

# Smart Housing Initiative as Catalyst for Advancing Un-Agenda 2030 in Ota, Nigeria

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## Abstract

This study examines the integration of smart housing initiatives as a strategic mechanism for addressing housing deficits and advancing the United Nations Agenda 2030 in Ota, Nigeria. A mixed-method research design was adopted, combining quantitative assessment of spatial expansion and housing conditions with qualitative evidence from field observations, structured interviews with household heads, and key informant interviews with a local government official. The residential area of Ota was spatially delineated into three zones—traditional core, transitory, and emerging suburban areas—based on building location and residential density. From a sampling frame of 97 streets, 19 streets (20%) were selected, yielding 190 household heads for the survey through stratified random sampling, while key informants were purposively selected. Data were analyzed using descriptive statistics and interpreted in relation to Clarence Perry's neighbourhood concept and relevant Sustainable Development Goal (SDG) indicators. Findings reveal marked spatial variations in residential density and housing conditions. Emerging suburban areas are predominantly low-density, transitory areas exhibit medium-density development, while the traditional core is characterized by high-density housing. These spatial differences correspond with variations in housing quality, environmental deficiencies, slum conditions, and infrastructure deficits across the residential zones. The study concludes that smart housing can provide an important pathway for improving housing and infrastructure outcomes in Ota. It recommends a transition from predominantly analogue systems to integrated smart platforms to enhance resource management, service delivery, transparency, and inclusive urban development, thereby strengthening Ota's contribution to the achievement of Agenda 2030.

**Keywords:** Sustainable Development Goals (SDGs), Housing, Infrastructure, Upgrade, Smart.

## 1. Introduction

Recent studies by Ojoko (2017) and Ogunkan et al. (2026) in housing reveal rapid urbanization in Ota, an industrial hub in Southwestern Nigeria, has exacerbated infrastructure deficit and housing insecurity. Concurrently, the global mandate of UN Agenda 2030 demands immediate technology driven intervention to foster resilient housing. According to (Relm and Vega, 2025; Verdecchia *et al.*, 2022), the future of smart or digital infrastructure involves building robust AI ready and sustainable ecosystems with hyper-connectivity (5G satellite), decentralized computing, advanced security (with zero trust and tolerance) and digital public infrastructure (DPI) to drive inclusive economic growth, smart cities, and efficient public services, focusing heavily on green energy and responsible data management. Therefore, achieving United Nations' Agenda 2030 for global equity has been the focus of the Nigerian government.

Like all other United Nations Member States, Nigeria in 2015 signed the SDG treaty, emphasizing its commitment to working towards realizing the global goals. However, it is evident in ten years into the global commitment that Nigeria like most developing countries is falling behind on its local and global ambitions. This is so because, poverty and inequality in the country are so chronic that it has become a catalyst for terrorism, violence, conflicts, displacement of large populations, environmental degradation, illness due to malnourishment, spread and endemic of diseases, such as HIV/AIDS, multi-drug resistant tuberculosis, malaria and vaccine-preventable childhood diseases (Sakanko *et al.*, 2022). Furthermore, achieving sustainable development goals (SDGs) in Nigeria faces major hurdles of pervasive insecurity, deep rooted corruption and poor governance evident in fund misappropriation or diversion, and weak implementation; a monolithic economy reliant on oil, unemployment, insufficient funding, regional disparities, terrorism and banditry, and environmental degradation, all compounded by global shocks like economic meltdown and pandemics like Ebola and Corona vi-

ruses (Aduma *et al.*, 2012 and Oluwasuji, 2023). Mainly affected are the increasing low-income earners, struggling with overpopulation without a corresponding housing supply and stable mortgage programme.

The Nigerian Forum Digital Repository (2011) states that, with an approximated annual growth rate of 3.4% Ogun state is highly dense especially around major towns like Ota, driven by factors like proximity to Lagos, leading to urban expansion and increased demand for services. In addition to this, traditional housing delivery systems in Ota remain heavily reliant on analog data processing, resulting in prolonged land document delays, inefficient resource allocation and haphazard structural development. This operational friction significantly hinders local progress towards the 2030 sustainable development milestones. Without a systematic pivot to digitized housing, the region risks prolonged infrastructure stagnation and heightened vulnerability to uncontrolled urban sprawl.

