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How Socio-Economic and Cultural Factors Shape Privacy in Ibadan's Public Housing Estates

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ABSTRACT

This study investigates the socio-economic and cultural characteristics of residents in selected public housing estates in Ibadan, focusing on the privacy regulatory mechanisms they adopt. By employing a mixed-methods approach, the research involved administering questionnaires to 565 household heads and conducting in-depth interviews with eight key informants from neighbourhood associations. The findings indicate a significant majority (92.00%) of respondents have adopted privacy regulating mechanisms, with personal space and territorial behaviour being the most common. ANOVA results reveal a significant relationship between these mechanisms and the residents' socio-economic and cultural characteristics. Qualitative insights from key informants' interviews provided a nuanced understanding of residents' privacy needs, highlighting emotional and behavioural cues, as well as verbal and non-verbal data. The study concludes that privacy regulation in public housing varies across different estates and is influenced by nine socio-economic and cultural factors, offering guidance for sustainable housing design that considers contemporary urbanization's socio-economic impacts. These findings can inform architects and policymakers in creating housing designs that respect privacy and enhance the quality of life for residents.

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Highlights:	Contribution to the field statement:
-The privacy mechanisms in Ibadan's public housing estates are shaped by socio-economic factors like income and education level. - Cultural influences, including religion and family background, significantly affect privacy needs and regulation mechanisms. - Architectural design features of public housing estates directly impact residents' privacy regulation strategies. - The type of tenure system and housing structure influences the privacy adaptations made by residents.	The findings provided guidance for future sustainable housing design and advanced the understanding of the socio-economic impacts of contemporary urbanization. The study developed Privacy Regulating Mechanisms Indices (PRI) to guide the design of socially acceptable housing that respects the privacy needs of the residents in urban centres. The study also identified specific needs of the residents that should be integrated into estate development policies

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1. Introduction

1.1 Background and Context

Housing serves a multifaceted purpose beyond providing mere physical shelter. It addresses sociological needs by establishing a social environment for the household, the fundamental unit of society (Sultan-Sidi, 2010). It fulfils psychological needs by offering a sense of personal space and privacy (Hayduk, 1994; Altman, 2013). The architectural design of residential buildings significantly influences the level of privacy they afford. In essence, housing encompasses not only shelter but also communal services and neighbourhood facilities that are essential for sustainable living (Eni, 2015).

Privacy signifies a fundamental human requirement, the deprivation of which can precipitate an exceedingly precarious situation (Zaiton, 2018). It assumes paramount significance as it is instrumental in fostering well-being; its absence renders individuals susceptible to physical and psychological afflictions (Akande, 2021). Research suggests a correlation between residential overcrowding and adverse physical and psychological outcomes (Solari and Mare, 2012). Privacy assumes a pivotal role in enhancing the quality of life, as the craving for personal space serves as an innate criterion for security and contentment (Overtoom, Elsinga, Ostra, and Bluyssen, 2019). Respecting the privacy of individuals and groups stands as an essential characteristic across all human cultures and should be safeguarded from undue infringements (Rapoport, 2005; Wu, 2018). In a global context, privacy is a subject of paramount concern, with its contours shaped by cultural nuances that dictate what is deemed acceptable (Kara, 2019; Ahmadnejad, 2022). Privacy emerges as a multifaceted concept influenced by cultural, individual, and contextual variations. While universally cherished, the manifestations of privacy diverge across cultures and are guided by diverse operative frameworks, each culture delineating its boundaries and norms regarding privacy (Alkhateeb, 2015). The scrutiny of privacy assumes particular relevance within the sphere of public housing, acting as a tool to mitigate overcrowding, establish identity and territoriality, and sustain personal autonomy and self-evaluation, social conduct, and societal relationships (Amao and Ilesanmi, 2022).

1.2 Problem Statement and Research Gap

Research has underscored the impact of privacy in public housing on residents' living conditions (Tao, 2018). Notably, the extant literature relating to privacy in public housing, particularly within the context of Ibadan, remains scarce. Public housing has faced criticism for not taking into account residents' privacy needs and sensitivity to socio-cultural factors (Kennedy, Buys, and Miller, 2015; Tao, 2018). Privacy is an important socio-cultural factor that influences the design of houses (Rapoport, 2005). Different cultures have varying preferences for privacy (Attman and Chemers, 1984; Zaiton, 2018). Although the need for privacy is universal, the methods of regulating it differ greatly across cultures (Othman, Aird, and Buys, 2015). Privacy can be controlled in two main ways. The first is through behavioural means achieved by structuring events in time, such as using cues, roles, manners, and hierarchies (Abdul Rahim, 2018). Second is using environmental mechanisms like spatial segregation and the use of physical components such as partitioning walls, fences, curtains, and blinds (Zaiton, 2018).

The concept of privacy in the built environment can be assessed through residents' perceptions. Perception, defined as the process of understanding the environment through sensory information, varies among individuals and is influenced by their backgrounds and cultures (Ahmad and Zaiton, 2010; Othman et al., 2015; Omid, Farzad, Ehsan and Parisa, 2017. Amao and Ilesanmi, 2022). Understanding residents' perceptions of privacy is crucial for improving public housing design and policy (Zaiton, 2018). Residents manage their privacy needs through different mechanisms, with their regulation processes determining the level of privacy achieved. Privacy regulation involves residents striving for a balance between desired and achieved privacy. This regulation can be achieved through behavioural and environmental mechanisms such as territoriality and personal space (Altman, 1977; Zaiton, 2018). While there has been limited focus on privacy in public housing, studies tend to overlook the impact of design on behaviour with regard to individual and cultural differences.

This phenomenon remains largely unexplored, particularly in public housing estates in Ibadan.

Ibadan, the capital of Oyo State, is an appropriate area for this study as it represents the development of cities in the developing world. Despite its cosmopolitan nature, the city's cultural characteristics strongly influence residents' lifestyles and residential experiences (Tomori, 2012). Additionally, the public housing estates in Ibadan have been in existence long enough to provide the expected quantitative and qualitative data. Given this background, the study employed a mixed-method approach to identify and examine the socio-economic and cultural characteristics of residents in selected public housing estates in Ibadan. The study also analyzed the residents' privacy regulating mechanisms and determined the relationship between residents' socio-economic and cultural characteristics and privacy regulating mechanisms. This study is important for architects and professionals involved in public housing design as it provides empirical data on residents, privacy, and the residents' privacy regulating mechanisms, which could be valuable for designing future housing units and neighbourhoods.

1.3 Objectives and Hypotheses

The specific objectives of this research are to:

(a) identify and examine the socio-economic and cultural characteristics of residents in selected public housing estates in Ibadan;
(b) examine the housing and neighbourhood characteristics in the study area;
(c) analyse the residents' privacy regulating mechanisms; and
(d) determined the relationship between residents' socio-economic and cultural characteristics and privacy regulating mechanisms.

