

A Participatory Decision-Making Model for integrating Hausa Socio-Cultural Housing Pattern in the Sustainable Redevelopment of Informal Settlement in Minna, Nigeria

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Abstract- Nigerian cities experience continuous growth of informal settlements because urban areas expand while there is a shortage of housing and planning systems remain inadequate. The city of Minna in Niger State contains numerous settlements which serve as residential areas for Hausa people who maintain their traditional architectural styles which reflect their cultural and religious and environmental beliefs. The majority of redevelopment projects implement contemporary building methods which disregard local construction methods, leading to community opposition and environmental harm. The study investigates how important Hausa cultural housing traditions function in participatory design procedures which lead to sustainable development of informal settlements in Minna. The study identifies essential cultural housing components through a mixed empirical method which uses direct field research, interviews with main sources, and analysis of written materials to assess their suitability for participatory development methods. The research results create a decision-making framework which respects cultural practices while combining community participation and sustainability and social values. The study demonstrates that redevelopment methods which combine Hausa traditional housing practices with community decision-making processes will result in better social acceptance and environmental sustainability and enduring benefits.

Keywords: *hausa housing culture, participatory design, informal settlements, sustainable redevelopment, minna, nigeria*

I. INTRODUCTION

The urban growth of Nigeria has developed at a speed that exceeds what official planning organizations can manage which causes cities to expand without proper planning when their populations grow beyond the capacity of current

housing and infrastructure systems. The system breakdown has created numerous informal settlements that now serve as the primary housing solution for low- and middle-income residents throughout multiple Nigerian cities which show fundamental weaknesses in their urban management and housing provision systems (Essien, 2024).

The informal settlements of northern Nigerian cities such as Minna serve dual purposes because they provide shelter for the poor while functioning as museums that display their cultural heritage. The spaces represent the ancestral customs of the Hausa people through their building design which includes specific spatial arrangements and their traditional housing patterns and their communal spaces that Islamic religious beliefs and extended family structures and their responses to weather conditions (Ibrahim et al., 2024). The Hausa traditional house design which surrounds central courtyards with family compounds creates spaces for social interaction and private time that enables multiple generations to live together while maintaining their cultural identity through architectural design.

The standard housing designs that authorities use for their redevelopment and upgrading programs fail to recognize the existing cultural values which they should protect as established by local communities. The research findings show that housing projects which do not match local cultural traditions face difficulties in getting community support because residents will not take responsibility for maintaining these projects that do not reflect their everyday life and community standards (Lawanson and Odekunle 2020 and Ogun and Stren 2025). The results of

redevelopment projects that lack cultural connections create social problems which communities cannot maintain for long periods.

The study addresses the existing research gap through its empirical research which examines how Hausa social and cultural housing practices can be integrated into participatory design methods used for redeveloping informal settlements. The paper presents a decision-making model which Minna needs to implement for attaining sustainable development while preserving its traditional heritage.

II. LITERATURE REVIEW

2.1 Informal Settlement Redevelopment in Nigeria

The essential characteristic of informal settlements arises from their three interconnected deficiencies which include physical challenges and legal issues and social problems, but their most significant aspect includes their essential requirement for permanent land rights and basic infrastructure development and proper housing conditions. The UN-Habitat organization defines informal settlements as regions where people do not possess legal land ownership rights and there exists a critical shortage of vital services which include safe drinking water and sanitation and drainage systems and electricity and roads and the housing structures fail to meet established planning and construction requirements (UN-Habitat, 2015). In Nigeria, tenure insecurity is closely associated with informal land markets and incremental housing development, particularly in contexts where formal land access is rigid and exclusionary, which forces households into unregulated and self-built solutions (Alabi et al., 2026; Essien, 2024). The lack of secure land rights creates two problems for residents because it results in ongoing eviction threats and it discourages them from spending money on home improvements (Ogun & Stren, 2025).

The basic services in these settlements are insufficient which creates conditions that threaten public health and make people more susceptible to environmental dangers. The informal neighbourhoods of Nigerian cities face three major problems which include overcrowding and poor sanitation and limited

healthcare accessibility that increase the chances of infectious diseases and result in lower life-quality outcomes (Adejare et al., 2024; BMC Public Health, 2024). The common absence of essential infrastructure which includes drinking water systems and operational drainage networks and dependable electricity services endangers the health of residents while it increases the likelihood of floods and environmental harm which results from ineffective stormwater management and broken road connections (Linklater et al., 2025; World Bank, 2020). Economic challenges force housing units to use temporary materials which leads to unsafe structures that do not meet safety regulations.

