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Examining liveability in the informal community of Kabawa, Nigeria

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Research article

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Abstract

This article examines the nature and causes of liveability challenges faced by the residents of Kabawa, an informal community south-east of Lokoja, the capital of Kogi State, North-Central Nigeria, and points out solutions to the identified problems. Liveability concepts were adopted, while both primary and secondary data were used. The research instruments used included a structured questionnaire, an observation checklist, and a housing facility survey. A total of 180 household heads/respondents were randomly selected for the study. The study establishes that the community exhibited slum characteristics, including poor housing conditions, filthy environment, poor sanitation, indiscriminate waste disposal, and acute lack of basic infrastructure. Illiteracy, poverty, poor maintenance of the available facilities, and lack of participation in governance are common challenges reported by residents. The study recommends improved planning and partnership between government and other community development stakeholders towards achieving improved liveability through participatory, community-centred development and a financial framework.

Keywords: Basic infrastructure, community-centred development, housing, informal settlements, liveability challenges, Lokoja, sanitation management, sustainability, waste management, water access

DIE LEEFBAARHEID IN DIE INFORMELE GEMEENSKAP VAN KABAWA, NIGERIË

Hierdie artikel ondersoek die aard en oorsake van leefbaarheidsuitdagings wat die inwoners van Kabawa, 'n informele gemeenskap suidoos van Lokoja, die hoofstad van Kogi-staat, Noord-Sentraal-Nigerië, in die gesig staar, en identifiseer oplossings vir die geïdentifiseerde probleme. Leefbaarheidskonsepte is aangeneem, terwyl beide primêre en sekondêre data gebruik is. Die navorsingsinstrumente wat gebruik word, sluit 'n gestruktureerde vraelys, 'n waarnemingskontrolelys en 'n behuisingsfasiliteitopname in. 'n Totaal van 180 huishoudingshoofde/-respondente is ewekansig vir die studie gekies. Die studie stel vas dat die gemeenskap kenmerke van krotbuurte vertoon, insluitend swak behuisingstoestande, vuil omgewing, swak sanitasie, onoordeelkundige afvalverwydering en 'n akute gebrek aan basiese infrastruktuur. Ongeletterdheid, armoede, swak instandhouding van die beskikbare fasiliteite en gebrek aan deelname aan bestuur is algemene uitdagings wat deur inwoners gerapporteer word. Die studie beveel verbeterde beplanning en vennootskap tussen die regering en ander gemeenskapsontwikkelingsbelanghebbendes aan om verbeterde leefbaarheid te bereik deur deelnemende gemeenskapsgesentreerde ontwikkeling en 'n finansiële raamwerk.

HLAHLOBO EA TULO E AMOHELEHILENG SECHABENG SA KABAWA, NIGERIA

Sengoliloeng sena se hlahloba mefuta le lisosa tsa mathata a bophelo a tobaneng le baahi ba Kabawa, motse o sa reroang o fumanehang boroa-bochabela ho Lokoja, motse-moholo oa Kogi, Nigeria, 'me se fana ka tharollo mathateng a khethiloeng. Likhopolo tsa tulo e amohelehileng li ile tsa sebelisoa, 'moho le lintlha tse ka sehlohong le tse ling. Lisebelisoa tsa lipatlisiso li ne li kenyellelitse lethathamo la lipotso tse hlophisitsoeng le lethathamo la tlhahlobo ea matlo. Kakaretso ea lihlooho tsa malapa tse 180 li khethiloe ka mokhoa o sa reroang bakeng sa thuto-patlisiso ena. Boithuto ba senotse hore motse ona o na le ts'obotsi e ts'oanang le ea mekhukhu e kenyelelitseng matlo a maemong a hlobaetsang, tikoloho e sa hloekang, lithole tse tsoileng taolong le thlokahalo ea lits'ebeletso tsa motheo. Ho se tsebe ho bala le ho ngola, bofuma, tlhokomelo e fokolang ea litsi tse teng, le ho se be le seabo pusong ke mathata a tloaelehileng a tlalehoang ke baahi. Sengoliloeng sena se sisinya ntlafatso

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ea thero le ts'ebelisano 'moho pakeng tsa 'muso, sechaba le lihlopha tse ling tse amehang molemong oa ntlafatso ea bolulo bo amohelehileng ka nts'etsopele e kenyelelitseng sechaba le moralo oa lichelete.

1. INTRODUCTION

The rapid rate of urbanisation experienced after the industrial revolution has caused a tremendous change in the world (United Nations Human Settlements [UN-Habitat], 2011; Gollin, Jedwab & Vollrath, 2016). As the urban population increases, the land area occupied by cities has increased at an even higher rate (UN-Habitat, 2016). In the World Cities Report of 2022, the UN-Habitat (2022: xv) reports that the world will continue to urbanise over the next three decades – from 56% in 2021 to 68% in 2050. This translates into an increase of 2.2 billion urban residents, living mostly in Africa and Asia (UN-Habitat, 2022: xv).

Human beings have made efforts to achieve a higher quality of life in diverse ways, consequently affecting the environment negatively on both the local and global scales (Soltani & Sharifi, 2012; UN-Habitat, 2017). The urban environment is a living organism; people interact with it and, in turn, it interacts with people. It is the mirror with which we reflect our being (Owoeye & Obayomi, 2015: 17-18). Expressing the mirroring of informality, Alabi, Babalola and Popoola (2021) emphasise the increasing informality in incremental housing apparent in the corridors of the city of Ibadan, Nigeria. Visagie and Turok (2020) report that the spontaneity in growth and emergence and negative traction characterise informal settlement and informality in Africa. Samper, Shelby and Behary (2020: 1) point out that a third of the global urban form comprises informal settlements. Following the global environmental crisis (that is, liveability challenges, poverty, slum development, urban decay), increasing global attention is paid to the need to address the emergence and growth of slums or informal settlements across the world's cities (Ziblim, 2013: 4).

By 2030, 5 billion people will have migrated to cities, placing unprecedented pressure on infrastructure and resources, particularly those related to liveability (Aliyu & Amadu, 2017: 149; UN-Habitat, 2017; United Nations, 2017a; 2017b). By 2050 (UN-Habitat, 2017: 2), 70% of the 7 billion projected world population will be urbanised. India, China, and Nigeria together are expected to account for 37% of the projected growth of the world's urban population between 2014 and 2050. India will add 404 million urban dwellers, China 292 million, and Nigeria 212 million (Newton, 2015: 138; Rajashekariah, 2017: 1). This growth rate will result from the large influx of people to urban centres in search of means of improving their living standards. However, it is essential to stress that the working-age population in Africa is expected to grow by close to 70%, or by approximately 450 million people, between 2015 and 2035, because of population growth (World Economic Forum, 2017: xiv). If the current trends continue, only roughly 100 million people can expect to find stable employment opportunities (World Economic Forum, 2017: xiii), because Africa's macroeconomic policies, investment climate, and quality of human and physical capital remain a limitation to accelerated job creation.

According to Visage and Turok (2020: 351-352), crowded informal settlements in African cities are attributed to unplanned and uncoordinated urban densification. They mention that many cities in Africa are struggling to cope with large-scale urbanisation and the associated negative externalities of congestion, contagion, and pollution, all of which are common features of informal settlements in cities.

Iterating this city informality, Tilaki *et al*. (2011: 160) mention that urbanisation in developing countries, resulting in informality, can be attributed to uncontrolled population influx in many growth poles (many of which are cities) and that migration can be attributed to the formation of informal settlements on the outskirts of major cities. The emergence and spread of informal settlements are now a widespread phenomenon in African cities (Ono & Kidokoro, 2020: 384), including the Nigeria urbanising trends, where empirical evidence reports on the continuing emergence and expansion of informal settlements in Nigeria (Aliyu & Amadu, 2017; Samper *et al.*, 2020; Olatunde *et al*., 2021). Using a case study of some selected informal settlements in Nigeria, John-Nsa (2021: 41) reports that the spatial footprint and density of these settlements have continued to increase, due to numerous liveability factors (Aliyu & Amadu, 2017: 149).

For instance, over the past few decades, the city of Lokoja (administrative capital of Kogi State at the confluence of the Niger and Benue rivers) has experienced high and rapid rates of urbanisation, characterised by unplanned city expansion along with the suburbs and periphery (Alabi, 2009; Ukoje, 2016). Studies on the urbanisation and expansion feature of the city report that Lokoja is currently facing significant challenges in its quality of life and the range of opportunities it can offer its residents (Fatiregun, Mofolorunsho & Osagbemi, 2009; Adetunji & Isah, 2015). Overcrowding, slum development, flooding, noise pollution, poor air quality, traffic congestion, poor waste-management systems, and industrial emissions are the current liveability challenges associated with Lokoja. These have raised the prospect of a crowded, violent, and unhealthy Lokoja city, strengthened by the escalation of intolerable environmental degradation and the collapse of the few provided essential infrastructure services. However, there is a lack of research on the liveability experience in informal spaces such as Kabawa community of Lokoja, because informal spaces, as sub-city fragments of urban space, remain excluded in scientific investigations (Samper *et al.*, 2020: 1; Maemeko, Mukwambo & Nkengbeza, 2021: 39). Kabawa is one of the informal districts in Lokoja which exhibits a high degree of slum characteristics, including overcrowding, poor and inadequate

sanitation facilities, flooding, noise pollution, poor air quality, and unhealthy waste-management systems (Fatiregun *et al*., 2009; Adetunji & Isah, 2015; Ukoje, 2016).

