



Perceived Environmental Quality as a Dimension of Spatial Comfort: Its Role in Residential Preferences Among Urban Youth in Jakarta's Public Rental Flats

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ABSTRAK

Penelitian ini menganalisis peran persepsi kualitas lingkungan—sebagai dimensi utama kenyamanan spasial—terhadap preferensi hunian generasi muda di rumah susun sewa (rusunawa) berbasis fasilitas publik di Jakarta. Keterbatasan lahan strategis di perkotaan dan rendahnya okupansi kelompok generasi muda di rusunawa menjadi urgensi studi pengembangan rusunawa di atas lahan fasilitas publik. Studi ini didorong oleh pergeseran tren di mana generasi muda memandang hunian tidak sekadar sebagai tempat tinggal, melainkan juga sebagai identitas sosial. Keterbatasan studi terdahulu terletak pada dominasi fokus pada atribut fisik-struktural dan ekonomi, sehingga belum mengeksplorasi bagaimana faktor sensori-psikososial membentuk keputusan hunian. Kebaruan penelitian ini terletak pada pengintegrasian Theory of Planned Behavior dan Person-Environment Fit Theory untuk menjelaskan fenomena rendahnya minat generasi muda untuk tinggal di rusunawa. Melalui metode pendekatan campuran, dilakukan survei terhadap 450 responden dan wawancara terhadap 10 responden terpilih untuk mengeksplorasi faktor psikososial yang mempengaruhi pilihan perumahan. Hasil analisis kuantitatif menunjukkan bahwa persepsi kenyamanan spasial-lingkungan yang dirasakan, meliputi kebersihan, kebisingan, privasi, bau, dan keamanan, secara signifikan memprediksi minat perumahan, melampaui faktor struktural seperti ukuran unit. Hasil regresi ($R^2 = 0.79$, $\beta = 0.889$, $p < .001$) menunjukkan dominasi persepsi faktor kualitas lingkungan, sementara analisis moderasi menunjukkan bahwa ukuran unit tidak memiliki efek mediasi yang signifikan. Temuan kualitatif memperkuat hasil ini, menyoroti kualitas lingkungan yang terdiri dari faktor kebisingan, terbatasnya privasi, bau tidak sedap, dan lingkungan yang kurang bersih yang sering ditemui di rumah susun berbasis fasilitas publik di Jakarta. Selain itu, tinggal di rusun dianggap sebagai hunian sementara, dan stigma sosial dan stigma lingkungan negatif yang masih melekat pada citra rusunawa menyebabkan beberapa generasi muda enggan tinggal di tempat tersebut. Temuan ini menunjukkan bahwa kebijakan perumahan bagi generasi muda perlu menekankan kenyamanan spasial-lingkungan. Partisipasi pengguna dalam perencanaan, serta integrasi fitur ramah generasi muda seperti ruang komunal dan desain fleksibel, penting untuk meningkatkan penerimaan dan keberlanjutan hunian.

Kata Kunci: generasi muda; persepsi kualitas lingkungan; preferensi hunian; rusunawa berbasis fasilitas publik di Jakarta.

ABSTRACT

*This study analyzes the role of perceived environmental quality—as a primary dimension of spatial comfort—in shaping the residential preferences of the younger generation in public-facility-based rental flats (*rusunawa*) in Jakarta. The scarcity of strategic urban land and low youth occupancy rates in rental flats underscore the urgency of studying *rusunawa* development built on public facility sites. This research is driven by a shifting trend where the younger generation views housing not merely as a place to live, but also as a form of social identity. A limitation of previous studies lies in their predominant focus on physical-structural and economic attributes, leaving unexplored how sensory-psychosocial factors shape housing decisions. The novelty of this study lies in integrating the Theory of Planned Behavior and Person-Environment Fit Theory to explain the low interest among youth in living in public rental flats. Using a mixed-methods approach, a survey of 450 respondents and interviews with 10 selected participants were conducted to explore the psychosocial*

*factors influencing housing choices. Quantitative analysis shows that perceived spatial-environmental comfort—comprising cleanliness, noise, privacy, odor, and safety—significantly predicts residential interest, surpassing structural factors such as unit size. Regression results ($R^2 = 0.79$, $\beta = 0.889$, $p < .001$) demonstrate the dominance of perceived environmental quality factors, while moderation analysis reveals that unit size has no significant mediating effect. Qualitative findings reinforce these results, highlighting environmental quality issues such as noise, limited privacy, unpleasant odors, and unclean surroundings commonly found in public-facility-based rental flats in Jakarta. Furthermore, living in rental flats is perceived as temporary housing, and the persistent social and negative environmental stigmas attached to the image of *rusunawa* make many young people reluctant to reside there. These findings suggest that housing policies for the younger generation need to emphasize spatial-environmental comfort. User participation in planning, alongside the integration of youth-friendly features such as communal spaces and flexible design, is essential for improving housing acceptance and long-term sustainability.*

Keywords: *perceived environmental quality, public-facility-based rental flats in Jakarta, urban youth, residential preference.*

PENDAHULUAN

Jakarta is currently the second most densely populated city in Southeast Asia after Manila, with over 11 million residents and a density of 14,464 people per square kilometer (Jakarta Population Office, 2024). As Indonesia's economic epicenter, the city attracts around 250,000 new migrants annually, dominated by young individuals aged 20 to 39, who now constitute approximately 45% of the population (World Bank, 2011; BPS, 2024). The surge in population has implications for the increase in affordable housing, especially for young urbanites who are currently facing a crisis of affordable homeownership.

In response to land scarcity and the urban housing crisis, the government has pursued a vertical housing strategy through the provision of public rental housing, which has been constructed on state-owned land since 2007 (Adianto & Gabe, 2023). As a form of follow-up to these problems, the Jakarta Government began to develop a transit-based public housing model and integrated it with public facilities; one example is the Pasar Rumput Flat, which combines residential functions with commercial areas in the form of traditional markets (The Jakarta Post, 2015). Dedicated to low- to middle-income people, this integrated model is expected to provide decent and strategic housing. However, many units in Pasar Rumput Flats remain persistently unoccupied, revealing a gap between housing provision and youth acceptance.

