

Perception of Homeowners Towards Interlocking Stabilized Soil Block Housing Developments in Nigeria

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Abstract- Nigeria faces a persistent housing deficit exacerbated by rapid urbanization, population growth, and rising costs of conventional building materials. Interlocking Stabilized Soil Blocks (ISSBs) offer a sustainable, affordable alternative, yet their adoption remains limited. This study investigated homeowners' perceptions towards ISSB housing developments in Nigeria, examining awareness, perceived advantages and disadvantages, factors influencing acceptance, and willingness to adopt. A quantitative cross-sectional survey of 385 homeowners was conducted across Lagos and Abuja, utilizing stratified random sampling. Data were analyzed using descriptive statistics and multiple regression analysis. Findings revealed significant disparities in awareness and perceptions between ISSB residents and conventional housing residents. While 67.4% of ISSB residents were aware of the technology, only 20.9% of sandcrete residents demonstrated similar awareness. ISSB residents rated advantages significantly higher across all attributes ($p < 0.001$), with environmental sustainability (Mean=3.98), affordability (Mean=3.79), and thermal comfort (Mean=3.74) ranked highest. Conversely, cultural stigma (Mean=3.05), social status concerns (Mean=3.05), and structural integrity concerns (Mean=3.10) emerged as significant barriers among non-ISSB residents. The regression model explained 52% of variance in acceptance ($R^2=0.52$), with awareness emerging as the strongest predictor ($\beta=0.28$), followed by perceived affordability ($\beta=0.16$) and durability ($\beta=0.14$). Only 36.5% of sandcrete residents would consider purchasing ISSB housing compared to 77.7% of ISSB residents. The study concludes that addressing non-technical barriers, particularly awareness deficits and cultural stigmatization, is essential for promoting wider ISSB adoption. Recommendations include comprehensive awareness campaigns, demonstration projects, government certification frameworks, and financial

incentives to accelerate adoption of this sustainable housing technology.

Keywords: Interlocking Stabilized Soil Blocks, Homeowners' Perception, Affordable Housing, Sustainable Construction, Nigeria, Diffusion Of Innovation Theory

I. INTRODUCTION

Housing constitutes one of the most fundamental human needs and serves as a critical indicator of social welfare, economic stability, and national development. Beyond providing physical shelter, adequate housing contributes to improved health, security, social inclusion, and economic productivity. Consequently, the provision of affordable, durable, and sustainable housing remains a priority for governments, international organizations, and built environment professionals worldwide. Despite global efforts to improve housing accessibility, developing countries continue to face significant housing shortages due to rapid urbanization, population growth, rising construction costs, and inadequate housing finance systems (UN-Habitat, 2009).

Nigeria is among the countries most affected by this challenge. Rapid population growth, increasing rural-urban migration, inflation, and the escalating prices of conventional building materials have significantly widened the gap between housing demand and supply. Richards (2025) observed that although successive governments have implemented numerous housing policies and programmes, the provision of affordable housing continues to lag behind population growth due to institutional constraints,

high construction costs, land administration challenges, and inadequate investment in locally appropriate housing technologies. Similarly, Nwachukwu (2024) argued that ineffective housing delivery frameworks, poor access to serviced land, and high development costs have substantially limited private-sector participation in affordable housing provision.

Among the numerous factors contributing to the high cost of housing delivery in Nigeria, building materials constitute one of the most significant. Adedeji (2010) estimated that building materials account for approximately sixty percent of the total cost of housing construction, making material selection a critical determinant of housing affordability. Conventional walling materials such as sandcrete blocks, fired bricks, and reinforced concrete remain the dominant choices within the Nigerian construction industry despite their relatively high production costs, energy requirements, and environmental impacts. Consequently, researchers have consistently advocated for increased utilization of locally available construction materials capable of reducing construction costs while maintaining acceptable structural performance and environmental sustainability (Adedeji & Fa, 2012).