In an attempt to understand and proffer solutions to these liveability challenges (economic, social, and environmental), this article aims to examine the nature and causes of residents' liveability challenges; to assess the physical and environmental factors of liveability, and to suggest solutions to improving liveability in Kabawa.

2. LITERATURE REVIEW

2.1 Urbanisation patterns

Urbanisation in the developing countries shows a very significant level of unplanned and uncontrolled growth, which often outpaces the infrastructure provision and value for space (Collier & Venables, 2017: 356). Urbanisation remains a contested and evolving issue (Frey & Zimmer, 2001: 15), with its underpinning term 'urban' being elusive and volatile (Cohen, 2006: 63; Owusu, 2005: 48). While some researchers argue that the population threshold (minimum range of 1 000-5 000) and density (minimum range of 400-1 000 persons/km^2) are central to urbanisation (Qadeer, 2004: 8), others regard legal boundary, agricultural employment, and political function as primary aspects in understanding urbanisation (Pacione, 2009: 11; UNFPA, 2007: 7).

Urbanisation in Nigeria mirrors the urbanisation challenges within the larger developing countries of Africa (Sulyman & Medayese, 2016: 1; Abdrazack *et al*., 2021: 42). Nigeria's urbanisation is a function of population increase, both natural (birth rate) and migration inclined (rural-urban). The population has increased rapidly over the past 50 years and will likely double within the next 30 years (Braimoh & Onishi, 2007: 502; Peri & Sasahara, 2019: 1-2; Gu, Andreev & Dupre, 2021: 606). Bloch *et al*. (2015: 1) as well as Fox, Bloch and Monroy (2018: 948) argue that the growth of Nigeria's urban population, in both absolute and relative terms, has been accompanied by the expansion of existing built-up areas and the emergence of new and identifiably 'urban' settlements. This rapidly urbanising environment has accounted for a substantial part of the urban system in the country and cascades down to all Nigerian cities (both large and medium sized), leading to the continuous demand for space for basic urban infrastructure such as water, energy, transportation, and housing, among others. Urbanisation in Nigeria is thus driven by unregulated birth rates and rapid movement from rural to urban areas in search of a better livelihood.

In 2013, 32% of the world's urban population, nearly 1 billion people, were housed in slums, with the vast majority of the people living in less economically developed countries (LEDC) (Elledge & McClatchey, 2013:1). This remains the contributory factor to the over 2.5 billion people who do not have access to improved sanitation and 1.5 million children who die from diarrhoea worldwide, as of 2013 (Elledge & McClatchey, 2013:1; WHO, 2017: 1). Virtually all large cities in medium, economically developing countries (MEDC) contain slum districts such as Khayelitsha in Cape Town, South Africa; Vietnam in Muruku and Kario-Bangi district of Nairobi, Kenya; Arat Kilo, Taliyan Sefer, and Tora Bora in Addis Ababa, Ethiopia; Ajegunle, in Lagos; Foko in Ibadan; Oke-Bale in Osogbo, and Kabawa, Karaworo, Ganaja village and Adankolo in Lokoja, Nigeria. This creates challenges for the residents' liveability in these areas. Alluding to the crossroad of spatial planning and urban governance within the new urban agenda, the International Federation of Surveyors (FIG) (2008) emphasises the need for informal spaces regeneration towards achieving sustainable communities. This is emphasised in Lutta, Schoonjans and Lupala (2021: 445, 460), who advocate collaborative planning and management in informal areas. Aligning to the legality that will support planning of informal areas, Onyemenam *et al*. (2016: 8-9) suggest the need for the physical improvement, integration, formalisation, and tenure regularisation of informal settlements towards achieving sustainable communities. The reason for this is that improving living conditions in informal spaces is key to sustainable communities (Tucker & Anantharaman, 2020: 290, 296; Kasim, Wahab & Olayide, 2020: 10).

2.2 Urbanisation and informality

Informal spaces emerge due to land scarcity, resulting in uncoordinated and unplanned sprawling developments on the peripheries of mostly large cities (Lasisi *et al*., 2017: 152; Adeleye *et al*., 2018: 26, 31; Popoola *et al*., 2020: 124).

Owusu (2008: 117) mentions that changes, stress, and shocks associated with land rights and access are due to pressure from the population in city areas. The emergence of informality such as informal land market and peri-urban sprawling remains a challenge in developing countries (Owusu, 2008: 77). Focusing on the spatial economy in the Global South, Van Noorloos, Klaufus and Steel (2019: 855) argue that land is a critical factor in informality and urban sprawling and that land grabbing characterises the city land economy that continues to limit land access to 'all'. Alluding to the effect of urbanisation on land ownership, access and tenure, as well as tenure-related conflicts, Dadashpoor and Ahani (2019: 227) observe that urban expansion towards city peripheral corridors and its associated land-use emergence are due to weak development control and planning, as well as space and land-related informality.

Reporting about the anomalies associated with urbanisation, Onyemenam *et al*. (2016: 88) state that extreme deprivation remains a significant concern, with 1 billion people living in urban fringes, informal spaces, and slums. Despite this, Dovey *et al*. (2020: 1) report that informal settlements serve as an absorption point of entry and access for housing and infrastructure for rural-urban migrants. Their role is further emphasised in informal spaces' collective formality of Global

South metropolitan areas (Dovey & Kamalipour, 2017: 223). With this view, in a collective, inclusive, and sustainable urban space, Dovey *et al*. (2020: 13) state the need for informal spaces to be integrated into the urban formal fabric. They write that the housing, *de facto* tenure, infrastructure, and locational advantage embodied in informal settlements are significant assets of the urban poor that cannot be demolished and replaced without damaging livelihoods (Dovey *et al*., 2020: 13). In Lagos, Nigeria, Popoola *et al*. (2020: 124) note that those informal spaces are characterised by makeshift livelihood and liveability experiences and that the 'usual and expected' forced eviction and demolition cannot be the only options to managing such spaces. Housing modernisation for the wealthy and high-income earners (as a post-eviction and demolition of informal spaces) at the detriment of the urban poor (Olatunde *et al*., 2021: 47) needs to be correctly managed.

2.3 Liveability and quality of life

According to Kaal (2011: 533), the concept of liveability originated in the 1950s in Dutch rural geography. Although much of the focus of the definitions of 'liveability' was on people's individual well-being, a collective, universal definition of the concept 'liveability' remains difficult. Scholars report that 'liveability' is vague and multi-dimensional (Balsas, 2004; Yeun & Ooi, 2009; Wahab, 2017). However, Holden and Scerri (2013: 444) describe liveability as to capture the human living environment. It is the totality of the factors that add up to a community's quality of life, including the built and natural environments, economic prosperity, social stability and equity, educational opportunity, as well as cultural, entertainment, and recreation possibilities (Kasim *et al*., 2020: 3). This also implies that the quality of a human living environment is pleasant, safe, affordable, and supportive of the human community (Wheeler, 2001: 11). This quality of human life, measured with different variables and indicators such as social, economic, environmental, and cultural factors, is important for sustainable liveability (Liu *et al.,* 2017: 99). Liveability is concerned with enhancing both the functioning and the integrity of human life (Khalil, 2012: 80). It covers a wide range of human needs, including food, fundamental security, beauty, cultural expression, and a sense of belonging to a community or a place (Momtaz & Elsemary, 2015: 77). It refers to the environment from the individual's perspective and includes a subjective evaluation and measurement of the quality of the housing conditions (Heylen, 2006: 4).

This article views urban liveability as integrated with the development of factors and resources that help transform the city into a pleasant, economically attractive, convenient, and healthy place for residents and visitors – the characteristics of sustainable liveability in the city. According to the World Commission on Environment and Development (1987: 16), sustainability means a development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs. For human settlements (in this case, urban centres), urban sustainability improves the quality of life in a city, including ecological, cultural, political, institutional, social, and economic components, without leaving a burden on future generations (URBAN21, 2000; Mella & Gazzola, 2015: 542).

Urban sustainable cities provide citizens with access to educational opportunities, healthcare, affordable housing, public spaces, livelihood opportunities, and basic services, which improve the environment with efficient infrastructure for energy, security, transportation, and municipal waste. Liveable cities offer green public areas that are safe, secure, and clean; they enhance individual well-being through social inclusiveness, social justice, ecological sustainability, cultural vibrancy, economic vitality, long-term-oriented policies, and integrated governance processes (Marwa, 2012: 3).

2.4 Liveability and informality

The liveability function of ensuring integrity and security of human life, improved access, and collective sense of belonging within a particular space thus questions the liveability of urban spaces (in the face of informality) globally. In cities of developing countries, urbanisation has become virtually synonymous with urban informal settlements and slum formation. Studies on slums reveal that unhygienic conditions and high population density (people and buildings) are inherent problems with all slum settlements (Husock, 2009: 1; UN-Habitat, 2017). Overcrowding in slum and informal neighbourhoods has an impact on various facilities such as public transport, water, and sanitation provided in urban areas, consequently leading to unprecedented pressure on the amenities in the city (Dhingra *et al.,* 2008: 49; United Nations, 2015; 2017b). Overcrowding also has other liveability challenges such as inadequate affordable housing, inadequate essential services, as well as job scarcity, particularly, for the urban poor who live in informal settlements worldwide.

