5-Day GIAN Module

May 26-30, 2025
Dept. of HSS, IIT Roorkee

On

Multidimensional Energy Poverty, its Measurement and Economic Development

Overview

This 20-hour module, led by Dr. Suman Seth from the University of Leeds, explores various issues with the measurement of poverty and social well-being with particular emphasis to energy deprivation. With a focus on 60% theory and 40% practical application, the module equips participants with the knowledge and skills needed to understand the technical intricacies of poverty measurement, using advanced methodologies and their applications.

The course begins by introducing the conceptual issues within unidimensional measurement of income standard, inequality and poverty using cardinal variables, where we will discuss important axiomatic properties, strengths and limitations of different measures, dominance and robustness and practical issues such as poverty line sensitivity and pro-poor growth. We will also provide insights into their implications for policy design and implementation. We will then discuss the limitations of relying on a single cardinal indicator and transition into the assessment of poverty when variables are ordinal as well as the assessment of poverty from a multidimensional perspective as poverty can have multiple dimensions. We will learn the advantages and disadvantages of different approaches to multidimensional poverty measurement. The tutorial sessions will cover practical techniques for handling large-scale survey data, including data extraction and merging of relevant variables, enabling participants to work with real-world data. For multidimensional poverty measurement, participants will also explore the counting approach used in multidimensional poverty measurement, specifically the Alkire-Foster framework based on which the well-known Multidimensional Poverty Index (MPI) has been developed. The MPI is widely used for assessing poverty consisting of three dimensions: health, education, and living standards.

Finally, in line with the course's theme, specific emphasis will be placed on assessing energy poverty. Energy poverty itself has multiple dimensions. Participants will explore the various deprivations caused by insufficient energy access, including lack of electricity, reliance on polluting fuels, and the impacts on health and education. Energy poverty will be discussed through practical sessions where participants will compute energy poverty indices, evaluate its impact on households, and apply the counting methodology to real data on energy access. The course will also cover topics such as energy poverty computations and growth elasticities and how these relate to sustainable development.

Key objectives of the module include:

- Introducing participants to unidimensional poverty measures and their limitations.
- Exploring the nuances of multidimensional poverty, including the concepts and methodologies used for measuring different deprivations.
- Teaching participants how to use the counting approach to measure multidimensional poverty, focusing on the methodology for assessing the MPI and its applications.
- Providing hands-on experience in the extraction and merging of large-scale data sets.
- Understanding the relationship between energy poverty and economic development and applying measurement frameworks to evaluate its impact.
- Teaching how multidimensional poverty measures in general, as well as multidimensional energy poverty, influence economic policies and sustainable development strategies.

Course details

Duration: May 26-30, 2025 (5 days): 12 hours lectures and 8 hours Tutorials
Venue: Dept. of HSS, IIT Roorkee, Uttarakhand, India -247667

Lecture Schedule

Day 1:

Lecture [**SS, 2 hours, morning**] Unidimensional measurement of income standard and inequality: properties, pros and cons of different measures, dominance, robustness and decompositions

Lecture [**SS, 2 hours, afternoon**] Unidimensional measurement of poverty: properties, pros and cons of different measures, dominance with different poverty curves, poverty line sensitivity, growth and poverty, pro-poor growth

Day 2:

Tutorial [**SS, 1 hour, morning**] Poverty measurement with ordinal variables

Tutorial [**PCM, 2 hours, morning**] Handling extraction of large-scale data

Tutorial [**PCM, 1 hour, afternoon**] Merging of large-scale data

Day 3:

Lecture [**SS, 2 hours, morning**] Conceptual issues in measurement involving multiple dimensions: motivations, typology of multidimensional measures, joint distribution versus marginal distribution, practical issues on robustness of weights and selection of dimensions/indicators

Lecture [**SS, 2 hours, afternoon**] Multidimensional poverty measurement: critical evaluation of different methodologies (Fuzzy sets, statistical approaches, dominance approach, axiomatic approach) and their pros and cons

Day 4:

Lecture [**SS, 2 hours, morning**] Counting approach to poverty measurement: Alkire-Foster methodology and its applications

Tutorial [**SS, 1 hour, afternoon**] Applications of the counting methodology: growth elasticities, impact evaluation

Tutorial [**SS, 2 hours, afternoon**] Alkire-Foster methodology

Day 5

Lecture [**PCM, 2 hours, morning**] Energy poverty

Tutorial [**PCM, 1 hour, morning**] Energy poverty computations

Eligibility Criteria

- Applicant must have enrolled in a Ph.D. program (preferably in their early stage) or data analyst, in the policy team and consulting professional.
- Applicant should have basic knowledge of statistics and econometric tools.
- Applicant must have completed Masters' degree in Economics / Management / Development studies.

