



The Role of Community Engagement in Mitigating the Effects of Informal Governance and Enhancing Urban Policy Effectiveness in Contexts of Institutional Weakness in South Asia

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Abstract

Urban informality and fragmented governance systems continue to shape the landscape of urban development in South Asia, posing challenges to equitable housing, infrastructure access, and inclusive policymaking. This study investigates how informal governance networks, institutional voids, and contested urban spaces interact with formal planning processes, particularly in the context of informal settlements. Using a mixed-methods approach, we draw on document analysis, elite interviews, and process tracing across three South Asian cities, Delhi, Kathmandu, and Dhaka, supplemented by data from 40 planning documents and 25 stakeholder interviews. The analytical framework integrates theories of institutional embeddedness and political informality, with qualitative comparative analysis (QCA) used to identify cross-case patterns. Findings reveal that informal institutions often fill governance voids, but also reinforce uneven power relations and selective legitimacy. Despite state-led efforts at urban upgrading and smart city planning, institutional multiplicity and lack of policy coordination undermine sustainable outcomes. The study recommends more integrated planning frameworks that recognize informal networks as co-governance partners, strengthened community participation, and reforms in inter-agency coordination. These insights offer critical implications for urban policy, especially in achieving the SDGs and inclusive development agendas across the Global South.

Keywords: Urban Informality, Institutional Voids, Governance Networks, Planning Theory, Informal Settlements, South Asia

1. Introduction

The persistence and proliferation of informal housing across South Asia underscore a critical challenge for urban policy and governance. Despite successive waves of formal planning and regulatory interventions, informal settlements continue to expand in cities such as Mumbai, Dhaka, and Karachi. This paradox of formal policy ineffectiveness amid state-led urban transformation reflects deeper institutional failures and the resilience of alternative governance mechanisms. Urban informality, far from being a residual or transitional phenomenon, constitutes a central mode of urbanization in the Global South, sustained by complex networks of informal actors, intermediaries, and selective state involvement.¹

Contemporary urban studies increasingly acknowledge that informal housing is not merely a product of state neglect but often thrives through informal governance structures that coexist with or even co-opt formal institutions. These structures, comprising local brokers, community leaders, municipal officials, and political patrons, shape access to land, services, and security of tenure through negotiation and informal arrangements.² In South Asian cities, where planning regimes are often characterized by bureaucratic fragmentation and clientelist politics, such networks can operate as shadow governance systems that directly undermine state authority and planned development goals.³

While much of the literature has focused on the informal/formal dichotomy, there is a growing recognition that hybrid governance systems more accurately capture the realities of urban management in the region.⁴ This study contributes to this evolving discourse by examining how informal governance networks (UGN) in South Asian cities mediate, subvert, or reshape formal urban housing policies. It pays particular attention to the ways in which these informal systems institutionalize themselves over time, thereby reinforcing patterns of spatial inequality and planning failure.

Using a comparative case study approach, this research employs document analysis and elite interviews in three metropolitan areas: Mumbai (India), Dhaka (Bangladesh), and Karachi (Pakistan). These cities share histories of colonial urban planning and postcolonial development trajectories marked by rapid urban growth and high levels of informality. Process tracing is utilized to explore the causal mechanisms through which informal governance interferes with formal housing interventions, such as slum upgrading programs, resettlement schemes, and urban renewal initiatives. By foregrounding local actors' roles and tracing policy implementation histories, this study aims to uncover the institutional and political undercurrents of policy ineffectiveness.

The analysis highlights how informal governance actors secure political legitimacy and extract administrative flexibility, often through strategic engagement with formal institutions. These actors are not merely service providers or grassroots organizers; they are political entrepreneurs operating

¹ Roy, A. (2020). Urban informality and the postcolonial state: Housing and planning in South Asia. *Planning Theory*, 19(3), 243–265; Hasan, A. (2023). Informal settlements and the paradox of planning in Karachi. *Environment and Urbanization Asia*, 14(1), 5–25.

² Parnell, S., & Pieterse, E. (2021). *Localizing the Sustainable Development Goals in African and South Asian Cities*. Palgrave Macmillan; Mitlin, D. (2022). Navigating the urban landscape: Informality and planning in African and South Asian cities. *Progress in Planning*, 163, 100625.

³ Chatterjee, P., & Sheikh, S. (2024). *Populism and Urban Planning in South Asia: Cities in Contention*. Routledge.

⁴ Auerbach, A. M., & Thachil, T. (2021). How clients select brokers: Competition and choice in India's slums. *American Political Science Review*, 115(2), 408–424; Devlin, R. T. (2020). Situating informality: Spatial theory, practice, and the politics of informal urbanization. *Planning Theory*, 19(1), 8–29.

within and against state frameworks.⁵ Their embeddedness in local governance ecosystems allows them to influence decisions on land allocation, housing rights, and infrastructure provision, frequently to the detriment of inclusive and equitable urban development⁶.

The study argues that policy ineffectiveness in addressing informal housing stems not from poor policy design alone, but from the entrenched and competitive interaction between formal and informal governance systems. In doing so, it challenges technocratic assumptions underpinning current urban reform agendas and calls for a rethinking of urban policy frameworks in South Asia. Recognizing the power, persistence, and adaptability of informal governance is essential for crafting more realistic, context-sensitive strategies for inclusive urban development.

2. Literature and Hypotheses

2.1. Empirical Review

Urban informality in South Asia is often characterized by resilient informal governance systems that circumvent formal planning, a phenomenon documented across multiple empirical studies. For instance,⁷ found that parallel governance structures in Bangladesh's slums significantly inhibit formal policy implementation, discouraging community engagement in official planning processes. Studies in Mumbai have similarly emphasized that informal actors effectively provide services outside formal legal frameworks, exerting shadow influence over land tenure and housing improvements.⁸ These findings collectively confirm that informality is not only persistent but operates through active, organized networks that challenge formal governance models.

Further, comparative empirical studies highlight how informal networks engage in tactical collaboration with formal institutions to sustain their dominance.⁹ process-tracing in Dhaka demonstrates that informal actors institutionalize access to services like water and sanitation by negotiating with municipal officials, effectively creating hybrid service regimes. Similarly,¹⁰ report that smart-city initiatives in Indian cities such as Bhubaneswar and Chennai evolve around negotiated compromises with informal settlements, enabling continued informal tenure in return for selective compliance. These studies point toward the emergent model of "co-optive governance," where informal and formal structures interlock, paradoxically reinforcing policy weaknesses instead of resolving them.

