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EXPLORING THE ROLE OF ARTIFICIAL INTELLIGENCE IN STAKEHOLDERS' ENGAGEMENT FOR SUSTAINABLE URBAN DEVELOPMENT OF IBADAN, NIGERIA

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ABSTRACT

Urban planning aims to promote fairness, livability, sustainability, and resilience by addressing social concerns and finding solutions to community problems as cities evolve. This means that decisions regarding planning must consider social objectives, governmental directives, and other constraints. These decisions should be debated with community stakeholders and undergo multiple iteration processes. This is crucial because urban issues such as poor housing and environmental degradation are complex and often require adaptive and responsive knowledge from various sources to address them. Since planning is an ongoing activity, stakeholder engagement process in Ibadan must also be continuous to achieve sustainability goals. Therefore, this study explored how artificial intelligence (AI) can enhance and sustain stakeholders' engagement for sustainable urban development in Ibadan. A multi-stage sampling technique was adopted, initially stratifying participants into a cross-section of 16 stakeholders. Convenient sampling determined a sample size of 79 respondents across all stakeholder groups. Descriptive statistics were used to analyse the data. From the findings of this study, it was revealed that AI can ensure inclusive engagement of stakeholders in Ibadan by facilitating access to all categories of stakeholders. In addition, large volume of baseline unstructured data can be collected and analysed by AI in real-time. This can be represented through maps and images which can be visualised by all the stakeholders. To ensure the appropriate AI use in the city, a meticulous approach to its implementation is important to handle any potential challenges or ethical considerations that may develop. This study recommends a holistic approach to AI implementation by developing an Ibadan City Management Policy Framework (IBCMPF), a key part of which will be an Ibadan City AI Strategy to facilitate Ibadan sustainable urban development.

KEY WORDS Artificial Intelligence (AI), Ibadan, Stakeholder Engagement, Sustainable Urban Development

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1. INTRODUCTION

Urban planning aims to promote fairness, livability, sustainability, and resilience, by addressing social concerns and providing solutions to community challenges as cities grow and evolve (Peng *et al*., 2023). However, urban planning process is usually multifaceted and requires the involvement of numerous stakeholders to solve urban problems from multiple sources (Santi, 2023). Choices about city planning and design which are required to take into account social objectives, governmental directives, and other forms of limitation, must be debated with stakeholders in the community and should go through multiple iteration processes (Santi, 2023). This is highly essential because urban problems such as poor housing, traffic congestion, environmental degradation, inequalities, sprawls among others are complex and for them to be sufficiently addressed, they often require adaptive and responsive knowledge from a variety of sources (Reed, 2008). In Ibadan, the lack of involvement from significant actors and stakeholders in the environmental profiling of the city contributed to lack of success in implementing the Sustainable Cities Programme's for the city (UN-Habitat & UNEP, 2008). This shows that the marginalisation of particular stakeholders from decision-making processes, perhaps due to their presumed insignificance, might lead to a failure to effectively tackle issues related to sustainability (Bal *et al*., 2013).

Collaborative planning that include all stakeholders is crucial for sustainable urban development. Community involvement and participation in the planning process have been facilitated via the promotion of collaborative planning (Ghomashchi, 2012). It is a novel and expanding approach to public participation that planners have welcomed since it gives stakeholders direct control over planning (Brand & Gaffikin, 2007; Gunton & Day, 2003). With its emphasis on ongoing interaction and collaboration, this new paradigm in participatory approach has enhanced community knowledge, fostered a sense of trust and consensus, and produced decisions acceptable by all (Ghomashchi, 2012). As such, it has helped the planning profession to move away from autocratic ideas of planning for the public and towards planning with the public (Klosterman *et al*., 2006).

