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Standard Of Living In Urban Slums: How To Measure, And Map Its Correlates –

Evidences From Indian Metro Cities

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A phenomenal surge in number of urban slums and its population in many developing countries is identified as a major challenge for the overall urban development. Slums are not only deficient in infrastructure, but the standard of living of the slum-dwellers is also quite appalling. Deprivation is not limited to pecuniary factors; several non-pecuniary aspects also hold them back.

This policy brief, based on the research findings of a survey undertaken in three metro cities of India, puts forward a way to assess slum dwellers' standard of living and map the associated correlates. It uses a conventional monetary approach (e.g. per capita income or consumption) as well as a novel non-monetary multi-dimensional counting approach framework to assess standard of living. It is observed that some household-level and slum-level characteristics are indeed similarly associated, yet certain others are quite differently associated with the monetary vis-à-vis the non-monetary standard of living. It is thus proposed to use both approaches simultaneously while making policy decisions as well as evaluating policy outcomes.

Why is it important to study the standard of living of (Indian) slums dwellers?

Urban centres serve as powerhouses of the developing economies by accommodating both formal and informal activities. The urban population growth, due to natural growth and migration, often outpaces both urban economic and institutional development (Fox, 2014) and urban infrastructure. This has been forcing surplus population to take shelter in squatters and slums.

Slums are informal settlements characterised by substandard housing, overcrowding and squalor, often considered either as "blight" of erstwhile prosperous area or as "staging areas" for immigrant poor (Frankenhoff, 1967). Compared to the rest of the urban area, slum-dwellers also suffer from worse levels of education, health and other socio-economic indicators (Martinez *et al*., 2008; Banerjee, *et al*., 2012; Fink *et al*., 2014). Policy makers although recognises that slums are different from non-slum areas by certain common characteristics, yet they often tend to ignore the fact that there exist large *inter-city* and *intra-city* differences among slums (Bag *et al*., 2016; O'Hare *et al*., 1998).

Slums are ubiquitous in urban areas of many developing countries in Asia, Africa and Latin America. The number of slum dwellers in developing counties, between 1990 and 2012, has increased from 650 million to 862 million (UN-HABITAT 2003). In India, despite her enormous economic growth in the past decades, it homes a large number of slum dwellers in the metro as well as tier II cities. For example, according to the 2011 Indian Census, 17.4% of all urban household reside in slums.

The phenomenal surge in slum population is identified as a major challenge for the overall urban development, as it is often considered as a drag to urban infrastructure and environment. Urban India has had a long history of slums; various policies at different point in time have been undertaken and numerous bills have been passed to improve the living conditions of the slum dwellers (Bag, Seth and Gupta, 2016). The irony, nevertheless, is that most policies are often ad-hoc, city specific and preoccupied with slum clearance, if not arbitrary.

The global development discourse has not ignored the appalling living conditions of the slum dwellers. The United Nations, as part of Sustainable Development Goals, have set a target of upgrading slums as well as reduce poverty in all its dimensions according to national definitions by 2030. However, achieving these targets however requires appropriate policy design (Marx *et al*., 2013), which can be strengthened through proper understanding of slum dwellers' standard of living (SoL, hereafter) and the associated correlates.

This brief tries to propose a comprehensive way to assess the slum dwellers' standard of living and map the associated correlates so that the relevant policy choices can be drawn.

How do the slum dwellers in India fare in terms of Standard of Living?

The answer to how slum dwellers' SoL fare depends on how it is assessed. According to Bag and Seth (2016), it is observed that both monetary and non-monetary forms of assessments matter in practice, and they can be reconciled without elevating one over the other. Moreover, certain household-level and slum-level characteristics, such as, social background and rental status of slum dwellers and protection status of slums, are related *differently* to monetary versus non-monetary SoL.

A key message that this policy brief tries to put forward is: *policy choices and designs for improving slum-dwellers' SoL need to be adequately tempered according to the nature and veracity of deprivations that are often non-monetary in character*. Additionally, the findings may question the

efficacy of the usual policy choices, such as cash transfers, in automatically improving the slum-dwellers' non-monetary multifaceted living conditions.

