Bhulle Rathi
ii. Name of Co-Investigator: NA
3. Collaboration if any, give details of institution(s): NA
4. Any Project(s) previously sanctioned by any funding agency? If yes give the details: NA

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)
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5. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues? NA
6. Duration (months): 12
7. Enclose the following while submitting the application form: NA

Duly filled application form (complete with all Annexures)- 2 hard copies	
Bio-data of the PI & Co-I -2 copies	



Part II: Proposal Summary

1. Origin of the Proposal: (Maximum 1 page)

(Scientific/Technical rationale for doing this work should be elaborated)

Description of problem –

The prevalence of these disorders can be influenced by the particular difficulties that rural populations frequently confront in terms of access to healthcare, nutrition, and lifestyle.

- 1 Due to factors like restricted availability to a variety of nutritional foods, a lack of knowledge about anemia, and greater rates of parasitic and infectious diseases, anemia can be more common in rural areas, especially in low- and middle-income nations.
- 2 Children, older individuals, and women of childbearing age may get anemia more frequently in rural regions.
- 3 Anemia can result from inadequate intake of iron, folic acid, and vitamin B12. Diets that are predominantly comprised of basic foods and lack a variety of nutritional sources may pose a risk.
- 4 Diabetes prevalence is rising worldwide, including in rural regions.
- 5 While type 2 diabetes is more common, rural communities might also have type 1 diabetes.
- 6 Lifestyle changes, such as increasing consumption of processed foods, sedentary behaviors, and decreased physical activity, can all contribute to the rising prevalence of diabetes in rural areas.
- 7 Limited healthcare access: Because rural locations may have fewer healthcare facilities and healthcare personnel, diabetes diagnosis and management may be delayed.
- 8 Socioeconomic factors: Poverty and illiteracy might limit access to better food options, as well as diabetes education and self-management tools.

2. Objectives (Only 4-5 focused one that can be observed, measured or clearly assessable)

- | |
|---|
| i. To determine the incidence and risk factors for anemia and diabetes, a thorough health evaluation of a particular neighborhood population is the project's primary goal. In order to effectively manage these two important health conditions, the research intends to provide useful insights |
| ii. To ascertain the incidence of anemia and diabetes in rural communities, taking into account variations among various age groups, genders, and other demographic characteristics. |
| iii. To explore potential health disparities between rural and urban areas concerning anemia and diabetes, considering factors such as limited access to healthcare facilities, resources, and health education. |

3. Review of status of Research and Development in the subject

3.1 International Status: (Maximum 2 pages)

(Researchers working in the area worldwide and their contributions must be properly highlighted with recent references and reviews. A correct and faithful description of the international research status must be given)

Prevalence of anemia and its associated factors among patients with type 2 diabetes mellitus in a referral diabetic clinic in the north of Iran, Reyhane Hizomi Arani et. al. A cross-sectional study was conducted on 415 patients with T2DM referred to the referral diabetes clinic of Sayad Shirazi Hospital in Gorgan in 2021, Demographic information, anthropometric indices, past medical history, and some laboratory data on cell counts, serum blood glucose, HbA1c, creatinine, lipid/iron profiles, and urinary albumin were

collected. The prevalence of anemia was 21.5% [95%CI: 17.6-25.7]. The adjusted model revealed that obesity (OR, 1.94 [95% CI, 1.17–3.23]), T2DM duration for more than five years (OR, 3.12 [1.78–5.47]), albuminuria (OR, 6.37 [3.13–10.91]), chronic kidney disease (OR, 4.30 [2.83–7.29]) and hypertriglyceridemia (OR, 1.72 [1.21–2.77]) were significantly associated with prevalent anemia among patients with T2DM. Moreover, using insulin separately or in combination with oral GLDs associated positively with the prevalence of anemia with ORs of 2.60 [1.42-6.42] and 1.87 [1.30-4.37] , respectively. Anemia had a high prevalence among patients with T2DM in the north of Iran (about 22%), which is associated with obesity, hypertriglyceridemia, duration of T2DM, and diabetic kidney disease.

3.2 National Status: (Maximum 1 page)

(Same as above to cover the contribution of Indian Scientists in the project area)

Prevalence Rate: The prevalence rate of anemia in individuals with diabetes is a crucial measurable parameter. It is expressed as the proportion or percentage of individuals with diabetes who also have anemia. For example, if out of 100 people with diabetes, 20 have anemia, the prevalence rate would be 20%.

Anemia Severity: Anemia can range from mild to severe, and researchers may use hemoglobin levels to categorize anemia severity. Hemoglobin values below specific thresholds (e.g., 12 g/dL for women and 13 g/dL for men) can indicate mild, moderate, or severe anemia

3.3 Importance of the proposed project in the context of current status (Maximum 1 page)

(Highlight what is the new area or gap which will be solved in the project in relating to what is already known. This is a very important section to project the novelty content of the proposal)

1. **Reduced Oxygen Delivery:** Anemia results in a decreased number of red blood cells or hemoglobin, which are responsible for carrying oxygen to body tissues. This can lead to reduced oxygen delivery to vital organs, including the heart, brain, and muscles, exacerbating the effects of diabetes-related complications.
2. **Increased Cardiovascular Risk:** Both anemia and diabetes are associated with an increased risk of cardiovascular disease. Anemia can further elevate this risk by causing additional stress on the heart and impairing its ability to pump blood efficiently.
3. **Increased Hospitalizations:** Anemic individuals with diabetes may experience more frequent hospitalizations due to exacerbations of diabetes-related complications or other health issues related to reduced oxygen supply and overall health compromise.

4. Work Plan:

4.1 Methodology: (Maximum of 5 pages)

(It should contain all the details of how each of the objectives will be addressed. This section must be detailed and have clear plans, not vague and generalized statements. It should have several schemes, tables, figures, equations etc. in addition to text, explanation and justification of why the project research plan will work)

1. **Study Design:** The project will adopt a cross-sectional study design, collecting data from a specific community population during a specific period.



2. Sampling: A representative sample of the community population will be selected using random sampling techniques to ensure the findings can be generalized to the entire community.
3. Data Collection: a. Health Surveys: Structured questionnaires will be used to collect demographic information, medical history, lifestyle habits, and dietary patterns from participants. b. Anthropometric Measurements: Height, weight, waist circumference, and blood pressure measurements will be taken to assess the participants' health status. c. Blood Tests: Blood samples will be collected from participants to assess hemoglobin levels for anemia and blood glucose levels for diabetes. d. Medical Records Review: With participants' consent, relevant medical records will be reviewed to obtain additional health information.
4. Data Analysis: a. Descriptive Analysis: Prevalence rates of anemia and diabetes in the community will be calculated. b. Comparative Analysis: The project will compare the prevalence rates between different age groups, genders, and ethnicities. c. Correlation Analysis: Relationships between risk factors, lifestyle habits, and the occurrence of anemia and diabetes will be explored. d. Regression Analysis: Identifying potential risk factors associated with anemia and diabetes to understand their impact on the community population.
5. Ethical Considerations: Ethical approval will be sought from relevant institutional review boards, and informed consent will be obtained from all participants.

4.2 Time Schedule of activities giving milestones through Gantt Chart. (Maximum 1 page)

5. Expertise:

5.1 Expertise available with the investigators in executing the project: (Maximum 1 page)
(Professional expertise existing with each of the investigators in terms of publications, Patents and preliminary results, to execute every component of the proposal should be highlighted): NA

6. List of facilities required from Sushant University for the project implementation.

6.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	yes
2.	Water & Electricity	yes
3.	Laboratory Space/ Furniture	yes
4.	Power Generator	yes
5.	AC Room or AC	yes
6.	Telecommunication including e-mail & fax	yes
7.	Transportation	yes
8.	Administrative/ Secretarial support	yes
9.	Information facilities like Internet/Library	yes



10. Computational facilities yes
 12. Any other special facility being provided yes

6.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group	ERBA KIT OF GLUCOSE REAGENT	-	-
PI's Department	IRON REAGENT KIT, KFT PARAMETERS KIT	-	-
Other Institute(s) in the region	CBC CELL COUNT ANALYZER SEMI AUTO MATED ANALYZER FOR BIOCHEMISTRY ERBA CHEM. 5X	-	-

6.3 Total Budget (Rs. in Lakhs): 260200

- Recurring Cost (Rs):160200
- Non-Recurring Cost (Rs):100000

Sl. No.	Item	Budget			
		1 st Yr	2 nd Yr	3 rd Yr	Total
A	Recurring	80000	80200		
	1. Manpower				
	2. Consumables				
	3. Travel				
	4. Field testing, Demo/ Training expenses (if applicable)				
	5. Contingencies/Other costs				
	6. Institutional Overheads*				
	7. Any other item				
B	Non-Recurring	50000	50000		
	Permanent equipment				
	Construction of work shed/structures				
	Fabrication of prototype equipment				
	Grand Total (A+B)	130000	130200		



A. Recurring:

1. Budget for Manpower

Sl. No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	Budget (Rs. in lakhs)			
					1 st Yr	2 nd Yr	3 rd Yr	Total

2. Budget for Consumables*

Sl. No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)			Total
			1 st Yr	2 nd Yr	3 rd Yr	

*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel

Sl. No.	Purpose	Budget (Rs. in lakhs)			Total
		1 st Yr	2 nd Yr	3 rd Yr	
1.	Project logistics				
2.	Field activities				
3.	Review meetings (if elsewhere)				

4. Field Testing/ Demo/ Trainings*

Sl. No	Description of field testing/demos /trainings	No/Yr	Budget (Rs. in lakhs)			Total
			1 st Yr	2 nd Yr	3 rd Yr	

*Include material for technology field testing/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of beneficiaries/training, duration of training days, cost /training).

