

Influence of Urbanization on Social Connections in Informal Settlements of Bharatpur Metropolitan City, Nepal

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Abstract

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Urbanization is rapidly reshaping social structures in developing countries, particularly in informal settlements where housing, infrastructure, and access to basic services are often inadequate. This study examines the impact of urbanization on social networks in informal settlements of Bharatpur Metropolitan City, Nepal, a fast-growing urban center with diverse residential conditions. Guided by Social Network Theory and Social Capital Theory, the research investigates whether urban growth, housing type, and access to services influence the quality, frequency, and strength of social interactions and support systems. Data were collected from 200 households using stratified random sampling, with one adult respondent from each household interviewed through structured face-to-face surveys. The data were analyzed using descriptive statistics, bivariate analysis, logistic regression, and factor analysis. The findings reveal that urbanization, housing type, and access to basic services do not have a statistically significant effect on social ties. Despite poor infrastructure and economic challenges, strong social relationships persist due to cultural values, community cooperation, and informal support systems. The study highlights the importance of strengthening community networks alongside physical infrastructure to promote inclusive, resilient, and socially cohesive urban development.

Keywords: urbanization, social connections, informal settlements, social capital, infrastructure



Introduction

Informal settlements in municipalities are an important aspect of modernization in the cities, especially in developing nations. Even though these settlements are extremely diverse and complex, they are usually characterized by poor housing and insufficient basic services, overcrowded housing and poor environmental conditions (Wahab, 2017; Abounaga et al., 2021). Different disciplines, countries, and history use different definitions of informal settlements, which adds ambiguity to the concept. However, the main features are widely accepted by scholars. UN-Habitat (2016), informal settlements are irregularly set up residential or unplanned communities whose housing units are not built according to legal standards in formal planning and building codes. In the same vein, Oguche et al. (2019) refers to them as processes of growth that occur beyond the legal environment, and in most cases, they are found on land, with unofficial ownership. Informal settlements in urban areas are very important in determining spatial and social interactions in most developing nations. In Nigeria, these settlements, as an appear as a response to the intensive urbanization and economic stress. The limited access to formal jobs forces the inhabitants to rely on the informal economic life that tends to stretch into common places, and the boundaries of personal and social spheres are unclear. The degree to which informal settlements coagulate and swell on their spatial site and their acculturation into larger urban systems is crucially dependent on their spatial location and their connection to the broader urban system. Government efforts to deal with their challenges are still insufficient even though they are widespread and complicated. It is therefore critical that urban planners, policymakers and development professionals involved in sustainable urban development should understand the origin, change, and socio-economic consequences of informal settlements.

Urbanization is the growing concentration of population in urban centers which is due to rural-urban migration as well as due to natural population increase. It involves conversion of land to infrastructure, residential, industrial and business thereby altering the physical, economic and social environments of cities (Jackline et al., 2023). On the one hand, urbanization enables the growth of the economy alongside the improvement of access to services; on the other hand, it creates challenges to the city system, which tends to promote inequality and reorganize the old social relations. The center of Chitwan District, Bharatpur Metropolitan City, is where urban growth has been observed in the last decades. Bharatpur is the third populated city in Nepal, housed by 369, 377 inhabitants in 2021 (Metropolitan Profile, 2021). It is an attraction point of migrants not only in Nepal but also in other



countries since it is a hub of business, education, and jobs. This inflow has not only prompted economic growth but has also enhanced the growth of informal settlements and increased socio-economic inequalities.

The process of urbanization has a significant social impact and influences the life of the community. It is indicated that urbanization often disintegrates the existing social networks, thus undermining social cohesion (Christopher et al., 2022). Migration, informal settlement growth and the increase in inequality in Bharatpur have reorganized community structures and interaction patterns. These dynamics highlight the role of critically evaluating the impact of urbanization on social life in informal settlements to which issues of integration, identity, and belonging to a collective are especially acute.