Concomitantly, Ota in Ogun state, Nigeria faces a significant housing and infrastructure deficit driven by massive demand, from Lagos spillover and rapid population growth. According to Obisanya, et al. (2023), the problem of housing globally became aggravated after the scourge of Covid-19 in 2020. Ogun State government focused on infrastructure such as road and water under 'ISEYA,' housing reforms of low-cost estates via Ogun State Housing Corporation (OSHC) developing estates like Obasanjo Hill-top, Olokemeji. Digital technology initiatives such as OGTECH Hub in Abeokuta providing free internet and training (Salau and Omoniyi, 2025; Atabo, 2025). Conversely, the well-being of any nation lies on its functional and readily available infrastructure, because it plays a key role in enhancing the built environment. However, since 2012, there has been a record of massive infrastructure deficit, standing at about \$2 trillion, according to development agencies (Abdul *et al.*, 2018). This is further widened by demand for affordable housing from Lagos spillover in Ota. Hence, the manifestation of this gap is substandard housing and government low cost housing failing to meet the financial capacity of public servants and the poor.

It is in a bid to address this infrastructure and housing deficit that this paper positions smart housing initiative, encompassing automated property registry, digital construction workflows and smart data analytics, as critical catalysts to streamline housing delivery and bridge the socioeconomic divide in urban planning.

The aim of this paper is to mitigate housing deficit through smart upgrade of housing in Ota for achievement of United Nations' Agenda 2030. In order to achieve this aim, the following objectives are relevant:

1. Assess socioeconomic characteristics of residents as stakeholders and SDG target group
2. Identify and delineate Ota residential zone towards regional development planning
3. Examine existing situation of the study area for housing and infrastructure deficit
4. Assess residents' knowledge of digital things and application
5. Examine a roadmap integrating SDGs 11 and Clarence Perry's neighbourhood concept, alongside smart upgrade of housing in Ota, Nigeria for the achievement of United Nations' Agenda 2030.

## 2. Literature Review

This section of the study provides secondary data collection and a platform for survey of past efforts in housing studies. It reveals the link between smart housing, infrastructure and the achievement of United Nations' Agenda 2030, as follows:

Housing refers to structure providing shelter for people, this includes; single family houses, manufactured houses, condominium, cooperative housing and apartments. It could be a protective casings for mechanical parts or engine housing, encompassing living spaces for privacy, food and rest, while also meaning the act of providing shelter, a critical social/economic element addressed by government and private sectors through projects, policies like rent-to-own and efforts to bridge deficits for human dignity and development (Moore, 2019; Salau, 2025 and Oxford et al., 2025). According to (United Nations-Habitat, 2025 and United Nations, 2025), housing is crucial as a fundamental human need, providing safety, stability and dignity, acting as a base for physical/mental health, child development and social life, while also driving economic growth, wealth creation as a major asset, generating job opportunities and support community vitality. However, by 2030 UN-Habitat estimates that 3 billion people, about 40% of the world's population will need adequate housing. This translates into a demand for 96,000 new affordable housing units every day. Additionally, an estimated 100 million people worldwide are homeless (more than 1.8 billion people live in informal settlements or inadequate housing with limited access to essential services and are often under

threat of forced eviction) and one in four people live in harmful conditions that to their health, safety and prosperity.

Access to basic infrastructure is crucial for development and growth. It means having the ability to use essential physical systems such as road, power, water and internet and social structures (schools and hospitals) for societal function, vital for economic growth, poverty reduction and quality of life, requiring availability, quality, reliability and affordability to be truly effective and equitable for everyone (Straub, 2025). According to Abdul et al., (2018), infrastructure can be defined as the aggregate of all facilities that allow a society function effectively, believing it as a wide range of economic and social activities crucial to creating an enabling environment for economic growth and enhanced quality of life.

In furtherance to this, internet or digital access is the ability to fully participate in digital society, meaning having affordable, reliable internet, appropriate devices (such as computers and smart phones), and the skills to use them effectively for work, education and social connection, encompassing both general access and crucial digital accessibility for vulnerable people to navigate content and services independently and promoting digital inclusion (Zhang, 2025). Yasar (2023) stated the meaning of digital as the description of electronic technology that generates, stores and processes data in terms of positive and non-positive states. Positive expressed or represented by number 1 (one) and non-positive by the number 0 (zero). Thus data transmitted or stored with digital technology is expressed as a string of bit; a string of bits that a computer can address individually as a group is a byte.