This reluctance to occupy public vertical housing highlights a broader shift in the determinants of housing choice among

the younger generation. Existing research demonstrates that youth housing preferences are no longer dictated solely by economic attributes or spatial proximity. On one hand, location-oriented research shows that while millennials in West Jakarta prefer housing close to activity centers, location alone does not guarantee residential attractiveness; decision-making is heavily driven by non-economic factors, including accessibility, infrastructure, security, and comfort (Qodriyah & Ariastita, 2021). On the other hand, studies focusing on environmental quality report that many young people, especially students, remain reluctant to reside in vertical apartments and public housing specifically due to negative perceptions of environmental comfort, such as noise factors (Wen et al., 2025).

These empirical findings are strongly supported by post-occupancy studies confirming that spatial comfort plays a pivotal role in housing satisfaction. Spatial comfort is multidimensional, highlighting the critical role of physical, sensory, and psychological factors—including privacy, cleanliness, and security—in shaping how residents experience their living space (Kleeman & Foster, n.d.; Sakina, 2025; Saleem & Alchalabi, 2025).

Synthesizing these studies reveals a critical **research gap**: while previous literature confirms that location alone is insufficient (Qodriyah & Ariastita, 2021) and that environmental stressors like noise and privacy deficits reduce housing satisfaction (Kleeman & Foster, n.d.; Sakina, 2025; Saleem & Alchalabi, 2025; Wen et al., 2025), existing research has focused predominantly on conventional high-rises or dormitories. Limited attention has been paid to how these



multidimensional environmental qualities operate within the complex setting of *public-facility-based rental flats*—where housing is directly combined with public facilities such as markets or transit hubs.

This study addresses the gap by examining how perceived environmental quality—covering cleanliness, noise, privacy, odor, and security—shapes residential preferences among urban youth in Jakarta. It also compares these perceptual dimensions to structural attributes, such as unit size and number of rooms. The findings are expected to contribute to more inclusive and user-oriented housing policies.

Based on the above background, this study addresses the following questions:

- (1) To what extent does perceived environmental quality influence residential preferences among urban youth in public-facility-based rental flats?
- (2) How do physical aspects, like unit size and the number of rooms, compare to environmental quality in influencing these preferences?
- (3) Does unit size moderate the relationship between perceived environmental quality and residential preference?

CONCEPTUAL FRAMEWORK

Spatial comfort is considered one of the important factors influencing residential satisfaction in dense urban environments. Spatial comfort itself consists of several aspects, including physical (e.g., unit size, layout, artificial environment), sensory (e.g., air quality, lighting, noise), and psychological aspects (e.g., privacy, emotional bonding), where this spatial comfort directly affects the well-being of residents (Buys & Miller, 2012; Mohit, Ibrahim, & Rashid, 2010; Mudra, 2025; B Sakina & Setiawan, 2023; Wang, Hua, & Wang, 2025; Wegener & Schmidt, 2024). The results of several studies conducted over the past three decades indicate a shift in the factors influencing housing satisfaction and youth expectations, particularly among younger generations. Younger generations prioritize non-economic attributes such as privacy and access to natural light. On the other hand, perceptions of cleanliness, sanitation, and environmental stigma act as mediators of housing satisfaction and also affect aspects of comfort, health, and social identity (Jiram et al., 2016; Max, 1999; Mohit et al., 2010b).

In Jakarta, this shift in preference has not been fully reflected in the design of public rental flats. Despite affordable housing prices, occupancy rates remain low. A study by (Mohit et al., 2010b) confirms that perceptions of environmental quality, including cleanliness, sanitation, and social stigma, have a significant influence on housing satisfaction. In addition, the need for privacy and psychological comfort is an important aspects that need to be accommodated in housing policies to be more inclusive and able to meet the expectations of younger generations (de Macedo, Ornstein, & Elali, 2022).

This study adopts a hybrid theoretical framework to explain how perceived spatial and environmental comfort influences housing preferences among urban youth in Jakarta's public-facility-based rental flats. To begin with, this study employs Ajzen's (1991) Theory of Planned Behavior (TPB) suggests that young people's intention to live in a particular housing type is shaped by their attitudes toward environmental attributes (e.g., cleanliness, noise), social norms, and perceived control over their living conditions. To enrich this model, the Person–Environment Fit Theory Zhang et al (2025) emphasizes the importance of alignment between residents' needs and the physical features of the housing and the neighborhood. According to the P-E Fit theory, residential satisfaction and behavioral intention are determined not only by individual or environmental attributes alone, but by the congruence between personal needs (e.g., privacy, safety, cleanliness) and environmental supplies (e.g., spatial quality, sanitation, noise control). When this fit is lacking—such as limited privacy, a hazardous environment, or overcrowding—residential interest and well-being decline.

The Place Attachment Theory (Scannell & Gifford, 2016) adds an emotional dimension, showing how feelings of safety, cleanliness, and identity foster stronger bonds with a place, increasing its desirability. Finally, Maslow's Hierarchy of Needs (McLeod, 2025) situates comfort as a basic psychological requirement. If safety and belongingness are unmet, youth may reject housing options regardless of affordability or location. Together, these perspectives conceptualize housing preference as a multidimensional process driven by cognitive evaluation, environmental fit, emotional attachment, and psychological well-being.

Figure 1 illustrates the conceptual framework guiding this research.

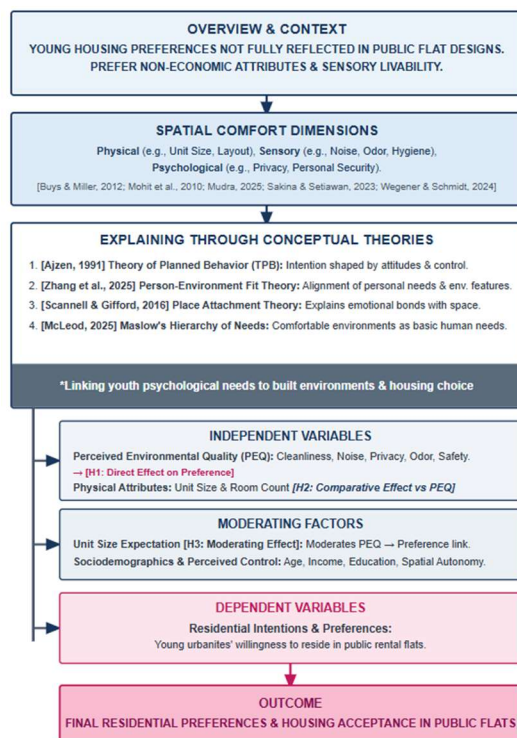


Figure 1. Conceptual Hybrid Theoretical Framework: Perceived Environmental Quality as part of Spatial Comfort in Shaping Housing Preference Among Urban Youth
Source: Constructed by the authors based on (Ajzen, 1991; Buys & Miller, 2012; Mcleod, 2025; Mohit et al., 2010b; Mudra, 2025; Sakina & Setiawan, 2023; Scannell & Gifford, 2010, 2016; Wang et al., 2025; Wegener & Schmidt, 2024; Zhang et al., 2025)

Based on the conceptual framework in Figure 1 above, the proposed hypotheses of the research are: (H0) there is no significant relationship between perceived environmental quality and residential preference among urban youth; (H1) perceived environmental quality significantly affects residential preference in public-facility-based flats; (H2) perceived environmental quality exerts a stronger influence than physical aspect or structural attributes characteristics such as unit size and number of rooms; and (H3) unit size moderates the relationship between perceived environmental quality and residential preference.

