Chapter One

Introduction

1.1 Background to the Study

Societies all over the world yearn for one form of development or the other. Development is part of every society in the world and it can be economic, social or environmental. These elements of development are also associated with the tenets of sustainable development. Sustainable development derived mostly from the Brundtland Report (our common future), 1987. It is also rooted in earlier ideas about sustainable forest management and 20th-century environmental concerns before it shifted its focus more towards economic development, social development and environmental protection for future generations. Brundtland report gave the most recognized and widely accepted definition of Sustainable development as the human ability to meets the needs of the present without compromising the ability of the future generations to meet their own needs[1].

With the increasing rate of environmental degradation, the effect of globalization taking place all over the world, particularly in Nigeria is generating a great concern for the sustainability of the environment and how it will be able to meet the needs of the present generation without compromising the ability of future generations to meet their own needs[1].

The foremost concern of public institutions around the world is to find effective and efficient means of delivering public services to the citizens. To this end, public institutions are buying into the idea of responsive and simplified bureaucratic processes in dealing with citizens and businesses by adopting digital and eco-friendly policies to enhance efficient and effective public services delivery for sustainable development. The current buzzword in the public

sector is e-governance. E-governance involves the integration of new leadership style, new approaches for making policy decisions and interacting with the public, as well as innovations in organizing and delivering information and services.

E-governance have become a major tool to be used in the day to day workings of government both within the government agencies, in dealing with the citizens and in doing business as was witnessed during the Covid-19 pandemic.

During the outbreak of the Covid-19 pandemic almost every country of the world resulted in use e-governance in engaging its citizens, employee as well as engaging in other productive ventures. People were asked to sit at home, social distance was introduced, and some workers were asked to work from home using information and communication telecommunication instruments to achieve their aims of their objectives.

The significance of E-Governance in Nigeria was brought to the fore by the Covid-19 pandemic. Long before now, the government efforts at digitalizing governance in Nigeria has been arguably slow. But the Covid-19 pandemic brought social distancing as one of the methods of checkmating the spread of the coronavirus made the government rethink of engaging its citizens using various ICT tools. Nigeria was among the countries that turned digital in its interactions with the citizens. Today; the use of online platforms has become prominent among many Nigerians[2].

It is also good to note that e-governance assisted Nigeria government during and after the Covid-19 era in meeting the urgency required by the government in its efforts at developing and improving the efficiency and effectiveness of government service delivery. Supporting health service and health-related service delivery, e-business (working from home), e-Learning which involves a ground-breaking move in education, through the provision of swift starter to

explicit information, e-banking and many others. By implication, the Covid-19 pandemic is a blessing in disguised that require concerted efforts by the government in meeting its desired goals for the citizens[2].

It is obvious that achieving sustainable development especially SDs goals number nine and twelve; Industry, Innovation and Infrastructure and responsible consumption and production patterns might be difficult in Nigeria with high share of her public sector in the structure of the economy without conscious effort of public authorities in the adoption of e-governance and green public management policies to deliver efficient and effective public service to the citizenry[3].

However, a new phase has come up about creating a green economy through governance and how it can be achieved via e-governance[4]. Initially, e-government strategies were targeted at re-engineering public processes in order to produce a cost-effective public sector and eliminating bureaucracy that is New Public Management (NPM) that demands governmental bodies be modernized, marketize for effective and efficient service delivery[5]. Despite the fact that economic burdens, under such phenomenon, and cost reduction remains a critical dimension, a new dimension has evolved, which speaks of transformation of the society, the public sector into a digital, green and eco-friendly system through green public management[6]. Sustainability is the ability to continue a consistent behavior for an indefinite or unspecified period of time in order to preserve a high standard of living[7]. In this regard, environmental sustainability is the obligation to protect and preserve natural resources for future generations while also supporting the health and well-being of the present generation[8]. It is the practice of regulating the rates of exploiting renewable capitals, producing non-pollution, and depletion of non-renewable resources that are durable and sustainable[9]. Also, economic sustainability

is an integral part of sustainability, which means that we must use, protect, and preserve resources (human and material) in order to create long-term, sustainable values through optimal resource utilization, recovery, and recycling. It is the aptitude to support a clear level of economic production forever. However, social sustainability is a process for creating sustainable successful places that promote wellbeing, by understanding what people need from places they live and work. It is the aptitude of a social system, such as country, to function at a defined level of social well-being[10].

Sustainability is defined as the capability of a scheme to uphold a distinct equal presentation over time and if obligatory, to improve production without damaging the vital ecological honesty of the system. That is meeting the needs of the present generation without compromising the ability of future generations to meet their own needs. In addition to natural resources, we also need social and economic resources; we also find concerns for social equity and economic development[11].

Sustainability is a concept that has gained wide global acceptance because it represents a concept which dictates that the desire for national or personal development must be aligned with other efforts intended to safeguard human and environmental health. It is a concept that demands than the exploitation of natural resources must be undertaken in a manner that does not compromise the ability of future generations to meet their own requirements[12]. A key aspect of sustainability is environmental sustainability. Environmental sustainability mandates that all human activities be organized in a manner that protects the environment and its natural resources in order for them to produce their maximum yield and be preserved for the benefit of both present and future generations[13]. The rate of renewable reserve harvesting, pollution production and depletion of nonrenewable resources can continue

indefinitely. They are not sustainable if they cannot be maintained. It is a model of development that tries to strike a balance between environmental conservation and economic progress[14].

Nigeria as a member of the global community is also concerned with the issue of sustainable development which is one of the United Nation's Development Agenda. For Nigeria, goals number nine and twelve of the SDGs, are of the topmost priority. Goal number nine is important for Nigeria as a developing country. It guides the country's effort in industrialization, innovations and infrastructural development. It means that, as the country push forward in graduating from an agriculture-based to an industrialized economy and in its efforts to cater for its growing population, it must build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation[15]. Goal number 12 is also aligned with the Nigerian situation as it encouraged responsible consumption and production patterns. That is, Nigeria's dependence on its crude oil and mineral resources must be balanced with environmental needs. Dealing with the diverse challenges facing Nigeria's growth demands a comprehensive approach that includes economic, social, and environmental factors[16].

In accordance with Nigeria's economic objectives, the national objective is to leverage national resources in a manner that promotes national prosperity, as well as an efficient, robust, and self-sustaining economy; regulate the national economy so as to ensure utmost welfare, freedom, and happiness of every citizen on the basis of social justice and equality of status and opportunity; manage and operate the major economic sectors, and protect the right of every citizen to engage in economic activity[17]. The Nigeria also has the responsibility of ensuring the promotion of a planned and balanced economic development; that the material

resources of the nation are utilized and distributed to the greatest extent possible for the common good; that the economic system is not managed in a manner that facilitates the concentration of the national commonwealth or the means of production and exchange in the hands of a selected few who are able to exploit the masses. The government is also expected to ensure decent livelihood, accommodation and basic security of life and properties for the citizenry. The achievement of these goals demands a sustainable economic growth. Sound environmental management, capable and well-equipped human capital, a government that is accountable, engaging the private sector, building peaceful and inclusive societies, effective policies, building strong institutions of governance, supporting the rule of law, sustainable economy initiatives, and increased agricultural productivity are essentials for achieving sustainable economic development[18].

It is reported that at the 2013 Annual National Management Conference, the President and Chairman of Council Mr. Michael Oluwale-Cole, observed that the attainment of the realization of the expectations of Vision 2020 is doubtful in view of the nature of the approach, strategy and style of governance of the political leaders in Nigeria. The attainment is uncertain mainly because majority of the leaders and individuals in authority are not showing commitment and loyalty to the development of the country[19].

Good governance can facilitate a stable political and economic environment that encourages investments and flourishing business; sustainable development of a country's resources, both human and material; improvement and development of infrastructure, related to basic living standards, such as sanitation, accommodation, water, and electricity. It can also engender the development of robust and accessible health and educational facilities and ensuring that all citizens have equal access to these facilities. This has been recognized as some of the basic

human rights that every human being are expected to enjoy[20]. There seems to be a general consensus that the best way to guarantee the basic needs of the masses such as the right to food, security, shelter, health care and to fair, equitable and accessible justice system is through good governance. In countries where good governance has been instituted, citizens are able to go about their everyday routines without fear of harm to themselves or their possessions. This will increase national productivity. Improved national productivity is ensured because the human capital that is frequently lost during a crisis will be preserved. Also, the establishment and maintenance of a favorable business climate is also guaranteed. Foreign investors will also be encouraged to invest in a country that has a robust governance system because of this[20].

Investors, both foreign and local, would put be encouraged to risk their money when they are assured that their investments will be safe and that the Nigerian market is large enough to support them. With excellent administration, people will be able to live in harmony both inside and between their own communities, political parties, religious denominations, and other government agencies. With effective government, justice would be served in Nigeria without fear or favour. To rid the world of bribery and corruption as well as misappropriation from public funds, decent governance must be established, and the entire populace must have a voice[21].

The main purpose of adoption of e-governance is to encourage broader participation in the public policy and administration. E-governance is able to achieve this by providing a holistic view of the government operations through the use of Information and Communication Technology (ICT) in government businesses. At the dawn of the twenty-first century, the concept of e-governance began to take shape. When e-governance was first developed, it was

in response to development in the private sectors such as e-commerce, which followed the evolutionary e-business evolving paradigm where the focal point of e-services was a simple graphic-user interface symbol with no mutual or reciprocal action. As e-governance became more widely accepted, academics shifted their attention to a careful and effective evaluation of the roles these technologies could play in improving government services[22].

E-governance includes e-registration, e-voting, e-taxation, e-mobilization, e-education, e-service delivery, and the examination of public financial statements. Consequently, e-government is a network of organizations, including the government, non-profit organizations, and commercial institutions, that collaborate to achieve a common purpose and to offer public services effectively and efficiently. The major objective of enabling the implementation of e-governance in state operations is to promote good governance, which is defined by equality, participation in the democratic process, transparency, and accountability in the many sectors of the nation's economy. E-governance arose from the revolution in information and communication technology, which manifests itself in digital technologies such as personal computers, the Internet, mobile phones, and modern digital platforms such as Whatsapp, Twitter, and Facebook, among others. The progressive appearance of these gadgets facilitated the movement of data and services between the government and other sectors of society[23].

It has been noted that employing e-governance in inter-governmental partnerships generates new innovations in a nation's governmental and administrative processes. It is believed that the success of the government to government (G2G) model of e-governance is highly dependent on the type of governance in operation and the population of the area. G2G describes the relationship among government entities. The strategic objective of employing

e-governance in government to government (G2G) model is to simplify and support the process of governance for the government, citizens and businesses. It is also expected to make government activities more transparent, speedy and accountable. Government to Citizens (G2C) deals with the relationship between government and citizens. In this model of e-governance, the focus is on the roles that governments can play in enabling citizens to access information and services remotely without visiting government offices[24]. Through this avenue, citizens are able to seek and obtain information about matters pertaining to government institutions, maintain income tax records, pay fines and dues, and renew driver's licenses, among other things. In addition, the government can assist with the dissemination of web-based information, the provision of downloadable forms, the assistance of citizens in seeking jobs, and the dissemination of information regarding health and safety issues. Government to Business (G2B) consists of the electronic interactions between government agencies and private businesses. In Government to Business (G2B) model, here, e-Governance tools are used to help the business community, providers of goods and services to flawlessly interact with the government In Government to Business (G2B) model, corporate bodies, business organization can register their business online like in Corporate Affairs Commission (CAC), bid contract online, the objective is to cut red tape, save time, reduce operational costs and to create a more transparent business environment when dealing with the government. These measures help to provide a friendly environment to businesses that enable them perform more efficiently. Government to Employees (G2E) refers to the relationship between government and its employees. In Government to Employees (G2E) model, government is the biggest employer and like any organization, it has to interact with its employee in a regular basis. This interaction is a two-way process between the

organization and the employee[25]. Using of ICT tools helps in making these interactions fast and efficient on the one hand and increase satisfaction levels of employees on the other.

Nigeria, like every other members of the global community, strives to reach a point where e-governance becomes widely available and generally accepted by the populace. It has set a goal of improving its ICT infrastructure to the point where it can be used to send and receive information from one area of the society to another. As a result, Nigeria's telecommunications and ICT sector is now the fastest-growing market on the African continent, as a result of its utilization of numerous approaches to strengthen its ICT sector[26]. In order to ensure the efficacy of public services and the open flow of information from one sector to the next, the government must implement e-governance in all spheres of society. Between 2011 and 2013, the Nigerian government deployed a number of online procedures, including mobile apps and mobile portals, to directly promote poverty eradication, gender equality, social inclusion, and the promotion of economic development, environmental protection, and disaster management[27].

Available literature shows that e-governance has become globally accepted with several countries around the world attempting to implement effective e-governance systems capable of managing service delivery models in society. Nigeria is not excluded from this worldwide transformation. Thus, the government has improved its e-governance status by adopting an increasing number of scientific techniques to enhance the technical skills of ICT in order to anticipate the wants and specific needs of citizens and to search for anomalies during the purchase of public goods in various sectors of the economy[27].

Green Management (GM) is an organization-wide process of applying innovation to achieve sustainability, waste reduction, social responsibility, and a competitive advantage by

embracing environmental goals and strategies that are fully integrated with the organization's goals and plans. Without compromising future needs, green management is all about business sustainability[28].

Green initiatives refer to efforts by public and private institutions around the world to reduce pollution and carbon emissions, which contribute to the greenhouse impact on Earth[29]. The initiative is made up of the components namely: Recycle, Reduce, and Reuse. This trio of activities reduces the load imposed by human activity, particularly industrial operations. By incorporating such a big activity into the organization's operations, management can prevent and reduce the impact of their business or operational activities on the environment[30]. However, the success of any green initiative will depend on effective planning. Institution the green approach will require organizations and institutions to upgrade and modify their existing technologies to become green technologies and use eco-friendly management practices. Going green demonstrates outstanding financial acumen, thus global corporations are increasingly adopting a green management strategy. This study examines the following aspects of green public management: renewable energy, trash recycling, and environmental repercussions[31]. This study's primary variable is comprised of e-governance, green public administration, and sustainable development. Each of these variables will be evaluated in the selected agencies in Southwest Nigeria.

The selected agencies are in the Ministry of Communications and Digital Economy. The Ministry was created in 2011 as Ministry of Communication Technology. The Ministry was created to foster a knowledge based economy and information society in Nigeria. The objective of the ministry also include the creation and establishment of policies capable of accelerating Nigeria's economy into a digitalized one by facilitating the use of ICT as a vital

tool in the country's transformation agenda in the areas of job creation, economic growth, and government transparency[32].

The goal was to ensure that everyone in the country has access to a wide range of communications services at a reasonable cost. In order to improve the communications infrastructure, digital content creation, domestic software applications, and internet-delivered private and public services, encourage the widespread use of ICT in all facets of society. In addition, it encourages and supports the growth of the information and communications technology (ICT) sector and raises the ICT sector's share of GDP. Transparency in government and better public service delivery in Nigeria can be achieved via the use of information and communications technology (ICT)[32].

There are seven agencies under the Ministry of Communication and Digital Economy they are:, Nigerian Communications Commission (NCC), National Information Technology Development Agency (NITDA), Galaxy Backbone, Nigerian Communications Satellite Limited (NigComSat), Nigerian Postal Service (NIPOST), National Identity Management Commission (NIMC), Universal Service Provision Fund (USPF)[32].

The Nigerian Communications Commission (NCC) is the independent regulatory authority for the telecommunications industry in Nigeria. The NCC was created under Decree number 75 by the Federal Military Government of Nigeria on 24 November 1992. The NCC was charged with the responsibility of regulating the supply of telecommunications services and facilities, promoting competition, and setting performance standards for telephone services in Nigeria. The Decree has been abrogated and replaced with the Nigerian Communications Act (NCA) 2003[32].

Second is National Information Technology Development Agency (NITDA) National Information Technology Development Agency (NITDA) is a public service institution established by NITDA Act 2007 as the ICT policy implementing arm of the Federal Ministry of Communication of the Federal Republic of Nigeria. It has sole responsibility of developing programs that caters for the running of ICT related activities in the country[33]. NITDA is also mandated with the implementation of policies guideline for driving ICT in Nigeria. It plays advisory role in copyright law by verification and revision of applicable laws in tandem with the application of software and technology acquisition. Majority of these activities are achieved through organization of workshops which cater for training needs of her staff, government functionaries and education sectors. It empowered 75000 youths in Kaduna. The agency's main objective is to provide ICT as a tool in tertiary institution to drive the mechanism of education sector in the country[34].

The Third is Galaxy Backbone is a public enterprise of the Federal Government of Nigeria incorporated in 2006 with the primary mandate of setting up and operating a unified Information and Communication Technology (ICT) infrastructure platform that addresses the connectivity, transversal and other technology imperatives for Ministries, Departments and Agencies (MDAs) of the Federal Government. The company was also charged with operating a nationwide network backbone to help facilitate the digital inclusion of underserved areas and rural communities towards the realization of the MDG goals[35].

Fourth is Nigerian Communications Satellite Limited (NigComSat). This organization is governed by the Federal Ministry of Communications. NigComSat-1, a Nigerian satellite ordered and constructed in China in 2004, was Africa's first communication satellite and Nigeria's second spacecraft. It was launched on 13 May 2007 from the Xichang Satellite

Launch Centre in China on a Chinese Long March 3B carrier rocket. The spacecraft was managed by NigComSat and NASRDA, the Nigerian Space Agency. NigComSat-1 failed in orbit on 11 November 2008 after running out of power due to an abnormality in its solar array. It was based on the Chinese DFH-4 satellite bus and has numerous transponders, including 4 C band, 14 Ku band, 8 Ka band, and 2 L band. It was intended to cover a large portion of Africa, and the Ka band transponders would even reach Italy. The satellite's eventual failure was preceded by some disturbing signs which prompted the operators to switch it off in November 2008. This was to enable technical analysis to be conducted on the satellite so as to avoid a possible collision with other satellites. After the initial shutdown it was put into "emergency mode operation in order to effect mitigation and repairs[35].

On 24 March 2009, the Nigerian Federal Ministry of Science and Technology, NigComSat Ltd. and CGWIC signed a further contract for the in-orbit delivery of the NigComSat-1R satellite. NigComSat-1R was also a DFH-4 satellite[32].

On 19 December 2011, a new Nigerian communications satellite was launched into orbit by China in Xichang. The satellite according to Nigerian President Goodluck Jonathan which was paid for by the insurance policy on NigComSat-1 which failed in 2008 would have a positive impact on national development in various sectors such as communications, internet services, health, agriculture, environmental protection and national security.

Fifth is Nigerian Postal Service (NIPOST) The Nigerian Postal Service, abbreviated as NIPOST is a government-owned and operated corporation, is the Nigerian postal administration responsible for providing postal services in Nigeria. It has more than 12,000 employees and runs more than 3,000 post offices. The Nigerian Postal Service also have the following Commercial Business Units; EMS/PARCEL, e-Commerce & Logistics, Financial

Services, Mails, Counters, Property & Workshop, NIPOST Training School. Its functions are to provide and operate facilities for collection, dispatch and distribution of inland and overseas mail at reasonable cost, provide and operate facilities for remittance of money through the money or postal order systems[35].

The sixth core element of e-governance in Nigeria is the National Identity Management Commission. This commission has the responsibility for creating biometric databases for all Nigerians. It issues the National Identification Number (NIN), enrollment citizens into the database and issue, National ID cards. It also carries out identity verification, and data harmonization and authentication[35]

The National Identity Management Commission (NIMC), which was established by the NIMC Act No. 23 of 2007, is tasked with establishing, owning, operating, maintaining, and managing the National Identity Database in Nigeria, registering persons covered by the Act, assigning a Unique National Identification Number (NIN), and issuing General Multi-Purpose Cards (GMPC) to Nigerian citizens and legal residents.

The NIMC Act of 2007 establishes the NIMC, its functions and powers, the National Identity Database, the assignment of the National Identification Number (NIN), and the issue of token General Multi-purpose cards. The Act also grants the Commission the authority to promulgate regulations pertaining to its activities. The NIMC Act of 2007 repeals the law that established the previous Department of National Civic Registration (DNCR) and transfers its assets and liabilities to the NIMC[35].

The seventh is Universal Service Provision Fund (USPF) was established by the Federal Government of Nigeria to facilitate the achievement of national policy goals for universal access and universal service to information and communication technologies (ICTs) in rural,

un-served and under-served areas in Nigeria. The Fund is being managed to facilitate the widest possible access to affordable telecommunications services for greater social equity and inclusion for the people of Nigeria.

The major focus of this study is centered on investigating e-governance and green public management for sustainable development in Ministry of Communication and Digital Economy in Southwest, Nigeria. This is to bring to the fore the fact that the ministry might be characterized with some anomalies which this study intends to detect and correct through the recommendation of workable policies.

1.2 Statement of the Problem

The last decades of the last century saw the movement of concerns for human geophysical environment from a subject of social activism to a global agenda[36]. This was as a result of the realization that one of the consequences of human social and economic activities was the accumulation of Green House Gases (GHG) in the earth's atmosphere and this could lead to climate change and its negative consequences and, the environmental degradation resulting from that could harm humanity, fauna and Flora, biodiversity, ecosystems and many others[37]. In Nigeria there is an increased level of consciousness that is observable with regard to the complex relationship that exists between development and the quality of environmental life.

Nigeria, like many other developing countries, is beset with such environmental problems as desertification, deterioration of urban physical quality, land degradation, deforestation, soil erosion, and flooding, pollution, global warming, overpopulation, waste disposal, ocean acidification, loss of biodiversity, ozone layer depletion, public health issues and many others, these problems are associated with sustainable development[31]. It has also been established

that these problems emanate mainly from human activities created in the quest to achieve a higher level of development. The implication is that sufficient precautions have not been taken to balance development objectives against the need to maintain desirable environmental quality for sustainable development[31].

Studies have shown however, there remains much to be done by way of actually developing the mechanism and legislative backing for reconciling environmental requirements with developmental goals[38]. Many of the problems highlighted above in the context of sustainable development are pretty much in the context of green public management.

However, government all over the world Nigeria inclusive, exist to provide essential services to the citizens with fewer resources, enhance transparency and accountability of public servants efficiently and effectively[39]. Considering the relationship between efficient and effective service delivery and the increase in the citizens' economic activities and well-being and for sustainable development, it behooves on the government to try as much as possible to put machinery in motion to provide effective and efficient services to the people.

Similar studies on public sector examined, states that public sector of any country is saddled with the implementation and enforcement of some government policies, the Nigeria public sector has failed woefully for some years past. The primary responsibility of government is to deliver, promptly, efficiently and quality services to its citizens at affordable prices. The standard of service delivery in the public sector, no doubt; plays an increasingly significant role in the economy of many countries[40].

The inefficiency in public service in Nigeria therefore, constitutes a barrier towards achieving sustainable development. To a large extent therefore, the efficient and effective performance of the public service determine greatly, the level of sustainable development of

a nation. This is why every government in developed and developing countries of the world acknowledge that the achievement of its social, environmental and economic development objectives depends on effective public services.

However, the Nigerian public service failure or ineffective delivery of such services has always been the order of the day, public service delivery in Nigeria has variously been described as chaotic, epileptic, unsatisfactory, shoddy, deplorable, sensitive, inflexible and non-cost effective among other negative connotations. In addition, public servant has been characterized by such negative attitudes and traits such as insensitivity towards citizens and their complaints, poor organization, lack of planning, over-staffing, unbridled corruption, indiscipline, unnecessary delay and red-tapism, secrecy, rigidity, centralization, apathy, favouritism, rudeness and high-handedness, laziness, truancy malingering, lateness; absenteeism, palpable negligence, inexcusable incompetence, lackluster performance and a general lackadaisical attitude to work[41].

Furthermore, the Nigeria public service has undergone a number of reforms aimed at improving its performance since its inception to enhance public service delivery. The Udoji Commission of 1973 by General Yakubu Gowon, Dotun Philips Commission, 1988 during Babagida regime, the public service reforms 2004 under Olusegun Obasanjo regime, The SERVICOM, New Public Management (NPM) reforms, Contracting Out, Public-Private Partnership (PPP), Direct Public Service Delivery all these reforms are aimed at improving public sector organizations for better public service delivery[42]. It is however, doubtful if these reform efforts have changed the public service for the better.

Also, in rendering effective service delivery in the public sector, a major way this can be achieved is through e-governance. E-governance has become one of the reform tools geared

towards effective public service delivery, which is premised on the assumption that the appreciable use of Information and Communication Technologies (ICT) method in the day to day activities[43]. E-governance allows citizens to communicate with government, participate in the government's policy-making and allows citizens communicate with each other. E-governance will allow ordinary people to constantly interface with the government in both local and central level on various matters[44]. E-governance encourages the take up of digital technologies that are crucial to economic competitiveness, it allows government to redefine its role and become more citizen-focused, it enables us to 'join-up' information and hence governs more effectively and it can reduce the cost of governance while not compromising on the quality of service to the public, reduces corruption in the government, ensure speedy administration of services and information, reduce difficulties for business, provide immediate information and enable digital communication by e-business[45]. However, there are lots of challenges that hamper the effective implementation of e-governance in Nigerian public service such as lack of IT infrastructure; epileptic power/electricity supply; digital divide, lack of trained and qualified personnel, the resistance to change attitude by most public servants and so on which if not tackled will make the adoption of e-governance a mirage[46].

It is against this background this study investigated E-governance and Green Public Management for Sustainable Development in selected agencies, Southwest Nigeria.

Aims and Objectives of the Study

The research aim is to investigate the implementation level of e-governance and green public management and the factors facilitating and impeding the implementation of tools and

policies of e-governance and green public management in public establishment in Nigeria focusing on four selected agencies, Southwest, Nigeria.

The Objectives are:

i. ascertain the influence of e-governance implementation on sustainable development in selected agencies, Southwest, Nigeria.

ii. investigate the effect of green public management practices on sustainable development in selected agencies, Southwest, Nigeria.

iii. examine the influence of e-governance and green public management on sustainable development of selected agencies, Southwest, Nigeria.

iv. determine various challenges confronting implementation of e-governance for sustainable development in selected agencies, Southwest, Nigeria.

1.3 The Research Questions are:

i. to what extent e-governance implementation influence sustainable development in selected agencies, Southwest, Nigeria?

ii. in what ways do green public management practices effect sustainable development in selected agencies, Southwest, Nigeria?

iii. to what extent does e-governance and green public management significantly influence sustainable development in selected, Southwest, Nigeria?

iv. what are the various challenges confronting implementation of e-governance for sustainable development in selected agencies, Southwest, Nigeria?

1.5 Hypotheses

The research hypotheses for this study was tested at 0.05 level of significance

Ho1: E-governance will not significantly influence sustainable development of selected agencies, Southwest, Nigeria.

Ho2: Green Public Management will not significantly influence sustainable development of selected agencies, Southwest, Nigeria.