However, with a growing urban population, increasing construction costs, and declining household income, access to affordable housing is becoming more difficult for millions of citizens. Growing housing deficit in Nigeria, particularly in urban areas, has resulted to various housing problems such as overcrowding, homelessness, slum and squatter developments. Despite the myriad of housing policies and programmes to solve the housing deficit, the desired goals have not been achieved (Adegoke and Agbola, 2020). Mboho (2021), stated in his report that, solving the challenge of severe housing deficit will entail creating linkages between the provisions of land to property developers, through increased availability of housing finance, to a reduction in property transaction costs.

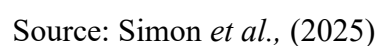
Upgrade as an urban planning phenomenon means improving existing city areas, especially informal settlements, by boosting infrastructure (water, sanitation, and roads), enhancing living conditions (housing, services), fostering economic chances and involving residents for sustainable, inclusive development, tackling issues like decay, congestion and lack of services to create safer, more efficient and equitable urban environment (Alomari, 2020). Synonyms of upgrading are; renewal, revival, and revitalization, its outcome includes achievement of United Nations' Agenda 2030.

The United Nations 2030 Agenda for sustainable development serves as a foundational blueprint that directs local urban interventions towards long-term socio-economic and environmental resilience. Central to this is Sustainable Development Goals (SDGs) 11. The SDGs also known as the global goals were adopted by the United Nations in 2015 as a universal call to action to end poverty, protect the planet and ensure that by 2030 all people enjoy peace and prosperity. The 17 SDGs are integrated –they recognize that action in others, and that development must balance social, economic and environmental sustainability (The Global Goals for Sustainable Development, 2022). Sustainable Development Goal 11 make cities and human settlements inclusive, safe, resilient and sustainable. Sustainable development goal 11 (SDG 11) aims to make cities and human settlements inclusive, safe, resilient and sustainable by 2030. It addresses rapid urbanization challenges like slum, pollution and poor infrastructure. Its key targets include; universal access to housing, transport, green spaces, efficient resource use, waste management and protecting cultural heritage, sustainable urban planning for everyone, especially vulnerable groups (United Nations Environmental Programme, 2025) and UN Nigeria, 2025). In addition to this, (The global goals, 2025) explains that, SDG 9 focuses on building resilient infrastructure, promoting inclusive and sustainable industrialization and fostering innovation to drive economic growth, create jobs and improve living standards while ensuring environmental responsibility and equitable access for all. Its key targets are; upgrading industries, expanding technology, facilitating trade and ensuring everyone benefits from development.

Lesson from this literature survey is that digital housing offers immense advantage for achieving SDGs by 2030. It will create an efficient affordable and sustainable urban environment, boost financial inclusion, improve public services, optimize resource management (energy, water, internet), and enhance transparency in governance, while

## The Study Area

**Figure 1: Delineated Residential Zones in Ota, Ogun State**



**Table 1: Sampling Table**

| Sampled Areas    | No of Streets | Selected Streets                                                                          | No of Streets |
|------------------|---------------|-------------------------------------------------------------------------------------------|---------------|
| Traditional core | 24            | Mefun, Palace road, Okede, Abebi & Koro Otun                                              | 5             |
| Transitional     | 34            | Isawo, Arara, Olu Ojelade, Anuoluwapo, Iyana Ilogbo & Joju                                | 6             |
| Suburban         | 39            | Cocacola road, Fashogbon way, Ogundipe GRA, Davol, Obasanjo road, Hassan, Igberen & Ewupe | 8             |
| <b>Total</b>     | <b>97</b>     |                                                                                           | <b>19</b>     |

Source: Authors' field work, (2026)

ing the merging of Ota, part of the defunct Ifo/Ota Local Government with Ado-Odo/Igbese Areas of the Yewa South Local Government. The Local Government is the second largest in Ogun State with its headquarters at Ota. It is located within the tropical zone, lying between 60 47°N of the equator and 20 33°E and 30 18°E of the Greenwich Meridian. The Local Government covers an area of 1,460 square kilometres and share boundaries with Lagos State, Yewa in the South, Ifo in the West and Ipokia in the North East. From 2006 Census, Ota Local Government Council has an estimated population of 527, 242 with towns, villages and settlements. It is an economically developing Local Government Council and has a direct access road to the Republic of Benin.