One construction technology that has received increasing scholarly attention is the Interlocking Stabilized Soil Block system. ISSBs are compressed earth blocks manufactured primarily from lateritic soil stabilized with a small proportion of cement before being mechanically compressed into interlocking units. Unlike conventional masonry units, ISSBs possess tongue-and-groove interlocking mechanisms that significantly reduce the quantity of mortar required during construction while improving construction speed and minimizing material wastage. According to UN-Habitat (2009), ISSB technology offers a sustainable alternative for housing delivery because it utilizes locally available materials, requires relatively low embodied energy, reduces greenhouse gas emissions, and improves thermal comfort within buildings.

Several empirical studies conducted in Nigeria have reinforced these advantages. In their comparative

assessment of walling materials, Ibitoye, Dare-Abel, and Alagbe (2022) demonstrated that ISSBs significantly reduce wall construction costs through lower cement consumption, elimination of extensive wall rendering, and reduced labour requirements. Their findings indicate that ISSB construction presents a practical solution for affordable housing delivery, particularly within low- and medium-income residential developments. Similarly, Adedeji and Fa (2012) reported that interlocking masonry systems shorten construction periods, reduce overall project costs, and offer superior environmental performance compared with conventional masonry construction.

Beyond affordability, ISSBs have attracted considerable attention because of their contribution to sustainable development. The increasing global emphasis on environmentally responsible construction has encouraged researchers to investigate building materials capable of reducing embodied carbon while promoting local resource utilization. Fundi (2019), in his investigation of the structural response of interlocking stabilized laterite soil block panels, established that properly manufactured ISSBs possess adequate structural capacity for low-rise residential construction while providing satisfactory durability and mechanical performance. Likewise, Maduabum and Munonye (2020) argued that stabilized compressed earth blocks represent one of the most promising alternatives for achieving affordable housing in Nigeria because they combine structural adequacy with environmental sustainability.

Despite these documented technical, economic, and environmental advantages, the adoption of ISSBs within Nigeria remains relatively limited. This situation presents an interesting paradox. While researchers consistently report positive findings regarding the structural performance, affordability, and sustainability of ISSBs, conventional sandcrete blocks continue to dominate residential construction across the country. The persistence of this trend suggests that technical superiority alone may not be sufficient to influence housing choices.

Emerging evidence indicates that homeowners' decisions are influenced by factors extending beyond construction cost and engineering performance. Housing selection is often shaped by personal experiences, cultural values, social aspirations, aesthetic preferences, and perceptions regarding durability, prestige, and long-term value. In a study examining walling material selection for affordable housing in Southwest Nigeria, Alagbe et al. (2019) found that socioeconomic status significantly influences homeowners' preferences for construction materials. The study further established that lower construction costs do not necessarily translate into greater acceptance, as many households associate certain building materials with higher social status and long-term investment value. These findings suggest that affordability, although important, represents only one component of homeowners' decision-making processes.

The importance of perception is equally reflected in studies focusing specifically on ISSBs. Olaleye and Ibitoye (2022) investigated architects' responses to the utilization of ISSBs and found that architects generally acknowledged the material's affordability, sustainability, and structural suitability for residential projects. However, they identified inadequate public awareness, limited practical experience, and insufficient promotion as significant barriers to widespread adoption. Their findings imply that while construction professionals may possess confidence in ISSB technology, similar confidence may not yet exist among prospective homeowners.

Further supporting this argument, Ibitoye, Abiola, and Babamboni (2023) documented the demographic characteristics of housing estates developed with ISSB technology in Southwestern Nigeria. Their study identified several successful ISSB housing developments, including estates in Ekiti, Ogun, and Lagos States. Nevertheless, they concluded that public preference for ISSB housing remains considerably lower than that of conventional sandcrete construction despite the existence of completed residential projects demonstrating the technology's viability. This observation reinforces the argument that limited adoption is not primarily the result of technical inadequacies but may instead be

associated with public perception, awareness, and social acceptance.