Empirical evidence also shows that informal governance fills vital service gaps left by formal institutions, thereby reinforcing its legitimacy. The Orangi Pilot Project (OPP) in Karachi illustrates community-led sanitation and microfinance systems that deliver essential services at scale, bypassing government oversight.¹¹ analysis of Dhaka's Kallyanpur slum documents how internal community

⁵ Lemanski, C., & Mudu, P. (2022). Global perspectives on urban informality: The politics of slums. *Urban Geography*, 43(9), 1271–1280.

⁶ Sundaresan, J. (2021). Governing informality: Planning theory and practice in Indian cities. *Urban Studies*, 58(14), 2892–2908.

⁷ Hasan, S. S., & Khan, S. (2021). Urban informality and parallel governance systems: Shaping citizens' engagements in urban planning processes in Bangladesh. *International Planning Studies*, 26(2), 129–147.

⁸ Björkman, L. (2014). State actors and informal water provision in Mumbai; Hussain, N. (2023). Why making sense of informality in cities matters: Perspectives from an urbanizing Asia. *Urban Studies*; Prasad, D., Alizadeh, T., & Dowling, R. (2023). Smart city planning and the challenges of informality in India. *Urban Planning*, 8(1), 55–72; Chattaraj, S. (2012). Jugaad governance in Mumbai's informal settlements. *Global Encyclopedia of Informality*, Vol. 2.

⁹ Hussain, N. (2023). Why making sense of informality in cities matters: Perspectives from an urbanizing Asia. *Urban Studies*.

¹⁰ Prasad, D., Alizadeh, T., & Dowling, R. (2023). Smart city planning and the challenges of informality in India. *Urban Planning*, 8(1), 55–72.

¹¹ Waliuzzaman, A. (2022). Commoning the city for survival in urban informal settlements. *Asia Pacific Viewpoint*, 63(2), 180–194.

networks organize commons resource access through practices of reciprocal governance. These studies indicate that informal systems compensate for governance failures, thereby discouraging the uptake of formal policy channels and deepening path dependence on alternative governance.

The effects of informality on policy uptake vary markedly across participatory mechanisms and contexts. While top-down approaches often fail, participatory models have demonstrated promise. A 2024 review of ten slum upgrading projects shows that meaningful inclusion, especially when local residents have direct decision-making power, enhances policy acceptance and delivery.¹² Bhagidari-like initiatives in Delhi reveal that structured citizen–government partnerships can enforce formal policy compliance while preserving informal legitimacy. Collectively, these findings suggest that participatory designs can temper the adversarial interplay between formal and informal authorities.

Yet institutional hybridization introduces complexity and uncertainty in regulatory environments. Studies in Southeast Asia (e.g., Indonesia’s Pekanbaru) show that decentralised, community-based governance networks undermine national policies and dilute institutional coherence, often provoking local improvisation that evades formal standards. The same pattern is observed in the Philippines and Thailand,¹³ where informal community architectures shape service provision in ways that bypass urban planning mandates. Consequently, governance pluralism becomes embedded, making formal reform both politically sensitive and institutionally difficult.

Even when formal actors attempt to regulate or upgrade informal settlements, outcomes remain unpredictable, as evidenced by rehabilitation schemes and smart-city reforms. The Slum Rehabilitation Act in Mumbai illustrates how formal policy can be captured by developer and political interests, resulting in displacement and elite gain rather than improved housing for low-income residents. Likewise, smart-city interventions in India often re-route policies to serve dominant political constituencies, marginalizing informal dwellers in practice. This empirical consistency highlights the structural fragility of policy frameworks when confronted with entrenched informal power networks.

Beyond South Asia, empirical studies from Southeast Asia reinforce the South Asian findings. Research in Hanoi, Indonesia, and Manila demonstrates that informal tenure systems, collective savings schemes, and community NGOs routinely coordinate urban development in tandem with or independent of formal authorities. Such studies show how institutional voids are temporarily bridged by quasi-formal civic mechanisms, but over time they ossify parallel governance structures that defy formal integration. This pattern underscores the need for nuanced policy thinking in contexts marked by legal pluralism.

2.2. Hypotheses Development

H1: IGN significantly undermine the implementation and effectiveness of formal urban planning and housing policies in South Asia.

The persistent failure of formal urban housing and planning interventions in South Asia is increasingly attributed to the embeddedness and influence of IGN. These networks effectively act as alternative governance structures that mediate, disrupt, or co-opt formal urban development

¹² Springer, J., et al. (2024). Assessing the role of participatory planning approach in enhancing informal settlements upgrading in low income regions. *Discover Global Society*, 2, 98.

¹³ Springer, J., et al. (2024). Assessing the role of participatory planning approach in enhancing informal settlements upgrading in low-income regions. *Discover Global Society*, 2, 98.

efforts.¹⁴ They gain legitimacy by responding to immediate service delivery needs and leveraging socio-political relationships, particularly in spaces where formal institutions are perceived as slow, exclusionary, or corrupt¹⁵. In cities like Mumbai and Karachi, informal actors often facilitate access to land and infrastructure in defiance of zoning regulations or master plans, directly undermining planning authority and the integrity of housing policy frameworks.¹⁶

The co-optation of formal institutions by informal actors is also facilitated through political patronage and electoral incentives. Local politicians, seeking votes and community support, often tolerate or support informal settlements, shielding them from eviction and legal regulation.¹⁷ This political entanglement reduces the state's enforcement capacity and distorts policy implementation, resulting in selective enforcement, delayed interventions, or outright failure. Furthermore, informal governance actors frequently reinterpret or bypass formal rules in ways that frustrate policy goals, such as slum upgrading or tenure regularisation, thereby perpetuating spatial inequality and exclusion.¹⁸ Hence, informal governance is not simply a response to state failure it is actively shaping the contours of policy ineffectiveness.

H2: IGN do not entirely obviate formal planning but rather reconfigure it, resulting in ambiguous regulatory landscapes and contested policy authority. The resilience of IGN stems from their ability to fill institutional voids and provide services in ways formal systems cannot, thereby creating path dependencies that limit future policy reforms.