Ho3: E-governance and Green Public Management will not jointly, significantly influence sustainable development of selected agencies, Southwest, Nigeria.

1.6 Significance of the Study

This study was of immense significance to different stakeholders in the country and beyond. First and foremost, the findings of this study will help government, public establishment and agencies to improve in the administration of effective and efficiency public service delivery and operations bordering on Information Communication Technology (ICT). The findings of this study will also enable the agencies formulate policies that will position the agencies to keep up with international practices when it comes to carrying out various operations of the organization.

Secondly, the findings of this study will enable the federal government come up with policies framework that will help the process of network process, interoperability framework, and cross agency collaboration among government, ministries and agencies.

Thirdly, the findings of this study will enable the federal government come up with policies that will make her Information Communication Technology (ICT) operations become highly professional and also worthy of emulation by other countries in Africa and beyond. Other agencies in the country will also especially those that are ICT inclined will find the findings of this study something worthy to be reckoned with.

Lastly, those in the academia will find this study very useful. Academicians also can improve on the findings by adopting suggestions for further studies in the section of this study. Also the study will add to the body of knowledge in the knowledge repository of Lead City University, Ibadan.

1.7 Scope of the Study

This study is centered on e-governance and green public management for sustainable development in selected agencies, Southwest, Nigeria. The target respondents of this study was employees of four selected agencies in Southwest, Nigeria. These agencies are: Nigerian Communication Commission (NCC,), National Identity Management Commission (NIMC), National Information Technology Development Agency (NITDA), and NIPOST. The reason why these agencies are selected to be investigated in this study is basically because of the nature of their activities which is mostly associated with their day to day operations.

1.8 Limitations of the Study

There are limitations to this study as it will be with any research are numerated below:

(1) The study was limited in that it covered only a few government agencies in the ministry of communication and digital economy, considering the number of ministries and agencies in Nigeria. It would have been much more representative if it covered more public and private organization in Nigeria for proper representation.

(2) The study targeted only the adoption of ICT tools and green management practice in public agencies without consideration for issues requiring manual/physical presences, maintenance of these ICT equipment's and their safety as well as welfare of staff in these government agencies.

(3) The study focused on some selected concepts to measure determinants of e-governance and green public management (influence of e-governance implementation, effect of green public management practices, influence of e-governance and green public management on sustainable development and

various challenges confronting implementation of e-governance) on sustainable development.

There could be other contributing factors that influence and effect e-governance and green public management to the departure or the quit decision process and their preferred destinations that could be looked into.

(4) The study adopted a cross-sectional time horizon in which the data was a snapshot at a particular time and in no means can the findings of the research be concluded for more government agencies in Nigeria.

(5) The study was limited in obtaining information in these agencies caused by lack of Cross agency collaboration, inter-connection or linkage between government ministries and agencies that could have made it easy and cost effective in obtaining information for this research.

1.9 Operational Definition of Terms

E-government

Electronic government is the use of Information and Communication Technologies in public administrations combined with organizational change and new skills in order to improve public services and democratic processes. E-government is the use of technology to enhance the access to and delivery of government services to benefit citizens, business partners and employees[47]. It has the power to create a new mode of public services where all public organizations deliver a modernized, integrated and seamless service for their citizens. It has been emphasized that e-government services have a great potential in facilitating democratic activities, particularly in decision-making, campaigning, public feedback, opinion polling or communication.

Electronic government is the ongoing optimization of service delivery via citizen participation in government processes, with the potential to revolutionize both internal and external relationships through the use of technologies and new media[48]. This definition of electronic government was further expanded to encompass government-to-citizen (G2C), government-to-employee (G2E), government-to-government (G2G), and government-to-business (G2B)[49]. It was suggested that electronic government might be broadly described as governments' efforts to offer their constituents with the information and services they need through a variety of Information and Communication Technologies (ICTs) including the internet[46]. The United Nations Organization and The World Bank defined E-government similarly, stating that E-government the use of information communication technology (ICT), the internet, mobile computer devices by government and its agencies to transform relations with citizens, businesses, government agencies, employee for better service delivery[50].

E-governance

E-Governance is essentially the use of information and communication technologies (ICTs) to carry out public services, i.e. the use of the internet to ensure that services are delivered in a far more convenient, customer-focused, and cost-effective manner. E-governance is the application of Information Technology to the functioning of government in order to establish a SMART (Simple, Moral, Accountable, Responsive, and Transparent) Governance[51].

In a similar vein, e-governance can also be seen as "the application of information communication technology (ICT) by the government to enhance accountability, create awareness and ensures transparency in the management of governmental business". Therefore, e-governance is simply the use of ICTs in the operations of government businesses, which is the application of ICT to transform the efficiency, effectiveness,

transparency and accountability of exchange of information and transaction; with the objective of providing a Simple, Moral, Accountable, Responsive and Transparent (SMART) Governance.

Governance

Governance has been defined to refer to structures and processes that are designed to ensure accountability, transparency, responsiveness, rule of law, stability, equity and inclusiveness, empowerment, and broad-based participation.

Public Service

Public service is a term utilized to comprehend the public sector. We mentioned before in this paper that the public sector is where government activities occur. The public service performs certain governmental responsibilities. Public service can be understood in two ways: first, as a government institution, and second, as a provider of government service[39]. Public service is defined as the whole of government-organized services. The 1999 Constitution of the Federal Republic of Nigeria, as amended, defines Public Service as service to the government of the state in any capacity[39].

Management

Is a process of planning, decision making, organizing, leading, motivation and controlling the human resources, financial, physical, and information resources of an organization to efficiently and effectively reach its goals[52].

Development

Development is a multifaceted concept because it encompasses numerous facets. Political, social, economic, cultural, technological, and environmental growth exists simultaneously. Nevertheless, developments in general and in all its ramifications signify betterment in the various facets of human existence. On this basis, it was proposed that growth should be more focused on boosting the quality of our lives and the liberties we enjoy[53]. Therefore, development is the capacity to ensure and maintain a better quality of life for humankind. The endeavour to improve the quality of human life and comfort from a level deemed unacceptable to a better and possibly more comfortable level[54]. Development is about people; their mental condition, the economic, social, and institutional activities the arrangements they are capable of and set in place to enhance and sustain a better quality of life in a given society and era.

Sustainability

Definition of the term 'sustainable' is meeting the needs of the present generation without compromising the ability of future generations to meet their own needs. In addition to natural resources, we also need social and economic resources; we also find concerns for social equity and economic development.

Sustainable

It is being able to continue over a period of time, or being able to be used without being completely used up or destroyed or being able to be maintained at a certain rate or level. It can also be defined as something that can be continued or a practice that maintains a condition without harming the environment.

Sustainable Development:

Sustainable development refers development in such a manner that economic, social and environmental activities protect the interest of future and present users of the environment[55].

Environment

In the context of this research work, the term 'environment' encompasses an organization's socioeconomic surroundings. It consists of several Stakeholders such as organization members, public customers, vendors of various E-government-related artifacts, competitors and interest groups, and the government. Stakeholders can impact a company's interpretation of its need for innovation, its ability to acquire the resources necessary to implement innovation, and its capacity to deploy such innovations[13].

Social

Relating to society or to the way society is organized seeking or enjoying the companionship of others; friendly, sociable, gregarious of relating to connected with or suited to polite or fashionable society, a social event, living or disposed to live in companionship with others or in a community, rather than in isolation. People are social beings.

Economic

Relating to, or based on the production, distribution, and consumption of goods and services.

Green

Green refers to nature and the natural world, colour green is associated with harmony, healing and balancing, green represent abundance, renewal and growth.

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Chapter Two

Literature Review

2.1 Conceptual Review

2.1.1 Concept of Sustainable Development

The concept of sustainable development can be interpreted in many different ways, but at its core is an approach to development that looks to balance different, and often competing, needs against an awareness of the environmental, social and economic limitations we face as a society. All too often, development is driven by one particular need, without fully considering the wider or future impacts. We are already seeing the damage this kind of approach can cause, from large-scale financial crises caused by irresponsible banking, to changes in global climate resulting from our dependence on fossil fuel-based energy sources. The longer we pursue unsustainable development, the more frequent and severe its consequences are likely to become, which is why we need to take action now.

Following the publication of the Founex Report on development and environment in 1972 and the Brundtland Commission's report 'Our Common Future' in 1987, the phrase sustainable development has been receiving considerable attention especially in all aspect of life[1]. During the 1992 UN Conference on Environment and Development (UNCED) held in Rio de Janeiro, Brazil, environmental sustainability was the primary focus of sustainable development as world leaders tried to lower the concentration of greenhouse gases to acceptable levels. The widespread use of the term sustainable development in virtually all human endeavours has made it a fundamental priority of several local and international accords. Contrary to common belief that sustainable development is a modern concept, it is believed that sustainability, which imposes a feeling of stewardship on humanity, has been practiced by numerous indigenous communities for thousands of years[2].

Researchers have found it difficult to construct a definition of sustainable development that encompasses its multiple connotations. This is even despite the fact that the phrase has gained widespread popularity. Sustainability is a term that has come to mean whatever its

user desires it to mean[3]. Scholars have identified more than 300 definitions and interpretations, all claiming to describe the notion of sustainable development. As each of the definition is necessarily contested and contestable, the availability of this pool of definitions in the literature indicates a considerable interest in the area[4].

However, this dilemma is not exclusive to sustainable development. Indeed, the vast majority of social scientific subjects are adaptable to reducing or widening their meaning, and so their definitions are in a permanent state of flux. The addition of the word' sustainable' to a variety of products and services is indicative of the increased interest in sustainable development that has been developed in current fields[5].

Since the adoption of the concept by multilateral agencies such as United Nations, several international conferences, congresses, summits, and meetings have been conducted, resulting in numerous declarations, reports, resolutions, and conventions, and addressing environmental issues" According to Webster's Ninth New Collegiate Dictionary, the word sustainable comes from the Latin word sustinere, which means "to endure." Sustainable is defined as the capacity to be utilized without depletion or destruction. Inherent to the concept of sustainability is an entity's capacity to persist and perpetuate itself[6].

Develop is defined as to progressively increase in size, sophistication, or strength. Utilizing natural materials and energy in a manner that does not harm the environment is considered sustainable.

According to the dictionary definitions of the two phrases sustainable and development, sustainable development refers to growth or expansion that can be maintained throughout time. The definition provided by the Brundtland Commission in its 1987 report titled Our Common Future has been largely used as the generic term for sustainable development,

notwithstanding the vast number of definitions available in the literature on the topic. It defines sustainable development as "development that meets present demands without jeopardizing future generations' ability to meet their own needs[7]. At the heart of sustainable development is the adoption of a forward-thinking mentality into all human undertakings to ensure a higher quality of life for present and future generations.

The demands urge global and national leaders to act in unison to address the difficulties that have plagued humanity and continue to do so. Global and national partnerships aimed at achieving the goals of sustainable development should be geared toward the achievement of four fundamental objectives: "economic progress; social integration and cooperation; environmental protection; and good governance by major social actors such as governments and businesses[8]. In order to achieve the all-encompassing sustainable development goals (SDGs), especially SDG 9 and SDG 12 that are important for this study, SDG 9, Industry, Innovation and Infrastructure; that is "Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation. The targets are: Develop sustainable, resilient and inclusive infrastructures; promote inclusive and sustainable industrialization; increase access to financial services and markets; upgrade all industries and infrastructures for sustainability; enhance research and upgrade industrial technologies. The remaining are means of achieving the targets: Facilitate sustainable infrastructure development for developing countries; support domestic technology development and industrial diversification; universal access to information and communications technology[9]. SDG 12: Ensure sustainable consumption and production patterns. The targets of the goal are: implement the 10-Year Framework of Programs on Sustainable Consumption and Production Patterns; achieve the sustainable management and efficient use of natural

resources; reducing by half the per capita global food waste at the retail and consumer levels and the reduction of food losses along production and supply chains, including post-harvest losses, achieving the environmentally sound management of chemicals and all wastes throughout their life cycle; reducing waste generation through prevention, reduction, recycling and reuse; encourage companies to adopt sustainable practices; promote public procurement practices that are sustainable; and ensure that people everywhere have the relevant information and awareness for sustainable development[10]. The means of achieving targets are: support developing countries to strengthen their scientific and technological capacity; develop and implement tools to monitor sustainable development impacts; and remove market distortions, like fossil fuel subsidies, that encourage wasteful consumption. It is essential to acquire the cooperation and commitment of both state and non-state actors because the potential difficulties to be navigated in the course of introducing the necessary adjustment may far exceed the government's ability to address them alone. Without multi-stakeholder collaborations throughout the lifecycle of sustainable development programmes, achieving sustainable development will be almost impossible. Cooperation and active engagement of the larger society, who are the intended beneficiaries, must be encouraged[11].

From another perspective, sustainable development as a pattern of development that permits future generations to live at least as well as the current generation[12]. This definition is similar to that of the World Commission on Environment and Development; the Brundtland Commission – namely: "development which meets the needs of the present without compromising the ability of future generations to meet their own needs"[13]. It was points out that the concept encompasses the interdependent goals of various aspects of development and environmental conservation. Improving individual living conditions in the community,

maintaining food safety, maintaining water safety, making clean energy universally accessible, ensuring ecosystems function in a healthy and productive manner, and ensuring a healthy and sustainable ecosystem are the six universal goals of sustainable development in the realisation of the 2030 vision[14].

In addition, when examining the concept of sustainable development, it is a path of desirable social goals, such as an increase in real per capita income, an improvement in health and nutrition, educational achievement, access to resources, a fairer distribution of income, and an expansion of basic freedom[15]. It is also argued that sustainable development is that which leaves our total patrimony, including natural environmental assets, intact over a specific period of time, whereas) sustainable development is the willingness and capacity of the current generation to devise a means of utilizing depletable resources such that future generations are left no worse off than the current generation[16].

Sustainability is concerned with treating present and future generations fairly and maintains that, for ethical reasons, resource use should not leave future generations in a worse position than the current generation. Sustainability also requires that the current generation, despite its ability to act otherwise, manage the resource base in such a way that future generations can potentially enjoy the average standard of life it ensures[17]. Additionally, sustainability requires that the average quality of life be distributed evenly within the present generation (intra-generational) and between the present and future generations (inter-generational)[18]. In fact, sustainability has become a rallying cry and organizing principle for a significant portion of the subsequent public dialogue on natural resource and environmental policy. Consequently, it encourages a longer-term perspective in policy discussions and decisions. Thus, the essence of economic development is the long-term modification of environmental quality. It

is expected that development will shift the production possibility curve outward, and as economies change, becoming less dependent on natural resources, and as less polluting technologies are adopted, this outward shift will improve the potential trade-offs between marketed output and environmental quality[19].

2.1.2 Components of Sustainable Development

There are three basic components of sustainable development economic, social and the environment, often referred to as the Triple Bottom Line (TBL). The three components are inter-related[2]. Economic sustainability is a guiding principle which demands that societies seek growth trajectories that create an optimal flow of income while preserving their basic stock of manmade, human, and natural capital. Environmental costs linked with manufacturing and consumption must also be internalized for economic viability. The three fundamental objectives of economic sustainability are to expand production of products and services, meet basic requirements, or reduce poverty and enhance equality. The social aspect of sustainable development is founded on the twin tenets of justice and equality. For a growth route to be sustainable over time, wealth, resources, and opportunities must be distributed evenly. Equal chances for education and productive contribution to society in terms of cultural variety, social justice, gender equality, and public involvement constitute social equity. The environmental component demands sustainable resource use, efficient sink function, and maintenance of natural capital stocks, i.e., the environment must be able to perform its three roles efficiently and uninterruptedly so as not to compromise environmental balance and stability[20].

2.1.3 Concept of E-governance

Electronic governance is a two-way communication process that deals with the use of information and communication technology to supply government services and ensure the accessibility of such services for citizens. Available evidence in literature points to the fact that an increasing number of governments around the world are implementing e-governance platforms to improve citizen participation, monitor government initiatives, ensure accountability, and circulate information between sectors[21]. In general, the motive behind implementation of e-governance platforms can be discussed under three broad categories: E-administration aims to improve government operations in particular in the public sector. E-services is an effort to improve the delivery of public services, such as delivering public papers online like birth and so on. E-democracy aims to increase public participation in a country's government decision-making process through electoral processes and e-voting mechanisms, among other means[22].

Many countries in the developed world now consider e-governance to be a crucial political tool for assessing the effectiveness of their governments. For these countries, transparence in governance is seen as a way to win citizens' trust and ensure popular participation in public administration.

Many countries in the developed world now consider e-governance to be a crucial political tool for assessing the effectiveness of their governments. In other words, governments throughout the world are turning to information and communication technology (ICT) to improve service delivery, public administration, and democratic participation. For these countries, transparence in governance is seen as a way to win citizens' trust and ensure popular participation in public administration[23]. Or to put it another way, governments throughout the globe are striving to identify ways to deliver public services more effectively

through strategic objective of supporting and simplifying the governing processes for government, citizens, businesses and employees. In Nigeria, the concept of e-governance and green public management principles and policies for sustainable development which dominant emergent trend in the global public administrative space appears to be absent in Nigeria state. There is need in Nigeria to deploy Information Communication Technology (ICT) and green public management policies that enhance efficiency and effectiveness in public service delivery.

E-governance deals with the adoption of new leadership style, new methods of making decisions on policies and investment, new ways of making education available to citizens, new ways of listening and attending to citizens as well as new ways of organizing and delivering information and services[24]. Thus, assessing e-governance status and nature in any part of the world, requires analyzing several parameters and factors.

E-governance has been defined in several ways by various stakeholders, such as scholars, government institutions, multilateral organization and others. Government services and information are delivered to citizens using electronic devices that work on electronic principles; this is referred to as "electronic governance"[25]. It is asserted that electronic governance is a broad concept which analysis and accesses the effects of technologies on the administration of governments, and the inter-relations which exist between the public servants and the larger society[26]. E-governance as a concept usually aims at achieving certain objectives such as enhancing government operations particularly in the public sector, improving the delivery of public services and encouraging effective participation of citizens in the decision making processes of the nation. The scope of e-governance revolves around e-

registration, e-participation, e-taxation, e-mobilization, e-education, e-service delivery, e-feedback, e-policing, e-debate, and the analysis of public financial statements[27].

E-registration: These are online portal used to capture and update new data such as the registration of new births, newly acquire vehicles, permits, landed property registration, driver's license and so on. These portals also allow citizen to register for employment opportunities, government aids, health services and others. All of these tasks can be completed on the website without physically visiting the offices.

E-participation: These are portals that enable citizens to have a say in a democratic society. e- Participation portals encourage citizen participation. The allow citizen to give feedback on government policies and services and also enables people to vote in issues of national interest that require general input but is not big enough to warrant a full election. ICT promotes citizen participation in government decision-making. A successful e-governance platform requires substantial private and public participation. Trust and responsibility will play a crucial part in the realization of the promise. Awareness is essential to develop such involvement, literacy plays a crucial role in acquiring it, and ICT will provide that participation-enabling environment[28]. Participatory methods must be integrated horizontally and vertically into each e-government institution's process, whether at the municipal or state level. This involvement would adhere to the model in which businesses, citizens, individuals, the marketplace, employees, and institutions have direct access to government services, maximizing contact via online transactions. One approach to achieve this is by mandating the migration of offline financial services to a secure online environment, hence reducing the cost to the government. In order to provide democratic e-governance, participation must also occur via electoral process and e-voting mechanism.

E-taxation: These are system that allows citizen to file their tax returns from the comfort of their homes. It is another area in which citizens can pay taxes such as property tax, tenement rate, income tax, etc. online. This is more convenient and secure than manual or physical approaches for all taxpayers[29].

E-mobilization: E-mobilization may also foster citizen's participation in local, state and federal decision making and projects. For instance, the activities of local, state development can be placed on the government data page, informing the citizens to participate in such project. This will facilitate people's participation in ensuring grassroots development.

E-debate: The concept of e-debate is like chatting over the internet, wherein not only the citizens but also the political leaders contesting the elections participate. The citizens give their feedback about the various policies of the parties and particularly the manifesto of the party. The initiative will further strengthen the process by enhancing the representative role improving accessibility of citizens to their elected members and developing the capacity of elected representative to engage in e-government elected members will also be provided with access to the local authority's Internet and e-mail system so that they become available online for decision making and people can easily access them[29].

E-service delivery: The demands for effective and efficient service delivery by the citizens requires total overhauling of traditional mode of operation in Nigeria public service therefore, there is need to re-shape the political structure and her public service agencies of Nigeria state through information communication technology in order to meet up with the current technological challenges. E-governance promotes effective and efficiency public service delivery at all level of government. In many developed nations of the world such as United

Kingdom and United State of America, public service are capable of rendering effective and efficient services through the functional internet platform provided by the government.

E-consultation: The programmes of government become informative through the application of ICT to the citizens. When the activities of government are widely and popularly disseminated, it makes the citizens informed on the various programmes provided for the sustainable development, it was argued that the increased availability of political information using e-governance is envisioned to improve participatory democracy. The publication of information to the public for policymaking process promotes accountability of elected officials to their electorate, thus enhancing their representative role. For the citizens, information on both the process and the outcome may raise their appreciation of the policymaking process, including the role of their elected officials, which may, in turn increase their participation in the selection of elected government officials. Consulting citizens through online polls and surveys facilitates direct feedback that could raise the quality of decision making and help promote partnership.

E-coordination: Coordination is very important in the management of public affairs, therefore e-coordination is a platform where the government relies on electronic media and information technology to reach other members of the organization, citizens and community with more information on time, location and also knowledge workers depend on advanced technologies for coordinating work processes with colleagues, clients and vendors.

E-education: In a democratic society such as Nigeria, civic education is bedrock through which sustainable democracy could be realized. This involves information relating to citizen's democratic exercises such as voting eligibility and sensitization towards citizen's political rights and so on. The adoption of internet facilities may enhance the actualization of

these various programmes that may benefit the citizens at all level in Nigeria. Democracy requires two-way communication as well as information, at regular intervals beyond elections, so that political leaders receive feedback and maintain contact with the citizen[30]. Many critics who advocate strong 'or direct' democracy neither commonly argue that these functions are nor well served by e-government websites alone. The opportunities for 'bottom up' interactivity in communication with official departments are far fewer than the opportunities to read top down 'information.

E-transaction portals: This implies business engagements between the citizens and the government or private institution, the employees and the government. Through online facilities, this can facilitate effectiveness and efficiency in the day to day governmental business.

E-policing: Security of lives and properties is the primary responsibility of any responsible government all over the world. Therefore, e-policing could be a platform for citizens to alert the security agency of the major issues related to security and this will also facilitate adequate feedbacks.

E-**planning portals:** Planning is essential for the survival of any institution, whether private or public. E-planning entails informing the general public of government policies and programs prior to their execution. Therefore, citizens are able to offer suggestions and opinions on government activities aimed at improving outcomes.

Consequently, e-government is a network of organizations, including the government, non-profit organizations, and corporate institutions, that collaborate to achieve a common purpose. The major objective of ensuring the implementation of e-governance in state affairs is to promote good governance, which is defined by equality, participation in the democratic

process, transparency, and accountability across the many sectors of the nation's economy[31]. E-governance arose from the revolution in information and communication technology, which manifests itself in digital technologies such as personal computers, the internet, mobile devices, and various electronic applications. The progressive appearance of these gadgets facilitated the movement of data and services between the government and other sectors of society[31].

It is being asserted that information and communication technology has been described as the tools for changing the society electronically. The global community views electronic governance as a more acceptable and reliable means of operating government businesses through the utilization of information and communication technology in improving transparency, ensuring the provision of adequate information to citizens, improving efficiency in administrative processes and ensuring availability of public services[32]. The primary focus of e-governance is to ensure that the citizens have a stress-free access to government services. Thus, the cumbersome process of following bureaucratic processes is avoided at all cost. In the same vain, certain scholars are of the view that e-governance is a concept that involves the deployment of information and communication technology by various government agencies and civil society in promoting the frequent participation of citizens in the governing and administrative process of political institutions[33]. In other words, the primary focus of e-governance is on the administerial and managerial process of an organization. This view was corroborated by some scholars by asserting that the basic focus of e-governance is the internal utilization of information and internet technologies in the management of certain resources such as capital, human, material, and machines, which are deployed to aid administrative processes in an organization[34]. It is being maintained that

electronic-governance analyses the whole component of the inter-relationship and networks which exists between the government and other institutions present in the state with regards to the use and application of information and communication technology. As such, e-governance is an approach which studies the processes involved in the administrative relations existing in an organization. It was also observed that four main groups can be distinguished in e-governance concepts. These groups are; government, citizens, employees and business/interest groups[34].

2.1.4 Measuring E-governance

Information and Communication Technology and its application in recent times have offered many opportunities for economic and human development within various nations in the global community. Public institutions around the world and other stakeholders at the national, regional, and global levels are working together to conceptualize and implement ICT in governance in order to drive sustainable development as part of the World Summit on the Information Society (WSIS). The level of E-governance implementation has now become a yardstick with which people can evaluate the current condition and type of e-governance in countries throughout the world. E-governance surveys conducted by the United Nations have adopted a comprehensive approach to measuring the quality of the nation's e-governance infrastructure, online service availability, and human capital index since its founding[35].

According to the United Nations (UN), a five-stage paradigm for e-government development can be used to examine the online service delivery index. Emerging, enhanced, interactive and transactional stages are all included in this list. These stages were further explained. Emerging is defined by them as a stage where essential government information is limited to a few specific areas and is only accessible to a small number of people. This stage of e-

governance includes an official website that links to ministries, departments, parastatals and regional/local administrations. In this stage, significant papers such as the constitution and some policy statements are also made available online. Public policy documents such as the E-Government Policy Statements, education and health-care-specific statements, government sources of current and anchored information are all made available to citizens under the increased presence stage of governance. Each person will be able to influence and act on the government's online services through the interactive stage[36]. This site has forms for tax payments, license renewals, and bill payments that can be downloaded. Updates will be made on a regular basis so that the most recent information and data may be found. During the transaction stage, citizens and government can converse on a two-way basis. When it comes to government services, this stage provides citizens with the ability to pay for them online, while those who provide them are given the chance for online bidding. Network presence is the most advanced level of e-governance, and is the final stage of online service delivery[37]. There are many opportunities for people to get involved in the government's decision-making process during this stage. The government is also willing to engage every sector of society in a two-way conversation with the goal to promote social cohesion. The government asks for people' opinions on a variety of government processes, including policymaking, legislation, the democratic process, and, lastly, the government's decision-making process, repeatedly during the course of interactions.

