THE IMPACT OF ICT ON LAND ADMINISTRATION EFFICIENCY: A CASE STUDY OF EDO GEOGRAPHIC INFORMATION SERVICE (EDOGIS)

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BEING A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF PUBLIC ADMINISTRATION, SOCIAL SCIENCES, UNIVERSITY OF BENIN, BENIN CITY, IN PARTIAL FUFILMENT OF THE REQUIREMENTS FOR THE AWARD OF BACHELOR OF SCIENCES (BSC) DEGREE IN PUBLIC ADMINISTRATION

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CERTIFICATION

We certify that this project was carried out by **Precious Ese Ekiuwa** with matriculation number **SSC2105800** is adequate in scope and quality in partial fulfillment of the requirements for the award of Bachelor of Sciences degree in Public Administration.

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DEDICATION

This project is dedicated to God Almighty, for his unconditional love, strength and grace over me throughout my stay in the university and also to my amazing parents, Mr and Mrs Ekiuwa and my lovely brother.

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ABSTRACT

This study examine the impact of ICT on land administration efficiency, a focus on Edo Geographic Information Service (EDOGIS). The study examines the evolution of ICT in Nigeria, identify the benefits of ICT to land administration efficiency, examine role Edo Geographic Information Service (EDOGIS) in land administration. The study adopts the survey research method. Survey research design focuses on a sample drawn from a population in which the data collected from the former through questionnaire. The study find out that land administration in Edo State was plagued by corruption, criminality, improper land allocation, and monetization under CDAs before the introduction of the EDOGIS. The EDOGIS is qualitative enough for effective e-governance of land administration in Edo state. The study reveals that the EDOGIS ICT platform has significantly improved land administration in Edo State. It is user-friendly and intuitive, providing an efficient system for land registration, valuation, and cadastral management. The use of Information and Communications Technology (ICT) has significantly impacted land administration in Edo State, enhancing town planning and development. The Edo State Geographic Information Service (EDOGIS) has implemented Information and Communication Technology (ICT) services to improve communication between land authorities and the public. This has led to increased transparency, efficiency, and trust in land administration processes. The ICT implementation of EDOGIS faces challenges such as the digital divide systems.

CHAPTER ONE

INTRODUCTION

1.1 Background to Study

In almost all the countries in the world, government is more than a part of life, it is a necessity to all citizens. This is because many governments leverage their services to meet citizen need using the instrumentality of technology. It does not matter whether citizens are awake or asleep, in the rural, local, state, urban or federal territories respectively. The 20th century and the 21st centuries are remarkably known as an era of technological breakthrough in governance process

around the world. These break through paved the way to the computer technology and the telecommunication industry. The information communication technology (ICT) has impacted significantly on nations and particularly on the governance process of countries, and thus give birth to new governance process, e-governance. Although it was initially utilized in the management of private sector organisations, it has long found its way in the public services (Maryam, 2018).

In all ramifications the public interacts with public administrators like a client or customers or both. The significant of the client or customer relationship is that citizens seek to obtain a benefit or service from the public administrators from different department, ministries or agencies. These services may range from improving transparency, through providing information speedily to all citizens, providing administration efficiency to providing public services such as transportation, power, health, water, security and municipal services (Richard and Okechukwu, 2015). All these have been made much more accessible to the citizen with aid of information communication technology in governance or government services.

In other word, e-government has been introduced to establish a better client, customer, citizens and public administrators' relations and efficiency than it has been in the past. In the past, public service delivery especially when measured

along the lines of efficiency and effectiveness appears to have been undermined. Describing the state of public sector organisations in the past period, Adeyemo (2011) writes that: cramped spaces; shabby ambience; discourteous dealing personnel and their chronic abstenteeism; demands of gratification; inefficiency in work; long queues; procrastinating officials; procedural complexities, etc. where some of the undesirable features of the working of the government departments. Consequently, a visit to government department by a citizen to make use of any service used to be a harrowing experience.

To the citizen, government tended to be rigid, laid too much emphasis on red tapism, sap creativity, thwarted initiative, wore out dynamism and denied justice as a resultant of delays. In addition, the focus was more on following procedures and keeping records. Consequently, the government moved at snails speed, that too, after guzzling scarce public resources. Public services were neither efficient and accessible, nor responsible and responsive to the yearnings and aspirations of the citizen (Daria, 2017).

All around the world these has been revolutionized with the introduction and proper used of information communication technology (ICT). The application of this ICT to the internal and external workings of public sector organisations is called electronic governance (e-governance). E-governance or government refers

to the efforts of government to use internet to simplify its activities for both the citizens and public administrators (Maryam, 2018). E-governance is the public sector's use of information and communication technologies with the aim of improving information and service delivery, encouraging citizen participation in the decision-making process and making government more accountable, transparent and effective. E-governance has also been described as the long sought and overwhelmingly the most fashionable service delivery instrument.

E-governance is the public sector's use of information and communication technologies with the aim of improving information and service delivery, encouraging citizen participation in the decision-making process and making government more accountable, transparent and effective. E-governance involves new styles of leadership, new ways of debating and deciding policy and investment, new ways of accessing education, new ways of listening to citizens and new ways of organizing and delivering information and services.

The strategic objective of ICT is to support and simplify governance for all parties; government, citizens and businesses. The use of ICTs can connect all three parties and support processes and activities. In other words, in e-governance electronic means support and stimulate good governance. Some benefits associated to it according to Patil (2011) are that it enhances the transformation of

work culture, better delivery of government services to citizens, improved government interactions with business and industry, citizen empowerment through access to information and more efficient government management.

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. Furthermore, little or no academic works are available on the use of ICT in land administration in Nigeria and in Edo state. Besides 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. 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). In 2017, Edo Geographical Information System was created to utilize ICT measure as a means to ameliorate

the situation. This study examine the impact of ICT on land administration efficiency, a focus on Edo Geographic Information Service (EDOGIS).

1.2 Statement of the Problem

The internet is a potential medium for processing, retrieving and disseminating information with positive impacts on students and scholars globally. It has been identified as in separable companion in today's educational system for the increasing dependence of academic activities on the internet. Many higher institution of learning around the world are investing heavily on information technology especially the internet for efficient e-learning. The use of the internet for learning is a means to improve accessibility, efficiency and quality of learning by facilitation access to resources and service exchanges and collaboration.