Conventionally, Nepalese culture prevailed, particularly in the rural community, and was based on strong family and social networks. These intimate associations lead to the development of shared responsibility and families and communities can offer economic and emotional assistance. These social constructs give importance to teamwork, respect for the elders, and common values which have traditionally supported Nepalese communities during the hard types of times. But with urbanization these networks have been disintegrated whether in a fast-growing city such as Kathmandu or Bharatpur. The more time residents spend on economic activities, the fewer chances to develop social relations they have, and the communal relations that previously defined Nepalese society are eroded (Jackline et al., 2023). The increase in individualism where individual interests and independence overrule the welfare of the community has also been traced to urbanization in Bharatpur. The move is informed by the urban life where people are more concerned about getting a job, education, and fulfilling the needs of the busy lifestyle and have little time to engage in the social activities. The Metropolitan Profile (2021) indicates that 78 percent of the urban population in Bharatpur consists of people below the age of 30 years. This is a young generation population that is mostly involved in work and study, and they are further affected in terms of sustaining any meaningful social relationship. As a result, the old methods of interaction like community meetings, family visits and cultural involvement have reduced.

The social connections are also affected by the physical structure of the city. Bharatpur, like most of the fast-urbanizing cities in Africa and Asia, experiences inadequate infrastructure delivery thus the development of the informal settlements with little access to roads, water and sanitation. Such decentralized regions frequently limit the social interaction



because of the overpopulation and deficiency of social areas (Ssewanyana and Kasirye, 2020). The process of urbanization has also changed the family structure that influences social ties directly. The system of extended family, which was core to the Nepalese form of social organization, is being supplanted by nuclear families, particularly in urban regions. The relatives who immigrate in search of improved opportunities tend to abandon their extended family, which strengthens family ties, lessening the number of family get-together. These pressures coupled with exorbitant living standards drive families to focus on their financial sustainability rather than on their social activities, which makes them live in isolation (Ngabirano, 2019).

There are mental health and well-being implications of such breakages to social relationships. Loneliness, anxiety and depression are linked to social isolation that is becoming common in urban environments. As an example, Nabunya et al. (2021) discovered that people who lived in Kampala and had poorer social connections were more susceptible to psychological distress. In Bharatpur, economic stresses, both alone and in combination with the lack of supportive community networks, also make people more vulnerable to mental health issues.

However, there are new types of social connections that have been brought about by urbanization. The multicultural population of Bharatpur, which includes migrants of various backgrounds promotes new interactions. City dwellers tend to establish relationships depending on profession, interests or livelihoods other than on family relations. As an illustration, networks are created by transport operators, market vendors, and professionals, which offer social and economic assistance. Nevertheless, these new networks are more likely to be narrow-based and usually do not provide the same level of emotional or psychological support as other relationships based in the family or community (Ssekamatte & Kiwanuka, 2020).

Notwithstanding all this, Bharatpur has a chance to enhance social relations in terms of city planning and policies. Inclusion of recreational facilities, community centers and parks are some of the ways of interaction and solidarity that could be enhanced. Inclusivity and belonging could also be achieved through policies that encourage affordable housing and alleviate social-economic inequality. Moreover, it is necessary to address the issue of social isolation and build valuable relationships within the city through the expansion of access to mental health services and social support programs. The rapid urbanization, which is taking



place in Nepal, has changed the spatial and social structure of cities like Bharatpur. The urban population grew in 1991 to more than 20 percent in 2021 (Nepal Bureau of Statistics, 2021). Over 60 per cent of the population resides in informal settlements with no basic infrastructure and services in Bharatpur, which leads to socio-economic stratification and undermines social connections (Nepal National Slum Upgrading Strategy, 2021). Unplanned urbanization has overloaded the traditional kinship and communal bonds. Similar situations have been pointed at in other contexts, including Kampala where the drop in community participation, the deterioration of trust, and increased individualism is noteworthy in the informal urban areas (Tumwesigye, 2021). The urban growth of Bharatpur has also outpaced the social infrastructure development such that vulnerable groups are exposed to risks and traditional values of collectivism and kinship are under threat. It is on this basis that evidence-based studies are urgently required to determine the impact of urbanization on social linkages as well as to in formulate policies on enhancing social capital in the informal settlements.