According to some experts, determining the degree to which a country's telecommunications infrastructure meets the six basic criteria for an ICT-enabled economy is part of measuring that country's overall development. Personal computers, internet users, phone lines, online users, mobile phones, and televisions all fall under this category[29]. There is a final

explanation in this section, which states that UNDP data is used to calculate the country's human capital index[36]. The adult illiteracy rate and the gross enrollment ratio of elementary, secondary, and tertiary institutions are used to calculate the index, with the former receiving a weight of two-thirds given to literacy rate and the latter a weight of one-third accorded to gross enrolment ration. E-governance in the United Nations member states has been assessed in many ways, according to the United Nations global e-government preparedness report (2005). E-government readiness levels are a function of a country's economic, technological, and human resource development, according to the 2001 study. The e-government index was created to measure this state of affairs. E-government readiness index was the name of a new platform that was used for the 2003 study[36].

According to the United Nations global e-government readiness report (2005), the assessment of the status of e-governance in member countries of the United Nations have been taking various dimensions. The 2001 study was on the basis that the level of a nation's state of e-government readiness is a product of country's economic, technological, and human resource development. To assess this status, a synthetic indicator called the e-government index was adopted. A second survey took place in 2003 and it adopted a new platform tagged e-government readiness index.

The 2005 e-government survey was a concrete analysis of the capacity and willingness of countries to employ e-government in development through Information Communication Technology (ICT). Thus, focus was now being placed on web measure index which is the level of internet service provisions, telecommunication infrastructure index, and the human capital index[36].

The current 2014 e-governance survey shows that the methods employed in assessing e-governance status has remained the same in other survey periods, however certain components have been updated to reflect new e-government strategies. The United Nations e-government survey is only report in the global community that assesses and analysis concretely the status of electronic-governance among 193 member states of the United Nations (UN). United Nations e-government survey 2014, pointed out that the income level of a nation to a large extent aids in promoting the implementation of e-governance services and initiatives. Thus the income level is an analysis of economic capacity and progress, access to ICT infrastructure, and provision of electronic-education. The report however presents the fact that the financial status of a nation does not actually make certain the establishment of e-governance in any society. There are some countries in the world that have, to a large extent improved their level e-government status despite relatively low financial base, just as there are countries which are backward in e-governance despite their relatively high income level[37].

Also noted was the growing trend of delivering public services jointly, which allows governments agencies, citizens, civil societies (non-governmental organizations (NGOs) and private sector to collaborate on the development of new technologies that promote e-governance[30]. Both developed and developing countries like Nigeria are experiencing this movement toward e-governance as they attempt to meet the UN's e-government development index. The United Nations e-government 2014 report highlights suggest that Nigeria is one of the 74 countries classified in the middle of the e-government spectrum. Nigeria is included in the group of middle-ranking countries that use mobile devices to deliver e-government services, according to the research[33]. As a result of their lower adult literacy and education

levels, the countries in the center of the ranking list have particular difficulties in the development of e-government. E-government progress in Africa is unequal and slow, according to the United Nations e-government report of 2014. E-government development index ranks Nigeria as the 19th best African country, ahead of only Egypt and South Africa[31].

2.1.5 Concept of Green Public Management

New circumstances of management plan ask new methods for realizing management activity. Nowadays as never, the problem of enhancing public administration's principals and policies is very real. Organizations are increasingly finding it challenging to balance economic and environmental performance particularly those that face competitive, regulatory and community pressure. With the increasing pressures for environmental sustainability, clearly ecological principals have to become new rule of state management[38].

Public servants are expected to be good stewards of resources, including the energy and environmental resources consumed in public organizations day-to-day operations. Many government organizations have enacted policies to lessen the environmental impact of their operations. Even in the absences of formal policies however, public employees might engage in a number of discretionary pro-environmental behaviours like eco-friendly initiative; being connected to nature, organizational commitment and organizational citizenship behaviours, to ensure efficiency and environmental sustainability[39].

In discussing the concept of green public management, it is important that we understand what green often symbolizes, nature and the natural world. Green is related to issues such as ecological concerns, conservation (planet and animal), corporate social responsibility (CSR), humanitarian concerns, fair trade, clean water, animal welfare, equality, and sustainability. Each of these issues alone is broad and complex. Green may also imply different things to

professionals in various fields. In health and medicine, for example, greening may mean minimizing damage to human health; in business, the term may imply harmonizing corporate environmental performance with stakeholders 'expectations, and so on.

Public administration as a field mainly is concerned with the means of implementing government policies and political values. Woodrow Wilson is the founding father of Public Administration. Two scholars opined that public administration is the action part of government, the means by which the purposes and goals of government are realized[40]. It was conceived that public administration as a science that deals with government and how its work is being done. Another authority opined that public administration can be described as the apparatus of government, including personnel, equipment and the administration processes designed to assist governmental public policy formation and implementation[41],[42]. It was stressed that the task of public administration is to strengthen the path of government, to make its business less un-business like, to strengthen and purify its organization and to crown its duties with dutifulness Green Public Management.

There are far reaching consequences of human industrial activities resulting in the extinction and endangering of many life forms. Upon realization of this alarmingly increasing threat on its own survival, the human industrial activities have started to transform itself which has led to discussions on newer concepts like green management. Since the industrial revolution about 250 years ago, humans have acted in ways and proliferated at rates that alter the equilibrium of life on Earth's surface. The age of human abuse of the environment can be traced back to the industrial revolution approximately 250 years ago. Prior to this period, the impacts of human activity were localized, or at most regional, as opposed to global impact being witnessed today. This may be a difficult concept to swallow, yet in all of Earth's long

and varied history, it has never been in this position. The economy has always depended on and affected the natural world[43],[44].

However, business historians have long disregarded the evolution of the interaction between business and the environment, from the extraction of raw materials to the management of resources to the production of refuse. When humans use these natural resources without limit in business, the natural environment is adversely affected. Its effects include global warming, floods, famines, tsunamis, and earthquakes and so on.

Environmental deterioration has always been a feature of human history, particularly due to business activity. However, the Industrial Revolution of the 18th and 19th centuries brought with it the capacity to destroy the natural environment to an unprecedented degree and velocity. Each of these colossal environmental occurrences is largely attributable to human actions and, more especially, to our present industrial civilization arrangements. Simply stated, the way humans have operated for the past two centuries has led us to the ecological limitations of the earth's capacity to support human life, and it has already exceeded those limits for countless other kinds of life[45]. the effort to promote sustainable actually emanated from the private sector.

Corporate organizations had little choice but to try to incorporate green management initiatives into all of their business functions because they were being held responsible for finding solutions to the environmental challenges facing our planet. Regulatory agencies have for long maintained that organizations adopting green management practices by which organizations obtained knowledge, responded to environmental issues, and set goals for environmental protection and preservation were a necessary part of this process[46].

As a relatively new concept, it's difficult to come up with a clear definition of "green public management." Researchers and practitioners have their own ideas on what it means. Requiring that all photocopies be done on both sides is seen by some as a straightforward effort to reduce paper usage. There are some who believe that green management requires a comprehensive strategies, organizational restructuring or a compete over-haul of manufacturing process.

A search through available literature revealed that there are only a few studies that cover the phrase "green management," and the majority of these studies focus on environmental management and environmental management systems (EMS). Even though green management aims to improve both the environment and corporate performance, we feel a more explicit and comprehensive conceptualization is required. As a result, many of the definitions of green management found in the literature are either too vague or too incomplete. "Green management" refers to environmentally-friendly product production, green research and development, and green marketing, according to one of the studies on the subject. We believe that this definition falls short of embracing true green public management because it does not highlight elements like strategic integration or sustainability. While researchers have made courageous attempts to develop and arrive at a widely-accepted definition of green management, another obstacle in determining a solid definition of the term is that green management is typically labelled with a different nomenclature such as corporate environmentalism, environmental management, or corporate sustainability. Each of these terms are defined and interpreted in a variety of ways by a diverse group of researchers and practitioners.

Corporate environmentalism revolves around the objective of reducing waste, which in turn contributes to the organization‘s ultimate goal of making money[47]. Corporate environmentalism is something much more broad and profound than financial returns derived from waste reduction. "Corporate environmentalism" is phrase used to represent an organization's commitment to incorporating environmental considerations into its strategic planning[48]. However, while the definition is clear to first timers, there are a few crucial elements missing from this definition, such as continual improvement, sustainability, and innovation that researcher believe are essential to the practice of green management. Simple definition of environmental management: economic gain focused on continual development. Environmental management systems are highly regarded by major enterprises, policy makers, consultants, and researchers as an effective strategy to dealing with environmental concerns in advance[49].

In order for sustainability to be possible, our economy must fundamentally change from one that prioritizes growth to one that is steady-state economy, which calls for ensuring that rates of consumption do not outpace rates of regeneration, rates of non-renewable resource use do not outpace rates of development of sustainable renewable substitutes, and rates of pollution emissions do not outpace the environment's ability to absorb them[50].

To applies an economic golden rule to define what it means to be sustainable it was advised everyone to leave the world better than you found it, take no more than you need, try not to harm life or the environment and make amends if you do. So there is need to incorporate ideas such as continuous improvement and sustainable processes into the definition of green public management[51].

From the theoretically based literatures concerning green management, Green public management is the organization wide process of applying innovation to achieve sustainability, waste reduction, social responsibility, and a competitive advantage via continuous learning and development and by embracing environmental goals and strategies that are fully integrated with the goals and strategies of the organization[52].

Green management is all about the sustainability for business without compromising the future need. Sustainability in relation to corporate plan implies the opportunity for business to provide a long-term solution, such need to enhance the quality of the workplace and natural environment[52].

Green Business

Green business is business with the philosophy that it is possible to make money while still ensuring the sustainability of our planet. Green Business use green management use environmentally friendly management principles, policies, and practices to enhance the standard of living for their clients, their staff, the environment and the neighborhoods where they operate. The goal of many green firms is to reduce the effects of climate change and other environmental issues. As a result, many green businesses were formed with a desire to resolve the impacts of climate change and other environmental problems. Green businesses must follow a green approach and green standards in their operational management and in the output of products. A green approach and green standards in operational management and product output are important for green business. An economic activity's process (or production) and its outcome in the form of environmentally friendly goods and services can both be considered when defining green business[52]. An explicitly green business sector is open to entrepreneurs who want to provide environmentally beneficial goods and services

(e.g. waste management, renewable energy among others). To deliver goods and services in an environmentally responsible manner, a green firm can employ green techniques or use clean technology (e.g. ecotourism). As a result, a green firm is one that operates in accordance with environmental sustainability principles at every level of its operations. Renewable resources are used as much as possible, and efforts are made to reduce the environmental impact of its activities. As a part of a long-term strategy to become sustainable, greening of company is seen as a means of doing business tasks in a way that does not pose any economic, social or environmental damage for both the present and future generations' well-being[53].

Going green enables businesses to immediately lower their own regulated or unregulated environmental consequences, which lowers regulatory risk, boosts the company's reputation, and enables businesses to be ahead of anticipated legislation. Increase the reuse and recycling of materials used in the production process while lowering the environmental implications of their customers' consumption and their customers' exposure to unhealthy substances, boost their own or their clients' energy efficiency and increase the efficiency of their resources or the productivity of their clients. Waste reduction and pollution prevention systems should be implemented throughout the organization or facility in order to discover waste reduction, energy efficiency, and resource productivity potential. As a business, you should collect and share more information about your environmental impacts and performance than is required by law. Make environmental decision-making more open to public participation than is required by law. Contribute to the development of environmentally friendly products and business strategies by securing financial investments[54].

Green Reputation

Is a set of perceptions of people inside and outside the company, agencies on meeting the needs of the present without compromising the ability of future generations to meet their own needs. The concept of corporate reputation is the set of perceptions of people inside and outside the company. A corporate reputation is based on the abilities that a company has in producing and delivering products and services[55]. It helps to save costs, reduce waste and improve productivity.

Green Economy

A green economy is derive from the effort to shift the focus of business activities from exploitation orientation to sustainable business practices which results in improved human well-being and social equity, while significantly reducing environmental risks and degradations. The green economy is a combination of businesses who have committed to low carbon emission, resource efficient utilization of resources and social inclusiveness[56]. The strategic pedestals on which the Green economy reside includes; mitigating the effect of climate change, resource saving and management, circular economy, environmental protection, ecosystem protection and recovery, water conservation and natural disaster prevention.

Another definition of green economy offered by the Green Economy Coalition- a group of NGOs, trade union groups and others doing grassroots work on a green economy, is that green economy is a resilient economy that provides a better quality of life for all within the ecological limits of the planet[57].

One of the major promoters of environmental sustainability is the United Nations (UN). The world body held a conference on sustainable development in 2012 in Brazil. The conference was tagged Rio + 20. It outlined various issues relating to environmental sustainability and in

this conference, the concept of green economy was born. The conference facilitated a global debate which has put to the forefront, the necessity for a redefinition of economic principles and the implementation of a new model of socio-economic development dubbed green growth or green economy. Furthermore, it was accepted that, in view of the challenges to the environment posed by human activities, sustainable growth and the green economy are the only viable alternatives to the brown economy.

Green Economy is a factor that produces structural changes in economic and social life. A new direction of change is the introduction of environmental criteria into production processes, investment and consumption, which in turn leads to the growth of the green economy, to green growth expressed in the growing share of the green economy in the creation of gross domestic product and green jobs. Everyone who is willing to work will be able to do so in the green economy. The Green Economy seeks to strike a balance between the challenges of economic growth, environmental degradation caused by human activity, and the rapid demographic and environmental shifts of the twenty-first century. Thereby it's thought that the concept of sustainable economic, social, and environmental development is best expressed through the concept of a "green economy." The goal of this economic system is to increase human well-being while decreasing environmental danger and natural resource shortage[58].

Table 2.1: Green Economy versus Modern Brown Economy.

Brown Economy	**Green Economy**
"Unlimited" economic growth	Economic growth can be achieved without depleting all available natural resources
Non-renewable energy sources	Renewable energy sources
Intensive consumption of natural resources	Energy efficient

(energy and material-intensive)	
Greenhouse gas emissions	Clean production
Destruction of biodiversity	Biodiversity protection
Global social inequalities	Intergenerational and interregional justice
Unlimited consumption (over consumption)	Sustainable consumption
Lack of Corporate Social Responsibility of Businesses and Investors	Corporate Social Responsibility of Businesses and Investors
Weakening of social trust	Increase in social trust

Source: authors' own elaboration based on Ryszawska, 2013[56]

Green Growth means fostering economic growth and development, while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies. The main objectives are; to reduce vulnerability to environmental risks and increase the livelihood security of the poor. The term describes a path of economic growth that is environmentally sustainable. It is based on the understanding that as long as economic growth remains a predominant goal, a recoupling of economic growth from resource use and adverse environmental impacts is required. As such, green growth is closely related to the concepts of green economy and sustainable development. A main driver for green growth is the transition towards sustainable energy systems.

The Green growth could be said to be born at a summit in Seoul, South Korea, the Asia-Pacific region concluded that a shift from the then-current economic growth road to a sustainable green growth path with its overarching goal of reducing poverty and environmental sustainability was needed. It began as a regional policy in 2005, but has since become a worldwide one, especially among developing countries, thanks to the help of international organizations like the World Bank[59].

Green growth is a policy framework that combines environmental protection with economic growth, with the goal of reducing poverty by creating green and clean jobs and enhancing the well-being of the country's citizens, as well as developing a management strategy to monitor and control environmental activity. Only by reducing poverty and raising public knowledge of environmental issues can emerging countries be put on a path to sustainable development.[118] Adopting green growth in its proper form will only be made possible if African countries' governments demonstrate the necessary level of innovativeness and remove obstacles that prevent green growth products and technology from spreading widely[60].

Green Jobs

Green Jobs can be defined as workplaces that support the environment. Green jobs are decent jobs in which workers' duties involve making their establishment's production processes more environmentally friendly or use fewer natural resources, that contribute to preserve or restore the environment, be they in traditional sectors such as manufacturing and construction, or in new, emerging green sectors such as renewable energy and energy efficiency[61,62]. Bureau of Labour statistics categories green jobs into water conservation, sustainable forestry, biofuels, geothermal energy, environmental remediation, sustainability, energy auditors, recycling, electric vehicles, solar power and wing energy[60].

According to United Nations Environmental Program defines green jobs as work in agricultural, manufacturing, research and development (R&D), administrative, and service activities that contribute(s) substantially to preserving or restoring environmental quality. Specifically, but not exclusively, this includes jobs that help to protect ecosystems and biodiversity, reduce energy, materials, and water consumption through high efficiency strategies, de-carbonize the economy, and minimize or altogether avoid generation of all

forms of waste and pollution[54]. The environmental sector has the dual benefit of mitigating environmental challenges as well as helping economic growth. In addition, Green jobs are now perceived as a solution for young, unemployed people who can both find work and start their own businesses in this industry.

UNEP, the world's foremost authority on environmental improvement, believes that the green economy holds the potential of both environmental protection and meaningful employment for the world's poor. The term "green job" refers to any job or self-employment that has a positive impact on the environment. Green employment can be found in a variety of industries, such as construction or transportation, that are dedicated to reducing their impact on the environment. For those who are just starting out in the workforce, green spaces can have a significant impact on their success[54].

Green Jobs

- Employment in production of green products and services
- Decent jobs
- Employment in environmental friendly processes

Source: Good Green Jobs in a Global Economy, D. J. Hess, 2012

Green Procurement

Green procurement means purchasing products and services that cause minimal adverse environmental impacts. It incorporates human health and environmental concerns into the search for high quality products and services at competitive prices. It is defined as the acquisition of goods, works, services or consultancies whose results have the least possible harmful effects on environment, human health and safety when compared to other competing and similar acquisitions, or those that make a positive impact on the environment[63].

Green procurement can play a leading role in resource waste reduction, helping you better manage your resources and improve efficiency. In addition to the long-term costs benefits, most customers now expect businesses to act responsibly and tot look after the environment. Green procurement involves evaluating your supply chain and looking at where the products come from, what they are made of and what happens to them once they have been used. Benefits of Green procurement are reduction solid waste, it conserves water and protects natural resources and it can help alleviate climate change[63].

New Public Management

In 1991, Christopher Hood first used the phrase "New Public Management" (NPM). A combination of the planning, organizing, and controlling management functions with the management of human, financial, physical, informational, and political resources, New Public Management is an interdisciplinary study of the general features of administration. NPM uses a number of different strategies, including: debureaucratization, decentralization of decision-making, new managerialism, privatization, and performance evaluation[64]. Historically, the bureaucratic organization model served the public sector well. However, as time has progressed, a new form of public administration has arisen that emphasizes teams and customer service. As an alternative to traditional public administration approaches, market model reforms are being implemented. All levels and branches of the public sector, as well as every administrative culture in any country, were encouraged to adopt NPM as a way to change from bureaucratic administration to business-like professional management. NPM has been touted as a panacea for the maladies of management across a wide range of organizations and policy domains, from education to healthcare[65],[66].

To achieve the objective building a green economy, the New Public Management model rely mainly on legal acts. As part of its "Europe 2020 Strategy for Smart, Sustainable and Inclusive Growth" announcement in 2010, the European Commission outlined three intertwined goals: assisting a resource-efficient, more environmentally friendly, and more competitive economic system; promoting social and territorial cohesion through a knowledge-based economy; and encouraging sustainable development, all of which fall under the umbrella of "smart" development. In order to improve the quality of life of the poor and boost their potential for employment and entrepreneurship, the government employs NPM to build a leading role and larger public engagement[67].

Human, financial, technical, and structural elements are all intertwined in an ever-changing context when it comes to implementing NPM reforms efficiently. In countries and regions all over the world, green activities are essential policy actions that may be implemented in virtually every sector of the economy, assisting in sustainable development and the greening of the economy while also serving as an important instrument in the fight against unemployment.

The importance of NPM is to improve product delivery, make bureaucratic systems more effective and cost-beneficial, improve public sector structures, reduce costs and expenditures, and put consumers first[68].

Decentralization, privatization, market-oriented results, and private sector management methods are all components of NPM. Decentralization, goal-setting, cost cutting, and increased revenue are just a few of NPM's features. It also provides management support services and ensures that citizens receive better service. Governments will save money with

NPM changes because more market orientation in the public sector will not negatively impact other goals and considerations[68].

All activities and polices directed at reducing pollution and carbon emissions are part of an organization's effort to combat the Greenhouse effect on the planet. There are three main components to this strategy: Recycling, Reducing, and Reusing. Human activities, primarily in the form of industrial production, place a heavy pressure on these three fundamental activities[69].

This three primary activity helps to reduce the burden pouring by human activity, mostly by the industrial operation. Management can prevent and minimize the effect on the environment by assimilating such significant activity in the functioning of an organization. Upgrade and modified green technology with eco-friendly policy in managing the organization is needed before moving forward in such movement. Going green in public agencies or organizations indicates impressive business sense, so worldwide corporate is extensively switching to adopt green philosophy in the public management function. In the context of this study, green public management has the following dimensions: Renewable energy, waste recycling and environmental impacts[70].

2.1.6 Renewable Energy and Green Public Management

Public and private institutions are now shifting to green energy sources such as sun, wind, water and geothermal energy. These are all examples of renewable resources that are renewed on a timely and regular basis. Global warming and other environmental and social concerns have pushed for the use of only renewable energy sources for electricity, transportation, and even the world's whole primary energy supply. According to the Intergovernmental Panel on Climate Change, integrating a wide range of renewable energy

technologies to meet most of the world's energy needs is possible. Even the most optimistic proponents of renewable energy have been surprised by how quickly it has taken off. At the national level, renewable energy already accounts for more than 20% of the energy supply in at least 30 countries around the world[71]. Electricity generation, air and water heating/cooling, transportation, as well as rural (off-grid) energy services, are all common uses of renewable energy. More than $286 billion was invested in renewable technology around the world in 2015, with China and the United States leading the charge. In total, 7.7 million jobs are involved with the renewable energy industry around the world, with solar photovoltaic accounting for the biggest number[72].

Energy security, climate change mitigation, and economic gains are all being realized as a result of rapid deployment of renewable energy and energy efficiency technologies. In terms of energy security and economic benefits, rapid implementation of renewable energy and energy efficiency, as well as technology diversification, would be highly beneficial. Among other things, it would improve public health, reduce early deaths due to pollution, and save hundreds of billions of dollars in health care expenditures each year solely in the United States alone, due to air pollution caused by fossil fuel burning[73]. The forecasted rise in heat from the sun is expected to render the Earth's surface too hot for liquid water to exist, but renewable energy sources such as hydro and wind are likely to be able to supply humanity with energy for almost another 1 billion years[73]. There is a realistic chance that existing energy supply arrangements can be replaced by renewable sources of energy by 2050, even if they aren't completely renewable. It is largely viewed as "mainly social and political, not technological or economic" to implement the renewable energy plan. Using wind, solar, and

water systems to generate energy should cost no more than today's energy expenditures, according to the study authors[74].

As a result of reviewing numerous studies from around the world, the National Research Council in the United States concluded that the most significant roadblocks to the widespread implementation of large-scale renewable energy and low carbon energy strategies are political rather than technological in nature. The fossil fuels lobby, political inaction, unsustainable energy consumption patterns, and out-of-date energy infrastructure are among the key roadblocks[74].

2.1.7 Waste Recycling and Green Public Management

Waste has a devastating effect on the natural world, especially when it is not properly managed. It has health and economic implications for all societies. Rubbish in landfills emits harmful chemicals and greenhouse gases. That is why waste recycling which is a way to turn refuse that would have constituted health hazards into resources to create more goods has been globally embraced. Reducing waste pollution is made possible in part through recycling[73]. Recycling is a wonderful opportunity that not only eliminates health hazards, but also leads to wealth creation while also contributing greatly to conservation[75].

Recycling conserves the rainforests by reducing the demand for raw materials. Paper, glass, plastic and metals may all be recovered from waste and used to produce new products, minimizing the demand for virgin raw materials. When compared to using virgin fibers, recycling white paper reduces pollutants by 74% in the air and 35% in the water. Recycling aluminum cans instead of mining ore produces 95 percent less air pollution and 97 percent less water pollution than making aluminum cans from ore. Compared to landfilling and new manufacturing, recycling and remanufacturing are 194 times more successful at reducing

greenhouse gas[75]. The simple act of recycling may minimize trash, help save energy, and protect the environment. To get the full benefits of recycling, the three components of collection, manufacturing, and purchasing recycled must all work together. Community recycling programmes and private recyclers take common consumer materials such as: paper, cardboard, plastic, glass, metal, and steel. Retailers and other electronic recyclers acquire unwanted, outdated, and broken devices[75].

2.1.8 Environmental Impacts of Recycling and Green Public Management

Reusing and recycling materials such as paper which contains plastic and lead, glass, metals (such as aluminum and steel), rubber tyres, electronics, and batteries (which contain plastic and lead) as well as used oil helps preserve natural resources, conserve energy, and reduce emissions into the atmosphere during manufacturing. Bottles are recycled into new bottles. b) Aluminum cans can be recycled endlessly since they can be recycled back into aluminum cans. In addition to being used in other steel items like automobile parts and construction materials, steel cans are also recyclable. Carpet, clothing, automobile parts and fresh bottles are all made from recycled plastic bottles. Paper waste is turned into fresh sheets of paper through the process of recycling[75]. It is possible to recycle some types of paper up to seven times. Recyclable materials are not yet tracked by the National Environmental Standards and Regulation Enforcement Agency (NESREA) Act 2007 of Nigeria[76].

The U.S. Environmental Protection Agency (EPA, 2005) provides information on the benefits of recycling and municipal solid waste disposal statistics. For example, recycling 10 aluminum cans, can help generated enough electricity to power a laptop computer for up to 52 hours. It is claimed that recycling just 10 plastic bottles may power a 60-watt CFL light bulb for nearly 100 hours. For the year 2012, paper accounted for about 27% of total waste

production and over 51% of total recyclables collected from over 5,000 papers and non-paper goods. One ton of recycled material can power a typical home for six months on its own and save 7,000 gallons of water in the process[77].

Recycling is already a big enterprise globally with country even exporting wastes to be recycled into goods in other countries. It is estimated that 54 percent of garbage was buried, while 11.7 percent was burned to generate electricity, and the remaining 34.5 percent was repurposed. More than 168 million metric tonnes of carbon emissions will be avoided, which is the equivalent of removing 33 million cars from the road[72]. More than 1.1 quadrillion BTUs of energy will be saved, which is equivalent to the annual use of over 10 million households[77].

2.2. Theoretical Framework

2.2. 1 Passet Theory of Sustainable Development

Rene Passet theory of sustainable development suggest that the economic sphere and the human activity sphere are linked by means of information, knowledge and market processes, but that they are also embedded in the biosphere considered as a global macro-system and energy. These three spheres are directly connected and interface[78].