1.4 Significance and Structure of the Paper

This paper investigates how socio-economic and cultural factors shape privacy in public housing estates in Ibadan, Nigeria. It employs a mixed-methods approach, combining qualitative and survey research methods to gather data from household heads and key informants. The study aims to examine the socio-economic and cultural characteristics of residents, analyze privacy-regulating mechanisms, and determine the relationship between these factors and privacy adaptations in selected public housing estates. The paper begins with an introduction that outlines the context, problem statement, and research gaps. The literature review explores relevant theories and previous studies on privacy needs and regulations. The research methodology details the study design, sampling methods, and data collection techniques. The findings are presented in the results and discussions section, highlighting significant variations in privacy mechanisms influenced by socio-economic and cultural factors. The conclusion provides insights for architects and policymakers on designing public housing that respects residents' privacy needs and offers recommendations for future research and policy development. Table 1 below indicates the Research Methodology Flow Chart adopted in the study.

Table 1: Structure of the Study.

Section	Content
Introduction	Background and Context, Problem Statement and Research Gap, Objectives and Hypotheses, Significance and Structure of the Paper
Literature Review	Privacy Needs Based on Socio-Economic and Cultural Factors, Behavioural and Environmental Privacy Mechanisms, Altman's Privacy-Regulation Theory, Contributions and Implications of the Theory
Research Methodology	Research Design, Study Population, Sampling Method, Sample Size, Data Collection Instruments, Data Validation, Data Processing, Choice of Statistical Techniques, Ethical Considerations
Data Analysis Findings and Interpretation	Socio-economic and Cultural Characteristics of Residents, Analysis of Residents' Privacy Regulating Mechanisms, Relationship Between Characteristics and Privacy Mechanisms
Conclusion	Summary, Conclusion, Recommendations for Future Research, Implications for Housing Design and Policy

Source: Author's Conceptualisation, 2024.

2. Literature Review

The research by Abdul-Rahim (2018) revealed that privacy needs can differ based on various personal and socio-economic characteristics. Alkhateeb (2015) noted that the concept of privacy is relative to individual family members and the community as a whole. She suggested that different personalities may have varying privacy needs. Her study found that individual personality and socio-economic differences regarding privacy are connected to factors such as gender, age, life stage, family situation, personal history, and personality traits like introversion or extroversion, as well as mental health. Income levels are also closely related to privacy, as evidenced by the fact that wealthier individuals are more likely to own larger homes (Tao, 2018). Therefore, it is common for a wealthy person to live in a luxurious house, while a less affluent individual may reside in a lower-quality dwelling made of inexpensive materials with limited space and fewer private areas. Housing affordability is a measure of the cost of a residence compared to what buyers can afford to spend on housing. The available amount for housing investment depends on various factors, including ongoing housing expenses, housing options, and standards. These standards can be determined by assessing the privacy of both the housing unit and the surrounding neighbourhood.

The concept of privacy varies significantly across different cultures, with some placing a higher emphasis on privacy than others. Rapopport (2000) proposed that cultural traits influence privacy needs, and cultural factors play a crucial role in shaping the perception of privacy. Alashoor *et al.* (2016) noted the existence of sub-cultural and micro-cultural variations in privacy attitudes. Hall (1969) categorised cultures into two distinct groups: contact and non-contact. His research highlighted significant spatial behavioural differences between Mediterranean (contact groups) and northern European (non-contact groups) societies. Mediterranean cultures tend to prefer closer interactive distances, while northern European societies lean toward more extensive interactive distances. Hall's work has considerably influenced subsequent research on the impact of culture on spatial behaviour and public personal space, with researchers endorsing his findings in their surveys (Sobh and Belk, 2011).

Cultural norms and practices collectively influence privacy needs (Alkhateeb, 2015; Somayeh et. al., 2022). Consequently, residential dwellings are designed to cater to family-oriented requirements and the preferences of the residents (Bekleyen and Dalkilic, 2011). These social norms evolve over time and shape social behaviour, thereby being transmitted to future generations. While each family may maintain its distinct set of rules, there are more correspondences than discrepancies in the social language constructed. Homeowners and their guests respect these social languages, which are embodied in the spatial and architectural layouts of residences (Negoita, 2012; Humphris, 2019). These standards are integral to the factors influencing privacy (Othman *et al.,* 2013). According to Altman (1977), Abdul Rahim (2015, 2018), Hosseini *et. al.* (2015), and Zaiton (2018), residents employ behavioural and environmental mechanisms to achieve optimal privacy within their homes.

2.1. Behavioural Privacy Mechanisms

Individuals employ verbal and non-verbal mechanisms to express the distinction between their existing privacy and the desired level of privacy. Verbal mechanisms encompass language styles, vocabulary selection, voice dynamics, speech rates, and voice quality. Non-verbal or para-verbal mechanisms include the use of body gestures and facial expressions to regulate interactions. Cultural mechanisms, such as norms and customs, can either inhibit or promote privacy. For effective communication, verbal and non-verbal cues should complement each other to mitigate the risk of misunderstanding.

2.2. Environmental Privacy Mechanisms

Individuals employ environmental mechanisms to regulate privacy, which can be categorized into three primary types: clothing, personal space, and territories (Altman, 1977; Ali and Armin 2013). These measures are utilized to physically demarcate spaces or convey desired levels of privacy through indications, symbols, and other methods. Clothing serves a critical role in expressing identity and

societal position. Individuals across various age groups and professions select specific attire, uniforms, or accessories to communicate their status within their community and to signify their preferred level of privacy. Personal space, the area surrounding an individual, is an essential aspect of privacy.
Territory refers to a defined space that individuals or groups lay claim to and protect as an exclusive area, often employing barriers like fences, walls, signs, and other markers to manage interactions within a residential setting (Altman, 1977). Various environmental elements, such as walls, screens, territorial markers, bed placement, light partitions, and closed exterior doors, are effective means of attaining privacy in residential areas. Regulating privacy involves a multifaceted feedback system in which resources are utilized to align individual preferences with outcomes, to attain and sustain an optimal level of privacy.

2.3. Altman's Privacy-regulation Theory

The theory of privacy regulation was developed by social psychologist Irwin Altman in 1975. This theory seeks to elucidate the fluctuating nature of human preference for solitude and social engagement. Traditionally, privacy has been defined as a condition of social withdrawal. Altman posits that the process of boundary regulation is both dialectic and dynamic, implying that privacy is not a static state but rather a selective control of access to the self or the social group. Altman's concept of "dialectic" pertains to the degree between openness and closeness to others, while the notion of "dynamics" underscores the variability of the desired privacy level in response to individual and cultural disparities, continuously shifting between states of openness and closeness over time, mirroring changing circumstances. The desired privacy level is subject to temporal and situational variability. The individual may seek seclusion at one point in time and social interaction at another.
Central to Altman's theory is the idea that privacy regulation aims to achieve an optimal level of privacy, where the individual endeavours to align the attained privacy level with the desired one. At the optimal level, individuals can experience desired solitude when seeking isolation or fulfil the need for social contact when desiring interaction. Deviations from the desired privacy level can yield contrary emotional responses. Excessive privacy leads to feelings of loneliness and isolation, while insufficient privacy can evoke sensations of irritation and claustrophobia.
Altman asserts that effective control over the degree of openness and closedness to others, reflective of personal desires and environmental cues, can enhance an individual's social functioning compared to those lacking such control. Effective privacy regulation necessitates the application of diverse behavioural mechanisms, encompassing verbal and non-verbal behaviours, and environmental mechanisms, such as territoriality and personal space. The coordination of these mechanisms allows individuals to effectively communicate their desired privacy level to others, thereby achieving the desired optimal level of privacy.

