The dynamics of informality, insufficiency, and neighborhood insecurity in slums: Evidence from Patna, India

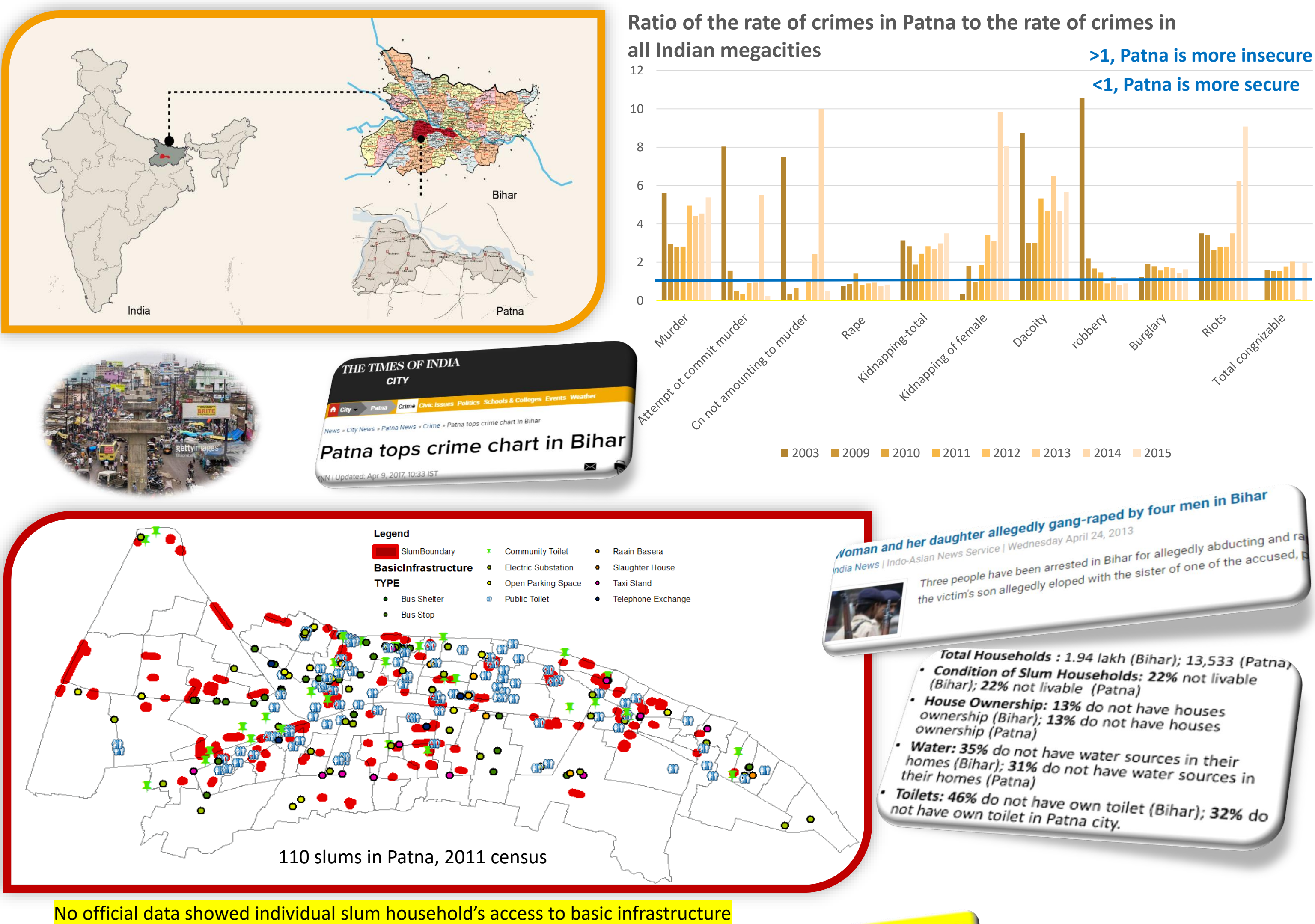Ziming Li (Ph.D. Candidate, liziming@ufl.edu) , Abhinav Alakshendra (Assistant Professor)
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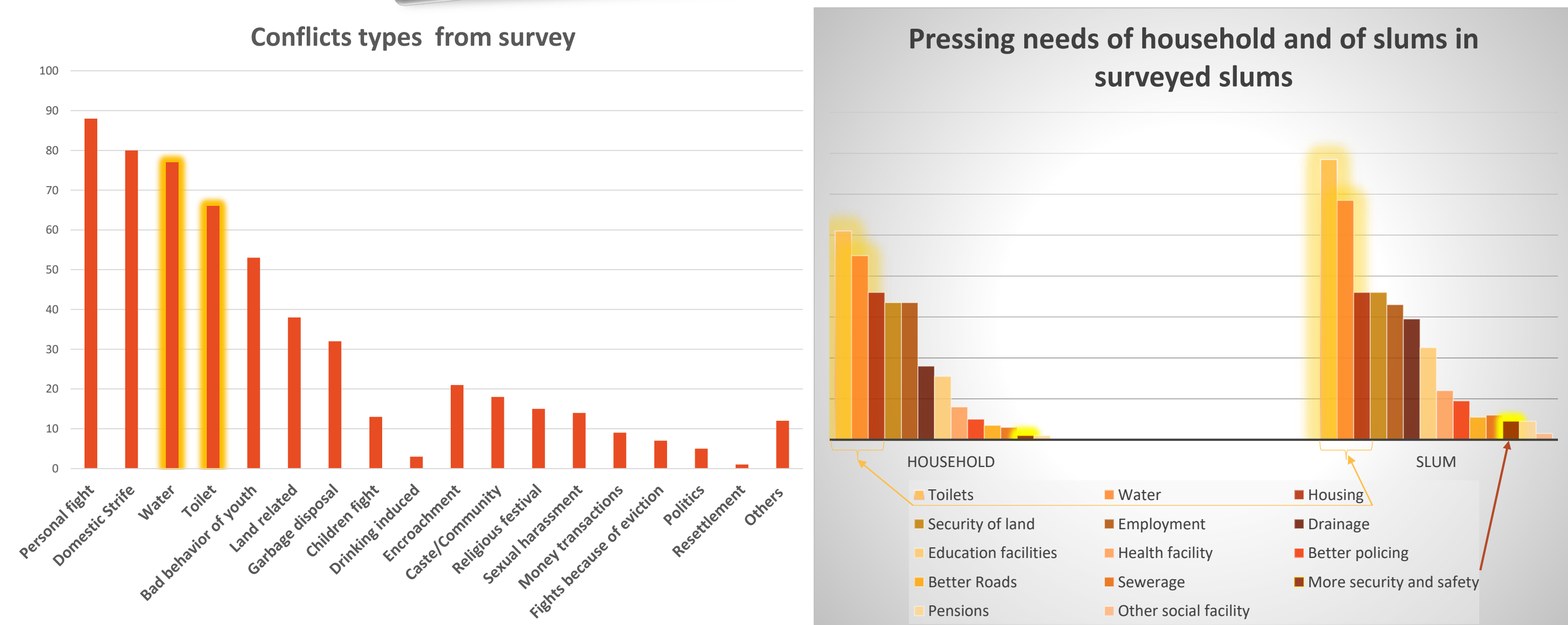
Abstract

