

Incorporating Neighborhood Physical Characteristics and Well-Being in Selected Public Residential Schemes of Lagos State

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Abstract

Neighborhood characteristics play a critical role in shaping the healthy styles of residents universally, particularly in rapidly growing cities like Lagos, Nigeria. Reducing the housing deficit issues and providing physical features that promote health in megacities globally is a growing concern for city managers. Due to rising pressure on existing amenities, spaces earmarked to enhance the physical health of residents by design are quickly disappearing. This study examines the intersections between physical characteristics and implications for well-being in four of the largest selected public residential schemes in Lagos State. The paper evaluated key physical attributes such as housing quality, healthy lifestyle, infrastructure, public spaces, accessibility, and the well-being dimensions for residents. Using a mixed-methods approach, data was collected through environmental assessments, resident surveys, and observations. Findings revealed a strong association between physical conditions such as poor infrastructure and limited green spaces, and declining well-being outcomes. Opportunities for resident's physical exercises are limited, a condition which impinged healthy lifestyles and social interconnection. The study underscores the pressing need for targeted interventions to improve infrastructure, enhance public spaces, and prioritize resident well-being in housing strategy. Actionable strategies should incorporate wellbeing-driven urban layouts imbued with health-inspired amenities and improve existing local facilities to foster community health for all stakeholders.

Keywords: Healthy lifestyle, physical characteristics, public housing, well-being.

1. Introduction

The quality of residences and neighborhoods determines how well they will be able to withstand adverse environmental conditions, and how well they can enhance quality of life and health of communities (UN-Habitat, 2003). Altman asserted, that, "we do not just 'exist' within a physical environment - we interact with it and derive important meaning from it (Altman, 1993). This study identifies the neighborhood features of Lagos State Development and Property Corporation (LSDPC) residential schemes that affect resident's well-being. The question is, what are the neighborhood elements and characteristics in LSDPC housing schemes that impact the well-being of residents? Residential environments that promote physical workouts are known to be imbued with deliberately planned amenities that encourage healthy lifestyles such as walking, jogging, cycling and even a stroll in the park. (Jacard & Jacoby, 2010). Urban residential planning began in Lagos in the aftermath of the 1918 bubonic plague via the division of the city into two distinct urban spaces, namely, European Reserved Areas with well-planned well-being infrastructures and the native areas with little attention to neighborhood amenities for health. Apart from the natural climate-friendly benefits of the green band that separated the two city-sites, the Ìkòyí-Òbaléndé green belt was an urban design concept to curtail the malaria fever mosquitos from flying across 4km band to the colonizer's section of the city. (Godwin & Hopwood, 2012). This urban dichotomy still pervades residential architecture and urban design scenarios at the home, district and city scale till the post-independence eras of the 21st century. (Makinde, 2020),

Background

Evolution of Public Housing Schemes and Their Role in Urban Planning

Improving residents' well-being is of growing concern in many public and private residential estates in urban Lagos. Due to many factors deriving from the problems of urbanization, such as overcrowding, residential deficit and uncontrolled increase in urban populations, the quality of residential neighborhoods is constantly being eroded. Compounded by other associated urban distresses, the quality of life, health and well-being of urban dwellers are steadily affected negatively. (Makinde, 2020). From the Lagos Island (Ekó) the residential neighborhoods in Ebute-Meta across the Lagos Lagoon were established the 1920s to decongest Lagos Island after the bubonic plague debacle. While Surulere and other residential districts were located further afield to help in controlling and safeguarding the demographics of the ERAs for health and planning measures. The quality of residences and neighborhoods determines how well they will be able to withstand

adverse environmental conditions, and how well they can protect the life and health of households and communities (UN-Habitat, 2003 & 2007; Akinsemoyin and Vaughan-Richards, 2009; Godwin and Hopwood, 2012).