The pattern of urban redevelopment policies in Nigerian cities has relied on modernist planning systems which value visual order and building design consistency more than actual cultural practices. The clearance-based methods needed to demolish informal settlements while building new residential areas which required residents to move away from their existing social ties and work locations and cultural environments (Lawanson & Odekunle, 2020). The latest studies demonstrate that these programs break apart extended family connections and neighborhood assistance networks which results in social displacement and decreased health status for people who have been moved from their homes (Abubakar & Doan, 2017; Nature Cities, 2025).

Relocation programmes often fail to recognize the vital importance of specific locations which communities use to maintain their social connections and cultural heritage and their daily activities. People who move to new areas from their previous homes tend to view the new locations as completely different from their normal living spaces which leads to their dissatisfaction and their decision to leave and create new informal settlements in different locations (Ogun & Stren, 2025; Essien, 2024). The current pattern demonstrates how demolition-based urban renewal methods fail to produce sustainable results because the primary challenges stem from the need to match housing policies with the cultural and economic and social needs of communities.

2.2 Hausa Traditional Housing and Socio-Cultural Values

Hausa residential architecture uses a compound-based housing system which features a central courtyard as the main area for spatial and social activities and environmental purposes. The courtyard functions as a versatile area which enables people to conduct their daily household tasks and social activities and formal events and casual meetings, while it also acts as a natural climate control system which improves thermal comfort in the northern Nigerian hot semi-arid climate (Ibrahim et al., 2024). The compound design creates indoor spaces which protect inhabitants from heat and dust while allowing fresh air and sunlight to enter adjacent areas.

The internal layout of Hausa houses follows a clearly defined spatial hierarchy which directs movement between public and private areas because cultural customs about privacy and gender relationships and family structure dictate their use. The entrance spaces which include the zaure function as public waiting areas which permit visitors to enter the house while they establish contact with people from the surrounding community. The area beyond this entry point controls access to different levels of space which include public areas and semi-private courtyards and inner family spaces that support domestic activities and maintain cultural standards for gender separation and household privacy which exist in Islamic social structures (Abdullahi & Embi, 2021). The spatial arrangement of this area establishes social order, which maintains cultural identity through its architectural design.

Hausa housing uses passive design techniques which function without any need for mechanical systems to achieve permanent environmental sustainability according to environmental assessments. The building design uses thick earthen walls which possess high thermal mass to create indoor temperature control by storing daytime heat and releasing it throughout the night while their small outside openings create restrictions on solar energy absorption. The design of courtyards enables natural ventilation to function through the creation of pressure differences which drive out hot air while bringing in cooler air to flow through the living areas

(Adegun & Adedeji, 2017; Salami et al., 2023). The courtyard area contains vegetation and shaded surfaces which create better microclimatic conditions that enable people to enjoy outdoor spaces throughout the day.

The combination of social and environmental initiatives demonstrates two sustainable development systems which exist within Hausa architectural design. The first system achieves social sustainability through architectural design which enables communities to maintain their cultural traditions and their family relationships and individual privacy rights. The second system achieves environmental sustainability through design methods which use local building materials and energy-saving passive cooling systems to adapt to climatic conditions. Contemporary studies increasingly recognise Hausa compound housing as an indigenous model of sustainable architecture whose principles remain relevant for modern housing design in hot climates especially in contexts where energy efficiency and cultural continuity and affordability represent critical concerns (Ibrahim, et al., 2024; Salami, et al., 2023; UN Habitat 2022).

2.3 Participatory Design and Sustainability

The definition of participatory design describes it as a group effort between professionals and users who work together from the beginning of a project until its final execution to create results which reflect their actual experiences and their understanding of the area (Sanoff 2000). The latest proof from projects that upgrade informal settlements shows that participatory planning methods create better results for sustainability and fairness and community resilience when residents have decision-making authority instead of just advisory positions (Discover Global Society review 2024). Research demonstrates that active involvement from residents in both planning and execution creates community ownership over infrastructure which leads to better upkeep and development of solutions that match their everyday cultural backgrounds (Discover Global Society review 2024; Karwitha et al., 2025). The combination of local knowledge with community development and inclusive processes- which participatory methods use- now stands as the main method to create housing

redevelopment solutions that offer long-term social justice and local relevance (Alhassan 2025; Urban Planning thematic issue 2025). The practice of limited participation combined with tokenistic engagement methods results in interventions that show reduced effectiveness while the community becomes less receptive and the long-term sustainability decreases (Discover Global Society review 2024).