Slums in India are often looked as breeding grounds for conflict, violence, and crime. This study attempts to draw attention to the problems of insecurity and informality in slums in Patna, Bihar and draw lessons for urban planning and local governance. One of the central questions is why slum dwellers suffer from insecurity. This study adopts the quantitative analysis based on the household survey that selected 225 households from 16 slums through multi-stage stratified random sampling and qualitative analysis based on individual interviews and focuses group discussion between 2016 and 2017. It identifies the determinants of neighborhood conflicts and violent resolution. It finds that the perception of infrastructure insufficiency rather than informality in terms of housing, employment, and infrastructure quality played a more significant role in arousing neighborhood conflicts. The qualitative analysis further justified the evaluated effect of self-governance in mitigating the neighborhood conflicts in regression models. Further, we also focus on the perception of insecurity and crime and their origin by evaluating the gender differences in perceiving insecurity and crimes. The empirical findings fill up the knowledge gaps in data-poor areas.

We suggest that 1) providing the sufficient facilities according to the pressing needs at household level could reduce conflicts immediately; while empowering the urban poor through civic education is an effective mitigation in the long run; 2) providing pro-women facilities through empowering females in terms of community governance, political engagement, and economic opportunities could increase the perception of neighborhood security; 3) reducing the mutual distrust between local government and slum dwellers should rest on information sharing at the bottom and empowerment in the unplanned and deregulated sector in urban planning. These findings will facilitate effective policy-making to make the city safer and socially resilient.
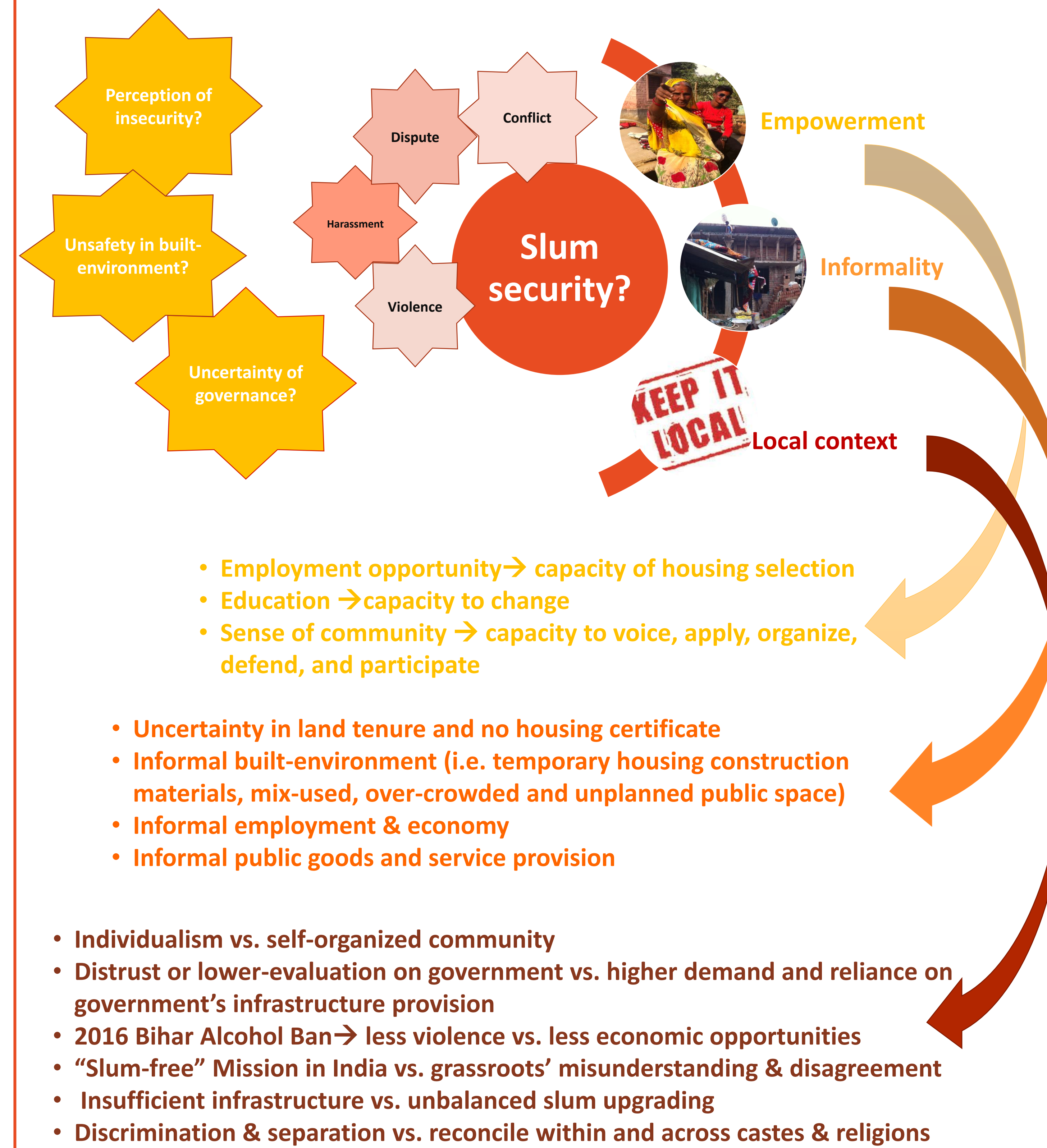
Background

Ratio of the rate of crimes in Patna to the rate of crimes in all Indian megacities

>1, Patna is more insecure
<1, Patna is more secure

Patna tops crime chart in Bihar

Woman and her daughter allegedly gang-raped by four men in Bihar

Three people have been arrested in Bihar for allegedly abducting and raping the victim's son allegedly eloped with the sister of one of the accused...

Total Households : 1.94 lakh (Bihar); 13,533 (Patna).
- **Condition of Slum Households**: 22% not livable (Bihar); 22% not livable (Patna)
- **House Ownership**: 13% do not have houses ownership (Bihar); 13% do not have houses ownership (Patna)
- **Water**: 35% do not have water sources in their homes (Bihar); 31% do not have water sources in their homes (Patna)
- **Toilets**: 46% do not own toilet (Bihar); 32% do not have toilet in Patna city.

110 slums in Patna, 2011 census

No official data showed individual slum household's access to basic infrastructure

Slum=Poverty=Insecurity?

Conflicts types from survey

Pressing needs of household and of slums in surveyed slums

Research questions

❖ What are the major determinants of insecurity and slum dwellers' perception of security in Patna slums
❖ How do individuals of different genders and families, slum communities, and local government prevent violence and crime?
❖ What are the effective mitigation for local planning and governance?