Engagement with stakeholders was a key strategy used throughout the at the recently completed Ibadan City Master Plan. This process helped to receive the maximum degree of commitment from the public and government to commence implementation as soon as the master plan was approved (Bruce, 2019). The structuring of the stakeholders' engagement process for Ibadan City Master Plan started with the gathering of background data and ended with the development of the final master plan and the specific urban plans. This shows that an extensive stakeholder engagement approach involving discussions across Ibadan was undertaken during the course of 18-month of preparing the master plan. At every level of the master plan's development, Ibadan residents had the chance to engage in discussions surrounding the development of the plan. To involve the stakeholders, a series of seminars, public displays, interviews, and presentations were arranged. Through these events, Ibadan residents and business owners offered meaningful inputs and insights. Several suggestions were made by the stakeholders throughout their involvement, and they were documented and taken into account during the development of the master plan (Leclercq & Sureiya, 2019; Bruce, 2019).

However, stakeholders' engagement should not be a one-off event in planning. Since planning is an ongoing activity, engagement with stakeholders should also be continuous. United Nations (2020) identified that when stakeholder participation is conducted continuously as opposed to occasionally or through one-time engagement methods at various policy cycle phases; it greatly enhances the delivery of a far-reaching influence on sustainable development. This means that for Ibadan to attain sustainability goals, stakeholders' engagement for the city development must be an ongoing process. This study explored how artificial intelligence (AI) can enhance and sustain stakeholders' engagement for sustainable urban development in Ibadan. Specifically, it examines stakeholders' perception and experiences with AI-enabled engagement and identified perceived benefits and challenges in implementing AI-driven stakeholders' engagement process for urban development in Ibadan. The findings have implication for policy makers, city managers, urban planners, technology companies and other development actors on leveraging AI as a tool for sustainable development.

Several studies have demonstrated the important role AI technology might play in addressing issues connected to development and putting the 2030 Agenda into action (MGI, 2018). Importantly, both the Sustainable Development Goals (SDGs) and the New Urban Agenda (NUA) recognised the importance of AI. The SDGs identified the importance of using an integrated approach to AI by taking into consideration different sectors and stakeholders. The NUA observed that cities are able to drive their own growth through the use of AI (UN-Habitat, 2022). Thus, AI presents a unique opportunity for providing sustainable solutions by facilitating the process of achieving the 2030 Agenda and by fostering increased collaboration and participation in a seamless and productive urban planning process. This is made feasible because AI-based solutions are intended to function as a cognitive boost by enhancing planners' ability to perform their jobs effectively (GIZ, 2020).

Research has identified that systems driven by AI have great promise to improve the efficacy and transparency of citizen involvement (Rieder, Schmuck & Tugui, 2022; Pellegrin, Colnot & Delponte, 2021; Ortega-Fernández, Martín-Rojas & García-Morales, 2020; Caprotti & Liu, 2020; GIZ, 2020; Paulin, 2018). This demonstrate that cities have benefited greatly from using AI to develop and

implement city administration policies thus far (Zhou, Li & Zhou, 2020). Many cities throughout the world, including Amsterdam, London, San Francisco, Stockholm, Singapore, Hong Kong, Vienna, and Toronto, are now utilising AI-powered technology to improve their urban management and delivery of services (Kassens-Noor & Hintze, 2020; Kirwan & Zhiyong, 2020). AI applications in the planning domain are designed to aid planners, not substitute them (GIZ, 2020). Therefore, using AI may automate stakeholder engagement and extract insights from massive amounts of unstructured data, which can then be gathered and processed to help make decisions about extremely complex urban concerns (He & Chen, 2024).

2. CONCEPTS DEVELOPMENT

The major concepts including AI, Sustainable Urban Development and Stakeholders' Engagement are discussed as follows:

2.1. Concept of Artificial Intelligence (AI)

Artificial Intelligence (AI) is the study of robots or computers that simulate cognitive processes like acquiring knowledge and solving issues that people identify with the human mind (Schalkoff, 1990). As an area of computer science, AI looks around it and takes action to increase the likelihood of success. AI has the capacity to reply quickly and rationally by drawing lessons from history (Jackson, 2019). According to Wah *et al*., (1993), AI consists of four primary elements: expert system which demonstrates professional handling of the examined circumstance and produces the intended or anticipated performance; heuristic problem solving which entails assessing a limited set of possibilities and making informed guesses to get almost perfect answers; natural language processing which allows for natural language conversation between humans and machines and computer vision which produces the capacity to automatically identify traits and patterns.