The technology is new, costly and may be threatening to existing academic structures and traditions; ignoring the potentials of this new technology for learning will lead to institutions being less competitive and unattractive to productive students. This study examine the impact of ICT on land administration efficiency, a focus on Edo Geographic Information Service (EDOGIS)

1.3 Research Questions

The research questions for this study are:

i. What is the origin of ICT in Nigeria?

ii. What are benefits of ICT to land administration efficiency Edo state?

iii. How does ICT benefit Edo Geographic Information Service (EDOGIS)?

1.4 Objectives of the Study

ii. To examine the evolution of ICT Nigeria.

iii. To identify the benefits of ICT to land administration efficiency.

iv. To examine role Edo Geographic Information Service (EDOGIS) in land administration.

1.5 Scope and Limitation of the Study

The research work is restricted to impact of ICT on land administration efficiency in Edo State, Nigeria. It focus on Edo Geographic Information Service (EDOGIS)

1.6 Significance of the Study

The recent commercialization of the internet in Nigeria has revolutionalized our information flows and systems. The ICT is now being used in a variety of ways to provide productivity, communication, businesses, advertisement and marketing in Nigeria.

1.7 Definition of Terms

EDOGIS: Edo geographic information system. It was created to utilize ICT measure as a means to ameliorate the adverse situation in administration of land.

Internet: the internet is viewed as an information technology with interest centered on software, data transmission systems and messaging capabilities. The internet is seen as a business innovation focusing on the harmonizing of practices within the community of firms linked by electronic means.

Information System: An information system collects, processes, stores, analyses and disseminates information for a specific purpose. Like any other system, an information system includes inputs (data, instructions) and outputs (reports, calculations).

Development: This means the systematic growth on the job to a mature stage through training courses and on-the-job training.

E-governance: Implies the application of information and communication technology (ICT) by government and its agencies in order to deliver faster and better services to governance stakeholders.

ICT: Information communication technology

ICT-Staff: staff refers to the necessary human elements needed to manipulate the provided ICT tools and infrastructure in order to make for a viable e-governance.

This includes Edo state civil service staffs that are in charge of networking, software development and management, management information system, networking, etc.

ICT Technological infrastructure: Technological facilities and organisational structure needed for a viable ICT service delivery.

ICT Utilization Specifically: ICT utilization is the extent to which citizens make use of the e-governance platform provided by the government. Operationally, it relates to awareness on its existence, trust and confidence in its usage, technical know-how on its usage, its simplicity and accessibility; internet availability, cost of using internet in registration and accommodation etc.

CHAPTER TWO

LITERATURE REVIEW AND THEORITICAL FRAMEWORK

2.1 Introduction

This chapter two of the study will be a review of related literature and the theoretical framework that will guides the study.

2.1 CONCEPTUAL FRAMEWORK

Information Communication and Edo State Government Service Delivery

Government and it service are vital to citizens. This is because in modern time, many governments simplify and leverage their services to meet citizen need using the instrumentality of technology. It does not matter whether citizens are awake or asleep, in the rural, local, state, urban or federal territories respectively.

The 20th century and the 21st centuries are remarkably known as an era of technological breakthrough in governance process around the world. These break through paved the way to the computer technology and the telecommunication industry. The information communication technology (ICT) has impacted significantly on nations and particularly on the governance process of countries (Maryam, 2018).

Although it was initially utilized in the management of private sector organisations, it has long found its way in the government service delivery. In all ramifications the public interacts with public administrators like a client or customers or both. The significant of the client or customer relationship is that citizens seek to obtain a benefit or service from the public administrators from different department, ministries or agencies. These services may range from improving transparency, through providing information speedily to all citizens, providing administration efficiency to providing public services such as transportation, power, health, water, security and municipal services (Richard and Okechukwu, 2015) and land administration.

In other word, ICT has been introduced to establish a better client, customer, citizens and public administrators' relations and efficiency than it has been in the past. In the past, public service delivery especially when measured along the lines

of efficiency and effectiveness appears to have been undermined. Describing the state of public sector organisations in the past period, Monga (2008) writes that: cramped spaces; shabby ambience; discourteous dealing personnel and their chronic abstenteeism; demands of gratification; inefficiency in work; long queues; procrastinating officials; procedural complexities, etc. where some of the undesirable features of the working of the government departments. Consequently, a visit to government department by a citizen to make use of any service used to be a harrowing experience. To the citizen, government tended to be rigid, laid too much emphasis on red tapism, sap creativity, thwarted initiative, wore out dynamism and denied justice as a resultant of delays. In addition, the focus was more on following procedures and keeping records. Consequently, the government moved at snails speed, that too, after guzzling scarce public resources. Public services were neither efficient and accessible, nor responsible and responsive to the yearnings and aspirations of the citizen (Daria, 2017).

Besides 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. 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).

Land administration in Edo State has been plagued by corruption, criminality, improper land allocation, and monetization. CDAs, led by youths, have been accused of granting land to multiple people, leading to loss of land and money. In 2017, Oba Ewuare II cursed CDA members and in 2018, the state House of Assembly banned CDA activities. The government has adopted ICT policy to address these issues, creating the Edo Geographic Information System.

Origin of ICT in Nigeria

ICT in Nigeria can be traced to the formulation of the Nigerian National Information Technology (NNIT) policy in the year 2000. The essence of the policy was to make Nigeria an Information Technology (IT) capable country in Africa and a key player in the information society and also use IT for education; creation of wealth; poverty eradication; job creation; governance; health; agriculture (Ugochukwu and Lawrence, 2015).