Sustainable development can be thought of in terms of three spheres, dimensions, domains or pillars, that is, the environment, the economy and the society. The three-sphere framework was initially proposed by the economist Rene Passet in 1979. It has also been worded as "economic, environmental and social" or "ecology, economy and equity". This has been expanded to include culture as the fourth pillars of SD by some authors who advocates the introduction of culture sustainability as a fourth pillar of sustainable development and not to be seen as dependent on the other three pillars of SD, social, economic and environmental[79]. Consequently, culture SD is the only notion properly able to covers all the culture and all its complex interactions with the social, economic and environmental dimension of human life[80]. Culture as defined by UNESCO, which, in its turn, is borrowed from Tylor (1871), defined culture as that complex whole which includes knowledge, beliefs, arts, morals, laws, customs, and any other capabilities and habits acquired by (a human) as a member of society, gained recognition as interdependence between culture and sustainable development, in 2015, he highlighted the importance of culture in building a sustainable future, though culture was not properly identify as a fourth pillar alongside the social, environmental and economic pillars of sustainable development[81]. Culture, institutions or governance or alternatively re-configured as four domains of the social, ecology, economics, politics and culture, then economics would once again be considered a part of the social, and ecology which would be viewed as the meeting point of the social and the natural world[81],[82].

Sustainable development is an organizing principle for attaining human development goals while preserving natural systems' ability to offer these resources and services critical to the economy and society development. Ensuring that living circumstances and resources are utilized to meet human requirements without compromising the natural system's integrity and

stability are desirable outcomes. Development that satisfies the requirements of the present without compromising the ability of future generations to meet their own needs might be defined as sustainable development (SD). It is basically a concept aimed at correcting the wrong impression that earth's natural resources are inexhaustible and to get all stakeholders to consume these resources responsibly so that incoming generation can still benefit from them[83].

Sustainable forest management and twentieth-century environmental concerns have been influencing the modern concept of sustainable development since the 1980s, when the Brundtland Report was published. The notion has evolved to focus more on the economic, social, and environmental well-being of future generations as it has evolved. As the concept evolved, the focus changed more in favor of environmental preservation, social advancement, and economic advancement for future generations. The argument has been made that "sustainable development" refers to the all-encompassing strategy and temporal processes that lead us to the ultimate state of sustainability, whereas the term "sustainability" should be understood as humanity's target goal of human-ecosystem equilibrium, contrasting the demands of ambitious economic expansion and the duty to safeguard ecosystems and natural resources are being balanced by modern economies. A better approach is to use sustainability commitments and other sustainability measures as a catalyst for economic growth, rather than as a panacea. Managed Sustainable Development (MSD) is the term used to describe the type of economic growth that results from following such well-defined principles and procedures (MSD)[84]. In order to manage sustainable development, it is necessary to use analytical tools and management practices that analyze and integrate environmental, social, and economic objectives as well as problems that span over several

years or decades. Some of the measures that can be adopted in managing sustainable development are; (i) technology (ii) reduce, reuse and recycle approach (iii) promoting environmental education and awareness (iv) resource utilization as carry capacity (v) improving quality of life including social, cultural and economic dimension[85].

Experts agreed that there have been and, there will continue to be critics of the concept of sustainable development, particularly the question of what will be sustained in such a development. Non-renewable resources cannot be used sustainably because of the limited supply on Earth, according to this theory. As a result, the Industrial Revolution is considered unsustainable as a whole. Another argument is that the Brundtland Report only endorsed a "business as usual" plan for global expansion with an imprecise and insubstantial idea linked as a public relations slogan to the concept of "conservation management". However, there is ample evidence in the cotemporary global society to show that to preserve world productivity processes permanently, whether natural or human-made, it is imperative to practice sustainability by replacing resources utilized with resources of equal or greater value without compromising or jeopardizing natural biomes. For example, for every tree cut down to make ships, furniture and other items, another one should be planted[86].

The carrying capacity of natural systems and the social, political, and economic difficulties that humanity faces are all part of the concern of sustainable development. The study of sustainable development and environmental science is known as "Sustainability Science." Additional emphasis is placed on the current generation's responsibility to renew, maintain, and develop the planet's resources for future generations' benefit. The roots of sustainable development can be traced back to the 17th and 18th century European notions regarding sustainable forest management. According to John Evelyn, planting trees was "a national

obligation of every landowner, in order to stop the harmful over-exploitation of natural resources" in his essay Sylva in 1662, which was a response to a growing awareness of England's depleting timber supplies[86,87].

During this period, businessmen as well as scholars began to voice their concern about the rate at which natural resources was being depleted in Europe. A senior mining administrator, Hans Carl von Carlowitz produced Sylvicultura economics, a 400-page study on forestry, in 1713. The book built on Evelyn and Jean Baptiste Colbert's theories to establish a new approach to forest management. The aim of the book is to ensure proper forestry management so that forests would not simply disappear as an inevitable end to unbridled exploitation. This work also inspired other scholars to come up with various intellectual works on natural resources management. As a result of this work, Alexander von Humboldt and Georg Ludwig Hartig developed forestry as a scientific discipline. Gifford Pinchot, the first head of the United States Forest Service, was affected by this and adopted a resource-conscious approach to forest management, while Aldo Leopold's land ethic impacted the environmental movement in the 1960s[88].

This relationship between economic expansion and environmental degradation was also brought to light following Rachel Carson's publication of Silent Spring in 1962. Kenneth E. Boulding Earth recognized that the economic system needed to change to account for the limited amount of resources available in the natural system in his influential 1966 article, “The Economics of the Coming Spaceship”. The term "sustainable" appeared for the first time in the modern sense in the Club of Rome's landmark report on the Limits to Growth, which was written by a team of scientists led by Dennis and Donella Meadows of the Massachusetts Institute of Technology (MIT), in 1972. According to the efforts of authors

such as these, it was recognized that the economic systems must adapt to the ecological system's finite resources. The stated of this club was to find a model production and consumption that reflects the world system as sustainable without sudden and uncontrolled collapse, and capable of providing the basic material needs for all, of its people. MIT researchers, in response to the Club of Rome report, set up ten days of hearings for the US Congress on "Growth and Its Implication for the Future, the first hearings of their kind on the topic of long-term sustainability. These pioneer efforts from various countries set the tone for global acceptance of sustainability development[89],[90].

Sustainability as a top global goal was first mentioned in 1980 by the International Union for Conservation of Nature (IUCN), which coined the term "sustainable development." Five principles of conservation were outlined in the United Nations World Charter for Nature, which was adopted two years later. The Brundtland Report was published in 1987 by the United Nations World Commission on Environment and Development. At the time, it contained a definition for sustainable development that is now widely accepted. This generation's requirements are met without jeopardizing future generations' capacity to meet theirs, which is what we mean when we talk about sustainable development. Both the concept of "needs," in particular the vital requirements of the poorest people on earth, and the idea of environmental limitations imposed by technological and social organization constraints on the ability of the environment to supply existing and future needs are at the heart of this paper. Our Common Future, the report of the United Nations Framework Convention on Climate Change (1987) Brundtland's basic intergenerational framework for sustainable development has since then evolved into a newer goal of "socially inclusive and environmentally sustainable economic growth" since then[2].

The Earth Charter, published in 1992 by the United Nations Conference on Environment and Development, lays out the foundations for a peaceful, equitable, and sustainable global civilization in the twenty-first century. Key building blocks of the action plan Agenda 21 for sustainable development are information, integration, and participation. It underlines that everyone is a user and a source of information in sustainable development. In order to move away from previous sector-centric corporate practices, it emphasizes the importance of integrating environmental and social considerations into all development processes, as well as cross-sectoral co-ordination[91].

In addition, Agenda 21 stresses the importance of including the general public in decision-making in order to achieve long-term sustainability. Millennium Declaration concepts and treaties on sustainable development, including economic development, social development, and environmental protection, were established in accordance with the United Nations Charter. For the sake of the present and future generations, sustainable development can be characterised as a method that considers all of a society's resources, including natural, produced, and social capital, as one system. According to the United Nations, the term "sustainable development" includes both land development issues and human development issues such as education, public health, and living standards. Researchers determined that reporting on sustainable development must take into account four interrelated domains: environment; economic theory; politics; and cultural theory[91].

Education for Sustainable Development (ESD) was launched in 2005 as part of the UN Decade of Education for Sustainable Development (UNDESD), 2005-2014. UNESCO's 37th General Conference supported the Global Action Programme on ESD (GAP) on the basis of the Decade's accomplishments, as expressed in the Aichi-Nagoya Declaration on ESD. The

Global Action Plan (GAP) was established in 2014 at the UNESCO World Conference on Sustainable Development (ESD) and was officially recognized by UN General Assembly Resolution A/RES/69/2119[91].

UNESCO and its partners play a critical role to guarantee that ESD principles are taught in all forms of education, including formal, informal, and non-formal. A rising international acknowledgment of ESD as a crucial enabler for sustainable development There were three major UN summits on sustainable development that recognized the importance of ESD: the 1992 UN Conference on Environment and Development (UNCED), the 2002 World Summit on Sustainable Development (WSSD), and the 2012 UN Conference on Sustainable Development (UNCSD). Additionally, the Paris Agreement (Article 12) acknowledges the importance of education for sustainable development (ESD)[1].

As part of the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs), ESD is undoubtedly at the heart of the 2030 Agenda for sustainable development's According to the Sustainable Development Goals, all countries must work together to address the most pressing global issues if humankind is to have any chance of surviving. These major categories include people, planet, prosperity, peace, and collaboration. Sustainable Development Education (ESD) is listed in SDG4 Target 4.7 as an important tool to achieving the other 16 SDGs, which include ensuring that all learners gain the information and skills necessary for promoting sustainable development[14].

2.2.1.1 Relationship between Ecological Footprint and Human Development

Ecological footprint is the impact of person or community activities have on the environment, measured by the amount of land required to sustain the use of natural resources and to

assimilate the waste generated to enable suitability of the environment to maintain an eco-stability. It is a relationship of non-domination between both the biotic and abiotic constituent and elements of the environment. While Human Development Index (HDI) is a summary measure of a country's average achievements in three basic aspects of human development; health, knowledge and standard of living, that is a long and healthy life, as measured by life expectancy at birth, knowledge as measured by mean years of schooling and expected year of schooling[92].

The relationship that exist between man and its environment most time are not symbiotic, human being most times according to anthropocentric philosophical viewpoint argue that human beings are the central or most significant entities in the world through their activities that continuously deplete the environment without thinking of how the environment will be able to replenish itself and remain eco-stable for the future needs.

Some non- anthropocentric philosophers have countered the view stating that human being and the environment have relationship that each depends on the other for survival. Thus ecological stability of the environment is important for human survival and for sustainable development. The ecological stability of the environment is very important for positive measure of human development index of a country[92].

The ecological stability of human settlements is part of the relationship between humans and their natural, social and built environments. Also termed human ecology, this broadens the focus of sustainable development to include the domain of human health. Fundamental human needs such as the availability and quality of air, water, food and shelter are also the ecological foundations for sustainable development that addresses public health risk through investments in ecosystem services can be a powerful and transformative force for sustainable

development which, in this sense, extends to all species. Environmental sustainability concerns the natural environment and how it endures and remains diverse and productive. Since natural resources are derived from the environment, the state of air, water, and the climate are of particular concern[93].

In the United Nations Fifth Assessment Report, the Intergovernmental Panel on Climate Change (IPCC) provides an overview of the most recent scientific, technological, and socio-economic information on climate change and list options for adoption and mitigation. In order to maintain the planet's life support systems while meeting human demands, environmental sustainability necessitates thoughtful planning on the part of every human society. This entails using water sustainably, utilizing renewable energy and sustainable material suppliers, for example harvesting wood from forests at a rate that maintains the biomass and biodiversity[94].

When natural capital (the sum total of nature's resources) is depleted faster than it can be replaced, the situation is unsustainable. Nature's resources must be used only at a rate that can be renewed naturally by human activities. As a whole, sustainable development and carrying capacity are interwoven. Degradation of the environment might theoretically lead to the extinction of human life on Earth. Human mortality should rise as a result of environmental deterioration on a global scale, until the population reaches a level that the degraded environment can support. Humanity will face extinction if environmental degradation goes past a particular threshold or tipping point. Economic, environmental, and social factors all come together in a sustainable development strategy[95].

Agriculture that is environmentally friendly and doesn't harm people or the environment is what we mean when we talk about sustainable agriculture. To do this, one must consider the

impact on the farm's environment and the health of the people who live and work there, as well as the biodiversity of the area[96]. Ecological sustainability is a long-term approach to food production that considers the long-term effects of food production on the environment and the economy. Crop rotation and multiple cropping are among the methods of sustainable agriculture that include permaculture, agroforestry and mixed farming. It calls for environmentally friendly farming practices, cutting-edge agricultural technologies that improve the quality of the environment for humans, and the reclamation and conversion of deserts into productive farmland[96].

2.2.2 Social-technical Systems Theory

The Tavistock Institute, London, in the 1950s and 1960s was the source of socio-technical theory. Socio- technical systems in organizational development is an approach to complex organizational work design that recognizes the interaction between people and technology in workplaces[97]. Socio-technical refers to the interrelatedness of social and technical aspects of an organization or the society as a whole. The cornerstone of the socio-technical approach is the design process that leads to optimization of the two subsystems that is excellence in technical performance and quality in people's work lives. The theory holds that there must be appropriate information flow between the socio-technical system and its environment in order to grasp the changing needs of both the organization and the external environment. In order to achieve their objectives, organizations need to be able to respond quickly to changes in their environment[98].

Self-managed teams or autonomous work groups are the primary use of sociotechnical systems. In comparison to more rigidly structured teams, self-managed teams with a wide range of functions perform better[98].

The Quality of Work Life Movement of the 1970s was heavily influenced by socio-technical systems theory. With the emergence of the fifth discipline, the relevance of socio-technical systems has once again been highlighted. The socio-technical system is also influenced by Open Systems theory which asserts that an organization is a living, breathing human system that is always interacting with its surroundings[99]. Organizations can improve their performance significantly by implementing socio-technical system principles in their internal structures. Because of the intricate interrelationships among its constituent elements, a system has properties that are unique to the system as a whole. It is impossible to pin down the emergence of these traits to a single portion of the system[100].

To the contrary, they do not manifest until every component of the system is working together as it should. While traditional information systems are defined by their functionality, a more accurate measure is how well a system interacts with its surroundings. System performance can be improved by incorporating usability and other "non-functional" needs such as security and dependability. One of the eight system goals (functionality, flexibility, extendibility, and connectedness) is a success-creating goal; the other (failure-avoiding goals) is a failure-avoiding goal (security, reliability, privacy and usability)[100].

2.2.3 New Public Management Model and Green Public Management

In the 1980s and 1990s, in response to the shortcomings of the traditional model of public administration, a new approach called New Public Management (NPM) was created. The model was focused on issues such as the restructuring efforts aimed at enhancing the standard of public services, reducing government spending, and boosting the effectiveness of government operations[101]. Despite the fact that many

nations in the developing world have not fully adopted NPM, public management reform is still a topic of attention and certain NPM changes have been implemented in one form or the other by government around the world. Thus, the question arises as to whether or not there is convergence towards a single NPM model of public administration that is widely recognize[102].

It has been said that the NPM is one of the most notable international trends in public administration[103]. NPM has been the subject of a great deal of academic interest which has led to the emergence of a variety of viewpoints. NPM ideas can be classified into two main threads. Decentralization, disaggregation, and downsizing are all part of the first school of thought, which focuses on better management and organizational reform[104]. According to this line of argument, NPM is "a solid managerial style," emphasizing the need of a focus on outcomes (efficiency, effectiveness and quality service). The goal of NPM is to enhance the quality of public services, reduce public spending, boost government productivity, and expedite policy implementation[105].

In the same vein, it was noted that NPM has brought benefits of cost efficiency and service effectiveness to public management as well as improving efficiency and obtaining value for money by focusing on performance management and auditing. Other observers also believe that NPM encourages government to concentrate on the efficient production of quality services[106]. Furthermore, NPM replaces highly centralized hierarchical organization structures with decentralized management because NPM involves restructuring and reducing the size of the public sector including reorganizing and slimming down central civil services[107].

The other strand of NPM ideas emphasizes markets and competition which include contracting out and adopting private sector styles of management practice. In this second strand, NPM can be defined as a set of particular management approaches and techniques which are mainly borrowed from the private sector and applied in the public sector. It is also perceived as an ideology based on belief in the efficacy of markets and competition and business-like management ideas and practices[108]. More recently, some scholars noted that NPM involves the use of market or market-like mechanisms for the delivery of public services (including privatization, contracting out and the development of internal markets. It was contended that NPM has been evident in contracting out, a variant of the purchaser-provider type of relationship[109],[110].

2.3. Empirical Review

2.3.1 E-governance and Sustainable Development in Nigeria

Nigeria as a country holds an interesting position in the comity of nations. It is considered as one of the influential countries in Africa, his attributes however, is as a result of its enormous population, not necessarily because of its growth in information technology. Nigeria's vast population, rather than its rapid rise in information technology, is what gave it the title "giant of Africa" in the international system[111]. According to a researcher, the world community has held divergent perspectives about Nigeria's development status and economic potential. This paradox is often reflected in the low ranks it receives from international organizations in various surveys.

Successive governments have made efforts to reposition the country so that it can take its rightful position in the international stage. One of the means of achieving this is to follow the global trends such as e-governance[112].

E-governance is a goal to achieve for Nigeria, as it is for every other government in the world. As part of its long-term strategy, it intends to create an ICT infrastructure that will enable it to send and receive data from one sector of society to the other. Consequently, Nigeria's telecommunications and information technology (ICT) sector has grown at a rapid rate and is now Africa's fastest expanding market. In conclusion, he states that nation must adopt electronic governance to ensure the effectiveness of public services and the free flow of information from one sector of society to another[113], [24].

Between 2011 and 2013, the Nigerian government adopted a variety of online application, such as mobile apps and mobile portals, to aid in the eradication of poverty, gender equality, social inclusion, and the promotion of economic development, environmental protection, and disaster management. In addition, several countries in the global community are attempting to implement a new governance plan that can control service delivery models in the society[114]. Nigeria is not left out from the worldwide transformation taking place at the moment. As a result, the government's e-governance status has been elevated by increasing the use of scientific techniques to enhance the ICT skills of the government's employees so that they can better understand the specific needs and wants of citizens before they purchase public goods, and to look for anomalies in the purchasing process in various sector of the economy. Although the international community has implemented various strategies to promote the growth of ICT connectivity and project the importance of e-governance for

service delivery, it was observed that in Nigeria there remains a fundamentally different in the distribution of e-government services for service delivery[115].

Despite various attempts to improve Nigeria e-governance status and nature, the international system still ranks the nation among those countries with low e-governance level. According to the United Nations E-Governance Survey Report 2014, Nigeria ranks 162 positions out of 193 countries in terms of its e-governance status. The survey also revealed that Nigeria is among those countries with lower middle income and it had 0.2929 as its e-governance development index figure. These low rankings can only be explained by analyzing the many factors used to judge e-state governance's and nature in the Nigerian context. Online service delivery, telecommunications infrastructure and human capacity development are all included in these metrics[116].

According to the United Nations' e-governance survey, mobile apps are the primary means by which Nigeria provides e-governance and online services[117]. One other thing that has been noted is Nigeria's telecommunications and ICT sector's great improvement in its attempt to provide citizens with unrestricted and affordable internet services. Tele-density also increased from 68 percent in 2011 to 96 percent during the same period, while mobile internet subscriptions increased from 45million in 2011 to 73.8million as at September 2014. Internet penetration increased from about 26.5 percent in September, 2011 to about 52 percent in September, 2014. Nigeria’s mobile market has gradually emerged as the largest market in the African continent with a current statistics of having more than 125 million subscribers with a penetrating rate of almost 75 percent. Records also reveal that the Nigerian market remains one of the average revenue per user rates in Africa[118].

As of September, 2014, there were 134.5 million active mobile phone subscribers in Japan, up from 95 million in 2011. In the same time span, tele-density grew from 68 percent to 96 percent, and mobile internet subscriptions went from 45 million to 73.8 million. In September, 2011, internet penetration was 26.5 percent; in September, 2014, it was 52 percent[119].

A penetration rate of about 75% has helped Nigeria's mobile market grow steadily to become Africa's largest market. The country currently has over 125 million users. Records show that the Nigerian market continues to have one of the highest revenue per user rates in Africa. In a survey on household internet penetration, Nigeria ranked 87th position among 140 countries which were surveyed by the International Telecommunications Union (ITU). The survey also revealed that the country had 7.8 percent penetration and was among the 61 countries with national broad band policy. Based on the global assessment of Nigeria's growth in online service delivery and telecommunication infrastructures, the UN e-governance survey (2014) placed Nigeria's online service delivery and telecommunication index at 0.3071 and 0.1905 respectively. In a bid to boost its ICT sector, a rural telephony project was set up by the federal government to pursue various policies which have eliminated the digital divide existing among citizens[120]. The project also presented the view that the popularity which smartphones such as black berry, androids and tablets had gained also meant people could access the internet more easily without even owning a computer or any other internet equipment. United Nations E-government Survey observed that despite the presence of broad band service providers such as Main one, CUOI, Sat3 and WACS cables, the exorbitant cost of internet access makes it quite difficult to find internet services in many Nigerian homes[121].

In the United Nations e-governance study conducted in 2014, Nigeria was placed 152 out of 187 nations in Human development. This ranking effectively positioned the country among those with low human development number. This low ranking was largely as a consequence of the status and nature of e-governance in Nigeria[122]. According to the research, Nigeria has a Human Development Index of 0.381, which is significantly lower than the recommended value. It was claimed in the UNDP report that the distinction between economic growth and wellbeing can be assessed by an economy's growth trajectory that lacks inclusiveness. Human development paradigms report took a people-centered approach, which focused on regional and country-level disparities while also highlighting structural vulnerabilities. To put it another way, it refers to a subset of society that is disproportionately targeted because of their ethnicity or cultural heritage.

According to United Nation's human inequality coefficient, Sub-Saharan Africa (coefficient 83) is the region with the highest level of inequality in the world. In the region alone more than 585 million people, or nearly 72 percent of the population are either living on the brink of poverty or are at risk of descending into extreme poverty[122]. Since the people are not provided with an equitable and fair opportunity to participate in the state's democratic processes, it will be difficult for them to force any significant change in their standard of living. Nigeria as one of the countries in sub Saharan Africa is also affected by this statistics[122].

Available data suggest a regression instead of progress in the case of Nigeria. The country dropped into the 85th percentile of countries with a low human development index, according to a review of the characteristics of these countries. Consequently, Nigeria was

ranked ninth out of 42 nations on the UNDP 2014 list of low-human-development countries[122].

E-governance in Nigeria is still in its elementary stage, according to various assessments and analyses of the three primary characteristics for assessing its status and nature. Despite the fact that Nigeria has been ranked as one of the least developed countries in the world, the government at all levels is still working hard to promote e-governance. This is why the Federal government established the ministry of communication and Digital Economy to recognize the importance of the private and public sectors in promoting the growth of information and communication technology sector[123].

A new ICT development strategic action plan committee was also established in Nigeria to design a new ICT plan to promote e-governance in the country in light of the changes in the global community, according to the government. Originally known as the Ministry of Communication Technology, the Ministry of Communications and Digital was established in 2011. It was established in order to promote Nigeria's knowledge-based economy and information society. Create and implement policies that would help the Nigerian economy transition to a digitalized economy by facilitating ICT as a vehicle for job creation, economic growth, and transparency in government[124].

The ministry was given the responsibility of facilitating affordable and accessible telecommunications infrastructure across the country. These are two of the most important tasks it is expected to deliver. It is also expected to optimize communication infrastructure, digital content development, home software applications and internet service delivery by promoting the use of ICTs in all domains. The ICT sector's contribution to GDP should be increased by encouraging and simplifying development. Make use of ICT to increase

Nigeria's public service delivery's quality and efficiency while decreasing costs. There are seven agencies under the Ministry of Communication and Digital Economy they are: There are seven agencies under the Ministry, Nigerian Communications Commission (NCC), National Information Technology Development Agency (NITDA), Galaxy Backbone, Nigerian Communications Satellite Limited (NigComSat), Nigerian Postal Service (NIPOST), National Identity Management Commission (NIMC), Universal Service Provision Fund (USPF)[125],[126].

The goal of the plan was to use ICT to help the government accomplish its vision 2020 development plan. Nigeria's millennial development goals, NEPAD Development programmes, and the Transformation Agenda have all relied on ICT in recent years. E-governance growth may be bolstered by governments around the world ensuring that an effective governance structure is in place to adequately support and manage a citizen-centered service delivery model, according to a United Nations e-government report from 2014. There should be an ICT policy and an e-government strategy established by the governments of the various member nations, which will enhance political institutions and encourage public officials to improve their work attitudes[122].

2.3.2. Prospects of E-governance in Nigeria

E-governance is becoming increasingly important in the administrative operations of many emerging countries due to evolving nature of the global system. Governments in many developing countries have realized the multiple benefits of e-governance, and as a result, e-governance has become a major part of their administrations. E-governance, according to some academics, has the potential to benefit developing countries in a number of ways,

including improved efficiency, greater transparency in government roles in society, accountability for public office holders, faster and easier access to government services and democracy that is more people-centered[127].

The proposed benefits can be released only if the following are put in place; the government must create an environment where citizens can easily communicate with the government using technological methods of communication. Public service efficiency and effectiveness will be improved as a result of a two-way flow of information between citizen and government. Efforts should be made to put in place institutions that can effectively combat corruption at every level of government. Institutions should play a major role to ensure that public officials are held accountable for their actions. The principle of the rule of law should be respected by everyone irrespective of position, age, qualification or gender Respect for the rule of law should be accorded to everyone, regardless of their position, age, education, or gender. As a result, everyone should have the same access to information when they need it. Inter-departmental information exchange and the consolidation of linked services can minimize costs, time, space, and manpower by reducing bureaucratic bottlenecks[128].

In addition, it was pointed out that African countries agreed that e-government is an important innovation for improving governance and promoting democracy. As a result of government agencies being able to network and integrate their services via ICT, electronic governance strengthens ties between the government and the general population[1295]. It is the opinion of some academics that e-governance could be used to reduce the country's ongoing political instability. If e-governance is correctly applied, Nigeria's culture, openness, and accountability can be enhanced. With the introduction of computerized technologies in all areas of administration, there will be less demand for human resources[129].

Nigeria, like other countries in the Sub-Saharan area is suffering certain obstacles in their route of integrating e-governance paradigm in the governing process. It is argued by certain experts that there are numerous issues which limit the establishment of e-governance in underdeveloped countries. They include: - A certain degree of unwillingness on the side of the government to provide essential information to the public. This has ultimately resulted in the execution of policies that are not helpful to the population and the construction of government websites with little or no information. Information and Communication Literacy rate is at a very minimum level[130],[131]. Thus, it is rather tough to gain access and manipulate using official websites to obtain information. There is an unequal dispersion of internet services and facilities, a comparatively extravagant cost of connecting to the internet and in some situations; the speed connected to the internet is fairly poor due of low penetration rate[132],[133]. One of the biggest obstacles in e-governance adoption is the absence of team collaboration among government institutions. Every ministry has its own web page but there is no inter-connection or linkage between them, so the system is not interactive. Lack of ICT infrastructure especially at the rural areas and lack of electrical supply, most times there is no power to access in internet. Despite these hurdles, government is still putting various initiatives in place to encourage the expansion of e-governance in the nation[134],[135].