III. METHODOLOGY

3.1 Research Design

The research study used qualitative empirical research design which enables researchers to study social and cultural and spatial elements of informal settlements through detailed research. The research used qualitative methods to study how people in the study area experience their daily lives and interact with others and practice their cultural traditions and use housing and urban areas (Creswell & Poth, 2018; Yin, 2018). The research design provided detailed contextual information about Hausa housing patterns and community decision-making processes and how built environments interact with social and cultural factors which researchers needed to create their participatory decision-making model for redevelopment.

3.2 Study Area

The research study took place in Minna which serves as the capital city of Niger State located in the central northern region of Nigeria. The city of Minna consists of officially designated residential districts and vast unregulated areas that contain both Kpakungu and Bosso and Limawa. The unregulated areas of the city display multiple housing types and high population density and distinct social spatial patterns which researchers can use to study how cultural and environmental elements and community involvement impact housing redevelopment. The majority of residents in these settlements are members of the Hausa ethnic group, whose traditional housing practices and communal structures provide a critical lens for examining culturally responsive design and participatory planning.

3.3 Data Collection Methods

Data were collected using a triangulated approach to ensure credibility, depth, and breadth of understanding:

1. Field Observations – The study conducted systematic observations of housing layouts, compound structures, courtyard usage, and spatial organization to identify design patterns that occurred repeatedly and environmental adaptations and social functions of the spaces. The researchers used photographs and sketches to create a spatial record of the research area.
2. Key Informant Interviews – The research team conducted semi-structured interviews with community leaders and elders and women representatives and local planning officials. The interviews examined how residents believed their housing requirements and cultural traditions and the difficulties of formalizing informal settlements and their participatory programs. The research team created interview guides through initial literature examination which they tested for clear understanding and applicable content.
3. Document Analysis – The researchers analyzed planning documents and housing policies and previous redevelopment studies to establish historical background and detect policy deficiencies and validate research results which emerged from their fieldwork. The research used three types of sources which included municipal planning archives and Niger State housing policies and UN-Habitat reports about informal settlements.

3.4 Data Analysis

Thematic analysis was used to conduct data analysis because it provides a structured method for discovering patterns and identifying common themes and cultural elements that exist in housing practices. The researchers developed codes through multiple rounds of analysis which captured emerging themes about housing design and social organisation and participatory practices and community development activities. Thematic insights were used to develop a decision-making model which integrated both actual

field data and traditional cultural practices of housing use. The research team used NVivo software to handle all qualitative data while developing codes which made their research decisions more visible and traceable throughout their analysis work.

IV. RESULTS

4.1 Socio-Cultural Housing Elements Identified

The empirical findings reveal consistent Hausa housing features across informal settlements in Minna.

Table 1: Identified Hausa Socio-Cultural Housing Elements

Housing Element	Description	Socio-Cultural Significance
Central courtyard	Open internal space	Social interaction, ventilation
Spatial hierarchy	Public-private zoning	Privacy, gender norms
Compound living	Extended family housing	Kinship cohesion
Incremental expansion	Phased construction	Affordability, adaptability
Local materials	Earth blocks, timber	Climate response, identity

The housing elements in table 1 demonstrate how traditional Hausa settlements link their built environments with their social and cultural activities because their houses function as spaces for social organization and cultural preservation and environmental adjustment. The central courtyard functions as the primary area for family activities because it offers a location where family members can meet and complete their daily tasks while creating social connections and improving indoor airflow and temperature control which is essential for Minna's hot weather conditions. The spatial hierarchy principle controls the house layout by dividing spaces into three distinct areas which include public spaces and semi-private areas and private spaces. The arrangement of the space establishes a system of privacy control which follows traditional Islamic and Hausa practices to maintain gender separation while regulating social interactions that build household moral standards and social norms.

Compound living is equally important because it provides space for extended family members to stay together while their family relationships grow stronger through their shared living and shared duties. The housing system enables people to receive social security benefits while family members from different generations can spend time together and people can support each other which helps build community strength. Hausa people use incremental expansion to build their homes because this building

method lets them develop their houses according to their changing family needs and expanding financial resources which results in affordable housing that maintains its value over time. The integrated housing system uses local materials which include earth blocks and timber to address climatic needs while maintaining cultural heritage. The combination of these elements demonstrates that Hausa housing patterns function as active cultural solutions which offer socially acceptable and environmentally sustainable options for Minna's informal settlement redevelopment.

4.2 Community Perceptions of Redevelopment

Interviews indicate strong community preference for redevelopment approaches that preserve compound living and courtyard spaces. Residents expressed resistance to rigid apartment-style housing blocks.