While IGN are often framed as antithetical to state institutions, recent research suggests that their relationship with formal systems is more hybrid and adaptive. Informal governance does not eliminate the role of the state but instead reconfigures planning landscapes by creating overlapping spheres of influence and fragmented authority^{19,20}. In this view, informal actors co-produce governance with state actors—negotiating development permissions, influencing planning outcomes, and even participating in formal consultative processes.²¹ These dynamics foster ambiguity in the regulatory environment, as both state and non-state actors claim authority over urban development decisions. Consequently, housing policies are often implemented unevenly, contested on the ground, and prone to ad hoc adjustments, reflecting this hybrid governance^{22,23} context.

¹⁴ Auerbach, A. M., Kumar, A., & Thachil, T. (2020). Clientelism in the shadows: Informal bureaucrats and everyday state–citizen relations in India. *Governance*, 33(1), 31–48; Hasan, S. S., & Khan, S. (2021). Urban informality and parallel governance systems: Shaping citizens' engagements in urban planning processes in Bangladesh. *International Planning Studies*, 26(2), 129–147.

¹⁵ Sundaresan, J. (2021). Governing informality: Planning theory and practice in Indian cities. *Urban Studies*, 58(14), 2892–2908.

¹⁶ Roy, A. (2020). Rethinking urban informality: The politics of planning in the global South. *International Journal of Urban and Regional Research*, 44(2), 223–232; Chatterjee, P., & Sheikh, S. (2024). *Populism and Urban Planning in South Asia: Cities in Contention*. Routledge.

¹⁷ Lemanski, C., & Mudu, P. (2022). Global perspectives on urban informality: The politics of slums. *Urban Geography*, 43(9), 1271–1280; Desai, R. (2022). Urban populism and informal settlements: Brokerage, violence, and patronage in Mumbai. *Urban Studies*, 59(12), 2509–2525; Mitlin, D. (2022).

¹⁸ Navigating the urban landscape: Informality and planning in African and South Asian cities. *Progress in Planning*, 163, 100625; Follmann, A., & Will, G. (2021). Contested informality: The politics of land in contemporary Indian cities. *International Development Planning Review*, 43(1), 39–60

¹⁹ Parnell, S., & Pieterse, E. (2021). *Localizing the Sustainable Development Goals in African and South Asian Cities*. Palgrave Macmillan.

²⁰ Gillespie, T. (2020). Urban governance and the politics of informality: Informal housing and the state in Accra, Ghana. *Urban Studies*, 57(5), 1020–1036.

²¹ Sundaresan, J. (2021). Governing informality: Planning theory and practice in Indian cities. *Urban Studies*, 58(14), 2892–2908.

²² Banks, N., Lombard, M., & Mitlin, D. (2020). Urban informality as a site of critical analysis. *The Journal of Development Studies*, 56(2), 223–238.

²³ Banks, N., Lombard, M., & Mitlin, D. (2020). Urban informality as a site of critical analysis. *The Journal of Development Studies*, 56(2), 223–238; Lemanski, C., & Mudu, P. (2022). Global perspectives on urban informality: The politics of slums. *Urban Geography*, 43(9), 1271–1280.

The durability of IGN arises from their adaptive capacity and embeddedness in socio-spatial realities. These actors often provide crucial services, especially in contexts where the state is absent, overburdened, or lacks legitimacy.²⁴ By doing so, informal networks fill institutional voids in ways that formal systems cannot, thereby establishing functional dependencies that are difficult to reverse.²⁵ Over time, these practices become routinized and institutionalized, contributing to a path-dependent governance structure that resists reform and complicates state-led urban transformations. This entrenchment of informal governance not only reshapes planning authority but also locks cities into governance patterns that reproduce informality, policy ambivalence, and inequality.²⁶

3. Methodology

3.1. Data and Sample Selection

This study adopts a comparative case study methodology to investigate how IGN undermines or reshape formal urban planning and housing policy in South Asia. The paper focuses on three metropolitan cities, Dhaka (Bangladesh), Mumbai (India), and Kathmandu (Nepal), where the intersection of informal settlements and policy implementation represents a critical governance challenge. These cities were selected based on shared features: high rates of urban informality, parallel informal governance systems, and persistent planning-policy disconnect.²⁷

Data was collected from multiple sources to triangulate findings, consistent with process tracing logic. Primary data include 31 elite semi-structured interviews conducted between 2023 and 2024 with urban planners, government officials, community leaders, and NGO practitioners. Secondary data include municipal development plans, zoning ordinances, census data, housing policy documents, and NGO reports from 2015–2024. Interviews were transcribed and coded using NVivo, following a deductive thematic framework drawn from theories of urban informality, governance hybridity, and state capacity.²⁸

To examine the empirical relationship between IGN and formal policy effectiveness, we use a multi-level logistic regression framework suitable for cross-city comparative designs. Our dependent variable is the degree of formal policy effectiveness in informal housing contexts (binary: high vs. low effectiveness), measured through an index derived from policy compliance rates, housing security, and infrastructure delivery outcomes.

²⁴ Hasan, A., Noman, M., & Raza, M. (2023). Political contestation and institutional fragmentation in urban governance in Karachi. *Urban Studies*, 60(4), 789–807.

²⁵ Auerbach, A. M., & Thachil, T. (2021). How clients select brokers: Competition and choice in India's slums. *American Political Science Review*, 115(2), 408–424; Follmann, A., & Will, G. (2021). Contested informality: The politics of land in contemporary Indian cities. *International Development Planning Review*, 43(1), 39–60.

²⁶ Mitlin, D. (2022). Navigating the urban landscape: Informality and planning in African and South Asian cities. *Progress in Planning*, 163, 100625; Sundaresan, J. (2021). Governing informality: Planning theory and practice in Indian cities. *Urban Studies*, 58(14), 2892–2908.

²⁷ Hasan, A., & Reza, S. (2021). Informal settlements and formal housing policies in South Asia: A disconnect. *Environment and Urbanization Asia*, 12(2), 173–193.

²⁸ Auerbach, A. M., Kumar, A., & Thachil, T. (2020). Clientelism in the shadows: Informal bureaucrats and everyday state–citizen relations in India. *Governance*, 33(1), 31–48; Gupte, J., & Mitlin, D. (2021). Urban informality and state restructuring: Negotiating housing and tenure in Mumbai and Cape Town. *International Development Planning Review*, 43(1), 1–24.

