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## A STUDY ON THE SOCIAL DETERMINANTS OF PSYCHOLOGICAL WELL-BEING OF RESIDENTS OF HIGH-RISE COMPLEXES

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### ABSTRACT

Rapid urbanization and increasing land scarcity have led to the widespread development of high-rise residential buildings. This shift toward vertical living has introduced new social dynamics that may influence residents' psychological well-being. The present study examines the relationship between social issues and psychological well-being among occupants of high-rise buildings, with a focus on the predictive role of key psychosocial factors in a Tier-II city, Bhopal. A correlational research design was employed, using stratified random sampling to select 400 residents of which 214 were from high-rise and 186 were from low-rise buildings in Bhopal. Regression analyses were conducted to determine the extent to which four components of social issues predict five dimensions of psychological well-being. The findings revealed that four social issues components significantly predicted psychological well-being. However in most cases limited community engagement was found to be the most potent predictor of psychological well being followed by the other three components of social issues. The models explained between 19% and 21% of the variance in psychological well-being, providing substantial support for rejecting the null hypothesis. The results highlight the crucial role of social dynamics in issues pertaining to psychological well being in vertical housing. The study emphasizes on the need for resident-centered planning, improved community-building mechanisms, and enhanced safety measures to promote healthier and more cohesive high-rise living environments.

**KEYWORDS:** High-rise buildings; Psychological well-being; Social issues; Neighbour relations; Community engagement; Urban housing; Security concerns; Sense of ownership; Environmental psychology.

## **INTRODUCTION**

To accommodate large number of people in urban cities vertical housing has increasingly emerged as a strategic solution. Over the past two decades, India's urban landscape has evolved dramatically, witnessing a marked shift from traditional low-rise, street-based neighbourhoods to multistoried apartment complexes, particularly in Tier-II cities such as Bhopal (Nagar, 2006; Carre, 2023). A large number of studies have found that high-density residential settings introduce increased anonymity and reduced social visibility, which can diminish opportunities for neighborly contact and weaken communal bonds (Nagar & Sharma, 2006; Gifford, 2007). Many architectural features and spatial conditions often elevate environmental stressors such as crowding, noise, loss of privacy, and limited access to open and green spaces, adversely impacting residents' psychological health (Nagar 2006; Evans, 2003; Zijlema et al., 2024). International reviews have concluded that poor design and social cohesion in high-rise settings increase risks of loneliness, distress, and alienation (Larcombe et al., 2019). Psychological research emphasizes models like Person–Environment Fit and Environmental Stress Theory, which articulate how misalignment between human needs (privacy, control, social connection) and spatial design contributes to elevated stress and lowered well-being (Evans, 2003; Nagar, 2006). Moreover, social capital and place attachment frameworks highlight that strong neighborhood ties and community engagement buffer negative psychological effects, fostering collective well-being (Larcombe et al., 2019). Empirical evidence on the social dynamics among residents of high-rise housing indicate increased social isolation and constraint opportunities for informal interaction if the residential design features include closed corridors, and insufficiently designed communal spaces (Nagar (2006). This lack of informal contact often contributes to loneliness, reduced neighbourly connection, and limited community formation, thereby weakening social capital, particularly in urban Indian contexts. Although collective facilities and organized activities can lessen isolation, residents' engagement remains low because of privacy concerns and limited feelings of ownership (Nagar & Sharma, 2006; Yang & Chen, 2023).

Within the Indian context, research has shown that older adults and individuals living alone experience heightened isolation in vertical housing due to inaccessible common areas and a

lack of inclusive community programming (Nagar, 2006). Initiatives such as cultural celebrations and shared maintenance projects have had partial success but often attract uneven participation (Mehta & Sheth, 2023; Banerjee & Kumar, 2022; Rao et al., 2024; Chakravarty & Singh, 2023; Sharma & Mitra, 2024).

Studies on cultural and ethnic diversity within high-rise environments present a complex picture. Several researchers emphasize that the concentration of heterogeneous populations in vertical housing can create opportunities for cultural exchange and mutual learning. Blasius and Friedrichs (2023) observed that multi-ethnic apartment complexes often fostered cross-cultural understanding, enriching residents' sense of community. Similarly, Morrison, Gupta, and Lee (2024) reported that diversity enhances urban vibrancy by bringing together varied cuisines, festivals, and traditions, strengthening the social dynamism of cities. In the Indian context, Menon and Raghavan (2024) described high-rise buildings as "miniature versions" of the nation's pluralism, where multiple faiths and languages coexist within a single structure.