METHODOLOGY

1. Research Design & Rationale

This study employed a sequential explanatory mixed-methods design to examine the relationship between perceived environmental quality and residential preference among urban youth in Jakarta. The quantitative phase tested hypothesized direct, comparative, and moderating relationships, while the qualitative phase explored lived experiences and contextual nuances within public-facility-based rental flats. This sequential integration allowed statistical patterns from the survey to inform the semi-structured interview guidelines, ensuring robust triangulation and internal validity.

To align variable operationalization with the theoretical framework (TPB, Person–Environment Fit, Place Attachment, and Maslow's Hierarchy), Perceived Environmental Quality (PEQ) was conceptualized as a multidimensional construct comprising cleanliness, noise levels, privacy, odors, and safety. Items were measured on a 5-point Likert scale ranging from 1 (*Very Unimportant / Strongly Disagree*) to 5 (*Very Important / Strongly Agree*). Physical structural attributes (unit size and number of rooms) were measured as physical baseline predictors, while minimum required unit size was evaluated as a moderating variable.

The measurement instrument underwent rigorous testing prior to full administration. A pilot test ($n = 30$) was conducted to evaluate construct validity and internal consistency. Pearson's product-moment correlation coefficients for all PEQ indicators exceeded the critical value ($r > 0.361, p < 0.05$), confirming construct validity. Reliability analysis demonstrated high internal consistency across scale items, yielding a composite Cronbach's alpha of $\alpha = 0.892$ for the PEQ construct, well above the acceptable threshold of 0.70.

2. Sampling, Data Collection, and Data Analysis

The target population comprised non-homeowning urban youth aged 20–39 in Jakarta (estimated at $N = 6.29$ million individuals; BPS, 2024). Based on Slovin's formula with a 5% margin of error ($e = 0.05$), the minimum required sample size was calculated at $n = 400$. Data were collected via an online survey distributed between



March and April 2025 using stratified random sampling across age cohorts and employment status. Out of 587 submitted responses, screening eliminated 137 incomplete or invalid cases, leaving 450 valid responses. Applying demographic weighting based on regional census data (BPS, 2025) produced a final analytical sample of 387 respondents.

For the qualitative phase, 10 participants representing both current flat residents and non-residents were selected via purposive sampling (coded P01 to P10) to provide rich contextual narratives and explain the quantitative findings.

Quantitative analyses were conducted using JASP. Construct validity and internal consistency were confirmed before full survey administration. All questionnaire items demonstrated adequate construct validity ($r > 0.30$), and the composite PEQ scale showed high internal reliability with a Cronbach's alpha (α) exceeding the 0.80 threshold. Before hypothesis testing, classical regression assumptions were evaluated to ensure statistical validity:

- **Normality:** Shapiro-Wilk tests on regression residuals ($p > 0.05$) and visual inspection of Q-Q plots confirmed normal distribution.
- **Multicollinearity:** Variance Inflation Factor values ($VIF = 1.02 - 1.18$, well below the 5.0 threshold) and Tolerance values (> 0.80) indicated no multicollinearity between PEQ and structural predictors.
- **Heteroscedasticity:** The Breusch-Pagan test ($p = 0.214 > 0.05$) and plots of standardized residuals against predicted values confirmed homoscedasticity.
- **Independence of Residuals:** The Durbin-Watson statistic yielded $DW = 1.96$, confirming the absence of serial autocorrelation.

Hypothesis testing was executed through JASP's *Linear Regression* module. Direct and comparative models (H_1 and H_2) evaluated standardized regression coefficients (β), explanatory power (R^2), and significance levels (t -statistics). Moderation analysis (H_3) was specified within JASP's moderation interface by creating mean-centered interaction terms ($PEQ \times$ Unit Size). Qualitative interview transcripts were transcribed, anonymized, and coded using thematic framework analysis to triangulate with statistical outcomes.

RESULTS AND DISCUSSION

Overview of Respondent Backgrounds

Out of the 450 validated respondents, the age distribution reveals that 36% (163 individuals) fall within the 20–24 age group, followed by 27% (123 individuals) aged 25–29, 23% (104 individuals) between 30–34, and the remaining 13% (60 individuals) within the 35–39 age range. Gender composition is relatively balanced, with females constituting 55% (248 individuals) and males 45% (202 individuals). In terms of marital status, the majority—65% (294 individuals) — are single, 34% (151 individuals) are married, and a marginal 1% (5 individuals) are divorced. Regarding dependent children, approximately 72% (325 individuals) report having none, 16% (70 individuals) have one child, 9% (41 individuals) have two, and only 1% (3 individuals) report having more than three children. The absence of dependents may indicate a stronger emphasis on emotional comfort and place identity, as outlined in Place Attachment Theory (Scannell & Gifford, 2016).

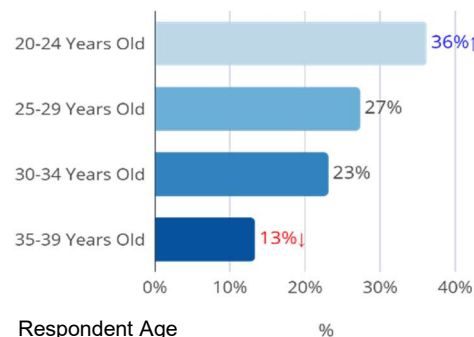


Figure 2. Age of the Respondents

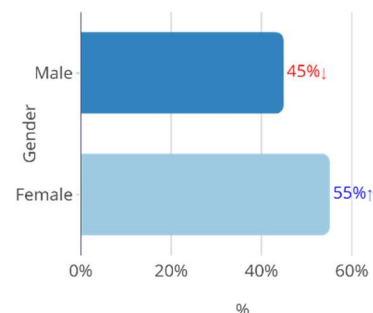


Figure 3. The Respondents Gender

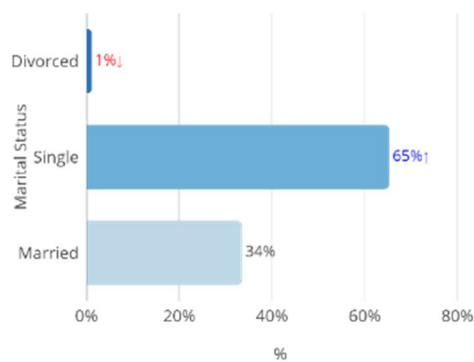


Figure 4. The Marital Status of the Respondents'