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)			Total
			1 st Yr	2 nd Yr	3 rd Yr	

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

B. Non-Recurring:

Budget for Permanent Equipment/ Workshed/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.	1- CBC CELL COUNT ANALYZER	1	40000
2.	- SEMI AUTO MATED ANALYZER FOR BIOCHEMISTRY ERBA CHEM. 5X	1	20000
3.	3- ERBA KIT OF GLUCOSE REAGENT	1	20000



4. HbA1c REAGENT KIT INFINITE WITH CALIBRATOR

1

20000

7. Deliverables

Deliverable	Mark	Brief description
Product development/adaptation	✓	
Process development/adaptation	✓	
Technology package for development of the project area and local community	✓	
Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)	✓	
Scientific knowledge and/or data generation leading to technology development in future	✓	
Other (Please specify)		

8. Name and address of experts/ institution interested in the subject / outcome of the project.

School of Health Sciences, SU



PROFORMA FOR SUBMISSION OF SEED FUND PROPOSAL

Part I: General Information

1. Project Title (should be focused not exceeding 15 words): Metal organic-frameworks (MOFs) of Glimepride for Enhanced Bioavailability
2. i. Name of Principal Investigator: Dr. Vinod Kumar
ii. Name of Co-Investigator: NA
3. Collaboration if any, give details of institution(s): NA
4. Any Project(s) previously sanctioned by any funding agency? If yes give the details: NA

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)

5. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues?: No
6. Duration (months): 24 Months
7. Enclose the following while submitting the application form:

Duly filled application form (complete with all Annexures)- 2 hard copies	
Bio-data of the PI & Co-I -2 copies	



Part II: Proposal Summary

1. Origin of the Proposal: (Maximum 1 page)

(Scientific/Technical rationale for doing this work should be elaborated)

Diabetes is a major public health problem that affects 285 million people worldwide. The prevalence of diabetes is projected to double globally by 2030. The pathophysiology of type 2 diabetes mellitus (T2DM) is characterized by a relative decrease in insulin secretion and/or insulin resistance. Since the first sulfonylurea (SU) was commercially launched in Germany in 1956, SUs, as the oldest oral hypoglycemic drugs, have been developed for three generations and are commonly used for patients with type 2 diabetes (T2D). In 2008, the US Food and Drug Administration and European Drug Administration required cardiovascular safety certification for all hypoglycemic drugs, resulting in an increase in related clinical trials. Third-generation SUs, such as glimepiride, are widely used for treating T2D because of their definite hypoglycemic efficacy, relatively low risk of hypoglycemia, convenient daily use, and low price. The very poor aqueous solubility and wettability of glimepiride give rise to difficulties in the design of pharmaceutical formulations and lead to variable oral bioavailability, so it is beneficial to prepare it into a new dosage form.

Ning *et al*; in 2011, prepared different glimepiride preparation via dissolution-enhancing strategies, solid dispersion (SD) and micronized techniques, for improving oral absorption property of glimepiride.

Waghet *et al*; in 2012, prepared to solid dispersion of the Glimepiride drug to enhance its solubility, and showed better drug release with Poloxamer polymer.

Hadi *et al*; in 2012, prepared sustained release tablets of glimepiride by wet granulation method based on combination of hydrophilic (HPMC15cps, HPC) and hydrophobic (Ethyl cellulose) polymers.

Kilore *et al*; in 2017, prepared stabilize optimized nanosuspensions of glimepiride by solidification using a novel Oral Thin Film (OTF) formulation.

Akram *et al*; in 2018, prepared and evaluated transdermal patches with optimization of suitable polymeric blend of poly(meth) acrylates (Eudragit®) (Ammonio Methacrylate Copolymer Ph Eur) for sustained transdermal delivery of glimepiride.

2. Objectives (Only 4-5 focused one that can be observed, measured or clearly assessable)

i. Synthesis of Glimepiride Metal organic framework
ii. Characterization of the prepared MOF
iii. Evaluate the stability parameters, Bioavailability and antidiabetic activity of synthesized MOF (<i>in vitro/in vivo</i>)

3. Review of status of Research and Development in the subject

3.1 International Status: (Maximum 2 pages)

(Researchers working in the area worldwide and their contributions must be properly highlighted with recent references and reviews. A correct and faithful description of the international research status must be given)

Metal organic-frameworks (MOFs) arise from a self-assembly reaction involving metal ions or metal clusters with a special functional group of an organic chain, such as a carboxyl group or a nitrogen-containing heterocycle, enabling formation of complexes with a periodic network structure. The high variability of the organic chain allows for the pore sizes of MOFs to be adjusted to meet different requirements

No MOF based Glimepiride formulation available globally till now, however antidiabetic activity (*in vitro* and *in vivo*) of various synthesized compounds and plant extracts has been studied at Amity University, DIPSAR, Sharda University (UP), Dabur Research Foundation, and K. R. Mangalam University (Haryana) by Dr. Vinod Kumar from 2018 to date, and it is still going on..

Waghet *et al*; in 2012, prepared to solid dispersion of the Glimepiride drug to enhance its solubility, and showed better drug release with Poloxamer polymer.

Hadi *et al*; in 2012, prepared sustained release tablets of glimepiride by wet granulation method based on combination of hydrophilic (HPMC15cps, HPC) and hydrophobic (Ethyl cellulose) polymers.

Kilore *et al*; in 2017, prepared stabilize optimized nanosuspensions of glimepiride by solidification using a novel Oral Thin Film (OTF) formulation.

Akram *et al*; in 2018, prepared and evaluated transdermal patches with optimization of suitable polymeric blend of poly(meth) acrylates (Eudragit®) (Ammonio Methacrylate Copolymer Ph Eur) for sustained transdermal delivery of glimepiride.

Soumya *et al*; in 2020, prepared oral Nanosuspensions of glimepiride, but its bioavailability is low due to extensive first pass metabolism.

Sakure *et al*; in 2020, develop rapid disintegrating tablets (RDT) of glimepiride solid dispersion and it showed significant improvement in solubility and dissolution.

3.2 National Status: (Maximum 1 page)

(Same as above to cover the contribution of Indian Scientists in the project area)

No MOF based Glimepiride formulation available globally till now, however antidiabetic activity (*in vitro* and *in vivo*) of various synthesized compounds and plant extracts has been studied at Amity University, DIPSAR, Sharda University (UP), Dabur Research Foundation, and K. R. Mangalam University (Haryana) by Dr. Vinod Kumar from 2018 to date, and it is still going on..

The study purports to investigate the effect of Glimepiride-MOF on water solubility, bioavailability, and its effect on type 2 Diabetes mellitus for the first time.

3.3 Importance of the proposed project in the context of current status (Maximum 1 page)

(Highlight what is the new area or gap which will be solved in the project in relating to what is already known. This is a very important section to project the novelty content of the proposal)

In the past two decades, owing to their extremely high surface area and pore volume, tunable pore size, and different chemical compositions, MOFs have been studied for various applications. In recent years, biomedical applications of MOFs for drug delivery have attracted increasing attention. When the size of MOF particles is scaled down to the nanoscale, these MOFs can act as efficient carriers to deliver the drug to the targeted receptor, overcoming all previously presented challenges

4. Work Plan:

4.1 Methodology: (Maximum of 5 pages)

(It should contain all the details of how each of the objectives will be addressed. This section must be detailed and have clear plans, not vague and generalized statements. It should have several schemes, tables, figures, equations etc. in addition to text, explanation and justification of why the project research plan will work)

MOFs are composed of different combinations of metal clusters and organic ligands. The pore size, shape,

and particle size of MOFs are mostly related to the structure of organic ligands. In the process of preparing MOFs, a regular framework material between metal ions and organic ligands requires an external energy supply, like high temperature and high pressure. In addition, the way to change the energy supply form also enriches the preparation methods of MOFs, including sonochemical, microwave-assisted, mechanochemical, electrochemical, etc. In the current study, we synthesize GP-MOF via a sonochemical process.