Figure 1 as discussed above, shows delineated residential zones in Ota, Ogun state, stratified into; traditional core, transitory and emerging suburban areas.

### 3. Methodology

The methodology blends empirical field data with policy framework for a holistic view of local urban development. The mixed method approach was employed for this study by combining quantitative data regarding spatial expansion and housing deficit with qualitative insights. Primary data collection was gathered from observation checklist, structured interviews with residents via stratified random sampling technique and a key informant, local government official through purposive sampling method. In collecting primary data for this study, the sampling frame identified 97 streets, which were the total number of streets

in the delineated Ota residential zone. These delineated residential zone in Ota shown in figure 1, was stratified into 3 viz; traditional core, transitory and suburban areas, for the purpose of sampling. The sample size derived from this was 20% of the streets in the study area. Hence, 190 respondent household heads were interviewed along 19 sampled streets using stratified random sampling technique.

These randomly selected sampled streets as shown in table 1 are: Mefun, Palace Road, Okede Abebi and Koro Otun streets, selected from the traditional core area; selected from the transitory area was; Isawo, Arara, Olu Ojelade, Aanuoluwapo, Iyana Ilogbo and Joju streets; while Cocacola road, Fashogbon way, Ogundipe GRA, Davol, Obasanjo road, Hassan, Igberen and Ewupe Streets were selected from sub-urban area. Table 1 shows the sample stratification and streets randomly selected, to obtain the sample size and questionnaire administration for this study.

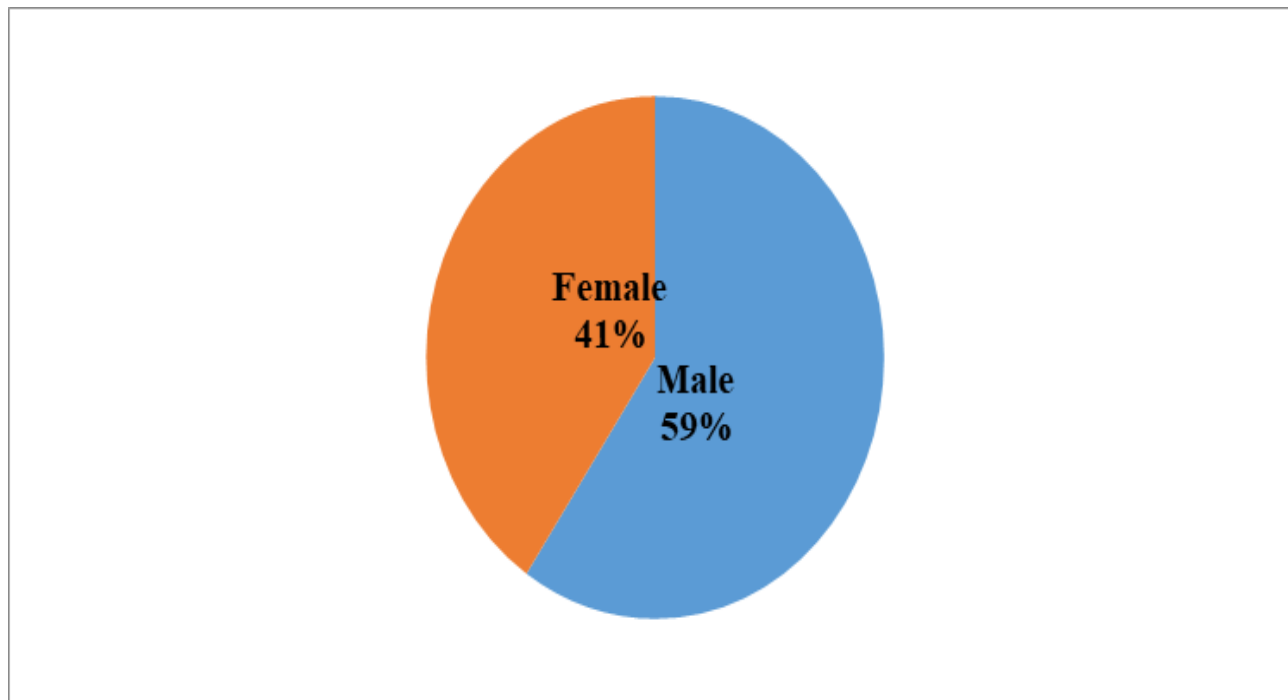
For data analysis, resulting dataset was cross examined against Clarence Perry's neighbourhood concept and SDG indicators using simple descriptive method.