The need for liveability is emphasised in the management, formalisation, as well as inclusive growth and development of informal settlements. Despite the various institutional attempts, thematic keywords such as poverty, dilapidated housing, institutional neglect, survival struggle, unplanned spaces, infrastructure shortage, overcrowding, and poor quality of life, used to describe slums and informal settlements, pose a threat to their sustainable liveability. For instance, Wahab (2017: 6) avers that slums are often informal settlements because they exhibit similar characteristics, especially lack of planning and development permits. Roy (2009: 82) describes slums as the most deprived and excluded informal settlements, characterised by poverty and large agglomerations of dilapidated housing built along unstable sites. UN-Habitat (2003) defines slums as contiguous settlements, characterised by insecure residential status, poor structural quality

of housing, and overcrowding, inadequate access to potable water, as well as lack or inadequate sanitation infrastructure or services. Maru (2012: 1-5) also argues that, in many instances, people living in slums are not recognised as residents of the city. This often leads to their neglect of governance.

Due to densification, spatial delineation of slums through strategic improvement programmes remains limited and sometimes unsuccessful. If the growth of slums is not controlled, it will be very difficult to implement and execute any proposed development in and around slums. Slum development has considerable impacts on stability, quality of life, development, and sustainability of urban areas at both micro and macro levels (Wahab, 2017: 1-2). Therefore, it requires concerted and sustained policies and actions to alleviate the negative impacts.

Studies suggest the need for a planning framework and sustainable co-partnership interventions for informal settlements in Africa, because the threat to liveability due to informality cannot be underplayed (Abbott, 2002: 317; Smit, 2017: 26).

With respect to the informal spaces as permanent components of the city fabric, Chigwenya and Simbanegavi (2021: 1) suggest the need to include it in the delivery systems of the city for sustainable urbanity. Informal settlements play a crucial role in the provision of housing to low-income urban dwellers. Therefore, Swapan, Zaman and Lehmann (2020: 196) state that informal settlement space emergence and transformation is critical to sustainable urbanisation and planning. Roy (2005: 147) suggests the need for inclusive planning as a framework for distributive justice for informal spaces. This is embedded in Recio's view (2015: 18) that planning plays a critical role, as part of governance processes, in shaping socio-spatial relations and managing multiple arrangements, including informal economic activities, in shared urban spaces.

3. STUDY AREA

3.1 The study setting

Lokoja, the capital of Kogi State, is situated in the north-central geopolitical zone of Nigeria, on the western bank of the River Niger (Figure 1). Lokoja is approximately 162 kilometres from Abuja, the Federal Capital Territory (FCT) of Nigeria. Lokoja town, with a population of 196 643 in 2006 and 741 000 in 2021, is located within Lokoja Local Government Area (LGA) (United Nations, 2022).

The Kabawa community is an informal settlement situated along Chief Olusegun Obasanjo Road in Lokoja and bounded by the River Niger on the right-hand side towards the Lokoja-Abuja Expressway. The community is located at the foot of mountain Patti, behind the International Market in Felele, Lokoja. It lies within latitude 7⁰50′N and 7⁰51′N and longitude 6⁰43′E and 6⁰44′E (Figure 1). A reconnaissance survey revealed that the community is serviced by one healthcare centre, and two government-owned primary and secondary schools, respectively. Based on the researchers' physical enumeration of the residential buildings in the Kabawa community, as undertaken in June 2018, it amounts to 336 buildings made up of 329 bungalows, 32 single-storey, and five 2-storey buildings. Residents are predominantly

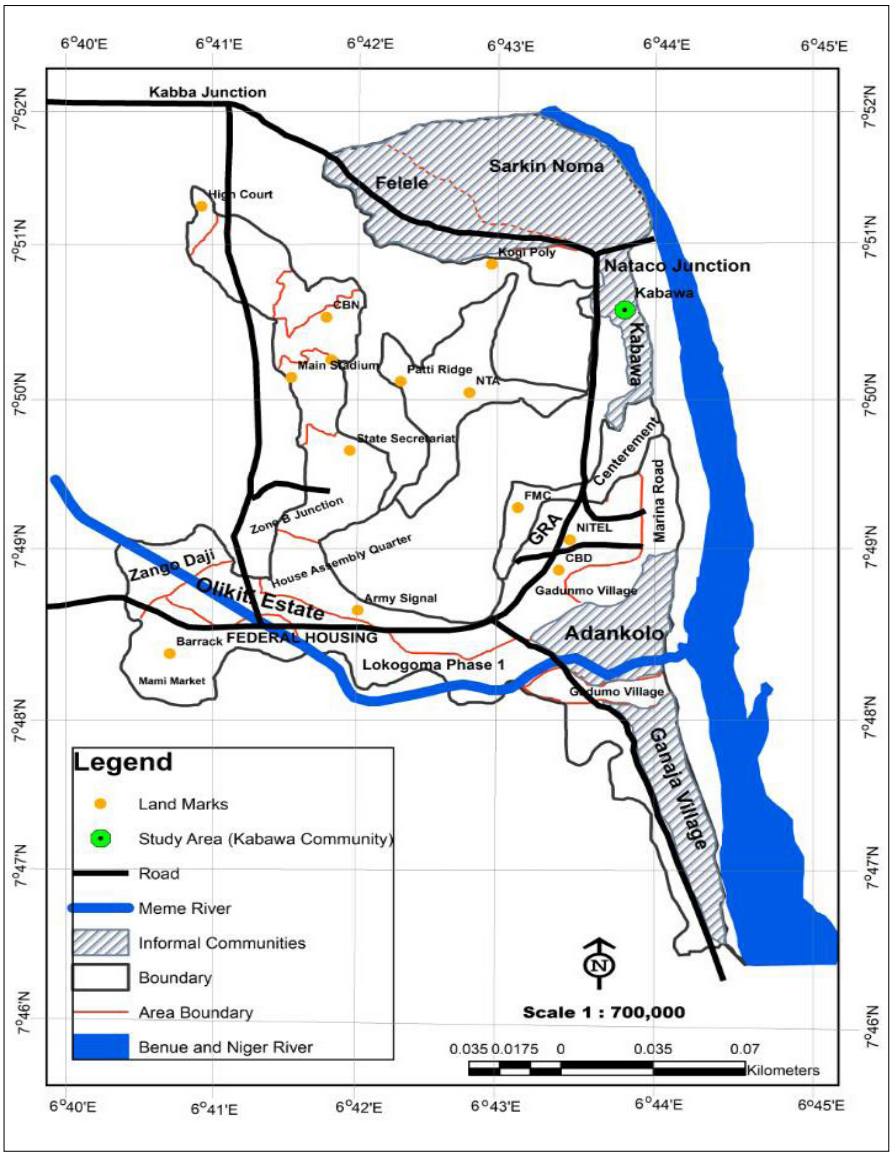

Figure 1: Kabawa study community in the context of Lokoja Metropolis
Source: Adapted from Olarewaju (2015: 22) and rendered by authors

fishermen, traders, farmers, and civil servants. There were only two public toilet facilities (a non-functional 4-pour flush toilet provided by Lokoja Local Government and assisted by *Sure P Programme* in 2013 (Figure 2), and a yet-to-be commissioned 6-water closet toilet facility provided by the Federal Government of Nigeria (Figure 3). The community has four public water-supply facilities, two of which were provided by the government.

3.2 Rationale for selecting the study area

The Kabawa community was selected as a case study area, as it is characterised by primary activities such as farming and informal trading (Oyesanmi, 2017: 51), indicative of liveability struggles due to water and livelihood insecurities (Danjibo, Adeoye & Ojo, 2019; Obihan *et al*., 2019; Society for Family Health, 2021). Geographical exclusion continues to limit these residents' liveability.

4. METHODOLOGY

4.1 Research design

This study adopted a mixed methods research strategy (with an exploratory research design) where qualitative and quantitative data are collected in parallel, analysed separately, and then merged (Creswell, 2014). It also allows for descriptive statistical analysis (Siedlecki, 2020). In this study, a structured questionnaire survey (quantitative) assessed people's views on the housing conditions and sanitation facilities in the Kabawa community (see 4.3).

The observations and interviews (qualitative) explored environmental conditions and waste management practices and water provision that contribute to the liveability challenges faced by Kabawa's residents. The reason for collecting both quantitative and qualitative data is to elaborate on specific findings from the questionnaire survey, such as similar housing and sanitation challenges suggested from respondents and the interviewee (Creswell & Plano-Clark, 2017).