There are three main benefits that come with AI technology according to He & Chen (2024). First, by automating time-consuming and boring operations, it frees up human ability for more complex endeavours. Second, it reveals insights that were previously hidden behind enormous amounts of unstructured data that needed to be manually supervised and analysed, such as emails, videos, photos, written reports, business papers, and social media information. Third, AI has the ability to solve extremely complicated problems by combining the power of hundreds of computers with extra resources.

2.2. Concept of Sustainable Urban Development

According to Todaro & Smith (2006), development is a multifaceted process that includes the elimination of total poverty, economic growth, and significant shifts in institutions, mindsets, and social systems. The Brundtland Report of the World Commission on Environment and Development (WCED) (1987) is considered to be the most often cited definition of sustainable development. Sustainable development, according to the report, is development that meets current needs without jeopardising the capacity of meeting the needs of future generations.

Global development policy and agenda revolve around the fundamental idea of sustainable development. It provides people with a means of interacting with the environment without jeopardising the resource's availability for future generations (Abubakar, 2017; Cerin, 2006). Thus, it is both an approach to development and a philosophy that advocates raising quality of life without endangering the planet's ecosystems or creating environmental issues like deforestation, water and air pollution, or other problems that result in climate change and biological extinction among other issues (Browning & Rigolon, 2019; Benaim & Raftis, 2008). Government representatives can momentarily suture nodal points and establish meanings around a collection of objectives linked to normative orientations of sustainable development by using sustainable development as a master-signifier (Carr, 2020).

The goal of sustainable urban development is to build towns and cities that enhance the sustainability of the natural and human systems on earth (Wheeler, 1996). In general, sustainable urban development aims to balance the needs of the present and the future with the needs of the environment while delivering a social, economic, and resilient home for the community at large (Slaper & Hall, 2022). Four aspects or pillars of sustainable urban development have been established by studies. Environmental quality and carrying capacity are preserved via the first dimension, which is known as environmental protection. The second is economic development, which upholds objectives including stability, improvement, prosperity, and equitable trade. The third is social justice, equity, and culture; it promotes social goals including overall health, involvement, standard of living, and cultural diversity. The last component is governance, which manages and upholds urban services from the perspective of the general population (Saha & Paterson, 2018).

2.3. Concept of Stakeholders' Engagement

A stakeholder is a person or group of people who have the potential to be impacted by an organisation or who may impact its ability to meet their goals (Prpich, Sam & Coulon 2019; Geaves & PenningRowsell 2016; Cundy *et al*., 2013). All members from non-governmental sectors who may help realise Agenda 2030 are considered stakeholders. While local and regional governments are acknowledged as stakeholders in the Agenda 2030 framework, they bear a dual obligation as government actors alongside other actors who must take a role in national engagement activities (UNDESA, 2020). The United Nations (2020) has recognised certain groups that

are eligible to be involved as stakeholders in order to contribute to the realisation of Agenda 21 and the SDGs. They include non-governmental organisations, local communities, women, kids, youth, workers and labour unions, business and industry, the science and technology community, and farmers. Other significant stakeholders involved in sustainable development but not included in the main groups are local communities, academia, religious leaders, humanitarian organisations and foundations, older citizens, migrant families, legislative networks and associations, people with disabilities, and volunteer organisations.

By including the stakeholders, one may inform, consult, have a discourse, and enable interested parties or groups to participate in the processes of making choices that could have an impact on them (Reed, 2008). The 2030 Agenda specified two roles for stakeholders to fulfil. These include: holding the government responsible for its deeds or lack of it (by, for instance, monitoring its implementation or taking part in advocacy initiatives) and; supporting the realisation of the SDGs (e.g., by providing services or aligning efforts). The second role might be carried out on behalf of governments or in collaboration with them (UNDESA, 2020).