Previous research on locally available walling materials has reached similar conclusions. Amadi and Amadi (2018) observed that many Nigerians continue to perceive earth-based construction materials as inferior, temporary, and suitable primarily for rural settlements despite advances in stabilization technologies. Such perceptions often discourage potential homeowners from adopting innovative walling systems even where objective evidence demonstrates satisfactory structural performance. Consequently, misconceptions regarding durability, aesthetics, prestige, and maintenance continue to limit the acceptance of alternative building materials. From a theoretical perspective, these observations are consistent with Rogers' (2003) Diffusion of Innovation Theory, which explains that the adoption of new technologies depends largely on users' perceptions of their relative advantage, compatibility with existing values, complexity, observability, and trialability. The theory suggests that innovations possessing demonstrable technical benefits may still experience slow adoption if potential users perceive them as socially undesirable or incompatible with prevailing cultural expectations. Therefore, understanding homeowners' perceptions represents an essential step toward improving the diffusion of ISSB technology within the Nigerian housing sector.

Although considerable progress has been made in understanding the structural, environmental, and economic performance of ISSBs, relatively limited attention has been devoted to the perceptions of homeowners who ultimately determine housing demand and market acceptance. Existing Nigerian studies have largely focused on engineering characteristics, comparative cost analyses, sustainability assessments, and professional opinions, while the attitudes of end-users remain comparatively underexplored. This represents an important gap because the success of any housing technology depends not only on its technical performance but also on its acceptance by intended users.

It is against this background that this study investigates the perception of homeowners towards

Interlocking Stabilized Soil Block housing developments in Nigeria. Specifically, the study seeks to examine homeowners' awareness of ISSB technology, their perceptions regarding its affordability, durability, aesthetics, environmental performance, and social acceptability, as well as the factors influencing their willingness to adopt ISSB housing. By providing empirical evidence on end-user perceptions, the study intends to contribute to ongoing efforts aimed at promoting sustainable, affordable, and socially acceptable housing solutions capable of addressing Nigeria's persistent housing deficit.

II. LITERATURE REVIEW

2.1 Concept of Housing and Housing Development

Housing extends beyond the provision of shelter and encompasses physical, social, economic, and psychological dimensions that contribute to human well-being. According to housing scholars, adequate housing should provide safety, comfort, privacy, accessibility, and protection from environmental hazards. Housing development refers to the planning, design, construction, and management of residential buildings and communities. In developing countries such as Nigeria, housing development faces challenges including high construction costs, inadequate infrastructure, limited access to mortgage finance, and dependence on imported building materials. These challenges have led to increasing interest in alternative building technologies that can support affordable housing delivery.

2.2 Housing Deficit and Affordable Housing Challenges

Nigeria faces one of the largest housing deficits in Africa. The shortage has been attributed to rapid urban population growth, increasing costs of building materials, inadequate government intervention, and insufficient private-sector investment in affordable housing. The cost of conventional construction materials accounts for a significant proportion of total building expenses. Cement, reinforcement materials, and sandcrete blocks continue to experience price increases, making housing unaffordable for many Nigerians. Researchers have argued that reducing material costs is essential to achieving affordable

housing objectives. The search for alternative materials has therefore encouraged the promotion of locally available resources such as compressed earth blocks and ISSBs. These materials utilize locally sourced soil and require less energy during production, thereby reducing both construction costs and environmental impacts.

2.3 Interlocking Stabilized Soil Blocks

Interlocking Stabilized Soil Blocks are compressed earth blocks manufactured from a mixture of soil, water, and stabilizing agents such as cement. Unlike conventional blocks, ISSBs are designed with interlocking features that allow blocks to fit together without excessive mortar application. The technology has been promoted internationally as a sustainable building solution for developing countries. ISSBs offer several advantages, including reduced material consumption, lower construction costs, faster construction speed, improved thermal performance, and reduced environmental impact. Research has demonstrated that ISSBs possess adequate compressive strength for low-rise and medium-rise residential structures when properly produced and cured. The interlocking mechanism also reduces dependence on skilled labor and decreases construction waste.