4.2 Population, sample, and response rate

The unit of analysis in this study is households. The National Population Commission (2010: 17) identifies that, in 2006 (the latest verifiable Nigerian census information available at the time of the study), there were a total of 38 612 households in Lokoja LGA. However, the census data did not provide a breakdown and analysis of households in each community across the various LGAs. There was no baseline data on housing stock and household population. Therefore, to arrive at the sample population in Kabawa community, the total number of buildings (366 units), as obtained from the building enumeration survey undertaken, was chosen systematically from every second building (50% of the buildings); a sample of 183 household heads were randomly selected as the respondents for questionnaire administration. Out of the 183 copies of the questionnaire administered, only 180 were considered reliable and all the necessary questions were captured. This represents a response rate of 98.36%. Maxfield and Babbie (2015) state that a response rate of over 60% of the targeted sample size is sufficient to represent the expected sample population.

Interviews were conducted to complement the descriptive variables captured in the study. Three of the interviewees were residents (youth leader, and two community elders) in the sample community, while one interviewee was a public officer

Figure 2: Non-functional 4-pour flush toilet facility in Kabawa community
Source: Authors, 2018

Figure 3: A yet-to-be-commissioned Federal Government-provided 6-water closet toilet facility in Kabawa
Source: Authors, 2018

of the Kogi State Town Planning and Development Board, Lokoja. The interviewees were purposively selected based on their knowledge of the community (resident of over five years), community representative as youth leader and elder, respectively.

4.3 Data collection

From 19 to 27 July 2018, the researcher and the research assistants distributed the structured questionnaire by hand to the 183 selected household heads. They were present between 7.30 am and 6 pm each day to assist respondents in answering the questions.

The questionnaire was divided into three parts. Part one, on the socio-economic characteristics of respondents, obtained information on age, gender, marital status, education, household size, annual income, and occupation. Part two contained eight tick-box questions with 3-5 options on the physical condition of the houses (construction material, roof, walls) and sanitation facilities (bathroom, toilet). Part three covered 4 tick-box questions with 3-5 options on the access to waste and water infrastructure in both the community and the buildings in which the respondents live. Respondents were requested to mark the options that best fit the conditions of their houses and community.

The researcher also made use of field observations to determine the water and sanitation conditions. Observations helped determine external conditions and practices such as open drains and solid waste disposal in unauthorised places. The observations were recorded in the questionnaire spaces that had been left unfilled by the respondents.

The interview schedule questions obtained information on environmental conditions and waste-management practices in the area, their liveability challenges, and residents' willingness to support urban regeneration and liveability-enhancement projects. Questions were translated into both pidgin English and the native language of those respondents who could not speak English.

Ethical issues were given due consideration; the purpose of the study and the content of the research instrument were explained to the participants; confidentiality of the data and respondents' right to privacy were ensured, and the informed consent and willingness of the respondents to participate in the survey were obtained.

4.4 Data analysis and interpretation of findings

In this study, the Statistical Package for Social Science, Version 22, was used to analyse the data captured descriptively. Both frequency and percentage were calculated to explain the socio-economic profile of respondents, the housing conditions and sanitation facilities in the sampled buildings, as well as access to waste and water infrastructure in both the community and the buildings sampled in the study area. Following the frequency data evidence, pictures and interview extracts were used to support the statistical findings (Bazeley, 2009; Wisdom & Creswell, 2013). The interview results were transcribed to English from both pidgin English and the local language, respectively. Thematic content analysis of the interview results provided context to and understanding of issues related to liveability in the study area. These issues are presented in direct quotes in section 6 below.

5. RESULTS

5.1 Characteristics of respondents

Based on frequency of occurrence, Table 1 shows that most of the respondents were males (62.8%), aged between 18-35 years (42.2%). In 62.2% of the houses, between 6 to 15 persons were living in one household. This can be due to family configuration as 53.9% of the respondents were married and, generally, 79.4% of the sampled residents were aged between 18-60 years. This implies a youthful and vibrant population. Most of the respondents (30.6%) were farmers and another 47.8% engaged in

Table 1: Characteristics of respondents

Characteristic	Variable	Category	Frequency (N=180)	%
Socio-demographic characteristics	Gender	Male	113	62.8
		Female	67	37.2
	Age	18-35 years old	76	42.2
		36-60 years old	67	37.2
		60+ years old	37	20.6
	Marital status	Married	97	53.9
		Single	42	23.3
		Widow/Widower	32	17.8
		Divorced	9	5.0
	Household size	2-6 persons in the household	34	18.9
		6-10 persons in the household	55	30.5
		10-15 persons in the household	57	31.7
		15+ persons in the household	34	18.9
Socio-economic characteristics	Education	No formal education	67	37.2
		Primary education	55	30.6
		Secondary education	17	9.4
		Technical college education	9	5.0
		Tertiary education	32	17.8
	Occupation	Farming	55	30.6
		Trading	48	26.7
		Civil service	33	18.3
		Craftsmanship	25	13.9
		Transportation	13	7.2
		Unemployed	6	3.3
	Annual household income	<N 200,000	38	21.1
		N200,000–N300,000	66	36.7
		N300,000– N400,000	50	27.8
		>N400,000	26	14.4

informal activities such as trading (26.7%), craftsmanship (13.9%), and transportation business (7.2%), while only 3.3% were unemployed. This indicates a high level of informal economic activities in the area. Roughly one-fifth of the respondents earned less than N200,000 annually, and 36.7% earned between N200,000 and N300,000 annually (at the time of the survey, N358 = 1USD). Although 30.6% of the respondents had primary school education, over one-third (37.2%) had no formal education. This implies the likelihood that over one-third of the residents were uninformed of the gravity and effect of the precarious conditions in which they lived. This assumption is based on the view that a limited level of education (which includes environmental knowledge and training) will restrict their knowledge of the magnitude of the environmental problem in their setting.

5.2 Housing conditions and sanitation facilities

A survey on housing conditions and sanitation facilities revealed that 62.2% of the respondents used cement blocks for their buildings and that 36.7% of them used mud and stone materials. In comparison, 1.1% of the respondents used timber materials (Table 2). The material used in building the sampled houses indicates that age influences it. Of the buildings, 76.4% were older than 10 years. This indicates a community characterised by old building structures that likely pose liveability challenges to the residents. In terms of structural soundness, as observed in the external condition of the houses' foundation and through personal comments, the study revealed that 41.1% were rated not sound. The conditions of 52.8% of the sampled building walls were either rated deteriorating or deteriorated (Figures 5 and 6). This implies that most of the buildings were in poor structural condition, thus posing a danger to the residents in terms of potential building collapse. The poor housing condition is evident in the 46.1% of the building roofs corroding and corroded.

Poor sanitation facilities influence liveability. Of the respondents, 16.7% lacked access to electricity, 42.8% used bare ground bathroom, 28.3% depended on pit latrine, and 17.2% of houses did not have toilet facilities. This indicates that, although a significant proportion of the residents' homes are connected to public electricity, over a third of the houses did not have in-house bathrooms.

Table 2: Conditions of housing and sanitation facilities

Characteristic	Variable	Category	Frequency (N=180)	%
Housing condition	Construction materials	Cement block	112	62.2
		Mud and stone material	66	36.7
		Timber materials	2	1.1
	Structural soundness	Very sound	38	21.1
		Sound	68	37.8
		Not sound	74	41.1
	Building age	1-5 years	16	8.9
		6-10 years	26	14.4
		11-15 years	38	21.1
		16-20 years	77	42.8
		20+ years	23	12.8
	Condition of walls	Excellent	20	11.1
		Very good	29	16.1
		Good	36	20.0
		Deteriorating	40	22.2
		Deteriorated	55	30.6
	Condition of roof	Excellent	24	13.3
		Very good	35	19.5
		Good	38	21.1
		Corroding	42	23.3
		Corroded	41	22.8
	Availability of electricity	Available	150	83.3
		Not available	30	16.7
Sanitation facilities	Type of toilet	Water closet	77	42.8
		Pour flush toilet	21	11.7
		Pit latrine	51	28.3
		No toilet	31	17.2
	Type of bathroom	Bathtub	21	11.6
		Tiled bathroom	82	45.6
		Covered bare ground	77	42.8

5.3 Waste and sanitation management practices and household water access

The study investigated the environmental condition of the area in terms of the management of solid and liquid waste. Table 3 reveals that 43.3% of the respondents disposed of their solid waste on available open spaces; 32.2% burnt theirs; 17.8% disposed of theirs through the informal waste collectors, while only 6.7% disposed of them through the Kogi State Waste Management Board. This shows that a majority (75.5%) of the respondents engaged in indiscriminate disposal of solid waste (Figure 8), contributing to the observed unhealthy physical environment in which the residents lived in the area. Similarly, most of the respondents (81.7%) engaged in unhygienic disposal of their liquid waste, while 62.8% discharged directly into the bare ground, and 18.9% discharged theirs into open drains. Only 18.3% of the respondents adopted the soak-away method to dispose of their liquid waste.

Table 3 reveals that the most negligible proportion (7.8%) of the respondents sourced their water from the government pipe-borne water supply; 12.2% of the respondents sourced water from water vendors; 13.9% from boreholes (accessed from overhead tanks); 16.7% relied on rainwater, while 24.4% sourced raw (untreated) water from the River Niger (open river), and 25% from hand-dug wells. Although drains were available, most of the respondents (82.2%) claimed that their drainage system is very poor (47.2%), or poor (35.0%).