2.3.3. E-governance the Experience of Ghana

Efforts to apply e-governance to improve governmental service delivery and consolidate revenue from trade in Ghana's started as far back as the 90s. Some of Ghana's bilateral and multilateral partners supported these efforts to move away from the manual system and toward automation by providing technical and financial resources. There were 14 future government integration activities that would be built on top of the computers and electronic

data collection provided by these initiatives. The Ghana Human Resource Management Automation System is the result of the Structural Adjustment Program's (SAP's) consolidation of government records and services. Due to technological and financial constraints, this endeavour only lasted a few months. However, despite the system's failure to meet its stated goals, it served as a reminder of the need of e-governance and provided valuable insights for future implementations[136].

A series of assessments by the World Bank, the IMF, and others in the late 1990s prompted Ghana to implement policy reform recommendations, which culminated in the introduction of the Ghana Gateway Project as part of a build-own-operate-transfer agreement. The TradeNet project in Singapore and Mauritius served as a model for the Gateway project's design. In order to handle customs systems and implement electronic data interchange, a joint venture business called Ghana Community Network (GCNet) was formed. In order to help the government manage the external trading environment, GCNet was required to build a system that would be both effective and efficient. The goal of the system was to help the Ghanaian government track and recover income from foreign trade by streamlining the country's international trade. In all of Ghana's seaports and interior ports, GCNet serves as a digital network for business and customs transactions. One of the primary goals of GCNet is not just to boost government income through ICT-based solutions and customs management but also to promote electronic technology adoption in other public sector industries. The introduction of the GCNet system was seen as laying the groundwork for future e-government initiatives in Ghana[136].

To reduce "high administrative costs, human errors, delays and malpractices, the CSSPS injected efficiency, transparency, simpleness, and speed in school selection and placement

from Junior High School to Senior High School in 1995," according to him, "GCNet facilitated the development of a Computerized School Selection and Placement System." It was through the work of GCNet that a centralized network was established to connect all the parties involved in international trade. It was hoped that the new system would simplify commerce, customs, and revenue mobilization, eliminate balkanization of the old system, and minimize the amount of paperwork involved in these processes. In the former system, importers had to go through between 25 and 32 stages before their consignments were cleared, it has been pointed out. A single document could be submitted to GCNet online, which would then send it to the appropriate agency and communicate their reaction to the trader, as a result of this new method. Goals for the GCNet project are as follows: Tracking and monitoring consignments from port to destination in a systematic manner. Access to a shared database for regulatory purposes should be made available to agencies. Streamlining the clearance process and enhancing trade facilitation[136].

A one-stop shop for the commerce and customs community in Ghana was created as a result of the work done by GCNet, and the e-Ghana Project was born as a result of these efforts. When the Ministry of Communication came up with the idea for e-Ghana in August 2006, the World Bank lent it $40 million in a normal International Development Association (IDA) credit line. The goal of the project was to act as a backbone for Ghanaian e-government initiatives by integrating ICT into the country's long-term development agenda through a variety of Public-Private Partnership models (PPP). Create an enabling environment (US$ 9.6m), attract IT investments and promote the development of indigenous firms (US$ 9.6m), and implement government services and communication (US$ 22.6m) were the three components of the project. 93. An additional US$ 44.70 million was pumped in to the

project in May of this year in order to add a new component to the project; the Ghana integrated financial management information system (GIFMIS). More than a dozen governments and organizations, including China's Export-Import Bank (EXIM) and Denmark's government, have contributed to the project's funding since it was first proposed (DFID). When the project underwent a second restructuring in May of 2014, it was completed on December 30, 2014 with an IDA disbursement of US$80.25 million after a total of certain project operations were fully terminated[137].

The National Information Technology Agency (NITA) was established as part of the e-Ghana Project implementation framework by an act of parliament. This department's primary aim is to monitor the implementation of ICT policies in Ghana with the goal of generating "an enabling environment for the effective deployment and use of ICT by all sectors, through the implementation of good policies and regulatory framework. The third component of the e-Ghana Project is primarily under its mandate to implement the three components. As a result of NITA's efforts, various government agencies' operations have been streamlined and administrative bottlenecks have been alleviated. E-governance projects in Ghana were sparked by the e-Ghana Project. There are three components to Ghana's e-governance project that have been implemented by the National Information Technology Agency (NITA), which is responsible for carrying out the document's goal. In order to carry out its mission, NITA established an e-Government Network Infrastructure to connect the "national backbone infrastructure to all districts in the country and provide a national data center and a secondary data center facility for disaster recovery, and ultimately connect all public institutions and MDAs and MMDAs to a single shared communications and computing infrastructure to facilitate effective delivery of government services[137].

With the help of the e-Government Network Infrastructure, national, regional, and district governments have been able to go paperless. The e-government network has so far been connected to all capital cities, some large townships, ministries, departments, and agencies (MDAs), MMDAs, major health facilities, security services, and educational institutions. A directive from the Ministry of Communication prohibits the use of private email servers for official communication in order to accomplish this objective. The government's official email domain, '.gov.gh,' is expected to be used by all agencies by the 31st of December 2019. Trust and real-time tracking of official correspondence are expected benefits of using the official email server provided by the government[137].

2. 3. 3.1. E-governance and Sustainable Development

Public administration processes have evolved over time as a result of technological advancements in a wide range of fields of human activity. Significantly, the art of governance has been transformed all over the world as a result of tremendous advances in technology. The simultaneous impacts of incorporating ICT into governance, electronic governance, have been the breaking down of old barriers to governance and the swelling of support for good governance idea[138]. E-governance is essential to achieving sustainable development because it bridges the gap between the ideals of sustainable development and the practicalities of implementing them. Achieving sustainable development is critical to society because of the role that e-governance plays in making it possible and in accelerating the process of attaining sustainable development[139].

EGOV4SD is defined as "the use of ICT to support government services and administration as well as making possible public engagement in decision-making while promoting social equality and socio-economic development and safeguarding natural resources for future

generations"[140],[141]. EGOV4SD as a facilitator of sustainable development makes use of the capabilities of information and communications technology (ICT) to facilitate interactions among various stakeholders functioning in a dynamic system[142]. It connects previously disparate groups of people and creates a route for two-way communication that has never existed before[143]. In Ghana, e-government projects are progressively being implemented and hailed as a sign of progress by policymakers and lawmakers. People are becoming increasingly interested in the dynamic interaction between electronic government and the three pillars of sustainable development[136].

It's a pity that the majority of writing focuses on economic foundations rather than other two foundations. If we don't keep an eye on the larger picture when implementing e-government systems in a complex context, we may wind up with unanticipated issues that weaken our ability to contribute to sustainable development due to the fact that monetary sustainability may be attained at the expense of environmental and social progress[144]. After the United Nations launched an effort to measure the state of electronic governance in member countries, the E-government Development Index (EGDI) was created, which ranks countries on a scale ranging from 0.0 to 1.0 and divides them into four categories: Low EGDI (0.25); Middle (0.25 – 0.50); High (0.50 – 0.75) and Very high (0.75). (0.75)[145]. Historically, UN's e-government surveys have found that the West African region lags behind the global average. It was found in a 2008 UN E-government survey that the West African region scored just 0.21110 out of the global average of 0.4514. Neither Cape Verde, Nigeria, nor Ghana, the region's leaders in e-government, were able to reach the global average of 0.4158, 0.3063, or 0.2997.32[37].

However, in the last decade, some West African countries have seen a rise in their ranks. Ghana's EGDI ranking has risen from 138 in 2008 to 101 in 2018 as a result of the country's large investments in ICT infrastructure, which have paid off. Streamlining "institutional and policy frameworks to capitalize on ICT advances" has been credited in part, according to the 2018 report, for Ghana's rise from middle to high in the EGDI rankings[146]. The e-Ghana and e-Transform initiatives, the Ghana Shared Growth and Development Agenda (GSGDA), and the National Electronic Security System, among other ICT-related interventions, are some of these government-led innovations that are helping to realize the benefits of e-government[146]. Online Service Index (OSI), Human Capital Index (HCI), Telecommunications Infrastructure Index (TII), and E-participation Index (EPI) are all in the "high" category in the 2018 ranking (EPI). As of right now, Ghana is Africa's fifth-best performer in terms of electronic governance[146].

2.3.4. Challenges to E-governance Implementation in the Nigerian Public Service

From the review of literature and the opinions expressed by various stakeholders around the world, E-governance has been shown to improve government accountability, public awareness, and transparency[132]. It has been claimed that the implementation of the SMART governance model will lead to a more efficient and effective system of government. In addition, it is hoped that it will achieve an effective, rapid, and transparent method of providing information to the public and other agencies, improve the performance of administrative activities both internally and externally, and also improve the quality of governance[118]. All of these reasons and benefits have prompted many countries to implement e-governance platform. It is also the reason why multilateral agencies such as the

United Nations have been advocating for the implementation of e-governance by developing countries[119].

However, despite the expressed interested of public officials and support from international agencies, Nigeria has not been able to reap the full benefits of e-governance. Nigeria, on the other hand, is sadly lacking in this respect. This is not simply due to lack of e-governance structures. Indeed, there are several highly functioning e-governance platforms in Nigeria. However, the assumption that e-governance practice is bound to encounter with considerable hostility from the bureaucratic quarters is quite relevant in the case of Nigeria, such as resistance to change on the part of some organization, departments and their workers. The first pushback is from Nigerian Labor Union members who would often erroneously view e-governance as an attempt by the government to remove the majority of their members from their employment. They are therefore likely to utilize their positions of power to hinder the proper implementation of E-governance in Nigeria, as most public servants. They often strongly object to any system that reduces the amount of face-to-face interaction that citizens have with the government. However, the adoption of e-governance in the Nigerian public service is accompanied by numerous other difficulties apart from labour resistance to change[130].

In Nigeria, e-governance is hampered by a shortage and lack of skilled and qualified professionals to manage and run its infrastructures. As a result of this, the government may be reluctant to implement e-governance in public service because of the high costs connected with the acquisition and training of public workers in ICT skills. As an analogy, the lack of qualified people to manage diverse ICT services and their applications is being emphasized as an important factor in realizing public sector e-governance. Lack of government

regulatory policy is a major issue that needs to be addressed if e-governance is to be a reality in government organizations[128]. As far as they are concerned, the successful implementation of e-governance involves the coordination and operation of IT-related infrastructures by experts manage and understood the technical and complexity of ICT systems because of lack in competent employees to handle infrastructure procurement, it would then be meaningless. Another issue is the country's electricity supply, which is considered to be epileptic and irregular in terms of supply. These issues have made it difficult for Nigeria to achieve its e-governance goals. E-governance deployment in the country's public sector can only be successful if appropriate power supply is available. As a contrast to the current public service picture, most government agencies run on generators, and the generators occasionally lack the ability to adequately power the ICT facilities[127].

Furthermore, it is emphasized that the government needs to develop the infrastructure in electricity, internet connectivity and telecommunications and computer hardware as well as optical fiber cables in order for e-governance to be successfully implemented. E-governance deployment in Nigeria's public sector is hampered by the country's digital divide, the difference between individuals who have frequent, effective access to digital and information technologies and those who do not[131]. In a nutshell, the digital gap is the difference in ICT expertise between those who are wealthy and powerful and those who are poor and weak. Digital gap isn't just a matter of ICT proficiency; it's also a matter of linguistic proficiency. Those who can speak English and those who can't are separated by this barrier. There is also a growing digital divide between the rich and poor nations, as well as a new elite group, which he refers to as the "digerati," that is, those who benefit from the enormously successful information technology industry and other knowledge-based sectors of the economy, such as

biotechnology and pharmacology. Digital divide therefore includes both physical access to technology hardware and the knowledge and resources needed to make effective use of that technology[131].

Some of the factors identified as contributing to the digital divide are physical handicap; physical accessibility, content accessibility, and the lack of ICT expertise all play a role in widening the digital gap[132]. Insufficient funds allocated to e-governance projects, difficulty streamlining various e-government projects already existing or being implemented prior to the creation of the Ministry of Communication Technology, disparity between urban and rural residents or those with low literacy levels in accessing the internet, risk of eroding citizens' privacy, and so on, are some of the reasons cited by a scholar[133].

E-governance in Nigeria's public sector has also been hindered by the following factors: lack of accountability and transparency on the part of government and organization leaders. Another major obstacle to implementing e-governance in Nigeria's public service is a lack of ICT infrastructure. E-governance, as defined above, is the use of information and communication technologies (ICTs) in government operations. Lack of basic IT infrastructure continues to be a problem in Nigeria's public sector. Some offices, for example, still do not have standard computers, let alone the standard knowledge needed to operate them. In their daily routines, you'll observe how they've always done things. They still have a reputation for doing a lot of paperwork, which might be decreased if e-governance is completely implemented. In the best-case scenario, you'll see a hybrid strategy that incorporates both traditional and digital methods. The internet is still unavailable in many public office sectors, and there is no reliable power supply. The implementation of e-governance in Nigeria's public service is hindered by these factors[133].

In the public sector, there are many employees who are resistant to change because they have grown accustomed to the way things have always been done. That is to say, they are still comfortable with dealing with a large amount of paper and to move files from one desk or office to another. E-government implementation in the public sector has been rated poorly because of their reluctance to implement it in their own services. It is because the majority of public workers are not computer literate or qualified, and they've received little or no training in ICT infrastructure installation, maintenance, design, and implementation[134]. As a result, it follows that the Nigerian public service's ability to successfully deploy e-governance depends on overcoming issues such as those listed above.

2.3.5 Green Public Management and Sustainable Development

According to a survey of the literature on green management (GM) concerns, there is a strong association between green practices and company profitability. In comparison to the market as a whole, companies that score well on environmental criteria have higher financial returns, while companies that score poorly see lower financial returns[147]. There is a widely held belief that implementing green management techniques into a company's operations might increase expenses because of the additional standards that must be satisfied. Firm-level financial performances are affected as a result[148].

Green management and organizational effectiveness have been studied empirically in a wide range of industries. Taiwanese electronics enterprises were polled as part of an empirical study on green management and performance. Research shows that green management impact on company success is substantial[149]. On the basis of environmental effect and green reputation criteria, several researchers have found that manufacturing organizations have a lower environmental impact and higher green reputation than companies in the service

industry. For manufacturing and service organizations analyzed, the overall impact of green operations differed. Organizational performance was found to be influenced by environmental impact score, green policy and performance score, and green reputation for manufacturing enterprises but not so much for service organisations[150],[151]. Green management has been shown to have a beneficial impact on an organization's performance in most research, however there are other studies that show mixed findings. Environmental and financial success of a company, for example, were found to be negatively linked Competitive advantage, according to a study, has a little influence in the decision-making process for green buying managers[152],[153]. Environmental measures implemented by corporations, it was said, result in unaffordable expenses, take resources away from more productive uses, and hence, are not viable[154]. This study was necessitated by the inconsistencies in empirical data regarding how green management impacts organizational effectiveness in the manufacturing business. We believe that by working together, we can make a significant contribution to previous research on the relationship between green management and organizational effectiveness in manufacturing[155].

Researchers in Owerri, Imo State, Nigeria examined the links between environmental stewardship and business performance. A single indicator (waste recycling) was used to quantify green management, while cost-cutting and environmental pollution were used to measure organizational effectiveness[156]. Reduced landfill and incinerator use, lower operating costs, and the creation of new jobs have all been found to be the results of trash recycling as studied by this data set, conserve water and other natural resources and finally reduce pollution generated during the harvesting of raw materials, improve working conditions for employees which translates into employee productivity and cost/money

savings for organizations through the sale of recyclable materials (e.g. paper wastes) allowing them to offset additional costs for collection and processing recyclable materials, reduce energy needs for manufacturing many new products. The T-test statistical examination of the research hypotheses shows that green management has a considerable impact on business performance and overall economic development[157].

2.4 Conceptual Model

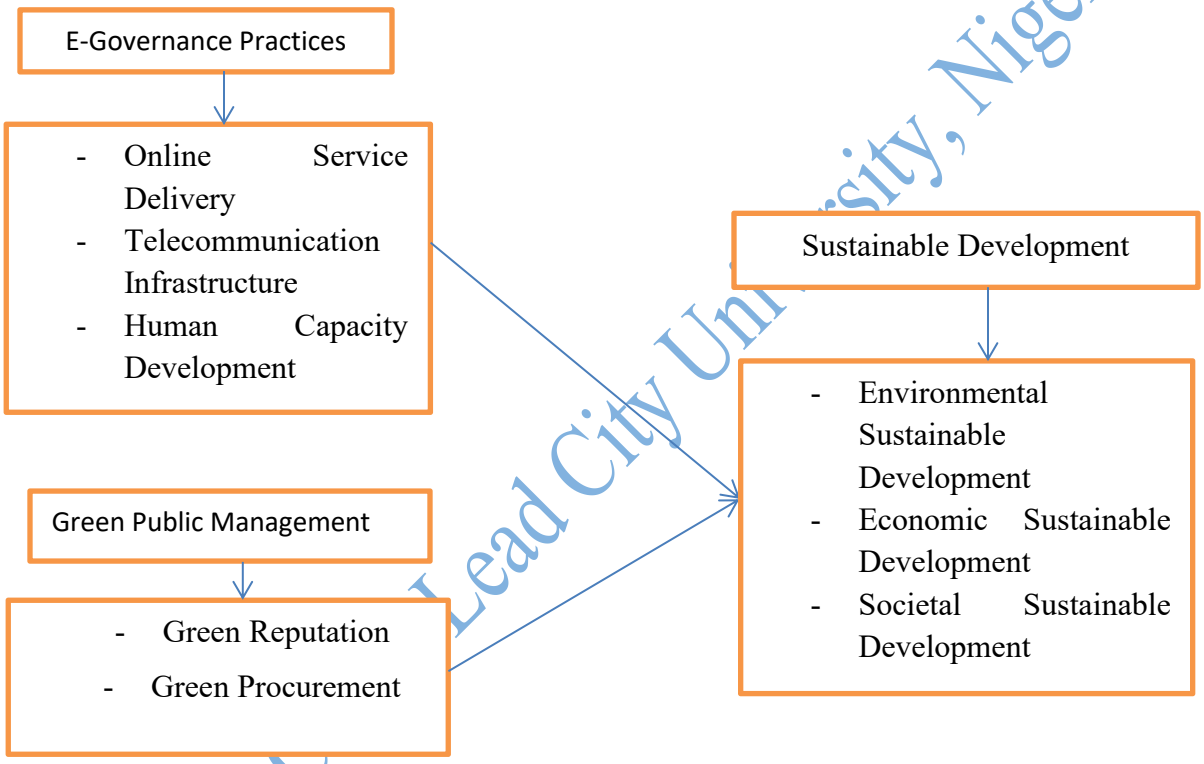

Figure 1: Conceptual Model on Sustainable Development, E-Governance and Green Public Management by the Researcher, 2021.

The above conceptual model for this study depicts the variables for this study. The first independent variable for this study is E-governance. This variable is measured with the following indices: Online Service Delivery, Telecommunication Infrastructure and Human Capacity Development. The second independent variable for this study is Green Public Management. The variable is measured with the following indices: Reputation and Green

Procurement. The dependent variable for this study is sustainable development. This variable is measured using the following indices: -Environmental Sustainable Development, Economic Sustainable Development and Societal Sustainable Development.

2.4. Summary of Gap in Literature Reviewed

The aspect of this study examined variables in this study from three perspectives: Conceptual, empirical and theoretical. The conceptual aspect of this study ranged from concept of e-governance and green public management for sustainable development. The review of literature also examined three theories used to buttress each of the variables in this study. Passet's theory of sustainable development was used to buttress the variable on sustainable development. New Public Management model was used to buttress green public management model while Socio-technical Systems theory was used to buttress the variable e-governance. On the empirical side, the review of related literature was centered on reviewing literature between the independent variables and the dependent variable.

From the literature reviewed, there appear to be scarcity of works on e-governance and green public management for sustainable development in Nigeria. Few of the works available such as [7,8, 16,18,31,56] despite the progress in literature, surprisingly, there is no available framework that incorporate the relationship between e-governance and green public management for sustainable development in Nigeria, hence the need to examine the empirical cap.

Similarly, prior studies on sustainable development have largely be on environment, economic and social with few in cultural sustainable development, some of such studies include; World Commission on Environment and development[1,2.4,154]. On e-governance, previous studies reviewed are largely on ways of using Information Communication

Technology to deliver government services to the public[21,25,26,29,34,37,38]. Similar studies have been conducted on green public management for sustainable development in Nigeria with majority focusing on environmental management and environmental management systems (EMS)[39,47,48,58,60,61,64]. However, these studies fall to examine the influence e-governance and green public management have, on sustainable development, most of the literature often appear either too unclear or incomplete. Some authors see it in terms of economic profit; some stress the importance to integrate environmental strategy into organization. It was observed that some factors that are critical to the practice of green governance such as continuous improvement, sustainability and innovation of green public management for sustainable development are missing and need to be specified.

Furthermore, specific studies on e-governance and green public management policies in Ghana[136,137,148,150]. However, some of these studies indicates that, more countries are likely to implore the use of ICT and environmental policies for sustainable development, while some indicates various challenges of e-governance and green public management for sustainable development like poverty, illiteracy, unwillingness to change, lack of electricity supply, lack of ICT infrastructures that is likely going to hamper fully and smooth implementation and use of these policies.

More so evidence from several studies around the world indicates the need for academic researches to measure efficiency and effective public service delivery in terms of transparency, accountability, speed, team collaboration and internetwork connectivity, ease of doing business with government and citizens in public organizations towards achieving suitable development in Nigeria[39,65,66,69,102,103,112,116,118].

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Chapter Three

Methodology

Research Methods

Mixed methods was adopted for this study. Mixed method research is the combination of both quantitative and qualitative approach. The use of quantitative and qualitative approaches in combination provided a better understanding of research problems than either approach alone[1]. Hence, it will allow extraction of perceptions from both staff and management of the four agencies under the ministry; Nigerian Communication Commission (NCC,), National

Identity Management Commission (NIMC), National Information Technology Development Agency (NITDA), and Nigerian Postal Service (NIPOST).

3.1 Research Design

The research was descriptive in nature (survey). The goal descriptive research is to describe a phenomenon and its characteristics. It helps answer the; who, what, when, where and how questions regarding the research problem, rather than the why. Against this background, the study clarified and explained its inner relationships and properties between the dependent and independent variable e-governance and green public management for sustainable development. The choice of a descriptive survey for this study was based on the selection of questionnaire as a dominant instrument for data collection and the need to establish the perceived relationship existing between e-governance and green public management for sustainable development in selected agencies, southwest, Nigeria. The descriptive approach enabled the researcher to examine perceptions of respondents on measuring variables such as the demographic and Likert-type format as contained in this study.

3.2 Population of the Study

The study focused on the staff of the four agencies under Ministry of Communication and Digital Economy in Southwest Nigeria; Nigerian Communication Commission (NCC), National Identity Management Commission (NIMC), National Information Technology Development Agency (NITDA), Nigerian Postal Service (NIPOST). Currently, there are seven agencies (7) under the Ministry of Communication and Digital Economy in Nigeria, which comprises of Nigerian Communication Commission (NCC), National Identity Management Commission (NIMC), National Information Technology Development Agency

(NITDA), Nigerian Postal Service (NIPOST), Galaxy Backbone, Nigerian Communications Satellite (NIGCOMSAT), and Universal Service Provision Fund (USPF).

Table 3.1: Agencies of Ministry of Communication and Digital Economy in Nigeria

S/N	NAME	DATE Established	Core Mandate
1.	Nigerian Communications Commission (NCC)	November 1992	To protect the interests of consumers against unfair practices by the telecommunication companies in Nigeria.
2.	National Information Technology Development Agency (NITDA)	April 18, 2001	To provide and promote professional IT skill to undergraduates in Nigeria
3.	Galaxy Backbone	2006	To operate a unified Information and Communication Technology (ICT) infrastructure platform that addresses the connectivity, transversal and other technology imperatives for economic development in Nigeria.
4.	Nigerian Communications Satellite Limited (NigComSat	April 4, 2006	To build and launch satellites for various applications in Nigeria.
5.	Nigerian Postal Service (NIPOST)	1987	To provide and operate facilities for collection, dispatch, and distribution of inland and overseas mail at a reasonable cost. It was charged with the responsibility of stamp duty collection in Nigeria until the role was transferred to the FIRS
6.	National Identity Management Commission (NIMC)	2007	To establish, own, operate, maintain and manage the National Identity Database of Nigerians

7.	1. Universal Service Provision Fund (USPF)	August 2006	To facilitate access of rural dwellers in Nigeria to telecommunication services for universal access and universal service to information and communication technologies (ICTs)

Source: Agencies under Ministry of Communication and Digital Economy intensify efforts to actualize Nigeria's digital economy agenda, Ogbonna Oruh, August, 13, 2020

The study focused on four (4) of the agencies of Ministry of Communication and Digital Economy in South West Nigeria namely; Nigerian Communication Commission (NCC), National Identity Management Commission (NIMC), National Information Technology Development Agency (NITDA), Nigerian Postal Service (NIPOST). In order to have a broader view of the e-governance and green public management phenomenon, in addition to the southwest being locations of most of the agencies. The study sampled the public agencies in the southwest geo-political zone as a representative sample for all the six-political zones from where inferences and generalizations can be made.

Table 3.2: Four (4) Agencies of Ministry of Communication and Digital Economy in Southwest Nigeria

S/N	Name	Date Established	Address/Location	Number of Staff
1.	Nigerian Communications Commission (NCC)	November 1992	Ibadan Office : 102A, DPC Road off Government House Road, Agodi GRA, Ibadan, Oyo State. Tel: +234-2-2918710, 2918711 9A, Bankole Oki Street, Behind Ikoyi Club, Ikoyi, Lagos State. Tel: +234-1-4630643-5	102

			Fax: +234-1-4630309	
2.	National Information Technology Development Agency (NITDA)	April 18, 2001	No. 9, Kofo Abayomi Street Victoria Island Lagos, Lagos State. info@nitda.gov.ng +2348168401851 Ibadan office of NITDA: Ibadan Forum Office: Jibowu Street, Opposite Magara Plic Station, Iyaganku, G.R.A. Ibadan. Oyo State. Telephone No. 08146862252 Email address: ibadanforum@nerc.gov.ng	92
3.	National Identity Management Commission (NIMC)	2007	Located in Oyo, State NIMC Office in Ibadan: NIMC Ibadan in the city Ibadan by the address Beside Adegoke House – Iyana Express, New Garage Road, 110115, Ibadan, Nigeria.	215
4.	Nigerian Postal Service (NIPOST)	1987	General Post Office is located : Opp. Railway Station, Dugbe, Ibadan	221
Total				630

Source: Agencies under Ministry of Communication and Digital and Human Resource Office/Head Operations Office

3.3 Sample Size Determination

There are several approaches to determining sample size amongst which includes using a census for small populations, imitating a sample size of similar studies, using published tables, and applying formulas to calculate sample size[2].