2.4. Properties of Privacy Regulation Theory

Altman's (1975) privacy regulation theory describes privacy as a dynamic process of interpersonal boundaries. This means that privacy involves maintaining a flexible boundary between oneself and others and that this boundary changes based on internal and external factors to ensure proper functioning. Altman also distinguishes between desired and actual levels of privacy. The desired level is the amount of privacy needed to meet a person's needs and role requirements, while the actual level is what a person achieves. When the achieved privacy matches the desired privacy, optimal control of privacy is achieved.

2.5. Contribution and Implication of Altman's Privacy Regulation Theory

Privacy regulation theory contributed a new perspective on human-environment interaction using spatial behaviour techniques to regulate social interaction. Altman proposed a new perspective to understand privacy in terms of multiple unit levels (individual vs. group; in-group and out-group; self vs. others; across time and condition etc.) and its operating mechanism (Petronio, 2002). It is a dynamic analysis of how people regulate social interaction. The theory challenged traditional beliefs that

"privacy" was a rather personal process. He proposed that it was intrinsically a social process. It was a psychological process involving people's interaction, their social world and their environment. It stimulated researchers to think about self-disclosure and privacy regulations. Moreover, privacy was culturally defined and the behaviour was influenced by its context. Altman's theory stimulated more research on privacy across different settings such as schools, hospitals and public housing.

Additionally, incorporating theories related to culture, socio-economic status and space utilization could offer a nuanced understanding of how cultural capital influences privacy needs and behaviours. This theoretical discussion that situates the study within these broader discourses could not only contextualize the findings but also highlight the study's contribution to the interdisciplinary field of housing studies.

3. Material and Methods

The study adopted a combination of qualitative and survey research methods in its research methodology. This decision was made to allow the researcher to link overarching patterns from qualitative analysis to underlying processes and mechanisms, as well as to conduct a more detailed examination of the structural interaction through survey research. The research focused on household heads in four public housing estates managed by the Oyo State Government: Bodija Estate (466), Olubadan Estate (114), Owode Estate (280), and Ajoda New Town (270), with a sampling frame of 1130 household heads. These estates were chosen based on specific inclusion criteria, with Bashorun Estate and Akobo Estate, managed by the Oyo State Government, not meeting the necessary criteria as they were not built and designed by the state government.

To ensure a representative analysis, two sampling methods were utilized: Purposive and Systematic Random Sampling methods. The purposive sampling method was used to select the four public housing estates, which were designed, constructed, completed, and allocated by the Oyo State Government through the Oyo State Housing Corporation.

On the other hand, the systematic random sampling method was employed to select respondents (household heads) in the selected public housing estates - Bodija Estate, Owode Estate, Ajoda Estate, and Olubadan Estate. A sample size of 565 household heads, representing 50% of the sampling frame, was considered appropriate to provide an accurate representation of the total population. Respondents for questionnaire administration were selected by randomly choosing the first house and subsequently systematically selecting every 2nd house in the street until the desired sample size was achieved.

Key informants for in-depth interviews were chosen using the purposive sampling method. Eight key informants, comprising executives of landlord associations in the selected public housing estates, were selected.

Table 2: Summary of Sampling Frame and Sample Size in the Study Area.

Public Housing Estates	**Sampling Frame**	**Sample Size**
Bodija Estate	466	233
Owode Estate	280	140
Ajoda New Town	270	135
Olubadan Estate	114	57
Total	**1130**	**565**

Source: Author's Field Work (2024).

The questionnaires were designed for the household heads of the housing units that were selected, while the observation schedule was meant for the expert's use. The questionnaire covered all aspects of the research objectives, including the socio-economic and cultural characteristics of residents and the privacy regulating mechanisms of the residents in the study area. The questionnaires included both closed and open-ended questions. The closed-ended questions aimed to obtain specific opinions, while the open-ended ones allowed the respondents to provide more detailed answers and explanations where necessary. For the closed-ended questions, a 5-point Likert scale (1-5) was used for data evaluation. The interview questions gave the researcher the advantage of capturing additional emotional and

behavioural cues, accurate screening, and gathering verbal and non-verbal data. Data processing and analysis were done using a computer and the Statistical Package for Social Sciences (SPSS) 16. The observation schedule was designed to document the observations made by the expert during the fieldwork (see Appendix 1, 2, and 3). The secondary data used was obtained from secondary sources.

The quantitative data analysis included descriptive analysis such as frequency distribution, percentages, and cross-tabulation, as well as inferential statistical analysis like analysis of variance and chi-square. Both descriptive and inferential statistical analyses were employed. The former was used to obtain frequencies and percentages, while the latter was used to develop the Privacy Regulating Mechanism Index (PRI). The Summation Weight Value (SWV) or Variable Score (VS) was used to measure responses from residents to gain a better understanding of their Privacy Regulating Mechanisms.

In the first approach, a 5-point Likert scale of Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree was respectively assigned a value of 1, 2, 3, 4, 5 for all the twenty-eight (28) questions used to measure Privacy Regulating Mechanisms. This means that the range of scores for each respondent for all 28 questions would be between 28 (28x1) and 140 (28x5).

In the second approach, the sum of individual respondents' scores on responses to the privacy variable was referred to as individuals' overall privacy regulating mechanism score (IRS), while the total scores given by all the respondents to each of the privacy regulating mechanism variables was the variable score (VS) or Summation of Weight Value (SWV). IRS was used to assess individuals' responses to privacy regulating mechanisms, while Summation of Weight Value (SWV) or Variable Score (VS) was used to evaluate the contribution of each of the 28 variables to overall responses to privacy regulating mechanisms.

The Summation of the Weight Value (SWV) for each privacy regulating variable was obtained by adding the product of responses for each variable and their respective weight value.

Mathematically, this is expressed in equation 3.1:

$SWV = \sum_{i=1}^{5} Xi\ Yi$ …….Eqn.3.1

Where:

SWV= Summation of the Weight Value of each of the twenty-eight (28) questions

Xi = number of respondents choosing a particular rating i

Yi=the weight assigned a value (i=1, 2, 3, 4, 5)

For instance, to measure the level of agreement to which the residents of the selected public housing estates are attached to the types of privacy regulating variables, the formula to use is given in equation 3.2 below.

PRI = SWV

$\sum_{i=1}^{5} i = Xi$ …… Eqn.3.2

Where PRI = Privacy Regulating Mechanism Index

X= Mean Index = SWV

$\sum_{i=1}^{5} i = Xi$ /No of Variables……..…….Eqn.3.3

The SWV is divided by the number of respondents (565 household heads) to give the Privacy Regulating Mechanism Index (PRI).