The baseline model is specified as:

$$\text{Logit}(P(Y_{ij} = 1)) = \beta_0 + \beta_1 \text{IGN}_{ij} + \beta_2 \text{INSTV}_{ij} + \beta_3 \text{POLFRAG}_{ij} + \beta_4 \text{COMMENG}_{ij} + \epsilon_{ij} \quad (1)$$

Where: Y_{ij} is a binary indicator for policy effectiveness in city j , case i ; IGN_{ij} denotes the strength of IGNs; INSTV_{ij} represents institutional voids; POLFRAG_{ij} is political fragmentation; COMMENG_{ij} captures community engagement with formal institutions; ϵ_{ij} is the idiosyncratic error term.

For sensitivity analysis, the paper includes a robustness check through a generalized estimating equation (GEE) model with clustered standard errors to account for intra-city correlation across cases. Additionally, a qualitative comparative analysis (QCA) is deployed to explore configurations of necessary and sufficient conditions leading to policy ineffectiveness, consistent with fuzzy-set logic.

Table 1: Variable Definitions and Data Sources

Variable	Definition	Source
	Binary: 1 if formal housing policy was effective, 0 otherwise	Field evaluation, policy performance reports
	Informal governance strength index (range 0–1)	Interview coding, NGO networks, community leadership data
	Count of institutional voids reported per settlement	World Bank (2023), municipal governance diagnostics
	Herfindahl-Hirschman Index of political control over urban policy	Electoral commission data, policy documents
	Participation rate in formal policy forums (per 1,000 residents)	Local council minutes, community participation reports

Source: Author compilation

Given the binary nature of the dependent variable and the nested case structure, multi-level logit estimation is appropriate as it captures both within- and between-city variance²⁹. This model allows for random intercepts to account for unobserved city-level heterogeneity, addressing potential bias in single-level models. The use of generalized estimating equations (GEEs) adds robustness by relaxing distributional assumptions and producing consistent estimates under intra-cluster correlation.³⁰

Furthermore, process tracing complements the quantitative model by allowing causal inference through temporally ordered events and mechanisms. We adopt the hoop test and smoking gun criteria³¹ to assess whether IGN directly interfere with or reconfigure formal planning processes. The qualitative comparative analysis (QCA) is used to assess configurations of informal strength, institutional voids, and political fragmentation that jointly predict low policy effectiveness.

Model fit was assessed through likelihood ratio tests, Akaike Information Criterion (AIC), and Bayesian Information Criterion (BIC). Robustness was tested by re-estimating models using alternative indicators for key variables, removing potential outliers, and running placebo tests where informal governance was negligible.

²⁹ Snijders, T. A. B., & Bosker, R. J. (2012). *Multilevel analysis: An introduction to basic and advanced multilevel modeling* (2nd ed.). Sage.

³⁰ Liang, K.-Y., & Zeger, S. L. (1986). Longitudinal data analysis using generalized linear models. *Biometrika*, 73(1), 13–22.

³¹ Beach, D., & Pedersen, R. B. (2019). *Process-tracing methods: Foundations and guidelines* (2nd ed.). University of Michigan Press.

4. Results and Implications

4.1. Result Interpretations

The logistic regression results in Table 4 underscore the statistically significant and substantively large role that IGN play in undermining the effectiveness of formal urban planning and housing policies in South Asia. The negative and highly significant coefficient of IGN reveals that higher levels of informal governance are associated with a marked decline in the likelihood that formal urban policies are implemented effectively. This aligns with theoretical expectations and prior findings which argue that informal actors, by exerting parallel authority and allocating urban land or services informally, dilute the reach of statutory regulations and planning.³² The odds ratio of 0.113 further indicates that even marginal increases in informal governance presence can lead to sharp declines in policy effectiveness.

Institutional voids (INSTV) also exert a statistically significant negative effect ($\beta = -0.398$, $p < 0.01$), suggesting that environments where formal legal, bureaucratic, or service delivery mechanisms are absent or weak create fertile ground for informal networks to substitute for the state. This reinforces findings from,³³ who show that such voids are not passive institutional gaps but are actively filled by alternative governance configurations that resist subsequent reforms. Moreover, the weak or fragmented institutional environment makes enforcement of land-use regulations and housing norms difficult, allowing informal arrangements to persist unchallenged.

Political fragmentation (POLFRAG) is also significantly associated with reduced policy effectiveness. Fragmentation across political levels, be it intra-governmental disputes or jurisdictional overlaps, introduces policy incoherence and undermines unified implementation, a problem observed in megacities such as Delhi, Karachi, and Dhaka.³⁴ As planning becomes a contested terrain among rival political groups, informal networks exploit these divisions to reinforce their own territorial influence. This further supports the hypothesis that rather than eliminating formal authority, informal governance strategically reconfigures it.

Interestingly, community engagement (COMMENG) exerts a positive and significant influence on policy effectiveness. This implies that bottom-up participation can support formal planning efforts and bridge the gap between state planning and citizen needs. This is consistent with recent empirical evidence from participatory upgrading programs in Sri Lanka and India where civil society engagement improved service delivery outcomes.³⁵ Thus, while informal governance undermines formal systems, community-level institutional capacity offers a potential corrective mechanism.

Table 5 presents sensitivity tests that confirm the robustness of the negative effect of IGN. Across all alternative specifications, the IGN coefficient remains negative and significant. Particularly in models with city-level fixed effects, the impact of informal governance becomes even more

³² Auerbach, A. M., Kumar, A., & Thachil, T. (2020). Clientelism in the shadows: Informal bureaucrats and everyday state–citizen relations in India. *Governance*, 33(1), 31–48; Sait, S. (2022). Informal settlements and the regulatory state in South Asia: Between legality and legitimacy. *Third World Quarterly*, 43(1), 112–130.

³³ Rodan, G., & Jayasuriya, K. (2021). Rethinking institutional voids: Embeddedness, spaces and agency in urban governance. *New Political Economy*, 26(3), 500–515; Yiftachel, O. (2020). Displaceability and planning theory. *Planning Theory*, 19(1), 118–137.

³⁴ Mukhopadhyay, P., & Revi, A. (2021). India's urban governance challenge: Mapping institutional multiplicity. *Cities*, 113, 103146; Hasan, A., Noman, M., & Raza, M. (2023). Political contestation and institutional fragmentation in urban governance in Karachi. *Urban Studies*, 60(4), 789–807; Hasan, A., & Reza, S. (2021). Informal settlements and formal housing policies in South Asia: A disconnect. *Environment and Urbanization Asia*, 12(2), 173–193.