ICT IN NIGERIA AND EDO STATE PUBLIC SECTOR

Section 318 of the 1999 constitution of the Federal Republic of Nigeria as amended defines the public service as "the service of the Federation in any capacity in respect of the Government of the Federation" and includes Service as:

a) clerk or other Staff of the National Assembly or of each House of the National Assembly;

b) member of Staff of the Supreme Court, the Court of Appeal, the Federal High Court, the High Court of the Federal Capital Territory Abuja, the Sharia Court of Appeal of FCT, the Customary Court of Appeal of FCT or other courts established for the Federation by this Constitution and by Act of the National Assembly;

c) member or Staff of any Commission or authority established for the Federation by this Constitution or by an Act of the National Assembly;

d) staff of any area Council;

e) staff of any Statutory Corporation established by an Act of the National Assembly;

f) staff of any educational institution established or financed principally by the Government of the Federation;

g) staff of any company or enterprises in which the Government of the Federation or its agency owns controlling shares or interest;

h) members or officers of the armed forces of the Federation or the Nigeria Police Force or other government security agencies established by law.

In a clearer view, Agba, Ochimana and Abubakar (2013) see public service as the activities of government employees and institutions aimed at formulating and implementing governmental policies and programmes for the interests of the public. However, the concept of public service is often used interchangeably with the term civil service but the fact remains that they are two unique concept, though with some similarities. Public service usually indicates a wider scope than the civil service (and)... means the totality of services that are organized under public (i.e. government) authority.

It covers ministries, departments and agencies of the central government, its field administration, local government, the military, other security forces and the judiciary. This is a broader conceptualization and it is in line with the constitutional definition of the terms and the distinction between them. Civil Service refers to the body of permanent officials appointed to assist the political executive in formulating and implementing government policies (Ibietan, 2013).

The similarities they both share is that they are machinery of government saddled with the responsibility of implementing governmental policies, that is carrying out the day-to-day duties that public administration demand (Adebayo,

2000). It is imperative to state that public service encompasses the civil service or put differently is broader than civil service. Public service has to do with the totality of services that are organized under government (Ezeani, 2006).

Besides the aforementioned, worthy of note is the Edo Geographical Information System (EDOGIS). In 2017, Edo Geographical Information System was created to utilize ICT measure as a means to ameliorate the situation. EDOGIS is an ICT information system created by the Edo state government in 2018 to improve land administration transparency, eliminate corruption, and ensure timely and affordable acquisition of Certificates of Occupancy (C of O). It compiles data, manages master plans, supervises Land Use Allocation Committees, and processes C of O and Consent for land transactions.

Challenges to ICT Implementation in the Nigerian

By implication however, the ICT implementation in the Nigerian and Edo State public service is accompanied with many challenges. According to Abdel-Fattah and Galal-Edeen (2008), the major challenge of ICT in the Nigerian public service is lack of trained and qualified personnel to handle and operate its infrastructures. They further state that due to the high cost associated with the procurement and training of public servants with ICT skills, government

sometimes feel reluctant in the actual implementation of e-governance in the public service.

Similarly, Ayo & Ekong (2008) also stress the absence of skilled workers to handle various ICT services and their applications in bringing about the successful implementation of e-governance in the public sector. They also noted that the lack of government regulatory policy is a major issue that needs to be addressed if e-governance is to be a reality in government organisations. To them, the effective and successful implementation of e-governance requires experts to coordinate and operate the ICT-related infrastructures, because where there are no competent personnel to handle it infrastructure, it will be useless to procure the infrastructures (Ayo & Ekong, 2008).

Another challenge has to do with the state of power supply in the country, which is said to be epileptic and irregular in terms of supply. These have posed a considerable challenge to the realization of e-governance objectives in Nigeria. Okwueze (2010) also noted that adequate power supply is an important element to be considered for the successful implementation of e-governance in the country's public sector. Against the current picture of what exist in most of the public service, most government agencies operate on generators and sometimes the generators lack capacity to power adequately the ICT facilities. Corroborating this

view, Gberevbie; Ayo; Iyoha; Duruji & Abasilim (2015) stress that there is need for the government to establish the needed infrastructure in electricity power supply, internet connectivity, telecommunications and computer hardware, optical fiber cables, among others for the implementation of e-governance to be successful.

This implies that the success of ICT implementation in the Nigerian public service is tied to dealing with these current challenges, among others. For Bansode and Patil (2011) the digital divide also poses a challenge to e-governance implementation in Nigeria's public service. What this simply means is the gap between those with regular, effective access to digital and information technology and those without this access. Digital divide is the level of ICT knowledge between the rich and powerful who he terms as those parts of the information age and the poor and powerless who are not. He further note that digital divide is not only limited to the level of ICT knowledge between the rich and the poor but also that which has to do with linguistic. To him, this divide separates those who can speak English from those who cannot.

Another feature of this digital divide can be seen from the growing digital gap between the rich and poor nations and also the digital divide between a new elite group, which he called the "digerati", that is, those who benefit from the

enormous successful information technology industry and other knowledge based sectors of the economy such as biotechnology and pharmacology. The implication of this, is that, the challenge of digital divide encompasses the access to technology hardware physically and the required skills and resources needed for the judicious application of its use. But there are factors that are known to have contributed to this digital divide. For instance, factors like physical disability, physical access, access to the contents and lack of ICT skills contribute to the digital divide (Bansode and Patil, 2011).

Inadequate funds allocated to the ICT projects, difficulty associated with streamlining various silos of e-Government projects already existing or being implemented prior to the creation of the Ministry of Communication Technology, disparity between urban and rural dwellers or those with low literacy levels in accessing the internet, potential to erode the privacy of the citizenry, perceived lack of value for money when the huge cost of deploying e- Governance projects is compared to the actual value to the people, false sense of transparency as the challenges to the adoption and delivery of e-governance in Nigeria (Adegoroye, Oladejo and Yinus, 2015). Additionally, the following are also considered as factors impeding the effective implementation of e-governance in Nigeria's public service:

Lack of ICT infrastructure is another crucial challenge to the implementation of e-governance in Nigeria's public service. As it has been explained in the definition of e-governance above, it is the application of ICTs in the operations of government business. The Nigeria's public service is still lacking in basic ICT infrastructure. For instance, some of the offices still lack common computers let alone the common skills for its operation. What you see in their daily activities is the traditional way of doing things. That is, they are still known for doing a lot of paper work which if e-governance is embraced fully would have reduced. In a better case, you will see the combination of both the traditional way of doing things alongside the digital approach. There are still no accesses to internet network in most public sector offices, no regular power supply and so on. All these pose challenge to the implementation of e-governance in Nigeria's public service (Adeyemo, 2011).