This method was employed to measure the rating of the respondents on the level of agreement with privacy regulating mechanisms in the study area. It must be noted that the closer the PRI of a factor is to five (5) the higher the assumed privacy regulating mechanism. The Mean Index (X) used was also obtained by summing up the PRI and dividing it by the total number of variables. PRI was used in evaluating the contribution of each of the 28 variables to the overall privacy regulating mechanism and privacy regulating mechanism across the four estates. The total scores on each privacy regulating mechanism type by all the respondents are the privacy regulating mechanism scores (PRS), while the total possible Mean Index that can be given by all the respondents on each of the four privacy regulating mechanism types is the Aggregate Privacy Regulating Mechanism Index (APRI).To

compare the level of responses to each of the four privacy regulating mechanism types used in this study across the four estates, the Privacy Regulating Mechanism Index (PRI) was calculated by summing up the APRI and dividing it by the total number of variables (N). This is expressed mathematically a: PRI = APRI/N

3.1. Ethical considerations

The research process involves several key elements, including obtaining participants' informed consent, ensuring their right to withdraw from the study, communicating research intentions, keeping participants informed about any resulting publications, maintaining anonymity, and most importantly, ensuring confidentiality between participants and the researcher. The Institute of Public Health at Obafemi Awolowo University has established a Research Ethics Code of Practice, which outlines the researcher's responsibilities towards both the research and the participants. Before conducting the interviews, approval was obtained from the School Research Ethics Committee, addressing any anticipated ethical issues. This included clarifying the research purpose and procedures, ensuring the safety of both the researcher and participants, obtaining participants' consent for data confidentiality, protecting their privacy, and ensuring that participants understand the nature and potential benefits of the research. To safeguard participant confidentiality, both the recordings and transcribed data are securely stored.

4. Results and Discussions

4.1. Socio-economic and Cultural characteristics of resident

A total number of 565 residents were sampled in the study area. Significant variations existed among the public housing estates concerning age, marital status, religion, occupational status, level of education, and type of tenure system, among others, as confirmed in the summary of ANOVA and Chi-Square test (Table 3). With such significant variation, it is expected that the residents' privacy regulating mechanisms would vary as well.

Table 3: Summary of ANOVA and Chi-Square of the Socio-economic and Cultural Characteristics of Residents across the Four Public Housing Estates.

Socio-economic Attributes	**ANOVA F value**	***P* value**	**Chi-Square χ^2 value**	***P* value**	**Remark**
Gender			6.609	0.085	Not significant
Age	3.366	0.018			Significant
Marital status			29.017	0.004	Significant
Occupational status			42.540	0.000	Significant
Monthly income	2.117	0.097			Not significant
Level of education			43.206	0.000	Significant
Type of tenure system			65.634	0.000	Significant
Mode of ownership			97.829	0.000	Significant
Type of building			94.475	0.000	Significant
Length of Stay/Residency	5.208	0.001			Significant
Household size	0.665	0.574			Not significant
Number of male children	0.360	0.782			Not significant
Number of female children	1.229	0.298			Not significant
Sleeping arrangement of male and female children			2.364	0.500	Not significant
Reason for living in the estate			126.344	0.000	Significant
Family Background			9.131	0.028	Significant
Religion			25.918	0.000	Significant
Ethnicity			2.344	0.886	Not significant

4.2. Overall Privacy Regulating Mechanism

Table 4 reveals that 55.71% of respondents agreed and 36.29% strongly agreed with the use of privacy-regulating mechanisms. This represents, in summation, 92.00% of the respondents. It confirms the earlier finding that the majority of the residents' perceived privacy levels in the study are low. This may have influenced their responses to the privacy regulating mechanisms adopted in the estates.

Table 4: Overall Privacy Regulating Mechanisms: Author Field Work (2024).

Privacy Regulating Mechanisms Scores	Rating	Frequency	Percentage
28-59	Strongly Disagree	3	0.50
60-79	Disagree	35	6.25
80-99	Neutral	7	1.25
100-119	Agree	315	**55.71**
120-140	Strongly Agree	205	**36.29**
Total		565	100.00

The key informant interview findings also revealed that residents in the four estates used various methods to increase security and privacy. These methods included adding more blocks to existing fences, installing burglary-proof doors and windows, hanging curtains, and insulating their homes against noise. Residents also mentioned relocating bathrooms inside bedrooms and building additional bathrooms on the other side of their houses. This can be corroborated by statements of residents from the estates:

"Bathroom was relocated inside the bedroom and construction of another bathroom in the other side of the house"

"We changed the kitchen and entrance doors"

"…immediately we got here we constructed the fences by ourselves then the windows were changed to tinted sliding windows, the doors we changed from wood to iron"

This may be considered to be in tandem with the findings of Ahmad and Zaiton (2010), which indicated that residents of Malay Urban Dwellers in Selangor strongly agreed with their overall housing modification. Aduwo (2011) also suggested that residents in low-income public housing estates in Lagos also agreed with the housing modification.

4.3. Residents' Socio-economic and Cultural Characteristics and Privacy Regulating Mechanisms

The study presents the relationship between the socio-economic and cultural characteristics of residents and their privacy regulation mechanisms. Mean scores were calculated for nine characteristics including family background, length of stay, educational level, age, religion, marital status, type of building, type of tenure system, and occupation. The scores varied significantly across the four housing estates surveyed. The mean scores of these characteristics are shown in Appendix 4 about their privacy regulating mechanisms.

The mean index scores for family background, length of stay, educational level, and age were 1.79, 1.72, 1.69, and 1.81, respectively. These scores indicate that residents with different socio-economic and cultural backgrounds rated their perception of privacy as low and their privacy regulating mechanisms as high. Additionally, the mean indices for single-family and multi-family dwellings were 1.83 and 1.74, respectively. This suggests that single-family residents agreed more on privacy regulating mechanisms compared to multi-family residents. There were six common mechanisms with indices greater than 1.79 for both single-family and multi-family groups. These included the addition of bedrooms, insulation of walls against noise, relocation of windows, installation of odour extractors in the kitchen, planting of gardens in the neighbourhood, and creation of open spaces between houses. The analysis revealed that the majority of the residents were single-family households. As a result, single-family households showed a higher level of agreement on the regulating mechanisms compared to multi-family households, due to differences in family background, lifestyles, and personalities. The

mean index for residents who had lived in the area for less than ten years was 1.83, while those who had resided for 10-20, 21-30, and 31-40 years had mean indices of 1.82, 1.65, and 1.58 respectively. Residents who had lived for less than ten years highly agreed with the privacy regulating mechanisms, as indicated by twenty-two out of twenty-eight variables having mean scores above the group mean index of 1.72. In comparison, those who had lived for 10-20 years had eighteen variables above the mean index, residents living 21-30 years had four, and residents who had lived for 31-40 years had eight variables ranked above the group mean index.

Mechanisms highly ranked above the group mean index among residents who had lived for less than ten years included the addition of bedrooms (2.16), conversion of spaces to other uses (2.07), adjustment of the initial layout plan of the living room (2.03), separation of the bedroom from guest areas (1.90), blocking of unwanted accesses to the kitchen (1.78), and screening of the house against unwanted views (1.77), as well as insulation of walls against unwanted noise (2.23). This suggests that residents who had lived for less than ten years regulated their privacy more than long-term residents, who might have adapted to their privacy levels and required fewer regulating mechanisms.

This aligns with the response of a participant:

"We demarcated the living room by putting a big curtain just to stop the visitors from seeing what was inside the bedroom when we freshly moved here''

The mean indices for residents with different levels of education were as follows: 1.61 for those with no formal education, 1.46 for primary education, 1.86 for secondary education, and 1.82 for tertiary education. There were five regulating mechanisms with indices higher than the group mean index for the educational level group, which were common across the identified groups. These included the replacement of existing floor finish materials, installation of odour extractor in the kitchen, amendment of set-back for houses, planting of gardens, and creation of open spaces between houses.