In terms of educational background, the majority of respondents belong to the highly educated cohort, with 63% (284 individuals) holding D4 or undergraduate degrees, followed by 10% (44 individuals) possessing master's degrees and one respondent holding a doctoral degree. Meanwhile, 8% (37 individuals) completed education at the D1–D3 level, and 19% (84 individuals) attained only primary or secondary education (elementary, junior, or senior high school). Higher education levels suggest increased sensitivity to environmental fit, as educated youth are more aware of the mismatch between their personal needs and the actual housing conditions (Zhang et al., 2025).

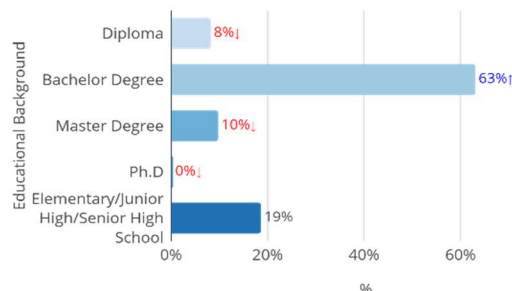


Figure 5. Level of Education of Respondents

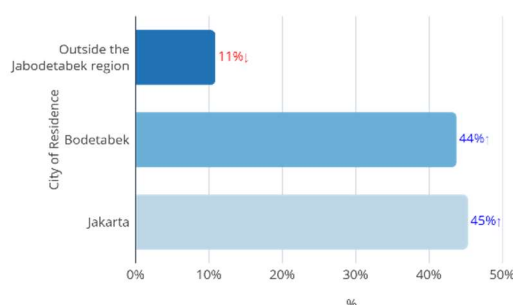
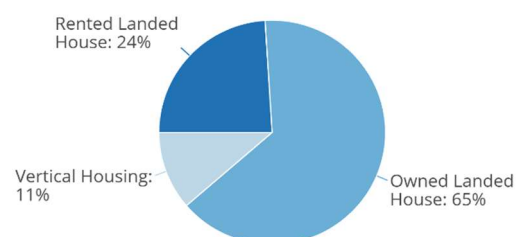


Figure 6. Level of Education and City of Residence of Respondents

Residential distribution reveals that 45% (204 individuals) reside within Jakarta's administrative boundaries, primarily concentrated in South and Central Jakarta, while 44% (197 individuals) live in the surrounding Bodetabek region, and the remaining 11% (49 individuals) are located outside the greater metropolitan area. Regarding current housing conditions, 65% (291 individuals) occupy privately owned landed houses, 24% (108 individuals) live in rental units or co-living boarding houses, and only 11% (51 individuals) reside in vertical dwellings such as apartments or flats.

In terms of duration of residence, 50% (224 individuals) have lived in their current homes for over five years, 26% (103 individuals) for less than three years, and 11% (51 individuals) for three to five years. These findings suggest a dominant preference for landed homeownership, particularly among educated youth who equate housing permanence with life stability.

However, an emerging subset increasingly embraces vertical and shared housing models that align with greater mobility, affordability, and access to urban amenities. The majority of respondents have lived in landed homes for over five years, indicating a strong exposure to low-rise residential environments. The findings supported a previous study; according to Alexander (2008), long-term residential familiarity contributes to place attachment through emotional and ecological identity, which can influence housing satisfaction and preference. More recently, Selfiardy, Susilo, & Utomo (2025) emphasize that the duration of residence strengthens emotional and cognitive bonds with place, reinforcing the role of familiarity in shaping attachment. These insights help explain the reluctance of urban youth to consider vertical public housing, particularly those built above public facilities.



Current Housing Types

Figure 7. Current Housing Type of Respondents



Figure 8. The Duration of Stay of Respondents

The occupational profile of respondents—dominated by private-sector employees (50%) and civil servants (29%)—reflects a segment of urban youth engaged in professional and service-based industries. These groups typically require high mobility and time efficiency, especially given that 68% of respondents work within Jakarta's administrative boundaries, concentrated in South and Central Jakarta. This aligns with the logic of transit-oriented development (TOD) strategies, which emphasize the integration of housing with public transport and urban amenities to support daily commuting and reduce time-cost burdens. Furthermore, the need for proximity to work and services among mobile urban workers supports the relevance of the Theory of Planned Behavior (Ajzen, 1991), where behavioral intention to reside in a particular housing type is shaped by perceived control and convenience. In this context, public-facility-based rental flats—such as markets or transit hubs—offer strategic value by providing immediate access to essential services, aligning with both lifestyle and logistical needs. These findings also resonate with studies on housing preference and urban labor dynamics, which suggest that younger, economically active populations tend to prioritize location efficiency and accessibility (Qodriyah & Ariastita, 2021).

Otherwise, the rest of the respondents are working as freelancers for 14% (61 individuals), reflecting a growing segment of flexible but income-vulnerable labor, whereas 7% (32 individuals) are self-employed entrepreneurs navigating the precarity and potential of informal enterprise. Monthly income profiles reveal a markedly stratified economic landscape: 12% report earnings near Rp3 million, 19% fall between Rp3–5 million, and 23% earn around Rp5–7 million.

The upper-middle segment comprises 34% earning Rp7–9 million, while a marginal 0.2% earn between Rp9–15 million, and 8% and 4% report monthly incomes of Rp15–25 million and above Rp25 million, respectively. This income composition underscores the heterogeneous nature of Jakarta's emergent urban middle class, which constitutes a pivotal demographic for location-sensitive rental housing policies, exhibiting heightened sensitivity to the triadic calculus of affordability, accessibility, and the symbolic capital of residential form.