For the purpose of this study, the researcher found it convenient to follow the tabular approach by at 0.05 margin error and confidence level of 95% percent to determine the sample size, as shown in Table 3.3[3].

Table 3.3 Sample Size Determination Table

	Variance of the Population (P=50%)		
	Confidence Level =95%		
	Margin of Error		
Population Size	5	3	1
50	46	49	50
75	67	72	75
100	87	95	99
150	122	139	149
200	154	180	198

250	181	220	246
300	206	258	295
400	249	328	391
500	285	393	485
600	314	452	597
700	**340**	507	672
800	362	557	763
1000	398	647	943
1500	459	825	1375
2000	497	957	1784
3000	541	1138	2539
5000	583	1342	3838
10000	620	1550	6228
25000	643	1709	9944
50000	652	1770	12413
100000	656	1802	14172
250000	659	1821	15989
500000	660	1828	15984
1000000	660	1831	16244

Teherdoost 2017, How to Calculate Survey Sample Size: Determining Sample Size.

From the determinant table, the sample size comprised six hundred and thirty (630) respondents. However, to determine the proportion of the questionnaire to be administered to

each agency adopted Bowling (2005) method[4]. That is proportionate allocation formula as shown in Table 3.4. The formula is given as:

$$Nh = \frac{n \times nh}{N}$$

Where; Nh= Number of units to be distributed to each group.

nh = Total population of respondents in each group.

n= Determined Sample Size.

N= Total Population Size.

Nh= Determined sample size multiply *by* Total population of respondents in each group

Total population size

Nigerian Communications Commission (NCC) Ibadan and Lagos = 340 X 102 = 55

630

National Information Technology Development Agency (NITDA) Ibadan and Lagos

= 340 X 92 = 50

630

National Identity Management Commission (NIMC) Ibadan = 340 X 215 = 116

630

Nigerian Postal Service (NIPOST) Ibadan = 340 X 221 = 119

630

TOTAL = 340

Table 3.4 Sample Size Distributions

S/N	Name of Institutions	Population of Academic staff	Selected sample Size
1	Nigerian Communications Commission (NCC) Ibadan and Lagos	102	55
2	National Information Technology Development Agency (NITDA) Ibadan and Lagos	92	50
3	National Identity Management Commission (NIMC) Ibadan	215	116
4	Nigerian Postal Service (NIPOST) Ibadan	221	119
	Total	**630**	**340**

Source: Researcher 2022

3.3.1 Sampling Techniques

The study adopted multiple sampling techniques for data collection, that involve both probability and non-probability sampling techniques. The method was considered appropriate because it will help to obtain a satisfactory representation of various subgroups within the population under study. The non-probability sampling technique will make use of purposive sampling to target the expected employees. The probability sampling techniques will adopt stratified random sampling technique for a fair representation of employees from the existing four strata: Deputy Director (Grade Level 15), Chief Administrative Officer (Grade Level

14), Assistant Chief Administrative Officer (Grade Level 13), Principal Administrative Officer (Grade Level 12), Senior Administrative Officer (Grade Level 10), Administrative Officer 1 (Grade Level 09), Administrative Officer 2 (Grade Level 08), and Clerical Officer (04). This will ensure that every employee in the selected agencies had an equal chance of being selected. Because of likely difficulty in accessing the respondents at one time due to their busy schedule, the administration of the questionnaire will be done based on respondents' availability and willingness to participate. Hence, a convenience sampling technique will be employed. The combination of these methods will help to generate robust data for the analysis.

Furthermore, due to the magnitude of this research work, in terms of the number of agencies selected, their locations, and sample size, recruitment of research assistants will be required. Hence, two graduate research assistants will be recruited and trained by the principal researcher. The training involved teaching them how to select respondents from each of the study areas using the adopted sampling procedures and research tools. The aim of the study and the significance of each question in the questionnaire will be explained to each assistant. Also, the research assistants will be consistently monitored and supervised by the principal researcher.

3.4 Research Instruments

This study will adopts both quantitative conducted using questionnaires and qualitative methods using semi-structured questionnaires as research instruments for the collection of the necessary information from the employees of selected agencies of Ministry of Communication and Digital Economy Southwest Nigeria.

3.4.1 Quantitative Data Instruments

The collection of quantitative data from selected agencies will be done through the use of a structured questionnaire. The questionnaire was developed based on a review of extant literature emerging from the topic of the research, research problem, objectives of the study and research questions. The questionnaire was used to collect relevant information pertaining to the demographic characteristics of the respondents, determinants of employee's intention in e-governance and green public management in the selected agencies, Ministry of communication and Digital Economy. The questionnaire consisted of five major parts on a modified four (4) point Likert response rating scale, ranging from (1) "strongly agree" (2) "agree" (3) "disagree" to (4) "strongly disagree. Part A contained background information such as age, sex, marital status, educational qualification and years of working experience to address the perceived effect of sustainability development.

Part B comprises questions on e-governance intention as the independent variable (ID) with fifteen (15) items, Part C will comprises questions on green public management intention as the independent variable (ID) with ten (10) items, Part D will comprises questions on sustainable development as a dependent variable (DV), with fifteen (15) items,

3.5 Validity the Research Instrument

The instrument for data collection was considered valid and was used to measure the variable intended to measure[5] Therefore, validity can be regarded as the degree to which the instrument measures what it is supposed to measure[6,7.] Four types of validity were identified for measuring instruments that are designed to collect data quantitatively[8]. These are: (i) construct validity, (ii) content validity, (iii) criterion validity, and (iv) face validity. The study therefore adopted both content and constructs validity in line with Patten (2004) three

principles to improve content and construct validity: (1) used a broad sample of content rather than a narrow one, (2) emphasized important material, and (3) wrote questions to measure the appropriate variables. These three principals were addressed when writing the survey items. Additionally, the supervisors who are experts went through the instrument to check the content coverage and clarity of the questions on the issues that were to be investigated.

3.6 Reliability of the Research Instrument

The essence of reliability test it to actually determine the consistency of the constructs used in measuring the variables of this study. To establish the reliability of this research work, the researcher relied on multiple sources of enquiries to link chains of evidences and to corroborate findings from various data and information through the triangulation of multiple sources of enquiry[9]. The researcher relied on key informant interviews (KII), semi-structured questionnaires and online sources to substantiate findings and research outcome.

3.7 Data Collection

This study adopted both primary and secondary sources of data collection, which involved both quantitative and qualitative forms of data collection. While the primary data are sourced through questionnaires, the secondary data were obtained through analysis of achieved documents, books, journals, magazines, and periodicals within the public domain. The quantitative source of data consist the use of a structured questionnaire and qualitative form involved the semi-structured questionnaires that are suitable for use in qualitative data techniques. The purpose of these forms of data collection was to ensure triangulation of data in the analysis.

3.7.1 Qualitative Data Collection

To complement the data that was obtained through the questionnaire, key informant interviews (KII) using semi-structured questionnaire was conducted in each of the selected agencies of Ministry of Communication and Digital Economy in Southwest Nigeria. This implied that Assistant Director, Chief Administrative Officer, Assistant Chief Administrative, Principal Administrative Officer as the case may be, from each of the selected agencies will be purposively selected. Purposive sampling, as the principal form of non-probability sampling, involved direct and deliberate selection of specific elements of the population that could provide one with rich information on specific aspects to promote a deep understanding of phenomena under investigation. The selection of participants for key informant interviews (KII) using semi-structured questionnaire as presented Table 3.6.

Two major criteria for the selection of key informant interviews (KII) is that the person must exhibit a high degree of knowledge or experience in the subject matter and second is that the person must exhibit "representativeness" of the profession so that their suggestions may be adaptable or transferable to the population[5]. Therefore, it is believed that the Assistant Director, Chief Administrative Officer, Assistant Chief Administrative or Principal Administrative Officer of the selected agencies under Ministry of communication and Digital Economy would have practical experience and information regarding e-governance and green public management and how it can enhance sustainability as shown in Table 3.7.

Table 3.5: Selection of Participants for Questionnaire Based on Demographic Profile

S/N	Institution	No of Participants	Age range	Gender	Highest Qualification	Designation

1	Nigerian Communications Commission (NCC) Ibadan and Lagos	1	39 – 54 years	Male	M.Sc.	Assistant Chief Administrative
2	National Information Technology Development Agency (NITDA) Ibadan and Lagos	1	39 – 54 years	Male	B.Sc.	Principal Administrative Officer
3	National Identity Management Commission (NIMC) Ibadan	1	39 – 54 years	Female	B.Sc.	Assistant Chief Administrative
4	Nigerian Postal Service (NIPOST) Ibadan	1	39 – 54 years	Female	M.Sc.	Principal Administrative Officer

Source: Researcher's Field Survey Result, 2021

3.8 Data Analysis

The researcher made use of a combination of qualitative and quantitative data; the quantitative data emerged from use of structured questionnaire and qualitative data emerged from use of key informant interviews (KII), semi-structured questionnaire obtained from research participants that were selected. Results obtained from the quantitative phase were analyzed and interpreted and used in answering the research questions for the study.

3.8.1 Quantitative Data Analysis

In analyzing the quantitative data, descriptive and content analysis methods will be employed. Descriptive statistics such as mean, frequencies and percentages shall be employed to analyze the tabulated data, to be followed by qualitative discussion of the captured data. Descriptive statistics for instance, is concerned with organizing and summarizing the data at hand, to render it more comprehensible.

The qualitative content analysis method will be eminently useful in analyzing secondary and key informant interviews (KII) of semi-structured questionnaire which essentially involve giving interpretation to actions and words based on meanings as conveyed and clarified by the respondents themselves.

3.9 Ethical Approval

Following, the conventional demands of ethical standards in academic research, the researcher will adhere to standards by seeing to it that issues of privacy, confidentiality and anonymity of all respondents will not be compromised and wholly protected. Since the study will involve the collection of information about the respondent's agencies; confidentiality was of great value and importance. The identity of the participants will be kept anonymous and data obtained from the respondents will be treated as private and will only be utilized for the study. Lastly, the researcher will acknowledge all the sources consulted during the process

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Chapter Four

Results and Discussion

This chapter offers the empirical results from the data analysis conducted, interpretation of the findings, and discussions of the study results. The aim of this study is to examine the effect of E-governance and Green Public Management for Sustainable Development in in selected agencies, Southwest Nigeria. To achieve the objective of the study, the research was conducted through questionnaire which was used to obtain the required information. Information regarding respondents' demographic, response rate, response to each variable and test of hypotheses are presented in this chapter. This last section dealt with discussion of findings. The data was analyzed using Statistical Package for Social Sciences (SPSS) version 24 (for the descriptive statistics) and SmartPLS version 3.3.9 (for the inferential statistics).

4.1 Demographic Data Analysis

Response Rate

A total of three hundred and forty (340) copies of questionnaire were administered, and three hundred and ninety-eight (391) copies were returned usable. The useable questionnaire represented 97.4% response rate. The high response rate was recorded as the researcher administered the instruments with the help of research assistants who put concerted efforts to regularly visit the respondents to request them to fill the instrument, sometimes to clarify queries from the respondents and to prompt the respondents to fill the questionnaire. The response results are presented in Table 4.1.

Table 4.1: Response Rate

Responses	Frequency	Percent
Completed usable copies of questionnaire	391	97.4%%
Unusable, unreturned and disqualified questionnaires	09	2.6%
Total	340	100%

Source: Field Survey Results, 2022

4.1.1 Demographic Characteristics of Respondents

Table 4.2: Demographic Characteristics of Respondents

Variable	Category	Frequency	Percentage
Institution	NCC	55	16.6%
	NITDA	50	15.1%

	NIMC	114	34.4%
	NIPOST	112	33.8%
Age	20-38 years	183	55.3%
	39-54 years	126	38.1%
	55-73 years	22	6.6%
Gender	Female	157	47.4%
	Male	174	52.6%
Marital Status	Single	104	31.4%
	Married	218	65.9%
	Separated	9	2.7%
Educational qualification	B.Sc	110	33.2%
	NCE/OND	100	30.2%
	HND	71	21.5%
	M.SC	25	7.6%
	O.Level	21	6.3%
	PhD and above	4	1.2%
Years of working experience	0-3years	124	37.5%
	4-6years	97	29.3%
	7-9years	65	19.6%
	10-12years	24	7.3%
	13-15years	19	5.7%
	16 years and above	2	0.6%
Present position	Deputy Director	2	0.6%
	Chief Admin. Officer	19	5.7%
	Assistant Admin, Officer	17	5.1%
	Principal Admin. Officer	38	11.5%
	Senior Admin Officer	52	15.7%

Administrative officer 1	98	29.6%
Administrative officer 11	66	19.9%
Clerical officer	39	11.8%

Source: Field Survey Results, 2022

This section consists of background and respondents' information that describes basic characteristics such as institution of the respondents, age, gender, marital status, educational qualification, years of working experience, and present position of the respondents. Table 4.2 presents the demographic and personal profile of respondents used for this study. Demographic and personal profile of respondents as shown in table 4.2. Profile of institution indicated that 55 respondents representing 16.6% attended Nigerian Communications Commission (NCC), 50 respondents representing 15.1% attended Nigerian Information Technology Development Agency (NITDA), 114 respondents representing 34.45 attended National Identity Management Commission (NIMC), and 112 respondents representing 33.8% attended Nigerian Postal Service (NIPOST) indicating that most of the respondents attended National Identity Management Commission.

Demographic and personal profile of respondents as shown in table 4.2 by age revealed that 183 respondents representing 55.3% were between the ages of 20-38years, 126 respondents representing 38.1% were between 39-54 years, and 22 respondents representing 6.6% were between 55-73years, indicating that most of the respondents were between 20-38years. Also, 157 respondents representing 47.4% were female, 174 respondents representing 52.6% were male, and 9 respondents representing 2.7% were separated, indicating that most of the respondents were male.

Furthermore, 110 respondents representing 33.2% had B.Sc of based on educational qualifications, 100 respondents representing 30.2% had NCE/OND, 71 respondents representing 21.5% had HND, 25 respondents representing 7.6% had M.Sc, 21 respondents representing 6.3% had O.Level, and 4 respondents representing 1.2% had PhD and above. However, 124 respondents representing 37.5% had 0-3years of work experience with present agency, 97 respondents representing 29.3% had 4-6years, 65 respondents representing 19.6% had 7-9years, 24 respondents representing 7.3% had 10-12years, 19 respondents representing 5.7% had 13-15 years, and 2 respondents representing 0.6% had 16 years and above. In addition, 2 respondents representing 0.6% were Deputy Director, 19 respondents representing 5.7% were Chief Admin Officer1, and 17 respondents representing 5.1% were Assistant Admin Officer, 38 respondents representing 11.5% were Principal Administration Officer, 52 respondents representing 15.7% were Senior Admin Officer, 98 respondents representing 29.6% were Administrative Officer1, 66 respondents representing 19.9% were Administrative Officer2, and 39 respondents representing 11.8% were Clerical Officer.

4.2 Presentation of Data

4.2.1 Descriptive Analysis for Research Objective One

Objectives 1: Ascertain the influence of e-governance implementation on sustainable development in selected, Southwest, Nigeria.

Table 4.3: Descriptive Analysis of Responses on E-governance Implementation

Online Service Delivery	SA	A	D	SD	MEAN
Citizens find it easy to locate information on e-government platforms in my country	271 (81.9%)	47 (14.2%)	9 (2.7%)	4 (1.2%)	1.23
Ever since the emergence of e-governance in my country, government processes, businesses has been simplified	80 (24.2%)	231 (69.8%)	7 (2.1%)	13 (3.9%)	1.86
Online service delivery of my agency is	79	218	22	12	1.90

top-notch	(23.9%)	(65.9%)	(6.6%)	(3.6%)	
Record keeping on e-governance platforms in my country has been fantastic	104 (31.4%)	193 (58.3%)	20 (6.0%)	14 (4.2%)	1.83
E-governance in agencies has been used to evaluate government performance of my country overtime	104 (31.4%)	190 (57.4%)	27 (8.2%)	10 (3.0%)	1.83
Weighted Mean for Online Service Delivery					1.73
Telecommunication Infrastructure	**SA**	**A**	**D**	**SD**	**MEAN**
The Information Communication Technology (ICT) activities of government agencies, has promoted accountability and transparency among government officials	122 (36.9%)	179 (54.1%)	22 (6.6%)	8 (2.4%)	1.75
The Information Communication Technology (ICT) activities in government agencies have brought about free flow of information among government parastatals	125 (37.8%)	162 (48.9%)	32 (9.7%)	12 (3.6%)	1.79
E-governance activities of government agencies have simplified the way and manner the government carry out her day-to-day operations	128 (38.7%)	164 (49.5%)	26 (7.9%)	13 (3.9%)	1.77
The e-governance practices of government agencies has brought about new Leadership style, new methods of making decisions on policies and investment	128 (38.7%)	166 (50.2%)	27 (8.2%)	10 (3.0%)	1.76
E-commerce activities of my country were as result of e-governance policies in government agencies	131 (39.6%)	163 (49.2%)	25 (7.6%)	12 (3.6%)	1.75
Weighted mean for Telecommunication Infrastructure					1.76
Human Capacity Development	**SA**	**A**	**D**	**SD**	**Mean**
E-governance in government agencies has fostered inter-government relationships in my country	138 (41.7%)	156 (47.1%)	23 (6.9%)	14 (4.2%)	1.74
Since the creation of e-governance platforms in my country, more jobs have been created	141 (42.6%)	153 (46.2%)	26 (7.9%)	11 (3.3%)	1.72
To large extent e-governance of government agencies has been economically benefitting to my country at large	142 (42.9%)	165 (49.8%)	17 (5.1%)	7 (2.1%)	1.66

I think e-governance should never be scrapped by future governments rather it should be sustained	181 (54.7%)	125 (37.8%)	15 (4.5%)	10 (3.0%)	1.56
All in all, e-governance has done more good than harm to the economic development of my country	174 (52.9%)	139 (42.0%)	12 (3.6%)	6 (1.8%)	1.55
Weighted mean for Human Capacity Development					1.65
Weighted mean for E-governance practice					1.71

Decision rule 1.00 – 1.49= very low, 1.50 – 2.49= low, 2.50 – 3.49 = high, 3.50-4.00= very high.
Note: SA-Strongly Agree (4), A-Agree (3), D-Disagree (2), SD-Strongly Disagree (1)
Source: Field Survey Results, 2022

According to results in Table 4.3. 81.9% of the respondents strongly agree that citizens find it easy to locate information on e-government platforms in their country, 14.2% agree, 2.7% disagree, and 1.2% strongly disagree. On average, the respondents indicated that citizens find it easy to locate information on e-government platforms in their country has a mean of 1.23. Results also indicated that 24.2% of the respondents strongly agree that ever since the emergence of e-governance in their country, government processes, business has been simplified, 69.8% agree, 2.1% disagree, and 3.9% strongly disagree. On average, the respondents indicated that ever since the emergence of e-governance in their country, government processes, business has been simplified has a mean of 1.86.

Results also indicated that 23.9% of the respondents strongly agree that online service delivery of their agency is top-notch, 65.9% agree, 6.6% disagree, and 3.6% strongly disagree. On average, the respondents indicated that online service delivery of their agency is top-notch has a mean of 1.90. Results also indicated that 31.4% of the respondents strongly agree that record keeping on e-governance platforms in their country has been fantastic, 58.3% agree, 6.0% disagree, and 4.2% strongly disagree. On average, the respondents indicated that record keeping on e-governance platforms in their country has been fantastic

has a mean of 1.83. Results also indicated that 31.4% of the respondents strongly agree that e-governance in government agencies has been used to evaluate government performance of their country overtime, 57.4% agree, 8.2% disagree, and 3.0% strongly disagree. On average, the respondents indicated that e-governance in government agencies has been used to evaluate government performance of their country overtime has a mean of 1.83.

According to results in Table 4.3. 36.9% of the respondents strongly agree that the Information Communication Technology (ICT) activities in Ministry of Communication and Digital Economy has promoted accountability and transparency among government officials, 54.1% agree, 6.6% disagree, and 2.4% strongly disagree. On average, the respondents indicated that the Information Communication Technology (ICT) activities in government agencies has promoted accountability and transparency among government officials has a mean of 1.75.

Results also indicated that 37.8% of the respondents strongly agree that the Information Communication Technology (ICT) activities in government agencies have brought about free flow of information among government parastatals, 48.9% agree, 9.7% disagree, and 3.6% strongly disagree. On average, the respondents indicated that the Information Communication Technology (ICT) activities in government agencies have brought about free flow of information among government parastatals has a mean of 1.79. Results also indicated that 38.7% of the respondents strongly agree that e-governance activities of government agencies have simplified the way and manner government carry out her day-to-day operations, 49.5% agree, 7.9% disagree, and 3.9% strongly disagree. On average, the respondents indicated that e-governance activities of government agencies have simplified the way and manner government carry out her day-to-day operations has a mean of 1.77.

Results also indicated that 38.7% of the respondents strongly agree that the e-governance practices of government agencies has brought new leadership style, new methods of making decisions on policies and investment, 50.2% agree, 8.2% disagree, and 3.0% strongly disagree. On average, the respondents indicated that the e-governance practices of government agencies has brought new leadership style, new methods of making decisions on policies and investment has a mean of 1.76. Results also indicated that 39.6% of the respondents strongly agree that e-commerce activities of their country were as result of e-governance policies in government agencies, 49.2% agree, 7.6% disagree, and 3.6% strongly disagree. On average, the respondents indicated that e-commerce activities of their country were as result of e-governance policies in government agencies has a mean of 1.75.

According to results in Table 4.3. 41.7% of the respondents strongly agree that e-governance in government agencies has fostered inter-government relationships in their country, 41.1% agree, 6.9% disagree, and 4.2% strongly disagree. On average, the respondents indicated that e-governance in government agencies has fostered inter-government relationships in their country has a mean of 1.74. Results also indicated that 42.6% of the respondents strongly agree that since the creation of e-gpvernance platforms in their country, more jobs have been created, 46.2% agree, 7.9% disagree, and 3.3% strongly disagree. On average, the respondents indicated that since the creation of e-gpvernance platforms in their country, more jobs have been created has a mean of 1.72. Results also indicated that 42.9% of the respondents strongly agree that to large extent, e-governance of government agencies has been economically benefitting to their country at large, 49.8% agree, 5.1% disagree, and 2.1% strongly disagree. On average, the respondents indicated that to large extent, e-governance of government agencies has been economically benefitting to their country at

large has a mean of 1.66. Results also indicated that 54.7% of the respondents strongly agree that they think e-governance should never be scrapped by future governments rather it should be sustained, 37.8% agree, 4.5% disagree, and 3.0% strongly disagree. On average, the respondents indicated that they think e-governance should never be scrapped by future governments rather it should be sustained has a mean of 1.56. Results also indicated that 52.9% of the respondents strongly agree that all-in-all, e-governance has done more good than harm to the economic development of their country, 42.0% agree, 3.6% disagree, and 1.8% strongly disagree. On average, the respondents indicated that all-in-all, e-governance has done more good than harm to the economic development of their country has a mean of 1.55.

The Weighted mean for E-governance practice is 1.71 which indicates that on average, respondents disagreed with most of the statements on the low scale as it relates to how online service delivery, telecommunication infrastructure, and human capacity development are appropriate measure of administrative capacity. Moreover, The Weighted mean of 1.71 shows that the level of E-governance practice is very low given the organisations under study.

4.2.2 Descriptive Analysis for Research Objective Two

Objectives 2: investigate the effect of green public management practices on sustainable development in selected agencies Southwest, Nigeria.

Table 4.4: Descriptive Analysis of Responses on Green Public Management

Green Reputation	SA	A	D	SD	MEAN
System of operation has improved overtime	269 (81.3%)	56 (16.9%)	3 (0.9%)	3 (0.9%)	1.21
Managerial practices in government agencies have brought about operational	89 (26.9%)	232 (70.1%)	5 (1.5%)	5 (1.5%)	1.78

efficiency					
I can say that public service operation has improved generally overtime in my country	104 (31.4%)	198 (59.8%)	25 (7.6%)	4 (1.2%)	1.79
Weighted Mean for Green Reputation					1.59
Green Procurement	**SA**	**A**	**D**	**SD**	**MEAN**
Cost efficiency and service effectiveness has improved tremendously in government agencies	120 (36.3%)	190 (57.4%)	15 (4.5%)	4 (1.2%)	1.72
The adoption of green public management in government agencies has brought about restructuring and reduction in the size of employees in the public sector	163 (49.2%)	140 (42.3%)	23 (6.9%)	5 (1.5%)	1.61
Reforms introduced in the public sector of my country have really been effective	119 (36.0%)	186 (56.2%)	17 (5.1%)	9 (2.7%)	1.75
Green public management in my country enabled the government of the day save a lot of resources	119 (36.0%)	177 (53.5%)	25 (7.6%)	10 (3.0%)	1.78
I will recommend that the government of the day should take green public management practices seriously	145 (43.8%)	168 (50.8%)	12 (3.6%)	6 (1.8%)	1.63
I think every parastatals should take cognizance of green public management	156 (47.1%)	151 (45.6%)	17 (5.1%)	7 (2.1%)	1.62
All-in-all, green public management is a welcome development v	183 (55.3%)	123 (37.2%)	16 (4.8%)	9 (2.7%)	1.55
Weighted Mean for Green Procurement					1.67
Weighted mean for Green Public Management					1.63

Decision rule 1.00 – 1.49= very low, 1.50 – 2.49= low, 2.50 – 3.49 = high, 3.50-4.00= very high.
Note: SA-Strongly Agree (4), A-Agree (3), D-Disagree (2), SD-Strongly Disagree (1)

Source: Field Survey Results, 2022

According to results in Table 4.4. 81.3% of the respondents strongly agree that system of operation has improved overtime, 16.9% agree, 0.9% disagree, and 0.9% strongly disagree. On average, the respondents indicated that system of operations has improved overtime has a mean of 1.21. Results also indicated that 26.9% of the respondents strongly agree that managerial practices in government agencies have brought about operational efficiency, 70.1% agree, 1.5% disagree, and 1.5% strongly disagree. On average, the respondents indicated that managerial practices in government agencies have brought about operational efficiency has a mean of 1.78. Results also indicated that 31.4% of the respondents strongly agree they can say that public service operation has improved generally overtime in their country, 59.8% agree, 7.6% disagree, and 1.2% strongly disagree. On average, the respondents indicated they can say that public service operation has improved generally overtime in their country has a mean of 1.79.