6. DISCUSSION

6.1 Social conditions

Despite the limited investigation into male or female home ownership in Kabawa, empirical studies suggest that the disparity may be attributed to Nigeria's patriarchal society. In support of this, Oriye, Owoeye and Weje (2012: 443) state that women's experiences in access to, and ownership of land and housing are subjected to communal and male family head control. The gendered limitation in access to land can be further attributed to the respondents' limited income. For instance, Mazzotta and Ng'weno (2020: 1), as well as Popoola, Magidimisha-Chipungu and Chipungu (2022: 285) mention that Nigerian women remain financially limited compared to men.

This is further emphasised in the peculiar informal activity as the main source of livelihood among residents in the Kabawa community. However, the analysis shows the interlink of livelihood, income, and liveability, as noted in Kasim *et al.* (2020: 2), who posit that, compared to rural settlements, African cities are playing an increasingly important role in economic development, and in promoting opportunities to improve the living standards of millions of urban citizens.

6.2 Housing and sanitation facilities

The general evaluation of the sanitation condition of the community remains an underlying limitation to environmental sustainability as well as to household and communal liveability. The study emphasises the role of formal education in environmental ignorance. Popoola *et al*. (2015: 70) report that there exists a relationship between household literacy, and public awareness and education about the effect of housing and human health conditions in slum and squatter settlements. The poor environmental awareness accounted for observed (during household surveys) the indiscriminate discharge of faeces

Table 3: Waste-management practices by the respondents

Characteristic	Variable	Category	Frequency (N=180)	%
Waste	Solid waste disposal	Open space	78	43.3
		Burning on bare ground	58	32.2
		Informal waste managers	32	17.8
		Kogi State Waste Management Board	12	6.7
	Liquid waste disposal	Bare ground/Open space	113	62.8
		Drainage	34	18.9
		Soak-away	33	18.3
Water	Source of water	Pipe-borne	14	7.8
		Water vendor	22	12.2
		Boreholes	25	13.9
		Rain and open sources	30	16.7
		River Niger	44	24.4
		Hand-dug well	45	25.0
	Water drainage condition	Very poor	85	47.2
		Poor	63	35.0
		Fair	23	12.8
		Good	07	3.9
		Very Good	02	1.1

Figure 4: A bare ground covered with roofing sheets used as a bathroom with waste water channelled into the open drains in Kabawa community

Source: Authors' field observation, 2018

either through the famous 'shot put' (open defecation – into unclosed waste-water drains and streets) or on bare grounds (Figure 5). The open drain also serves as waste-water collection from houses with external bathing area. Such bathing spaces were enclosed with used corrugated zinc roofing sheets (Figure 4), from which wastewater was either channelled into public drains or allowed to flow freely in situations where gutters were not available.

This situation points to urban development's challenges to include poor waste disposal, poor sanitation, burgeoning slum, and squalor and environmental degradation. These challenges render the Kabawa environment vulnerable to health and environmental disasters. Likened to the experience in the Kabawa community, Popoola *et al*. (2015) report that income and financial assets of households could influence the environment and household health of both informal settlement residents and their communities. The informal settlers lack the knowledge to accept that housing is a combination of the building and the complementary facilities such as toilets, drainage, and bathroom. All of which contributes to the environmental sustainability of the environment. However, economic power often determines the choice, access, and availability of such a complementary facility.

Examining the environmental condition in the study area shows that most of the respondents are involved in unhygienic disposal of waste. A large group of residents discharged waste directly onto the bare ground and into open drains (Figure 5).

The observation revealed the poor and precarious condition of the drainage infrastructure in Kabawa (Figure 6). The bulk of the drains were open, while only a few were covered. However, it is clear from the research findings that the residents understand the implication of living in proximity to the poor and unhealthy environment but noted that they have no other option but to remain in such an environment, due to the cost of living in areas with better living conditions. This finding aligns with studies (World Bank, 2009; Wahab, 2018; World Economic Forum, 2017) noting that exceptionally rapid urban population growth has outpaced economic growth, and this continues to impact on the type of environment in which urban residents live. Coupled with a *laissez-faire* approach to urban management, this has seen the proliferation of unplanned, under-serviced settlements, where diseases associated with poor water and sanitation are rife. Access to adequate health and education facilities is often limited; insecurity prevails; organised policing is *ad hoc* at best, and employment is mostly informal, insecure, and poorly paid.

In the study area, the only pedestrian walkway is a covered drainage that performs the function of waste-water collection and for limited community circulation and mobility. Other drainage channels were opened, which made them easily blocked with debris mainly from contents spilling from the highways and indiscriminate refuse dumps in the community. This explains the sources of the degradation and stench that filled the environment during the survey. This degradation can be attributed to lack of the facility, pressure on the available facility, or poor maintenance culture by both the government and the community.

The researchers directly observed that the government water-supply facilities in the area are in a state of disrepair. Residents report the poor perception of potable water provision, although the poor facility provision does not depict the government's 'complete' neglect of the community. Direct observation and interviews revealed government's physical development interventions through motorised solar-powered pipe-borne water-facility provision through the Sustainable Development Goals (SDGs) Project in 2016 (Figure 7A).

Figure 5: Poor solid waste disposal in Kabawa community
Source: Authors' field observation, 2018

Figure 6: Unsanitary conditions of open drains in Kabawa community
Source: Authors' field observation, 2018

The facility, which supplies water to the community 2-4 times a week, was being managed by the community and found to be in good working condition at the time of this research (Figure 7B). The Federal Government of Nigeria provided this (Figure 7A/B) in 2017 as a constituency project of a democratically elected House of Representative member of Lokoja/Kogi/Koton-Karfe Federal Constituency. In an interview, a youth leader disclosed that the solar-powered facility supplied water free of charge to residents of the community; it was routinely maintained by the community leaders and remained in excellent working condition. It was observed that, due to poor maintenance (Figure 8) of water infrastructure and the on-off supply from the Kogi State Water Board, these two water points remain the potable water source for the community. The maintenance of the solar-powered facility can be attributed to easy access to spare parts and to a sense of communal ownership of the facility (see Popoola & Magidimisha, 2019; 2020).

As a result, many residents could not access the water, while unquantifiable cubic litres of treated water were continuously wasted. The research findings also show several broken infrastructures such as damaged tap water outlets in the community. These taps were not closed, leading to water leakage and spillage. This experience results in the inability of the water facility to meet the communal demand. Residents now depend on water from unhygienic sources to complement their household needs. Narrating his household experience, a Yoruba male respondent (Interviewee A) spoke on why the respondents relied on other sources of water besides the potable (pipe-borne) water:

> *Omi ijoba koláyòlée, kosi se gbe okànlé. Omi to ye ki won fun wan ni* èmejì *l'osèkan, a le ma ri omi larinòsè meta si osukan. Lai si omi, kosi* ìròrùn… (The government's pipe-borne water supply to the community is epileptic and unreliable. Contrary to the water supply schedule of 2-3 times a week, water is not supplied for upwards of 3 weeks to 1 month. Without water, there is no comfort.)

Based on open-ended responses, the authors conclude that the identified challenges that limit household liveability and communal sustainability are poverty; dirty environment and poor sanitation; inadequate and poor circulation network; overcrowding, and air pollution. Furthermore, some of the sampled households identified illiteracy as their problem, while claiming that governance exclusion was a challenge, as both local and state governments never involved them in any development decision-making or considered them in the provision of basic facilities. Iterating this, Interviewee B (a community leader) had this to say on government neglect and community exclusion:

> Our community had suffered exclusion from the government decision-making process, which led to resentments among the residents in the past. Only a few influential people in the community enjoy the dividend of governance at the detriment of most of the residents.

Popoola and Magidimisha (2020) recognise the role of community in ensuring improved liveability and enhancing livelihood options. Concerning the respondents' preference and willingness to support liveability-enhancement projects, captured open response reveals that the majority of them opted for the electricity project as their major priority for the area. Others include willing to support social housing project, construction of roads, sanitation facilities, drainages, markets, and new schools, youth empowerment programmes, sound security infrastructure, and the support agricultural development projects. The findings indicate that the interests of the residents differed. They were all willing to

Figure 7A/B: Water supply facilities provided under the Sustainable Development Goals (2016); Figure 7A by the Federal Government of Nigeria (2017); Figure 7B by the community

Source: Authors' field observation, 2018

Figure 8: Poor conditions of the water-supply facilities by the Kogi State Water Board

Source: Authors' field observation, 2018

support one type of liveability-enhancement project or the other in their community, with their counterpart contributions in the form of project management, security watch, labour, land, and finance.

The foregoing shows that the Kabawa community experience liveability challenges as reflected in the inadequacy of physical, social, environmental, and healthcare facilities. Government's neglect in allocating resources and liveability-enhancement projects remains a hindrance to sustainable liveability. These situations are not far from the conceptualisation of informal settlements because it is often difficult to know in a typical African city setting when formality merges with informality. If, as Wahab and Agbola (2017) observe, urban informality refers to the ambiguity of instant stability and constant change, then the African city of today is informal. Unless the informal settlements are regarded as 'work in progress' with viable family ties and cultural identity, and as a collection of latent energy to be channelled constructively, informal settlements will continue to be regarded as unsuitable, unedifying areas to be removed and redeveloped according to modern town-planning principles that often do not benefit urban Africans. The planning official interview reports that space and people restriction of planning activities remain contributory factors to the poor liveability condition experienced in the area. Dovey (2012) mentions that physical planning principles are strangers on the local landscape and offensive to the sense and sensibilities of indigenous or local inhabitants. In this regard, liveability indicators should embrace, especially for African cities, new models of city growth and development that are inclusive and that view all sectors as equally contributing to the sustenance of the city. According to Wahab and Ola (2016: 80), "this new approach must include a new system to informality in cities and its potential contribution to sustainable lifestyles".