2.4 Characteristics and Benefits of ISSB Housing

Affordability is one of the major factors driving interest in ISSB technology. Comparative studies have shown that ISSB construction can reduce overall building costs due to lower mortar requirements, reduced transportation costs, and utilization of locally available materials. Ibitoye, Dare-Abel, and Alagbe (2021) found that ISSBs provide significant cost advantages compared with conventional sandcrete blocks, making them suitable for affordable housing projects in Nigeria. ISSBs contribute to sustainable construction by reducing dependence on energy-intensive materials such as fired bricks and concrete blocks. Their production requires less energy and generates lower carbon emissions. The use of locally available soil also reduces transportation-related environmental impacts. One of the most significant advantages of ISSBs is their thermal mass, as earth-based materials absorb and release heat slowly, helping to regulate indoor

temperatures. Studies have shown that buildings constructed with ISSBs provide improved thermal comfort compared to conventional sandcrete block structures. Researchers have reported that ISSBs possess sufficient compressive strength for residential construction when manufactured according to recommended standards. The interlocking system improves wall alignment and construction efficiency while maintaining structural integrity.

2.5 Homeowners' Perception of Housing Developments

Perception refers to the process through which individuals interpret and evaluate information based on their experiences, beliefs, attitudes, and expectations. In housing studies, homeowners' perceptions significantly influence housing choices, acceptance of new technologies, and overall residential satisfaction. Factors affecting homeowners' perception include cost of housing, structural safety, durability, aesthetic appeal, environmental performance, maintenance requirements, social acceptance, and cultural beliefs. The adoption of innovative housing technologies depends not only on technical performance but also on how potential users perceive the technology. If homeowners perceive a housing material as inferior or unsuitable, adoption rates may remain low regardless of its technical advantages.

2.6 Perception of Alternative Building Materials

Studies on alternative building materials have revealed that public perception often influences adoption more strongly than technical performance. Many homeowners associate earth-based construction with poverty, rural settlements, or temporary structures. Although ISSBs offer numerous benefits, misconceptions regarding durability, appearance, and prestige may discourage potential homeowners from adopting the technology. Research suggests that awareness campaigns and demonstration projects can improve public confidence in alternative construction materials. Community discussions regarding compressed earth construction have similarly highlighted concerns relating to social acceptance, perceived modernity, durability, and regulatory support.

2.7 Awareness and Acceptance of ISSB Housing in Nigeria

Research conducted in Southwestern Nigeria found that awareness of ISSB technology is gradually increasing among construction professionals and housing developers. However, widespread adoption remains limited due to inadequate public awareness and institutional support. Olaleye and Ibitoye (2022) reported that architects generally acknowledge the economic and environmental benefits of ISSBs but identified low awareness and limited practical experience as barriers to widespread adoption. Similarly, Ibitoye and Dare-Abel (2022) observed that the acceptability of ISSBs among housing stakeholders remains moderate despite their recognized advantages.

2.8 Factors Influencing Perception of ISSB Housing

Several factors influence homeowners' attitudes towards ISSB housing developments. Economic factors such as affordability and potential construction cost savings play a significant role in determining homeowners' willingness to adopt ISSB housing. Technical considerations, including durability, structural strength, weather resistance, and maintenance requirements, also affect the level of confidence homeowners have in ISSB structures. Aesthetic factors such as the visual appearance, architectural quality, and overall attractiveness of ISSB buildings contribute to their acceptance among potential homeowners. Environmental factors are equally important, as awareness of the sustainability benefits, energy efficiency, and thermal comfort associated with ISSB housing can positively influence perceptions. Furthermore, social and cultural factors, including traditional beliefs, social status considerations, and the degree of community acceptance, often shape housing preferences and decisions. Finally, awareness and education regarding ISSB technology significantly impact perception and adoption, as homeowners who possess greater knowledge of the technology are generally more likely to develop positive attitudes toward ISSB housing.