In the sonochemical method, ultrasonic waves are used to perform strong ultrasonic treatment on the liquid so that the ions in the reaction liquid can obtain high energy, promoting the progress of the chemical reaction. In this process, by controlling the sound wave frequency, the reaction time can be greatly shortened, and the uniformity of the formed product can be improved as well.

5. Expertise:

5.1 Expertise available with the investigators in executing the project: (Maximum 1 page)

(Professional expertise existing with each of the investigators in terms of publications, Patents and preliminary results, to execute every component of the proposal should be highlighted)

Dr. Jyoti Sinha

Dr. Sanjeev Sharma

5.2 Bibliography

Ning *et al*; in 2011, prepared different glimepiride preparation via dissolution-enhancing strategies, solid dispersion (SD) and micronized techniques, for improving oral absorption property of glimepiride.

Waghet *et al*; in 2012, prepared to solid dispersion of the Glimepiride drug to enhance its solubility, and showed better drug release with Poloxamer polymer.

Hadi *et al*; in 2012, prepared sustained release tablets of glimepiride by wet granulation method based on combination of hydrophilic (HPMC15cps, HPC) and hydrophobic (Ethyl cellulose) polymers.

Kilore *et al*; in 2017, prepared stabilize optimized nanosuspensions of glimepiride by solidification using a novel Oral Thin Film (OTF) formulation.

Akram *et al*; in 2018, prepared and evaluated transdermal patches with optimization of suitable polymeric blend of poly(meth) acrylates (Eudragit®) (Ammonio Methacrylate Copolymer Ph Eur) for sustained transdermal delivery of glimepiride.

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Sakure *et al*; in 2020, develop rapid disintegrating tablets (RDT) of glimepiride solid dispersion and it showed significant improvement in solubility and dissolution

6. List of facilities required from Sushant University for the project implementation.

6.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
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1.	Workshop Facility	no
2.	Water & Electricity	yes
3.	Laboratory Space/ Furniture	yes
4.	Power Generator	yes
5.	AC Room or AC	yes
6.	Telecommunication including e-mail & fax	yes
7.	Transportation	yes
8.	Administrative/ Secretarial support	yes
9.	Information facilities like Internet/Library	yes
10.	Computational facilities	yes
12.	Any other special facility being provided	yes

6.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group	Glasswares and chemicals	borosil	
PI's Department	Glasswares, Homoginiser, Mixer	-	
Other Institute(s) in the region	SEM, TEM, IR	-	

6.3 Total Budget (Rs. in Lakhs):

- Recurring Cost (Rs): 70000/-
- Non-Recurring Cost (Rs):90000/-

Sl. No.	Item	Budget			Total
		1 st Yr	2 nd Yr	3 rd Yr	
A	Recurring	35000	35000	-	-
	1. Manpower				
	2. Consumables				
	3. Travel				
	4. Field testing, Demo/ Training expenses (if applicable)				
	5. Contingencies/Other costs				
	6. Institutional Overheads*				
	7. Any other item				
B	Non-Recurring	60000	30000	-	-
	Permanent equipment				
	Construction of work shed/structures				
	Fabrication of prototype equipment				
	Grand Total (A+B)	95000	65000		



A. Recurring:

1. Budget for Manpower

Sl. No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	Budget (Rs. in lakhs)			
					1 st Yr	2 nd Yr	3 rd Yr	Total

NA

2. Budget for Consumables*

Sl. No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

NA

*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel

Sl. No.	Purpose	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

- | | | | | | | |
|----|--------------------------------|----|--|--|--|--|
| 1. | Project logistics | NA | | | | |
| 2. | Field activities | | | | | |
| 3. | Review meetings (if elsewhere) | | | | | |

4. Field Testing/ Demo/ Trainings*

Sl. No	Description of field testing/demos /trainings	No/Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

NA

*Include material for technology field testing/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of beneficiaries/training, duration of training days, cost /training).

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

NA

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

B. Non-Recurring:

Budget for Permanent Equipment/ Workshed/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
---------	------------------------	-----	-----------------------

- | | | | |
|----|------------|---|-------|
| 1. | Glasswares | - | 10000 |
| 2. | Chemicals | - | 30000 |
| 3. | other cost | - | 50000 |
| 4. | | | |



7. Deliverables

Deliverable	Mark ✓	Brief description
Product development/adaptation	✓	
Process development/adaptation	✓	
Technology package for development of the project area and local community	✓	
Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)	✓	
Scientific knowledge and/or data generation leading to technology development in future	✓	
Other (Please specify)	✓	

8. Name and address of experts/ institution interested in the subject / outcome of the project.

Department of Pharmacy, SHS, SU



PROFORMA FOR SUBMISSION OF SEED FUND PROPOSAL

Part I: General Information

1. Project Title (should be focused not exceeding 15 words): *Wrightia tinctoria*.extract for treatment of infertility in female

1. i. Name of Principal Investigator: Pooja Bidhlan
- ii. Name of Co-Investigator: NA

2. Collaboration if any, give details of institution(s): NA

3. Any Project(s) previously sanctioned by any funding agency? If yes give the details: NA

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)
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4. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues?NA

5. Duration (months): 12

6. Enclose the following while submitting the application form: NA

Duly filled application form (complete with all Annexures)- 2 hard copies	
Bio-data of the PI & Co-I -2 copies	



Part II: Proposal Summary

1. Origin of the Proposal: (Maximum 1 page)

(Scientific/Technical rationale for doing this work should be elaborated)

Due to an array of situations, the majority of females are unable to conceive even after several years of their marriage. Overall 15% of Infertility cases in women encounter unexplained causes. Other common causes may include- Smoking, obesity, lifestyle and other miscellaneous factors. Because not everyone is capable of paying for the procedure of IVF due to its high cost, an alternative process like herbal treatment would be holistic approach that increases the efficiency to conceive easily.

After completion of the project the findings will demonstrate the bioactive constituent present which shows the anti-fertility action.

2. Objectives (Only 4-5 focused one that can be observed, measured or clearly assessable)

1. To collect and prepare powder the stem bark of <i>Wrightia tinctoria</i> .
2. To extract the stem bark of <i>Wrightia tinctoria</i> .
3. To isolate the active constituent which shows anti-fertility activity.

3. Review of status of Research and Development in the subject

1. *Wrightia tinctoria* R. Br. is a member of the family Apocynaceae and is commonly known as Sweet Indrajao, Pala Indigo Plant, and Dyer's Oleander. Traditionally this plant reported to treat gynecological disorders. Seeds of this plant are used as an aphrodisiac.

2. In view of the reported severe health hazards of estrogen, such as increased risk of endometrial hyperplasia and carcinoma, it showed effective results. The stem bark of this plant showed anti-fertility activity.

3. In folk medicine, the dried and powdered roots of *Wrightia* along with *Phyllanthus amarus* (keezhanelli) and *Vitex negundo* (nochi) are mixed with milk and orally administered to women for improving fertility.

4. Anti-fertility has been shown in Wt stem bark ethanol extract and its fractions at the dosage of 250 mg/kg and the results were comparable to the effect of 17- α -ethinyl estradiol.

3.1 International Status: (Maximum 2 pages)

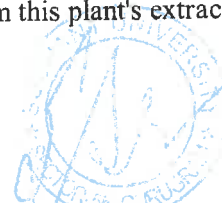
(Researchers working in the area worldwide and their contributions must be properly highlighted with recent references and reviews. A correct and faithful description of the international research status must be given):

Women all across the world frequently experience problems with their reproductive health. These illnesses' associated infertility can be quite distressing.

There is a need for more effective medicines, even though we have made considerable progress in creating treatments for infertility and other reproductive problems. We might be able to treat female infertility & endometrial hyperplasia using it.

Many reproductive disorders, including PCOS, endometriosis, hypothalamic dysfunction, hyperprolactinemia, menopausal symptoms, osteoporosis, and female reproductive problems can be prevented and treated with the help of these plants.

Following more pharmacological, phytochemical, and toxicological research, new and effective medications can be created by thoroughly examining the bioactivity of numerous components extracted from this plant's extract.