3. THE STUDY AREA

Oyo State's capital, Ibadan (see figure 1), is situated in southwest Nigeria and acts as the subject location for this research. It's a historic city in Nigeria that earned her the moniker "The Brown Roof City." Eleven local government districts make up Ibadan city, five of which are located within the city proper (Ibadan North, Ibadan North-East, Ibadan North-West, Ibadan South-East, and Ibadan South-West). The remaining six are part of Ibadan less city (Egbeda, Ona-Ara, Lagelu, Ido, Oluyole, and Akinyele). Situated at latitude 7.37750N and longitude 3.94700E, Ibadan encompasses 3,080 square kilometres, or 1,190 square miles. Ibadan is suitable for this study, as Bruce (2019) observed that the majority of Ibadan's recent development has been unplanned, which has contributed to a number of the city's current problems.

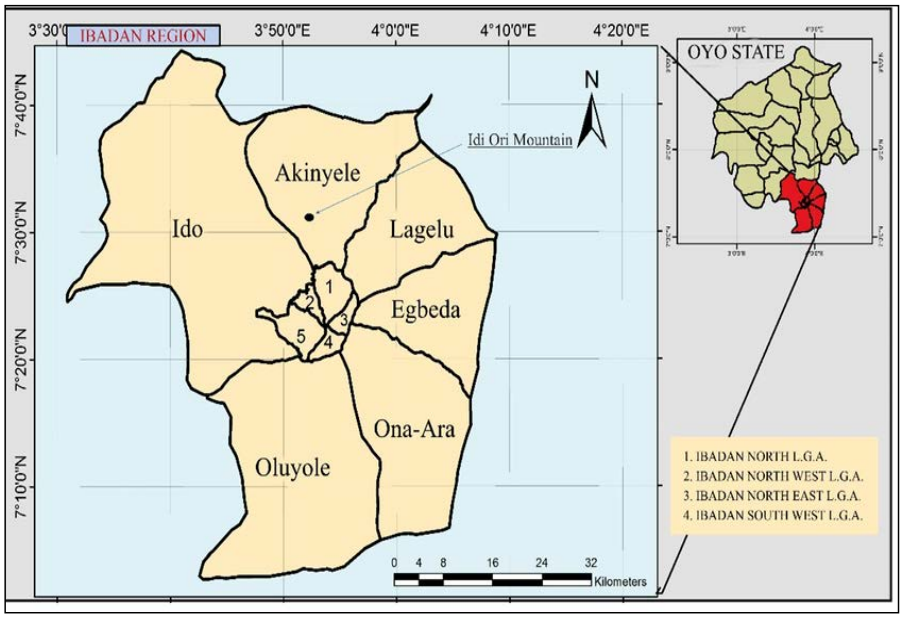

Figure 1: Map of Ibadan City
Source: Babalola et al., (2022)

4. METHODOLOGY

The whole of Ibadan City served as the sample frame for this study. A multi-stage sampling technique was adopted. Respondents who are stakeholders were first stratified into a cross-section of 16 stakeholders who were considered for data collection in this study. This method was adopted to ensure the inclusion of every stratum, which makes the opinion of everyone count.

The stakeholders proposed to use for this study are: development experts, including town planners, governmental agencies, NGOs, and civil societies; local groups, including women, the elderly, youth groups, trade associations, business and corporate organisations, technology and science associations, academia, religious and traditional institutions; minority groups, including ethnic minorities, people with disabilities, and other volunteer groups. Convenient sampling was used to determine the sample size. 79 responses were recorded across all the stakeholders' group. This method has a number of advantages, including the ability to pick participants with less work than other non-random sampling strategies and the ability to select individuals for relatively little money for researchers (Golzar & Tajik, 2022).

A Google form was created to collect data from the respondents, and a link was shared with the identified respondents, representing each stakeholder, either by email, WhatsApp, or SMS. The collected data was analysed and presented using descriptive statistics showing frequency, percentage counts and mean distribution of the variables.

5. RESULTS

The results are presented as follows:

5.1. Categories of Stakeholders

Table 1 shows the categories of the stakeholders that responded to the survey. Youth groups are the dominant stakeholder that responded to this survey. They accounted for 16.5%. This is closely followed by business/corporate organisations with 13.9%. Trade Associations also made the top 3 with 10.1%. All other categories of stakeholders as shown in the table 1 responded to the survey. Only the elderly group (senior citizen) and other volunteer groups have the least representation with 1.3% each.