This study has its ground in Social Network Theory and Social Capital Theory, which would give a broad spectrum of the analysis of the impact of urbanization on social contact, trust, and involvement. It is based on the Social Network Theory that was initially proposed by Barnes (1954) and, later, elaborated on by Granovetter (1973). It promotes the value of interpersonal relationships both as strong ties (e.g., family, close friends) and weak ties (e.g., acquaintances) in influencing access to resources, opportunities, and social support. In the situation of urbanizing, the networks of kinships tend to fall apart and new and varied social ties develop. Analyzing some of its attributes including density, centrality, and connectivity, the Social Network Theory sheds light on the ways in which urbanization rearranges the family relations by creating and transforming the strengths of ties, and restructures community interaction patterns. The Theory of Social Capital developed by Bourdieu, Coleman, and Putnam is concerned with theory of reciprocity, trust, and networked collectives, leading to cooperation and reinforced cohesion. The social capital in informal settlements is overpowering with poor infrastructures and weak governance systems that either make communities fragile or resilient with trust and collective response. This view highlights the compensatory aspect of the informal networks as well as the weaknesses faced when trust and participation are impaired. Combined, these frameworks provide complementary knowledge. The Social Network Theory identifies structural transformation of interactions in the process of urbanization, and the Social Capital Theory outlines the qualitative aspects of trust, reciprocity and cooperation. Their joint use will give a subtle



insight into the effects of urbanization, through the processes of informal settlements, on social cohesion, the family unit, and community flexibility in Bharatpur.

Thus, this study aims to examine the impact of urbanization on social networks in informal settlements of Bharatpur Metropolitan City. Accordingly, to examine how informal settlements impact on the trust and engagement of the community.

Method

The research was carried out in Bharatpur, the administrative capital of the Chitwan District that has experienced spectacular urbanization over the past decades. Bharatpur, a town with approximately 369,377 people, also has varied neighborhoods that consist of both planned residential and informal and peri-urban settlements. The variety in this area offered Bharatpur a perfect venue to discuss the effect of urbanization on social relationships. The informal households used in the sampling frame were 67,657 in Bharatpur Metropolitan City (Metropolitan Office, 2016). The sample population was limited to the adult population of residents (at least 18 years old) with the residence of at least five years to provide sufficient experience of urban conditions. The estimate of the required sample size was obtained based on the Krejcie-Morgan formula of finite population:

$$n = \frac{\chi^2 NP(1 - P)}{d^2(N - 1) + \chi^2 P(1 - P)}$$

where $N=67,657$, $\chi^2=3.841$ (95% confidence, 1 df), $P=0.50$ and $d=0.05$. Substitution yielded $n \approx 382$. Due to the logistic and resource limitations, the final sample was limited to 200 households. The level of confidence that was retained with this reduction was 95% but the precision bound was narrowed down to around 6.95% instead of the previous 5%. Based on this, the attained sample size is a statistically valid albeit resource sensitive trade-off that will guarantee adequate inferential power to the aims of the study. The random sampling method was used to select households, and one adult respondent was selected randomly within a particular selected household (Anwar et al., 2022). This process made it more representative through diversity in educational level, income and urban life. Structured face-to-face interviews and information about five key informants (a community leader, a youth, a household head of women, a municipal officer, and a migrant worker) were used to gather primary data with the help of a questionnaire, which was based on the previous studies on urbanization and social capital. The tool consisted of four parts, which are demographic data,