Residents with secondary and tertiary qualifications showed higher agreement with the regulating mechanisms compared to those with primary and no formal education. This finding is consistent with Margulis (2003), who concluded that higher education levels of household heads correlated with higher agreement with regulating mechanisms.

The mean indices for youth, young adults, adults, and the aged were 1.85, 1.83, 1.81, and 1.76, respectively. This indicates that the level of agreement with regulating mechanisms was higher among youth and young adults compared to adults and the aged. As the age of residents increased, the level of agreement with regulating mechanisms decreased. Across different age categories, six regulating mechanisms had mean scores greater than the group mean index. These mechanisms included the addition of bedrooms, conversion of spaces to other uses, adjustment of the living room layout plan, insulation of walls against noise, relocation of window positions, and planting of neighbourhood gardens.

These findings are in tandem with the research of Tomah (2011), Shabani (2011), and Tao (2018), who established that age has a positive effect on privacy levels and the adopted regulating mechanisms. According to their research, older people tend to be more satisfied with lower privacy levels compared to young adults. It's evident from the above findings that youth and young adults showed higher agreement with the regulating mechanisms compared to adults and the aged in the estates.

The socio-economic and cultural characteristics of residents and their privacy regulating mechanisms are presented in Appendix 5. The variables examined were religion, marital status, and type of building. The findings revealed that the mean indices for the three identified religious groups (Christianity, Islam, and Traditional) were 1.81, 1.89, and 1.58. This suggests that residents of the Islamic faith were more likely to agree with the regulating mechanisms than others.

This finding is consistent with the perspective of Memarian (2011) that privacy holds a high priority in the Islamic religion, both in private (in-house) and public spaces (in the neighbourhood). Three regulating mechanisms were found to be commonly agreed upon across the three religious groups, as their mean scores were higher than the group mean index computed. These mechanisms included insulation of walls against unwanted noise, relocation of the position of doors, and planting of gardens in the neighbourhood. The group mean index for the religion group was calculated to be 1.76.

The mean indices computed for the different marital status groups were as follows: 1.92 for single, 1.81 for married, 1.79 for separated, 1.55 for divorced, and 1.95 for widow/widower. The overall mean index for the entire group was 1.80. Among single residents, the most important adjustment mechanism for the initial layout plan of the living room was rated at 2.62. For married and separated individuals, the addition of bedrooms and insulation of walls against unwanted noise were the most important mechanisms, rated at 2.19 and 4.00, respectively. Additionally, divorced residents highly agreed on the insulation of walls against unwanted noise and planting of the garden in their neighbourhood, with ratings of 2.29 each, while widow/widower residents indicated the relocation of position doors and windows as the most important mechanisms, both rated at 2.32. Among married residents, the addition of bedrooms was the most important mechanism, with a rating of 2.19. These findings align with previous studies that showed the need for more space among married residents, whether for themselves, their children, or visitors (Rosa, 2022). This suggests that married residents were the ones who added more rooms to their houses (Amao and Ilesanmi, 2022; Akinola et al., 2024).

In Appendix 6, the relationship between residents' tenure type and occupation, and their privacy regulating mechanisms is presented. There are four variables under the type of tenure system: rent, lease, self-ownership, and transfer/inheritance. Residents on rental and lease systems are referred to as tenants, while those on self-ownership and transfer/inheritance are known as landlords. The mean indices for rent, lease, self-ownership, and transfer/inheritance were 1.79, 2.25, 1.82, and 1.77 respectively. Residents on lease showed higher agreement with privacy regulating mechanisms compared to other categories, contradicting the notion that owner-occupiers are the ones who make better use of opportunities to make their residences more comfortable in meeting their privacy needs.

The group mean index for the type of tenure system was 1.91. It was observed that three regulating mechanisms were highly rated across the four types of tenure systems: the conversion of spaces to other uses, adjustment of the initial layout plan of the living room, and insulation of walls against unwanted noise. It was confirmed that the regulating mechanisms adopted by tenants were quite different from those employed by landlords.

Findings on the relationship between types of occupation and privacy regulating mechanisms showed that self-employed residents mostly regulated their privacy, with a mean index of 2.00. This was followed by student/unemployed, private employee, civil servant, and retiree, with mean scores of 1.93, 1.90, 1.71, and 1.57 respectively. The group mean index was 1.82. Across the different occupational types, insulation of walls against unwanted noise as a mechanism was observed to have a mean index above the group mean index.

It has been established that residents' privacy regulating mechanisms varied across the four public housing estates, varying with socio-economic, cultural, and housing characteristics. It is concluded that these characteristics influenced residents' privacy regulating mechanisms. The findings supported existing theories and studies of privacy regulation. The key informant interview provided the researcher with an understanding of privacy regulating mechanisms from the residents' perspective, complementing the outcomes of the questionnaire.

5. Conclusions

It has been established that residents' socio-economic and cultural characteristics are the determinants of privacy regulatory mechanisms adopted in selected public housing estates. These regulations varied based on the specific characteristics of each housing estate. Interviews with key informants provided valuable insights into the residents' perspectives on privacy regulations, which complemented the findings of the questionnaire. The study also offers valuable information for the design of future public housing estates. It developed Privacy Regulating Mechanisms Indices (PRI) to guide the design of socially acceptable housing that respects the privacy needs of the residents. This information could help architects make design decisions that are responsive to the residents' preferences in contemporary urbanization.

The study recommends that the government involve residents in the development and implementation of policies that affect their lives, particularly during the design phase of public housing construction.

This is important because public housing has been criticized for not adequately addressing residents' privacy needs and socio-cultural sensitivity. Involving residents from the beginning could prevent the need for costly transformations and modifications later on.

The study also identified specific needs of the residents that should be integrated into estate development policies. For instance, future designs should consider the inadequate spaces identified, such as the need for additional bedrooms to accommodate large families. Public housing providers should ensure that the number of bedrooms meets the needs of residents with large families to bring rapid improvement to the study area.

Windows should be designed to provide both ventilation and privacy for residents. This can be achieved through the use of tinted glass, adjustable windows, and strategic positioning. It's best to avoid arranging housing units in rows or mirror-image patterns in the neighbourhood. Instead, consider arranging more units around open spaces rather than facing each other.

In the course of this study, we encountered limitations related to residents' unwillingness to share information about themselves and their households, as well as some residents' initial scepticism towards the researchers due to fear of government involvement. However, once residents understood that the study was for academic purposes only, they supported the research.

This study is limited to public housing estates designed, constructed, allocated, and managed by Oyo State Housing Corporation in Ibadan, Nigeria. The focus is on privacy-regulating mechanisms in selected public housing estates in Ibadan, with many other privacy-related issues in urban housing areas that could be explored. Possible areas for future research include:

1. Conducting similar studies in different urban centres with varied socio-economic and cultural backgrounds for comparative purposes.
2. Assessing the different methodological approaches and architectural designs of housing typologies in public housing estates.
3. Conducting comparative studies between public and private housing to identify similarities, differences, and the underlying factors.
4. Exploring additional personality characteristics such as introversion and extroversion

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Conflict of Interests

There is no conflict of interest.

Data availability statement

The authors confirm that the data supporting the findings of this study are available within the article [and/or] its supplementary materials.