Table 1: Categories of stakeholders

Categories	Frequency	Percentage
Urban planner	7	8.9
Governmental Agency	4	5.1
Non-Governmental Organisation	4	5.1
Civil Society	3	3.8
Women Group	3	3.8
Elderly Group (Senior Citizen)	1	1.3
Youth Group	13	16.5
Other local groups	2	2.5
Trade Association	8	10.1
Business/Corporate Organisation	11	13.9
Technology and Science Association	6	7.6
Academia and Research	4	5.1
Religious and Traditional institution	6	7.6
Ethnic minority groups	4	5.1
People with disabilities	2	2.5
Other volunteer groups	1	1.3
Total	79	100.0

Source: Author's fieldwork, 2024.

5.2. Stakeholders' Awareness and Perceptions of AI-Enabled Technologies for Stakeholders' Engagement in Ibadan

Table 2 shows stakeholders' awareness and perceptions of AI-enabled technologies for stakeholders' engagement in Ibadan. The findings revealed that the majority of the respondents (84.8%) are technology compliant. Although, only 68.4% stated that they had made use of AI in the past while 17.7% have not and 13.9% were not sure about past usage. 75.9% of the respondents described their experience with AI usage in the past as really helpful while 8.9% and 15.2% stated not and not sure respectfully. Most (83.5%) of the respondents expressed positive thoughts that AI can better facilitate stakeholders' engagement for sustainable development of Ibadan. 13.9% stated no to this while 2.5% were not sure if AI can be used for stakeholders' engagement.

Table 2: Stakeholders' awareness and perceptions of AI-enabled technologies for stakeholders' engagement in Ibadan

Awareness and perceptions	Yes		No		Not sure	
	Freq.	%	Freq.	%	Freq.	%
Are you technology compliant?	67	84.8	5	6.3	7	8.9
Past experience with the usage of AI?	54	68.4	14	17.7	11	13.9
Would you describe your experience with AI as really helpful?	60	75.9	7	8.9	12	15.2
Do you think AI can better facilitate stakeholders' engagement for sustainable development of Ibadan	66	83.5	11	13.9	2	2.5

Source: Author's fieldwork, 2024.

5.3.

5.4. Perceived Benefits of AI in Stakeholders' Engagement

There are certain benefits of using AI in stakeholders' engagement. From figure 2, all the perceived benefits were well agreed with by the respondents. The top benefits of AI as agreed with by the stakeholders are: quick decision-making and opportunity to respond to questions and queries in real-time (Mean = 4.54), minimisation of errors that planners can make when engaging multiple stakeholders and when performing repetitive, monotonous tasks (Mean = 4.48), smarter and more informed decision making (Mean = 4.48) and opportunity to save costs (Mean = 4.46). Others are: enhancement of stakeholders' experience during the engagement process (Mean = 4.42), minimisation of risks and vulnerabilities including controversies that planners and stakeholders can experience through direct/physical engagement with stakeholders (Mean = 4.40) and production of a highly effective and efficient engagement with stakeholders (Mean = 4.39).