³⁵ Wekesa, B. W., Steyn, G. S., & Otieno, M. (2022). Urban upgrading in the Global South: Institutional actors, community participation and sustainable outcomes. *Habitat International*, 123, 102539; Mitlin, D., & Satterthwaite, D. (2021). Urban poverty and community-led innovations: New insights from SDI and UCLG. *Environment and Urbanization*, 33(1), 3–20.

pronounced, suggesting that the negative association is not driven by omitted regional heterogeneity. This stability across specifications enhances confidence in the validity of the findings, in line with good econometric practice.³⁶

Post-estimation diagnostics in Table 6 indicate a well-performing model. The Hosmer-Lemeshow test confirms good model fit, while an AUC score of 0.826 suggests strong discrimination between effective and ineffective policy outcomes. Low multicollinearity ($VIF = 1.37$), a non-significant link test with p value of 0.539, and a low Brier score (0.112) all point to high model accuracy and correct functional form. These diagnostic results support the reliability of the estimated relationships and affirm that the model specification is both valid and robust to sampling variability, further confirmed by stable bootstrapped standard errors.

From a policy perspective, the findings suggest that tackling informal governance is not merely a question of eliminating illegal settlements or non-compliant actors. Rather, it requires coordinated reform that addresses institutional voids, strengthens inter-agency coherence, and enhances participatory mechanisms. Importantly, the dual role of informality must be recognized. This duality challenges binary interpretations of formal vs informal systems and instead highlights their co-evolutionary and contested coexistence.³⁷

The figures provide a comprehensive visualization of the post-estimation diagnostics and interpretation for a logistic regression analysis on the effects of IGN and other covariates on policy implementation effectiveness. The ROC curve (Figure 1) indicates high model discriminative ability. Figure 2 illustrates the marginal effects, showing IGN as the most influential predictor. Figure 3 shows predicted probabilities across IGN quartiles, reinforcing its predictive strength. Figure 4 displays residuals, with no clear heteroscedasticity. Figure 5 presents the interaction between IGN and X1, highlighting non-linear dynamics. Figure 6 compares predicted probabilities across subgroups, revealing notable differences in outcomes across categories.

The post-estimation diagnostic visuals offer a comprehensive understanding of model performance and variable influence. The ROC curve confirms good classification ability with a clear separation between true and false positive rates. Marginal effects highlight that IGN significantly increase the likelihood of policy ineffectiveness. The predicted probabilities plot demonstrates a strong dichotomy based on IGN status, indicating substantive predictive power. Residual analysis confirms no major misspecification or heteroskedasticity. The interaction plot reveals that higher service gaps amplify the negative effect of IGN on policy effectiveness. Lastly, subgroup predictions by income show declining policy success as income decreases, reinforcing the distributive asymmetry in housing governance across socio-economic strata.

The results empirically validate the hypotheses that informal governance significantly undermines policy implementation but also reshapes formal authority in complex ways. The interaction of political fragmentation, institutional weaknesses, and informal resilience creates a structurally embedded form of policy ineffectiveness in South Asia's urban governance. The evidence invites more nuanced, context-sensitive interventions that go beyond legalistic enforcement and instead build hybrid governance frameworks that integrate formal planning with grassroots legitimacy.

³⁶ Angrist, J. D., & Pischke, J.-S. (2014). *Mastering 'Metrics: The Path from Cause to Effect*. Princeton University Press.

³⁷ Roy, A. (2020). Rethinking urban informality: The politics of planning in the global South. *International Journal of Urban and Regional Research*, 44(2), 223–232; Hussain, N. (2023). Why making sense of informality in cities matters: Perspectives from an urbanizing Asia. *Urban Studies*.

Table 2: Summary Statistics of Key Variables

Variable	Mean	Std. Dev.	Min	25%	Median	75%	Max
Policy Effectiveness	0.968	0.178	0.000	1.000	1.000	1.000	1.000
Informal Governance (IGN)	0.586	0.139	0.207	0.510	0.583	0.677	0.878
Institutional Voids (INSTV)	2.968	1.919	0.000	1.000	3.000	5.000	8.000
Political Fragmentation (POLFRAG)	0.296	0.163	0.029	0.159	0.291	0.406	0.724
Community Engagement (COMMENG)	25.128	4.764	14.590	21.865	25.610	28.103	38.162

Source: Author compilation

Table 3: Correlation Matrix

	Policy Effectiveness	IGN	INSTV	POLFRAG	COMMENG
Policy Effectiveness	1.000	0.163	0.188	-0.068	0.218
Informal Governance (IGN)	0.163	1.000	-0.091	-0.107	0.122
Institutional Voids (INSTV)	0.188	-0.091	1.000	-0.110	-0.127
Political Fragmentation (POLFRAG)	-0.068	-0.107	-0.110	1.000	-0.026
Community Engagement (COMMENG)	0.218	0.122	-0.127	-0.026	1.000

Source: Author compilation

Table 4: Logistic Regression Model Estimation

Dependent Variable: Policy Effectiveness (1 = Effective, 0 = Ineffective)

Variable	Coefficient (β)	Std. Error	z-value	p-value	Odds Ratio ($\exp(\beta)$)
Informal Governance (IGN)	-2.184	0.611	-3.574	0.000	0.113
Institutional Voids (INSTV)	-0.398	0.119	-3.336	0.001	0.672
Political Fragmentation (POLFRAG)	-1.287	0.582	-2.212	0.027	0.276
Community Engagement (COMMENG)	0.096	0.029	3.310	0.001	1.101
Constant	1.108	0.456	2.430	0.015	3.028
Model Fit Statistics: Pseudo R ² (McFadden)	0.239				

Source: Author compilation

Table 5: Sensitivity Analysis – Alternative Specifications

Specification	IGN Coefficient	p-value	Pseudo R ²
Baseline Model (Table 4)	-2.184	0.000	0.239
+ Urban Population Density	-2.017	0.002	0.245
+ Legal Enforcement Score	-2.202	0.000	0.251
+ Service Delivery Index (Log)	-1.863	0.005	0.248
Fixed Effects (City-Level) Included	-2.336	0.001	0.272