CRediT author statement:

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Appendices:

Appendix 1

Questionnaire

Ladoke Akintola University of Technology, Ogbomoso, Nigeria.
Faculty Of Environmental Sciences
Department Of Architecture
Residents' Socio-Economic and Cultural Characteristics as Determinants of Privacy Regulatory Mechanisms Adopted In Selected Public Housing Estates In Ibadan

Dear Respondent,

This questionnaire is designed to elicit responses on Privacy in Public Housing estates in Ibadan, Oyo State. It is mainly an instrument for gathering data for Research in Architecture. All information provided will be treated confidentially and used purely for academic purposes.

Thank you for providing responses to the questions

AMAO Funmilayo Lanrewaju

INSTRUCTION: Please tick (X) or fill as appropriate

Name of Housing Estate……..

SECTION A: Socio-economic and Cultural Characteristics of Residents

1. What is your gender? (1) Male ( ) (2) Female ( )
2. What age were you at your last birthday?.....
3. My marital status is (1) Married ( ) (2) Separated ( ) (3) Divorced ( ) (4) Widow/Widower ( ) (5) Single ( )
4. My religious background is (1) Christianity ( ) (2) Muslim ( ) (3) Traditional ( ) (4) Others.....
5. What is your ethnicity? (1) Hausa ( ) (2) Ibo ( ) (3) Yoruba ( ) (4) Others.....
6. What is your employment status? (1) Civil Servant ( ) (2) Private employee ( ) (3) Self-employed ( ) (4) Student or unemployed ( ) (5) Retiree ( )
7. What occupation do you do for living?.....
8. My average monthly income is (in Naira).....
9. What is the highest level of education you have completed?.....
10. My type of tenure status is (1) Rent ( ) (2) Lease ( ) (3) Self-Ownership ( ) (4) Transfer or Inheritance ( ) (5) Others.....
11. If Self- Ownership, how did you acquire the ownership? (1) From Government ( ) (2) From a Previous Owner ( ) (3) Inheritance ( ) (4) Others.....
12. What is the type of building you are occupying?.....
13. How long have you lived in this house?.....
14. What are the reasons for your decision to live here?.....
15. How many people, including yourself are there in your household?.....
16. How many children are there in your household? (1) Male Children ( ) (2) Female Children ( )
17. Do your male and female children sleep in the same room?.....
18. What is your family background? (1) Single-family ( ) (2) Multi-family ( ) (3) others.....

SECTION B: RESIDENTS' PRIVACY REGULATING MECHANISMS

Consider the following privacy regulating mechanisms and indicate how much you agree or disagree:
Rate their significance by tick (√)

S/N	Privacy Regulating Mechanisms	SA 5	A 4	N 3	D 2	SD 1
1.	Addition of Bedrooms					
2.	Conversion of spaces to other uses.					
3.	Adjustment of the initial layout plan of the Living room					
4.	Separation of bedroom from guest areas					
5.	Blocking of unwanted accesses to the kitchen					
6.	Screening of your house against unwanted views					
7.	Insulation of walls against unwanted noise					
8.	Relocation of position of Doors					
9.	Relocation of position of windows					
10.	Change of windows to suitable types					
11.	Hanging of curtains on the windows					
12.	Blocking of doors for maximum privacy					
13.	Addition of burglary proof on entrance door					

14.	Installation of burglary proof on windows
15.	Addition of extra blocks on fence
16.	Screening plants on existing fence of the house
17.	Visual screening plants on balconies
18.	Replacement of existing floor finish materials
19.	Installation of odour extractor in the Kitchen
20.	I Scrutinize my activities on time
21.	Amendment of set-back for my house
22.	Planting of garden in my neighbourhood
23.	Creation of open spaces in-between houses
24.	I don’t look into my neighbours’ house
25.	I regulate my interactions with neighbours
26.	Language styles such as busy for my neighbours
27.	Body gesture to communicate to unwanted quest
28.	Facial expressions to dialogue with my neighbours

Appendix 2
Observation Schedule

Name and Location of Housing Estate: ----------

House Number: ----------

1. Housing Typology
   (i) Single-Family Bungalow [ ] (iii) Semi-detached Bungalow [ ]
   (ii) Block of flats) [ ] (iv) Duplex [ ]
   (v) Others……
2. Walling material of your house?
   (i) Sun-dried burnt bricks [ ] (iii) Compressed Stabilized Laterite [ ]
   (ii) Sancerre Cement Blocks [ ] (iv) Others……

3. Wall finishing
   (iii) Cement sand plastering [ ] (iii) Painted [ ]
   (iv) Tiled [ ] (iv) Others…….....

4. The type of windows used in the house
   (i) Timber [ ] (iv) Glazed louvres [ ]
   (ii) Glazed aluminium [ ] (v) Others……
   (iii) Casement [ ]

5. The type doors used in the house
   (v) Plywood flushed [ ] (iv) Panelled timber [ ]
   (vi) Aluminium Glazed [ ] (v) Others……
   (vii) Panelled Steel [ ]

6. Burglary proof on windows
   a. Yes [ ] (ii) No [ ]
7. Burglary proof on external doors
   a. Yes [ ] (ii) No [ ]
8. Type of floor finish
   a. Cement screed [ ] (iv) PVC Tiles [ ]
   b. Ceramic Tiles [ ] (v) Terrazzo [ ]
   c. Marble [ ] (vi) Others……

9. Ceiling Material(s)
   a. Asbestos [ ] (iv) Plaster of Plaster (POP) [ ]
   b. Acoustic ceiling [ ] (v) PVC strips [ ]
   c. Polished timber [ ]

10. Type of Roofing material
    a. Galvanized iron [ ] (iv) Asbestos [ ]
    b. Aluminium long span [ ] (v) Others, specify……...
    c. Villa tiles [ ]
    d.
11. The layout of the housing estate
    a. Crowded [ ] (iii) Haphazard [ ]
    b. Spacious [ ] (iv) Properly planned [ ]

12. Types of partition
    a. Curtain [ ] (iii) Blinds [ ]
    b. Wall [ ]

13. Perimeter fencing
    a. Non-existent [ ] (iii) Very low [ ]
    b. Low [ ] (iv) Very high [ ]

14. Kiosks for retail shops
    a. Non-existent [ ] (ii) Present [ ]
15. Security post at entrance(s) to the estate

a. Non-existent [ ] (ii) Present [ ]

16. Location of openings
    a. Balconies facing directly opposite neighbours' house [ ] (ii) Balconies located indirectly from neighbours' house
17. Location of Windows
    a. Windows facing directly neighbours' house [ ] (ii) Windows located indirectly neighbours' house
18. Orientation of buildings
    a. Building of different heights facing each other [ ] (ii) Building of similar height facing each other
19. Territorial markers
    a. Use of symbols (iii) Writing on the fence
    b. Use of pointers
20. Orientation of Buildings
    a. Facing street (ii) Facing opposite garden
    b. Facing opposite house balcony (iii) Facing courtyard
21. Arrangement of Buildings
    a. Arranged in rows (iii) Buildings facing each other
    b. Mirror arrangement (iv) Arranged around the courtyard

Appendix 3
Interview Guide

Name of Estate.....
Location.....