3.2 National Status: (Maximum 1 page)

(Same as above to cover the contribution of Indian Scientists in the project area):

How we measure the effectiveness of a research program depends to a great extent on our point of view and on our expectations. We have mentioned few parameters which can be used to monitor the effectiveness of our project-

The number of reports published in trade magazines

The number of studies implemented

The overall benefit/cost ratio

The improvements in operations resulting from research

The percentage of the research results adopted by others through technology transfer

The size of the research budget

3.3 Importance of the proposed project in the context of current status (Maximum 1 page)

(Highlight what is the new area or gap which will be solved in the project in relating to what is already known. This is a very important section to project the novelty content of the proposal)

After successful completion of our project, i.e, collection of active ingredients responsible for the increasing the fertility and anti-endometrial hyperplasia, we can test the effectiveness of the same using lab animals.

Depending upon the compatibility of our active ingredients with different excipients, we can formulate the formulation that can be in powder, tablet or liquid dosage form.

4. Work Plan:

4.1 Methodology: (Maximum of 5 pages)

(It should contain all the details of how each of the objectives will be addressed. This section must be detailed and have clear plans, not vague and generalized statements. It should have several schemes, tables, figures, equations etc. in addition to text, explanation and justification of why the project research plan will work):

1. Collection of the stem bark of *Wrightia tinctoria*

1.1 Authentication from botanist/CSIR-NISCAIR

1.2 Powdered the dried woody stem

The shade-dried stem bark is then to be powdered for its extraction procedure.

2. Extraction

2.1 Ethanolic extraction

The extraction procedure will be carried out by using methanol or 70% ethanol. This will be done by soaking 250 g powdered drug in ethanol for 3 days by cold maceration method.

2.2 Preliminary phytochemical screening

As per WHO recommendations different physicochemical and phytochemical evaluation parameters are to be performed for quality control of drug. This will include several tests like presence of alkaloids, glycosides, tannins, flavonoids, sterols, phenols, terpenoids, also for its fluorescence characters.

3. Isolation

After extraction, we need to isolate the different fractions of the extract, which can be done using different techniques to further check the effectiveness using in-vivo model.

4. Analysis

4.1. The plant has to be investigated by various instrumental techniques to check the concentration and effectiveness of bioactive constituent. The active constituents can be analyzed using different spectroscopic techniques such as IR, UV spectroscopy, Mass spectroscopy & NMR.



4.2 Time Schedule of activities giving milestones through Gantt Chart. (Maximum 1 page)

5. Expertise:

5.1 Expertise available with the investigators in executing the project: (Maximum 1 page)
 (Professional expertise existing with each of the investigators in terms of publications, Patents and preliminary results, to execute every component of the proposal should be highlighted): NA

6. List of facilities required from Sushant University for the project implementation.

6.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	no
2.	Water & Electricity	yes
3.	Laboratory Space/ Furniture	yes
4.	Power Generator	yes
5.	AC Room or AC	yes
6.	Telecommunication including e-mail & fax	yes
7.	Transportation	yes
8.	Administrative/ Secretarial support	yes
9.	Information facilities like Internet/Library	yes
10.	Computational facilities	yes
12.	Any other special facility being provided	yes

6.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group	Glasswares, Extraction Assembly	borosil	-
PI's Department	UV, IR	Schimadzu	-
Other Institute(s) in the region	HPLC, HPTLC	Schimadzu	-

6.3 Total Budget (Rs. in Lakhs):

- Recurring Cost (Rs): NA
- Non-Recurring Cost (Rs): 200000/-



SL No.	Item	Budget			
		1 st Yr	2 nd Yr	3 rd Yr	Total
A	Recurring	NA			
	1. Manpower				
	2. Consumables				
	3. Travel				
	4. Field testing, Demo/ Training expenses (if applicable)				
	5. Contingencies/Other costs				
	6. Institutional Overheads*				
	7. Any other item				
B	Non-Recurring	200000/-			
	Permanent equipment				
	Construction of work shed/structures				
	Fabrication of prototype equipment				
	Grand Total (A+B)	200000/-			

A. Recurring:

1. Budget for Manpower

SL No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	Budget (Rs. in lakhs)			
					1 st Yr	2 nd Yr	3 rd Yr	Total

2. Budget for Consumables*

SL No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel

SL No.	Purpose	Budget (Rs. in lakhs)			
		1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Project logistics				
2.	Field activities				
3.	Review meetings (if elsewhere)				

4. Field Testing/ Demo/ Trainings*

SL No.	Description of field testing/demos /trainings	No/Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Include material for technology field testing/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of



beneficiaries/training, duration of training days, cost /training).

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)			Total
			1 st Yr	2 nd Yr	3 rd Yr	

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

B. Non-Recurring:

Budget for Permanent Equipment/ Workshed/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.	Chemicals		60000/-
2.	glasswares		20000/-
3.	analytical tests		20000/-
4.	misc		100000/-

7. Deliverables

Deliverable	Mark ✓	Brief description
Product development/adaptation	✓	
Process development/adaptation	✓	
Technology package for development of the project area and local community	✓	
Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)	✓	
Scientific knowledge and/or data generation leading to technology development in future	✓	
Other (Please specify)	✓	

8. Name and address of experts/ institution interested in the subject / outcome of the project.

Department of Pharmacy, School of Health Sciences, SU



PROFORMA FOR SUBMISSION OF SEED FUND PROPOSAL

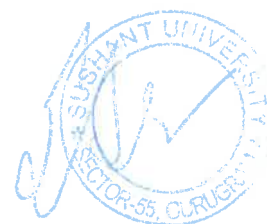
Part I: General Information

1. Project Title (should be focused not exceeding 15 words): Analysis of psychological capital of transgenders in NCR region
2. i. Name of Principal Investigator: Richa Dwivedi
ii. Name of Co-Investigator: Dr. Amit
3. Collaboration if any, give details of institution(s): NA
4. Any Project(s) previously sanctioned by any funding agency? If yes give the details: NA

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)
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5. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues?: NA
6. Duration (months): 24 months
7. Enclose the following while submitting the application form:

Duly filled application form (complete with all Annexures)- 2 hard copies	
Bio-data of the PI & Co-I -2 copies	



Part II: Proposal Summary

1. Origin of the Proposal: (Maximum 1 page)

(Scientific/Technical rationale for doing this work should be elaborated)

Although there are numerous traces of recognition of the third gender throughout our nations ancient past, the first official count of transgender people in India was not made public until a census was conducted in 2011. The census found that 4.88 lakh people in India identified as transgender, but several activists thought the number to be much higher. Despite a sizable population, the supreme court formally recognised the third gender in 2014. This illustrates the blatant disregard the transgender community experienced at the time. In India, transgender people have historically experienced social exclusion and ongoing discrimination based on their gender identity. Additionally, there are countless instances of abuse, cruelty, and violence against members of the community that are frequently ignored or disregarded.

1. In recent years, concerns about the social and psychological well-being of transgender population in India have grown. Transgenders' frequently encounter particular difficulties that can have a negative influence on their mental health and general quality of life due to the pervasive judgement, prejudice, and absence of societal acceptance. A thorough investigation using the Rorschach Inkblot Test and Psychological Capital framework is required to analyse the following crucial factors in order to address these problems and promote better understanding.

2. The proposed study seeks to address the urgent requirement for a thorough understanding of transgender peoples psychological wellbeing in Haryana. By inculcating the Psychological Capital. Researchers can explore the subtle aspects of identity perception, mental health, coping methods.

2. Objectives (Only 4-5 focused one that can be observed, measured or clearly assessable)

i. To examine the baseline psychological capital (hope, efficacy, resilience, and optimism) among transgender individuals in the selected regions.
ii. To investigate the initial identity perception of participants and its relationship with psychological capital.
iii. To identify potential factors which contributes to the development or enhancement of psychological capital and positive identity perception among transgender individuals.

3. Review of status of Research and Development in the subject

3.1 International Status: (Maximum 2 pages)

(Researchers working in the area worldwide and their contributions must be properly highlighted with recent references and reviews. A correct and faithful description of the international research status must be given)

The British colonisation of India is largely to blame for violence against the transgender community. Evidence of the transgender community's high regard and value before colonisation can be found in numerous early Hindu religious writings and writings from the Mughal era. The English government westernised Indian culture through colonisation and outlawed anything that disagreed with western social mores. In 1858, Section 377 of the IPC came into effect, and it was at this point that the idea of hatred towards the transgender community first emerged.