7. CONCLUSION AND RECOMMENDATIONS

The study findings revealed that the liveability challenges of the residents of the Kabawa informal community were multidimensional to include physical, economic, environmental, and social aspects. The study established that the Kabawa informal community exhibited slum characteristics in poor housing conditions, filthy environment, poor sanitation, indiscriminate waste disposal, and acute lack of basic infrastructure. Illiteracy, poverty, and non-inclusion in governance (as evident in poor infrastructure) were inherent among the residents and were the principal factors for the liveability challenges experienced in the community. There is an urgent need for both government and the community to collaborate on policies and actions that will enhance the area's liveability. This may be through organised, participatory, and community-centred urban regeneration and liveability-enhancement programmes, especially basic urban services. The rejuvenation of neglected parts of the area is required through an organised process and framework that involves retaining some of the good structures, rehabilitating old buildings and facilities, and upgrading existing roads. There is also a need for the construction of more roads to open the blighted and inaccessible areas. Economic revitalisation through the creation of employment opportunities is equally recommended. This will also serve as the potential for capital formation among the residents that will, in turn, strengthen their ability to provide basic household facilities and proper maintenance of buildings.

The study also recommends adequate monitoring of development and strict enforcement of planning and building regulations by planning agencies with the assistance and participation of community-based organisations. State and local governments should collaborate with the private sector operators and civil society organisations to provide basic infrastructure, neighbourhood facilities, and liveability-enhancement projects under participatory community-centred development and sustainable financial and management framework. Indigenous waste management and environmental education, community regeneration, and routine public enlightenment campaign on the liveable community should be introduced and sustained to enhance liveability in the area. Finally, urban planning departments embodying sustainability towards managing informality must be emphasised. This is important because there is no universal archetype for the 'sustainable city', but thousands of possible sustainable cities, as each city has its unique historical, cultural, political, and environmental circumstances.

REFERENCES

ABBOTT, J. 2002. A method-based planning framework for informal settlement upgrading. *Habitat International*, 26(3), pp. 317-333. https://doi.org/10.1016/S0197-3975(01)00050-9

ABD'RAZACK, N., MEDAYESE, S.O., MARTINS, I.V. & IDOWU, O.O. 2021. Comparative analysis of ecological footprint of urban and rural households in Minna Emirate of Niger State, Nigeria. *Journal of Inclusive Cities and Built Environment*, 1(2), pp. 41-54. https://doi.org/10.54030/2788-564X/2021/v1i2a5

ADELEYE, B., AYANGBILE, O., POPOOLA, A. & NDANA, M. 2018. Urban transformation: A changing phase of Minna Central Area, Nigeria. *International Journal of Architecture and Urban Development*, 8(1), pp. 25-32.

ADETUNJI, M. & ISAH, I.O. 2015. Urban housing and its health implications in Nigeria: An example of Lokoja, Kogi State, Nigeria. *Ethiopian Journal of Environmental Studies & Management,* 8(5), pp. 570-578. https://doi.org/10.4314/ejesm.v8i5.10

ALABI, M. 2009. Urban sprawl, pattern and measurement in Lokoja, Nigeria. *Theoretical and Empirical Researches in Urban Management*, 4(13), pp. 158-164.

ALABI, M., BABALOLA, A. & POPOOLA, A. 2021. Tenure insecurity and incremental housing development in the peri-urban interface of Ibadan, Nigeri. *Cidades* [Online], vol. 43. http://journals.openedition.org/cidades/4967. https://doi.org/10.15847/cct.21000

ALIYU, A. & AMADU, L. 2017. Urbanisation, cities, and health: The challenges to Nigeria – A review. *Annals of African Medicine*, 16, pp. 149-158. https://doi.org/10.4103/aam.aam_1_17

BALSAS, C. 2004. Measuring the liveability of an urban centre: An exploratory study of key performance indicators. *Planning Practice & Research*, 19(1), pp. 101-110. https://doi.org/10.1080/0269745042000246603

BAZELEY, P. 2009. Analysing qualitative data: More than 'identifying themes'. *Malaysian Journal of Qualitative Research*, 2(2), pp. 6-22.

BLOCH, R., MONROY, J., FOX, S. & OJO, A. 2015. *Urbanisation and urban expansion in Nigeria. Project Report*. London: ICF International.

BRAIMOH, A. & ONISHI, T. 2007. Spatial determinants of urban land use change in Lagos, Nigeria. *Land Use Policy*, 24(2), pp. 502-515. https://doi.org/10.1016/j.landusepol.2006.09.001

CHIGWENYA, A. & SIMBANEGAVI, P. 2021. Towards sustainable housing: Waste management in informal settlements in Masvingo City, Zimbabwe. In: Almusaed, A. (Ed.). *Sustainable housing*. IntechOpen. DOI: 10.5772/intechopen.98746. [Online]. Available at: <https://www.intechopen.com/chapters/77435> [Accessed: 1 September 2017].

COHEN, B. 2006. Urbanisation in developing countries: Current trends, future projections, and key challenges for sustainability. *Technology in Society*, 28, pp. 63-80. https://doi.org/10.1016/j.techsoc.2005.10.005

COLLIER, P. & VENABLES, A. 2017. Urbanization in developing economies: The assessment. *Oxford Review of Economic Policy*, 33(3), pp. 355-372. https://doi.org/10.1093/oxrep/grx035

CRESWELL, J.W. 2014. *Research design: Qualitative, quantitative and mixed methods approaches*. 4th edition. Thousand Oaks, CA: Sage Publications.

CRESWELL, J.W. & PLANO CLARK, V.L. 2017. *Designing and conducting mixed methods research*. 3rd edition. Thousand Oaks, CA: Sage Publications.

DADASHPOOR, H. & AHANI, S. 2019. Land tenure-related conflicts in peri-urban areas: A review. *Land Use Policy*, 85, pp. 218-229. https://doi.org/10.1016/j.landusepol.2019.03.051

DANJIBO, D., ADEOYE, E. & OJO, S. 2019. Dynamics in the response mechanisms of major stakeholders during flood disaster: A case study of Kogi state, Nigeria. *African Journal of Social Sciences and Humanities Research*, 2(2), pp. 29-42.

DHINGRA, C., GANDHI, S., CHAUREY, A. & AGARWAL, P. 2008. Access to clean energy services for the urban and peri-urban poor: A case study of Delhi, India. *Energy for Sustainable Development*, 12, pp. 49-55. https://doi.org/10.1016/S0973-0826(09)60007-7

DOVEY, K. 2012. Informal urbanism and complex adaptive assemblage. *International Development Planning Review,* 34(4), pp. 349-367. https://doi.org/10.3828/idpr.2012.23

DOVEY, K. & KAMALIPOUR, H. 2017. Informal/formal morphologies. In: Dovey, D., Pafka, E. & Ristic, M. (Eds). *Mapping urbanities: Morphologies, flows, possibilities*. New York: Routledge, pp. 223-248. https://doi.org/10.4324/9781315309163-13

DOVEY, K., VAN OOSTRUM, M., CHATTERJEE, I. & SHAFIQUE, T. 2020. Towards a morphogenesis of informal settlements. *Habitat International*, 104, article number 102240. https://doi.org/10.1016/j.habitatint.2020.102240

ELLEDGE, M. & MCCLATCHEY, M. 2013. India. *Urban sanitation, and the toilet challenge*. Research Brief. RTI Press: USA. http://dx.doi.org/10.3768/rtipress.2013.rb.0006.1309

FATIREGUN, A., MOFOLORUNSHO, K. & OSAGBEMI, K. 2009. Quality of life of people living with HIV/AIDS in Kogi State, Nigeria. *Benin Journal of Postgraduate Medicine*, 11(1), pp. 21-27. https://doi.org/10.4314/bjpm.v11i1.48823

FOX, S., BLOCH, R. & MONROY, J. 2018. Understanding the dynamics of Nigeria's urban transition: A refutation of the 'stalled urbanisation' hypothesis. *Urban Studies*, 55(5), pp. 947-964. https://doi.org/10.1177/0042098017712688

FREY, W.H. & ZIMMER, Z. 2001. Defining the city. In: Paddison, R. (Ed.). *Handbook of urban studies*. London: SAGE Publications, pp. 14-35. https://doi.org/10.4135/9781848608375.n2

GOLLIN, D., JEDWAB, R. & VOLLRATH, D. 2016. Urbanisation with and without industrialization. *Journal of Economic Growth*, 21(1), pp. 35-70. https://doi.org/10.1007/s10887-015-9121-4

GU, D., ANDREEV, K. & DUPRE, M.E. 2021. Major trends in population growth around the world. *China CDC Weekly*, 3(28), pp. 604-613. https://doi.org/10.46234/ccdcw2021.160

HEYLEN, K. 2006. Liveability in social housing: Three case studies in Flanders. Paper presented at the ENHR Conference on "Housing in an expanding Europe: Theory, policy, participation, and implementation", 2-5 July, Ljubljana: Slovenia.