urbanization variables, social ties, and attitudes to urban life (Nafiu et al., 2017). It was pre-tested on 10 residents to ensure that it was clear, culturally relevant, and reliable and finally revised and translated into Nepali. The data have been analyzed and coded through SPSS Version 25, and the descriptive statistics were used to describe demographics and cross-tabulations were made to determine the relationship between demographic factors and social connections (Sarah et al., 2024). To identify how urbanization has impacted social bonds, bivariate analyses (chi-square by Pearson) were conducted to determine relationships between urbanization measures and social relations (Olanrewaju, Abiodun, et al., 2021). Strong social connections were then entered into the logistic regression in Stata Version 16 with dependent variable being 1 (strong) and 0 (weak). The controlling factors were age, gender, education and income, factors that were identified by factor analysis in SPSS as underlying constructs which included social isolation, urban stress, and community engagement (Lu et al., 2013). Hosmer-Lemeshow test (Calibration) and Nagelkerke R2 (Goodness-of-fit) were employed as model diagnostics. The research complied with the principles of ethics. The study was conducted under ethical consent with a known institutional review board and informed consent had been taken of all participants. The anonymity and confidentiality were observed strictly, and the respondents were made to know that they will be allowed to withdraw at any point without being charged (Lanlege et al., 2013). Although studying possesses such methodological strengths, there are limitations to the study. The cross-sectional design limits the ability to make causal inferences, as well as the use of self-reported data can create social desirability bias. Moreover, the results are local to Bharatpur and might not be applicable to the context of other urban environments with varying socio-economic, cultural or infrastructural conditions.

Results and Discussion

Table 1

Influence of Urbanization on the Frequency and Quality of Social Interactions (N = 200)

| Variable | Coefficient | Standard Error | t-Value | P-Value | 95% Confidence Interval |
|--------------------|-------------|----------------|---------|---------|-------------------------|
| Urbanization Index | -0.1123 | 0.301 | -0.372 | .710 | [-0.705, 0.480] |
| Constant | 5.4821 | 0.982 | 5.581 | .000 | [3.544, 7.421] |



Table 1 shows the regression outcome that demonstrates the negative but not significant relationship between urbanization and the frequency and quality of social interactions between informal settlement residents of Bharatpur Metropolitan City ($\beta = -0.1123$, $p = 0.710$). This is an indication that the trend of urbanization does not significantly change the trends of social engagement in the study sample. The significant and positive coefficient ($\beta = 5.4821$, $p = 0.001$) indicates the overall high level of social interaction regardless of the pressure of urbanization. These results are consistent with studies that show that urbanization does not equally break social networks; formal patterns of communication may be lost, but informal patterns of assistance, neighborhood cohesion and job networks may hold social glue (Castells, 2012; Christopher et al., 2022).

Numerous contextual considerations can serve to describe the non-significant effect. The informal settlements in residents of Bharatpur not only have similar socio-economic vulnerabilities and livelihood opportunities but may also strengthen community bonds despite urbanization. As well, the urbanization of the city is multidimensional and includes infrastructural growth and population growth, which might not be adequate to disrupt localized and daily forms of socialization (Wahab, 2017; Abounaga et al., 2021). The findings indicate that, informal networks and coping strategies remain at the center stage in ensuring that social ties are upheld and that there is a need to conduct further studies on the mediating factors economic, cultural, and institutional that define the social cohesion in the fast-urbanizing settings in Nepal. A leader of one informal settlement in Bharatpur commented on the findings:

“Although the city is becoming extremely rapid, our social ties have not yet been entirely disintegrated. We continue to see one another in festivals, eat together in times of need and assist neighbors when one gets ill or problems arise. City living has rendered life challenging, things are costly, and everyone is so occupied with their work but in our society, these hardships have united us. We sense that nobody is going to help us unless we help ourselves. Perhaps that is why despite the developments in the city our social connections are still solid” (R. Gurung, personal communication, April 27, 2025).

The results show that urbanization has a small and non-significant effect on the occurrence rate and quality of socialization in informal settlements of Bharatpur. It is supported by insights of a community leader who states that even with the fast urbanization



and economic demands, the communities maintain strong social relationship by supporting each other, taking part in community activities, and by practices that are inherent in culture. All these findings point to the fact that informal networks and local coping mechanisms were strong and resilient enough to ensure social cohesion during urbanization.