Table 2: Community Perceptions on Redevelopment Approaches

Redevelopment Feature	Community Response
Courtyard retention	Highly preferred
High-rise flats	Strongly rejected
Participatory planning	Strongly supported
Incremental upgrading	Preferred

Table 2 provides evidence which shows that residents of Minna's informal settlements prefer traditional spatial patterns together with processes that involve all community members in decision-making. Residents show strong attachment to courtyard spaces because this housing design allows them to socialize with others while maintaining their personal space and enjoying comfortable temperatures. The function of courtyards extends beyond architectural design elements because they serve as vital areas which people use for their everyday activities and cultural practices and family bonding. The community prefers development methods which will maintain their current lifestyle instead of introducing them to new housing designs which they do not know.

People refuse to accept high-rise flats because these buildings conflict with their traditional social standards and their common home arrangements. The

public views these buildings as inappropriate for multiple generations to live together because they stop family growth and they interfere with cultural traditions about gender identity and personal space. Residents back participatory planning because they want to take part in shaping redevelopment plans which they developed from their previous experiences of poor outcomes when they were excluded from decision-making. The community prefers incremental upgrading because it demonstrates their understanding of affordable solutions which adapt over time by making small changes instead of large transformations. The table shows that Minna requires social acceptance and sustainable development through three key elements which include traditional housing types and resident-led decision-making processes and adaptive development methods that match their everyday experiences.

Plate 1:



Plate 2:



Plate 3:



V. CONCEPTUAL AND DECISION-MAKING FRAMEWORK

5.1 Conceptual Framework

The conceptual framework illustrates the interaction between socio-cultural values, participatory design, and sustainability outcomes.

Figure 1: Conceptual Framework for Culturally Responsive Redevelopment

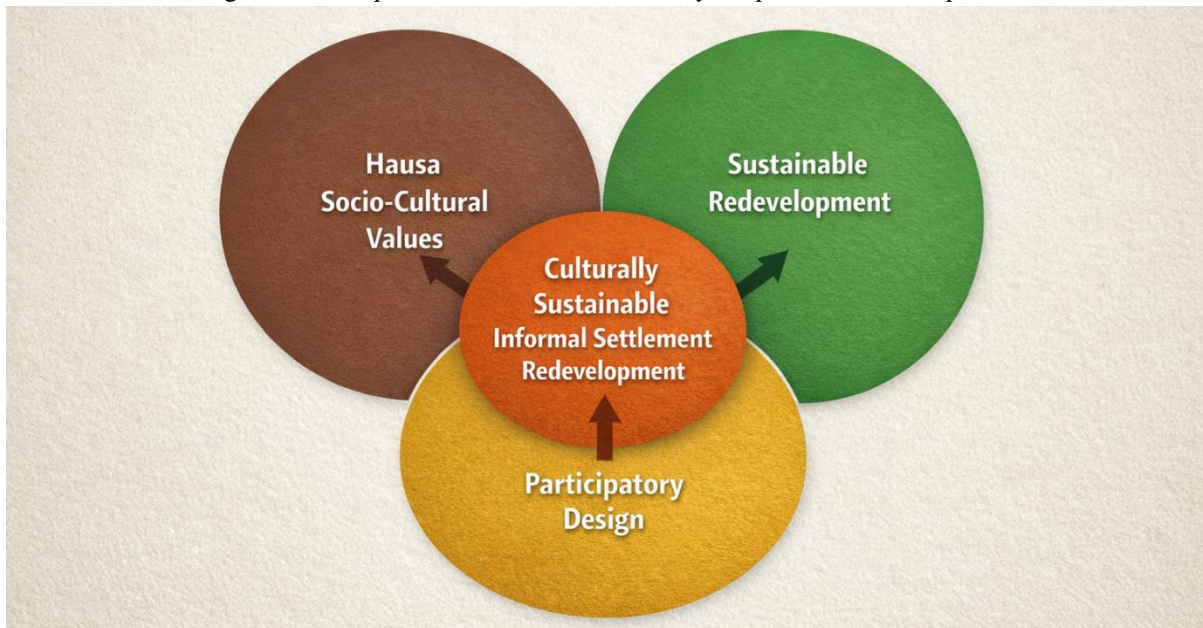


Figure 1 displays a conceptual framework which shows how informal settlement redevelopment will produce sustainable results through the implementation of Hausa cultural values and design methods and sustainable development practices. The framework demonstrates that the traditional housing practices of the Hausa people which include courtyard-based designs and spatial systems and compound housing and local material usage establish

the cultural base of Minna's informal settlements. Sustainable redevelopment creates environmental protection through land management practices which serve both social and economic needs over an extended period. The three components create a framework which enables communities to develop their informal settlements in a sustainable way because successful redevelopment requires the

interconnected effect of cultural preservation and community involvement and sustainable practices