The attitude or resistance to change is also a challenge in the public sector. Most of them are still used to the old way of carrying out government activities. That is, they are still known to be working with a lot of papers, carrying of files from one desk to the other or from one office to the other. Their resistance to ICT implementation in their services is what has culminated to the poor rating of the implementation in the public service. Some of the reasons for this, is that most of

the public servants are not computer literate, not qualified, have little or no training in the installation, maintenance, designing and implementation of ICT infrastructure.

IMPACTS OF ICT IN EDO STATE CIVIL SERVICE

With the introduction of ICT in land administration, there has been an improvement of information quality and information supply in the government service delivery such as land allocation and awarding or issuing of certificate of occupancy (C/O). Public sector is being considered as one of largest producers of information, therefore the question about the quality of provided information arises. Digitalization of information through the online services has a positive impact on the level of information quality and supply in the public sector. Information provided in electronic format decreases the amount of errors and consequently provides the basis for building quality management information systems (Akkaya et al., 2012).

The study by Wangpipatwong, Chutimaskul and Papasratorn (2005) provides a clear evidence that the quality of delivered information by public entities through the e-government systems is a significant factor that influence better adoption of digital government. Authors show that all explored characteristics of information quality, such as accuracy, timeliness, relevance,

precision, and completeness, significantly affect the level of acceptance of e-government websites by citizens. Considering the management implications of these results in order to achieve better development of information technologies in the public sector and its benefits, high quality online delivering of public services need to be ensured. Introduction of ICT in government activities supports improvement of information supply and, particularly, the openness of the data. Availability and openness of government data provides greater returns of public investment, stimulation of economic growth and wealth due to free flow of information for businesses, stimulation of innovation, increase in transparency and accountability.

There is reduction of process time. Implementation of ICT strategy has a significant effect on the reduction of the time expenditure for process and delivery of services, both for public administrators and citizens. The adoption of web-based technologies in public sector activities can be considered as a catalyst in delivery of government services. Active use of e-government websites allows minimization of the process time and encouragement of users to use the online service. Beneficial results of the digital government are also gained by the streamlining of internal processes due to faster decision making and by increasing the speed and quality of transaction processing (Ndou, 2004).

Basing on the example of e-government project in China named Beijing's Business E-Park, it has been shown that the processing time of administrative tasks has been reduced dramatically. The process of approval for specific applications has eliminated long and bureaucratic workflow and has accelerated from 2-3 months to a few days (Lin et al., 2001). In Singapore, transition from 20 paper forms for trade license application to one online form has reduced the processing time from 15 days to 15 seconds (Al-Kibsi et al., 2001).

Reduction of administrative burden implies lowering of private costs by citizens and businesses that they bear to comply with information and registrations defined by the governmental organizations. Rowley (2011), developing a stakeholder benefits analysis tool, considers reduction of administrative burden as one of the main benefits achieved by small-to-medium sized enterprises, public administrators (employees) and government agencies participating in e-government. According to Eurobarometer survey (2013), the introduction of ICT has a significant role for businesses due to reduction in the amount of time it takes to complete government forms and to receive a response from the public administrations. The study published by Godel, Harms, Jones and Mantovani for European Parliament (2016) states that administrative burdens can be distinguished by necessary costs (time and effort spent by businesses on

compliance) and unnecessary burdens (the non-functional payments), and, therefore, technologies in government are focused on minimizing the costs that are strictly necessary.

A more neutral point of view on the impact of ICT on reduction of administrative burdens was expressed in the paper "Does e-government reduce the administrative burden of businesses? *An assessment of business-to-government systems usage in the Netherlands*" (Arendsen et al., 2014). The results of the survey made by the authors showed neither positive, nor negative impact of digitalization of government in lowering burdens. The explanations of such result may come from the fact that larger businesses do not experience administrative burden at the same level as small and medium enterprises.

However, more skeptical opinion about benefits gained due to adoption of information technology can be seen in work of Malone, Yates and Benjamin (1987), where they state that government institutions being the dominant provider of electronic hierarchy are the ones who receive more benefits than the other stakeholders while reducing governmental costs during the digitalization process.

One of the most discussed economic impacts of adoption of ICT are cost reduction and budget savings that lead to realization of one guidelines of 2020 Europe strategy, improving the sustainability and growth-friendliness of public

finances. Achievement of these results can be explained by paperless environment of administrative procedures and consequently, minimization of transactional costs of government processes and better control of public expenditures (Bhatnagar, 2003).

Cost reduction and budget savings achieved by governance due to the use of information technologies in administrative activities can be explained as following:

1. Savings in labor costs: the application of ICT in public service delivery lowers its labor costs due to reduction of administrative employees that are required to perform the maintenance of e-government processing. Moreover, automation process reduces the time needed for a certain type of work leading to the raise of the labor productivity and consequently, to achievement of analogous targets with less number of employees.

2. Savings in service delivery: minimization of leading time of service realization (reduction of travel costs, waiting time, printing materials, etc.).

3. Savings in electronic invoicing: adoption of e-invoicing leads to greater automation and removes unnecessary handling of papers between different public authorities or through the post offices. For example, government of United Kingdom every year sends in average 100 million invoices with a total value of

£192 billion paying by each invoice process £40, therefore, spending two percent of government revenues on administrative processing. Using the electronic invoice systems can reduce the processing cost to £4 per invoice (Graham, 2015).

Although cost reduction on the grounds of digitalization of government is one of the major areas of potential impacts, the empirical part of such a transition to electronic environment does not always lead to the decrease in costs. Considering the developing countries where internet penetration is still on the low level, the e-government implementation does not become a substitution of traditional interactional tool with public sector, but on the contrary, it turns into an additional channel of service delivery. The level of acceptance of new technologies by citizens in emerging countries on the average is smaller than in the developed countries. Therefore, initially costs increase due to the investment made in the information technologies. For this reason, the scientific community is developing different evaluation methodologies in order to assess the opportunity of e-government adoption in developing countries.