Nevertheless, the benefits of diversity often coexist with tensions. Communication barriers, contrasting cultural expectations, and disagreements over the use of shared spaces can escalate into conflicts. Smith and Douglas (2022) found that in European high-rise dwellings, disputes over noise, cooking odours, and communal facilities were common among ethnically mixed residents. Similarly, Ali and Jha (2023) noted that caste and linguistic divisions in Indian housing communities frequently affected cooperation regarding cleanliness and maintenance contributions. Singh, Kapoor, and Bhatia (2022) further observed that festive events, while promoting social bonds, also triggered disputes when shared spaces such as terraces or halls required scheduling. These findings suggest that although cultural heterogeneity enriches social life, it can also fragment it if poorly managed. Effective governance mechanisms appear crucial: Sharma and Pillai (2023) demonstrated that clear community regulations and impartial mediation substantially reduced the intensity of disputes in multi-ethnic apartment complexes.

Indian studies echo these global findings, reporting that disputes concerning shared parking, cooking smells, religious observances, and personal boundaries often strain social relations (Chandrasekar & Kumar, 2023; Jain & Raj, 2024; Singh & Joshi, 2022). Practical strategies such as establishing community forums and enforcing hygiene standards have been shown to alleviate such tensions (Menon & Joseph, 2024; Reddy & Choudhury, 2023).

Concerns about security and surveillance also figure prominently in high-rise social research. Studies have revealed that inadequate monitoring and unauthorized access elevate residents' fear of crime, particularly in semi-public spaces such as lobbies and parking areas (Wilson & Ahmed, 2024; Patel & Desai, 2023). Both global and Indian evidence suggest that communication breakdowns between residents and management worsen feelings of insecurity, delay emergency responses, and reduce confidence in safety protocols (Morris et al., 2023; Chen & Lee, 2022; Sharma & Gupta, 2022; Reddy et al., 2024). The present study on multistoried housing complexes attempts to examine the relationship between psychological well-being and social issues among occupants living in high-rise buildings.

## **Methodology**

### **Sample and Design**

The study involved a stratified random sample in which participants were recruited from eight residential complexes; four high-rise and four low-rise, chosen to capture the city's various geographic areas. Using stratified random sampling, the study ensured balanced representation of men and women across building types and lengths of residence. In total, 400 residents took part, including 214 from high-rise structures and 186 from low-rise homes. Participants were between 25 and 60 years old, and individuals with cognitive impairments or serious psychiatric conditions that might hinder understanding were excluded. A correlational research design was adopted to explore predictive relationships between variables.

## **Measures**

A survey instrument comprising of three sections was designed. The first section comprised of items pertaining to demographic information while the second section was focused on assessment of social issues and the last section dealt with the psychological well-being scale. A brief description of the measures is given in the lines that follow.

**Demographic Characteristics:** The demographic profile indicates that the sample was both balanced and socially varied. The study relied on a purposive sample of 400 adult residents reflecting a broad mix of backgrounds. Of the participants, 45% were between 25 and 45 years old, 37.5% fell within the 45–65 age range, and 17.5% were aged 65 or older. In terms of education, 42.5% had completed schooling up to Class 12 or lower, whereas 57.5% possessed an undergraduate degree or higher. Marital status data showed that 75% of respondents were married, 20% were single, and 5% were separated, divorced, or widowed.

For family type, 62.5% lived in nuclear households, 25% in joint family systems, and 12.5% in single-parent families.

**Assessment of Social Issues:** The Social Issues Scale for Occupants Living in High-Rise Buildings, developed by the investigator, is a comprehensive self-report instrument designed to evaluate the diverse psychological challenges encountered by residents of vertical housing environments. This 32 item scale assessed social issues such as social isolation, community engagement, diversity conflicts, shared space disputes, neighbor relations, social support, security concerns, and communication efficacy. Responses were recorded on a 5-point Likert scale. The scale demonstrated strong reliability (Cronbach's alpha = 0.86).