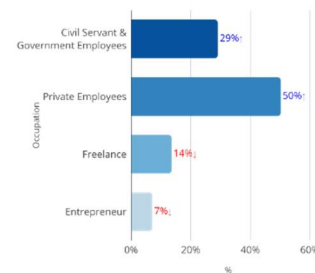


Figure 9. The respondents Occupation

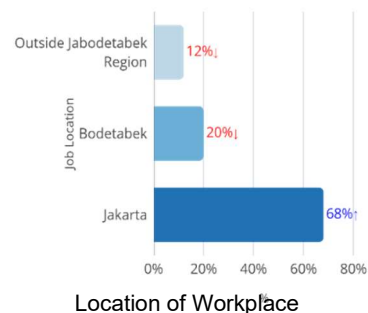


Figure 10. The location of the workplace of the respondents

Influence of Perceived Environmental Comfort

This section examines the impact of perceived environmental quality on residential preferences among urban youth in Jakarta, with a particular focus on flats constructed above public facilities (e.g., markets, terminals, or sports centers). Based on the survey data, environmental quality was operationalized through six key sub-variables: cleanliness, noise levels, privacy, unpleasant smell/odors, and safety. Descriptive responses revealed that over 83% of respondents rated cleanliness as "very important," followed by noise (75.33%), unpleasant smell/odors (67.78%), and safety (89.56%), and Overall Environmental Quality (98.22%) underscoring the centrality of sensory and affective factors in shaping residential desirability (see Table 1).

Table 1. Descriptive Statistics of Perceived Environmental Comfort Variables: Importance Ratings by Respondents

Perceived Environmental Comfort Variables	Very Important (5)	Percentage (%)
Cleanliness	374	83,11
Noise Levels	339	75,33
Privacy	179	39,78
Unpleasant Smell/Odors	305	67,78
Safety	403	89,56
Overall Environmental Quality	442	98,22

The perceived overall environmental quality variable (used in regression models, Table 1) is an aggregate construct representing key comfort dimensions, cleanliness, safety, noise levels, privacy, and unpleasant smell/odors as individually rated by respondents. This finding confirms the Theory of Planned Behavior (Ajzen, 1991), which states that an individual's tendencies are influenced by how they respond to environmental attributes, social norms, and perceived control over living conditions. In addition, Person-Environment Fit Theory (Zhang et al., 2025) emphasizes the importance of the fit between personal needs (such as privacy and security) and environmental conditions (such as cleanliness and noise control). When this fit is not met, interest in housing and psychological well-being tends to decrease.

To address Research Question 1 (RQ1), the regression analysis confirms the strong predictive power of perceived environmental comfort, with the model yielding an R^2 value of 0.791 and a standardized coefficient (β) of 0.889, statistically significant at $p < 0.001$. This indicates that nearly 80% of the variance in respondents' interest in residing in Public-Facility-Based Rental Flats can be explained by their perceptions of environmental comfort. The Pearson correlation coefficient between the two variables ($r = 0.889$, $p < .001$) further confirms this robust positive relationship. The regression and the Pearson correlation can be seen in Table 2.

Substantively, the high magnitude of R^2 (79.1%) and the high standardized coefficient ($\beta = 0.889$) indicate that for urban youth, environmental quality functions not as a secondary amenity, but as a foundational,

non-negotiable prerequisite. When environmental conditions are degraded by market noise, unpleasant odors, or privacy deficits, Person-Environment fit fails. As a result, negative attitudes dominate behavioral intention formation, causing young urbanites to reject housing options regardless of financial subsidies or strategic locational advantages.

Tables 2. Summary of Regression Results Addressing the Research Question...(1)

Research Question	Model / Predictor
RQ1. To what extent does perceived environmental influence residential preference?	Perceived Overall Environmental Quality
	Pearson Correlation (r)
RQ2. How do physical aspects compare with environmental quality?	Environmental Quality
	Minimum Required Unit Size
	Number of Rooms
RQ3. Does unit size moderate the relationship?	Environmental Quality × Unit Size

Tables 2. Summary of Regression Results Addressing the Research Question...(2)

β (Standard ized)	R^2	P-value	Main Finding
0.889	0.791	<0.001	Strong positive effect; environmental quality explains 79.1% of the variance in residential preference.
0.889	–	<0.001	Strong positive correlation between environmental quality and residential preference.
0.886	0.794	<0.001	Strongest predictor of residential preference.



β (Standard ized)	R^2	p- value	Main Finding
0.060		0.017	Small but significant positive effect.
-0.034		0.170	Not statistically significant.
-0.221	0.795	0.034	Significant negative moderation; the positive effect of environmental quality weakens as unit-size expectations increase.

The respondent argues that perceived environmental quality is as important as spatial comfort. This finding reinforces the argument that neighborhood comfort is a crucial component in the cognitive and affective evaluation process of housing, as described in Place Attachment Theory (Scannell & Gifford, 2016) and Maslow's Hierarchy of Needs (McLeod, 2025). When basic needs such as security and comfort are not met, the younger generation tends to reject housing options, even if they are affordable in terms of location and price. For instance, these findings support some previous studies that poor ventilation, hygiene issues, and environmental discomfort significantly reduce resident satisfaction and acceptance of high-density housing (Chan & Lee, 2009; Lai, Lee, & Yu, 2015; Mohit et al., 2010).

Crucially, when contrasted with broader Indonesian urban housing literature, these findings reveal a significant theoretical divergence. Traditional housing studies in Indonesia predominantly argue that residential choices among urban workers are dictated by financial affordability and physical proximity to activity centers or public transit (Adianto & Gabe, 2023; Qodriyah & Ariastita, 2021). However, the high predictive power of Perceived Environmental Quality ($\beta = 0.889, R^2 = 0.791, p < 0.001$) proves that for urban youth, strategic location alone cannot offset severe sensory and environmental discomfort. This empirical pattern supports recent scholarship showing that younger, educated demographics prioritize lifestyle alignment, acoustic tranquility, and psychological well-being over purely spatial

or locational convenience (Sakina, 2025; Wen et al., 2025).

These empirical findings provide a definitive answer to the study's first research question (RQ1): "To what extent does perceived environmental quality influence residential preferences among urban youth in public facility-based rental flats?" The high explanatory power of the model and the strong significance of the environmental comfort variable decisively reject Hypothesis 0 (H0) and support Hypothesis 1 (H1): perceived environmental quality significantly affects residential preference in public-facility-based flats. This result underscores that the influence of environmental quality extends beyond aesthetic concerns; it reflects perceived livability and personal security, which are especially salient for younger urban populations. These individuals increasingly view housing as an extension of lifestyle values and wellness aspirations, not just a functional space.