There is improvement of service quality and user satisfaction. With introduction of ICT into the government processes, the quality of public services becomes a topic of great discussion. Adoption of e-government systems enables citizens and businesses to have an “any time anywhere” access to variety of public

services with more detailed and complete information, opportunity to make a thorough monitoring and analysis of available services and customize its delivery.

Besides the above-mentioned quantitative impacts of government digitalization, the existing research provides wider qualitative effects that arise mostly through the indirect channels (Chevallerau, 2005):

1. Improvement in accountability and transparency due to the free accessibility and openness of government data, which in turn, provides necessary information for citizens and businesses increasing trust in public administration and stimulating development of new business opportunities.

2. Promotion of information society advances the level of participation in technological progress by citizens and private sector, which reflects in growth of e-participation index and user acceptance of digital modernization.

3. Reduction in corruption is achieved through an ability of society to analyze public data and information and through the elimination of barriers in interactions with governmental organizations.

4. Increase in national competitiveness arising from improvement in productivity and efficiency of public sector and consequently, catalyzing the economic growth and social development.

As it can be seen from the analysis above, the literature in e-government service quality provides an evidence of the importance of support and maintenance of a high quality e-government channels. Therefore, public authorities should perform the principle of user centricity during the software development and implementation.

2.2 THEORETICAL FRAME WORK

Harris-Todaro Model of Migration

A large body of literature has grown up in recent years around the topic in contemporary less developed countries (LDCs). In this chapter, focus will be placed on one of the particular influence theoretical works, that of Todaro (1969) and Harris-Todaro (1970). When in the early 1950s economists turned their attention to the problems of population growth and economic development in the LDCs, it was thus natural to think that policies which emphasized industrialization would not only increase national incomes, but also relieve the overpopulation of the countryside. However, during the 1960s this view came to be increasingly challenged when it became apparent that inequality and poverty has persisted

despite respectable growth in GNP. This challenge has now led to the new orthodoxy in which rural-urban migration in the LDCs is viewed as "a symptom of and a contributing factor to underdevelopment". The new orthodoxy is due mainly to Todaro (1969) and Harris-Todaro (1970) whose model has provided a widely accepted theoretical framework for explaining the urban unemployment in many LDCs.

Harris-Todaro model then demonstrates that, in certain parametric ranges, an increase in urban employment may actually result in higher levels of urban unemployment and even reduced national product (the Todaro Paradox the Harris-Todaro model migration was regarded as an adjustment mechanism by which workers allocate themselves between different labor markets, some of which are located in urban areas and some in rural areas, while attempting to maximize their expected incomes. In general, the model underlined that the migrants would reach on the decision to migrate by taking the probability of unemployment in the destination areas. The migrants could migrate, though their current income in place of origin is higher than in place of destination. This is because the migrants‟ expectation for a better wage that would be able to compensate past loses in the long run (Todaro and Smith, 2003). In 1977, Brown and Neuberger as cited in Kasahun (2000:11) hypothesized that some migrants are primarily "pushed" out of

a place of residence by combination of unfavorable forces that made continued residence there undesirable. Others are induced to leave their residence ("pulled" out) by attractive situations in other locations. Similarly, Bekure (1984:608) stated that "migration took place when conditions in the area of origin became intolerable or when the destination appeared attractive".

Relevance of Gartner to Study

The relevance of Gartner's (2000) maturity model to our study lies in its philosophy of gradual and steady movement of ICT in land administration strategies which determines the effectiveness or otherwise of the EDOGIS initiative in Edo and Nigeria as a whole. In other words, according to the Model develops through the four stage of information (ICT infrastructure), interaction (ICT utilization), transaction and transformation. The Edo state government platform, particularly the EDOGIS service delivery portals, provides Edo and others citizens with information regarding activities relating to land administration such as allocation, location and processing of necessary land documents as well as other services. This allows communication and exchange of data between the Edo people and Edo civil service. E-payments, among others relieve the stress of corruption, bribing and in – person contacts. The problem with Garner's theory is

that, it is much more a process or stage than a theory aim at realizing the objectives of using ICT for land administration efficiency in Edo state.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

The research methodology that will be employed in this study is the hallmark of this chapter. Specifically, it covers such elements as research design; population and sample size of the study and sampling technique. Others are method of data collection; administration of instruments as well as method of data analysis.

3.2 Research Design

This study adopts the survey research method. Survey research design focuses on a sample drawn from a population in which the data collected from the former through questionnaire. This design is appropriate as it allowed the researcher to thoroughly investigate the federal character principle in Edo state and its impact.

3.3 Population

The population that will be used for this study is the 150 civil servants in EDOGIS.

3.4 Sampling Technique and Sample Size of the Study

The fact that we deal with civil servants makes it imperative for us to adopt the probability sampling technique. Specifically, the simple random sampling technique will be use for the entire respondents. In other words, the simple random sampling technique will be utilize. Thus a sampled size of 100 respondents will be taken out of the 150 civil servants in EDOGIS.

3.5 Sources of Data Collection

The data for this study will be source from both primary and secondary sources. These sources will include the use of questionnaire for this research. It

will be largely made up of close-ended questions for easy coding, tabulation and subsequent analyses.

3.6 Validity of the Instrument

To determine the face and content validity of the instrument, the expert judgment approach will be adopted. In this regard, the specimen of the drafted copy of the questionnaire will be giving to the supervisor, who will give the necessary corrections and suggestions that will be effected. The final instruments will be constructed in compliance to the supervisor advice.

3.7 Administration of Instruments

The questionnaires will be administers to the respondents by the researcher.

3.8 Method of Data Analysis

To analyze the data, the simple percentage table will be use.

CHAPTER FOUR

PRESENTATION OF DATA AND ANALYSIS

4.0 Introduction

This study is aimed at examining the impact of ICT on land administration efficiency: a case study of Edo Geographic Information Service (EDOGIS). This chapter is concerned with the presentation and analysis of information gathered through the use of questionnaire distributed to the respondents. During the survey, one hundred questionnaires were administered and Eighty nine was return completed. The results of the analysis are tabulated below:

4.1 Analysis of Respondents Characteristics

Table 1: Highest Educational Qualification

Qualification	Frequency	Percentage (%)
WASC/GCE/SSCE	16	17.97
NCE/OND/ND	39	43.82
Degree/HND	22	24.72
Post graduate	22	24.72
Total	89	100

Source: Field Survey, 2025

The table above revealed that 16 respondents representing 17.97% had WASC/GCE/SSCE, 39 respondents representing 43.82% had NCE/OND/ND, 22 respondents representing 24.72% had Degree/HND, while 22 respondents representing 24. 72% had Post graduate.