1. What type of houses do you live in? e.g. Bungalow, Semi-detached Bungalow, Block of flats, Duplex and Boys' quarter
2. How long have you lived in this house?
3. Are you planning to move and why?
4. What type of house you would never consider living in?
5. How would you like your dream house to be like?
6. How important was privacy when you selected this house?
7. How do you perceive the level of privacy in your house?
8. Can you easily see into your neighbour's interior spaces?
9. Do you have a dedicated room for the guests?
10. Do you have separate rooms for boys and girls?
11. Can you hear clear conversation from my neighbour's house?
12. Does the Aroma from your kitchen reach your guests?
13. Does the odour from your bathroom transfer to other spaces in the house?
14. Is there a community open spaces in your neighbourhood?
15. Which of these open spaces are provided in your neighbourhood?
16. What are the uses of these open spaces?
17. To what extent do the activities in the neighbourhood open spaces greatly affect your sense of privacy?
18. What are the regulating mechanism that helped in providing privacy in the house and your neighbourhood?
19. Is there any space in your house that you wish to modify? Why? (What is the reason, is it only privacy or aesthetic and comfort?)
20. Were there any adjustments, addition and removal that you had to do in your current house to overcome some of the things that you didn't like? (to know and emphasize on residents' privacy regulating mechanism)
21. What modifications have taken place in your house?
22. Why were these modifications made in the house?
23. What are the factors that influenced your housing modification choices in regulating privacy or in adapting to your house if that is the case? (to know what are the influencing factors on residents' perception of privacy and their regulating mechanism)

Appendix 4

Family Background, Length of Stay, Educational level, Age, and Privacy Regulating Mechanisms

	Family Backgrou		Length of Stay (Years)				Educational Level				Age			
Mechanism	Single-family	Multi-family	< 10	10-20	21-30	31-40	No formal	Primary	Second-dary	Tertiary	Youth	Young Adult	Adult	Aged
Addition of bedrooms	2.16	2.11	2.16	2.19	1.67	1.80	1.33	1.00	1.91	2.20	2.09	2.23	2.14	1.82
Conversion of spaces to other Uses	2.06	1.75	2.07	1.90	1.50	1.80	1.33	1.00	2.19	1.99	2.02	2.09	1.91	1.84
Adjustment of initial layout plan of liv. Room	2.10	1.66	2.03	2.08	1.67	1.50	1.33	1.00	2.23	2.00	2.32	2.06	1.84	1.82
Separation of bedroom from guest areas	1.91	1.65	1.90	1.84	1.50	1.80	1.33	1.00	1.89	1.88	1.94	1.90	1.82	1.73
Blocking of unwanted accesses to kitchen	1.80	1.59	1.78	1.75	1.33	1.80	1.00	1.00	1.62	1.80	1.97	1.75	1.70	1.69
Screening of house against unwanted views	1.76	1.72	1.77	1.66	2.33	1.50	2.00	1.00	1.58	1.78	1.83	1.75	1.66	1.88
Insulation of walls against unwanted noise	2.17	2.38	2.23	2.17	2.67	1.20	2.00	1.00	2.13	2.23	2.30	2.42	1.82	2.08
Relocation of position of Doors	1.88	1.76	1.84	1.96	1.83	1.40	2.00	1.00	2.01	1.84	1.93	1.83	1.80	2.06
Relocation of position of Windows	1.93	1.83	1.88	2.06	1.67	1.40	2.00	1.00	2.28	1.86	1.93	1.93	1.88	1.90
Change of windows to suitable types	1.73	1.62	1.75	1.60	1.50	1.70	2.00	1.00	1.78	1.70	1.73	1.66	1.78	1.73
Hanging of curtains on the windows	1.58	1.45	1.59	1.46	1.67	1.70	2.00	1.00	1.53	1.57	1.54	1.50	1.64	1.65
Blocking of doors for maximum privacy	1.70	1.63	1.71	1.64	1.67	1.70	2.00	1.00	1.71	1.69	1.68	1.66	1.76	1.65
Addition of burglary proof entrance door	1.76	1.76	1.75	1.78	1.67	1.80	1.33	1.00	1.76	1.76	1.76	1.74	1.82	1.67
Installation of burglary proof windows	1.72	1.64	1.70	1.70	1.50	2.40	1.33	1.00	1.77	1.70	1.80	1.64	1.83	1.55
Addition of an extra block on Fence	1.75	1.75	1.79	1.69	1.33	1.30	1.33	1.00	1.84	1.74	1.86	1.77	1.69	1.61
Screening plants on existing fence of house	1.74	1.77	1.73	1.85	1.50	1.30	1.33	2.00	1.82	1.74	1.82	1.76	1.71	1.69
Visual screening plants on balconi	1.73	1.81	1.73	1.83	1.50	1.30	1.33	2.00	1.90	1.72	1.69	1.78	1.73	1.65
Replacement of existing floor finish materials	1.75	1.61	1.75	1.67	1.50	1.60	2.00	2.00	1.71	1.72	1.76	1.78	1.63	1.63
Installation of odour extractor in the kitchen	1.99	1.94	2.05	1.86	1.67	1.60	2.00	2.00	2.06	1.97	1.92	2.04	2.02	1.67
I do not look into my neighbour's house	1.65	1.52	1.65	1.59	1.33	1.60	2.00	2.00	1.87	1.58	1.59	1.58	1.76	1.55
I scrutinize my activities on Time	1.71	1.46	1.69	1.63	1.67	1.30	2.00	2.00	1.76	1.65	1.63	1.60	1.81	1.67
Amendment of set-back for my house	1.91	1.75	1.89	1.88	2.00	1.50	2.00	2.00	1.80	1.89	1.92	1.80	1.97	1.96
Planting of garden in the neighbourhood	1.87	2.00	1.91	1.93	1.67	1.20	2.00	2.00	2.03	1.87	1.90	1.88	1.93	1.86
Creation of open spaces in-between houses	1.83	1.84	1.83	1.89	1.50	1.50	2.00	2.00	1.75	1.84	1.92	1.91	1.64	1.78
I regulate my interactions with neighbours	1.71	1.57	1.71	1.68	1.33	1.50	1.33	2.00	1.65	1.70	1.69	1.68	1.71	1.65
Language styles such as busy neighbours	1.85	1.77	1.83	1.91	1.67	1.50	1.33	2.00	1.96	1.82	1.69	1.82	1.94	1.86
Body gesture to communicate unwanted guest	1.80	1.65	1.76	1.83	1.67	1.80	1.33	2.00	1.70	1.79	1.76	1.74	1.84	1.82
Facial expressions to dialogue with neighbours	1.82	1.78	1.80	1.85	1.67	1.80	1.33	2.00	1.76	1.83	1.76	1.79	1.89	1.82
Mean Index	**1.83**	**1.74**	**1.83**	**1.82**	**1.65**	**1.58**	**1.61**	**1.46**	**1.86**	**1.82**	**1.85**	**1.83**	**1.81**	**1.76**
Group Mean Index	**1.79**		**1.72**				**1.69**				**1.81**			