The organizers promote gender equality.

Maximum number of Participants: 30

Fees

Fees include all instructional materials, computer use for tutorials and assignments, laboratory equipment usage charges, food (during sessions) and internet access throughout the campus.

- **Indian Student: ₹1125**
- **Academic institutions: ₹5125**
- **Industry / research organization: ₹15125**
- **Participants (abroad): $251**

The participants will be provided with accommodation on the campus on a payment basis.

Some limited number of scholarships for food and accommodation to be provided to PhD students having no fellowships/scholarships (proof letter from HoD/Dean/Registrar/Director is required).

Payment Details:

1. To Make Payment (after acceptance email): Please use the following link:

   https://www.onlinesbi.sbi/sbicollect/icollecthome.htm?corpID=365641

   In this link, you have to select WORKSHOP-150-HSS-AHEAD2025 under the heading: Conference/Workshop Code/Others * (refer to attached pdf page below for step-by-step guidance)

2. Submit Payment Confirmation: After completing the payment, upload a screenshot of your payment confirmation using this Google Form:

https://docs.google.com/forms/d/e/1FAIpQLSdFTAsmjmGRivcazA_393aFHGTyDiB0n_4TBcE1yCG8MCeuFQ/viewform?usp=sf_link

Note: *There is no central registration on the GIAN portal, registration will be managed directly by the host institute (IIT Roorkee).* ***Fees are non-refundable.***

Deadlines

- Registration: **05 March 2025** (last date to apply)
- Fee payment: 08 March 2025 (After receiving confirmation email)

Apply:

https://forms.gle/mUq4YQNY49bezZK4A

Resource Persons

	**Dr. Suman Seth** is an associate professor at the Leeds University Business School and the co-editor of Review of Income and Wealth. He is a Research Associate at the Oxford Poverty and Human Development Initiative (OPHI) at the University of Oxford. His research specializes in the measurement and analysis of poverty, inequality and well-being from a non-monetary perspective and their policy-oriented applications. He has served as consultants to the Regional Bureau of Latin America and the Caribbean, United Nations Development Programme (UNDP), to the Development Research Groups at the World Bank, and to the Asian Development Bank. He has published his research in journals such as Journal of Economic Inequality, Social Choice and Welfare, World Bank Economic Review, Review of Income and Wealth, Economics Letters and World Development. He has coauthored a book on income poverty measurement with the World Bank and another book on Multidimensional Poverty Measurement and Analysis with OPHI researcher, published by the Oxford University Press.
	**Dr. Pratap C. Mohanty** is an Associate Professor of Economics at IIT Roorkee, with over 16 years of experience in teaching, research, and administration. He has previously taught at Delhi University, IIFT New Delhi, and IIM Indore. His research focuses on socio-economic issues in India, including healthcare and development, with a notable project on 'traditional medicine' sponsored by the Government of India. He is a columnist for The Hindu, Indian Express, Times of India, and Pioneer. He also shares his expertise through popular NPTEL courses on 'Health Economics', 'Handling Large-scale Data with STATA', 'International Trade', and 'Exploring Survey Data on Healthcare'. He has been invited to deliver sessions at leading institutions, including JNU, Delhi University, and IITs, and trains IAS probationers at LBSNAA, Mussoorie. He serves as an Academic Editor for BMC Public Health and has previously been with PLOS ONE.

Course Coordinator

Dr. Pratap C. Mohanty
Department of HSS, IIT Roorkee
Email: ahead@iitr.ac.in
pratap.mohanty@hs.iitr.ac.in

Contacts:

Hosted by: **AHEAD Lab**, IIT Roorkee.
Details of the GIAN course: www.ahead.iitr.ac.in

Priyandu M. Bajpayee (Ph.D. Scholar, HSS IITR)
Email: ahead@iitr.ac.in
Landline: +91-0133228-4884 (10AM – 6PM)

A WHATSAPP group to be made available to the shortlisted participants.

- **Weather Condition and Tourist Hotspots**

The temperature in Roorkee in May ranges around a high of 38°C to a low of 25°C. http://uttarakhandtourism.gov.in/; https://www.euttaranchal.com/tourism/roorkee-excursions.php