Understanding the Impact of Neighborhood Design on Residents' Well-Being

Urban residential neighborhoods are places for multitudes of cultures, gender, age categories, and socioeconomic classes to live, work, learn and play. These accounts for difference in the physical characteristics in time and scale. This is why practitioners, stakeholders, policy makers for residential developments of the public and private sector investors should understand that enhancing physical nature of residential sites are important for quality of life and health expectancy which are indicators for the physical wellbeing of residents. The role that the residential environment plays for health is important because most vulnerable population groups (poor, sick, children, elderly, and disabled) spend more of their time in this surrounding. Environment-Man studies established that the child deaths each day are due to the hazards present in the environments in which the children live, play, and grow (WHO, 2010). Professional best practices for proactive or smart design and planning initiatives are of key importance for well-being at the conception of residential provisions for the well-being of residents (Kaytal, 2002; Jiboye, 2010; Lawanson, 2015). Lagos is a flood-prone and sinking city which is now unprecedently challenged by climate change anomalies. This study describes neighborhoods as the intermediate level of social and physical organization between the residential space and the city spatiality that enables individuals or groups as the case may be in an evolving city to develop a sense of community or belonging. It is sometimes a small space made up of a few blocks of houses or fairly large areas around dwelling where structured basic amenities are located to enhance socio-cultural connections with fellow residents are established. It also relates to the notion that the residential unit is not an isolated component from the spatial whole in which it is located see Figure 1 and 2. (Olotuah, 2005; Moustafa, 2009). Improving the quality of new and older LSDPC residential stock is important for architects, planners, investors, policy makers, residents and other stakeholders to check the steady decline in housing. (Ilesanmi, 2011 and Makinde, 2020).

Study Area

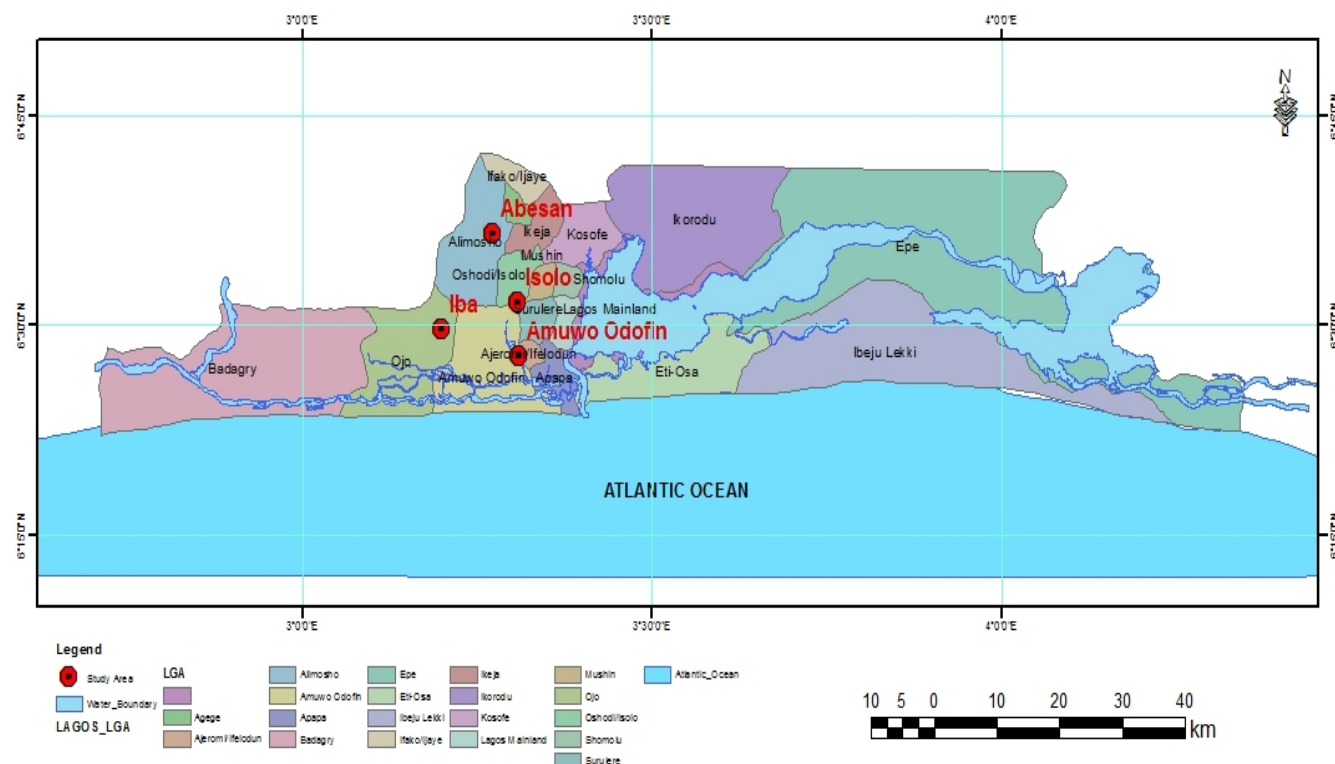


Figure 1: Map of Lagos State showing selected residential schemes. Source: Department of Surveying & Geo-Informatics, University of Lagos (2018).

