



## Welcome to the NDIC Fellows Newsletter!

We bring you a special edition of the work by NDIC Early Career Non-Resident Fellows, where innovation meets impact. This edition highlights the influential contributions of young scholars shaping India's survey methodology landscape. From reimagining data collection techniques to adapting global frameworks for local challenges, their work reflects a deep commitment to data-driven development. By addressing inconsistencies in existing datasets and exploring new methodologies, NDIC fellows present transformative solutions that redefine how we measure human development. A collection of measurement briefs developed by NDIC Fellows is highlighted below that delve into critical themes in data collection and analysis, presenting actionable insights into human development domains. The featured briefs are outlined below.

### **Aadhaar's Role in Improving Age Data Quality**

Subarna Banerjee

### **Do Time-Use Surveys Give a Higher Estimate of Women in Economic Activity?**

R Vijayamba

### **Mapping the Future: How New Tools are Redefining Urban Growth in South Asia**

Nawaj Sarif



# Aadhaar's Role in Improving Age Data Quality

SUBARNA BANERJEE

Accurate age data is critical for effective policymaking and demographic analysis, yet in India, age misreporting remains widespread. “From Heaps to Insights: Aadhaar’s Role in Enhancing Age Data Quality” investigates Aadhaar’s influence on reducing “age heaping”, the common tendency to round off ages to multiples of 0 or 5 due to limited birth records and low literacy levels. Using National Family Health Survey (NFHS) data across five rounds, the study reveals that Aadhaar has substantially reduced age heaping, especially among older populations.

Key findings indicate that a 10% increase in Aadhaar coverage matches with a 5% rise in age accuracy, showcasing Aadhaar’s effectiveness in providing official age records and reducing misreporting. In districts with high self-reported Aadhaar holdings, the Whipple’s Index, a measure of age heaping, drops by over 21 points, underscoring Aadhaar’s role in refining demographic data accuracy.

Aadhaar’s positive impact is particularly significant for older age groups, as these individuals previously lacked formal documentation. While Aadhaar has improved age reporting overall, additional measures, like reinforcing birth registration are essential for ensuring age accuracy among younger populations.

Facilitated by the NDIC Early Career Fellowship, the research suggests that expanding Aadhaar enrollment, along with supporting formal registration systems, could be pivotal for addressing age data challenges in India. Enhanced age data accuracy would lead to more precise population estimates, improved policy planning, and a better allocation of resources to serve diverse communities.

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## Do Time-Use Surveys Give a Higher Estimate of Women in Economic Activity?

R VIJAYAMBA

How accurately do we measure women's economic activity and how can the measurement be improved? Traditional Labour Force Surveys (LFS) often falls short, especially in rural areas, by overlooking activities such as livestock rearing, firewood collection, and unpaid work in self employment. Why? These surveys rely on narrow definitions that don't include the full range of women's contributions, and they often reinforce biases rooted in social norms - that women are primarily identified with household chores and child care.

Enter the 2019 Time Use Survey (TUS). Unlike standard surveys, TUS asked people to track all their daily activities without labeling them as economic or not. By using this approach, TUS captured a more comprehensive picture of women's activities. For instance, when the survey data was used to expand the definition of economic activity to include primary production activities, such as farming and construction for own use, the percentage of rural women identified as economically active jumped from 20.8% in the LFS to a striking 32%. This jump highlights the critical importance of capturing all economic activities for women, particularly in rural communities where such contributions are indispensable.

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# Mapping the Future: How New Tools are Redefining Urban Growth in South Asia

NAWAJ SARIF

Urbanization is often synonymous with progress, fueling economic growth, higher incomes, and improved quality of life. Yet, defining and measuring urbanization remains a challenge, especially in diverse regions like South Asia. Traditional census methods, often outdated or inconsistent, struggle to capture the dynamic layers of urban expansion. Enter modern tools like the Global Human Settlement Layers (GHSL) and gridded population data - innovative solutions offering a fresh perspective on urban growth. The research uses these cutting-edge datasets to explore urbanization trends in South Asia, including India, Pakistan, Bangladesh, and Bhutan.

By analyzing settlement patterns and population density, it reveals how these tools can complement traditional methods. The findings show that GHSL and gridded data estimates align closely with census results for countries like India while identifying discrepancies in regions like Bhutan (underestimated) and Sri Lanka (overestimated). Moreover, they highlight a growing phenomenon—suburban and peri-urban areas transforming into urban hubs, with a 12.4% transition between 2010 and 2020. Unlike traditional censuses, which rely on fixed definitions and socio-economic indicators, these geospatial tools provide real-time insights into population dynamics and settlement evolution.

They also highlight stark regional differences. For instance, while Bihar's urbanization appears overestimated due to economic factors, Tamil Nadu's dynamic urban growth is underestimated when relying solely on gridded data.

Beyond measurement, the study supported by the NDIC Early Career Fellowship, underscores the policy potential of these tools. Rapidly urbanizing regions can be identified early, enabling strategic infrastructure development and sustainable urban planning. Policymakers can prioritize areas with high population density and urbanization potential, equipping them for future growth. In an era of rapid transformation, tools like GHSL and gridded population data are crucial. They bridge gaps left by traditional methods, offering a more nuanced, timely, and scalable approach to understanding urbanization. As South Asia continues its urban journey, such innovations promise to reshape how we measure and manage the cities of tomorrow.



# ABOUT THE AUTHORS



## SUBARNA BANERJEE

Subarna Banerjee is a graduate of BSc. Economics (Hons) from Presidency University, Kolkata, and MSc Economics from Shiv Nadar University. She is currently in the fourth-year of her PhD at Shiv Nadar Institution of Eminence and also serves as a fellow at NCAER-NDIC. Her research interests focus on education, gender, and political economy.



## R. VIJAYAMBA

Vijayamba is a development economist interested in studying women's work in the labour markets. Her research interests include time use, decision-making, social norms, and issues of measurement. Currently, she teaches at the National Law School of India University, Bengaluru. She explored measurement issues of women's work using secondary data for the Post-Doctoral fellowship by the NCAER-NDIC.



## NAWAJ SARIF

Nawaj Sarif is a doctoral candidate for Population Studies at IIPS, Mumbai, specializing in urban growth patterns, with a focus on shrinking cities. His research expertise includes spatial demography, migration, population aging, and geo-spatial data analysis, showcasing his dedication to advanced research methodologies in population studies.

## Contact Us



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### **Our mailing address is:**

NCAER, Parisila Bhawan, 11, IP Estate, Delhi, 110002  
coord\_ndic@ncaer.org

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