HOLDEN, M. & SCERRI, A. 2013. More than this: Liveable Melbourne meets liveable Vancouver. *Cities,* 31, pp. 444-453. https://doi.org/10.1016/j.cities.2012.07.013

HUSOCK, H. 2009. Slums of hope. *City*, 19. [Online]. Available at: http://www.cityjournal.org/2017/19_1_slums.html [Accessed: 1 September 2017].

INTERNATIONAL FEDERATION OF SURVEYORS (FIG). 2008. *Informal settlements: The road towards more sustainable places.* FIG Publication No. 42. Copenhagen, Denmark: The International Federation of Surveyors (FIG).

JOHN-NSA, C. 2021. Understanding the factors influencing the spatial dynamics of informal settlements: The case of Enugu City, Nigeria. *Town and Regional Planning*, 79, pp. 29-43. https://doi.org/10.18820/2415-0495/trp79i1.5

KAAL, H. 2011. A conceptual history of liveability. *City*, 15(5), pp. 532-547. DOI: 10.1080/13604813.2011.595094

KASIM, O., WAHAB, B. & OLAYIDE, O. 2020. Assessing urban liveability in Africa: Challenges and interventions. In: Leal Filho, W. *et al*. (Eds). *Industry, innovation and infrastructure*. Switzerland: Springer Nature, pp. 1-13. 10.1007/978-3-319-71059-4_70-1

KHALIL, H. 2012. Enhancing quality of life through strategic urban planning. *Sustainable Cities and Society*, 5, pp. 77-86. https://doi.org/10.1016/j.scs.2012.06.002

LASISI, M., POPOOLA, A., ADEDIJI, A., ADEDEJI, O. & BABALOLA, K. 2017. City expansion and agricultural land loss within the peri-urban area of Osun State, Nigeria. *Ghana Journal of Geography*, 9(3), pp. 132-163.

LIU, J., NIJKAMP, P., HUANG, Z. & LIN, D. 2017. Urban liveability and tourism development in China: Analysis of sustainable development by means of spatial panel data. *Habitat International*, 68, pp. 99-107. https://doi.org/10.1016/j.habitatint.2017.02.005

LUTTA, J., SCHOONJANS, Y. & LUPALA, A. 2021. The complexity of social and cultural dynamics in emerging of collective spaces in unplanned urbanisation: Learning from Mlalakuwa-Dar es Salaam. *Current Urban Studies*, 9(3), pp. 445-463. https://doi.org/10.4236/cus.2021.93028

MAEMEKO, E., MUKWAMBO, M. & NKENGBEZA, D. 2021. Social challenges learners residing in informal settlements in Katima Mulilo Town face in learning. *Journal of Curriculum and Teaching*, 10(3), pp. 36-46. https://doi.org/10.5430/jct.v10n3p36

MARU, M. 2012. *Transforming slum settlements on environmentally sensitive areas to sustainable neighbourhood based on adaptive strategies: The case of 'Korea-Sefer', Addis Ababa.* A published MSc thesis, Department of Environmental Planning and Landscape Design. Ethiopian Institute of Architecture, Building Construction and City Development, Addis Ababa University.

MARWA, M. 2012. Urban celebrations-greenway network for liveable and sustainable cities: Case of Nairobi. Unpublished Masters thesis. Central Business District. School of Built Environment, University of Nairobi, Kenya.

MAXFIELD, M. & BABBIE, E. 2015. *Research methods for criminal justice and criminology*. 7th edition. Stamford, CT: Cengage Learning.

MAZZOTTA, B. & NG'WENO, A. 2020. The glass ceiling, even at home: How a report on poverty in Nigeria reveals an enduring gender gap in household headship. [Online]. Available at: <https://bfaglobal.com/insights/the-enduring-gender-gap-in-nigerian-household-headship/> [Accessed: 1 September 2017].

MELLA, P. & GAZZOLA, P. 2015. Sustainability and quality of life: The development model. In: Kapounek, S. (Ed.). *Proceedings of the 18th Annual International Conference Enterprise and Competitive Environment*, 5-6 March, Mendel University, Brno Czech Republic, pp. 542-551.

MOMTAZ, R. & ELSEMARY, Y. 2015. Qualitative conceptions of liveability between theory and applications in Egypt. Paper presented at the International Conference on IT, Architecture, and Mechanical Engineering (ICITAME'2015), 22-23 May, Dubai (UAE).

NATIONAL POPULATION COMMISSION (NPC). 2010. 2006 Population and Housing Census: Priority Table Volume II. Abuja: Housing characteristics and amenities. National Population Commission of Nigeria. [Online]. Available at: <https://catalog.ihsn.org//catalog/3340/download/48525> [Accessed: 29 March 2017].

NEWTON, D. 2015. *Overpopulation: 7 Billion people and counting*. Berkeley Heights, NJ: Enslow Publishing, LLC.

OBIHAN, I., USMAN, A., BOLARIN, J. & KABOSHO, K. 2019. Evaluation of heavy metal status of ground water around Kabawa in Lokoja, North Central, Nigeria. *Salem University Journal of Environmental Sciences*, 1(1), pp. 42-53.

OLAREWAJU, S. 2015. Problems of slum development in Lokoja, Kogi State. Unpublished BSc project submitted to the Department of Geography and Planning, Faculty of the Social Sciences, Kogi State University, Anyigba.

OLATUNDE, M., AGBOLA, B., POPOOLA, A., ADELEYE, B. & MEDAYESE, S. 2021. *Urban eviction in Badia, Lagos: A look at evictees' wellbeing and environmental burden*. *Researches Review of the Department of Geography, Tourism and Hotel Management*, 50(1), pp. 33-51. DOI: 10.5937/ZbDght2101033O

ONO, H. & KIDOKORO, T. 2020. Understanding the development patterns of informal settlements in Nairobi. *Japan Architectural Review*, 3(3), pp. 384-393. https://doi.org/10.1002/2475-8876.12161

ONYEMENAM, P., AYANGBILE, O., POPOOLA, A. & ADELEYE, B. 2016. Towards transforming human settlements in urban fringes of Delta State, Nigeria. In: Perry, G. & Ledwon, S. (Eds). *Proceedings of the 52nd ISOCARP Congress* 'Cities We Have vs. Cities We Need', 12-16 September, Durban, South Africa. ISOCARP, pp. 88-99.

ORIYE, O., OWOEYE, O. & WEJE, I. 2012. Gender equality in housing delivery – A panacea to adequate housing supply in Nigeria. *Mediterranean Journal of Social Sciences*, 3(11), pp. 437-437.

OWOEYE, J. & OBAYOMI, O. 2015. Towards achieving urban environmental sustainability in Lokoja Metropolis, Kogi State Nigeria. *Journal of Environment and Earth Science*, 5(9), pp. 179-188.

OWUSU, G. 2005. Small towns in Ghana: Justifications for their promotion under Ghana's decentralisation programme. *African Studies Quarterly*, 8(2), pp. 48-69.

OWUSU, G. 2008. Indigenes' and migrants' access to land in peri-urban areas of Accra, Ghana. *International Development Planning Review*, 30(2), pp. 177-199. https://doi.org/10.3828/idpr.30.2.5

OYESANMI, O. 2017. An assessment of domestic water consumption pattern in Lokoja Metropolis, Kogi State. *International Journal of Social Sciences,* 11(3), pp. 47-56.

PACIONE, M. 2009. *Urban geography: A global perspective*. 3rd edition. London, U.K: Routledge. https://doi.org/10.4324/9780203881927

PERI, G. & SASAHARA, A. 2019. The impact of global warming on rural-urban migrations: Evidence from global big data (No. w25728). National Bureau of Economic Research. https://doi.org/10.3386/w25728

POPOOLA, A.A & MAGIDIMISHA, H. 2019. Rural energy condition in Oyo State: Present and future perspectives to the untapped resources. *International Journal of Energy Economics and Policy,* 9(5), pp. 419-432. https://doi.org/10.32479/ijeep.7558

POPOOLA, A. & MAGIDIMISHA, H. 2020. Investigating the roles played by selected agencies in infrastructure development. In: Mafukata, M.A. & Tshikolomo, K.A. (Eds). *African perspectives on reshaping rural development*. IGI Global, pp. 289-319. https://doi.org/10.4018/978-1-7998-2306-3.ch014

POPOOLA, A.A., MAGIDIMISHA-CHIPUNGU, H.H. & CHIPUNGU, L. 2022. Profiling the wellbeing of residents in peri-urban villages and rural communities. *African Journal of Development Studies (formerly AFFRIKA Journal of Politics, Economics and Society)*, 12(1), pp. 267-295. https://doi.org/10.31920/2634-3649/2022/v12n1a14

POPOOLA, A., TAWOSE, O., ABATAN, S., ADELEYE, B., JIYAH, F. & MAJOLAGBE, N. 2015. Housing conditions and health of residents in Ibadan North Local Government Area, Ibadan, Oyo State, Nigeria. *Journal of Environmental Sciences and Resource Management*, 7(2), pp. 59-80.