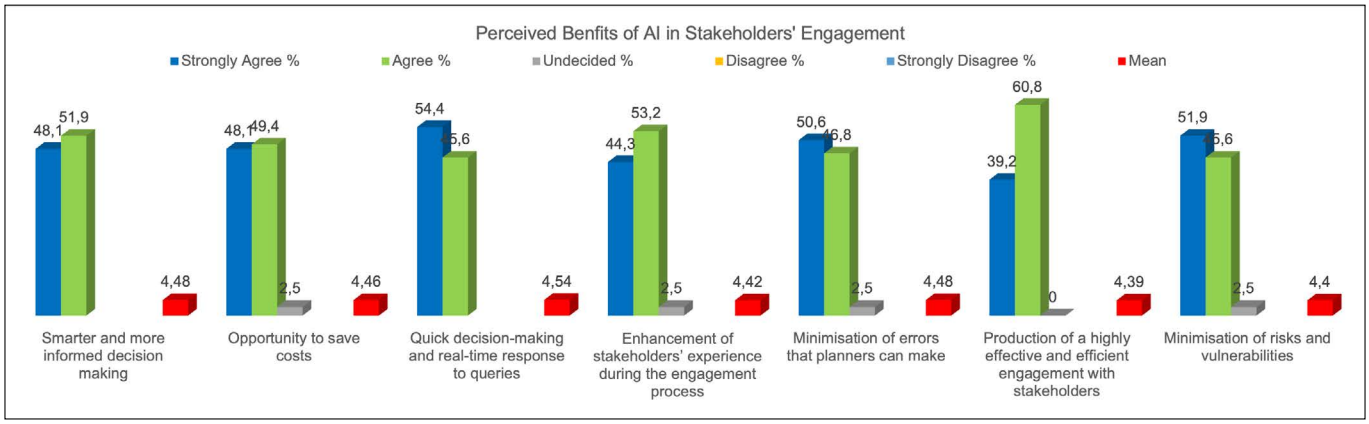

Figure 2: Perceived benefits of AI in stakeholders' engagement
Source: Author's fieldwork, 2024.

5.5. Perceived Challenges of AI in Stakeholders' Engagement

The perceived challenges of adopting AI technologies in stakeholders' engagement are shown in figure 3. The top challenges in which most stakeholders agreed with are: privacy concerns especially in regard to personal data which may be compromised (Mean = 4.34), availability of data (Mean = 4.32), lack of human intelligence and human-like emotions such as empathy, creativity, intuitiveness and flexibility (Mean = 4.32) and high costs of developing and operating AI (Mean = 4.30). Others are: cyber security threats (Mean = 4.28) and distrust of AI by the stakeholders (Mean = 4.23).

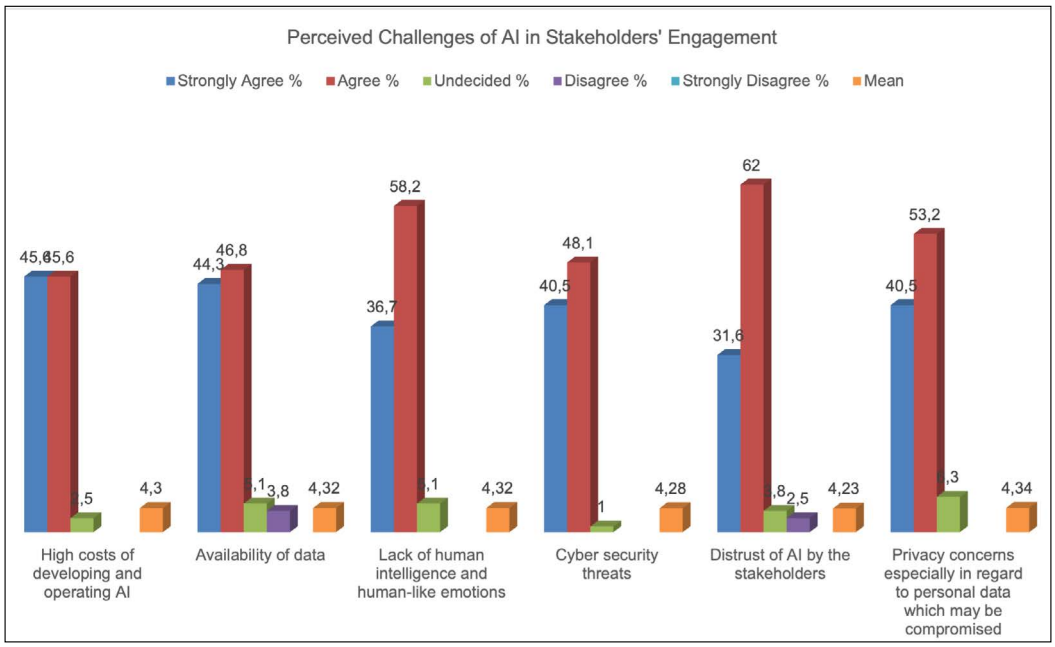

Figure 3: Perceived challenges of AI in stakeholders' engagement
Source: Author's fieldwork, 2024.