**Assessment of Psychological Well-Being:** Psychological Well-Being Scale was developed by Sisodia and Choudhary (2012). The scale consists of 50 items distributed equally across five dimensions, life satisfaction, efficiency, sociability, mental health, and interpersonal relationships. Each statement is rated on a five-point Likert scale. Higher scores denote greater levels of psychological well-being, whereas lower scores indicate reduced emotional balance and social adjustment. The PWBS has exhibited strong psychometric properties, demonstrating a test-retest reliability of .87, internal consistency reliability of .90, and a validity coefficient of .94, confirming its suitability for research and assessment within the Indian population (Sisodia & Choudhary, 2012).

### Procedure

Data collection was carried out after obtaining permission from the management committees of the selected high-rise residential complexes. Surveys were administered in small groups under the supervision of the researcher. Each session began with an explanation of the study's purpose, emphasizing the objective of examining the relationship between psychological well-being and social issues among occupants living in high-rise buildings. Participants were assured of confidentiality, instructed to respond honestly, and informed that there were no right or wrong answers. Although no strict time limit was imposed, most participants completed the questionnaires within 20–25 minutes. Completed questionnaires were carefully screened for accuracy and completeness to ensure data quality. Statistical analyses were performed using SPSS (Version 26) and Microsoft Excel 2016. Descriptive statistics summarized demographic characteristics and central tendencies. Regression analyses were performed each dimension of psychological well-being, including life satisfaction, efficiency, sociability, mental health, and interpersonal relationships.

## Analysis and Interpretation

### Relationship between psychological well being and social issues

The objective is 'To find the relationship between psychological well being and social issues among occupants living in high-rise buildings'. Regression analysis was conducted to find if components of social issues acts as a predictor of the components of psychological well being among the occupants. The results are presented in table 1.

### Regression Analysis of Social Issues and Psychological Well-Being

The impact of components of social issues on the components of psychological well-being among occupants living in high-rise buildings was examined using regression analysis. The results are shown in table 1.

**Table 1: Regression Results for Psychological Well Being with Respect to Components of Social Issues.**

Components of Psychological Well Being	Life Satisfaction		Efficiency		Sociability		Mental Health		Interpersonal Relationship	
Source of Variation	$\beta$	$R^2$	$\beta$	$R^2$	$\beta$	$R^2$	$\beta$	$R^2$	$\beta$	$R^2$
Strained Neighbour Relations	-0.23	0.05	-0.21	0.05	-0.21	0.05	-0.23	0.06	-0.23	0.05
Limited Sense of Ownership or Responsibility or Belongingness	1.88	0.10	1.98	0.10	1.98	0.10	1.9	0.11	1.89	0.10
Security Concerns	-0.17	0.13	0.16	0.12	0.16	0.13	-0.17	0.13	-0.17	0.13
Limited Community Engagement	0.34	0.21	-0.29	0.19	-0.29	0.20	0.34	0.21	0.33	0.21

\*\* significant at 0.01 level of significance \* significant at 0.05 level of significance

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From table 1 it can be seen that strained neighbour relations show a negative  $\beta$  coefficient across all five well-being components ( $\beta = -0.21$  to  $-0.23$ ). This indicates that higher levels of interpersonal conflict, tension, or lack of harmony among neighbours significantly reduce residents' life satisfaction, efficiency, sociability, mental health, and interpersonal relationship quality. Although the amount of variance explained ( $R^2 \approx 0.05$ – $0.06$ ) is modest, it is consistent across all domains, highlighting the foundational role of neighbour harmony in vertical housing.

The predictor limited sense of ownership, responsibility, or belongingness shows strong positive  $\beta$  values for all well-being dimensions ( $\beta = 1.88\text{--}1.98$ ;  $R^2 \approx 0.10\text{--}0.11$ ). Among all predictors, it is the strongest and most consistent positive contributor. This suggests that when residents feel emotionally connected to their building, responsible for shared spaces, or psychologically invested in their living environment, their overall psychological well-being improves substantially. The positive influence is uniform across life satisfaction, efficiency, sociability, mental health, and interpersonal relationships.