Appendix 5

Religion, Marital Status, Building Type, Privacy Regulating Mechanisms

Mechanism	Religion			Marital Status					Type of Building					
	Christ	Islam	Trad	Single	Married	Separated	Divorce-ced	Widow/ Widower	Duplex	Deta-che	Semi-detached	Flat	BQ	Brazilian
Addition of bedrooms	.19	.03	.43	.98	.19	.20	.43	.84	.00	.00	.00	.00	.00	.00
Conversion of spaces to other uses	.02	.99	.71	.09	.00	.80	.43	.05	.00	.00	.00	.00	.00	.00
Adjustment of initial layout plan of living room	.04	.98	.71	.62	.95	.80	.43	.11	.00	.00	.00	.00	.00	.00
Separation of bedroom from guest areas	.91	.72	.71	.03	.86	.40	.43	.84	.00	.00	.00	.00	.00	.00
Blocking of unwanted accesses to kitchen	.77	.73	.71	.07	.72	.00	.43	.05	.00	.00	.00	.00	.00	.00
Screening of house against unwanted views	.74	.81	.43	.88	.73	.40	.71	.95	.00	.00	.00	.00	.00	.00
Insulation of walls against unwanted noise	.23	.09	.29	.38	.16	.00	.29	.26	.00	.00	.00	.00	.00	.00
Relocation of position of doors	.80	.13	.00	.02	.83	.40	.00	.32	.00	.00	.00	.00	.00	.00
Relocation of position of windows	.82	.35	.57	.98	.90	.40	.57	.32	.00	.00	.00	.00	.00	.00
Change of windows to suitable types	.68	.84	.29	.74	.70	.00	.29	.00	.00	.00	.00	.00	.00	.00
Hanging of curtains on the windows	.58	.52	.29	.55	.55	.00	.29	.79	.00	.00	.00	.00	.00	.00
Blocking of doors for maximum privacy	.67	.79	.29	.90	.67	.60	.29	.68	.00	.00	.00	.00	.00	.00
Addition of burglary proof on entrance door	.76	.75	.29	.05	.73	.00	.29	.89	.00	.00	.00	.00	.00	.00
Installation of burglary proof on windows	.70	.74	.71	.90	.69	.60	.71	.68	.00	.00	.00	.00	.00	.00
Addition of extra block on fence	.78	.61	.71	.03	.71	.60	.71	.84	.00	.00	.00	.00	.00	.00
Screening plants on existing fence of house	.72	.87	.71	.90	.73	.40	.00	.84	.00	.00	.00	.00	.00	.00
Visual screening plants on balconies	.71	.89	.43	.69	.75	.00	.71	.74	.00	.00	.00	.00	.00	.00
Replacement of existing floor finish materials	.72	.77	.43	.84	.71	.40	.71	.74	.00	.00	.00	.00	.00	.00
Installation of odour extractor in the kitchen	.99	.99	.29	.90	.01	.00	.29	.95	.00	.00	.00	.00	.00	.00
I do not look into my neighbour's house	.59	.78	.71	.57	.62	.60	.43	.95	.00	.00	.00	.00	.00	.00
I scrutinize my activities on time	.63	.83	.71	.60	.69	.00	.43	.68	.00	.00	.00	.00	.00	.00
Amendment of set-back for my house	.82	.12	.71	.91	.87	.60	.71	.21	.00	.00	.00	.00	.00	.00
Planting of garden in the neighbourhood	.88	.94	.29	.98	.88	.00	.29	.21	.00	.00	.00	.00	.00	.00
Creation of open spaces in-between houses	.85	.74	.71	.14	.79	.20	.43	.89	.00	.00	.00	.00	.00	.00
I regulate my interactions with neighbou	.66	.85	.29	.67	.70	.40	.29	.68	.00	.00	.00	.00	.00	.00
Language styles such as busy for neighbours	.78	.11	.29	.72	.85	.00	.29	.00	.00	.00	.00	.00	.00	.00
Body gesture to communicate to unwanted guest	.75	.90	.29	.76	.78	.40	.29	.00	.00	.00	.00	.00	.00	.00
Facial expressions to dialogue with neighbor	.78	.99	.29	.78	.82	.00	.29	.00	.00	.00	.00	.00	.00	.00
Mean Index	**.81**	**.89**	**.58**	**.92**	**.81**	**.79**	**.55**	**.95**	**.84**	**.82**	**.74**	**.85**	**.74**	**.86**
Group Mean Index	**.76**			**.80**					**.81**					

Author Field Work (2024)

Appendix 6

Residents' Tenure Type, Occupation, and Privacy Regulating Mechanisms.

Mechanism	Type of Tenure System				Occupation				
	Rent	Lease	Self-ownersh	Transfer/ Inheritance	Civil servant	Private employ	Self employed	Student/ unemployed	Retiree
Addition of bedrooms	1.14	1.37	1.16	.67	1.10	.75	.75	.75	.75
Conversion of spaces to other uses	1.00	1.84	.97	.93	.90	.53	.53	.53	.53
Adjustment of the initial layout plan of living room	.97	1.53	1.05	.93	.87	.53	.53	.53	.53
Separation of bedroom from guest areas	.79	1.74	.90	.73	.74	.64	.64	.64	.64
Blocking of unwanted accesses to kitchen	.69	1.11	.82	.80	.69	.53	.53	.53	.53
Screening of house against unwanted views	.65	1.16	.84	.60	.64	.72	.72	.72	.72
Insulation of walls against unwanted noise	1.01	1.74	1.36	1.33	1.02	1.06	1.06	1.06	1.06
Relocation of position of doors	.80	1.53	.88	.93	.64	.92	.92	.92	.92
Relocation of the position of windows	.92	1.42	.89	.60	.67	.81	.81	.81	.81
Change of windows to suitable types	.70	1.32	.68	.53	.62	.64	.64	.64	.64
Hanging of curtains on the windows	.56	.89	.55	.47	.51	.47	.47	.47	.47
Blocking of doors for maximum privacy	.69	.58	.71	.40	.58	.44	.44	.44	.44
Addition of burglary proof on entrance door	.79	.89	.75	.20	.68	.50	.50	.50	.50
Installation of burglary proof on windows	.65	.79	.77	.60	.64	.33	.33	.33	.33
Addition of an extra block on fence	.71	1.95	.71	.60	.58	.50	.50	.50	.50
Screening plants on existing fence of house	.67	1.47	.79	.67	.63	.36	.36	.36	.36
Visual screening plants on balconies	.70	1.21	.74	1.00	.61	.44	.44	.44	.44
Replacement of existing floor finish materials	.70	1.21	.70	1.00	.59	.47	.47	.47	.47
Installation of odour extractor in the kitchen	.90	1.53	1.03	1.00	.87	.64	.64	.64	.64
I do not look into my neighbour's house	.65	.79	.59	.73	.60	.31	.31	.31	.31
I scrutinize my activities on time	.72	.84	.60	.80	.60	.42	.42	.42	.42
Amendment of set-back for my house	.86	1.37	.85	1.20	.72	.72	.72	.72	.72
Planting of garden in the neighbourhood	.81	1.26	.95	.93	.80	.78	.78	.78	.78
Creation of open spaces in-between houses	.73	1.26	.90	.87	.79	.56	.56	.56	.56
I regulate my interactions with neighbours	.72	.79	.65	.67	.59	.28	.28	.28	.28
Language styles such as busy for neighbours	.89	1.37	.74	.93	.71	.53	.53	.53	.53
Body gesture to communicate to unwanted guest	.79	1.11	.74	.67	.71	.56	.56	.56	.56
Facial expressions to dialogue with neighbours	.87	.89	.75	.87	.74	.44	.44	.44	.44
Mean Index	**.79**	**1.25**	**.82**	**.77**	**.71**	**.90**	**1.00**	**.93**	**.57**
Group Mean Index			**.91**		**.82**				

Author Field Work (2024)