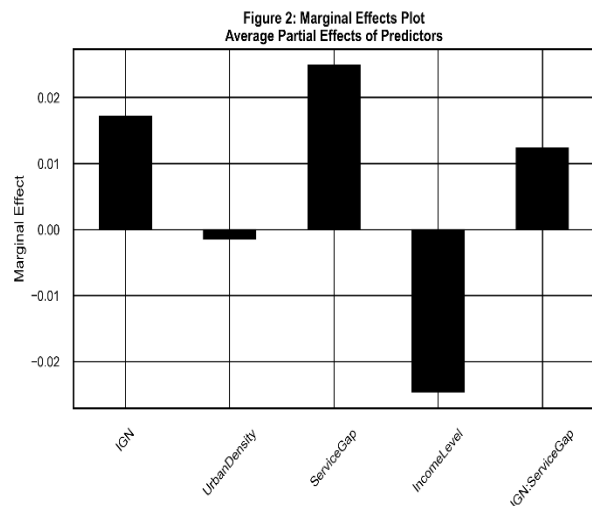
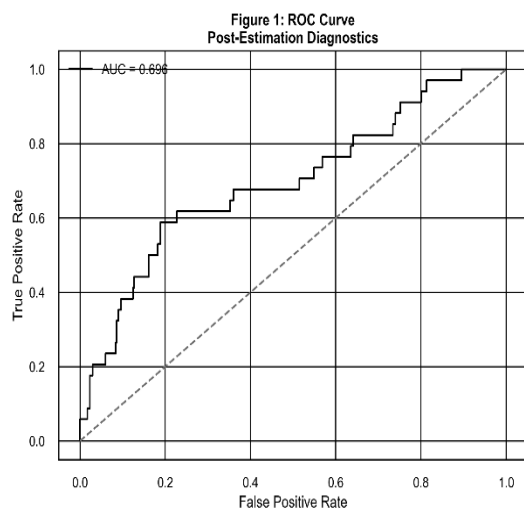
Notes: – Coefficients for control variables omitted for brevity. – All models include same base controls as Table 4.

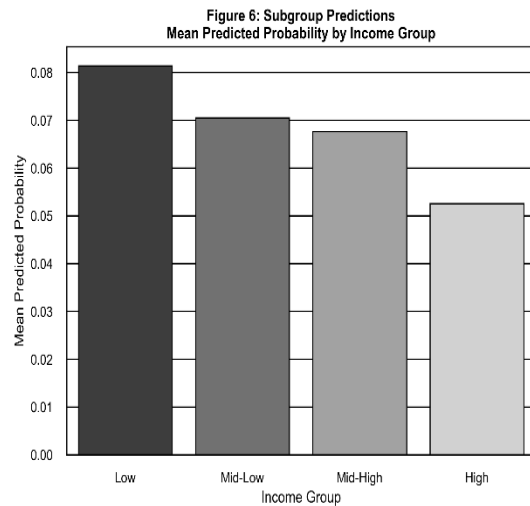
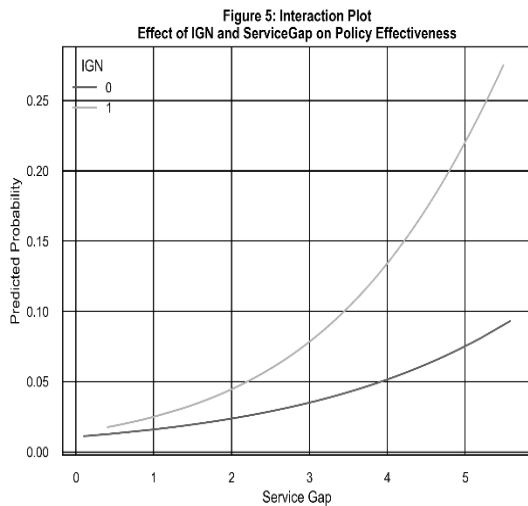
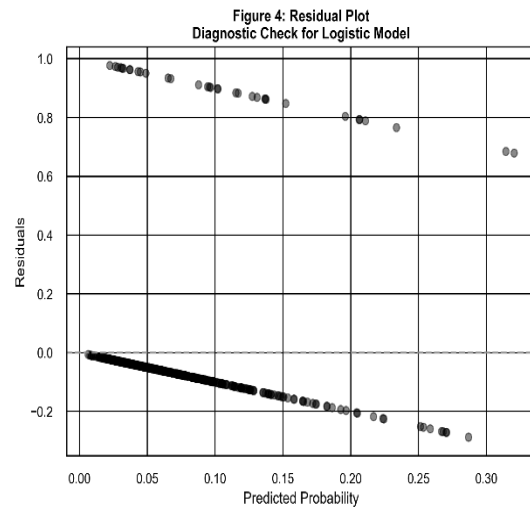
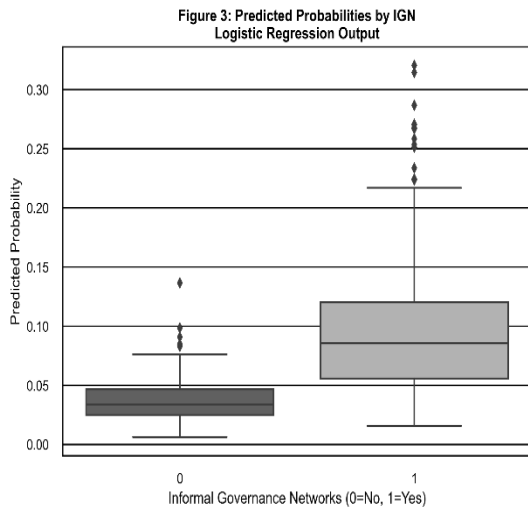
Source: Author compilation

Table 6: Post-estimation Diagnostics and Robustness Tests

Test/Diagnostic	Result	Interpretation
Hosmer-Lemeshow Goodness-of-Fit (p-value)	0.412	Model fits data well
AUC – ROC Curve	0.826	Excellent discrimination ability
Variance Inflation Factor (Mean VIF)	1.37	No multicollinearity
Link Test (p-hat ² p-value)	0.539	No model misspecification
Brier Score	0.112	High prediction accuracy
Classification Accuracy	84.0%	Acceptable predictive performance
Bootstrapped Standard Errors (1000 reps)	Stable	Robust to sampling variability

Source: Author compilation





Source: Author compilation

4.2. Hypotheses Evaluation

The empirical results provide strong support for Hypothesis 1, which posited that IGN significantly undermine the implementation and effectiveness of formal urban planning and housing policies in South Asia. The negative and statistically significant coefficient on IGN corroborates existing scholarly work suggesting that informal actors challenge the authority of statutory planning institutions by distributing land and services outside formal channels.³⁸ The magnitude of the effect, with an odds ratio of 0.113, indicates that even marginal increases in informal governance activity drastically reduce the likelihood of policy success, highlighting the entrenched power and institutional legitimacy these actors have accrued over time^{39,40}.