Security concerns show a mixed pattern. For life satisfaction, mental health, and interpersonal relationships, the  $\beta$  values are negative ( $\beta = -0.17$ ), indicating that perceptions of inadequate safety lower residents' well-being. However, security concerns show a positive association with efficiency and sociability ( $\beta = 0.16$ ;  $R^2 \approx 0.12\text{--}0.13$ ), suggesting that heightened vigilance or safety awareness may motivate residents to be more organised, alert, or socially attentive. The contrasting patterns highlight that security perceptions affect different aspects of well-being in different ways.

Limited community engagement shows the largest  $R^2$  values across the table ( $R^2 = 0.19$ – $0.21$ ), indicating that community participation plays a substantial role in predicting psychological well-being. However, its effects are both positive and negative – Positive for life satisfaction, mental health, and interpersonal relationships ( $\beta = 0.33$ – $0.34$ ), suggesting that when residents experience less engagement, they compensate by seeking support or strengthening selective interpersonal bonds; Negative for efficiency and sociability ( $\beta = -0.29$ ), indicating that low engagement reduces opportunities for informal interaction and productive networking. This dual pattern suggests that community involvement influences emotional and social functioning differently depending on context and intensity.

The combined influence of all four social-issue components explains a substantial proportion of variance in each psychological well-being dimension. In the case of life satisfaction, all four predictors together explained 21% of the variance ( $R^2 = 0.21$ ). For Efficiency, the model accounted for 19% of the variance ( $R^2 = 0.19$ ); for Sociability, all predictors together explained 20% of the variance ( $R^2 = 0.20$ ); in the case of Mental Health, the predictors explained 21% of the variance ( $R^2 = 0.21$ ); and for Interpersonal Relationships, the model accounted for 21% of the variance ( $R^2 = 0.21$ ).

## **DISCUSSION**

This study aimed to explore the relationship between social issues and various dimensions of psychological well-being—namely life satisfaction, efficiency, sociability, mental health, and interpersonal relationships—among occupants of high-rise residential buildings. The regression analyses revealed that four key social-issue components—strained neighbour relations, sense of ownership/responsibility/belongingness, security concerns, and community engagement—were significant predictors across all five well-being dimensions. This provides strong evidence for rejecting the null hypothesis that there is no significant relationship between psychological well-being and social issues in high-rise housing contexts.

Strained neighbour relations consistently emerged as a negative predictor across all outcomes. This aligns with prior findings that in high-rise environments poor neighbourly contact, low social support and weakened communal ties are linked with diminished psychosocial outcomes (Barros et al., 2019; Kearns et al., 2012). For instance, Kearns, Whitley, Mason, & Bond (2012) found that in a deprived high-rise context the frequency of neighbour contact and perceived control over one's dwelling were poorer than in other housing types. These results underscore the importance of neighbour relations for psychological adjustment in dense vertical residential settings.

The positive influence of a stronger sense of ownership, responsibility or belongingness is also well supported by the literature on social capital and housing. Being invested in one's living environment—feeling responsible for it and connected to others—has been shown to buffer against the isolating effects of high-density living (Larcombe et al., 2019; Barros et al., 2019). For example, Larcombe, van Etten, Logan, Prescott & Horwitz (2019) emphasize that ownership and belonging may mediate the association between high-rise living and mental health outcomes, noting that where high-rise buildings foster such psychosocial resources the negative associations with well-being may be attenuated.

Security concerns were a significant negative predictor for life satisfaction, mental health and interpersonal relationships, though interestingly a positive predictor for efficiency and sociability ( $\beta \approx +0.16$ ). The general negative association supports the notion that perceived lack of control and heightened risk in high-rise housing can erode psychological well-being (Larcombe et al., 2019; Barros et al., 2019). The positive associations in two dimensions may reflect complex mechanisms—for instance, heightened vigilance may lead to more organised routines (thus efficiency) or more proactive social linking (thus sociability). Nonetheless, this pattern suggests the relationship between perceived safety and well-being is nuanced and possibly moderated by other factors such as age, tenure or building design.

Community engagement showed a mixed pattern: a positive effect on life satisfaction, mental health and interpersonal relationships, but a negative effect on efficiency and sociability. This may reflect trade-offs: while engagement builds relational and emotional well-being, it may consume resources (time, energy) that detract from self-rated productivity or broader sociability measures. This resonates with the broader review that points to the importance of communal spaces and social interaction in high-rise housing, but also highlights that benefits depend on design, management and resident time resources (Barros et al., 2019; Larcombe et al., 2019).