3.2 National Status: (Maximum 1 page)

(Same as above to cover the contribution of Indian Scientists in the project area)

Gaining an in-depth understanding of transgender people's psychological Capital and perceptions of their identities in 3 regions of Haryana (i.e., Gurugram, Rohtak and Sonipat) is the main goal of this study pursuit. The research attempts to accomplish the following unique goals:

- Examine Mental Health Status



- Measure Psychological Capital
- Explore Social Implications
- Foster Cultural Sensitivity
- Help them to live a quality life

3.3 Importance of the proposed project in the context of current status (Maximum 1 page)
(Highlight what is the new area or gap which will be solved in the project in relating to what is already known. This is a very important section to project the novelty content of the proposal)

The Rorschach Inkblot Test considers a projective psychological assessment tool widely used to gain insights into individuals' personality traits, emotions, and cognitive processes. For transgender individuals, who often grapple with complex issues related to identity and self-perception, the Rorschach test holds potential in shedding light on their unique experiences and psychological dynamics.

4. Work Plan:

4.1 Methodology: (Maximum of 5 pages)

(It should contain all the details of how each of the objectives will be addressed. This section must be detailed and have clear plans, not vague and generalized statements. It should have several schemes, tables, figures, equations etc. in addition to text, explanation and justification of why the project research plan will work):

Hypotheses

- Hypothesis 1 (a): Transgender individuals in the selected regions will exhibit varying levels of psychological capital, with some participants demonstrating higher levels of hope, efficacy, resilience, and optimism compared to others.
- Hypothesis 1 (b): There will be significant differences in the baseline levels of psychological capital (hope, efficacy, resilience, and optimism) among transgender individuals from different regions (Gurugram, Rohtak, and Sonipat) in Haryana.
- Hypothesis 2 (a): Transgender individuals with a more positive initial identity perception will exhibit higher levels of psychological capital (hope, efficacy, resilience, and optimism) compared to those with a less positive initial identity perception.
- Hypothesis 2 (b): There will be a positive correlation between the scores of initial identity perception and psychological capital (hope, efficacy, resilience, and optimism) among transgender individuals.
- Hypothesis 3 (a): Over the six-month period, transgender individuals will experience changes in their psychological capital (hope, efficacy, resilience, and optimism), with some participants showing improvements while others may experience fluctuations or declines.
- Hypothesis 3 (b): There will be significant differences in the changes in psychological capital (hope, efficacy, resilience, and optimism) and identity perception among transgender individuals from different regions (Gurugram, Rohtak, and Sonipat) in Haryana over the six-month period.
- Hypothesis 4 (a): Social support and acceptance will positively contribute to the development or enhancement of psychological capital (hope, efficacy, resilience, and optimism) and positive identity perception among transgender individuals.
- Hypothesis 4 (b): Engagement in support groups or counseling programs will lead to an increase in psychological capital (hope, efficacy, resilience, and optimism) and positive identity perception among transgender individuals.
- Hypothesis 4 (c): Age and gender identity will moderate the relationship between potential factors and psychological capital (hope, efficacy, resilience, and optimism) and positive identity perception among transgender individuals.

Methodology detailing stepwise activities and sub-activities

Sample:



A total sample of 30 transgenders will be selected. The minimum age range of transgenders must have been 18 years for the study and also resident of Gurugram, Rohtak and Sonipat districts of Haryana. All participants will be choose using by purposive sampling method. All efforts will be made to ensure a diverse sample in terms of gender identity, age, and socio-economic background. Inclusion Criteria:

The certain point will cover in inclusion criteria:

- The voluntarily willingness of participants.
- Participants whose age ranges from 18 years old and above.
- District: Gurugram, Rohtak and Sonipat.
- Individual those are transgenders by birth.

Exclusion Criteria:

The exclusion criteria include:

- Those are not willing to participate.
- Below the age ranges from 18 years old and above.

Research Design:

The study will adopt a Pre-test-Post-test design with a single-group, meaning that all participants will undergo both the Pre-test and Post-test measurements.

Procedure:

i) Pre-Test:

Participants will be administered the Rorschach Inkblot Test to assess their psychological capital, identity perception, and other relevant psychological dimensions. Demographic data, including age, gender identity, educational background, and social support networks, will be collected through questionnaires.

ii) Intervention:

After the initial assessment, participants will undergo a series of resilience-building workshops, group counselling sessions, and skill-building exercises designed to enhance psychological capital and foster positive identity perception. The interventions will be conducted separately for each region and will focus on addressing region-specific challenges and needs.

iii) Post-Test:

Six months after the intervention, participants will undergo a second administration of the Rorschach Inkblot Test to measure changes in psychological capital and identity perception. A brief qualitative interview will be conducted to gather participants' feedback on the effectiveness of the interventions.

Data Analysis: Quantitative data will be analyzed using statistical software (e.g., SPSS) to examine changes in psychological capital and identity perception over time. Longitudinal comparisons will be conducted using paired-sample t-tests or repeated-measures ANOVA. Qualitative data from the interviews will be subjected to thematic analysis to gain insights into participants' experiences and perspectives.

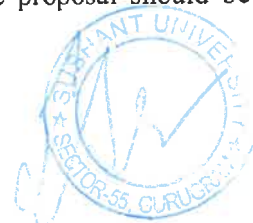
Tools:

- Psychological Capital Scale (Luthans, Avolio, Avey & Norman, 2007).
- Rorschach Inkblot Test (Comprehensive System, Exner, 2003)

Ethical Considerations: The research will be conducted in accordance with ethical guidelines, ensuring informed consent, anonymity, and confidentiality. Participants will be made aware of their right to withdraw from the study at any stage without penalty.

5. Expertise:

5.1 Expertise available with the investigators in executing the project: (Maximum 1 page) (Professional expertise existing with each of the investigators in terms of publications, Patents and preliminary results, to execute every component of the proposal should be highlighted): NA



5.2 Bibliography

1. Chakraborty, S., Gautham, V., & Gupta, R. (2020). Rorschach Inkblot Test as an aid in understanding gender identity disorder (gender dysphoria): A clinical study. *Journal of Clinical and Diagnostic Research*, 14(6), VC06-VC10.
2. Kaplan, R. M., Singer, J. B., & Meyer, W. J. (2017). The Rorschach Technique and its use in the diagnosis and treatment of gender identity disorder. *Journal of Personality Assessment*, 99(6), 651-659.
3. Meyer, I. H., Brown, T. N. L., Herman, J. L., Reisner, S. L., & Bockting, W. O. (2017). Demographic characteristics and health status of transgender adults in select US regions: Behavioral Risk Factor Surveillance System, 2014. *American Journal of Public Health*, 107(4), 582-589.
4. Steen, J. T. (2019). Rorschach responses of gender dysphoric individuals: A mixed-methods study. *Journal of Personality Assessment*, 101(6), 646-654.
5. Sutter, C., Perrin, P. B., & Smith, N. G. (2019). Perceived workplace gender discrimination and its association with psychological capital and subjective well-being among transgender employees. *Journal of Vocational Behavior*, 112, 240-252.
6. Tebbe, E. N., & Moradi, B. (2020). Navigating a cisgender world: Voices of transgender individuals. *Journal of Counseling Psychology*, 67(5), 589-602.

6. List of facilities required from Sushant University for the project implementation.

6.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	yes
2.	Water & Electricity	yes
3.	Laboratory Space/ Furniture	yes
4.	Power Generator	yes
5.	AC Room or AC	yes
6.	Telecommunication including e-mail & fax	yes
7.	Transportation	yes
8.	Administrative/ Secretarial support	yes
9.	Information facilities like Internet/Library	yes
10.	Computational facilities	yes
12.	Any other special facility being provided	yes

6.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group	NA		
PI's Department	NA		
Other Institute(s) in the region	NA		



6.3 Total Budget (Rs. in Lakhs): 270000/-

- Recurring Cost (Rs):170000/-
- Non-Recurring Cost (Rs): 100000/-

Sl. No.	Item	Budget			Total
		1 st Yr	2 nd Yr	3 rd Yr	
A	Recurring	35000	35000		
	1. Manpower				
	2. Consumables				
	3. Travel				
	4. Field testing, Demo/ Training expenses (if applicable)				
	5. Contingencies/Other costs	50000	50000		
	6. Institutional Overheads*				
	7. Any other item				
B	Non-Recurring	50000	50000		
	Permanent equipment				
	Construction of work shed/structures				
	Fabrication of prototype equipment				
	Grand Total (A+B)	135000	135000		

A. Recurring:

1. Budget for Manpower

Sl. No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	Budget (Rs. in lakhs)			
					1 st Yr	2 nd Yr	3 rd Yr	Total

2. Budget for Consumables*

Sl. No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel

Sl. No.	Purpose	Budget (Rs. in lakhs)			
		1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Project logistics				
2.	Field activities				
3.	Review meetings (if elsewhere)				

4. Field Testing/ Demo/ Trainings*

Sl. No.	Description of field	Budget (Rs. in lakhs)			
		1 st Yr	2 nd Yr	3 rd Yr	Total



Sl. No	testing/demos /trainings	No/Yr	1 st Yr	2 nd Yr	3 rd Yr	Total
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*Include material for technology field testing/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of beneficiaries/training, duration of training days, cost /training).