POPOOLA, A., OLATUNDE, M., MAGIDIMISHA, H., ABIODUN, A., ADELEYE, B. & CHIPUNGU, L. 2020. Urban forced evictions: Experiences in the Metropolitan City of Lagos, Nigeria. *Indonesian Journal of Geography,* 52(1), pp. 112-127. https://doi.org/10.22146/ijg.40555

QADEER, M.A. 2004. Urbanisation by implosion. *Habitat International*, 28, pp. 1-12. https://doi.org/10.1016/S0197-3975(02)00069-3

RAJASHEKARIAH, K. 2017. Addressing urbanisation: Turning challenges into opportunities? Oxford Policy Management Limited: United Kingdom. [Online]. Available at: <https://www.opml.co.uk/blog/addressing-urbanisation-turning-challenges-into-opportunities> [Accessed: 12 October 2020].

RECIO, R. 2015. Engaging the 'ungovernable': Urban informality issues and insights for planning. *Journal in Urban and Regional Planning*, 2(1), pp. 18-37.

ROY, A. 2005. Urban informality: Toward an epistemology of planning. *Journal of the American Planning Association*, 71(2), pp. 147-158. https://doi.org/10.1080/01944360508976689

ROY, A. 2009. *Why India cannot plan its cities: Informality, insurgence and the idiom of urbanisation*. Berkeley, CA: SAGE Publications. https://doi.org/10.1177/1473095208099299

SAMPER, J., SHELBY, J. & BEHARY, D. 2020. The paradox of informal settlements revealed in an ATLAS of informality: Findings from mapping growth in the most common yet unmapped forms of urbanisation. *Sustainability*, 12(22), article number 9510. https://doi.org/10.3390/su12229510

SIEDLECKI, S. 2020. Understanding descriptive research designs and methods. *Clinical Nurse Specialist*, 34(1), pp. 8-12. https://doi.org/10.1097/NUR.0000000000000493

SOCIETY FOR FAMILY HEALTH. 2021. Our water is now safe enough for drinking. [Online]. Available at: <https://sfhnigeria.org/our-water-is-now-safe-enough-for-drinking/> [Accessed: 12 October 2020].

SOLTANI, A. & SHARIF, E. 2012. A case study of sustainable urban planning principles in Curitiba (Brazil) and their applicability in Shiraz (Iran). *International Journal of Development and Sustainability,* 1(2), pp. 120-134.

SMIT, W. 2017. Informal settlement upgrading: International lessons and local challenges. In: Cirolia, L.R., Görgens, T., Van Donk, M., Smit, W. & Drimie, S. (Eds). *Upgrading informal settlements in South Africa: Pursuing a partnership-based approach*. Cape Town: Juta and Company (Pty) Ltd, South Africa, pp. 26-48.

SULYMAN, A.O. & MEDAYESE, S.O. 2016. Assessment of factors affecting urban planning and physical development in South-Western, Nigeria. *Advances in Multidisciplinary Research Journal*, 2(4), pp. 17-30. https://doi.org/10.22624/AIMS/V2N2

SWAPAN, M., ZAMAN, A. & LEHMANN, S. 2020. Urban (in) formality and the new unsustainable landscape of the Global South: A case study of megacity Dhaka. In: Di Raimo, A., Lehmann, S. & Melis, A. (Eds). *Informality through sustainability*. London: Routledge, pp. 196-212. https://doi.org/10.4324/9780429331701-13

TILAKI, M., JUSTAFA, R., MARZBALI, M., ABDULLAH, A. & ARIFFIN, J. 2011. Challenges of the informal settlements in developing countries' cities: A case study of Iran. *World Applied Sciences Journal*, 12(2), pp. 160-169.

TUCKER, J. & ANANTHARAMAN, M. 2020. Informal work and sustainable cities: From formalization to reparation. *One Earth*, 3(3), pp. 290-299. https://doi.org/10.1016/j.oneear.2020.08.012

UKOJE, J. 2016. Impacts of rapid urbanisation in the urban fringe of Lokoja, Nigeria. *Journal of Geography and Regional Planning,* 9(10), pp. 185-194. https://doi.org/10.5897/JGRP2016.0591

UNFPA (United Nations Population Fund). 2007. *State of World Population 2007*. New York: UNFPA.

UN-HABITAT. 2003. The challenge of slums: Global report on human settlements. Nairobi: United Nations Human Settlements Programme.

UN-HABITAT. 2011. *State of the world cities 2010/2011: Cities for all bridging the urban divide*. Nairobi: UN-Habitat. https://doi.org/10.4324/9781849774864

UN-HABITAT. 2016. Urbanisation and development: Emerging futures. World Cities Report. [Online]. Available at: <http://wcr.unhabitat.org> [Accessed: 2 January 2018].

UN-HABITAT. 2017. Global Activities Report. [Online]. Available at: <https://unhabitat.org/global-activities-report-2017> [Accessed:11 January 2018].

UNITED NATIONS. 2015. *World population prospects: The 2014 revision, United Nations*. Washington DC, New York: Department of Economic and Social Affairs.

UNITED NATIONS. 2017a. *World population prospects: The 2017 revision, key findings and advance tables*. Working Paper No. ESA/P/WP/248.

UNITED NATIONS. 2017b. Sustainable Development Goals Report. [Online]. Available at: <https://www.un.org/development/desa/publications/sdg-report-2017.html> [Accessed: 12 February 2018].

UNITED NATIONS. 2022. World population prospects. [Online]. Available at: <https://population.un.org/wpp> [Accessed: 16 September 2022].

UNITED NATIONS HUMAN SETTLEMENTS PROGRAMME (UN-HABITAT). 2022. World Cities Report 2022: Envisaging the future of cities. Nairobi, Kenya: United Nations Human Settlements Programme. ISBN no. 978-92-1-132894-3. [Online]. Available at: <https://unhabitat.org/sites/default/files/2022/06/wcr_2022.pdf> [Accessed:14 September 2022].

URBAN21. 2000. Sustainable cities Urban21. Berlin, Germany, Regional Environmental Centre. [Online]. Available at: <http://www.rec.org/REC/Programs/Sustainablecities> [Accessed: 19 September 2017].

VAN NOORLOOS, F., KLAUFUS, C. & STEEL, G. 2019. Land in urban debates: Unpacking the grab-development dichotomy. *Urban Studies*, 56(5), pp. 855-867. https://doi.org/10.1177/0042098018789019

VISAGIE, J. & TUROK, I. 2020. Getting urban density to work in informal settlements in Africa. *Environment and Urbanisation*, 32(2), pp. 351-370. https://doi.org/10.1177/0956247820907808

WAHAB, B. 2017. Transforming Nigerian informal settlements into liveable communities: Strategies and challenges. Paper delivered at the 2017 NITP Mandatory Continuing Development Programme held at Awka, Osogbo, and Katsina in April, May and July 2017.

WAHAB, B. 2018. Transforming Nigerian informal settlements into liveable communities: Strategies and challenges. In: Ogbazi, J. (Ed.). *Enhancing the liveability of informal settlements in Nigeria*. Abuja: Nigerian Institute of Town Planners, pp. 3-121.

WAHAB, B. & OLA, A. 2016. The activities of informal waste collectors in municipal solid waste management in Ibadan, Nigeria. *Journal of Environmental Disaster Management*, 8(1 & 2), pp. 80-91.

WAHAB, B. & AGBOLA, B. 2017. The place of informality and illegality in planning education in Nigeria. *Planning Practice Research*, 32(2), pp. 212-225. https://doi.org/10.1080/02697459.2016.1198565

WHEELER, S. 2001. Liveable communities: Creating safe and liveable neighbourhoods, towns, and regions in California. Working Paper 2001-2004. Berkeley, CA: Institute of Urban and Regional Development, University of California.

WISDOM, J. & CRESWELL, J. 2013. *Mixed methods: Integrating quantitative and qualitative data collection and analysis while studying patient-centered medical home models*. Rockville, MD: Agency for Healthcare Research and Quality. AHRQ Publication No. 13-0028-EF. [Online]. Available at: <https://pcmh.ahrq.gov/page/mixed-> [Accessed: 11 April 2018].

WORLD BANK. 2009. Systems of cities: Harnessing the potential of urbanisation for growth and poverty alleviation. Washington, DC: World Bank.

WORLD COMMISSION ENVIRONMENT AND DEVELOPMENT. 1987. *Our common future*. World Commission on Environment and Development. Oxford, New York: Oxford University Press.

WORLD ECONOMIC FORUM. 2017. *The Africa Competitiveness Report*. [Online]. Available at: <www.weforum.org/acr> [Accessed:11 April 2018].

YEUN, B. & OOI, G. 2009. Introduction: World cities challenges of liveability, sustainability and vibrancy. In: Ooi, G.L. & Yeun, B. (Eds). *World cities: Achieving liveability and vibrancy*. Singapore: World Scientific Publishing Co. Ltd., pp. 1-12. https://doi.org/10.1142/9789814280730_0001

ZIBLIM, A. 2013. The dynamics of informal settlements upgrading in South Africa: Legislative and policy context, problems, tensions, and contradictions. A study commissioned by Habitat for Humanity International/EMEA Office (Bratislava, Slovakia).