Table 2: Years or length of Service

Years of Service	Frequency	Percentage (%)
1-10	24	26.96
11-20	39	43.82
21-30	26	29.21
Total	89	100

Source: Field Survey, 2025

The tables above shows that 24 respondents representing 26.96% has 1-10 years of service, 39 respondents representing 43.82% has 11-20 years of service, while 26 respondents representing 29.21% has 21-30 years of service.

Table 3: Previously land administration was done through Community Development Associations (CDAs)

Qualification	Frequency	Percentage (%)
Agree	43	48.32
Strongly Agree	2	2.25
Undecided	28	31.46
Disagree	14	15.73
Strongly Disagree	2	2.25
Total	**89**	**100**

Source: Field Survey, 2025

From the table 3 above, 43 respondents representing 48.32% agree that previously land administration was done through Community Development Associations (CDAs), 2 respondent representing 2.25% strongly agree, 28 respondent representing 31.46% were undecided, 14 respondent representing 15.73% disagree, while 2 respondents representing 2.25% say is strongly disagree.

Table 4: There is need for the adoption of innovative technologies in land administration in Edo state

Options	Frequency	Percentage (%)
Agree	34	38.20
Strongly Agree	16	17.98
Undecided	22	24.74
Disagree	6	6.74
Very Low	11	12.36
Total	89	100

Source: ***Source: Field Survey, 2025***

From the table 4 above respondents representing 38.20 % agree there is need for the adoption of innovative technologies in land administration in Edo state, 16 respondents representing 17.98% strongly agree, 22 respondents representing 24.74% were undecided, 6 respondents representing 6.74% disagree, 11 respondents representing 12.36% strongly disagree.

Table 5: CDA process was laced with numerous corrupt practices

Options	**Frequency**	**Percentage (%)**
Strongly agree	37	41.56
Disagree	14	15.73
Undecided	6	6.74
Agree	29	32.58
Strongly disagree	3	3.37
Total	**89**	**100**

Source: Field Survey, 2025

The table above shows that 3 respondents representing 3.37% strongly disagreed, 14 respondent representing 15.73% disagreed, 6 respondent representing 6.74% were undecided, 29 respondents representing 32.58% agreed, while 37 respondents representing 41.56% strongly agreed.

Table 10: CDA was high in level of criminality and extreme monetization of land development

Options	**Frequency**	**Percentage (%)**
Strongly Disagree	3	3.37
Disagree	23	25.84

Undecided	11	12.36
Agree	19	21.35
Strongly agree	33	37.08
Total	89	100

Source: Field Survey, 2025

The table above shows that 3 respondents representing 3.37% strongly disagreed, 23 respondents representing 25.84% disagreed, 11 respondents representing 12.36% were undecided, 19 respondents representing 21.35%agreed, while 33 respondent representing 37.08% strongly agreed.

Table 11: CDA was high in improper allocation of land

Options	**Frequency**	**Percentage (%)**
Strongly Disagree	0	-
Disagree	9	10.11
Undecided	35	39.33
Agree	24	26.97
Strongly agree	21	23.60
Total	**89**	**100**

Source: Field Survey, 2025

The table reveals that none of the respondents strongly disagreed, 9 respondents representing 10.11% disagreed, 35 respondents representing 39.33% were undecided, 24 respondents representing 26.97% agreed, while 21

respondents representing 23.60%, strongly agreed that CDA was high in improper allocation of land.

Table 12: CDA was mare with hardship in the acquisition of Certificate of Occupancy (C of O)

Options	**Frequency**	**Percentage (%)**
Very Accessible	-	-
Accessible	2	2.25
Undecided	22	24.72
Inaccessible	30	33.71
Very inaccessible	35	39.33
Total	89	100

Source: Field Survey, 2025

The table above, show that 1 respondent representing 2.25% says accessible, 22 respondents representing 24.72% were undecided, 30 respondents representing 33.71% says inaccessible, while 35 respondent representing 39.33% agreed inaccessibility to internet facilities to civil servants. This showed that during CDA, Certificate of Occupancy (C of O) CDA was mare with hardship in the acquisition.

Table 13: CDA sometime deliberately and nefariously allocated land for more than two people

Options	**Frequency**	**Percentage (%)**
Strongly disagree	14	15.73
Disagree	9	10.11
Undecided	6	6.74
Agree	37	41.57
Strongly disagree	23	25.84

Total	89	100

Source: Field Survey, 2025

From the above table, 14 respondents representing 15.73% strongly disagree, 9 respondents representing 10.11% disagree, 6 respondent representing 6.74% were undecided, 37 respondents representing 41.57% agreed, while 23 respondents representing 25.84% strongly agree that CDA sometime deliberately and nefariously allocated same land for more than one people.

Table 14: The use of ICT enhance efficient land administration

Options	**Frequency**	**Percentage (%)**
Strongly disagree	12	13.48
Disgree	11	12.36
Undecided	4	4.49
Agree	30	33.71
Strongly agree	32	35.96
Total	89	100

Source: Field Survey, 2025

From the above table, respondents representing 13.48% strongly disagree, 11 respondents representing 12.36% disagree, 4 respondent representing 4.49% were undecided, 30 respondents representing 33.71% agreed, while 32 respondents representing 35.96% strongly agree that The use of ICT enhance efficient land administration.

Table 15: The use of ICT enhances prompt and easy access to land

Options	Frequency	Percentage (%)
Strongly Agree	-	-
Disagree	9	10.11
Undecided	11	12.36
Agree	45	50.56
Strongly Agree	24	26.97
Total	89	100

Source: Field Survey, 2025

From the above table, no respondents representing strongly disagree, 9 respondents representing 10.11% disagree, 11 respondent representing 12.36% were undecided, 45 respondents representing 50.56% agreed, while 24 respondents representing 26.97% strongly agree that The use of ICT enhances prompt and easy access to land.