By establishing a solid statistical and theoretical link, this study effectively bridges the conceptual gap between technocratic supply-side planning and actual user demand. The findings carry critical implications for both housing policy and architectural design of public rental flats (*rusunawa*), particularly those integrated with public facilities, which can then be discussed further on the critical discussion page.

Comparison of Environmental vs. Structural Factors

The regression results indicate that perceived environmental quality exerts a significantly stronger influence on residential interest in public-facility-based rental flats than structural attributes such as unit size and number of rooms (see Table 2). Specifically, environmental comfort ($\beta = 0.886, p < 0.001$) demonstrates a much higher standardized coefficient than unit size. These findings affirm that the experiential quality of the environment, comprising cleanliness, safety, noise levels, and general comfort, plays a more decisive role in shaping youth preferences than physical layout alone. This result supports (H2) perceived environmental quality exerts a stronger influence than physical aspect or structural attributes characteristics such as unit size and number of rooms. This is consistent with previous studies, which state that housing satisfaction and residential intention could be affected by environmental attributes such as cleanliness, privacy, good air quality,

tranquility, accessibility, and safety (Jansen, 2020; Lai et al., 2015; M A Mohit et al., 2010; Wen et al., 2025).

Crucially, the statistical non-significance of room count ($p = 0.170$) provides a profound empirical finding that directly critiques traditional public housing policy in Indonesia. Standard government guidelines for public rental housing (rusunawa) conventionally default to rigid two-bedroom unit templates under the assumption that physical room partitioning inherently adds dwelling utility. However, because 65% of the study respondents are single and 72% have no dependent children, internal room partitioning offers no additional utility and may even restrict spatial flexibility. Interpreted through Person–Environment Fit Theory (Zhang et al., 2025), person–environment congruence for young renters is driven by sensory livability, acoustic tranquility, and personal autonomy rather than the physical count of enclosed rooms (Sakina, 2025). Structural adequacy without sensory comfort fails to create a viable living environment; physical partitioning cannot compensate for environmental neglect.

This empirical evidence aligns strongly with Maslow's Hierarchy of Needs (McLeod, 2025), which positions environmental safety and sensory comfort as foundational prerequisites to well-being. Without satisfying these basic environmental conditions, structural adequacy—such as having a larger unit or multiple rooms—fails to meaningfully increase housing desirability. Within the Theory of Planned Behavior framework (Ajzen, 1991), persistent environmental stressors act as severe constraints on perceived behavioral control, causing young urbanites to reject housing options regardless of physical space or price subsidies.

From a policy standpoint, these results critique the prevailing technocratic approach to public housing design in Jakarta, which often emphasizes quantitative compliance (e.g., room size standards) over qualitative lived experience. The significant role of perceived comfort signals the need for a more user-centered and experiential design paradigm, where planning emphasizes how people feel and function in their environments, not just what is built.

In summary, this study highlights a conceptual misalignment in current public rental housing policy: prioritizing measurable physical criteria while underestimating the perceptual and emotional dimensions of

space that drive actual residential decisions.

Moderating Role of Unit Size

As shown in Table 2, the regression analysis confirms a significant interaction effect between perceived environmental comfort and unit-size requirement on residential interest ($\beta = -0.021$, $p = 0.034$). While overall environmental quality strongly predicts preference for public housing, this relationship weakens as respondents' expectations for unit size increase. This suggests that larger space needs may slightly diminish the appeal of environmental comfort alone. The regression analysis result in Table 5 supports (H3) that unit size moderates the relationship between perceived environmental quality and residential preference.

Scientifically, a negative moderation coefficient indicates that as an individual's minimum unit size expectation increases, the positive impact of environmental quality on residential preference slightly dampens. Grounded in Person–Environment Fit Theory (Zhang et al., 2025), this pattern reveals a "spatial constraint threshold." For urban youth with compact or flexible spatial needs, superior environmental quality (e.g., acoustic tranquility, hygiene, safety) can effectively substitute for a smaller physical footprint. However, when an individual's spatial requirement crosses a higher baseline threshold, environmental comfort alone exhibits diminishing returns; clean air, quietness, and security can no longer fully compensate for a living unit perceived as functionally cramped.

This finding extends the Theory of Planned Behavior (Ajzen, 1991) by demonstrating how physical structural dimensions condition attitude formation and perceived behavioral control. Unit size functions as a physical buffer and baseline constraint: adequate physical space enhances a resident's sense of spatial autonomy and functional control, increasing their psychological tolerance toward minor environmental discomforts. Conversely, if a unit falls below functional spatial tolerance, high environmental quality cannot fully restore the intention to reside.

Furthermore, these results align with Maslow's Hierarchy of Needs (McLeod, 2025), illustrating a hierarchical ordering of spatial demands. When baseline environmental and sensory comfort needs are satisfied, higher-order spatial expectations (such as unit expansion and



layout flexibility) gain salience in shaping final residential preference.

From a policy and design standpoint, this empirical moderation challenges overly technocratic public housing strategies that prioritize rigid physical space standards while neglecting post-occupancy sensory experience. Rather than treating unit size and environmental quality as independent, additive features, housing providers must recognize that physical dimensions act as a structural boundary condition that conditions how environmental quality is evaluated by young urbanites.

Qualitative Perceptions from Respondents

To complement the quantitative findings, open-ended responses were analyzed thematically to explore deeper perceptual and emotional responses toward rental flats built above public facilities. Two guiding questions framed this qualitative inquiry: (1) What aspects of the environment would make you comfortable or uncomfortable in such housing? and (2) How do you perceive cleanliness, noise levels, privacy, unpleasant smell, and safety in these environments? According to your opinion, can these public-facility-based rental flats potentially become public rental housing models that are integrated with TOD in Jakarta? The respondents' feedback after being interviewed can be seen in Table 3.