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)			Total
			1 st Yr	2 nd Yr	3 rd Yr	

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

B. Non-Recurring:

Budget for Permanent Equipment/ Workshed/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.	NA		
2.	NA		
3.	NA		
4.	NA		

7. Deliverables

Deliverable	Mark ✓	Brief description
Product development/adaptation	✓	
Process development/adaptation	✓	
Technology package for development of the project area and local community	✓	
Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)	✓	
Scientific knowledge and/or data generation leading to technology development in future	✓	
Other (Please specify)	✓	

8. Name and address of experts/ institution interested in the subject / outcome of the project.

School of Health Sciences, SU



PROFORMA FOR SUBMISSION OF SEED FUND PROPOSAL

Part I: General Information

1. Project Title (should be focused not exceeding 15 words): Mobile Diagnostic Unit Design and Setup in Kashmir
2. i. Name of Principal Investigator: Sabreena Afzal
ii. Name of Co-Investigator: Basit Iqbal
3. Collaboration if any, give details of institution(s): NA
4. Any Project(s) previously sanctioned by any funding agency? If yes give the details: NA

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)
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5. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues? NA
6. Duration (months): 24
7. Enclose the following while submitting the application form:NA

Duly filled application form (complete with all Annexures)- 2 hard copies	
Bio-data of the PI & Co-I -2 copies	



Part II: Proposal Summary

- 1. Origin of the Proposal:** (Maximum 1 page)
(Scientific/Technical rationale for doing this work should be elaborated)

In the remote regions of Kashmir, there is a significant problem with access to quality healthcare services. The challenges faced by the local population is the absence of advanced imaging and laboratory facilities, leading to delays in diagnosis and inadequate treatment options. Consequently, patients experience difficulties in receiving timely and accurate healthcare, resulting in suboptimal health outcomes. The lack of essential medical resources in these underserved areas further the burden of disease, making it crucial to implement a solution that can enhance healthcare access. Introducing a mobile diagnostic unit equipped technology would be an effective approach to bridge the healthcare gaps in remote Kashmir and ensure improved healthcare services for the underserved population.

- 2. Objectives (Only 4-5 focused one that can be observed, measured or clearly assessable)**

- | |
|---|
| i. To implement a mobile diagnostic unit in remote areas of Kashmir to improve access to imaging and laboratory services for underserved communities in remote areas. |
| ii To bridge the healthcare gap and ensure timely and essential diagnostic care for the people . |
| iii. To enhance health outcomes and contribute to a brighter future for the region by providing crucial medical services directly to those in need |

- 3. Review of status of Research and Development in the subject**

3.1 International Status: (Maximum 2 pages)

(Researchers working in the area worldwide and their contributions must be properly highlighted with recent references and reviews. A correct and faithful description of the international research status must be given)

Roshni Dhoot¹, John M Humphrey *et al*; in 2016, The MDU provides a potential solution to resource-limited, rural areas seeking to increase access to laboratory and radiology resources in western Kenya. The MDU may serve as a model for other settings facing similar challenges, both to address the burden of rural TB and the growing need for non-communicable disease detection and management in the population

Mohapatra, Devi Prasad; Mohapatra, Madhusmita M.1 *et al*; Highly skilled and forward-thinking healthcare professionals, including innovative and technologically-savvy physicians, epidemiologists, and reconstructive surgeons, possess a unique advantage in leveraging existing mobile software applications. Additionally, they have the potential to create new applications aimed at addressing prevalent public health issues affecting the population, such as cutaneous malignancies, tuberculosis, clefts, burns, acute wounds, chronic ulcers, and congenital and acquired hand deformities.

Angelo S. Nyamtema ,Nguke Mwakatundu,Sunday Dominico, in 2016, These findings strongly indicate



that remotely located health centres in resource limited settings hold a great potential to increase accessibility to CEmONC services and to improve maternal and perinatal health.

3.2 National Status: (Maximum 1 page)

(Same as above to cover the contribution of Indian Scientists in the project area)

While there have been no specific preliminary investigations directly focused on introducing a mobile diagnostic unit in Kashmir to improve imaging and laboratory services accessibility for underserved communities in remote areas, successful initiatives and projects in other regions have targeted enhancing healthcare accessibility and diagnostic services in remote areas. These accomplishments offer a foundation for the potential effectiveness and positive impact of implementing this innovative initiative in Kashmir. The introduction of the mobile diagnostic unit shows great promise in bridging the healthcare gap, ensuring timely and essential diagnostic care, and ultimately leading to improved health outcomes and a brighter future for the people of Kashmir

3.3 Importance of the proposed project in the context of current status (Maximum 1 page)

(Highlight what is the new area or gap which will be solved in the project in relating to what is already known. This is a very important section to project the novelty content of the proposal)

1. **Telemedicine Integration:** Leveraging cutting-edge telemedicine technology, the project introduces a seamless integration of remote diagnostics and consultation. Through telemedicine, medical experts from urban centers can remotely collaborate with local healthcare providers and guide them in interpreting diagnostic results, thereby enhancing the quality of healthcare delivery even in the most remote settings.
2. **Data Analytics for Targeted Outreach:** The project utilizes data analytics to identify regions with the highest healthcare needs in Kashmir. By analyzing population demographics, disease prevalence, and existing healthcare facilities, the mobile unit can be strategically deployed to areas where it can have the most significant impact, optimizing resource allocation and maximizing outreach.
3. **Community Empowerment Initiatives:** The project emphasizes community empowerment through health education and awareness campaigns. By involving local community leaders and healthcare workers, the initiative fosters a sense of ownership and involvement, encouraging active participation in health promotion and disease prevention efforts.
4. **Sustainability and Scalability:** To ensure the project's long-term impact, a sustainability plan is devised, exploring partnerships with government agencies, NGOs, and private organizations. The aim is to establish a self-sustaining model that can be replicated and scaled up to benefit other underserved regions beyond Kashmir.



4. Work Plan:

4.1 Methodology: (Maximum of 5 pages)

(It should contain all the details of how each of the objectives will be addressed. This section must be detailed and have clear plans, not vague and generalized statements. It should have several schemes, tables, figures, equations etc. in addition to text, explanation and justification of why the project research plan will work)

1. Needs Assessment and Resource Planning

- Conduct a comprehensive needs assessment in remote areas of Kashmir to identify healthcare gaps and the specific diagnostic requirements of underserved communities.
- Analyze existing infrastructure and resources to determine the feasibility of implementing a mobile diagnostic unit.
- Formulate a resource plan, including budget allocation and logistical considerations, for the successful deployment of the mobile unit.

2. Mobile Diagnostic Unit Design and Setup

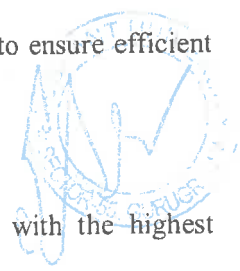
- Collaborate with experts in mobile healthcare technology to design a specialized mobile diagnostic unit tailored for Kashmir's challenging terrains.
- Procure state-of-the-art imaging and laboratory equipment, ensuring they are compatible with the mobile unit's infrastructure.
- Configure and equip the unit with necessary amenities, including electricity supply, water, and climate control systems.

3. Telemedicine Integration and Training

- Integrate telemedicine technology into the mobile diagnostic unit to enable remote consultations with medical experts.
- Train local healthcare providers in operating and utilizing telemedicine equipment effectively.
- Develop protocols for remote consultation and patient data transmission to ensure efficient and secure communication.

4. Data Analytics and Targeted Outreach

- Collect and analyze demographic and health data to identify regions with the highest healthcare needs in Kashmir.
- Utilize data analytics to map the most strategic routes for the mobile unit's deployment to maximize outreach.
- Establish a scheduling system to plan visits to targeted locations based on identified



healthcare priorities.

5. Community Empowerment Initiatives

- Conduct health education and awareness campaigns in collaboration with local community leaders and healthcare workers.
- Organize health camps to provide screenings, preventive services, and health promotion activities.
- Engage with community members to create a sense of ownership and active involvement in maintaining their health and well-being.