Table16: The use of ICT enhances prompt and easy access to land documentation

Options	Frequency	Percentage (%)
Strongly Agree	12	13.48
Disagree	5	5.62
Undecided	9	10.11
Agree	33	37.08
Strongly Agree	30	33.71
Total	89	100

Source: Field Survey, 2025

The above table, shows that 12 respondents representing 13.48% strongly disagree, 5 respondents representing 5.62% disagree, 9 respondent representing 10.11% were undecided, 33 respondents representing 37.08% agreed, while 30 respondents representing 33.71% strongly agree that The use of ICT enhances prompt and easy access to land documentation.

Table 17: The use of ICT facilitate convenient land dealing

Options	**Frequency**	**Percentage (%)**
Very regular	14	15.73
Regular	9	10.11
Undecided	6	6.74
Irregular	37	41.57
Very irregular	23	25.84
Total	89	100

Source: Field Survey, 2025

From the above table, 14 respondents representing 15.73% strongly disagree, 9 respondents representing 10.11% disagree, 6 respondent representing 6.74% were undecided, 37 respondents representing 41.57% agreed, while 23 respondents representing 25.84% strongly agree that The use of ICT facilitate convenient land dealing.

Table 18: The use of ICT make land administration enquiries faster

Options	**Frequency**	**Percentage (%)**
Strongly agree	34	38.20
Disagree	7	7.87

Undecided	26	29.21
Agree	17	19.10
Strongly Disagree	5	5.62
Total	**89**	**100**

Source: Field Survey, 2020

The table above shows that 34 respondents representing 38.20% strongly agree that the use of ICT make land administration enquiries faster, 7 respondents represent 7.87% disagree, 26 respondents representing 29.21% were undecided, 17 respondents representing 19.10% agreed, while 5 respondents representing 5.62% strongly disagree.

Table 4: ICT automation influences services and promote customers services

Option	Number of Response	Percentage (%)
Strongly Agree	36	72
Agree	18	36
Undecided	25	50
Strongly Disagreed	0	0
Disagree	1	2
Total	**80**	**100**

Source: Field Survey 2025

Table 4 reveals that 72.5% of the respondents strongly agree ICT automation influences services and promote customers services, 36% agree, 50% of the respondents were not sure, while 1.25% disagree.

Table 5: ICT is time and money saving as it help avoid wastage

Option	Number of Response	Percentage (%)
Strongly Agree	36	45
Agree	18	22.5
Undecided	25	31.25
Strongly Disagreed	0	0
Disagree	1	1.25
Total	**80**	**100**

Source: Field Survey 2025

Table 5 reveals that 67.5% of the respondents believes that ICT is time and money saving as it help avoid wastage, 3.25% of the respondents were not sure, while 1.25% believed it does not.

Table 6: Influence of ICT reduce duplication and reduce errors in land administration

Option	Number of Response	Percentage(%)
Strongly Agree	20	25

Agree	2	2.5
Undecided	55	68.75
Strongly Disagreed	3	3.7
Disagree	0	0
Total	**80**	**100**

Source: Field Survey 2025

Table 6 revealed that 68.75% of the respondents believed that Influence of ICT reduce duplication and reduce errors in land administration. 6.25% of the respondents were not sure, while 25% believed it has not.

Table 7: The use of ICT speed up and make land allocation easy and transparent

Option	Number of Response	Percentage(%)
Strongly Agree	34	42.5
Agree	7	8.75
Undecided	13	16.25
Strongly Disagreed	14	17.5
Disagree	12	15
Total	**80**	**100**

Source: Field Survey 2025

Table 7 revealed that 51.25% of the respondents believed that the use of ICT speed up and make land allocation easy and transparent, 33.75% of the respondent were not sure, while 15% believed it cannot.

Table 8: The usage of ICT and improves workers performance

Option	Number of Response	Percentage (%)
Strongly Agree	3	3.75
Agree	3	3.75
Undecided	37	46.25
Strongly Disagree	24	30
Disagree	13	16.25
Total	**80**	**100**

Source: Field Survey 2025

Table 8 revealed that 7.5% of the respondents believed The usage of ICT and improves workers performance, 76.25% of the respondents were not sure, while 16.5% believed it cannot.

Table 8: Adoption of ICT enhances accuracy of records.

Option	Number of Response	Percentage(%)
Strongly Agree	11	51.25
Agree	7	8.75
Undecided	16	20
Strongly Disagree	19	23.75
Disagree	0	0
Total	**80**	**100**

Source: Field Survey 2025

Table 8 revealed that 60% of the respondents believed that Adoption of ICT enhances accuracy of records, 43.75% of the respondents were not sure, while 0% believed it is not.

Table 9: Adoption of ICT enhances convenient land business transaction

Option	Number of Response	Percentage (%)
Strongly Agree	5	6.25
Agree	2	2.5
Undecided	44	55
Strongly Disagree	2	2.5
Disagree	27	33.75

Total	**80**	**100**

Source: Field Survey 2025

Table 9 revealed that 8.75% of the respondents believed that adoption of ICT enhances convenient land business transaction, 57.5% of the respondents were not sure, while 33.75% believed it is not.

Discussion of Findings

Based on the data presented, analysed and the result thereof, the study arrived at the following findings: Land administration in Edo State has been plagued by corruption, criminality, improper land allocation, and monetization. CDAs, led by youths, have become powerful and untouchable, leading to land loss and financial loss. In 2017, Oba Ewuare II cursed CDA members and in 2018, the state House of Assembly banned CDA activities. The government has adopted ICT policy to address these issues, creating the Edo Geographic Information System to improve land administration. EDOGIS is an ICT information system created by the Edo state government in 2018 to improve land administration transparency, eliminate corruption, and ensure timely and affordable acquisition of Certificates of Occupancy (C of O). It regulates data compilation, management of master plans, district plans, survey information, and supervision of Land Use Allocation Committees.