2.9 Theoretical Framework: Diffusion of Innovation Theory

This study is anchored on Rogers' (2003) Diffusion of Innovation Theory, which explains how new technologies and ideas spread within a society. According to Rogers, adoption of innovation depends on users' perceptions regarding relative advantage, compatibility, complexity, trialability, and observability. ISSB housing can be regarded as an innovation within the Nigerian housing sector. Homeowners' perceptions regarding its affordability, performance, and social acceptability determine the rate at which the technology is adopted. The theory is relevant because it explains why some homeowners embrace ISSB housing while others remain reluctant despite evidence of its benefits.

2.10 Empirical Review and Research Gap

Ibitoye and Dare-Abel (2022) assessed ISSBs as a sustainable housing solution in Nigeria and found that affordability and sustainability were major advantages; however, low awareness and acceptance limited adoption. Olaleye and Ibitoye (2022) investigated architects' responses to ISSB utilization and reported positive professional attitudes toward the technology but highlighted the need for greater promotion and public sensitization. Ibitoye, Abiola, and Babamboni (2023) examined demographic characteristics of residents living in ISSB housing estates and observed increasing interest in alternative building technologies among homeowners in Southwestern Nigeria. Ibitoye, Dare-Abel, and Alagbe (2021) compared the cost implications of ISSBs and sandcrete blocks and concluded that ISSBs offer significant cost savings capable of supporting affordable housing delivery. These studies demonstrate that while the technical and economic advantages of ISSBs are widely recognized, limited research has specifically focused on homeowners' perceptions toward ISSB housing developments in Nigeria. This gap justifies the present study.

III. RESEARCH METHODOLOGY

This study employed a quantitative cross-sectional survey design to investigate the perception of homeowners towards ISSB housing developments in Nigeria. The cross-sectional survey design was selected as it enables data collection from a population at a single point in time, allowing for the

capture of current socio-cultural realities and attitudes of homeowners without active intervention by the researcher. This design is highly appropriate for correlational research exploring interrelationships among variables of interest.

The research was geographically focused on selected urban housing developments in Lagos and Abuja. The selection of these metropolitan centres was strategic, as Nigeria is currently experiencing one of the largest housing deficits in Africa, heavily exacerbated by rapid urbanization and population growth. Lagos, as Nigeria's commercial nerve centre, has a population exceeding 20 million and experiences significant housing demand due to rural-urban migration and economic activities. Abuja, as the political and administrative centre of Nigeria, represents a planned city with significant government and private-sector housing developments. Both cities have experienced ISSB-related initiatives and provide diverse socioeconomic contexts for comprehensive analysis.

The target population exclusively comprised homeowners residing in selected urban housing developments. While previous studies on ISSB adoption have largely focused on construction professionals, this study intentionally targeted homeowners because they constitute the ultimate users and decision-makers in residential housing investment. The inclusion criteria required participants to be owner-occupiers of residential properties in the study areas, have resided in the property for at least twelve months, be eighteen years or above, and provide informed consent.

A total sample size of 385 homeowners was determined using Cochran's (1977) formula for large populations, providing sufficient statistical power to detect significant differences and relationships. A combination of purposive and stratified random sampling techniques was employed. Purposive sampling was used to identify housing developments where ISSB technology had been implemented, while stratified random sampling was used to select participants from both ISSB and conventional housing developments, stratified by geographical location, housing type, income level, and length of residence. The sample comprised 193 homeowners

from ISSB housing developments and 192 homeowners from conventional sandcrete block housing.

Data were collected using a structured questionnaire developed following a comprehensive review of existing literature. The instrument was structured into five sections capturing demographic information, awareness of ISSB technology, perceived advantages, perceived disadvantages and stigmatization, and overall acceptance and willingness to adopt. The questionnaire employed a five-point Likert scale and was administered through face-to-face interviews, online via Google Forms, and self-administered paper copies. Supplementary data collection included key informant interviews with 20 participants and field observations.