5.2 Proposed Decision-Making Model

Figure 2: Decision-Making Model for Informal Settlement Redevelopment in Minna



Figure 2 shows the proposed decision-making model for informal settlement redevelopment in Minna which operates as a cyclical process that focuses on achieving outcomes which respect local cultural practices and sustainable development. The model starts with community entry and cultural mapping which involves resident engagement to document housing patterns and identify important cultural elements. The design criteria development process uses these findings to create design guidelines which reflect Hausa housing patterns and connect sociocultural traditions with specific local design needs. The process continues with community members and professionals and government representatives working together to achieve planning and decision-making processes which include all stakeholders. The participatory design process establishes the framework for phased upgrading projects which include adaptable building methods and traditional material and construction method usage. The system uses monitoring and feedback to measure progress while gathering community feedback and modifying interventions according to

actual requirements. The model demonstrates that sustainable redevelopment requires an ongoing process which depends on multiple elements because it unifies cultural traditions with community involvement and design needs to maintain social and environmental and cultural sustainability throughout time.

VI. DISCUSSION

The research findings show that Minna's informal settlements maintain their core Hausa cultural housing traditions which showcase traditional heritage elements that continue to be useful for community-based redevelopment work. Kpakungu Bosso and Limawa residents use compound layouts with central courtyards and spatial systems that create different levels of privacy which control access to public areas and private spaces according to the cultural values of the community (Rikko & Gwatau 2011; Ibrahim et al. 2024; Usman et al. 2025). The enduring social patterns of these communities create two benefits which include environmental

sustainability and social bonds because the traditional street design methods provide buildings with natural cooling systems and efficient space management.

The evidence supports previous research conducted by Rikko and Gwatau and Ibem which demonstrates that housing satisfaction has cultural roots while local spatial understanding serves as a fundamental element for assessment. The integration of indigenous design logics into housing redevelopment projects actually creates enduring community ownership together with sustainable development outcomes according to modern research findings (Mba et al. 2025, Yigitcanlar et al. 2025). The participatory methods establish a dual approach through which traditional knowledge gets used alongside modern sustainability practices because both socio-cultural and environmental aspects of these patterns hold significance.

The proposed decision-making model establishes a bridge between Hausa spatial logic and contemporary sustainability goals, demonstrating that redevelopment need not be culturally disruptive. Culturally responsive planning which involves residents in design processes leads to better modernization of traditional housing because it uses their existing knowledge about typical housing patterns to create more relevant and fair and effective redevelopment solutions (UN-Habitat, 2022; Spatial Organisation in Hausa Settlements, 2025). The approach establishes heritage as an asset which supports development of housing solutions that hold social value while adapting to environmental needs and maintaining resilience throughout time.

VII. CONCLUSION

The research demonstrates that sustainable redevelopment of Minna informal settlements needs more than physical improvements because it requires both cultural awareness and participatory decision-making. The integration of Hausa socio-cultural housing patterns into decision-making processes will enable redevelopment projects to achieve better legitimacy and durability and extended operational success. The proposed model provides northern Nigerian city planners and policymakers with an

effective framework which enables them to implement culturally based urban development projects.

VIII. RECOMMENDATIONS

1. The Minna urban planning authorities need to include Hausa socio-cultural housing patterns which include courtyard layouts and spatial hierarchy and compound living areas into their local development regulations and informal settlement redevelopment regulations. The process enables redevelopment work to proceed in a manner which respects local customs and meets community needs.
2. Community members need to join the decision-making process for redevelopment projects which includes their participation in all project stages from needs assessment through to implementation. The process of participatory planning enables community members to take charge of their project while decreasing opposition and guaranteeing that local expertise will be used in the development process.
3. The redevelopment plan needs to permit construction to occur in stages while allowing residents to build their homes gradually according to their financial resources and the traditional development patterns of Hausa houses. This method produces built environments which people can afford and which they can adjust and maintain properly for extended periods.
4. The preservation of cultural identity through local materials which include earth blocks and timber and traditional roofing needs to take precedence because these materials provide thermal comfort and environmental sustainability. The capacity-building programmes for local artisans and builders will enable them to construct high-quality buildings while maintaining traditional building methods.
5. The project implementers and authorities need to establish feedback systems which enable them to monitor project development while collecting resident opinions and making necessary changes to redevelopment plans. The process ensures that interventions can adapt to fulfill cultural and

social and environmental requirements throughout their operational duration.

6. The government and planning authorities need to develop policies which acknowledge that informal settlements require ongoing socio-cultural development to be preserved, so that developers and planners can receive guidelines and incentives to practice participatory development.

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