Table 3. Thematic Analysis of Respondents' Perceptions on Flats Above Public Facilities

Theme	Illustrative Quote	Interpretation
Noise and Crowding	"I would feel uncomfortable living above a market, too noisy and crowded. Why would I live there?" "Uncomfortable (visually noisy and shabby)" "The environment is too crowded and open, which is not suitable for introverted"	Reflects sensory discomfort linked to proximity to busy markets or roads. Consistent with environmental quality studies (Lai et al., 2015; Wen et al., 2025; Zhang et al., 2025)

Theme	Illustrative Quote	Interpretation
Unpleasant Odors and Cleanliness	residents like me." "The odor is bad, the area looks shabby."	Indicates a negative place association due to hygiene concerns, weakening potential place attachment theory (Lai et al., 2015; M A Mohit et al., 2010; Scannell & Gifford, 2016)
Lack of Privacy and Security	"Doubtful of cleanliness and impact on health, Housing is not suitable to be combined with public facilities." "Privacy and security are compromised." "Safety concerns. There is concern for the children who live in the flats if they are left at work." "limited privacy area"	Highlights the importance of spatial enclosure and personal safety in establishing residential comfort studies (Mohit et al., 2010b; Wen et al., 2025)
Positive Potential with Good Design	"With good and complete facilities, it can be comfortable."	Implies conditional acceptance, contingent on perceived design quality studies (Chan & Lee, 2009)
Accessibility and Advantage	"It is attractive because it is close to public transportation."	Points to the functional value of location, though secondary to perceived

Theme	Illustrative Quote	Interpretation
		livability study (Qodriyah & Ariastita, 2021)
Design Suggestions	"Use design approaches for crowd mitigation and clear zoning. Separate private and public areas, the need for transition areas from public areas of public facilities to residential."	Advocates spatial layout improvements to reduce exposure and increase comfort. Suggests user-informed planning preferences for future research and design development.

The thematic findings reveal that emotional disconnection among young respondents primarily stems from perceived environmental discomfort, including noise, unpleasant odors, privacy, and a lack of security. These findings strengthen previous studies about the crucial factors of environmental quality in shaping residential preferences in vertical housing (Buys & Miller, 2012; Chan & Lee, 2009; de Macedo et al., 2022; Jiram et al., 2016; Lai et al., 2015; M A Mohit et al., 2010; Mudra, 2025; Wen et al., 2025). Rather than prioritizing proximity or affordability alone, respondents consistently emphasize the need for dignity, autonomy, and psychological comfort in their housing environments. Design elements such as vertical zoning, acoustic insulation, and enhanced visual privacy are frequently cited as essential to making public-facility-based rental flats more livable. These preferences reflect deeper emotional and cognitive connections to the living environment, which are central to the development of place attachment. As noted by Alexander (2008), a long-term residential familiarity fosters ecological and emotional identity, while Scannell & Gifford (2016) conceptualize place attachment as a multidimensional process involving person, place, and psychological processes. More recently, Selfiardy et al. (2025) emphasize that the duration of residence and perceived environmental comfort significantly contribute to emotional bonding and spatial attachment among urban residents.

These qualitative insights align closely with the quantitative results, particularly in supporting Hypothesis 1, which confirms that perceived environmental quality significantly predicts residential preference. This underscores that subjective perceptions often matter more than objective physical specifications in shaping housing desirability. To further contextualize the statistical findings presented in Table 7, open-ended responses were analyzed thematically to understand the emotional and perceptual undercurrents shaping young respondents' attitudes toward public-facility-based rental flats. These responses reveal how environmental quality, especially stemming from noise, odor, and safety concerns, forms strong behavioral intentions, aligning with the Theory of Planned Behavior (Zhang et al., 2025) which posits that attitudes, perceived behavioral control, and subjective norms shape intention to act. Several respondents cited environmental discomfort as the main deterrent to considering residence in such housing. As one respondent remarked:

"I would feel uncomfortable living above a market, too noisy and crowded." (R8, 26 y.o., female, private employee)

Another respondent voiced concern about hygiene and environmental quality:

"The smell and messiness of public facilities make the environment feel dirty and unsafe." (R14, 33 y.o., male, freelance worker)

This aligns closely with the perceived behavioral control dimension of the theory, where negative environmental stimuli diminish the perceived feasibility of choosing such housing. Similarly, concerns about privacy and intrusion were frequently mentioned:

"There is no sense of privacy in such environments; I'd always feel exposed." (R10, 29 y.o., female, civil servant)

Beyond environmental discomfort, there is a deeper social stigma attached to residing in public-facility-based rental flats, particularly markets or terminals. This sentiment aligns with findings from a Surabaya Public Rental Housing study, where residents reported feeling exposed due to inadequate spatial boundaries and poorly designed façades and ventilation, leading to a pervasive sense of lack of control over visual privacy (William, Hariyanto, & Budhiyanto, 2024).



Beyond these sensory discomforts, a deeper social stigma is attached to residing in Indonesian public rental housing (*rusunawa*), which are often viewed as temporary shelters associated with low-income status and marginal living. As documented in Malang, residents internalize *rusunawa* as transient housing and exhibit less pride or community engagement as a result of societal stigma (Rahmawati, 2018). This stigma echoes similar concerns expressed in global studies on public housing and spatial marginalization.

"People will always associate those flats with being dirty or lower class, even if they're new." (R21, 31 y.o., male, entrepreneur)

Despite these concerns, some respondents expressed conditional acceptance, particularly if environmental factors were properly addressed through design and policy:

"If it's designed well, clean, and quiet, I'd consider it, especially if it's close to transport." (R7, 24 y.o., female, private employee)

This illustrates that attitudes toward residential choice are not fixed, but contingent upon perceived environmental quality, a finding that resonates with the regression results showing environmental comfort as a stronger predictor than structural dimensions.

These qualitative insights deepen the quantitative interpretation by demonstrating how environmental perceptions shape behavioral intention, as per Ajzen's Theory of Planned Behavior (Ajzen, 1991). Furthermore, social stigma functions as a subjective norm, deterring even rationally beneficial choices like TOD-oriented rental flats. In short, these narratives reinforce the idea that public housing desirability is not just a matter of cost or size, but of dignity, perceived livability, and symbolic meaning. Without addressing the sensory and social discomforts, even technically "strategic" housing models will continue to face rejection among younger urban populations.

Critical Discussion: Why Youth Resist Public-Facility-Based Flats

Despite offering locational advantages, public-facility-based rental flats are often perceived by urban youth as uncomfortable and stigmatized spaces. The quantitative data confirm that perceived environmental comfort, rather than structural

features (e.g., unit size), is the most significant determinant of residential preference. This aligns with behavioral and environmental theories, which emphasize that perceived comfort—such as cleanliness, noise, unpleasant smell, privacy, and safety—plays a more decisive role in housing preference than physical attributes (Chan & Lee, 2009; de Macedo et al., 2022; Jiram et al., 2016; Lai et al., 2015; Mohit et al., 2010b; Scannell & Gifford, 2016; Syahrul Nizam Kamaruzzaman Atikah Razali, 2018; Wen et al., 2025; William et al., 2024). Emotional attachment and psychological well-being are key, especially for urban youth who view housing as part of their lifestyle, not just a place to live (Alexander, 2008; Scannell & Gifford, 2016; Selfiardy et al., 2025).