Content validity was ensured through comprehensive literature review, expert review by three housing studies specialists, and pilot testing with 20 homeowners. Reliability was assessed through internal consistency using Cronbach's alpha, with all sections achieving values above 0.70, and test-retest reliability with a correlation coefficient of 0.85. Quantitative data were analyzed using descriptive statistics and multiple regression analysis, with assumptions including normality, homoscedasticity, absence of multicollinearity, linearity, and independence of observations tested and confirmed. Qualitative data were analyzed using thematic analysis following Braun and Clarke's (2006) six-phase approach. Ethical approval was obtained, and all participants provided informed consent, with confidentiality and anonymity strictly maintained throughout the research process.

IV. RESULTS

4.1 Response Rate and Sample Characteristics

A total of 424 questionnaires were distributed across the study areas in Lagos and Abuja. Of these, 385 completed questionnaires were returned and deemed suitable for analysis, representing a response rate of 90.8%. The final analytical sample comprised 193 homeowners from ISSB housing developments (50.1%) and 192 homeowners from conventional sandcrete block housing (49.9%). The demographic

profile indicated that the sample was relatively balanced across key characteristics, with the majority of participants within the 31-60 years age range (67.6%), possessing tertiary education (62.9%), and falling within the N101,000-200,000 and above N200,000 income brackets (60.3%). These characteristics are consistent with homeownership demographics in urban Nigerian settings.

4.2 Awareness of ISSB Technology

The results revealed a stark contrast in awareness levels between the two groups. While 67.4% of ISSB residents reported being "aware" or "very aware" of ISSB technology, only 20.9% of sandcrete residents reported similar levels of awareness. Conversely, 55.7% of sandcrete residents reported being "unaware" or "very unaware" compared to only 16.1% of ISSB residents. This difference was statistically significant ($\chi^2 = 87.43$, $p < 0.001$). For respondents who reported awareness of ISSB technology ($n = 170$), direct exposure to ISSB housing (48.2%) and word of mouth (32.9%) were the most frequently cited sources of awareness, followed by media (25.9%), professional contacts (22.4%), government awareness campaigns (14.7%), demonstration projects (12.4%), and academic publications (9.4%).

4.3 Homeowners' Perceptions of ISSB Housing

ISSB residents rated the advantages of ISSB housing significantly higher than sandcrete residents across all measured attributes ($p < 0.001$). The largest differences were observed for thermal comfort (mean difference = 1.23), durability (mean difference = 1.10), and structural integrity (mean difference = 1.06). For the total sample, the most highly rated advantages were environmental sustainability (Mean = 3.98), affordability (Mean = 3.79), and thermal comfort (Mean = 3.74). Regarding perceived disadvantages and stigmatization, the results revealed significantly lower levels of concern among ISSB residents compared to sandcrete residents across all measured disadvantages ($p < 0.001$). The largest differences were observed for cultural stigma (mean difference = -1.74), social status concerns (mean difference = -1.46), and structural integrity concerns (mean difference = -1.50). For the total sample, the most significant concerns were cultural stigma (Mean

= 3.05), social status concerns (Mean = 3.05), and structural integrity concerns (Mean = 3.10), confirming the existence of cultural stigmatization associating earth-based construction with poverty and low social status. The factors that homeowners identified as influencing their perceptions included affordability (77.4%), durability (74.0%), aesthetic appeal (68.1%), social status (64.4%), environmental sustainability (61.0%), and awareness (59.2%).