Table 2

Relationship between Housing Types and the Strength of Social Connections (N = 200)

| Variable | Coefficient | Standard Error | t-Value | P-Value | 95% Confidence Interval |
|--------------|-------------|----------------|---------|---------|-------------------------|
| Housing Type | -0.0387 | 0.526 | -0.074 | .941 | [-1.081, 1.004] |
| Constant | 6.3299 | 0.611 | 10.364 | .000 | [5.119, 7.541] |

The regression analysis (Table 2) dependence between housing type and the strength of social ties between the residents of the informal settlements in Bharatpur Metropolitan City shows that the effect has a very small value, with a negative value and a statistically insignificant value (0.0387, $p = 0.941$). The confidence interval (β -1.081, 1.004) contains zero indicating that no differences in the type of housing have a significant impact on social cohesion among individuals in the sample under study. The constant value ($\beta = 6.3299$, $p = 0.001$) indicates that despite the nature of housing, the residents tend to have a rather high minimum level of social relationships.

This study shows that the physical housing features do not dominate as the key determinants of social interactions in informal settlements. According to Wahab (2017) and Aboulnaga et al. (2021), the housing conditions in informal settlements tend to be heterogeneous, but the presence of strong social networks can be explained by economic vulnerability and cultural behaviors and communities adapting to handle the crisis in a similar way. In the same vein, Della Porta and Tarrow (2005) believe that social cohesion in the marginalized urban communities exists not because of the formal structural variables, like housing type, but because of informal ways of interaction, such as neighbor cooperation, mutual aid and collective involvement. The housing differences on social interaction can be eased by the fact that in the context of Bharatpur, residents tend to use close-knit community networks to overcome issues concerning the livelihoods, security, and access to services. One of the 22-year-old young people living in an informal settlement of Bharatpur said:



“In our town (neighborhood), a lot of people do not care whether a person is living in a pakka house (concrete) or a temporary tin-shed. During the evenings we all sit and have carrom or cards and assist one another in the time of trouble. To us youths, friendship and unity matter more than the kind of house an individual possesses. Although our houses may be different, it does not matter because our problems in finding jobs, paying rent, and supporting our families are similar. It is due to this that we are connected, regardless of the type of house we are living in” (T. Shrestha, personal communication, April 27, 2025)

this was also highlighted by a government officer of the Urban Planning Division of Bharatpur Metropolitan City:

“On the side of the municipality, it has been noticed that the issue of housing differences in informal settlements does not pose a significant obstacle to social cohesion. Individuals can inhabit a wide range of buildings with some in concrete houses, others in temporary huts- yet in their everyday battle, particularly with finding jobs, water availability, and hygiene; they unite. Indeed, numerous efforts in these settlements at the community level like savings groups, women cooperatives, and youth clubs are operating in good conditions irrespective of the type of housing. We are observing that social relations are more deeply influenced by the feeling of mutual vulnerability and coping strategies than housing material quality”. (R. Shrestha, personal communication, April 27, 2025).

The results of the regression analysis, which were supported by the ideas of the key informants, demonstrate that the factors of housing type have little impact on social cohesion in the informal settlements of Bharatpur. Instead, communal solidarity is largely maintained due to identical socio-economic struggles, mutually sustaining support networks, and locally grounded group behaviors, which explains the fact that social solidarity lies more on the relational processes than the material aspect of a house.