The EDOGIS is qualitative enough for effective e-governance of service land administration in Edo state. The study reveals that the EDOGIS ICT platform has significantly improved land administration in Edo State. It is user-friendly and intuitive, providing an efficient system for land registration, valuation, and cadastral management. ICT tools like GIS and LIS facilitate land policies, land management strategies, and secure repositories for managing large volumes of land information. These technological advancements have revolutionized land records management, including registration, cadastral mapping, land valuation, and dispute resolution. The application of ICT in EDOGIS has also reduced costs and improved documentation.

The use of Information and Communications Technology (ICT) has significantly impacted land administration in Edo State, enhancing town planning and development. EDOGIS has democratized access to land information, allowing citizens to search for property information, verify ownership, and access transaction history. This accessibility empowers landowners, buyers, and investors, reducing transaction costs and corruption opportunities. ICT also helps implement equitable access to land, ensuring security of tenure, regulating land markets, implementing land reform, protecting the environment, and levying land taxes.

The Edo State Geographic Information Service (EDOGIS) has implemented Information and Communication Technology (ICT) services to improve communication between land authorities and the public. This has led to increased transparency, efficiency, and trust in land administration processes. Digital platforms and tools have streamlined interactions, making it easier for citizens to access information and resolve issues. Public perception of the seamless land acquisition procedures has increased due to ICT services in EDOGIS. The digitalization of land records and online portals have made land acquisition easier, reduced bureaucratic delays, and reduced fraud and corruption. This increased transparency has fostered greater trust in the land administration system.

The ICT implementation in EDOGIS faces challenges, including the digital divide, which affects accessibility to new systems. This divide, particularly in rural areas, affects rural dwellers and some aged and illiterate individuals, hindering their potential benefits.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The revolution in ICT and its consequent adoption as the most fashionable and effective way of delivering land services, the Edo state government converted land administration and service delivery to the ICT. Among other things, the Edo state EDOGIS in this regard established the ICT and deployed 37km of fibre optic network which provide internet access to close to 50% of immediate environment.

This study attempts to examining the impact of ICT on land administration efficiency: a case study of Edo Geographic Information Service (EDOGIS). It specifically ascertained the impact of ICT on land administration efficiency. It also determined the level of citizenry ICT utilization and its effect on the effectiveness of EDOGIS service delivery.

The study further stated in clear terms its significance in bridging knowledge gap. In terms of scope, the study centered on impact of ICT on land administration efficiency. The limitations of the study were the dearth of secondary data and the lack of empirical researches for review.

5.2 Conclusion

Following the presentation and analyses of data, the study concluded The integration of Information and Communication Technology (ICT) in EDOGIS has significantly improved land administration in Edo State, enhancing efficiency, transparency, and accessibility. This has contributed to economic development and governance improvements. The implementation of ICT has eased land acquisition and safeguarding, highlighting the potential of ICT to revolutionize land administration globally. However, concerns related to the digital divide, data security, and transition processes need to be addressed. The government should ensure inclusivity and build trust through continuous engagement and education to maximize the benefits of ICT in land administration. Additionally, the registration process should be made more seamless to curb the number of days and time required for physical appearance.

5.3 Recommendations

Based on the findings and conclusion of the study, the following recommendations are offered for improvement.

i. The quality of EDOGIS ICT infrastructure should be improved by the Edo State to meet the minimum standard for effective land administration. In this regard, apathy to computerization of land

administration should be dealt with by giving computerization and ICT a legal backing.

ii. The staff being the manning operators should be charged to provide timely, adequate, and regular information on the EDOGIS portal services. Also, procurement and maintenance of EDOGIS facilities should be contracted in-house to the ICT or outside Consultancy firms.

iii. The study recommend that more network bandwidth should be procured, and existing ones upgraded and properly maintained by the Network Infrastructure and Security Service Unit of the EDOGIS in collaboration with the Edo state government. This will solve the problems of poor internet reception and server response.

iv. On the low quality of EDOGIS ICT staff, the study recommend that the Edo state government should increase the staff strength by engaging potential human resources from the specialized private company to train them. Further, the available staff should be engaged in off and on-the-job trainings from the variety of training services offered by the ICT and the relevant Departments in the service.

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QUESTIONNAIRE ON

THE IMPACT OF ICT ON LAND ADMINISTRATION EFFICIENCY: A CASE STUDY OF EDO GEOGRAPHIC INFORMATION SERVICE (EDOGIS)

SECTION A: Personal Data

Instruction: kindly complete this questionnaire by tricking (√) in the appropriate box(es) provided or simply write in your response as appropriate.

1. Sex Male: ( ) Female ( )

2. Age Group: Less than 30 years ( ) 31-40 years ( ) 41-50 years ( ) 51- 60 years ( ) 60 years plus ( )

3. Marital status: Married ( ) Single ( )

4. Educational Qualification: O' Level ( ) ND/NCE/Diploma ( ) HND/BSC ( ) MSC/MBA ( ) PHD and above ( )

Section B

Please tick where appropriate in the spaces provided using any of the options below.

1 Strongly Agree (SA)
2 Agree (A)
3 Undecided (U)
4 Disagree (D)
5 Strongly Disagree (SD)

S/N	Questions	A	A	U	D	SD
	Part I					
1.	Previously land administration was done through Community Development Associations (CDAs)					
2.	There is need for the adoption of innovative technologies in land administration in Edo state					
3.	CDA was a process laced with numerous corrupt					

	practices					
4.	CDA was high in level of criminality and extreme monetization of land development					
5	CDA was high in level improper allocation of land					
6	CDA was mare with hardship in the acquisition of Certificate of Occupancy (C of O)					
7	CDA sometime deliberately and nefariously allocated land for more than two people					
	PART II					
8.	The use of ICT enhance efficient land administration					
9	The use of ICT enhances prompt and easy access to land					
10.	The use of ICT enhances prompt and easy access to land documentation					
11	The use of ICT facilitate convenient land dealing					
12	The use of ICT make land administration enquiries faster.					
	Part III					
13.	ICT automation influences services and promote customers services					
14.	ICT is time and money saving as it help avoid wastage					
15.	Influence of ICT reduce duplication and reduce errors in land administration					
16.	The use of ICT speed up and make land allocation easy and transparent					
	Part IV					
17.	The usage of ICT and improves workers performance					
18.	Adoption of ICT enhances accuracy of records.					
19.	Adoption of ICT enhances convenient land business transaction.					