The results of the present study are consistent to the conclusions drawn by Barros et al. (2019) who conducted a systematic review and found that house type, floor level and high-rise intrinsic spaces (corridors, stairwells) were associated with social-well-being and mental health. Larcombe et al. (2019) also argue that the negative associations of high-rise living can be mitigated in more affluent contexts with better amenities and sense of ownership. Kearns et al. (2012) specifically in a deprived high-rise context found worse outcomes in neighbour contact and control. Another study in Hong Kong found that built-environment features' impact on mental health was weak or indirect, suggesting that psychosocial mechanisms may operate as mediators (Chan et al., 2022).

Contradictory studies highlight the complexity of this field. For instance, Verhaeghe, Tampubolon & Thomas (2016) found in Belgium that living in high-rise buildings was associated with poorer self-rated health initially, but the association disappeared after adjusting for socioeconomic and demographic variables—suggesting housing type per se is not always a determinant. Similarly, the systematic review by Barros et al. (2019) emphasizes conceptual and methodological heterogeneity across studies. These contradictory findings

underscore that the social-environmental quality and resident perceptions within a high-rise setting are more important than the mere building height. Thus, the present study's focus on specific social-issue components rather than height alone offers a valuable contribution.

The above findings may be due to the fact that high-rise living may include the vertical stacking of units creates reduced incidental interaction (limiting neighbour relations); shared semi-public spaces (corridors, lifts) in many high-rises may foster anonymity or fear (affecting security perceptions); a weaker sense of ownership may arise when dwellers feel they have little control over communal areas or building management; and community engagement may flourish only where building management, design and resident tenure support it. In addition, personal sense of belonging and participation may counteract feelings of isolation, thereby enhancing well-being.

Across all five dimensions of psychological well-being, four consistent predictors, strained neighbour relations, limited sense of ownership or responsibility or belongingness, security concerns, and limited community engagement—were found to be statistically significant. Strained neighbour relations consistently negatively influenced all dimensions of psychological well-being, highlighting the detrimental effects of poor social cohesion in high-rise living environments. Limited sense of ownership, responsibility, or belongingness was a positive predictor across all components, indicating that fostering a stronger sense of attachment and responsibility within the community enhances psychological well-being. Security concerns showed a dual effect, generally negative for life satisfaction, mental health, and interpersonal relationships, but positive for efficiency and sociability—suggesting that perceptions of security may influence proactive or vigilant behaviors differently across domains. Limited community engagement exhibited mixed results—positively predicting life satisfaction, mental health, and interpersonal relationships, yet negatively predicting efficiency and sociability—implying that community participation has complex implications depending on context and intensity. The proportion of variance explained by the models indicate a moderate yet meaningful predictive influence of social issues on psychological well-being. These results lead to the rejection of the null hypothesis, affirming that there exists a significant relationship between psychological well-being and social issues among occupants living in high-rise buildings.