6. Deployment and Implementation

- Launch the mobile diagnostic unit and initiate its deployment to remote areas based on the planned schedule.
- Coordinate with local authorities and community representatives to ensure smooth access to the selected locations.
- Provide comprehensive training to the mobile unit staff on protocols, safety measures, and patient care.

7. Monitoring and Evaluation

- Implement a monitoring system to track the unit's activities, patient visits, and diagnostic services provided.
- Conduct regular evaluations to assess the impact of the project on healthcare accessibility and health outcomes.
- Seek feedback from both healthcare providers and community members to continuously improve the initiative's effectiveness.

8. Sustainability and Scalability

- Explore partnerships with government agencies, NGOs, and private organizations to secure ongoing funding and support.
- Develop a sustainability plan that outlines strategies for the project's long-term viability and scalability beyond Kashmir.
- Document the project's success stories and best practices to serve as a blueprint for replicating similar initiatives in other underserved regions.

By following this stepwise methodology, the project aims to successfully implement the mobile diagnostic unit, overcome healthcare barriers in remote areas of Kashmir, and bring about lasting improvements in healthcare accessibility and quality for the people of the



region.

4.2 Time Schedule of activities giving milestones through Gantt Chart. (Maximum 1 page)

5. Expertise:

5.1 Expertise available with the investigators in executing the project: (Maximum 1 page)
(Professional expertise existing with each of the investigators in terms of publications, Patents and preliminary results, to execute every component of the proposal should be highlighted): NA

6. List of facilities required from Sushant University for the project implementation.

6.1 Infrastructural Facilities

Sl No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	no
2.	Water & Electricity	yes
3.	Laboratory Space/ Furniture	yes
4.	Power Generator	yes
5.	AC Room or AC	yes
6.	Telecommunication including e-mail & fax	yes
7.	Transportation	yes
8.	Administrative/ Secretarial support	yes
9.	Information facilities like Internet/Library	yes
10.	Computational facilities	yes
12.	Any other special facility being provided	yes

6.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group	Vehicle Customization		
PI's Department	Basic Laboratory Equipment		
Other Institute(s) in the region	NA		



6.3 Total Budget (Rs. in Lakhs):

- Recurring Cost (Rs): 360000/-
- Non-Recurring Cost (Rs):NA

Sl. No.	Item	Budget			Total
		1 st Yr	2 nd Yr	3 rd Yr	
A	Recurring	NA	NA		
	1. Manpower				
	2. Consumables				
	3. Travel				
	4. Field testing, Demo/ Training expenses (if applicable)				
	5. Contingencies/Other costs				
	6. Institutional Overheads*				
	7. Any other item				
B	Non-Recurring	200000/-	160000/-		
	Permanent equipment				
	Construction of work shed/structures				
	Fabrication of prototype equipment				
	Grand Total (A+B)				

A. Recurring:

1. Budget for Manpower

Sl. No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	Budget (Rs. in lakhs)			
					1 st Yr	2 nd Yr	3 rd Yr	Total

2. Budget for Consumables*

Sl. No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel

Sl. No.	Purpose	Budget (Rs. in lakhs)			Total
		1 st Yr	2 nd Yr	3 rd Yr	
1.	Project logistics				
2.	Field activities				
3.	Review meetings (if elsewhere)				

4. Field Testing/ Demo/ Trainings*

Sl. No.	Description of field testing/demos /trainings	No/Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Include material for technology field testing/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of

beneficiaries/training, duration of training days, cost /training).

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)			Total
			1 st Yr	2 nd Yr	3 rd Yr	

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

B. Non-Recurring:

Budget for Permanent Equipment/ Workshed/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
1.	Vehicle Customization and Equipment Installation		200000/-
2.	Basic Laboratory Equipment		80000/-
3.	Data Collection and Analysis Software		40000/-
4.	Health Workshops and Campaigns		40000/-

7. Deliverables

Deliverable	Mark ✓	Brief description
Product development/adaptation	✓	
Process development/adaptation	✓	
Technology package for development of the project area and local community	✓	
Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)	✓	
Scientific knowledge and/or data generation leading to technology development in future	✓	
Other (Please specify)	✓	

8. Name and address of experts/ institution interested in the subject / outcome of the project.

School of Health Sciences, SU



PROFORMA FOR SUBMISSION OF SEED FUND PROPOSAL

Part I: General Information

1. Project Title (should be focused not exceeding 15 words): Portable smartphone fundus camera
2. i. Name of Principal Investigator: Shenbagam N
ii. Name of Co-Investigator: NA
3. Collaboration if any, give details of institution(s): NA
4. Any Project(s) previously sanctioned by any funding agency? If yes give the details:

SL. NO.	Title of the Project	File No.	Name of Division and funding agency (DST/DBT...)	Date of completion / status	Amount (Rs lakh)	Whether final project completion report has been submitted (if yes, mention date)

5. Whether project activities require any clearance from relevant authorities in respect of any environmental/legal/ethical issues?NA
6. Duration (months): 24 months
7. Enclose the following while submitting the application form:

Duly filled application form (complete with all Annexures)- 2 hard copies	
Bio-data of the PI & Co-I -2 copies	



Part II: Proposal Summary

1. Origin of the Proposal: (Maximum 1 page)

(Scientific/Technical rationale for doing this work should be elaborated)

Posterior segment examination is an important procedure while assessing Vision Screening in rural areas or in Teleophthalmology set up. Fundus camera is used for early detection, diagnosis and management of eye diseases. Smart Phone fundus photography makes the task in quick and feasible way compared to that of the traditional method (table Top fundus Photography).

Uncorrected refractive errors can be corrected by spectacles or Contact Lenses.

However there are some eye pathologies which cannot be rectified by these visual aids .It's the responsibility of the Optometrist to understand the reason for loss of Vision and thereby need to refer promptly to the tertiary care centers .The cause the no improvement with the visual aids can be due to the pathological changes in the retina. Early detection and monitoring the condition paves a long way for better quality of life. The primary objective of this device is to screen any retinal pathology due to the congenital defects, chronic systemic illness like Diabetes Mellitus, Systemic Hypertension, and also due to age related changes.

2. Objectives (Only 4-5 focused one that can be observed, measured or clearly assessable)

i. To detect the Diabetic changes in the geriatric population in the Screening phases at rural places/schools
ii. To prevent the aging changes in the eye, at the early stage of detection
iii. To evaluate the fundus status in school screening children and if abnormal only then they can be referred to higher centers for further Management

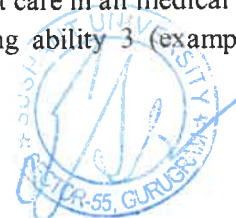
3. Review of status of Research and Development in the subject

3.1 International Status: (Maximum 2 pages)

(Researchers working in the area worldwide and their contributions must be properly highlighted with recent references and reviews. A correct and faithful description of the international research status must be given)

Fundus photography is the standard method to examine the changes in the fundus (retina - orange hue layer) .This is usually performed on the hospital set up as a procedure .Though this is the traditional method ,while undergoing screening procedures in the rural or urban population ,its cumbersome and time taking to transport the machine and to evaluate the same .

One of the reasons for inadequate feasibility is due the calibration which has to be done by the Bioengineers so increase in manpower may be required. In contrast Smart phone Fundus photography is a simple technique where it is ease to capture pictures through the smartphone camera; This can be easily depicted in picture taken from the article published 1 The above mentioned process in the traditional can be totally avoided thereby this Smart Phone will be an indispensable device for the community outreach activities . Studies have been reported that Smartphones are being used in patient care in all medical specialties .One of the advantages may be its advanced computing ability 3 (example, Iphone devices) .



It has been reported that the prevalence of Glaucoma 5 and vitreoretinal pathology 4 were 2.6% and 10.4% respectively in South Indian Population. It should also be noted that the percentage of DM affected population is one-fifth (20) in rural and one-eighth in semi urban population in the same region 6 . So the need for examination of the posterior segment becomes mandatory with these scientific evidences.

3.2 National Status: (Maximum 1 page)

(Same as above to cover the contribution of Indian Scientists in the project area)

Retinal Vasculature of the human body is the only place where the blood vessels are visualized non invasively 8 Smart phone Photography is a convenient method 7 because of its portability and cost effectiveness. When such devices are used in Teleophthalmology services, the need for the referral to the tertiary eye care centers are not required .Hence the technology saves the time both for the patient and the examiner in real time. For the Optometrists and Ophthalmologists the time could be even more spent productively for those subjects where the medical attention and care becomes mandatory. User friendly approach, with updated medical apps in the smart phone makes this herculean task an easy and effective approach in the era of the Ophthalmology.