According to results in Table 4.4. 36.3% of the respondents strongly agree that cost efficiency and service effectiveness has improved tremendously in v, 57.4% agree, 4.5% disagree, and 1.2% strongly disagree. On average, the respondents indicated that cost efficiency and service effectiveness has improved tremendously in government agencies has a mean of 1.72. Results also indicated that 49.2% of the respondents strongly agree that the adoption of green public management in government agencies has brought about restructuring and reduction in the size of employees in the public sector, 42.3% agree, 6.9% disagree, and 1.5% strongly disagree. On average, the respondents indicated that the adoption of green public management in government agencies has brought about restructuring and reduction in the size of employees in the public sector has a mean of 1.61. Results also

indicated that 36.0% of the respondents strongly agree that reforms introduced in the public sector of their country have really been effective, 56.2% agree, 5.1% disagree, and 2.7% strongly disagree. On average, the respondents indicated that reforms introduced in the public sector of their country have really been effective has a mean of 1.75. Results also indicated that 36.0% of the respondents strongly agree that green public management in their country enabled the government of the day save a lot of resources, 53.5% agree, 7.6% disagree, and 3.0% strongly disagree. On average, the respondents indicated that green public management in their country enabled the government of the day save a lot of resources has a mean of 1.78. Results also indicated that 43.8% of the respondents strongly agree that they will recommend that the government of the day should take green public management practices seriously, 50.8% agree, 3.6% disagree, and 1.8% strongly disagree. On average, the respondents indicated that they will recommend that the government of the day should take green public management practices seriously have a mean of 1.63. Results also indicated that 47.1% of the respondents strongly agree that they think every parastatals should take cognizance of green public management, 45.6% agree, 5.1% disagree, and 2.1% strongly disagree. On average, the respondents indicated that they think every parastatls should take cognizance of green public management has a mean of 1.62. Results also indicated that 55.3% of the respondents strongly agree that all-in-all, green public management is a welcome development in government agencies, 37.2% agree, 4.8% disagree, and 2.7% strongly disagree. On average, the respondents indicated that all-in-all, green public management is a welcome development in government agencies has a mean of 1.55.

The weighted mean for green public management is 1.63 which indicates that on average, respondents disagreed with most of the statements on the low scale as it relates to how

green reputation and green procurement are appropriate measure of green public management. Moreover, the weighted mean of 1.63 of shows that the level of green public management for the organisations under investigation is low and consequently needs management commitment to ensure the green public management is enhanced.

4.2.3 Descriptive Analysis for Research Objective Three

Objective 3: Examine the influence of e-governance and green public management on sustainable development of selected agencies, Southwest, Nigeria.

Table 4.5: Descriptive Analysis of Responses on Sustainable Development

Economic Sustainability	**SA**	**A**	**D**	**SD**	**MEAN**
Government agencies sees that economic development is necessary for sustainable development in the country	282 (85.2%)	42 (12.7%)	-	7 (2.1%)	1.19
Government agencies upholds the tenet that improving people's health and opportunities for a good life contribute to sustainable development	98 (29.6%)	222 (67.1%)	4 (1.2%)	7 (2.1%)	1.76
Access to good education is one of the goals of Government agencies	97 (29.3%)	203 (61.3%)	22 (6.6%)	9 (2.7%)	1.83
The operations of government agencies have impacted lots of lives economically	98 (29.6%)	202 (61.0%)	21 (6.3%)	10 (3.0%)	1.83
The economic operations of government agencies have done more good than harm to her employees	128 (38.7%)	175 (52.9%)	18 (5.4%)	10 (3.0%)	1.73
Weighted Mean for economic sustainability					1.67
Social Sustainability	**SA**	**A**	**D**	**SD**	**MEAN**
To a large extent, I think government agencies has carried out her social corporate responsibility efficiently.	169 (51.1%)	130 (39.3%)	23 (6.9%)	9 (2.7%)	1.61
Activities of government agencies are pretty much socially impacting to communities around her.	150 (45.3%)	152 (45.9%)	21 (6.3%)	8 (2.4%)	1.66
ICT activities of government agencies recognized by international bodies.	148 (44.7%)	157 (47.4%)	18 (5.4%)	8 (2.4%)	1.66
I have a strong feeling that in the nearest future, government agencies, ICT activities will attract much investment to	146 (44.1%)	160 (48.3%)	18 (5.4%)	7 (2.1%)	1.66

my country.					
All in all the social activities of government agencies is nationally impacting.	169 (51.1%)	137 (41.4%)	18 (5.4%)	7 (2.1%)	1.59
Weighted mean for social sustainability					1.64
Environmental Sustainability	**SA**	**A**	**D**	**SD**	**Mean**
In government agencies, our ICT activities have been extended to communities around her.	190 (57.4%)	117 (35.3%)	17 (5.1%)	7 (2.1%)	1.52
I think that government agencies has a smooth running relationship with other government agencies in the country.	272 (82.2%)	48 (14.5%)	6 (1.8%)	5 (1.5%)	1.23
Government agencies to a large extent has fulfilled United nations sustainable development goals as regards environmental sustainable development.	127 (38.4%)	189 (57.1%)	8 (2.4%)	6 (1.8%)	1.68
Government agencies is known for her innovative prowess when it comes to carrying out ICT functions.	160 (48.3%)	142 (42.9%)	22 (6.6%)	7 (2.1%)	1.63
All in all, the goals of Ministry of Government agencies are in tandem with the overall goals of United Nations goals on sustainable development.	160 (48.3%)	136 (41.1%)	35 (7.6%)	10 (3.0%)	1.65
Weighted mean for environmental sustainability					1.54
Weighted mean for Sustainable development					1.61

Decision rule 1.00 – 1.49= very low, 1.50 – 2.49= low, 2.50 – 3.49 = high, 3.50-4.00= very high.
Note: SA-Strongly Agree (4), A-Agree (3), D-Disagree (2), SD-Strongly Disagree (1)
Source: Field Survey Results, 2022

According to results in Table 4.5. 85.1% of the respondents strongly agree that government agencies sees that economic development is necessary for sustainable development in the country, 12.7% agree, and 2.1% strongly disagree. On average, the respondents indicated that government agencies sees that economic development is necessary for sustainable development in the country has a mean of 1.19. Results also indicated that 29.6% of the respondents strongly agree that government agencies upholds the tenet that improving

people's health and opportunities for a good life contribute to sustainable development, 67.1% agree, 1.2% disagree, and 2.1% strongly disagree. On average, the respondents indicated that government agencies upholds the tenet that improving people's health and opportunities for a good life contribute to sustainable development has a mean of 1.76.

Results also indicated that 29.3% of the respondents strongly agree that access to good education is one of the goals of government agencies, 61.3% agree, 6.6% disagree, and 2.7% strongly disagree. On average, the respondents indicate that access to good education is one of the goals of government agencies has a mean of 1.83. Results also indicated that 29.6% of the respondents strongly agree that the operations of government agencies have impacted lots of lives economically, 61.0% agree, 6.3% disagree, and 3.0% strongly disagree. On average, the respondents indicated that the operations of government agencies have impacted lots of lives economically has a mean of 1.83. Results also indicated that 38.7% of the respondents strongly agree that the economic operations of government agencies have done more good than harm to her employees, 52.9% agree, 5.4% disagree, and 3.0% strongly disagree. On average, the respondents indicated that the economic operations of government agencies have done more good than harm to her employees has a mean of 1.73.

According to results in Table 4.5. 51.1% of the respondents strongly agree that to a large extent, they think government agencies has carried out her social corporate responsibility efficiently, 39.3% agree, 6.9% disagree, and 2.7% strongly disagree. On average, the respondents indicated that to a large extent, they think government agencies has carried out her social corporate responsibility efficiently has a mean of 1.61. Results also indicated that 45.3% of the respondents strongly agree that activities of government agencies are pretty much socially impacting to communities around, 45.9% agree, 6.3% disagree, and 2.4%

strongly disagree. On average, the respondents indicated that activities of government agencies are pretty much socially impacting to communities around has a mean of 1.66.

Results also indicated that 44.7% of the respondents strongly agree that ICT activities of government agencies recognized by international bodies, 47.4% agree, 5.4% disagree, and 2.4% strongly disagree. On average, the respondents indicated that ICT activities of government agencies recognized by international bodies has a mean of 1.66. Results also indicated that 44.1% of the respondents strongly agree that they have a strong feeling that in the nearest future, government agencies, ICT activities will attract much investment to their country, 48.3% agree, 5.4% disagree, and 2.1% strongly disagree. On average, the respondents indicated that they have a strong feeling that in the nearest future, government agencies, ICT activities will attract much investment to their country has a mean of 1.66. Results also indicated that 51.1% of the respondents strongly agree that all-in-all, the social activities of government agencies is nationally impacting, 41.4% agree, 5.4% disagree, and 2.1% strongly disagree. On average, the respondents indicated that all-in-all, the social activities of government agencies is nationally impacting has a mean of 1.59.

According to results in Table 4.5. 57.4% of the respondents strongly agree that in government agencies, their ICT activities have been extended to communities around, 35.3% agree, 5.1% disagree, and 2.1% strongly disagree. On average, the respondents indicated that in government agencies, their ICT activities have been extended to communities around has a mean of 1.52. Results also indicated that 82.2% of the respondents strongly agree they think that Ministry of Communication and Digital Economy has a smooth running relationship with other government agencies in the country, 14.5% agree, 1.8% disagree, and 1.5% strongly disagree. On average, the respondents indicated they think that government agencies

has a smooth running relationship with other government agencies in the country has a mean of 1.23. Results also indicated that 38.4% of the respondents strongly agree that government agencies to a large extent has fulfilled United Nations sustainable development goals as regards environmental sustainable development, 57.1% agree, 2.4% disagree, and 1.8% strongly disagree. On average, the respondents indicated that government agencies to a large extent has fulfilled United Nations sustainable development goals as regards environmental sustainable development has a mean of 1.68. Results also indicated that 48.3% of the respondents strongly agree that government agencies is known for her innovative prowess when it comes to carrying out ICT functions, 42.9% agree, 6.6% disagree, and 2.1% strongly disagree. On average, the respondents indicated that government agencies is known for her innovative prowess when it comes to carrying out ICT functions has a mean of 1.63. Results also indicated that 48.3% of the respondents strongly agree that all-in-all, the goals of government agencies are in tandem with the overall goals of United Nations goals on sustainable development, 41.1% agree, 7.6% disagree, and 3.0% strongly disagree. On average, the respondents indicated that all-in-all, the goals of government agencies are in tandem with the overall goals of United Nations goals on sustainable development has a mean of 1.65.

The weighted mean for Weighted mean for Sustainable development is 1.61 which indicates that on average, respondents disagreed with most of the statements on the low scale as it relates to how economic sustainability, social sustainability and environmental sustainability are appropriate measure of Sustainable development. Moreover, the weighted mean of 1.61 of shows that the level of Sustainable development is low and consequently needs

management commitment to ensure that government agencies' contribute significantly to Nigeria's capacity to achieve sustainable development.

4.2.4 Descriptive Analysis for Research Objective Four

Objective 4: Determine various challenges confronting implementation of e-governance for sustainable development in selected agencies, Southwest, Nigeria.

Table 4.6: Challenges Confronting Implementation of E-governance in your Organization

Challenges Confronting Implementation of E-governance in Your Organization	SA	A	D	SD	MEAN
Absence of team work	302 (91.2%)	27 (8.2%)	1 (0.3%)	1 (0.3%)	1.10
Unequal dispersion of internet services and facilities	165 (49.8%)	163 (49.2%)	3 (0.9%)	-	1.51
Unwillingness on the part of the government to share vital information to the public	193 (58.3%)	119 (36.0%)	18 (5.4%)	1 (0.3%)	1.48
Policy summersault	217 (65.6%)	103 (31.1%)	10 (3.0%)	1 (0.3%)	1.38
Absence of competent personnel to handle ICT infrastructures.	231 (69.8%)	90 (27.2%)	7 (2.1%)	3 (0.9%)	1.34
Corruption among government personnel	224 (67.7%)	95 (28.7%)	9 (2.7%)	3 (0.9%)	1.37

Source: Field Survey Results, 2022

According to results in Table 4.6. 91.2% of the respondents strongly agree that there is absence of team work, 8.2% agree, 0.3 disagree, and 0.3% strongly disagree. On average, the respondents indicated that there is absence of team work has a mean of 1.10. Results also indicated that 49.8% of the respondents strongly agree that there is unequal dispersion of internet services and facilities, 49.2% agree, and 0.9% disagree. On average, the respondents

indicated that there is unequal dispersion of internet services and facilities has a mean of 1.51. Results also indicated that 58.3% of the respondents strongly agree that there is unwillingness on the part of the government to share vital information to the public, 36.0% agree, 5.4% disagree, and 0.3% strongly disagree. On average, the respondents indicate that there is unwillingness on the part of the government to share vital information to the public has a mean of 1.48.

Results also indicated that 65.6% of the respondents strongly agree that there is policy summersault, 31.1% agree, 3.0% disagree, and 0.3% strongly disagree. On average, the respondents indicated that there is policy summersault has a mean of 1.38. Results also indicated that 69.8% of the respondents strongly agree that there is absence of competent personnel to handle ICT infrastructures, 27.2% agree, 2.1% disagree, and 0.9% strongly disagree. On average, the respondents indicated that there is absence of competent personnel to handle ICT infrastructures has a mean of 1.34. Results also indicated that 67.7% of the respondents strongly agree that there is corruption among government personnel, 28.7% agree, 2.7% disagree, and 0.9% strongly disagree. On average, the respondents indicated that there is corruption among government personnel has a mean of 1.37. All these challenges are critical to successful implementation of e-governance in the organizations investigated**.**

4.3 Presentation of Test of Hypotheses

4.3. 1 Hypotheses One

Ho1: E-governance will not significantly influence sustainable development of selected agencies, Southwest, Nigeria.

To test the null hypothesis one, PLS-Structural Equation Modelling (PLS-SEM) was adopted using the SmartPLS statistical platform version 3.3.9. The study used the PLS-algorithm's

command which is appropriate for predicting effect-relationship, ran the bootstrapping to ascertain the level of significant of the prediction, and ran blindfolding to determine the predictive relevance of the structural model specified. The choice of PLS-SEM (via SmartPLS) is because it is a more advanced multivariate analytical technique which performs multiple regression, factor analysis, and provides a pictorial model of the interactions in a study with the push of one command as against running an isolated analysis using SPSS[1]. In addition, the SmartPLS statistical platform offers stricter and robust analysis compared with the outcomes of SPSS[2].

The independent variable E-governance includes sub-measures such as telecommunication infrastructure, online service delivery and human capacity development while sustainable development constitutes the dependent variable. Data from three hundred and thirty-one respondents in sustainable development in selected agencies, Southwest, Nigeria were collated for the analysis. The result of the PLS-SEM is presented in three model (see figure 1, 2 & 3) and a table (see table 4.1X). Figure one shows the path analysis, figure two shows the t values which confirm the significance of the path analysis and figure three shows Q^2 which confirms the predictive relevance of the structural model (t value above 1.96 and Q^2 above zero confirm a statistically significant effect and that the structural model specified is relevance). Each model comprised of outer model which shows the factor loadings (correlation) of each item in relation to the latent variable and the inner model termed the structural model (predictive model) which explains the interactions between the independent (E-governance) variable(s) and the dependent (sustainable development) variable in a study. The table 4.1X provides a tabular representation of the information in figure I, 2, and 3.

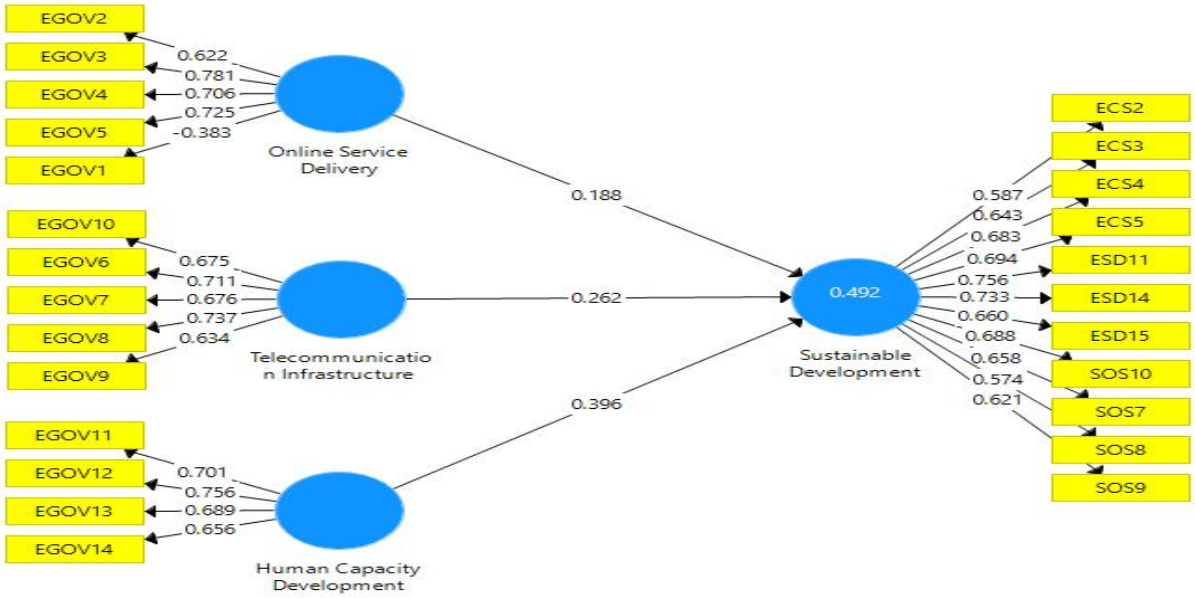


Figure 4.1. Path Analysis for Hypothesis One
Source: Researcher's Computation via SmartPLS V3.3.9

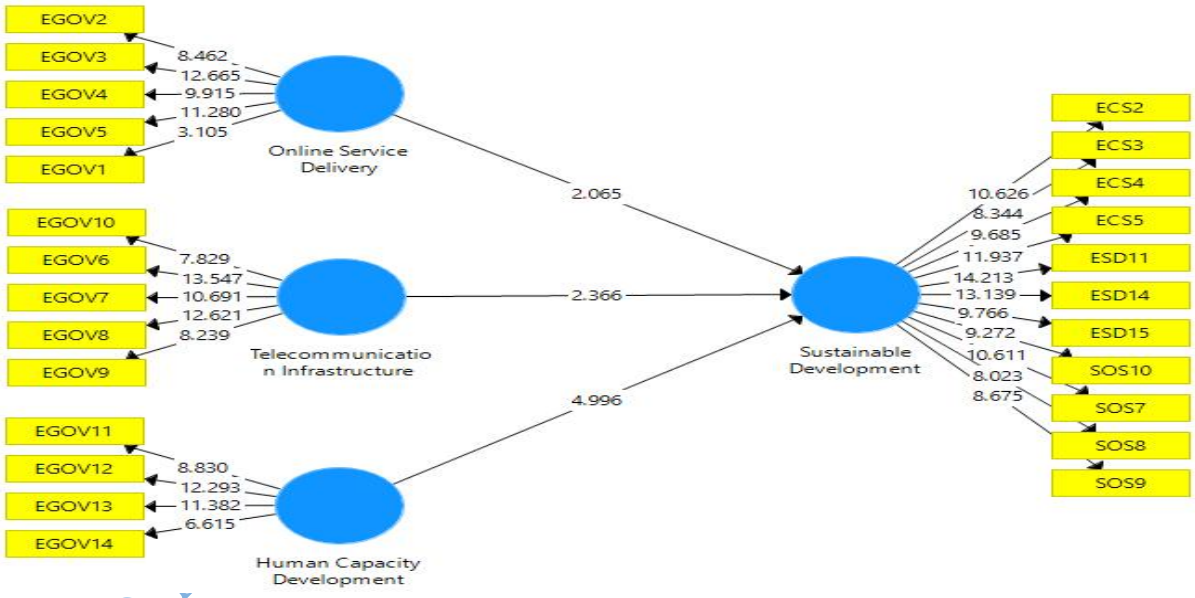


Figure 4.2. T-Statistics for Hypothesis One
Source: Researcher's Computation via SmartPLS V3.3.9

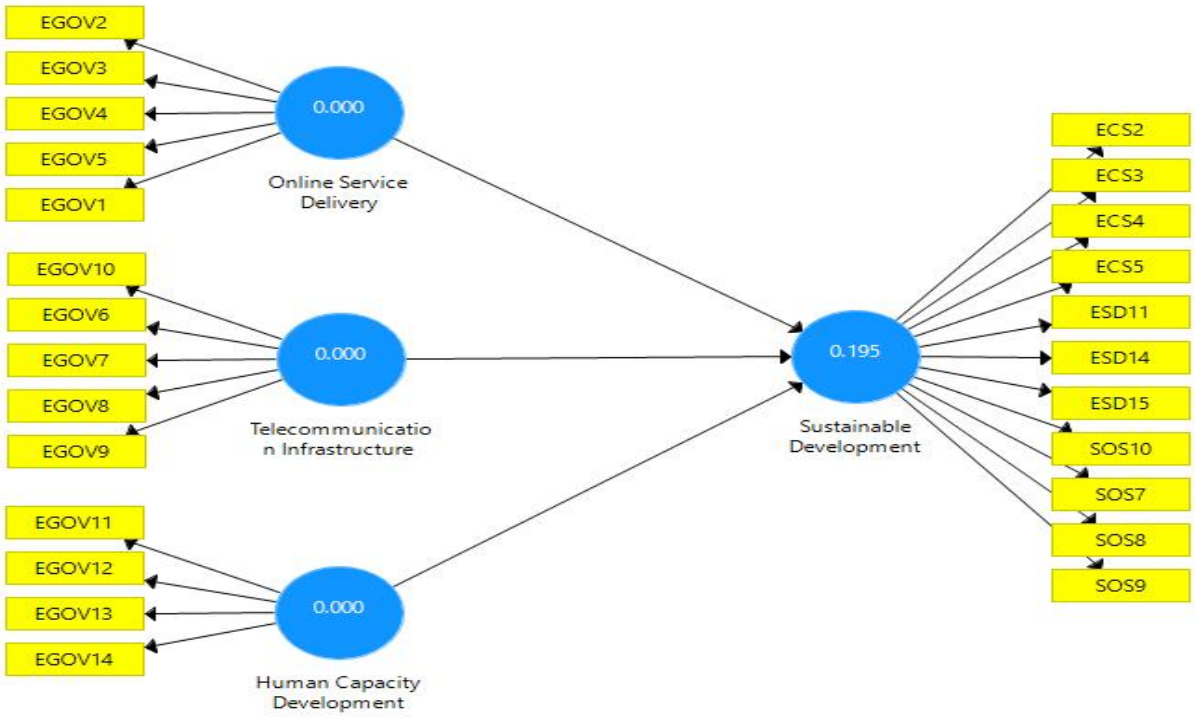


Figure 4.3. Q^2 Statistics for Hypothesis One
Source: Researcher's Computation via SmartPLS V3.3.9

Table 4.7: Summary of the PLS-SEM for the effect of E-Governance on Sustainable Development in Southwest, Nigeria

Path Description	Original sample (o) Unstandardized Beta	T	Sig.	R^2	Adj. R^2	Sig.	Q^2
				0.492	0.475	0.000	0.195
Human Capacity Development → Sustainable development	0.396	4.996	0.000				
Online Service Delivery → Sustainable development	0.188	2.065	0.039				
Telecommunication Infrastructure → Sustainable development	0.262	2.366	0.018				

Source: Researcher's Result via SmartPLS Version 3.3.9, 2022

4.3. 2 Hypotheses Two

Ho2: Green Public Management will not significantly influence sustainable development of selected agencies, Southwest, Nigeria.

To test the null hypothesis one, PLS-Structural Equation Modelling (PLS-SEM) was adopted using the SmartPLS statistical platform version 3.3.9. The independent variable green public management includes sub-measures such as green procurement and green reputation while sustainable development constitutes the dependent variable. Data from three hundred and thirty-one respondents in sustainable development in selected agencies, Southwest, Nigeria were collated for the analysis. The result of the PLS-SEM is presented in three model (see figure 4, 5 & 6) and a table (see table 4.1X).

Figure four shows the path analysis, figure two shows the t values which confirm the significance of the path analysis and figure three shows Q^2 which confirms the predictive relevance of the structural model (t value above 1.96 and Q^2 above zero confirm a statistically significant effect and that the structural model specified is relevance). Each model comprised of outer model which shows the factor loadings (correlation) of each item in relation to the latent variable and the inner model termed the structural model (predictive model) which explains the interactions between the independent (green public management) variable(s) and the dependent (sustainable development) variable in a study. The table 4.1X provides a tabular representation of the information in figure 4, 5, and 6.