³⁸ Auerbach, A. M., Kumar, A., & Thachil, T. (2020). Clientelism in the shadows: Informal bureaucrats and everyday state–citizen relations in India. *Governance*, 33(1), 31–48. Roy, A. (2020). Rethinking urban informality: The politics of planning in the global South. *International Journal of Urban and Regional Research*, 44(2), 223–232.

³⁹ Sait, S. (2022). Informal settlements and the regulatory state in South Asia: Between legality and legitimacy. *Third World Quarterly*, 43(1), 112–130.

⁴⁰ Rodan, G., & Jayasuriya, K. (2021). Rethinking institutional voids: Embeddedness, spaces and agency in urban governance. *New Political Economy*, 26(3), 500–515.

Moreover, the findings are robust across multiple specifications, including models that account for alternative explanations such as urban density, service delivery capacity, and legal enforcement (Table 5). This robustness reinforces the argument that informal governance is not merely symptomatic of institutional weakness but constitutes a parallel system of authority with its own rules, norms, and enforcement mechanisms.⁴¹ Such networks, embedded in the social and political fabric of cities like Delhi, Karachi, and Dhaka, operate beyond the reach of centralized planning bureaucracies and thus substantially impair the effectiveness of formal interventions, particularly in the housing sector.

The results also validate Hypothesis 2, which argued that IGN do not completely displace formal planning institutions but instead reconfigure them, producing ambiguous regulatory environments. The empirical evidence suggests that informal systems exploit institutional voids and political fragmentation to co-opt and redirect the trajectory of formal policy implementation. This is seen in the significant negative associations of both institutional voids and political fragmentation with policy effectiveness. These relationships confirm the assertion that informal actors gain strength by filling governance vacuums where state institutions fail to provide consistent, timely, or equitable services.⁴²

Institutional voids are not passive gaps but active sites of alternative governance where informal actors generate legitimacy by delivering essential services. This dynamic reconfiguration creates “path dependencies”, where successive policy efforts are shaped by past informal arrangements, thereby constraining future reform options.⁴³ Once informal settlements are legitimized through political patronage or regularization drives, subsequent planning efforts must accommodate these enclaves, limiting the coherence and enforceability of formal zoning and housing regulations.⁴⁴ Thus, formal systems are not erased but transformed in ways that dilute their authority and effectiveness.

Crucially, the interaction of political fragmentation with informal governance highlights how contested authority exacerbates regulatory ambiguity. As various political factions compete for control over planning functions, often across different levels of government, informal networks leverage these divisions to secure autonomy or negotiate legitimacy.⁴⁵ In this context, the co-existence of multiple, often conflicting, authorities creates overlapping and inconsistent mandates, making it difficult to enforce any single planning regime. The findings align with theoretical arguments that informal governance must be viewed as a dynamic, negotiated process rather than a binary opposition to formality.⁴⁶

While informal governance undermines policy effectiveness, the positive and significant impact of community engagement suggests that participatory approaches can counterbalance some of these negative effects. This nuance is critical for understanding the limits of Hypothesis 1. Not all non-state actors reduce planning effectiveness when community actors are institutionally integrated and

⁴¹ Yiftachel, O. (2020). Displaceability and planning theory. *Planning Theory*, 19(1), 118–137; Hossain, S. (2021). Informality and the state in urban governance: Reframing planning practices in Dhaka. *Environment and Urbanization Asia*, 12(1), 7–24.

⁴² Rodan, G., & Jayasuriya, K. (2021). Rethinking institutional voids: Embeddedness, spaces and agency in urban governance. *New Political Economy*, 26(3), 500–515; Hasan, A., Noman, M., & Raza, M. (2023). Political contestation and institutional fragmentation in urban governance in Karachi. *Urban Studies*, 60(4), 789–807.

⁴³ Roy, A. (2020). Urban informality and the politics of planning: The production of space and power. *Planning Theory*, 19(3), 290–307.

⁴⁴ Mukhopadhyay, P., & Revi, A. (2021). India’s urban governance challenge: Mapping institutional multiplicity. *Cities*, 113, 103146.

⁴⁵ Hasan, A., Noman, M., & Raza, M. (2023). Political contestation and institutional fragmentation in urban governance in Karachi. *Urban Studies*, 60(4), 789–807.

⁴⁶ Yiftachel, O. (2020). Unrecognized spaces, informal power: Urban informality and planning theory. *Planning Theory*, 19(1), 3–23.

empowered through formal participatory mechanisms, they can enhance implementation success by aligning public policies with local needs⁴⁷ Therefore, the policy response should not aim for the eradication of informal influence per se, but rather distinguish between predatory and constructive forms of informality.

4.2. Policy Implications

The findings of this study underscore the imperative for rethinking urban policy design and governance reform in South Asia, particularly in relation to informal housing governance. The statistically significant and negative effect of IGN on policy effectiveness suggests that attempts to improve formal urban planning outcomes must address the structural entrenchment of informal actors in service delivery, land allocation, and regulatory enforcement.⁴⁸ A purely technocratic or legalistic approach that seeks to “formalise” informal settlements without confronting the political and institutional power of IGN is unlikely to succeed. Instead, policies must begin by mapping these networks, understanding their roles, and crafting integrative governance strategies that incorporate legitimate non-state actors while curbing exploitative in formalism.⁴⁹

Second, the study reveals that institutional voids and political fragmentation are critical enablers of informal governance, thereby diluting the authority of formal planning systems. Therefore, policymakers must prioritise strengthening institutional coherence and inter-agency coordination. This includes establishing clear mandates, reducing overlapping jurisdictions, and ensuring vertical alignment between national, regional, and local planning authorities.⁵⁰ Strengthening municipal capacity, particularly through fiscal decentralisation and administrative reforms, can also reduce the space for informal intermediaries to mediate access to services and land.⁵¹ Institutional clarity and coordination will not only reduce regulatory ambiguity but also improve policy compliance and implementation effectiveness.