### 4. Findings

The foregoing discussion of findings reveal the derivative of digital housing and domestication of SDGs in Ota, Ogun State.

Figure 1 shows respondents' gender distribution in the study area. As SDG target group 41% of respond-

**Figure 1: Respondents' Gender Distribution**



Source: Authors' field work, (2026)

ents are female while 59% respondents are of the male as tenants make 40%, while landlords stand at 23% and residents in family houses remain 33% in proportion. Respondents in suburban area, resident as tenants make 18%, while resident landlords stand at 11% and none residing in family houses. Therefore, majority of resident tenants reside in the traditional core area, while most landlords reside in the transitory area and the core area is the resident of mogender. Therefore, respondents in the study area as SDG target group are mostly of the male gender. This implies that there might be challenges or discrimination in property acquisition in the study area.

Table 2 shows respondents' monthly income in Ota's delineated residential zone of traditional core, transitory and suburban areas. Respondents who reside in the traditional core area and earn a monthly income less than or equal to =N= 100,000 make a proportion of 61%, while residents in transitory and suburban areas who earn

≤ =N=100,000 stand at 24% and 15% respectively. Furthermore, 50% of respondents resident in the traditional core area, earn a monthly income between =N=100,001 and =N=400,000; while 31% and 19% of respondents who reside in transitory and suburban areas respectively, earn between =N=100,001 and =N=400,000 monthly. Respondents in traditional core area who earn between =N=400,001 and =N=700,000 stand at 41%, while respondents in transitory and suburban areas who earn the same amount make 41% and 18% respectively. In the traditional core area, respondents who earn between =N=700,001 and =N=1,000,000 monthly make 10%, whereas respondents in transitory and suburban who earn the same amount, stand at 60% and 30% respectively. Respondents with monthly income greater than =N=1,000,000 resident in traditional core area make 5%, while respondents in transitory area have a proportion of 55% and respondents in the suburban area stand at 40%.

**Table 2: Respondents' Monthly Income**

| Monthly income (=N=)        | Delineated Residential Zone (%) |            |          | Total (%) |
|-----------------------------|---------------------------------|------------|----------|-----------|
|                             | Core                            | Transitory | Suburban |           |
| Income Group                |                                 |            |          | Total (%) |
| ≤ =N= 100,000               | 61                              | 24         | 15       | 100.0     |
| =N= 100,001 – =N= 400,000   | 50                              | 31         | 19       | 100.0     |
| =N= 400,001 – =N= 700,000   | 41                              | 41         | 18       | 100.0     |
| =N= 700,001 – =N= 1,000,000 | 10                              | 60         | 30       | 100.0     |
| > =N= 1,000,000             | 5                               | 55         | 40       | 100.0     |

Source: Authors' field work, (2026)

Therefore, majority of respondents who earn a monthly income ranging from the minimum wage of =N=70,000, or =N=100,000, to =N=400,000 are resident in the traditional core area; while majority of respondents who reside in the transitory area of Ota, predominantly earn a monthly income ranging from =N=700,000 to =N=1,000,000 and above. This implies that most respondents of the higher income group were resident in the transitory area. Also, that majority of respondents in the study area, are living above the United Nations and World Bank's poverty line of earning Three dollars per day.