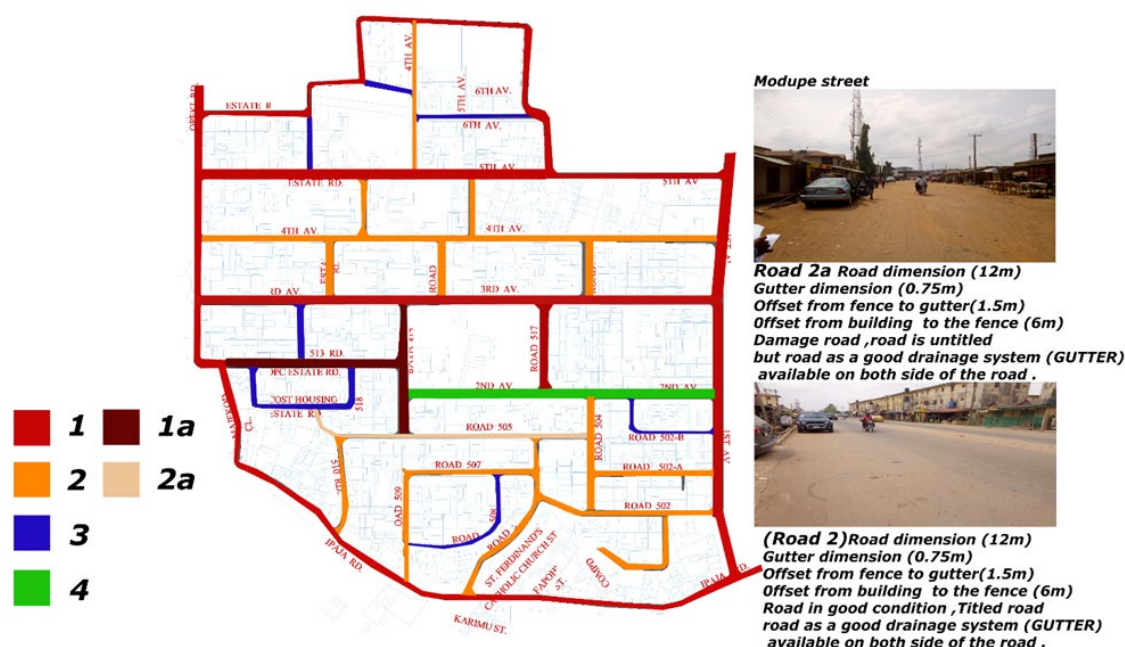


Figure 2: Neighborhood map of Abesan Estate. Source-authors' field work.

The study investigated the spatiality of the built environment of the estates under the following criteria. Housing stock, architectural quality, building maintenance, availability of health-enhancing physical characteristics and safety features. (Iweka, 2012, Godwin and Hopwood,2012)

2.0 Literature Review

Neighborhood Design and Well-being

The design of districts in public residential schemes significantly affects residents' well-being, influencing their physical and mental health, social connections, and economic opportunities. This paper examines the Vauban District in Freiburg, Germany, and Pruitt-Igoe in St. Louis to illustrate how well-planned neighborhoods can enhance quality of life while poorly planned ones can detract from it. The transformation of Vauban in 1990—from a military base to an eco-friendly residential area—highlights the importance of sustainable, community-focused planning, emphasizing accessibility, community participation, and the integration of local amenities for improved well-being. This study examines the intersections between neighborhood physical characteristics and resident wellbeing in in four of the largest selected public residential schemes in Lagos State. (Amole & Mills-Tettey,1998; Iweka, 2012 and Makinde, 2020),

Local Case Studies

The study selected the four largest housing schemes by LSDPC; Abesan, Isolo, Iba and Amuwo-Odofin Low-Income Housing Schemes. Abesan, located along Ipaja road, off Lagos-Abeokuta express way; had its housing units sold to speculators, investors or individuals who either resided or rented out their apartments. The residential scheme consists principally of three basic building categories that make up a total of 4,272 residential units. The categories include three basic accommodation types consisting of four floors having two apartments on each floor: an attached 2-bedroom flat of 8 units within a Block, 6 units of 3-bedroom flats in a block with escape stairs, and 6 units of 3-bedroom flats in a block without escape stairs. To achieve the initial purpose of the design as low cost, the design was quite simple and straight-forward with a small kitchen of approximately 6.5 m² in area. The second is the Isolo Low-Cost Housing Estate, geographically located in the Lagos-West Senatorial District of Lagos State. It shares boundary with Amuwo Local Government Area on the west. The third is Iba Low Income Housing Estate, commissioned in 1982 and completed in 1991. It is located off Lagos-Badagry expressway, and consists of Blocks of three-bedroom flats. Each block of flats consists of six apartments, arranged in units of twelve per plot. The layout is grouped into seven zones with a total of 199 blocks with overall 2388 dwelling units. Each prototype is equipped with a kitchen, a toilet and a bathroom with other basic functional spaces. (Iweka, 2012)

Problem Statement

Reducing the housing shortage issues and providing physical features that promote well-being in megacities globally is of growing concern for city stakeholders in Lagos as megacity. Rising pressure on existing amenities, takeover of spaces earmarked to enhance the physical health of residents by design exacerbates the situation. This study examines the intersections between neighborhood physical

characteristics and implication for wellbeing in four of the largest public residential schemes of the LSDPC. The well-being challenges faced in these public residential schemes, such as lack of neighborhood amenities, safety concerns, and poor environmental quality were addressed. (Ogunshakin, 2005).

Frameworks of Wellbeing

Objective well-being

Objective well-being refers to quantifiable home and neighborhood features that impact people's quality of life. In the context of public housing, it includes the physical, assessable conditions that impact the health, safety, and overall living standards of residents. WHO 2018 certified that neighborhoods with accessible amenities for physical exercises usually lead to reduction of obesity and related sickness among residents. Residential research in 2015 estimated that the UK spends up to £2 billion per year treating illnesses arising from poor residential buildings which is more than expenditure by local authorities on their own residential stock. A livable residence is a critical criterion for high standard of living. (Aribigbola, 2006). It is fundamental to welfare, survival and health. Hence, the residential setting possesses the best indicators of a person's standard of living and his status in society. The location and residential typology are also factors vital to this assessment. Kehinde (2010) noted that shelter is central to the existence of man and contends that this involves access to land, affordable shelter and the necessary amenities to make the setting functional, convenient, aesthetically pleasing, safe and hygienic. While poorly planned, unsanitary, unhygienic, unsafe and inadequate environment adversely affects security, privacy and well-being as in the Pruitt-Igoe's case. For objective well-being, these measurable factors consist of physical home conditions-ventilation, clean water and availability of common spaces for basic social amenities such as recreational facilities like parks, jogging trails, wide enough walkways, and nature-based community spaces. Other urban conditions security, proper lighting non-exposure to flooding, underground water surges, and overcrowding. The short- and long-term strategies and plans should promote improvement of objective well-being in public housing by focusing on maintaining healthy lifestyle amenities, ensuring just access to services, and fostering a sense of safety and community for residents' well-being. Emphasis made on whether residential buildings and environment possess the amenities for healthy lifestyle. For instance, residential research in 2015 estimated that the UK spends up to £2 billion per year treating illnesses arising from poor residential buildings which are more than expenditure by local authorities on their own residential stock. A good residence is a critical criterion for quality standard of living. (Aribigbola, 2006). It is very fundamental to welfare, survival and health. Hence, the residential setting possesses the best indicators of a person's standard of living and his status in society. The location and residential typology are also factors vital to this assessment. Kehinde (2010) noted that shelter is central to the existence of man and submitted further that this involves access to land, shelter and the necessary amenities to make the shelter functional, convenient, aesthetically pleasing, safe and hygienic. Proving further that poorly planned, unsanitary, unhygienic, unsafe and inadequate environment can adversely affect security, privacy and well-being. (Tzoulas et al, 2007; Ademiluyi, 2010 and Makinde ,2020; Mguni , Bacon, and Brown, 2011)

Subjective Well-being

In the context of subjective well-being refers to residents' self-assessed understanding and feelings about quality of life, emotional experiences, life fulfilment versus living conditions and overall environment. (Schueller and Seligman, 2010). In defining wellbeing "happiness" communicates its appeal across a spectrum of watchers. Conversely, the definition of happiness is a moveable goal, depending upon one's context and standpoint. The word "happiness" can be easily confused with the emotion of pleasure. In contrast, the word "well-being" draws upon the traditions of Aristotle and the ancient Greek philosophers as well as modern positive thinking unifies two backgrounds together: Hedonia which is a state of pleasure – and eudaimonia – a life experienced as meaningful and engaging. Well-being, in the residential context purposefully underscores this Aristotelian idea of living well and accomplishing one's full human potential. Well-being was also defined as living an expressive life, considered as feeling endowed to make transformation, be pleased, healthy, and attached to one's environment and municipality. (Deci & Ryan, 2008). Other definitions of well-being state that human well-being has varying aspects, including basic material for a decent life, independence and choice, health, good relations, security and safety. This puts well-being in parallel or at the reverse end of a continuum from poverty, which has been defined as a "pronounced deprivation" The constituents of well-being, as experienced and perceived by people, are situation-dependent, reflecting local characteristics, culture, and physical environments. (UNEP, 2003). Well-being is a positive state which is generally connected to experience, emotions and cognitive evaluation of one's life. (Deci & Ryan, 2008). Important facets of subjective well-being in public housing include safety, security, adequacy of space, privacy, comfort, psychological attributes, and social identity and cultural relationships. In defining Wellbeing "Happiness" and "wellbeing" are frequently substitutable, but they are primarily different.

“Happiness” communicates its appeal across a spectrum of watchers. The universal community can easily recognize it. Conversely, the definition of happiness is a moveable objective, depending upon one’s context and standpoint. The word “happiness” can be easily confused with the emotion of pleasure. In contrast, the word “well-being” draws upon the traditions of Aristotle and the ancient Greek philosophers as well as modern positive thinking unifies two backgrounds together: Hedonia which is a state of pleasure – and eudaimonia – a life experienced as meaningful and engaging. Well-being, in the context of dimension purposefully underscores this Aristotelian conception of living well and accomplishing one’s full human potential. Well-being was also defined as living an expressive life, considered as feeling endowed to make transformation, be pleased, healthy, and attached to one’s environment and municipality (Gilchrist, 2012). Other definition of well-being states that human well-being has numerous components, including basic material for a decent life, autonomy and choice, health, good relations, security and safety. This puts well-being in parallel or as the reverse end of a continuum from poverty, which has been defined as a “pronounced deprivation” The constituents of well-being, as experienced and perceived by people, are situation-dependent, reflecting local characteristics, culture, and physical environments. UNEP, (2003). Wellbeing is a positive state which is generally connected to experience, emotions and cognitive evaluation of one’s life. This study agrees with these varying definitions, because of the two common denominators; the ‘human being’ and ‘environment’ in the connections they have with each other and endowment to change and interact. (Conceição & Bandura 2008; Deci & Ryan, 2008; Wells, *et al.*, 2010; Mguni , Bacon, and Brown, 2011)

Framework for Well-being

Upgrading holistic well-being in public residential schemes requires addressing not only the physical and infrastructural challenges but also promoting a constructive environment that supports emotional health and community integration. Maslow’s hierarchy of needs model, PERMA (Positive Emotion, Engagement, Relationships, Meaning, and Accomplishment), or WHO’s definition of holistic health proposes a framework for well-being. (Evans, Erica, Wells and Saltzman, 2000; Amole, Ajayi, & Okewole, 2002; Karen & Kern, 2013; Makinde, 2020).

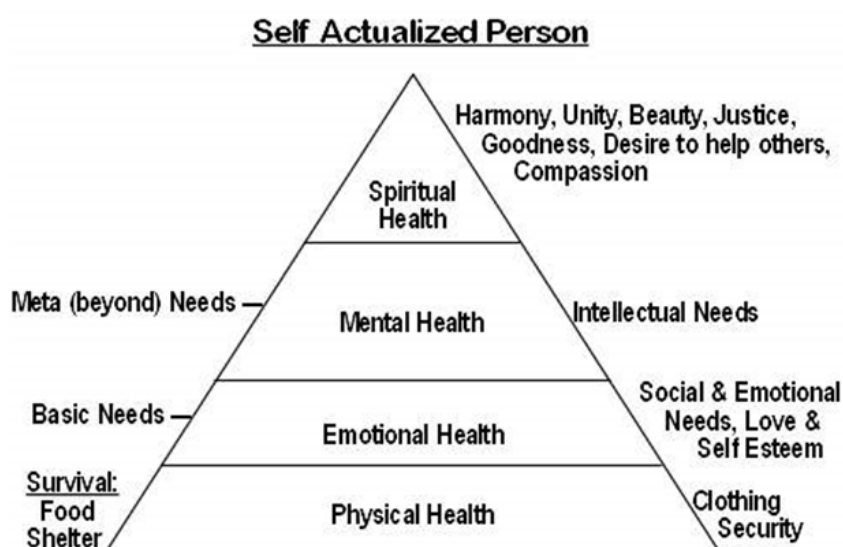


Figure 3: Maslows’ model was adopted to develop a framework of reference for assessing the physical well-being of LSDPC’s residential estates.

This study adapted this measurement of well-being indicators carried out by identifying physical characteristics in the environment by drawing parallels between them and the indicators of economic well-being. - (this was adapted from the Seligman’s economic well-being’s theory which measured well-being through the domains of GDP of income distribution, growth, productivity). Economic well-being was decomposed into five compartments of assessment: Positive emotion (**P**), Engagement (**E**), Relationships (**R**), Meanings (**M**), Accomplishments (**A**) (**PERMA**) (Diener, & Biswas-Diener, 2008; Conceicao & Bandura, 2008; Wells, *et. al.*, 2010; Seligman, 2011). Well-being assessment was broken down into five domains as earlier articulated as PERMA. (Forgeard, *et al.*, 2011). The list of physical elements of the urban environment essential for inhabitant’s well-being was classed into compartments according to PERMA domains by Seligman theory of well-being. Their physical conditions and dimensions were assessed for adequacy and quality. Through Likert scale, user-self measurement technique, the cumulative score forms the subjective Well-Being Score (WBS.) for the residential sites in the study area. The implications of these for public policy aim at increasing

well-being value which were not clearly understood in this context prior to this study. The simplification of this measurement method as explained will enable architects and other stakeholders involved in mass residential provision to improve techniques for obtaining highly dependable performance statistics to support residential design-decision and policy for arriving at sustainable physical well-being standards. (UNEP, 2003; Obeng-Odom, 2009; Karen and Kern, 2013; Makinde, 2020),

Table 1. Adapted PERMA Framework of reference for Well-being measurement

	Subjective/objective theoretical constructs	Physical elements Likert scale values. (Poor-excellent) A.	Well-being level Cumulative score through Likert scale.1-6. B WBS=Obtained score	Well-being score. %. (Perfect score for each element is 6. B÷Perfect score×100
1	Positive emotion (P)	Clean environment, (refuse bin, waste disposal facility),-1 natural aesthetics -1, safe pedestrian-vehicular access-1, noise level -1, facilities for healthy lifestyle -1, tenure-ship 1-, and residential ownership.-1	7	7×6=42. 7/42=0.167 16.70%
2	Engagement (E)	Distance to work -1, efficient transportation -1, and nearness to other neighborhood- 1, schools-3, market-3, hospitals 3, water-1, and power-1.	14	8×6=48 14/48 = 29.17 29.17%
3	Meaning (life satisfaction) (M)	Residential capacity-1, livable residential conditions-1, environmental aesthetics-2, privacy-1, cultural values-4. Religious center-3, recreation, parks-2, Safety-1	15	8×6=48 15/48= 0.31 31.25%
4	Residential relationships support (R)	Open spaces-2, parks with seats, bike trails-1, jogging routes 1, wide enough sidewalks-1, vehicle-free neighborhoods-1.	6	6×6=36 6/36= 0.167 16.67%
5	Accomplishment (A)	Ease of movement -1, residential capacity-1, established street network-2.	4	4×6=24 4/24= 0.167 16.67%
	Total score (WBS)		46	110.46/500%
	Well-Being Average Score. (WBAS)			22.09%

A = number of identified physical elements per PERMA domain;

B = cumulative sum of respondent's rating on Likert Scale per domain; {Where poor = 1; excellent =6.}

Total score= 16.7+29.17+31.25+16.67+16.67=110.46/ 500= 0.2209=22.09%

WBS= B / Obtained score ÷ perfect score ×100

$$WBAS = total \frac{WBS}{6} \dots\dots\dots (i)$$

(Adapted from Seligman (2011) theory of economic well-being.)

3.0 Methodology

This study utilized a case study approach, selecting four of the largest low-income residential schemes managed by LSDPC from nine identified low-cost schemes, based on high occupancy rates and population density (LSDPC, 2016). Qualitative methods included the assessment of LSDPC archival data and published information, while quantitative data was collected through structured questionnaires and physical site measurements. The sample size, determined using the Krejcie and Morgan formula (1970), included 929 residential units, or 7.5% of the total 12,392 low-income housing units. A total of 762 respondents completed the questionnaires, resulting in an 82.0% response rate. The study used Descriptive and Correlational Bivariate approaches to analyze the data and test relationships between variables. The Correlational Bivariate method specifically evaluated the connection between measured residential amenities and residents' well-being.

Table 2. Demographic distribution and well-being variables in studied residential neighborhoods

		Iso	Abesan	Iba	Amuwo-Odofin
Variables					
No of respondents		275	320	180	162
Male		143	147	77	72
Female		132	173	103	72
Age range of residents		18-30yrs- 36.9%	18-36yrs- 36.9%	18-30yrs- 50.6%	18-30yrs- 40.6%
Marital status	married	151	180	62	78
	Single	110	133	110	75
	divorce	2	2	2	2
	widower	1	2	6	2
Monthly income	<45000	135	179	90%	90no -60.5%
	45,000-100,000	45	57	2.2%	30nos-18.5%
	>100,000	85	75		26no 16%
Tenure	0-5yrs	18.5%	19.7%	29.4%	20.2%
	6-10yrs	32%	35.6%	29.4%	31.3%
	11-15yrs	25%	20.6%	16.1%	19.4%
	16-20yrs	14.25%	13.1%	15.6%	16.0%
	21-25yrs	5.1%	5.3%	7.8%	7.5%
	26-30yrs	1.5%	2.2%	1.7%	1.9%
Parking inadequacy		54.9%	56.3%	43.3%	59.9%

Table 3-Rating the physical exercise facilities in residents' house and neighborhood

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		36	11.3	11.3	11.3
	Excellent	42	13.1	13.1	24.4
	very good	37	11.6	11.6	35.9
	Good	45	14.1	14.1	50.0
	very fair	17	5.3	5.3	55.3
	Fair	49	15.3	15.3	70.6
	Poor	52	16.3	16.3	86.9
	very poor	42	13.1	13.1	100.0
Total		320	100.0	100.0	

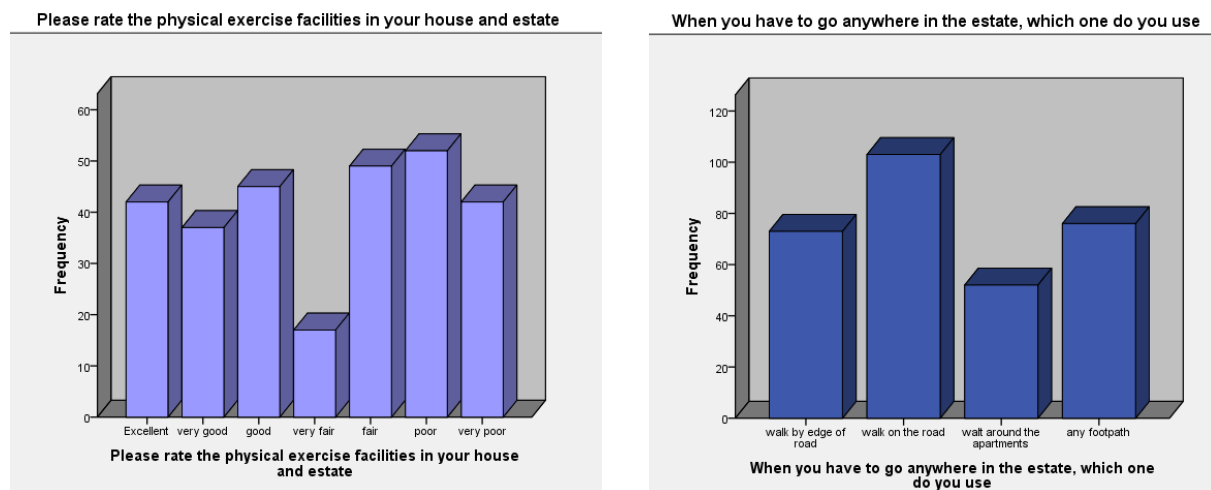


Figure 4: Residents' assessment of the use of estate's walkway to connect with other areas in the neighborhood and physical well-being amenities.

4.0 Results and Discussion

The availability of open spaces and the design of physical features are positively correlated and significantly influence the well-being of residents. Access to neighborhood open spaces is essential for physical well-being; however, many of these areas have been repurposed, misused, or abandoned by residents. In communities such as Abesan, Amuwo-Odofin, Isolo, and Iba, an average of 65% of available open spaces have been converted to other uses. This study underscores the importance of understanding the multifaceted and interdisciplinary concepts of well-being as a tangible phenomenon, which should be a priority for architects and planners in the built environment. The study confirmed the use of wide-enough walkways as one of the amenities that encourages physical health lifestyle for residents to engage in walking exercises regularly. Resident are compelled to use the road (vehicular) for pedestrian purposes. (See figure 4.). Furthermore, the findings reveal that location plays a significant role in well-being. Low-cost housing is commonly designed for low-income individuals earning between N45,000 and N100,000 monthly, which likely contributes to the poor residential conditions observed. This is in unambiguous contrast to the experiences of residents in the medium and high-income categories examined by Ilesanmi (2011), Iweka (2012) and Makinde, (2020).

5.0 Conclusion and Recommendations

5.1 Conclusion

Historically, Lagos has been at the forefront of housing policy and development in Nigeria. The city faces a range of urbanization challenges that influence residential characteristics and strategies for enhancing well-being across the country. This study examined the impact of the Lagos State Development and Property Corporation's (LSDPC) residential design and planning decisions on factors such as the physical health of residents, access to parks and open spaces, land-use diversity, physical infrastructure, and road layout. These factors are interconnected and play a significant role in determining the physical health and overall well-being of the community (Douglass, 2008; Wells et al., 2010). Furthermore, the study emphasizes the importance of considering residents' well-being during site planning, design conceptualization, and the construction phase of buildings. This understanding is crucial for urban residential managers and private sector developers, as it serves as a tool for enhancing residents' well-being. The research highlights that architectural design can significantly influence residential developments. By integrating proactive design practices, we can connect everyday functions with residents' well-being, lifestyles, and daily assessments—moving beyond the notion that residential design is merely an elite or abstract concept (Katyal, 2002; Katrien, 2010). Additionally, the study provides stakeholders in the built environment with strategies to improve quality of life and living conditions through responsive architectural design focused on well-being. This insight is intended to guide public and private investors, as well as policymakers, in understanding and estimating the well-being levels within their residential stock, ultimately leading to higher quality of life in future investments.

5.2 Recommendations

This study offers design guidelines aimed at improving the physical characteristics of neighborhoods and presents opportunities for policy-driven interventions to ensure sustainability and inclusivity. Effective collaboration among government entities, private sector developers, and residents is crucial for achieving sustainable and inclusive development. Based on the findings, the following recommendations are proposed

to enhance well-being in residential neighborhoods: Preserve adequate open spaces and implement a coordinated residential design framework. The study advocates that architects and practitioners should integrate well-being considerations into housing and urban design, creating environments that promote physical activity and social interaction. It also recommends re-evaluating housing policies for vulnerable low-income communities, involving citizen participation in housing planning processes, and continuously monitoring the existing physical attributes to inform and adapt future planning considerations. These measures have potential to lead to healthier and more sustainable urban residential environments.

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