Assessing standard of living: Monetary approaches

Common monetary indicators for assessing SoL are per-capita income and per-capita consumption expenditure. How do slum dwellers fare in terms of monetary indicators?

The real per-capita incomes, based on survey data of Bag and Seth (2016), in Kolkata, Delhi, and Mumbai slums are 2,599.5, 2,673.6 and 3,943.5 (in INR), respectively; whereas, the real per-capita consumption expenditures in Kolkata, Delhi, and Mumbai slums are 1,107.3, 1,089.2, and 1,151.4 (in INR), respectively. Additionally, Figure 1 presents the distributions of real per-capita incomes and the distributions of real per-capita expenditures in Panel A and Panel B, respectively, where the distributions of both per-capita income and expenditure for Mumbai lie to the right of the respective distributions of Kolkata and Delhi. Mumbai slum dwellers thus appear to enjoy better monetary SoL on average than those in Kolkata and Delhi slums; whereas the monetary SoL in Kolkata and Delhi slums are similar.

**Figure 1: Monetary SoL (Monthly Per-capita Income and Expenditure)
of slum households in three cities (in INR)**
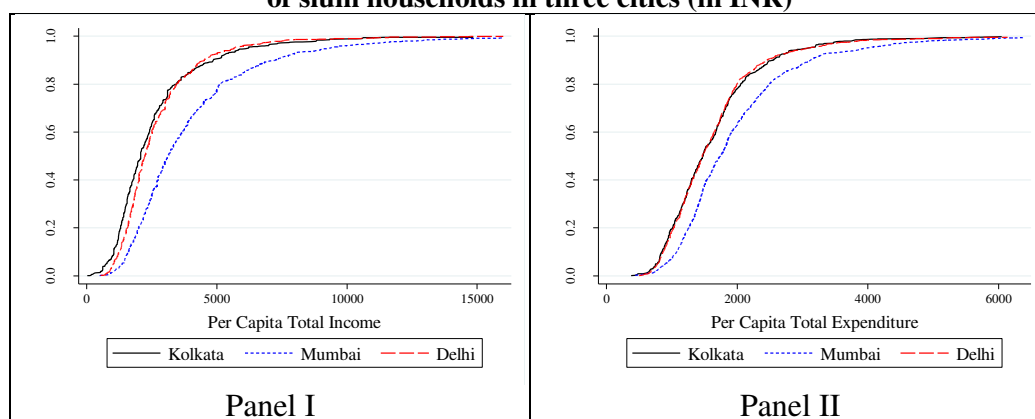
Monetary indicators are however resource-based and are criticized for failing to appropriately capture the capabilities that transform resources into well-being (Sen 2001). Furthermore, SoL is inherently multidimensional and is hard to gauge using any single indicator, which has now been increasingly acknowledged by the international organisations such as the United Nations and the World Bank.

Assessing standard of living: A multidimensional counting approach

Bag and Seth (2016) proposes to capture the non-monetary SoL and also its multidimensional nature, by using a counting approach framework (Atkinson, 2003; Alkire and Foster, 2011; Alkire et al, 2015). Table 1 summarises the proposed set of indicators and the respective deprivation cut-offs that are used to identify deprivations of each household in each indictors.[1]

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[1] Worth noting an important omission from the set of indicators is households' access to electricity, lacking which may cause being deprived of other important facilities. This is purely incidental, as more than 95% of surveyed slum dwellers had access to electricity for 18-24 hours.

Table 1: Non-Monetary Indicators and Deprivation Cut-offs

Indicator	Deprivation cut-off (A household is deprived …)
Water facility	If the water source is non-improved (UN-MDG); **Or**, stand-piped but time to fetch from source is 30 minutes or more; **Or**, stand-piped but access duration is less than two hours per day
Sanitation facility	If there is no personal facility **Or**, the personal facility is shared with others
Type of house	If the wall or the roof or the floor of the house is built with unimproved materials; **Or**, there is no house
Leakage in house	If water enters in the house through roof or ground
Over-crowding	If more than three persons live per bedroom (UN-HABITAT, 2010)
Respiratory health risk	If biomass fuel is used; **Or**, cooking is done inside sleeping room with no smoke outlet
Health insurance	If any member is suffering from chronic disease or there is any disabled member; **And**, no one in the household has any health insurance scheme
Savings instrument	If no member in the household has any instrument for savings
Asset ownership	If the household does not have any of the assets: washing machine, refrigerator, air conditioning machine, computer, four-wheeler, and **additional** rent generating property in city
Information instrument	If the household does not have a land-line phone, **And**, the number of mobile phones is less than the number of adults (15 years or more) in a household
Education attainment	If no household member has 10 or more years of schooling

In the counting framework, the SoL is assessed by counting the number of deprivations that each household faces, where a larger number of simultaneous deprivations reflects lower non-monetary SoL. The incidence of deprivations in each indicator is presented using a spider diagram in Panel A of Figure 2. The distribution of simultaneous deprivations is presented in Panel B of Figure 2, where the horizontal axis denotes the number of deprivations and the vertical axis presents the proportion of slum dwellers. The height of each curve gauges the proportion of slum dwellers facing at least a certain number of deprivations.

Figure 2: Incidences of Deprivation in Non-Monetary Indicators and the Distribution of Simultaneous Deprivations
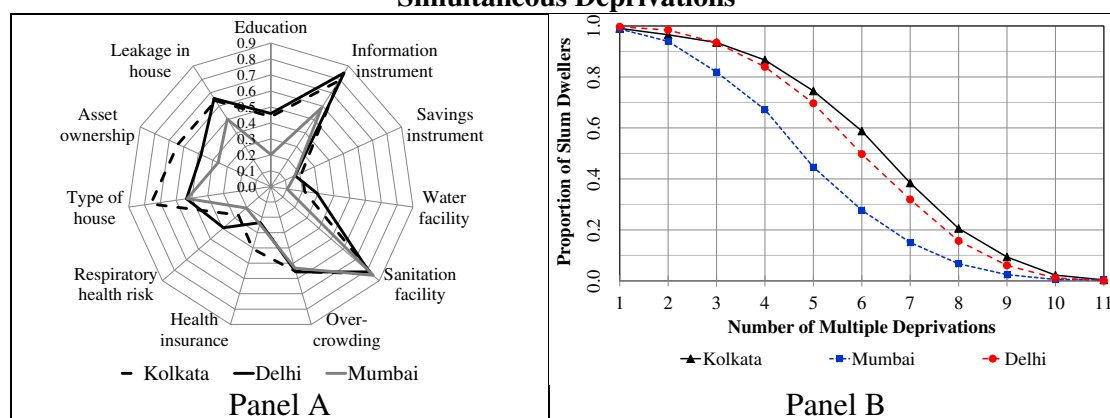
Clearly, incidences vary both across cities and across indicators in Panel A, but looking at them in isolation does not provide a conclusive comparative picture. We observe from Panel B that slum dwellers in Mumbai appear to suffer lesser multiple deprivations on average than those in Delhi and

Kolkata, but unlike in monetary assessment slum dwellers in Kolkata suffer larger extent of multiple deprivations that those in Delhi.

How various characteristics associated with monetary vis-à-vis non-monetary Standard of Living of slum dwellers?

In order to create effective policy design and its implementation, it is imperative to understand how different characteristics – both at the slums level as well as at the household level – are associated with the slum dwellers' standard of living (under two methods).

Slum dwellers' social standing often makes their experience of negotiating the city life more cumbersome. Gender, castes, religious identities, disabilities and labour market participation often affect their access to the urban space and hence there SoL. Bag and Seth (2016) resort to multivariate regression analyses (separately for three cities) to map how these different characteristics are consistently or differently associated with the standard of living of slum dwellers in three cities.

It is observed that some characteristics are indeed similarly associated, yet certain others are quite differently associated with the monetary vis-à-vis the non-monetary SoL. The household level characteristics, for example, that are similarly associated with both *lower* monetary and non-monetary SoL are: larger household size, higher child dependence, headed by female, primary occupation not being government/private contractual. However, crucially though, there are other characteristics (see following section) that are differently associated with these two different forms of SoL.

<h3 style="background-color:#1a8a8a; color:white; padding:10px;">POLICY IMPLICATIONS</h3>

To improve monetary and non-monetary living conditions in slums, a set of policies can be construed at three different levels: (a) at the household level, targeting the poor households with specific schemes; (b) at the community level, targeting and improving infrastructural inadequacies (e.g. water, sanitation, drainage, electricity etc.); and (c) dealing with the legal aspects related to tenure security in slums through political will. Worth highlighting certain interesting points from the findings of Bag and Seth (2016) in the Indian context that however may be applicable in the context of other developing countries.

First, within each city, caste identity is not found to be a correlate to monetary SoL. In fact, households from indigenous backgrounds (scheduled caste (SC) and scheduled tribe (ST)) *without* any caste reservation certificates are not monetarily worse off than the general Hindu households. Interestingly, however, these SC/ST households are consistently non-monetarily worse off. Due to the lack of their identity proofs in cities, they are left out of affirmative actions, which, along with other forms of social exclusion, may lead to perpetual deprivation in non-monetary indicators. Mere monetary assistance may not ameliorate their non-monetary deprivations. This finding calls for a review of the strategies relating to the issuance of caste certificates by government agencies in urban areas.

Second, although households in protected slums in Mumbai have higher per-capita incomes, they are not better-off non-monetarily than those in unrecognised slums. This observation questions the United Nation's prevailing notion of improving living standards in slums through tenure security. The Rajiv Awas Yojna (RAY) scheme for assisting the poor households in slums to construct or renovate their houses is in existence for a decade now (rebranded as Pradhan Mantri Awas Yojna in 2016), but the scheme can be availed only by those with legal ownership status. The Indian slum Acts however do not confer the ownership right (land titling) to the slum inhabitants. This calls for the modernisation of slum acts in India by conferring legally recognised foothold of the slum-dwellers – securing both their pecuniary and non-pecuniary prosperity.

Third, some contradictory spatial/regional ranking within each city has been observed. For example, the slum dwellers in the New Delhi region are on average monetarily better off compared to certain other regions of Delhi, but are non-monetarily worse off. Despite having higher incomes due to better earning potential, these slum-dwellers are more deprived in other indicators such as the 'type of house' indicator. This observation is crucial as it has the potential for influencing geographic targeting priorities.

Fourth, in Kolkata and Mumbai, we observe the households in tenements settlements (*Thika* or *Pagdi*) to be consistently non-monetarily worse off (even when they are not observed to be worse-off monetarily) than those who own their houses largely due to obsolete land tenure arrangements, institutionalised neglect and discrimination. Furthermore, many tenement settlements face a status quo under different tenancy acts and 'rent control'. Their distresses call for new laws to confer property rights to those in tenement settlements.

RESEARCH PARAMETERS

There is a dearth of studies that uses the methodology of multidimensional deprivation measurement to study the quality of life in slums and that compares the slum-dwelling households' monetary living standards to their non-monetary living standards. In order to understand the efficacy of various public policies, it is important that the living conditions are not only assessed by monetary indicators but also through a non-monetary approach capturing the joint distribution of achievements in different indicators. The policy brief is aimed to fill this gap in the literature.

The research uses the primary household survey data that were collected in 2013-14 through a two-stage stratified sampling from the slums of the municipal corporation areas of Kolkata, Mumbai and Delhi as part of the European Union funded global research project "NOPOOR". In the first stage, within each city, the municipal corporation areas were stratified according to the largest possible administrative divisions: at the *borough* level in Kolkata, at the *ward* level in Mumbai and at the *revenue-district* level in Delhi. The number of households to be interviewed from each stratum was determined through proportional random sampling, but with the additional requirement that at least thirty households should be interviewed from each stratum. In the second stage, a number of slums were randomly selected from each stratum and then from each selected slum, a collection of households were randomly selected to be interviewed. In Kolkata, 808 households were interviewed from 63 slums from 15 boroughs. In Mumbai, 1,086 households were interviewed from 77 slums from 23 wards. In Delhi, 864 households were interviewed from 57 squatter settlements from 11 revenue districts. The collected samples in Kolkata and Mumbai include both tenement and squatter settlements. The design of the survey questionnaire was drawn from the latest round of National Sample Survey (NSS) household questionnaire and slum particulars, and then customized to incorporate additional variables capturing further characteristics intrinsic to slums. The questionnaire captures information both at the household and the individual levels.

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