Understanding slum emergence and migration using an agent-based model

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Abstracts

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The existence of slums is common to most cities of developing countries. Recent studies have identified that it is important to study and assess the stability of slums as they exhibit vastly different levels of resilience [1]. While many slums are vulnerable to evictions, temporary jobs, and constant migration; few slums can respond and recover from external shocks [2]. In this paper, we present a discrete-choice based agent-based model to investigate inter-slum migration of slum dwellers in Bangalore based on a novel field data from 36 slums in Bangalore [3,4,5]. Specifically, we use the model to understand how existing social, economic and environmental situation impacts the choices of slums. The model produces two important insights. First, we find a high social satisfaction applies a stabilizing effect, which means that despite more attractive economic opportunities, the social satisfaction the agents derive from living in a slum is a strong motive to stay. However, given that a lack of opportunities causes emigration, the social satisfaction will decrease as a function of the number of social contacts that move. Further, this cascading effect of emigrating population is more pronounced in Muslim slum households as compared to Hindus. Second, we demonstrate how creating jobs in different occupational categories across social groups may impact the residential choices of slum dwellers. Through this new understanding, policymakers in India can better understand the impacts of their slum management policies ex-ante. With slums that are better managed some of the social (marginalization) and physical (hazardous lands) risks can be mitigated.

References

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ON THE COVER: Cattle graze in a pasture in the fall on the Last Dollar Ranch with the Mount Sneffels Range in the background, Uncompahgre National Forest.

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