3.3 Importance of the proposed project in the context of current status (Maximum 1 page)

(Highlight what is the new area or gap which will be solved in the project in relating to what is already known. This is a very important section to project the novelty content of the proposal)

The use of AI in interpreting the fundus pictures taken was investigated by Rajalakshmi 9 et al. Their findings suggested that training the health care providers to take the fundus pictures will be promising for the Diabetic and glaucoma patients Though it's quick, easy, portable and cost effective, for the beginners it takes time to learn the technique as the examiner should also use the +20D lens over the smart phone. Training the beginners over a time will solve .The repeatability of the findings should be done prior examining the patients.

Clinicians (faculties) will explore the nuances of the technique and promote

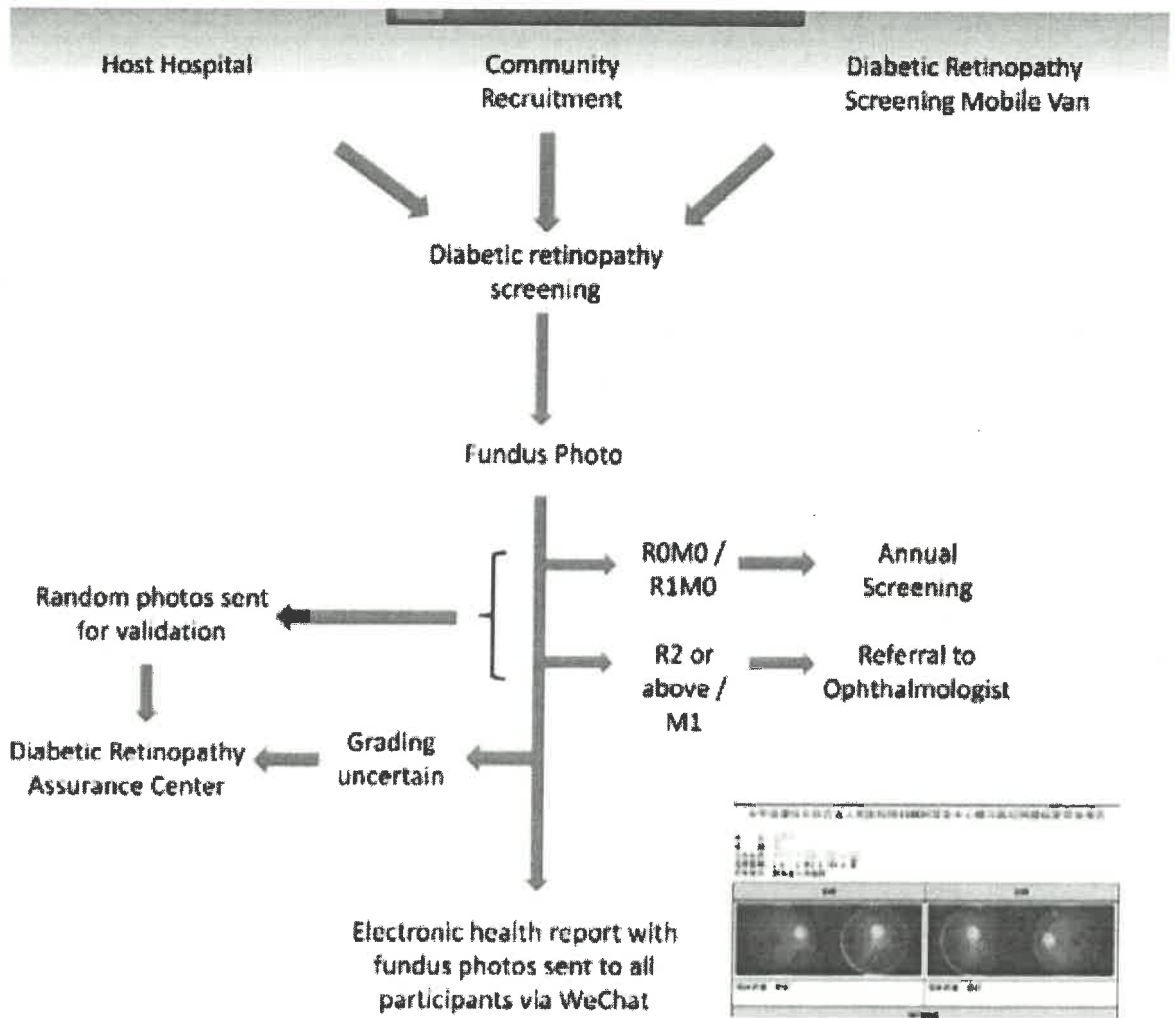
/train the students It helps in screening the community outreach activities particularly villages /rural areas in and around Gurugram It also gains the confidence of the young minds and expand the research interest in Teleophthalmogy and community services It paves way research innovation for other eye examinations.

4. Work Plan:

4.1 Methodology: (Maximum of 5 pages)

(It should contain all the details of how each of the objectives will be addressed. This section must be detailed and have clear plans, not vague and generalized statements. It should have several schemes, tables, figures, equations etc. in addition to text, explanation and justification of why the project research plan will work)





5. Expertise:

5.1 Expertise available with the investigators in executing the project: (Maximum 1 page) (Professional expertise existing with each of the investigators in terms of publications, Patents and preliminary results, to execute every component of the proposal should be highlighted): NA

6. List of facilities required from Sushant University for the project implementation.



6.1 Infrastructural Facilities

Sl. No.	Infrastructural Facility	Yes/No/ Not required Full or sharing basis
1.	Workshop Facility	

2. Water & Electricity
3. Laboratory Space/ Furniture
4. Power Generator
5. AC Room or AC
6. Telecommunication including e-mail & fax
7. Transportation
8. Administrative/ Secretarial support
9. Information facilities like Internet/Library
10. Computational facilities
12. Any other special facility being provided

6.2 Equipment available with the Sushant University for the project:

Equipment available with	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
PI & his group	fundus camera	VOLK Vista	-
PI's Department	smart phone	Any one with camrea	-
Other Institute(s) in the region	Optometry lab equipments	comman	-

6.3 Total Budget (Rs. in Lakhs):

- Recurring Cost (Rs): 250000/-
- Non-Recurring Cost (Rs):100000/-

Sl. No.	Item	Budget			Total
		1 st Yr	2 nd Yr	3 rd Yr	
A	Recurring	20000	20000		
	1. Manpower	30000	30000		
	2. Consumables				
	3. Travel				
	4. Field testing, Demo/ Training expenses (if applicable)	-	50000		
	5. Contingencies/Other costs	45000	45000		
	6. Institutional Overheads*				
	7. Any other item	5000	5000		
B	Non-Recurring	50000	50000		
	Permanent equipment				
	Construction of work shed/structures Fabrication of prototype equipment				
Grand Total (A+B)		150000	200000		



A. Recurring:

1. Budget for Manpower

Sl. No.	Designation	No.	Qualification & experience	Monthly emolument (Rs)	Budget (Rs. in lakhs)			
					1 st Yr	2 nd Yr	3 rd Yr	Total

2. Budget for Consumables*

Sl. No.	Description of consumable	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Includes items like chemicals, raw materials for fabrication, stationery, etc.

3. Budget for Travel

Sl. No.	Purpose	Budget (Rs. in lakhs)			
		1 st Yr	2 nd Yr	3 rd Yr	Total
1.	Project logistics				
2.	Field activities				
3.	Review meetings (if elsewhere)				

4. Field Testing/ Demo/ Trainings*

Sl. No	Description of field testing/demos /trainings	No/Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Include material for technology field testing/demo, training manuals, training expenses for beneficiaries. Note: For training give details about the subject of training(s), no. of beneficiaries/training, duration of training days, cost /training).

5. Budget for Contingencies*

Sl. No.	Item	Qty./Yr	Budget (Rs. in lakhs)			
			1 st Yr	2 nd Yr	3 rd Yr	Total

*Includes items like computer time, secretarial assistance, documentation, cost of technology transfers/acquisitions (intellectual fees), lab/field trials, maintenance/servicing of equipment, incidental expenses, etc.

B. Non-Recurring:

Budget for Permanent Equipment/ Workshed/ Structures

Sl. No.	Equipment/Item details	Qty	Budget (Rs. in lakhs)
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- 1.
- 2.
- 3.
- 4.

7. Deliverables



Deliverable	Mark	Brief description
Product development/adaptation	√	
Process development/adaptation	√	
Technology package for development of the project area and local community	√	
Technology capability development, training & documentation (e.g. reports, papers, articles, technology manuals, patents)	√	
Scientific knowledge and/or data generation leading to technology development in future	√	
Other (Please specify)	√	

8. *Name and address of experts/institution interested in the subject / outcome of the project.*

School of Health Sciences, SHS