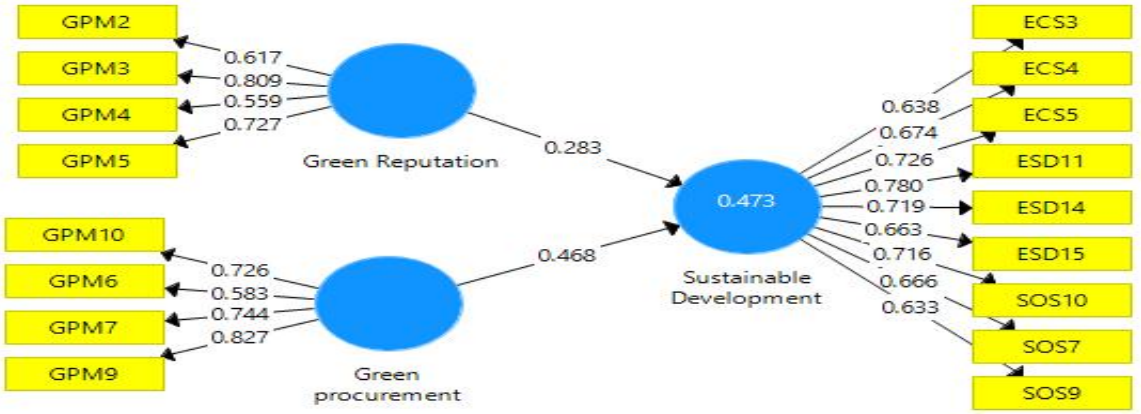


Figure 4.4. Path Analysis for Hypothesis Two
Source: Researcher's Computation via SmartPLS V3.3.9

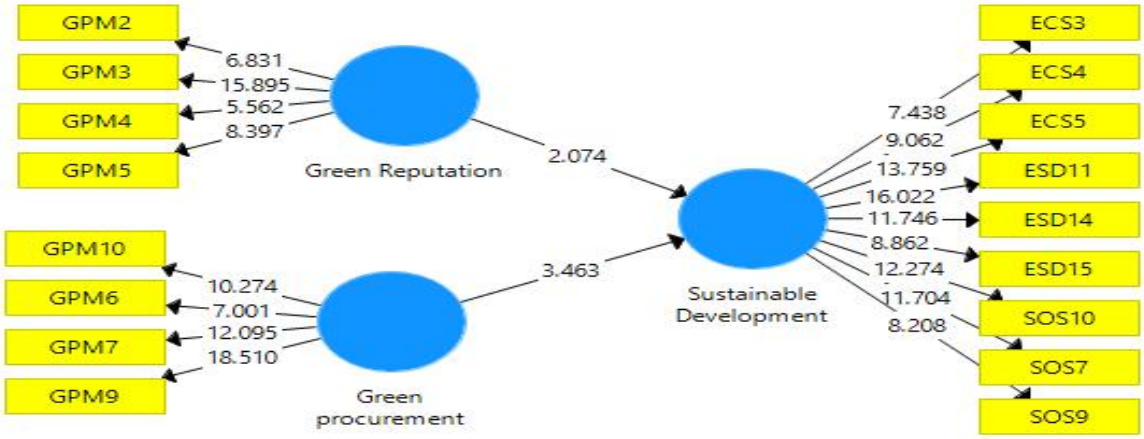


Figure 4.5. T-Statistics for Hypothesis Two
Source: Researcher's Computation via SmartPLS V3.3.9

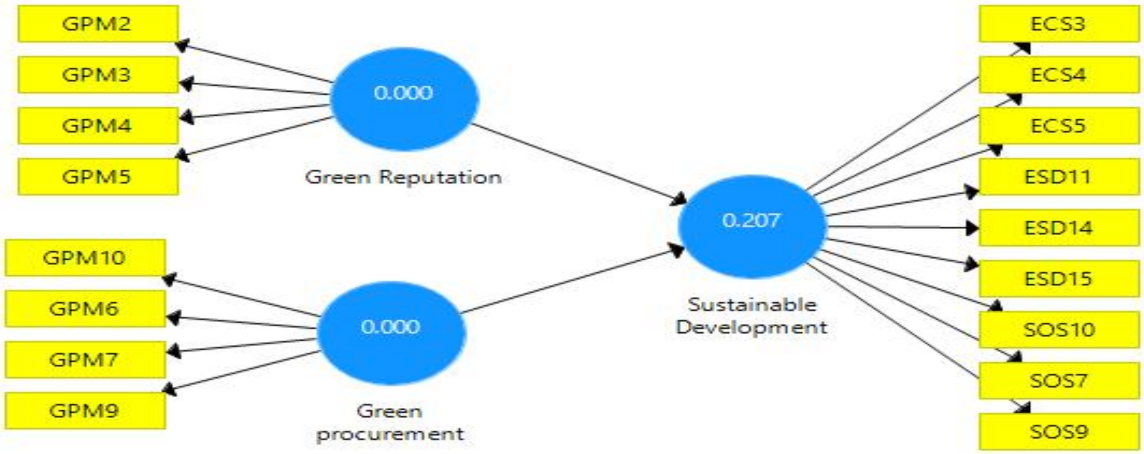


Figure 4.6. Q^2 Statistics for Hypothesis Two

Source: Researcher's Computation via SmartPLS V3.3.9

Table 4.8: Summary of the PLS-SEM for the effect of Green Public Management on Sustainable Development in Southwest, Nigeria

Path Description	Original sample (o) Unstandardized Beta	T	Sig.	R^2	Adj. R^2	Sig.	Q^2
				0.473	0.461	0.000	0.207
Green reputation → Sustainable development	0.283	2.074	0.039				
Green procurement → Sustainable development	0.468	3.463	0.001				

Source: Researcher's Result via SmartPLS Version 3.3.9 (2022)

4.3. 3 Hypotheses Three

Ho3: E-governance and Green Public Management will not jointly, significantly influence sustainable development of selected agencies in Ministry of Communication and Digital Economy in South West, Nigeria.

To test the null hypothesis three, PLS-Structural Equation Modelling (PLS-SEM) was adopted using the SmartPLS statistical platform version 3.3.9. The independent variables are E-governance and green public management while sustainable development constitutes the dependent variable. Data from three hundred and thirty-one respondents in sustainable development in selected agencies, Southwest, Nigeria were collated for the analysis. The result of the PLS-SEM is presented in three model (see figure 7, 8 & 9) and a table (see table

4.1X). Figure 7 shows the path analysis, figure two shows the t values which confirm the significance of the path analysis and figure three shows Q^2 which confirms the predictive relevance of the structural model (t value above 1.96 and Q^2 above zero confirm a statistically significant effect and that the structural model specified is relevance). Each model comprised of outer model which shows the factor loadings (correlation) of each item in relation to the latent variable and the inner model termed the structural model (predictive model) which explains the interactions between the independent (E-governance and green public management) variable(s) and the dependent (sustainable development) variable in a study. The table 4.1X provides a tabular representation of the information in figure 7, 8, and 9.

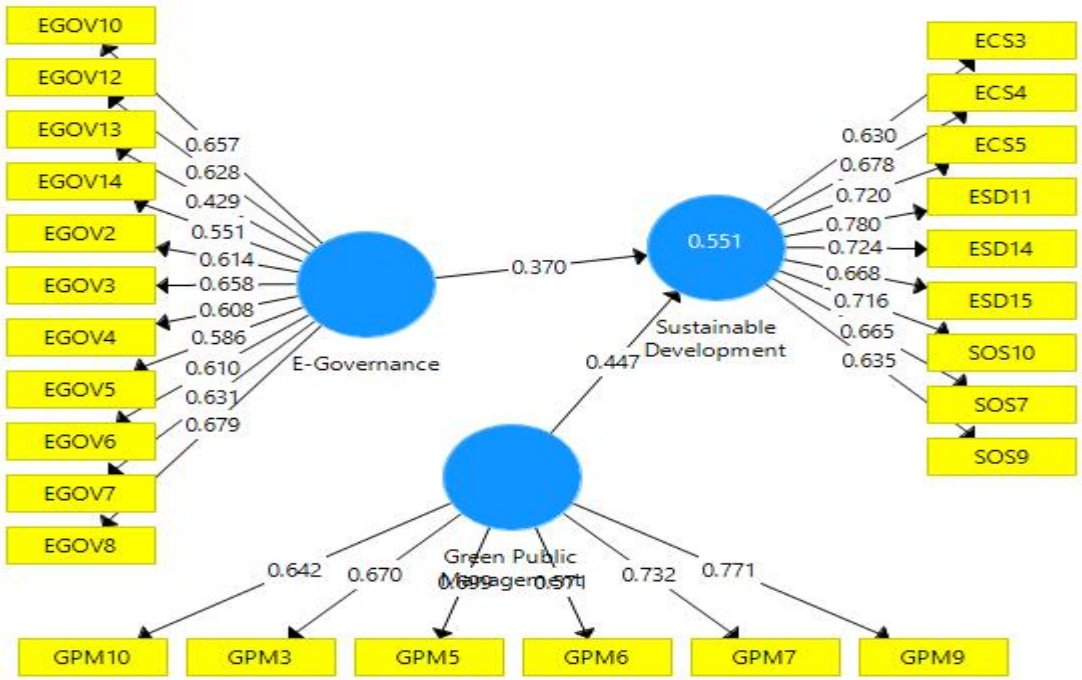


Figure 4.7. Path Analysis for Hypothesis Three
Source: Researcher's Computation via SmartPLS V3.3.9

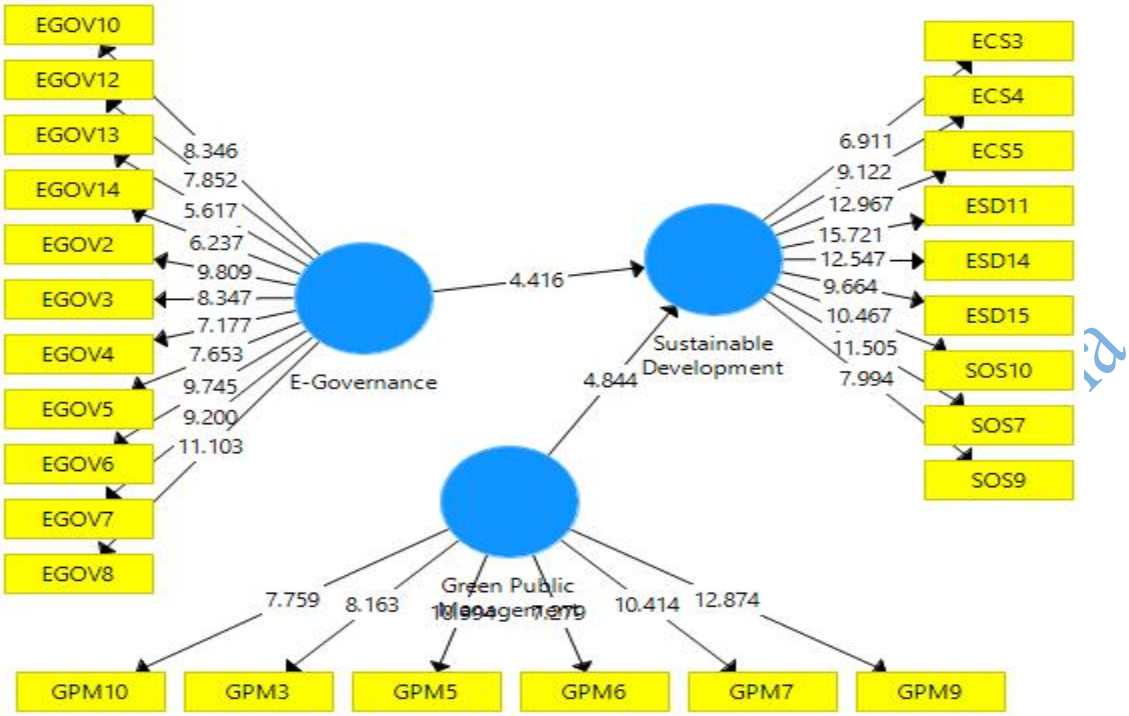
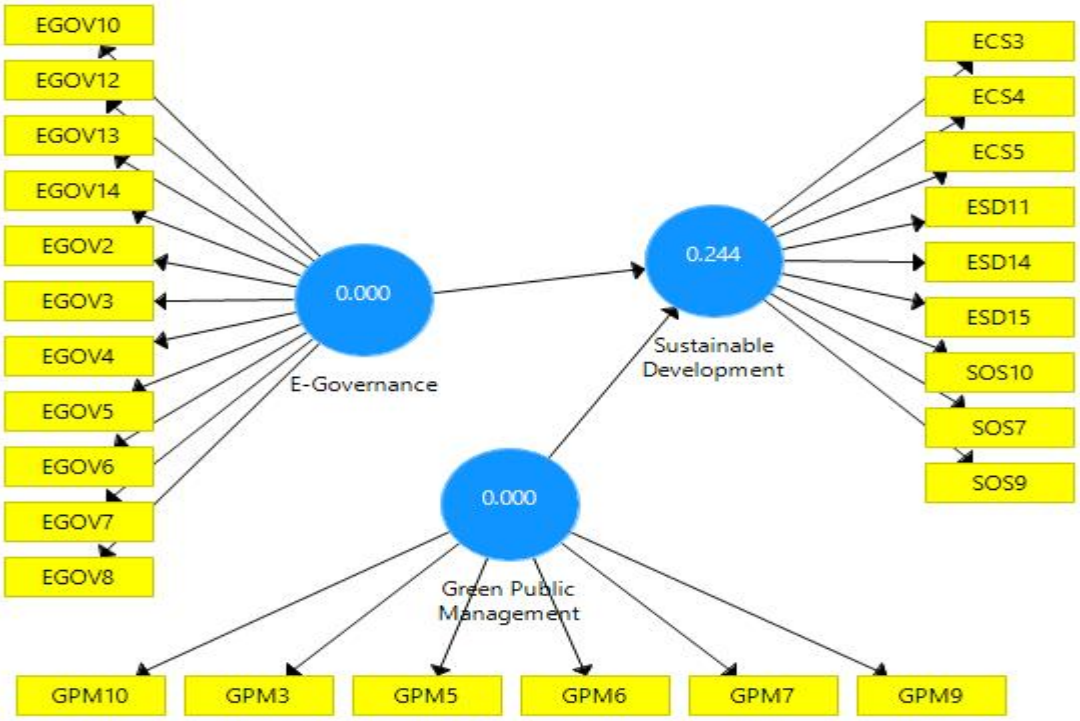


Figure 4.8. T-Statistics for Hypothesis Three
Source: Researcher's Computation via SmartPLS V3.3.9



Q2

Figure 4.9. Q^2 Statistics for Hypothesis Three

Source: Researcher's Computation via SmartPLS V3.3.9

Table 4.9: Summary of the PLS-SEM for the Effect of E-governance and Green Public Management on Sustainable Development in Southwest, Nigeria

Path Description	Original sample (o) Unstandardized Beta	T	Sig.	R^2	Adj. R^2	Sig.	Q^2
				0.551	0.542	0.000	0.244
E-Governance → Sustainable development	0.370	4.476	0.000				
Green Public Management → Sustainable development	0.447	4.844	0.000				

Source: Researcher's Result via SmartPLS Version 3.3.9 (2022)

4.3. 4 Discussion of Findings

Figure 1 presents the results of PLS-SEM analysis for the effect of E-governance dimensions on sustainable development in selected agencies, Southwest, Nigeria. The Adjusted R^2 was used to establish the predictive power of the study's model. From the results, the adjusted coefficient of determination (*Adj* R^2) of 0.475 showed that E-governance dimensions explained 47.5% of the variation in sustainable development in agencies, Southwest, Nigeria while the remaining 52.5% variation in sustainable development is explained by external factors different from E-governance dimensions considered in this study and the effect is statistically significant at 95% confidence interval and p value less than 0.05. This result suggests that E-governance influenced 47.5% of the sustainable development in Southwest, Nigeria. According to Hair et al. (2013) R^2 or AdjR^2 values for endogenous latent variable of 0.75, 0.50, and 0.25 represent substantial, moderate, and weak respectively. Based on this

threshold it is safe to posit that the effect of E-governance on sustainable development in agencies, Southwest, Nigeria is moderate.

The path coefficient of each E-governance dimensions (telecommunication infrastructure, online service delivery and human capacity development) represents the coefficient of determination (β) which shows the relative effect of each E-governance dimensions on sustainable development in South-west, Nigeria. PLS-SEM results in fig. 1 and 2 revealed that all E-governance dimensions have positive and significant effect on sustainable development. Specifically, the results revealed that at 95% confidence level, human capacity development (β = 0.396, t= 4.996), service delivery (β = 0.188, t= 2.065), and telecommunication infrastructure (β = 0.262, t= 2.366), were statistically significant as their p-values were less than 0.05 and their t-values greater than 1.96.

Further analysis indicates that taking all other independent variables at zero, a unit change in human capacity development holds plausible increase of 0.396 in sustainable development in South-west, Nigeria given that all other factors are held constant. Similarly, the result shows that a unit change in service delivery will lead to a 0.188 increase in sustainable development in South-west, Nigeria given that all other factors are held constant. Lastly, the result shows that a unit change in telecommunication infrastructure will lead to a 0.262 increase in sustainable development in Southwest Nigeria, given that all other factors are held constant. Overall, from the results, human capacity development had the highest relative effect on sustainable development in South-west, Nigeria with a coefficient of 0.396 and t value of 4.996. In second place is telecommunication infrastructure with a coefficient of 0.262 and t value of 2.366. Lastly, service delivery with a coefficient of 0.188, and t value of 2.065.

Further analysis was conducted to establish the predictive relevance of the model using Stone-Gleisser Q^2 value. Scholars posit that Q^2 values of 0.02, 0.15 and 0.35 represents small, medium, and large predictive relevance. Hair et al. 2017) suggested that Q^2 above zero confirm that the structural model specified is relevance. According to Table 4XX, the Q^2 value of sustainable development in South-west, Nigeria is 0.195. Hence, E-Governance has a medium degree of predictive relevance with regards to its effects on sustainable development in Southwest, Nigeria; And for this reason, the structural model specified is relevant and has sufficient predictive quality. On the strength of the PLS-SEM summarized results in table 4.XX (*Adj* R^2 =0.475, p=0.000, Q^2 =0.195), this study can conclude that E-Governance have significant and substantial effect on sustainable development in sustainable development in selected agencies, Southwest, Nigeria hence, the study rejects the null hypothesis one ($H_0$1) which states that E-governance has no significant effect on sustainable development in Southwest, Nigeria.

Figure 4.4 presents the results of PLS-SEM analysis for the effect of green public management dimensions on sustainable development in selected agencies, Southwest, Nigeria. The Adjusted R^2 was used to establish the predictive power of the study's model. From the results, the adjusted coefficient of determination (*Adj* R^2) of 0.461 showed that green public management dimensions explained 46.1% of the changes in sustainable development in agencies, Southwest, Nigeria while the remaining 53.9% changes in sustainable development **is** explained by external factors different from those considered in this study and the effect is statistically significant at 95% confidence interval and p value less than 0.05. This result suggests that green public management influenced 46.1% of the sustainable development in Southwest**,** Nigeria. According to Hair et al. (2013) R^2 or AdjR^2

values for endogenous latent variable of 0.75, 0.50, and 0.25 represent substantial, moderate, and weak respectively. Based on this threshold it is safe to posit that the effect of Green Public Management on sustainable development in agencies, Southwest, Nigeria is moderate.

The path coefficient of each green public management dimensions (green procurement and green reputation) represents the coefficient of determination (β) which shows the relative effect of each green public management dimensions on sustainable development in South-west, Nigeria. PLS-SEM results in fig. 4 and 5 revealed that all green public management dimensions have positive and significant effect on sustainable development. Specifically, the results revealed that at 95% confidence level, green reputation (β = 0.283, t= 2.074) and green procurement (β = 0.468, t= 3.463), were statistically significant as their p-values were less than 0.05 and their t-values greater than 1.96.

Further analysis indicates that taking all other independent variables at zero, a unit change in green reputation will result in increase of 0.283 in sustainable development in South-west, Nigeria given that all other factors are held constant. Similarly, the result shows that a unit change in green procurement will lead to a 0.468 increase in sustainable development in South-west, Nigeria given that all other factors are held constant. Overall, from the results, green procurement had the highest relative effect on sustainable development in South-west, Nigeria with a coefficient of 0.468 and t value of 3.463. In second place is green reputation with a coefficient of 0.283 and t value of 2.074.

Further analysis was conducted to establish the predictive relevance of the model using Stone-Gleisser Q^2 value. Scholars posit that Q^2 values of 0.02, 0.15 and 0.35 represents small, medium, and large predictive relevance. Hair et al. 2017) suggested that Q^2 above zero

confirm that the structural model specified is relevance. According to Table 4XX, the Q^2 value of sustainable development in South-west, Nigeria is 0.207. Hence, green public management has a medium degree of predictive relevance with regards to its effects on sustainable development in Southwest, Nigeria; And for this reason, the structural model specified is relevant and has sufficient predictive quality. On the strength of the PLS-SEM summarized results in table 4.XX (*Adj* R^2 =0.461, p=0.000, Q^2 =0.207), this study can conclude that green public management have significant and substantial effect on sustainable development in sustainable development in selected agencies. Southwest, Nigeria hence, the study rejects the null hypothesis two ($H_0$2) which states that green public management has no significant effect on sustainable development in South-west, Nigeria.

Discussion of Findings

Figure 4.9 presents the results of PLS-SEM analysis for the effect of E-governance and green public management on sustainable development in selected agencies, Southwest, Nigeria. The Adjusted R^2 was used to establish the predictive power of the study's model. From the results, the adjusted coefficient of determination (*Adj* R^2) of 0.542 showed that E-governance and green public management jointly predicted 54.2% of the changes in sustainable development in agencies, Southwest, Nigeria while the remaining 54.2% changes in sustainable development is explained by external factors different from those considered in this study and the effect is statistically significant at 95% confidence interval and p value less than 0.05. This result suggests that E-governance and green public management jointly influenced 54.2% of the sustainable development in South-west, Nigeria[3]. The author's

threshold it is safe to posit that the effect of E-governance and green public management on sustainable development in government agencies, Southwest, Nigeria is moderate.

The path coefficient of E-governance and green public management represents the coefficient of determination (β) which shows the relative effect of both independent variables on sustainable development in South-west, Nigeria. PLS-SEM results in fig. 7 and 8 revealed that E-governance and green public management have positive and significant effect on sustainable development. Specifically, the results revealed that at 95% confidence level, E-Governance (β = 0.370, t= 4.476) and green public management (β = 0.447, t= 4.844), were statistically significant as their p-values were less than 0.05 and their t-values greater than 1.96.

Further analysis indicates that taking all other independent variables at zero, a unit change in E-governance will result in increase of 0.370 in sustainable development in Southwest, Nigeria given that all other factors are held constant. Similarly, the result shows that a unit change in green public management will lead to a 0.447 increase in sustainable development in South-west, Nigeria given that all other factors are held constant. Overall, from the results, Green Public Management had the highest relative effect on sustainable development in South-west, Nigeria with a coefficient of 0.447 and t value of 4.844. In second place is E-governance with a coefficient of 0.370 and t value of 4.476.

Further analysis was conducted to establish the predictive relevance of the model using Stone-Gleisser Q^2 value. Scholars posit that Q^2 values of 0.02, 0.15 and 0.35 represents small, medium, and large predictive relevance. They suggested that Q^2 above zero confirm that the structural model specified is relevance[4]. According to Table 4XX, the Q^2 value of sustainable

development in South-west, Nigeria is 0.244. Hence, E-Governance and green public management has a medium degree of predictive relevance with regards to its effects on sustainable development in Southwest, Nigeria; And for this reason, the structural model specified is relevant and has sufficient predictive quality. On the strength of the PLS-SEM summarized results in table 4.XX (*Adj* R^2 =0.542, p=0.000, Q^2 = 0.244), this study can conclude that E-governance and green public management have significant and substantial joint effect on sustainable development in sustainable development in selected agencies, Southwest, Nigeria hence, the study rejects the null hypothesis three ($H_0$3) which states that E-governance and green public management has no significant joint effect on sustainable development in Southwest, Nigeria.

Endnotes

1. J. F. Hair, B. J. Babin, R. E. *Anderson, Multivariate Data Analysis,* Amason, 2018.

2. A. B. Onamusi, *Entry Mode Strategy and Firm Performance in Emerging Economy: Moderating Role of Organizational Structure and Environmental Turbulence,* **Journal of Sustainable Business and Management Solutions in Emerging Economics,** 2021.

3. J. F. Hair, M. Sarstedt, L. Hopkins, *Partial Least Structural Equation Modeling: Rigorous Appli**cations, Better Results and Higher Acceptance**,* Journal of Long Range Planning, 46, 2013, 1- 12.

4. J. F. Hair, M. Sarstedt, G. T. M. Hult, C.M. Ringle, *A Primer on Partial Least Squares Structural Equation Modeling (PLS – SEM),* Sage Publications Inc., Thousand Oaks, CA, 2017.

Chapter Five

Conclusion

This chapter concludes the study by presenting the summary of findings, conclusions and recommendations. It outlines its major academic and methodological contributions, findings from empirical and theoretical point of view, as well as implications of e-governance and green public management implementations in organizations. Finally, it provides procedures for future studies. As stated in Chapter One, the purpose of this study was to examine e-governance and green public management for sustainable development in selected agencies, Southwest, Nigeria in terms of information communication technology (ICT) usage and green management practices in public sectors in their day to day administration of governance. In addition, the study hypothesized the relationship between e-governance and green public management on sustainable development.

5.1 Summary of Findings

Objective 1: Ascertain the influence of e-governance implementation on sustainable development in selected agencies, Southwest, Nigeria.

Key findings:

The relationship between perceived influence of e-governance implementation on sustainable development in selected agencies, Southwest, Nigeria was confirmed to be directly significant with Q^2 value of 0.195. Hence, E-governance has a medium degree of predictive relevance with regards to its effects on sustainable development in Southwest, Nigeria; And for this reason, the structural model specified is relevant and has sufficient predictive quality. On the strength of the PLS-SEM summarized results in table 4.4 ($Adj\ R^2$ =0.475, p=0.000, Q^2 =0.195), this study can conclude that E-governance have significant and substantial effect on sustainable development in selected agencies, Southwest, Nigeria hence, the study rejects the null hypothesis one ($H_0$1) which states that E-governance has no significant effect on sustainable development in South-west, Nigeria.

The qualitative finding revealed that influence of e-governance implementation on sustainable development in selected agencies, Southwest, Nigeria is based on the strength of government willingness and commitment in the implementation of information communication technology in governance process are more likely to have significant effect on sustainable development in Southwest, Nigeria.

Similarly, the path coefficient of each E-governance dimensions (telecommunication infrastructure, online service delivery and human capacity development shows the relative effect of each dimension of E-governance on sustainable development in Southwest, Nigeria.

That is, all E-governance dimensions have positive and significant effect on sustainable development.

Overall, from the results, human capacity development had the highest relative effect on sustainable development in Southwest, Nigeria, second place is telecommunication infrastructure and lastly, online service delivery. The descriptive findings from senior-level of employees of the selected agencies revealed that government need to do more on e-governance implementation in the administration of governance in all the agencies of government for good public service delivery and more so for sustainable development. As can be seen that several nations are making headways in the use of ICTs for provision of public services and are prepared to put in place the necessary ICT polices to support their initiatives.

The findings showed that continuous use of manual/physical method in the provision of public services is no longer desirable, especially in this emerging global trend of the use of ICT in every aspect of human endeavour has negative effects on Nigeria's public sector and, more significantly, on sustainable development. More particular, qualitative research demonstrates the urgent need to incorporate e-governance and green management in Nigerian public enterprises. This is because the developmental sustainability of public institutions of any country especially Nigeria resides in its ability to adopt the use of e-governance and public management in the administration process for good governance towards achieving sustainable development.

Research evidence showed that Nigeria's public sector is characterized by a bureaucratic organizational structure. The approach to governance and decision-making processes concerning public services remains largely a top-down approach. When designing and

developing government websites, there are little or no consultation with the public on what the design or contents of the government websites should be.

The overall image of E-governance in Nigeria shows a trend of inconsistent public reformation policies and programmes with regard to implementing e-government systems inside of public-sector organizations. Given the foregoing, it is reasonable to believe that the Nigerian government's current efforts to reform the fundamental organizational structures of public-sector organizations and their services by utilizing ICTs to support fundamental organizational functions across all spheres of government are a positive step toward the development and implementation of E-government systems in Nigeria.

Objective 2: Investigate the effect of green public management practices on sustainable development in selected agencies, Southwest, Nigeria.

Key Findings:

The relationship between perceived effect of green public management practices on sustainable development in selected agencies, