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ICT and Quality Service Delivery in Nigeria: An Assessment of Edo Geographic Information System

Endurance Nogiomwan Aigbe[1] & Anthony Uchenna Onuoha[2]

[1]Department of Public Administration
[2]Department of Political Science
University of Benin, Nigeria
Corresponding author: endurance.aigbe@uniben.edu

Abstract

The Land administration in Edo State, Nigeria, has been reeled with numerous issues that bordered on land grabbing, in-depth corrupt practices, high level of criminality, improper allocation of land, untold hardship in the acquisition of Certificate of Occupancy (C of O), extreme monetization of land development stages, etc. Several attempts were made by the state government and the traditional institutions to remedy the situation but to no avail. However, in 2017, Edo Geographical Information System was created to utilize ICT measure as a means to ameliorate the situation. This study, therefore, examined EdoGIS by assessing the impacts of ICT application on land administration in the state. Relying on the survey research design, and both the quantitative and qualitative methods of research, the study revealed that ICT application has greatly impacted land administration and access in the state with a correlation of .384 @ $p < 0.01$. It also revealed that the application of ICT in land administration in Edo state has ensured land security albeit with a mixed public opinion. While acknowledging the impact of ICT application on land processes, the findings revealed some challenges that border on digital divide, lack of awareness and corrupt practices by members of staff. Thus, the study recommended that the government ensure inclusivity and building trust through continuous engagement and awareness education. Also, the study recommended that corrupt officers should be strictly monitored through digitalized means.

Keywords: EdoGIS, Edo State, Land administration, Service-delivery, Technology

Introduction

All over the world, the quest for efficiency, transparency and accountability in the rendition of public service has occupied the nadir part of good governance thought. To this end, the modern world configuration is reliant on Information and Communication Technology (ICT). ICT has improved the everyday life of people around the world. Several businesses and public organisations have shifted to the use of modern technologies for their operations (Bako, Aduloju, Anofi, Adikwu & Aina, 2021). ICT is a force that has transformed many facets of peoples' lives and government activities. It is recognised as a powerful tool for change and with immense potential for increasing government accountability, transparency, Public Expenditure Management (PEM), and curbing bureaucratic red-tapism (Yusuf, Afolabi & Loto, 2013). The impact of ICT since its adoption in governance has considerably been topnotch across countries of the world especially when the public sectors administrative system in service delivery is taken into cognizance. It is a truism that the way public administration function now is very different from how they operated hitherto.

Affected by the wave of ICT engagement that swept across the globe from the 1960s, Nigeria has keyed into the adoption and utilization of it in the past two decades in her public service delivery processes. In the early part of the millennium particularly from 2003 to 2005, Nigeria

formulated the ICT policy that would enable her achieved the vision of being among the 20th largest world economy by the year 2020. The major aim of the government was to enhance the provision of public goods in a more transparent, efficient and simplistic manner. Since then, numerous concerted efforts have been embarked upon so as to meet this objective (Nnamdi, 2016). Corroborating this view, Kayode and Ajadi (2016, p. 59) noted that "rapid development has been achieved due to its level of progress over the years. Within this context, quite a number of government information and services are now available online and provided for electronically". Currently, the availability of government information has significantly improved, surpassing the slower and more cumbersome paper-based bureaucracy of the past. Moreover, a considerable number of government personnel have become more diligent in fulfilling their responsibilities as a result of the digitization of their tasks. In addition, the implementation of Information and Communication Technology (ICT) in the public sector of Nigeria has improved the accessibility and retrieval of information for citizens. This, in turn, has promoted greater involvement of citizens in the government's decision-making process (Adeyemo, 2013; Sunday, 2014). With this development, the country has been regarded as Africa's largest ICT market with about 82% of the continent's telecoms subscribers and 29% of internet usage (Obodo & Anigbata, 2018).

This trend of e-governance adoption at the national level has spread to the constituent units of the Nigerian federation with Edo state being one of the most digitally minded states in terms of public goods delivery. The state government, since 2017, has formulated and implemented numerous ICT friendly policies that have basically improved the quality of service rendition in the state with special reference to the EDOBEST education system (Mustapha, Okonmah & Jesuhovie, 2022). Besides the aforementioned, worthy of note is the Edo Geographical Information System (EdoGIS) which constitutes the focal point of this paper.

In recent past, land administration in Edo State has been a topsy-turvy. Previously administered through Community Development Associations, CDAs, (a system headed by youths in their various communities), the process was laced with numerous problems like in-depth corrupt practices, high level of criminality, improper allocation of land, untold hardship in the acquisition of Certificate of Occupancy (C of O), extreme monetization of land development stages, etc. (Adjekophor et al., 2020). Notorious among them is a situation where a piece of land will be allocated or sold to more than two people. While some were lucky to be compensated with another plot in very remote areas in the community, other buyers lost their land and money as the CDA members became super powerful and untouchable (Usman, 2023). As a way to address this menace, in 2017, the Oba of Benin, Oba Ewuare II, openly placed a curse on members of the CDA who are involved in such nefarious act (Nonfodji, 2017). Also, in 2018, the state House of Assembly passed a legislation prohibiting the activities of the CDA under any guise across the state. The most remarkable of the efforts is the Edo State government adoption of ICT policy as a panacea for the backwardness and decay of the analogue CDA activities is the creation of the Edo Geographic Information System (Usman, 2023).

EdoGIS is a revolutionary ICT information system created by the Edo state government in August 2018 to address land administration issues in the state. The agency was established in order to make land administration more transparent and stress-free. Furthermore, it was created to eliminate corrupt practices while ensuring that the acquisition of C of O is timely and affordable. EdoGIS is charged with the responsibilities to establish and regulate the standards to

be applied in the compilation of data relating to land and its administration in the State; repository and management of master plans, district plans, survey information, and dataset, including charges for services; supervision of all Land Use Allocation Committees in the State; processing and grant of Certificates of Occupancy (C of O), Rights of Occupancy and grants of Consent to land transactions as required by Law (National ICT Policy, 2012). Thus, the onus of this research is to evaluate ICT application (through the enactment of EdoGIS) in the process of land administration in Edo state and how it has helped to eradicate the lag that was being experienced hitherto. The research therefore interrogates the following questions: What are the impacts of EdoGIS on land administration in Edo State? How has the implementation of EdoGIS ensured ease of access in land acquisition and safeguarding in Edo State? Lastly, to which extent has EdoGIS influenced public opinion on land acquisition in Edo State?

ICT Initiatives and Quality Service Delivery in the Nigerian Public Sector

The Nigeria Information and Communication Technology (ICT) initiative started in 2000 with the formulation of the Nigerian National Information Technology (NNIT) policy. The goal of this initiative is to transform Nigeria into a technologically advanced country in Africa and a strong contender in the global information society (National ICT Policy, 2012). It aims to leverage the potential of information technology in various sectors such as education, economic development, poverty reduction, employment generation, governance, healthcare, and agriculture. Before this effort, Nigeria's conventional form of government, which mostly depended on human involvement, had been consistently afflicted by problems such as corruption, inefficiency, a lack of transparency and accountability, bureaucratic obstacles, and similar issues (Duyile et al, 2023). To address the numerous issues that hinder quality service delivery and national development, the adoption and implementation of e-governance became paramount. Undoubtedly, the significance of ICT initiatives in fostering national development cannot be undervalued. Ndou (2004) stated that ICT projects enable the government to offer online services, reducing administrative obstacles, ensuring 24/7 access, facilitating fast and convenient transactions, and ultimately enhancing the quality of service. To this extent, the Nigerian government has expanded its ICT projects and policies to promote e-governance and transform the country into a digital powerhouse.

Some of these initiatives are exemplified in the digitalization of examination procedures such as the Joint Admission and Matriculation Board (JAMB) and the Unified Tertiary Matriculation Examination (UTME), which has made service delivery to the candidates more convenient, faster, and accurate through the computerisation of their operations and services (Aimuan & Aigbe, 2019). The JAMB's yearly examination, which involves a large number of candidates, is currently conducted through a computer-based system. The scripts are marked by computers and the results are promptly released and uploaded to the website within seven working days while the results are also sent to the students as SMS. This enables candidates to conveniently check their examination results using digital devices like mobile phones, smartphones, iPad, etc. by visiting the examination body's website.

This process is the same when it comes to UTME where results are sent to the candidates and admission status notified through mobile phones. According to Samuel and Akor (2020), digitisation of education services has transformed the architecture of learning from traditional to module-driven, ICT-based customizable, adaptable, and synergistic learning including learners,

instructors, facilitators, and specialists. Corroborating this view, Asomba, Egwuagu, and Uloma, (2023), stated that the integration of ICT and e-learning platforms is a widespread trend, with an emphasis on overcoming barriers to successful adoption and reforming pedagogical techniques. As a result of the e-learning ICT initiatives, some public tertiary institutions in the country now take their lectures and exams electronically, making distance learning seamless and at one's own pace and time.

Besides the educational sector, ICT utilization has had a significant impact on other vital sectors of the country. This revolution has provided enormous potential for the efforts aimed at eliminating corruption, providing accountability and assuring quality service delivery in the Nigerian public sector (Onuigbo & Eme, 2015). For instance, the Federal Inland Revenue Service (FIRS) has developed a mechanism for electronically filing tax returns. According to Etale, Apere, and Tovie (2021), all tax administration entities that are responsible for assessing and collecting taxes are motivated to implement ICT in order to enhance the efficiency of tax administration. This involves the utilisation of Information and Communication Technology (ICT) in various aspects of taxpayer services, such as tax assessment, tax audit, tax collection, and internal management operations.

This has been advantageous as it has contributed to the enhancement of performance in tax administration bodies, the reduction of tax administration and taxpayers' compliance costs, and the improvement of interactions between taxpayers and tax administration bodies. Also, the Nigeria Immigration Service (NIS), through its e-passport application portal, has adopted and implemented online passport applications process in order to speed up the undue delay that was hitherto experienced in the analog system. furthermore, the National Identity Management Commission (NIMC) has digitalise the National Identification Number (NIN) enrolment process through the introduction of the pre-enrolment (online) portal that is tagged “do it yourself whenever and wherever you are”. The aim is to reduce the hurdle and delay that is usually encountered during face-face registration process.

Additionally, in order to address the issue of “ghost workers” (fictitious or non-existent employees who are illegally included in the payroll system to embezzle funds), the Integrated Personnel Payroll Information System (IPPIS) initiative was adopted and implemented by the government. This initiative serves to achieve its aim (eliminate ghost workers) by providing a consolidated database of government employees with biometric verification. By validating each employee’s identity, the initiative uncovered and remove ghost workers from the payroll, minimizing the possibility of corruption and saving huge public expenditures. According to Angbulu (2022), 70,000 ghost workers were discovered while ₦220 billion was saved with the introduction of IPPIS. Thus, ICT initiatives in the Nigeria context have had tremendous impact on service delivery to the extent that there is a robust citizens-government engagement which creates room for positive citizens’ participation in the governance processes.

Theoretical Framework

The study adopts the Technology Acceptance Model as its analytical lens in its explanation of the impact of ICT on Service delivery. Technology Acceptance Model (TAM) is a prominent theory in information systems that seek to explain how users come to accept and use new technologies. Introduced by Fred D. Davis in 1989, the model is one of the most widely used

information system models to explain user acceptance behaviour. It is grounded in social psychology theory in general and the theory of Reasoned Action (TRA) in particular (Fishbein & Azjen, 1975). The model posits that when users are presented with a new technology, a number of factors influence their decision whether a computer system will be accepted. These factors are: (1) Perceived usefulness (PU): the degree to which a user believes that using a particular technology will enhance their performance or work efficiency. (2) Perceived ease of use (PEOU): the degree to which a user believes that using a particular technology will be free of effort and require minimal mental and physical exertion.

The key feature of this model is its emphasis on the perceptions of the potential user. That is, while the creator of a given technology product may believe the product is useful and user-friendly, it will not be accepted by its potential users unless the users share those beliefs (Davis, 1989). Without a doubt, the launching of EdoGIS in August 2017 elicited mixed reactions or resistance among participants. In reality, because locals were accustomed to analogue methods, they perceived the EdoGIS ICT program as a monumental undertaking to cope with. Data hacking, economic implications, a lack of suitable ICT infrastructures, digital divisions, and other issues fueled initial resistance or skepticism against EdoGIS adoption. Nevertheless, the perceived usefulness (PU) and perceived ease of use (PEOU), which is important factors of the Technology Acceptance Model (TAM), have made it a well-liked information system in Edo state, making land administration more accessible and stress-free. Evbuomwan (2021), asserted that: "the greatest challenge (EdoGIS had with the citizens at its inception) was to cross over from the old to the new system using inherited staff." To ensure public acceptance of the ICT initiative, he argued that the first task was to change the orientation of our staff to see the public as their masters to be served. Thus, there was a need to institute a culture of customer's satisfaction. Secondly, the staffs were trained on the need to adopt and utilise technology.

Methodology

The study adopts a cross-sectional or survey research design which utilises the questionnaire as a means to elicit information from a sampled population. In this study, the opinions of residents, staff of EdoGIS and some registered real estate owners were sought through the use of a structured questionnaire and in-depth interview thus making the research both qualitative and quantitative. While the people were administered the questionnaire, selected real estate owners were interviewed. The essence of including the real estate owners arose from the fact that they have the responsibility to deal on properties with utmost security. This means, that they have to register their lands appropriately before they can sell. The population of this study is made of 1,835,500 residences residing in Oredo, Egor, Ikpoba-Okha and Ovia Northeast Local Government Areas of Edo State based on population projection (Brinkhoff, 2022). These local government areas are predominantly the local government areas that made up Benin City, the capital of Edo State. The choice of these local government areas is borne out of easy access and the proximity to the researchers which made information access seamless. Four wards were selected each from the local government areas selected through purposive sampling technique.

With the total population of the study put at 1,835,500, it is necessary to scientifically determine the sample size that will be drawn from the total population. This was done using the Taro Yamane's formula for determining sample size formula. Thus, the sample size for this study is given as 400 respondents. Information was gathered using a structured questionnaire by administering 100 copies of the questionnaire in each ward selected from each local government

areas. Also, an in-depth interview was granted by some top management officers in a bid to further elicit relevant information. Data collected was analyzed and test of hypotheses was done using the Pearson's correlation coefficient. Statistical Package for Social Sciences (SPSS) was used for the analysis.

Results

Testing of Hypotheses

Table 1: Showing the analysis of questionnaire

Questionnaire Analysis	Number	(%)
Distributed	400	100
Retrieved	382	95.5
Unretrieved	18	4.5

Three hypotheses were formulated as a means to provide empirical analytical bases. The hypotheses were tested using the Pearson's correlation coefficient as indicated below.

Hypotheses 1

Ho: there is no significant relationship between ICT application and land administration in Edo State.
Hr: there is a significant relationship between ICT application and land administration in Edo State.

Correlations

		ICT Application	Land Administration in Edo State
ICT Application	Pearson Correlation	1	.384**
	Sig. (2-tailed)		.000
	N	382	382
Land Administration	Pearson Correlation	.384**	1
	Sig. (2-tailed)	.000	
	N	382	382

**. Correlation is significant at the 0.01 level (2-tailed).

The table shows the relationship between the application of Information and Communications Technology through EdoGIS and the effective administration of land in Edo State. From the result above, there is a positive correlation between ICT application and land administration in Edo State at the correlation value of .384 @ $p < 0.01$. What this means is that the variables are 99% related significantly. Therefore, the study accepts the research hypothesis which states that "there is a significant relationship between ICT application and land administration in Edo State" and rejects the null hypothesis which states that "there is no significant relationship between ICT application and land administration in Edo State".

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Hypotheses Two

Ho: there is no significant relationship between ICT implementation and land security in Edo state.

Hr: there is a significant relationship between ICT implementation and land security in Edo State.

Correlations

		ICT Implementation	Land Security
ICT Implementation	Pearson Correlation	1	.432**
	Sig. (2-tailed)		.000
	N	382	382
Land Security	Pearson Correlation	.432**	1
	Sig. (2-tailed)	.000	
	N	382	382

**. Correlation is significant at the 0.01 level (2-tailed).

The table above shows the correlation between the implementation of Information and Communications Technology and the security of land in Edo State. It indicates how the use of online services has aided the security and consolidation of landed properties in the state. With the correlation value of .432, there is a positive relationship between ICT implementation and land security. At the $p < .000$ and error value of 0.001, the relationship is very significant. Therefore, the study rejects the null hypothesis which states that "there is no significant relationship between ICT implementation and land security in Edo state" and accepts the research hypothesis which states that "there is a significant relationship between ICT implementation and land security in Edo state.

Hypotheses Three

Ho: there is no significant relationship between ICT implementation and public opinion on land acquisition in Edo State.

Hr: there is no significant relationship between ICT implementation and public opinion on land acquisition in Edo State.

Correlations

		ICT Implementation	Public Trust
ICT Implementation	Pearson Correlation	1	.475**
	Sig. (2-tailed)		.000
	N	382	382
Public Trust	Pearson Correlation	.475**	1
	Sig. (2-tailed)	.000	
	N	382	382

**. Correlation is significant at the 0.01 level (2-tailed).

The table shows the relationship between the utilisation of Information and Communications Technology and public trust. It tends to determine how the use of ICT and online facilities in EdoGIS land administration in Edo State has earned public trust in terms of land acquisition and safe guarding. The table revealed that there is a correlation of .475 between the two variables which indicates a positive form of relationship. Also, with the P value =.000 and $\alpha = 0.01$, the relation is significant. With this analysis therefore, the study rejects the null hypothesis which states that "there is no significant relationship between ICT implementation and public opinion on land acquisition in Edo State" and accepts the research hypothesis which states that "there is a significant relationship between ICT implementation and public opinion on land acquisition in Edo State".

Discussion of Findings

On the impact of ICT processes in EdoGIS on land administration in Edo State, the study revealed that the EdoGIS ICT platform was designed to be intuitive, user friendly and effortless to navigate in order to provide the people with an effective and efficient land administration system in Edo State. Again, the hypothesis tested signifies that there is a relationship between the application of Information and Communications Technology through EdoGIS and the effective administration of land in Edo State. Thus, the use of technology in the EdoGIS, has impacted positively on the administration of land in Edo State. This study is supported by Ajaero (2021) who asserts that information and Communication Technology tools such as GIS and LIS, provide the infrastructure for implementation of land policies and land management strategies and facilitate operations of the land registration, valuation and cadastral. It provide robust and secure repositories to manage the significant volumes of land information (textual and geospatial) in a distributed environment and to support efficient searching and querying of the information.

Information and Communication Technology (ICT) processes have significantly impacted land administration by enhancing efficiency, transparency, and accessibility. These technological advancements have revolutionized how land records are managed, improving various aspects of land administration, including registration, cadastral mapping, land valuation, and dispute resolution. The application of ICT in EdoGIS has improved the efficiency of land acquisition processes in terms of cost reduction and documentation. This view was echoed by an interviewee who explained that:

> *The application of EdoGIS in the process of land purchase in Edo State has greatly affected them positively. He asserted that the online verification and registration processes has streamlined the powers of those community elites that are engaged in corrupt and fraudulent practices by reselling parcel of land to numerous buyers. This, according to him has also mitigated the conflicts and disputes that had been one of the components of land purchase processes in the state. I, for instance, was involved in a nefarious event in which some plot of land belonging to the government was sold to me by members of the community. After making initial payment, I proceeded to EdoGIS for registration. During the evaluation process, it was discovered that the parcel of land had been acquired by the government over fifty years ago. I*

> *had to use the military forces before I could recover parts of the money involved.*

Corroborating this view, another interviewee, who is a real estate agent asserted thus:

> *I experienced a situation where some plots of land were sold to me and unknown to me that some parts of the community road were included. Issues arose when the people who bought the land started developing it and there was encroachment into another person's property due to the need to create a pathway. I had to visit EdoGIS to conduct a proper registration process and it was revealed to me, after the evaluation and verification, that a huge part of the land was made up of road. I had to destroy parts of the fence that encroached into the road thereby losing some finance in the process. If I had gone to EdoGIS at the beginning, I do not think that I would have fallen victim of such act.*

From the foregoing, it is obvious that the use of Information and Communications Technology has impacted land administration in the state which has positively influenced town planning and development in the state.

Hypothesis two shows that there is a positive relationship between the implementation of Information and Communications Technology through EdoGIS and the security of land in Edo State. EdoGIS has democratized access to land information by providing online platforms and mobile applications where citizens can search for property information, verify ownership, and access transaction history. This accessibility empowers landowners, potential buyers, and investors to make informed decisions without the need to visit government offices physically. It also reduces the reliance on intermediaries, thereby cutting down on transaction costs and reducing opportunities for corrupt practices (Bako *et al*. 2021).

According to Otubu (2018), the practice in land administration through the use of ICT helps government to implement the principle of equitable access to land by stakeholders within a policy framework and determines the degree to which government can offer the security of tenure, regulate land markets, implement land reform, protect the environment and levy land taxes to enhance the utility and value of the land. He asserted further that a good land administration system does not only guarantee ownership and security of tenure; support land and property taxation; provide security for credit; develop and monitor land markets; reduce land disputes but also facilitate land reform; improve urban planning and infrastructure development and support environmental management.

A realtor who was interviewed argued that:

> *Registering land through the Edo Geographical Information System (EdoGIS) has helped to secure my land to the extent that some people I sell land to scarcely get the wherewithal to embark on immediate development yet their land is secured. On several occasions, some members of the Community Development Association have attempted to sell my properties; on one occasion, I saw a group of people working on the land I had registered. When I inquired, I was told the land had been resold by the youth secretary. I had to*

> *contact the victim who bought the land and showed them my certificate of occupancy and told them to vacate the property.*

Another interviewee had this to say:

> *Land security is very big issue in this Benin city. Before, when you buy land and you do not develop fast, bad people in the community will resell it to more than two people. But now, there is nothing like that. One day, I got a call from a potential land grabbing victim who alerted me that people were about to sell my property to her. After being shown the land, she typed the beacon number on EdoGIS platform and it was discovered that the land had been sold. She went to the office and found out it was true and she was able to get my contact. If not for EdoGIS that is how my land would have been resold without my consent. Therefore, with EdoGIS, land security is guaranteed.*

The implementation of Information and Communication Technology (ICT) services in the Edo State Geographic Information Service (EdoGIS) has significantly enhanced communication between land authorities and the general public. This advancement has led to improved transparency, efficiency, and trust in the land administration processes within Edo State. Through various digital platforms and tools, EdoGIS has streamlined interactions, making it easier for citizens to access information, resolve issues, and engage with authorities.

On the issue of public opinion of ICT implementation in the EdoGIS on land acquisition and safety in Edo State, the study discovered that public perception of the seamless land acquisition procedures has increased due to ICT services in EdoGIS. This has facilitated better communication between land authorities and the general public in Edo State. The adoption of Information and Communication Technology (ICT) in the Edo State Geographic Information Service (EdoGIS) has generated diverse public opinions regarding its impact on land acquisition and safety. Makinde and Makinde (2019) posited that the adoption of ICT in land administration has been generally well-received by the people, with many stakeholders recognizing the benefits of enhanced efficiency, transparency, and security.

A significant portion of the public views the ICT implementation in EdoGIS positively, appreciating the streamlined processes and increased accessibility to land information. The digitalization of land records and the introduction of online portals have made it easier for individuals and businesses to acquire land. The reduction in bureaucratic delays and the ability to track application statuses online have been particularly well-received. For many, these changes have transformed a previously cumbersome and opaque process into a more user-friendly and transparent system (Bako, 2021). The increased transparency brought about by ICT has also been lauded. Public access to land records and transaction histories through online platforms has significantly reduced opportunities for fraud and corruption. This transparency has fostered greater trust in the land administration system, with stakeholders feeling more confident in the legitimacy and security of their land transactions.

However, reacting to this finding, an interviewee (who is a real estate agent) had this to say:

> *I will not totally agree that the ICT implementation has earned people's trust on land acquisition and safe guarding. That does not mean that ICT is not good for trustworthy but the issue basically is that not many people have*

> *actually embraced the process. I know of my colleagues in this real estate business that does not even border to register their properties may be due to the stress involved according to them. the stress now can be the financial involvement and what it takes to get the staff of EdoGIS for survey especially when the location is far. There is no fixed price and it varies for each local government.*

Corroborating this assertion, another interviewee who buys land for the purpose of reselling them also noted that:

> *Some members of the public do not really trust the credibility of the people that are working in the EdoGIS agency. Most times, they will keep your files for ages and be attending to the people that give them 'tips'. So, if you do not have any money to sort them for quick response your file will be lying low in one corner and your C of O and the registration will be delaying for no reason. I have been on the queue for several hours waiting to commence the registration of a particular land and one big man came to register. He was called to the front and his documents were collected all because he dropped money for them. Apart from quick attention, the time frame for registration is usually longer when you do not have the financial muscle to bulldoze your way through. So, a lot of people just buy land without having to go through all the numerous processes.*

Despite the overall positive reception, Abolade, Dugeri and Adama (2018) observed that there are some concerns and challenges associated with the ICT implementation in EdoGIS. One major concern is the digital divide, which affects accessibility to the new systems. Not all citizens have access to the internet or the necessary digital literacy to navigate online platforms. This can create a gap between those who can benefit from the digital services and those who are left behind, particularly in rural areas where internet access and digital literacy may be limited. This is the case majorly with rural dwellers and some aged and illiterate people.

Conclusion and Recommendations

The study concluded that the integration of ICT processes in EdoGIS has profoundly impacted land administration in Edo State. By improving efficiency, transparency, and accessibility, EdoGIS has not only transformed land administration practices but also contributed to broader economic development and governance improvements. As technology continues to evolve, EdoGIS is well-positioned to further enhance land administration in Edo State, setting a benchmark for other States to follow. Moreso, the implementation of ICT in EdoGIS has significantly eased land acquisition and safeguarding in Edo State. By enhancing efficiency, transparency, accessibility, and security, EdoGIS has transformed land administration practices, promoting economic growth and ensuring the protection of land rights. These advancements highlight the potential of ICT to revolutionize land administration globally. Finally, the public view on the ICT implementation in EdoGIS for land acquisition and safety is largely positive, recognizing the benefits of efficiency, transparency, and security.

However, addressing concerns related to the digital divide, data security, and the transition process is crucial for the sustained success and acceptance of the system. By ensuring inclusivity and building trust through continuous engagement and education, EdoGIS can

further enhance public confidence and maximize the benefits of ICT in land administration in Edo State. This can be achieved when government eliminates sabotage within the organisation. As the study revealed, registration files belonging to people are unnecessarily kept aside and delayed just because they do not have the wherewithal to give 'tips' in order to drag attention. The use of Closed-Circuit Television (CCTV) security framework and whistle blowing can be useful in this regard. Also, the government should create a proper awareness programme through an efficient means of communicating to the public and ensure a proper town planning programme. The States Orientation Agencies coupled with other Television and Radio jingles will be useful in terms of creating this awareness. As the study revealed, particularly from the interview, a lot of people have not embraced the method due to improper knowledge and effective town planning. Furthermore, the government of Edo State government should improve on the registration process by making it more seamless so at to curb the number of days and amount of time required for physical appearance.

References

Abolade, A., Dugeri, T. and Adama, J. U. (2018). Challenges of digitalizing land administration system in Nigeria. The 18th African Real Estate Society (AFRES) Conference, Pp. 67-82

Adeyemo A. B., (2013). An E-Farming Framework for Sustainable Agricultural Development in Nigeria, *Journal of Internet and Information Systems*, 3(1), Pp. 1 – 9

Adjekophori, B., Ojeh, P, P., Anyanwu, M., and Mustapha, A. (2020). Evaluating the processes and constraints of land administration system in Delta State Nigeria. *International Journal of Civil Engineering, Construction and Estate Management*. 8(2), Pp. 18 – 30

Aimuan, E. and Aigbe, E. (2019). The Application of Information and Communication Technology in Revitalizing Public Service Delivery in the Nigerian Public Sector. An assessment of the prospects and challenges. Available at https://www.researchgate.net/publication/343336864_The_Application_of_Information_and_Communication_Technology_in_Revitalizing_Public_Service_Delivery_in_the_Nigerian_Public_Sector_An_assessment_of_the_prospects_and_challenges (Accessed 15th May, 2024)

Ajaero, J. O. (2021). Use of information and communication technology (ict) tools for mitigating land conflicts in Delta State, Nigeria. *International Journal of Agriculture and Rural Development*. 24(1): Pp. 5452-5451

Angbulu, S. (2022). IPPIS eliminated 70,000 'ghost' workers, saved govt N220bn – FG. The Punch Newpaper Online. Available at https://punchng.com/ippis-eliminated-70000-ghost-workers-saved-govt-n220bn-fg/ (Accessed on 10th June, 2024)

Asomba, D. O., Egwuagu, I U. and Uloma, B. (2023). E-governance and Service Delivery in Nigeria Public Sector: An Overview. Journal of Policy and Development Studies (JPDS) 13(4), Pp. 21 – 33

Bako, A. I., Aduloju, O. T. B., Anofi, A. O., Adikwu, U. O. P. and Aina, E. O. (2021). Leveraging Information and Communications Technology (ICT) for Effective Planning Administration in Lagos, Nigeria. FIG e-Working Week 2021 on Smart Surveyors for

Land and Water Management - Challenges in a New Reality. Virtually in the Netherlands, 21–25 June

Brinkhoff, T. (2022). Nigeria: States & Cities Population Projection. Available at https://www.citypopulation.de/en/nigeria/cities/ (Accessed 7th July, 2024)

Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 13 (3) Pp. 319 – 340

Duyile, P. F., Ngboawaji, N., Abdussalam, A. A., Olayiwola, R. A. (2023). Elite Capture Syndrome and Anti-Corruption Control in Nigeria: The Economic and Financial Crimes Commission and The Independent Corrupt Practices Commission in Perspective. *International Journal of Business, Humanities, Education and Social Sciences.* Vol. 5(2), Pp. 144 – 152

Etale, L. M., Apere, T. O. and Tovie, O. (2021). Electronic Tax Administration and Government Revenue in Nigeria. *Niger Delta Journal of Management Sciences.* 2 (2), Pp. 12 – 25

Evbuovban, F. (2021). EdoGIS rakes in N3bn in 35 months. *BusinessDay Newspaper Online. Available at https://businessday.ng/news/article/edogis-rakes-in-n3bn-in-35-months/ (Accessed on 30th July, 2024)*

Fishbein, M., and Ajzen, I. (1975). Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research. Reading, MA: Addison-Wesley.

Kayode, A. A. and Ajadi, I. A. (2016). E-governance in Nigeria: Progress and Prospects. *Ilorin Journal of Administration and Development* (IJAD). 2(1), Pp. 60 – 64

Makinde, O. O. and Makinde, O. T. (2019). Public Land Acquisition And Administration In Nigeria: Issues, Strategies And Policies. *Journal of Multidisciplinary Engineering Science and Technology* (JMEST), 6(7), Pp. 10381-10394.

Mustapha, A. I., Okonmah, E. I. and Jesuhovie, G. (2022). ICT-Training Initiative and Workforce Productivity Re-Invention in Edo State Universal Basic Education Board (2016-2019). *NIU Journal of Humanities,* 7(1), Pp. 41 – 50

National ICT Policy (2012). National Information and Communication Technology (ICT) Policy. Abuja: Ministry Of Communication Technology. Available at https://nitda.gov.ng/wp-content/uploads/2020/06/National-ICT-Policy1. (Accessed on 24th June, 2024)

Ndou, V. (2004). E-Government for Developing Countries: Opportunities and Challenges. *Electronic Journal on Information Systems in Developing Countries*, Vol. 18, Pp. 1 – 24

Nnamdi, H. S. (2016). *E-government & E-governance: Trends, Progress & Challenges*. Nigeria: Rally Height Publishers

Nonfodji, P. (2017). The Faces of Land Grabbing in Benin. *International Journal of Development and Sustainability*. 6 (6): Pp. 278 – 306

Obodo, N. A. and Anigbata, D. O. (2018). Challenges of Implementing Electronic Governance in Public Sector Organizations in Nigeria. *International Journal of Applied Economics, Finance and Accounting*. 2(1), Pp 30 – 35

Ojo, J. S. (2014). E-governance: An imperative for sustainable grass root development in Nigeria. *Journal of Public Administration and Policy Research*. 6(4), Pp. 77 – 89

Onuigbo, R. A. and Eme, O. (2015). Electronic Governance and Administration in Nigeria: Prospects and Challenges. *Arabian Journal of Business and Management Review*. 5(3), Pp. 18-26

Otubu, A. (2018). The Land Use Act and Land Administration In 21st Century Nigeria: Need for Reforms. *Journal of Sustainable Development Law and Policy, 9,* 80–108. https://doi.org/https://dx.doi.org/10.4314/jsdlp.v9i1.5 1. (Accessed July 28, 2024)

Samuel, W. and Akor, V. (2020). Designing Curriculum FOR E-learning and Education in THE 21 ST Century Nigeria: Challenges and Prospects. Available at https://www.researchgate.net/publication/343574149. (Accessed on August, 4th, 2024)

Usman, B. (2023). How EdoGIS Tackled Land Grabbing, Racketeering in Benin. *Daily Trust Online*. Available at https://dailytrust.com/how-edogis-tackled-land-grabbing-racketeering-in-benin/ (Accessed on 12th April, 2024)

Yusuf, M.A., Afolabi, F.O., & Loto, A.B. (2013). Appraising the Role of ICT as a Change Agent for Higher Education in Nigeria. *International Journal of Educational Administration and Policy studies*. 5(8) Pp177-183