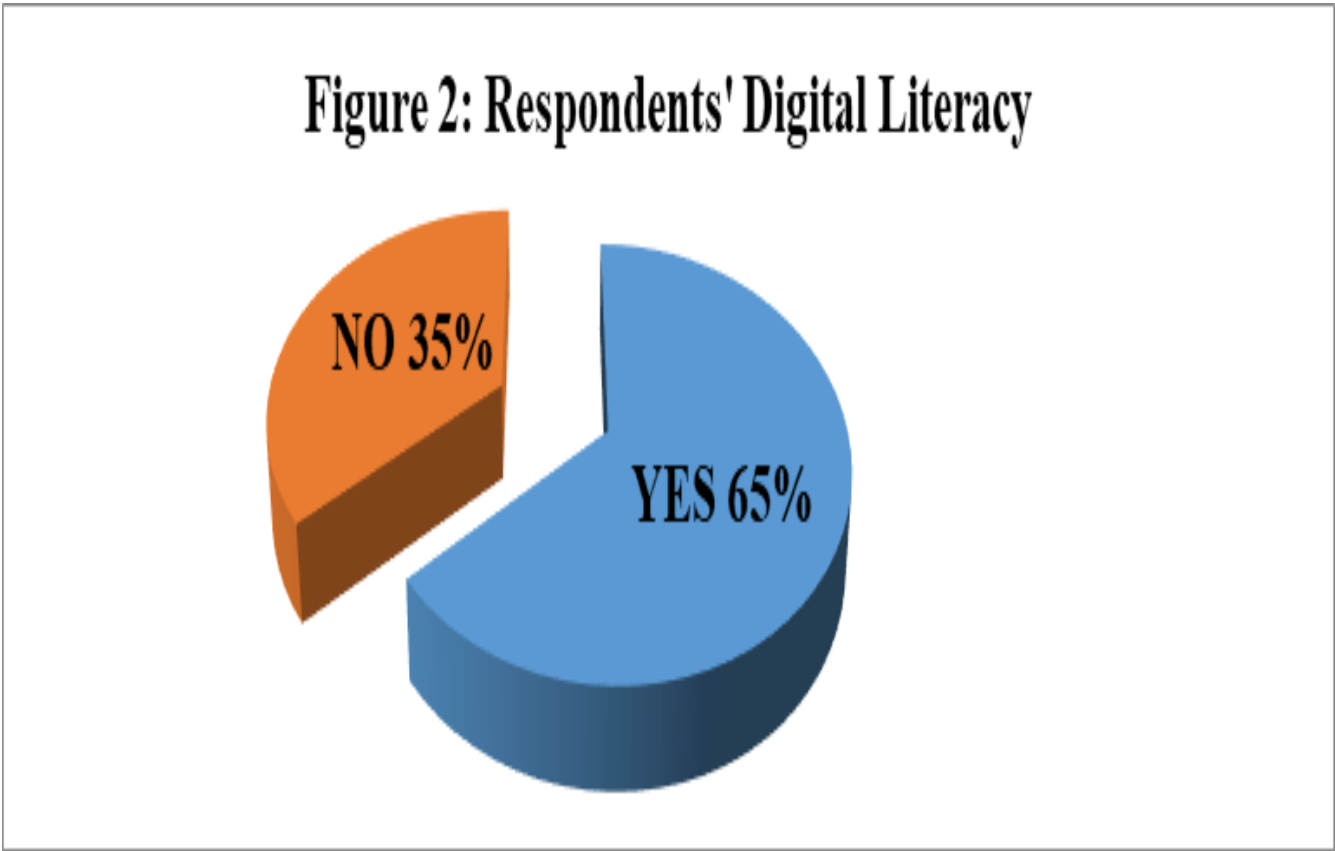
Table 3 shows respondents' occupancy status in the study area. Respondents in the traditional core area resident as tenants make 42%, while resident landlords stand at 66% and residents in family houses remain 67% in proportion. In transitory area, respondents who reside st respondents in family houses. These imply discrimination in access to and legal status of properties in Ota's delineated residential zone.

Figure 2 illustrates the level of digital literacy among respondents in the study area. The findings indicate that 65% of respondents are digitally literate, while 35% lack basic digital literacy. The relatively high proportion of digitally literate respondents suggests a considerable level of readiness for the adoption of technology-enabled housing services in the study area. Access to and use of digital devices, particularly smartphones and computers, may facilitate residents' engagement with smart housing platforms and digital housing information and services. However, the 35% of respondents who are not digitally literate highlights a potential barrier to inclusive smart housing adoption. This group may require targeted digital literacy programmes and alternative access channels to prevent digital exclusion. Overall, the findings suggest that while Ota has a substantial digital foundation upon which smart housing initiatives can be developed, successful implementation should incorpo-

Table 3: Respondents’ Occupancy Status

| Occupancy type | Delineated Residential Zone (%) |                |              | Total (%) |
|----------------|---------------------------------|----------------|--------------|-----------|
|                | Core (%)                        | Transitory (%) | Suburban (%) |           |
| Tenants        | 42                              | 40             | 18           | 100.0     |
| Landlords      | 66                              | 23             | 11           | 100.0     |
| Family House   | 67                              | 33             | 0            | 100.0     |

Source: Authors’ field work, (2026)



Source: Authors’ Field Work, (2026)

rate measures that ensure residents with limited digital skills can also participate and benefit.