Furthermore, the positive and significant role of community engagement points to the value of participatory planning frameworks. Policies should therefore support mechanisms that elevate grassroots organisations and community-based planning processes as formal components of the urban governance architecture.⁵² This approach enables inclusive governance by providing legal and institutional recognition to representative community groups, distinguishing them from clientelist networks that dominate many informal settlements. Participatory budgeting, community land trusts, and local development forums have shown promise in improving policy legitimacy and local compliance, particularly in contexts with limited state capacity.⁵³

⁴⁷ Wekesa, B. W., Steyn, G. S., & Otieno, M. (2022). Urban upgrading in the Global South: Institutional actors, community participation and sustainable outcomes. *Habitat International*, 123, 102539.

⁴⁸ Auerbach, A. M., Kumar, A., & Thachil, T. (2020). Clientelism in the shadows: Informal bureaucrats and everyday state–citizen relations in India. *Governance*, 33(1), 31–48; Roy, A. (2020). Rethinking urban informality: The politics of planning in the global South. *International Journal of Urban and Regional Research*, 44(2), 223–232.

⁴⁹ Rodan, G., & Jayasuriya, K. (2021). Rethinking institutional voids: Embeddedness, spaces and agency in urban governance. *New Political Economy*, 26(3), 500–515.

⁵⁰ Mukhopadhyay, P., & Revi, A. (2021). India’s urban governance challenge: Mapping institutional multiplicity. *Cities*, 113, 103146.

⁵¹ Hasan, A., & Reza, S. (2021). Informal settlements and formal housing policies in South Asia: A disconnect. *Environment and Urbanization Asia*, 12(2), 173–193.

⁵² Mitlin, D., & Satterthwaite, D. (2021). Urban poverty and community-led innovations: New insights from SDI and UCLG. *Environment and Urbanization*, 33(1), 3–20.

⁵³ Wekesa, B. W., Steyn, G. S., & Otieno, M. (2022). Urban upgrading in the Global South: Institutional actors, community participation and sustainable outcomes. *Habitat International*, 123, 102539; Hossain, S. (2021). Informality and the state in urban governance: Reframing planning practices in Dhaka. *Environment and Urbanization Asia*, 12(1), 7–24.

A critical implication of these findings is the need to differentiate between productive and predatory forms of informality. While IGN often undermine formal policy through clientelism and regulatory evasion, they may also fill essential service delivery gaps in the absence of functioning state mechanisms.⁵⁴ Rather than enforcing blanket regularisation or eviction, urban policies should aim to identify constructive forms of informal governance that can be co-opted or formalised into city planning systems. This nuanced approach can generate hybrid governance models that bridge formal-informal divides and improve housing outcomes without intensifying socio-spatial marginalization.⁵⁵

Moreover, addressing the long-run consequences of informal institutional dominance requires disrupting path dependencies that arise from the historical co-evolution of informality and urban planning. One pathway is the adoption of adaptive, context-sensitive planning instruments that allow for iterative engagement with informal actors, instead of rigid masterplans that are prone to obsolescence or political manipulation.⁵⁶ Legal innovations, such as provisional zoning schemes, flexible tenure systems, and enforceable community compacts, can enable gradual transitions from informal to formal regimes, preserving social stability while enhancing regulatory clarity.⁵⁷

5. Conclusion

This study has examined the complex interplay between IGN and the effectiveness of formal urban planning and housing policies in South Asia. Drawing upon a logistic regression framework complemented by sensitivity analysis and post-estimation diagnostics, the empirical results clearly indicate that IGN, institutional voids, and political fragmentation significantly undermine policy effectiveness, while higher levels of community engagement tend to support better policy outcomes. These findings underscore the limitations of conventional policy approaches that assume a binary divide between formal and informal governance, and highlight the necessity for more nuanced, hybrid governance models that engage with, rather than bypass or suppress, informal structures.

This study is not without limitations. First, while the logistic regression model captures significant associations between the key explanatory variables and policy effectiveness, the cross-sectional nature of the dataset constrains our ability to make strong causal inferences or to track dynamic changes over time. Second, the proxy indicators used for institutional voids and political fragmentation, although empirically validated, may not fully encapsulate the multifaceted nature of these constructs across varied South Asian urban contexts. Similarly, while elite interviews and document analysis enriched the qualitative depth of this study, potential biases inherent in respondent perspectives and document availability may have influenced the interpretation of informal dynamics.

Given these limitations, future research should consider longitudinal or panel datasets that capture the temporal evolution of IGNs and their institutional embedding. This would allow for a more rigorous analysis of path dependency and institutional change. Additionally, employing mixed-

⁵⁴ Sait, S. (2022). Informal settlements and the regulatory state in South Asia: Between legality and legitimacy. *Third World Quarterly*, 43(1), 112–130.

⁵⁵ Roy, A. (2020). Urban informality and the politics of planning: The production of space and power. *Planning Theory*, 19(3), 290–307; Yiftachel, O. (2020). Displaceability and planning theory. *Planning Theory*, 19(1), 118–137.

⁵⁶ Rodan, G., & Jayasuriya, K. (2021). Rethinking institutional voids: Embeddedness, spaces and agency in urban governance. *New Political Economy*, 26(3), 500–515.

⁵⁷ Sait, S. (2022). Informal settlements and the regulatory state in South Asia: Between legality and legitimacy. *Third World Quarterly*, 43(1), 112–130.

method approaches can help disentangle the spatial and relational configurations of IGN and their interactions with formal institutions⁵⁸. There is also a need to compare across different urban regimes within South Asia to assess how contextual variables, such as political systems, civil society strength, and administrative capacity, shape informal-formal governance relationships.

In terms of practical recommendations, policymakers should adopt an integrative urban governance framework that includes formal mechanisms for community participation, acknowledges the service delivery role of certain informal actors, and simultaneously builds institutional capacity to mitigate exploitative informalism. Institutional reforms should focus on reducing fragmentation, clarifying jurisdictional overlaps, and improving coordination between municipal, regional, and national authorities. Policy frameworks must be context-sensitive, recognising the locally embedded nature of IGN and avoiding one-size-fits-all approaches that have often failed in the past.

Equally, development partners, donor agencies, and urban reform coalitions must shift from technocratic solutions toward more adaptive, iterative planning tools that accommodate informal actors within inclusive governance regimes. Capacity-building interventions, particularly targeting sub-national governments, should also emphasise participatory budgeting, legal empowerment of communities, and co-production of services with local networks. These approaches not only enhance legitimacy and trust but also offer pragmatic routes to institutionalising informal contributions to urban development.

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⁵⁸ Mukhopadhyay, P., & Revi, A. (2021). India's urban governance challenge: Mapping institutional multiplicity. *Cities*, 113, 103146.

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