Theoretical framework

Perception of insecurity?
Unsafety in built-environment?
Uncertainty of governance?

Dispute — Conflict
Harassment
Violence

Slum security?

Empowerment
Individualism
Informality

KEEP IT LOCAL
Local context

- Employment opportunity→ capacity of housing selection
- Education →capacity to change
- Sense of community → capacity to voice, apply, organize, defend, and participate

- Uncertainty in land tenure and no housing certificate
- Informal built-environment (i.e. temporary housing construction materials, mix-used, over-crowded and unplanned public space)
- Informal employment & economy
- Informal public goods and service provision

- Individualism vs. self-organized community
- Distrust or lower-evaluation on government vs. higher demand and reliance on government's infrastructure provision
- 2016 Bihar Alcohol Ban→ less violence vs. less economic opportunities
- "Slum-free" Mission in India vs. grassroots' misunderstanding & disagreement
- Insufficient infrastructure vs. unbalanced slum upgrading
- Discrimination & separation vs. reconcile within and across castes & religions

Research design

❖ Quantitative analysis
- Household survey in Patna in 2016-2017
- Multistage stratification random sampling: 224 households from 16 slums
- Regression models:
  1) Logit, multinomial logit, bivariate probit models to identify determinants of neighborhood conflicts, their choice to use violent resolution, and harassment
  2) Treatment effect models by propensity score matching and k-nearest matching methods to check the impact of living in organized slums and the impact of NGOs
- Robustness checks: Bayesian models

❖ Qualitative analysis
- Participatory observations in 16 slums in Patna in 2017
- 25 focus group discussions by gender and 40 individual interviews

Survey and interview

Perceived neighborhood conflict

- Space(Land related, encroachment and conflicts with outsider)
- Facility (Water, toilet, garbage disposal)
- Institutions (Caste/Community, religious festival, politics)

38 / 91 / 51

Pilot slum after slum upgrading

Mixed used public space

- Bridge separated slum dwellers by caste.
- Distrust government, became aggressive. Badly-maintained community toilet

Water pipe and garbage problems

Sitting on the rail to avoid conflicts near water source

Private toilet in a organized slum

Individualism and water informality

Community toilet supported by NGOs

Open defecation before abandoned community toilet

Pre-test survey with Bihari students, 2016

Application for land tenure in an organized slum

Muslim women's focus group discussion about security and economic opportunity

Results

	Explained:	Incidence of conflict/dispute/harassment	Whether solved violently	Perception of insecurity (general perception, place, victim, time change)
Explanatory factors:				
Indices of informality (Infrastructure quality, housing & land type/ownership, working contract)		No	No	No (infrastructure informality) Yes (employment, house & land tenure informality)
Perception of comparative insufficiency (Facilities, education and health services, police patrolling and security, employment)		Yes	Depends on whether education and employment are sufficient	Yes
• Attitude/actions of government • Attitude of dwellers towards agencies		• No (eviction) Yes (slum upgrading) • Yes (cooperative → more facilities)	• Yes (Alcohol ban) • Yes, reduce violence	• Yes • Yes
Whether organized community		• Yes, reduce conflicts • Self-organized community makes police patrolling unnecessary	Yes, reduce violence	Yes
Control/covariate variables (Demographic and socioeconomic features at Individual, household, slum levels)		No gender difference	Females perceived that more violent solutions existed	More women than men feel females are safe

Conclusions

❖ Perceived infrastructure insufficiency, especially hard infrastructure, rather than the informality of built environment, is the major reason for neighborhood conflicts and violence. In particular, the pressing needs for infrastructure at the household level is more influential than that at slum level. This finding implies formalizing slums through the small-scale provision to meet each household's pressing needs and continuous maintenance of hard infrastructure could reduce neighborhood conflicts and violence.

❖ In the organized community, voicing, and empowerment are the keys to neighborhood security. There are three benefits of slum's self-governance. First, social connections reinforced in organized slums makes dwellers more cooperative under multiple scenarios. Second, the facilities provided by NGOs and governments in organized slums are also more likely maintained well than in unorganized slums. Third, slums' self-governance can mitigate the shortage of police patrolling and reduces police harassment. In particular, women's empowerment in terms of enhancing their sense of community, education, and income resources or economic capacity are more important.

❖ 2016 Bihar's alcohol ban significantly reduced neighborhood and enhanced slum dwellers' perception of neighborhood security. However, this research suggests empowering slums through civic education and engagement is a more sustainable strategy in the long run in the context of slum upgrading.