

An Indian-Australian research partnership

Project Title: **Climatic Conditions and Child Development Indicators**
Project Number **HSS1284**
Monash Main Supervisor

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Research Clusters:

Research Themes:

Highlight which of the Academy's CLUSTERS this project will address? <i>(Please nominate JUST <u>one</u>. For more information, see www.iitbmonash.org)</i>		Highlight which of the Academy's Theme(s) this project will address? <i>(Feel free to nominate more than one. For more information, see www.iitbmonash.org)</i>	
1	Material Science/Engineering (including Nano, Metallurgy)	1	Artificial Intelligence and Advanced Computational Modelling
2	Energy, Green Chem, Chemistry, Catalysis, Reaction Eng	2	Circular Economy
3	Math, CFD, Modelling, Manufacturing	3	Clean Energy
4	CSE, IT, Optimisation, Data, Sensors, Systems, Signal Processing, Control	4	Health Sciences
5	Earth Sciences and Civil Engineering (Geo, Water, Climate)	5	Smart Materials
6	Bio, Stem Cells, Bio Chem, Pharma, Food	6	Sustainable Societies
7	Semi-Conductors, Optics, Photonics, Networks, Telecomm, Power Eng	7	Infrastructure
8	HSS, Design, Management		

The research problem

Define the problem

Climate change has increased the possibility of extreme events, such as high temperatures. Such extreme climatic conditions may adversely affect child developmental indicators, particularly without adaptation strategies. Access to adaptation strategies is highly unequal in developing countries like India. Under these circumstances, it becomes crucial to understand how climatic conditions affect child development and if the effect is unequally distributed across economic strata. The project will investigate these questions in the context of India (a developing country) and Australia (a developed country), and compare these findings.

The project proposes to investigate the effect of climatic conditions on child development in India and Australia. The comparison of developed and developing regions, within and between countries, will shed light on the variation in access to technologies to deal with extreme climatic events with economic progress. The study will use primary and secondary data to understand the enabling factors that allow children to adapt to the climatic conditions. The primary data will enable us to examine the determinants in detail. It will also provide insights into the interrelation between various factors. The secondary data analysis will reveal regional variations.

Project aims

Define the aims of the project

The project aims to

1. investigate how climatic conditions and environment factors affect child development (health and education) indicators.
2. analyze if the climatic and environmental factors disproportionately affect children from disadvantaged section.
3. provide policy recommendations for reducing the adverse effect of climate change on child development and addressing equity concerns.

How skills/experience of the IITB and the Monash supervisor(s) support the proposed project

Highlight the purpose of the collaboration and/or the complementary skills/experience that you bring to the project. Do you have any joint or independent publications in the area of the proposed project?

Dr Jaai Parasnis is an applied microeconomist with long standing research in migration, gender discrimination and labour market outcomes, with particular focus on India and Australia. She has proven expertise in qualitative and quantitative data collection and analysis proposed in the project and has a collaborative, interdisciplinary research agenda. She has authored several publications in highly ranked journals in the area, including *Journal of Economic Behavior & Organization* and *Social Indicators Research*.

Dr. Rama Pal works in the area of development economics with special focus on education, health, migration and inclusive development. She has worked extensively with large data sets for India. Her research is published in peer-reviewed international journals including *Economic Modelling*, *Journal of International Development*, and *European Journal of Development Research*.

What is expected of the student when at IITB and when at Monash?

Highlight how the project will gain from the students stay at IITB and at Monash

The student will work with primary and secondary data from India and Australia. The primary data collection will be in Mumbai as well as Melbourne. This will enable a cross-country perspective with respect to the research question.

The student will also complete graduate courses at IIT B.

Expected outcomes

Highlight the expected outcomes of the project

The project will result in several outcomes such as:

1. PhD thesis by the student
2. Conference presentations
3. Journal submissions to journals
4. Policy recommendations

How will the project address the Goals of the above Themes?

Describe how the project will address the goals of one or more of the 6 Themes listed above.

Sustainable societies

The project addresses the key challenge of climate change and its impact on child development. It will inform the design of policies to mitigate the effects of climate change and develop climate resilience, particularly among the disadvantaged and vulnerable communities. The findings from the project are important for creating sustainable societies in face of the challenges posed by climate change.

How well the IITB and the Monash supervisor(s) know each other

Provide details of previous collaborations (if any). For new collaborators, have you had a chance to meet each other in person or through VC or Skype?

The two supervisors have started this collaboration in 2024. They have met personally and virtually several times to develop the proposal.

Potential RPCs from IITB and Monash

Provide names of the potential research progress committee members (RPCs) and describe why they are most suited for the proposed project

Associate Professor Vinod Mishra, Department of Economics, Monash University
Prof Dharma Arunachalam, School of Social Sciences, Monash University

Assistant Prof. Souvik Banerjee, Department of Economics, IIT Bombay
Prof Mrinmoyi Kulkarni, Department of HSS, IIT Bombay

All of them have extensive research and supervision experience in the area of this project. Prof. Mrinmoyi Kulkarni, Associate Professor Vinod Mishra and Prof Dharma Arunachalam have been involved in the supervision of IITB candidates.

Capabilities and Degrees Required

List the ideal set of capabilities that a student should have for this project. Feel free to be as specific or as general as you like. These capabilities will be input into the online application form and students who opt for this project will be required to show that they can demonstrate these capabilities.

Masters in Economics

Necessary Courses

Name three tentative courses relevant to the project that the student should complete during his/her coursework at IITB (the student will require to secure 8 point in these courses)

EC 801

EC 802

EC 821

Potential Collaborators

Please visit the IITB website www.iitb.ac.in OR Monash Website www.monash.edu to highlight some potential collaborators that would be best suited for the area of research you are intending to float.

Prof Jaai Parasnis

Prof Rama Pal

Keywords relating to this project to make it easier for the students to apply.

Climate conditions, Child Development, Health outcomes, Educational outcomes