Table 4 shows an inventory of the sample areas in Ota, Ogun State, Nigeria using amenities and facilities from Clarence Perry's neighbourhood Unit concept. Ota's residential area stratification of emerging suburban areas is characterized with low-density housing, while transitory and traditional core areas have the characteristics of medium and high-density housing respectively. The sample areas' traditional core, transitory and suburban areas strata have in common: Internet facilities either on their phones or in their buildings; recreational facilities, such as Ota recreational park in the transitory area, wonderland amusement park in the traditional core area and Covenant University sport complex in the emerging suburban area. Also, schools, shopping centres, encroachment on road setbacks, informal sector/slum, impaired traffic/on-street parking, blocked/no drainage, street light, no public toilets, banks, water supply, electricity supply, traffic lights, fire station, police post and ICT cameras are common neighbourhood unit facilities in the sample areas. Bad road, poor building materials, no airspace, no trees/landscape are environmental defects manifest in the traditional core area. Therefore, the study area is an urban place with housing and environmental defects like; informal sector, poor building materials and bad road. These defects indicate that the study area requires a smart upgrade alongside digital for the achievement of UN Agenda 2030 in Ota

## 5 Recommendations

The study findings offers a scalable roadmap for local government and other stakeholders to leverage technology in mitigating Ota's housing deficit; by suggesting the following recommendations:

### 5.1 Public open space and amenities in the traditional core area

Strategic investment in public open spaces, community amenities, and supporting infrastructure is essential for creating a more sustainable and liveable residential environment in Ota. Improving the quality, accessibility, and distribution of parks, recreational areas, community facilities, and other public spaces across the delineated residential zones can enhance residents' quality of life and strengthen neighbourhood cohesion. Such investments should be complemented by the development of green infrastructure, including urban vegeta-

tion, landscaped spaces, and environmentally responsive drainage systems, alongside more efficient and sustainable waste-management practices. Together, these interventions can improve environmental quality, support healthier and more attractive residential environments, enhance housing conditions, and ultimately increase the overall liveability and sustainability of Ota's residential neighbourhoods.

### 5.2 Urban Upgrade and Smart Housing Initiative

The proposed urban upgrade and digital housing initiative should adopt an integrated approach to addressing residents' vulnerabilities, improving community security, and promoting inclusive urban development. The deployment of digital monitoring and smart security systems could strengthen surveillance around residential areas, particularly during working hours when many homes are unoccupied and potentially more vulnerable to burglary and other property-related crimes. Such technologies should complement, rather than replace, conventional security measures, including regular police patrols and community-based security arrangements, to enhance the overall safety of residential neighbourhoods.

The sustainability of the initiative will also depend on effective public awareness, stakeholder engagement, and digital literacy. Targeted awareness campaigns should therefore be implemented through appropriate media platforms, community meetings, workshops, and symposiums to improve residents' understanding of digital housing technologies and the broader objectives of urban upgrading. Engagement should extend to key stakeholders, including residents, urban planners, architects, engineers, developers, technology providers, community leaders, and local government authorities in Ota.

Particular attention should be given to strengthening the participation of women, whose representation in the study was relatively limited. Deliberate efforts to mobilize female residents and professionals through inclusive consultations and targeted outreach would broaden stakeholder representation and ensure that diverse housing needs and perspectives are incorporated into planning and implementation. These measures are consistent with the principles of SDG 11 (Sustainable Cities and Communities) and SDG 9 (Industry, Innovation and Infrastructure), particularly their emphasis on inclusive, resilient, innovative, and sustainable urban development.