6. DISCUSSION OF FINDINGS

The findings revealed that most of the stakeholders are technology compliant and more than two-third of them have had past experience with AI. Majority of them described their experience with AI as really helpful and they have the opinion that AI can better facilitate stakeholders' engagement for sustainable development since it is already in use across major sectors such as finance, healthcare, agriculture, security, robotics, transport and manufacturing (Kankanamge *et al*., 2020; Yun *et al*., 2016). UN-Habitat (2022) also recognised the importance of AI in sustainable development and urged cities to plan their growth through such technologies. AI enhances planners' capacity to operate efficiently (GIZ, 2020) with its applications in different areas of planning such as energy and resource efficiency, pollution control, development of infrastructure, analysis of large volume of data and understanding urban environmental dynamics among others (He & Chen, 2024; Wang, Chang-Tien & Yanjie, 2022; Yigitcanlar *et al*., 2020; Allam & Dhunny, 2019; Davenport, 2018).

Since planning is a continuous process, likewise stakeholders' engagement, AI can support constant engagement. The significance of AI to governance and public participation has been identified in the literature (Rieder, Schmuck & Tugui, 2022; Pellegrin, Colnot & Delponte, 2021; Ortega-Fernández, Martín-Rojas & García-Morales, 2020; Caprotti & Liu, 2020). In particular, Rieder, Schmuck & Tugui (2022) identified the potentials of AI to improve the effectiveness and transparency of public engagement. The study identified that ML algorithms can classify public comments on a given subject and include comments from all stakeholders in the solutions developed. The solution can also be visualised and the impacts reviewed before its actual implementation.

To exemplify the application of AI, we make use of the six stages of stakeholders' engagement process of the Ibadan City Master Plan. AI can be used to collect large amount of unstructured data (He & Chen, 2024; Wang, Chang-Tien & Yanjie, 2022) including demographic data, infrastructure data, land use data, environmental data, housing data, transport data and economic data. Because the entire process of data collection is automated, AI analyse the data collected effortlessly (He & Chen, 2024; Wang, Chang-Tien & Yanjie, 2022; GIZ, 2020) and reveal key insights that may be hidden behind enormous amounts of unstructured data (He & Chen, 2024). AI enables stakeholders to visualise findings through maps, supporting planners to analyse the urban problems effectively (Peng *et al*., 2023; Rieder, Schmuck & Tugui, 2022). Thus, the framework for Ibadan master plan can be presented digitally for clearer understanding. Comments and feedbacks can be ollected online via social media, emails, websites, or other dedicated channels for the engagement processes. The interview process and meetings with the local communities can also be automated and their feedbacks fed into the AI algorithms for processing. ML algorithms are able to classify all of the public comments on a given subject (Rieder, Schmuck & Tugui, 2022). For instance, comments on anthropogenic factors influencing flooding in Ibadan can be grouped together by AI.

The stakeholders must be able to visualise digitally the draft master plan, final master plan and detailed urban plans which represents the fourth to the sixth stage of the engagement processes respectively. Comments and feedbacks collected from these stages are processed and analysed in the modification of alternative plans or the development of alternative courses of action. AI is capable of evaluating public opinions about events, plans, programmes, and proposals even in real-time (Peng *et al*., 2023). Although, Lührs & Rehkop (2019) expressed that at present, establishing the necessary framework for computers to learn city planning is the most important use of ML in urban planning. However, there has been case studies of how AI aided city planning. Case studies like, the SynCity project in Ethiopia shows how AI supports planning by adapting to environmental conditions and incorporating the residents' views (AIT, 2019).

It is crucial to remember that depending just on user engagement on social media sites might result in prejudice because not all individuals have access to or utilises these networks. Also, false information can be common on social media (Peng *et al*., 2023). Therefore, to ensure inclusiveness as all stakeholders may not be technology compliant, physical meetings with stakeholders can be held occasionally especially with marginalised and under-represented groups like ethnic minorities and elderly groups (senior citizens).