Table 3

Impact of Access to Basic Services on Social Support Networks (N = 200)

| Variable | Coefficient | Standard Error | t-Value | P-Value | 95% Confidence Interval |
|-----------------------|-------------|----------------|---------|---------|-------------------------|
| Basic Services Access | -0.0126 | 0.090 | -0.140 | .889 | [-0.191, 0.166] |
| Constant | 6.1147 | 0.541 | 11.300 | .000 | [5.041, 7.189] |



Table 3 shows that the regression model that explored the effect of access to basic services on the social support networks among the inhabitants of informal settlements in the Bharatpur Metropolitan City shows that the effect is very small, negative, and statistically not significant ($\beta = -0.0126$, $p = 0.889$). The confidence interval (-1.95 to 1.66) includes zero, indicating that alterations in access to basic services are not among the significant factors that affect the strength of social support networks in the sample of the study. The constant value ($\beta = 6.1147$, $p < 0.001$) indicates that regardless of the access to services, respondents tend to have rather strong social support systems.

Such results suggest that the existence or the non-existence of formal infrastructure does not always lead to the resilience of social networks in informal settlements. According to Wahab (2017) and Aboulnaga et al. (2021), the population of such communities tends to devise adaptive techniques, which they use to cope with the lack of services through informal support mechanisms: cooperation in a neighborhood, kinship, and joint problem-solving. On the same note, Della Porta and Tarrow (2005) observe that social cohesion among the marginalized urban residents is often held by communal relationships and mutual support instead of being institutionalized through services delivery mechanisms. The account of shared socio-economic hardships, cultural practices, and localized coping strategies can help perpetuate the existence of social support networks in the context of Bharatpur, despite having restricted access to water, sanitation, electricity, or healthcare.

One of the women, who is in charge of a household in an informal settlement (38 years old), said:

“And in our basti electricity and water are not always to be dependent upon. We may sometimes wait for long queues to fill water, or we experience regular load-shedding. However, in such instances, neighbors unite. In case one has an added amount of water than he or she shares. In case my children are ill, I request my neighbor to take me to the hospital. We rely on one another even in the absence of good services. In our case, the assistance of neighbors is more powerful than the governmental one.” (S. Adhikari, personal communication, April 29, 2025)

Besides, one 27-year-old male migrant worker of eastern Nepal commented:

“They have arrived in Bharatpur 5 years ago and rent a small room over there. Its services are not good either- we have drainage problems most of the time and lack



my landlord family assists me and when it comes to taking meals and money, fellow workers in my village assist me. City living may not be conducive as we would receive good amenities, yet such social ties can ease life. Had we been dependent on services alone we should not have been able to live here' (T. Mahatto, personal communication, April 29, 2025).

Regression analysis and informant opinions show that access to basic services does not have any significant impact on social support networks in the informal settlements of Bharatpur. The residents are well socially bonded and ensure social cohesion by informal means like mutual aid, neighborhood support, and kinship networks, which replace the lack of infrastructural amenities. This highlights the fact that social support in the peripheral urban setting is more influenced by group coping mechanisms and a similarity of socio-economic conditions than by institutional service delivery.

The finding of this study facilitates community participation in light of the high rate of urbanization, policy makers ought to emphasize strategic urban planning to facilitate interactions, including community centers, recreational areas, roads, public parks, and mixed-use developments. Further empowerment of inclusive community programs such as neighborhood councils, cultural programs and social clubs can further improve participation and resilient networks both in formal and informal settlements. Furthermore, the service provision plans could use existing strong social relationships by collaboration methods, like the joint water facilities or joint energy programs, integrating urban development with the social associations to achieve sustainable and harmonious urban development.

Conclusion

This study reveals that urbanization in Bharatpur works marginally to the negative but statistically insignificant influence on social interaction frequency. The growth and development of population, infrastructural development, as well as change of lifestyle do not significantly affect the social interaction between residents. In the same vein, the type of housing (formal vs. informal) and availability of the basic services like water, electricity and transport did not have significant impacts on the strength of social networks. These observations present the idea that cultural values, family, and community cohesion has a more decisive impact on the maintenance of social cohesion than material or infrastructural circumstances. Although urbanization brings challenges, it has minimal direct influence on



social relationships in Bharatpur, and the relationship and cultural elements are still the foundations on which the community relationships are built.

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