Qualitative findings provide further depth: concerns about noise, unpleasant odors, negative social stigma, lack of privacy, and safety issues dominate youth perceptions. As expressed by some respondents;

"I would feel uncomfortable living above a market, too noisy and crowded. Why would I live there?"

"People will always associate those flats with being dirty or lower class."

These affective impressions place attachment theory, suggesting that youth are unlikely to form positive spatial bonds in environments that feel hostile or degrading (Alexander, 2008; Scannell & Gifford, 2016; Selfiardy et al., 2025). From a behavioral standpoint, this reluctance aligns with Ajzen's (1991) Theory of Planned Behavior: if young residents perceive public flats as low-quality or stigmatized, their intention to reside there diminishes, regardless of affordability. This perception is worsened by the stigma of poverty historically associated with government flats, particularly those built atop markets or transit spaces. Thus, youth resistance is not irrational, but emerges from rational judgments about quality of life, social identity, and upward mobility. The flats are often seen not as stepping stones, but as symbols of stagnation.

Implications for Policy & Design

The empirical finding that Perceived Environmental Quality overwhelmingly governs housing preference ($\beta = 0.886, R^2 = 0.791, p < 0.001$) demands a policy shift in public rental housing (*rusunawa*). Housing authorities must update regulations (e.g., Perda/Pergub) to formally incorporate mandatory sensory-environmental metrics

alongside traditional physical criteria. Specifically, housing standards should enforce strict indoor noise caps (e.g., below 45 dBA during commercial market hours), mechanical air-filtration and odor-control requirements, and acoustic privacy boundaries between units and public corridors.

To mitigate the sensory noise, foul odors, and privacy deficits identified in flats built over public facilities (*fasum* like traditional markets), architectural design must mandate a 3D vertical separation strategy. This involves introducing buffer transition levels—such as resident parking, co-working lounges, or green podium terraces—between lower-level commercial activities and upper-level residential floors. Furthermore, complete circulation isolation must be enforced through dedicated ground-floor lobbies, elevators, and stairwells for residents, combined with acoustic floor insulation and engineered waste systems to safeguard quietness, security, and hygiene.

Addressing the statistical non-significance of room count ($\beta = -0.034, p = 0.170$) and the minor effect of unit size ($\beta = 0.060, p = 0.017$), design guidelines should abandon rigid, multi-room templates (e.g., standard two-bedroom Type 36 units) originally built for nuclear families. For predominantly single urban youth, policy should pivot toward compact, open-plan studio or one-bedroom layouts (24–30 m²) featuring movable partitions and modular furniture. Reallocating construction budgets away from internal brick wall partitions toward high-performance acoustic insulation, larger windows, and private balconies maximizes spatial quality over raw physical footprint.

Finally, to overcome the negative social stigma and perceived transience associated with public rental housing, developments should integrate youth-oriented communal amenities, such as shared creative hubs, rooftop gardens, and micro-retail spaces. Institutionalizing participatory co-design workshops and post-occupancy evaluations with young urbanites further fosters psychological ownership, transforming public flats into aspirational, dignified, and inclusive urban communities.

CONCLUSION

This study resolves a critical research gap at the intersection of public housing policy and youth residential preferences in

high-density metropolises. While technocratic housing strategies in Jakarta operate under the supply-side assumption that financial affordability and spatial proximity automatically drive occupancy, this research demonstrates that residential acceptance among urban youth is fundamentally governed by perceived environmental quality. Rather than evaluating housing strictly as physical shelter or economic assets, urban youth view dwelling desirability through the lens of sensory livability, personal autonomy, and psychological well-being.

Conceptually, this study enriches the theoretical understanding of spatial comfort and Person–Environment (P–E) Fit Theory in high-density, co-located vertical housing. By synthesizing the Theory of Planned Behavior and Place Attachment Theory, the findings establish a novel conceptual hierarchy: sensory-environmental quality—comprising cleanliness, acoustic tranquility, privacy, odor control, and personal safety—serves as a foundational, non-negotiable prerequisite of housing habitability. Without fulfilling these baseline sensory requirements, structural adequacy fails to generate residential preference. Furthermore, the statistical non-significance of room count alongside the negative moderating effect of unit size redefines P–E fit for mobile urban youth, proving that housing satisfaction is driven by open-plan layout flexibility and sensory protection rather than rigid internal physical compartmentalization.

The scientific novelty and practical value of this study lie in exposing the fundamental misalignment between supply-driven public housing planning and actual user demand. Moving beyond descriptive survey outputs, this research offers a paradigm shift for urban housing practice: reframing habitability from quantitative physical volume to user-centered, sensory-responsive design. For public rental flats integrated with high-impact public facilities, successful housing uptake requires mandatory sensory-environmental standards, 3D vertical buffer zoning, complete circulation isolation, and flexible spatial layouts. Without addressing sensory intrusion and associated social stigmas, co-located public housing strategies will continue to face rejection among younger demographics despite offering strategic urban locations.



Limitations and Future Research

This study has several limitations, including its geographic focus on Jakarta and the reliance on self-reported perceptions, which may introduce subjectivity or recall bias. The cross-sectional design also limits temporal insights into evolving comfort preferences. Future studies could explore intergenerational dynamics, include other Indonesian cities with varying density patterns, or adopt longitudinal or experimental designs to assess the causal influence of perceived environmental comfort variables.

Recommendation for Future Policy Implications

The findings demand a fundamental shift in public housing policy for urban youth—moving beyond physical volume metrics to formally institutionalize sensory-environmental standards (noise caps, ventilation engineering, and privacy limits) as mandatory criteria for habitability. For rental flats (rusunawa) integrated with public facility (fasum) sites, policy and architectural practice must mandate 3D vertical buffer zoning and complete circulation isolation to eliminate sensory intrusion from commercial operations. Furthermore, housing guidelines should abandon rigid multi-room templates in favor of compact, flexible open-plan layouts (\$24\text{m}^2\$) tailored to single professionals, reallocating construction budgets toward acoustic insulation and spatial quality over raw physical footprint. Finally, integrating youth-oriented communal amenities and institutionalizing participatory co-design workshops will effectively overcome social stigma, ensuring long-term housing acceptance and place attachment.

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INFORMED CONSENT

This study was conducted with the informed consent of all participants. Participants were informed of the study's purpose, procedures, potential risks and

benefits, and their right to withdraw at any time without penalty.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest

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