4.4 Relationship Between Perceptions and Acceptance

The study revealed that 77.7% of ISSB residents would "definitely" or "probably" purchase ISSB housing compared to only 36.5% of sandcrete residents. Similarly, 81.9% of ISSB residents would recommend ISSB housing to others compared to only 35.4% of sandcrete residents, and 81.3% of ISSB residents expressed high or moderate confidence in investing in ISSB housing compared to only 36.5% of sandcrete residents. The multiple regression analysis explained 52% of the variance in overall acceptance ($R^2 = 0.52$). Awareness emerged as the strongest positive predictor of acceptance ($\beta = 0.28$, $p < 0.001$), followed by perceived affordability ($\beta = 0.16$, $p < 0.001$), perceived durability ($\beta = 0.14$, $p = 0.003$), perceived environmental sustainability ($\beta = 0.11$, $p = 0.017$), and perceived aesthetic appeal ($\beta = 0.09$, $p = 0.046$). Perceived social acceptability was not a statistically significant predictor ($\beta = 0.06$, $p = 0.212$). Regarding factors that would increase acceptance, awareness campaigns and education (78.4%), demonstration projects and site visits (74.0%), government certification and quality assurance (69.6%), financial incentives (66.2%), and professional endorsements (59.2%) were the most frequently cited.

V. DISCUSSION

The findings of this study provide compelling evidence regarding homeowners' perceptions of ISSB housing developments in Nigeria and contribute to understanding the gap between documented technical benefits and limited market adoption. The results demonstrate that awareness of ISSB technology is significantly higher among homeowners residing in ISSB housing developments (67.4%) compared to

those in conventional housing (20.9%). This finding is consistent with the literature suggesting that direct exposure and experiential learning are powerful mechanisms for increasing awareness of new technologies (Rogers, 2003). The identification of direct exposure and word of mouth as primary sources of awareness aligns with previous research by Olaleye and Ibitoye (2022), who reported that inadequate public awareness and limited practical exposure remain major obstacles to wider ISSB adoption. The relatively low awareness among sandcrete residents is concerning and underscores the need for more proactive awareness campaigns targeting potential homeowners without direct exposure to ISSB housing.

The study revealed significant differences in perceptions between ISSB residents and sandcrete residents across all measured attributes ($p < 0.001$). The finding that both groups acknowledged the affordability of ISSB housing, with ISSB residents rating it more highly, is consistent with previous cost comparison studies by Ibitoye, Dare-Abel, and Alagbe (2021) demonstrating significant cost savings. The most striking difference was observed in perceptions of durability and structural integrity, with ISSB residents rating these attributes highly while sandcrete residents expressed significant concerns. This finding suggests that actual experience with ISSB housing dispels misconceptions about durability, consistent with research by Fundi (2019) demonstrating the structural adequacy of properly manufactured ISSBs. The significant difference in perceptions of thermal comfort is consistent with the documented thermal performance advantages of earth-based construction (UN-Habitat, 2009), with important implications for energy efficiency and health outcomes. While ISSB residents rated aesthetic appeal positively, sandcrete residents expressed concerns, suggesting that aesthetic perceptions may be influenced by cultural associations and familiarity with earth-based construction.

The study confirmed the existence of cultural stigma associating earth-based construction with poverty, rural settlements, and temporary structures. Sandcrete residents expressed significant concerns about

cultural stigma and social status, while ISSB residents expressed minimal concerns. This finding is consistent with previous research by Amadi and Amadi (2018), who observed that many Nigerians continue to perceive earth-based construction materials as inferior. However, the non-significance of social acceptability in the regression model suggests that once homeowners are considering ISSB housing, social status concerns may be less important than functional attributes such as affordability, durability, and sustainability. This finding offers hope that targeted interventions addressing functional concerns could overcome social stigma. Awareness emerged as the strongest predictor of acceptance, confirming that knowledge and understanding of ISSB technology are critical for adoption, consistent with Rogers' (2003) Diffusion of Innovation Theory. The significance of affordability and durability as predictors confirms that homeowners are not solely driven by cost but also seek assurance of long-term performance and value. The identification of awareness campaigns, demonstration projects, and government certification as factors that would increase acceptance provides clear direction for interventions aimed at promoting ISSB housing adoption.