**Table 4: Sample Area Inventory using Clarence Perry's Neighbourhood Characteristics**

| Neighbourhood Facilities           | Delineated Residential Zone |            |          |
|------------------------------------|-----------------------------|------------|----------|
|                                    | Core                        | Transitory | Suburban |
| <b>Income Group</b>                |                             |            |          |
| Internet                           | ♦                           | ♦          | ♦        |
| No Recreational facilities         | -                           | -          | -        |
| School                             | ♦                           | ♦          | ♦        |
| Shopping centers                   | ♦                           | ♦          | ♦        |
| No Fire station                    | ♦                           | ♦          | ♦        |
| No Air space                       | ♦                           | -          | -        |
| Encroachment on Road Setbacks      | ♦                           | ♦          | -        |
| Informal Sector/Slum               | ♦                           | ♦          | ♦        |
| High density buildings             | ♦                           | -          | -        |
| Medium density buildings           | -                           | ♦          | -        |
| Low density buildings              | -                           | -          | ♦        |
| Impaired traffic/On-street parking | ♦                           | ♦          | ♦        |
| Bad road                           | ♦                           | -          | ♦        |
| No Controlled waste                | ♦                           | -          | -        |
| Blocked/No drainage                | ♦                           | ♦          | ♦        |
| Street light                       | ♦                           | ♦          | ♦        |
| No Trees/Landscape                 | -                           | ♦          | ♦        |
| Poor Building Materials            | ♦                           | -          | -        |
| Poor Aesthetics                    | ♦                           | -          | -        |
| No public toilets                  | ♦                           | ♦          | ♦        |
| Banks                              | ♦                           | ♦          | ♦        |
| Water Supply                       | ♦                           | ♦          | ♦        |
| Electricity Supply                 | ♦                           | ♦          | ♦        |
| No Clinic                          | -                           | -          | -        |
| Noise Generation                   | ♦                           | ♦          | -        |
| No traffic light                   | -                           | -          | -        |
| ICT Cameras                        | -                           | -          | -        |
| No Police-post                     | ♦                           | ♦          | ♦        |

### 5.3 Local Government Funding of Community Development Agencies (CDAs)

A multi-stakeholder approach should be adopted to strengthen community safety through the deployment of digital security technologies. This approach should involve the active collaboration of landlords' and tenants' associations, local government authorities, community leaders, security agencies, technology providers, and other relevant stakeholders. Local government funding and institutional support, complemented by contributions from property owners, residents, and other partners, can facilitate the acquisition, installation, maintenance, and effective management of digital surveillance and security infrastructure. Such collaborative arrangements would promote shared responsibility for community safety, enhance the sustainability of digital security interventions, and ensure that the technologies deployed respond effectively to the specific security needs of residential communities.

### 5.4 Implementation of Digital Development Plans

Mobile-accessible digital development planning platforms should be developed to facilitate the efficient implementation, coordination, and monitoring of urban development projects. These platforms should incorporate geospatial technologies, environmental modelling, and real-time monitoring capabilities to support evidence-based planning and decision-making. By simulating proposed developments before implementation, the platforms can help planners identify potential design deficiencies, including inadequate public spaces, inappropriate land-use arrangements, insufficient accessibility, and non-compliance with established urban design and planning standards. Early detection of such deficiencies would enable timely corrective measures, reduce costly modifications during implementation, and improve the quality, functionality, and environmental performance of urban development projects. The integration of mobile accessibility would further enhance communication among planners, developers, local government authorities, and residents, thereby promoting transparency, stakeholder participation, and more responsive urban governance.

## 6. Conclusion

This study concludes that the successful transformation of Ota's residential environment into a resilient, liveable, and sustainable urban system requires an inte-

grated approach that combines physical urban regeneration, digital innovation, and inclusive public participation. The findings demonstrate clear spatial differentiation across Ota's residential zones, with emerging suburban areas predominantly characterised by low-density development, transitory areas by medium-density development, and the traditional core by high-density housing. These variations are accompanied by differences in housing quality, environmental conditions, and infrastructure provision.

The relatively high proportion of residents living above the poverty threshold and possessing digital literacy provides a favourable foundation for the adoption of digital housing initiatives. However, persistent concerns regarding equitable access to property and housing opportunities, particularly for women, highlight the need for more inclusive and non-discriminatory planning and property governance practices.

Assessment of Ota's residential areas through the principles of Clarence Perry's neighbourhood unit concept further reveals deficiencies in essential infrastructure, public spaces, accessibility, and community facilities that could constrain progress towards the 2030 Sustainable Development Goals. Addressing these deficiencies requires the complementary application of neighbourhood-based physical regeneration and technology-driven digital housing solutions.

Accordingly, strengthening meaningful public participation among residents, landlords, tenants, local authorities, professionals, and other stakeholders is critical to the effective implementation and sustainability of digital housing interventions. Such an integrated approach can contribute directly to SDG 9 (Industry, Innovation and Infrastructure) and SDG 11 (Sustainable Cities and Communities). Future research should further investigate how digital housing models can be adapted to enhance environmental sustainability, resource efficiency, social inclusion, and urban resilience in Ota and other Nigerian cities.

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