The findings revealed that the top benefits of AI include: quick decision-making and opportunity to respond to questions and queries in real-time; minimisation of risks and vulnerabilities including controversies that planners and stakeholders can experience through direct/physical engagement and; minimisation of errors that planners can make when engaging multiple stakeholders and when performing repetitive, monotonous tasks. These benefits are also established in the literature (He & Chen, 2024; Jackson, 2019).

Conventional stakeholder engagement processes can be monotonous (Santi, 2023) and also lead to mental and emotional distress, making planners and stakeholders vulnerable. AI can automate these processes, freeing stakeholders from these challenges. AI algorithms can process arguments, analyse attitudes, and comprehend natural languages, offering recommendations that can be subjected to consensus agreement through voting. This seamless management of stakeholder engagement ensures successful decision-making, equitable procedures, and efficient conflict resolution, ultimately improving the overall effectiveness of the process (He & Chen, 2024; Reider, Schmuck & Tugui, 2022).

However, challenges remain. Stakeholders raised concerns about high costs of developing and operating AI, lack of human intelligence and human-like emotions such as empathy and creativity, availability of data, privacy and security threats and distrust of AI by the stakeholders. Lack of data was also a major concern raised by stakeholders in the development of Ibadan City Master Plan (Leclercq & Pochee, 2019). Likewise, the literature is repleted with drawbacks of using AI in broad terms and specifically in urban planning (He & Chen, 2024; Santi, 2023; Peng *et al*., 2023; Pellegrin, Colnot & Delponte, 2021). For instance, He & Chen (2024) identified that for AI to be used responsibly and effectively in urban planning, it is imperative that crucial issues such as data privacy concerns, ethical issues, and the requirement for transdisciplinary competence be addressed. Data privacy is important because there are threats to privacy and security while managing private data (Pellegrin, Colnot & Delponte, 2021). Also, concerns may surface about the gathering and use of sensitive data, in addition to the possibility that AI models would reinforce current disparities.

7. CONCLUSION AND RECOMMENDATIONS

This study has investigated the application of AI for stakeholders' engagement in sustainable urban development of Ibadan city. Both the SDGs and the NUA recognised that the use of AI is significant to city management, therefore, cities are urged to make use of AI in ordering their development (UN-Habitat, 2022). The study found that AI can facilitate inclusive stakeholder engagement, with most stakeholders having experience with AI. However, certain groups, such as ethnic minorities, the elderly, and the socio-economically disadvantaged, may be excluded due to perceived inability to use AI. AI can collect large amounts of baseline unstructured data, which can be analysed in real-time and visualised through maps, diagrams, charts, and images. This aligns with previous studies on AI's importance in urban governance and public participation. Benefits of AI include quick decision-making, minimising errors, smarter decision-making, and cost savings. AI manages the stakeholders' engagement process seamlessly, ensuring successful decision-making and efficient conflict resolution. However, AI faces challenges, such as the need for large financial resources, which may not be easily accessible to governments in developing countries like Nigeria. Additionally, AI lacks essential human emotions like flexibility and empathy, which may hinder trust in its ability to provide lasting solutions to urban problems. These challenges must be addressed in integrating AI technology into sustainable urban development in Ibadan.

The findings suggest that policy makers, urban planners, technological companies, and other stakeholders in urban development need to collaborate to facilitate inclusive stakeholder engagement through AI. Thus, to effectively adopt AI strategy for Ibadan, the city needs to develop an integrated municipal structure through the creation of Ibadan City Management Policy Framework (IBCMPF) that would provide direction for driving the city sustainable urban development. A key part of the IBCMPF is the development of Ibadan City AI Strategy. The Ibadan City AI Strategy would adapt the UN-Habitat (2022) recommendation on AI. The development of an AI strategy in Ibadan is crucial for managing stakeholder participation in the city's development. This involves a people-centered design method, local expertise, and building on existing infrastructures and datasets. However, a challenge is the lack of data for successful implementation. Prioritising AI development requires improving procedures, resources, skills, and talent. Strengthening public capacity involves educating people about AI's benefits, drawbacks, and hazards. Cross-sectoral collaboration is essential, including promoting regional inventions, public-private partnerships, and engaging academia and research institutions. Civil society organisations can also contribute by promoting digital literacy and providing technological tools.

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