The study contributes to the literature on housing technology adoption and sustainable construction by extending Rogers' Diffusion of Innovation Theory to the Nigerian housing context, identifying the relative importance of different perceptual factors, and demonstrating the importance of cultural and social factors in technology adoption. The finding that cultural stigma and social status concerns are significant barriers but can be overcome through direct experience contributes to understanding the social dimensions of construction technology adoption. The study also contributes to understanding the gap between documented technical benefits and market adoption, suggesting that addressing non-technical barriers including awareness, stigma, and concerns about durability is essential for promoting wider adoption. The findings have substantial practical implications, suggesting that targeted awareness campaigns, investment in demonstration projects, establishment of certification frameworks, financial incentives, and professional endorsements

could significantly increase ISSB adoption. The study also aligns with several Sustainable Development Goals, including SDG 11 (Sustainable Cities and Communities), SDG 3 (Good Health and Well-Being), SDG 12 (Responsible Consumption and Production), and SDG 13 (Climate Action).

VI. CONCLUSION AND RECOMMENDATIONS

This study investigated the perception of homeowners towards Interlocking Stabilized Soil Block housing developments in Nigeria. The findings demonstrate that perceptions significantly influence acceptance and willingness to adopt ISSB technology. Homeowners with direct experience of ISSB housing hold positive perceptions and demonstrate high willingness to adopt, while homeowners without direct experience express significant concerns about durability, cultural stigma, and social status. The study confirms that awareness is the strongest predictor of acceptance, followed by perceived affordability and durability. These findings provide clear direction for interventions aimed at promoting ISSB housing adoption, including awareness campaigns, demonstration projects, government certification, and financial incentives.

The study makes several theoretical contributions by extending Rogers' (2003) Diffusion of Innovation Theory to the Nigerian housing context, identifying the relative importance of different perceptual factors, and highlighting the role of cultural and social factors in technology adoption. The practical implications are substantial, as addressing non-technical barriers to adoption can significantly increase the adoption of this sustainable and affordable housing technology. As Nigeria continues to urbanize rapidly and the housing deficit widens, the adoption of sustainable, affordable, and culturally acceptable building materials will be essential for creating resilient and livable cities. ISSB technology offers a viable pathway to address Nigeria's housing challenges while promoting sustainable development and improving the well-being of homeowners.

Based on the findings, the following recommendations are made: For policymakers and government agencies, comprehensive awareness

campaigns should be developed leveraging multiple channels, with investment in visible demonstration projects serving as "living laboratories" for potential homeowners. Certification frameworks and quality standards for ISSB production and construction should be established to increase confidence in the technology. ISSB technology should be integrated into national affordable housing programmes, with financial incentives including tax breaks, subsidies, or favorable mortgage terms for ISSB housing purchasers. Building codes should be revised to recognize and accommodate ISSB construction, removing regulatory barriers favouring sandcrete block construction. For construction professionals, active endorsement of ISSB technology through professional bodies, investment in innovative designs to address aesthetic concerns, rigorous quality control measures, and documentation of successful projects are recommended. For ISSB technology promoters and manufacturers, enhanced marketing strategies addressing identified acceptance factors, improved product presentation offering a range of finishes and design options, training programmes for builders and masons, and partnerships with research institutions and government agencies are recommended. For homeowners and communities, active participation in awareness programmes, formation of community groups to facilitate word-of-mouth communication, sharing of positive experiences, and advocacy for supportive government policies are encouraged.

Future research should employ longitudinal designs to examine changes in perceptions over time and establish causal relationships, examine seasonal variation in perceptions of thermal comfort, extend the study to other Nigerian regions, conduct more in-depth qualitative research including ethnographic studies, examine the long-term cost-effectiveness of ISSB housing, evaluate the effectiveness of specific interventions, conduct detailed environmental performance studies including thermal monitoring, and compare perceptions of ISSB housing with other alternative building materials. By addressing these research gaps and implementing the recommended strategies, Nigeria can significantly increase the adoption of ISSB technology, contributing to sustainable and affordable housing delivery for its rapidly growing population.

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