## REFERENCES

1. Ali, S., & Jha, R. (2023). Caste and cooperation in shared urban housing. *Indian Journal of Urban Studies*, 18(2), 155–173.
2. Banerjee, P., & Kumar, N. (2022). Community participation and social isolation in metropolitan apartments. *Journal of Indian Housing Research*, 12(3), 44–59.
3. Barros, P., Fat, L. N., Garcia, L. M., Slovic, A. D., Thomopoulos, N., de Sá, T. H., & Mindell, J. S. (2019). Social consequences and mental health outcomes of living in high-rise residential buildings. *Cities*, 93, 263–272.
4. Blasius, J., & Friedrichs, J. (2023). Ethnic diversity and neighbourhood cohesion in vertical housing. *Urban Sociology Review*, 29(1), 65–82.
5. Carre, D. (2023). Indoor environmental quality and urban housing. *Building Research & Information*, 51(4), 456–472.\*
6. Chakravarty, R., & Singh, A. (2023). Cultural programming in Indian condominiums. *Journal of Urban Culture Studies*, 9(2), 118–134.
7. Chan, E. H. W., Qin, H., & Choy, L. H. T. (2022). The impacts of housing characteristics and built-environment features on mental health. *Cities*, 129, 103832.
8. Chandrasekar, R., & Kumar, V. (2023). Everyday disputes and neighbour relations in Indian apartments. *Housing and Society*, 45(1), 22–37.
9. Chen, L., & Lee, H. (2022). Communication failures and safety perception in residential complexes. *International Journal of Housing Safety*, 11(3), 56–70.
10. Evans, G. W. (2003). The built environment and mental health. *Journal of Urban Health*, 80(4), 536–555.
11. Gifford, R. (2007). The consequences of living in high-rise buildings. *Architectural Science Review*, 50(1), 2–17.
12. Jain, M., & Raj, S. (2024). Neighbour disputes and tolerance in Indian apartments. *Sociology of Housing*, 16(1), 72–88.
13. Kearns, A., Whitley, E., Mason, P., & Bond, L. (2012). “Living the high life”? Psychosocial outcomes for high-rise occupants. *Housing Studies*, 27(1), 97–126.
14. Kim, Y., Park, S., & Sung, J. (2023). Cultural diversity and communication barriers in apartments. *Asian Journal of Urban Studies*, 19(3), 301–319.
15. Larcombe, D.-L., van Etten, E., Logan, A., Prescott, S. L., & Horwitz, P. (2019). High-rise apartments and urban mental health. *Challenges*, 10(2), 34.
16. Menon, S., & Joseph, P. (2024). Community forums as tools for dispute resolution in Indian apartments. *Urban Governance Quarterly*, 7(2), 88–104.

17. Menon, S., & Raghavan, R. (2024). Diversity and coexistence in Indian high-rise housing. *Journal of Urban Sociology*, 19(2), 111–127.
18. Morris, D., Chan, E., & Lopez, A. (2023). Emergency response communication in high-rise housing. *Safety Science Review*, 17(1), 65–82.
19. Nagar, D. (2006). *Environmental Psychology*. New Delhi: Concept Publishing.
20. Nagar, D., & Sharma, R. (2006). Amenities, community spaces, and well-being in urban housing. *Indian Journal of Environmental Studies*, 12(3), 214–229.
21. Patel, V., & Desai, S. (2023). Fear of crime and safety perceptions in gated towers. *Indian Journal of Security Studies*, 11(3), 122–139.
22. Rao, V., Patil, S., & Kadam, R. (2024). Collective maintenance and participation inequality. *Indian Sociological Review*, 30(2), 215–233.
23. Reddy, K., & Choudhury, A. (2023). Hygiene enforcement and neighbourhood cooperation. *Environmental Health and Housing*, 21(1), 95–109.
24. Sharma, D., & Mitra, P. (2024). Cultural engagement and elderly inclusion. *Journal of Indian Social Studies*, 22(2), 83–100.
25. Sharma, A., & Gupta, N. (2022). Safety communication and trust in apartment communities. *Journal of Safety Psychology*, 16(4), 201–219.
26. Sharma, R., & Pillai, V. (2023). Conflict management in multicultural apartments. *International Journal of Housing and Mediation*, 18(3), 233–248.
27. Singh, R., Kapoor, V., & Bhatia, M. (2022). Festivals, rituals, and conflict. *Journal of Indian Urban Life*, 14(1), 39–57.
28. Singh, T., & Joshi, K. (2022). Everyday disputes and cooperation among apartment residents. *Journal of Sociology and Development*, 26(3), 119–134.
29. Sisodia, D. S., & Choudhary, P. (2012). *Manual for Psychological Well-Being Scale (PWBS)*. Agra: National Psychological Corporation.
30. Smith, J., & Douglas, H. (2022). Intercultural tension in high-rise living. *European Journal of Urban Research*, 32(2), 147–163.
31. Wilson, J., & Ahmed, S. (2024). Perceived safety and surveillance in multi-storey housing. *Journal of Security and Society*, 19(1), 73–91.
32. Yang, L., & Chen, W. (2023). Privacy, participation, and social isolation in high-density housing. *International Journal of Environmental Psychology*, 18(1), 33–48.
33. Zijlema, W. L., Cerin, E., Cirach, M., Bartoll, X., Borrell, C., Dadvand, P., & Nieuwenhuijsen, M. J. (2024). Built-environment characteristics and mental health. *Environment International*, 188, 110173.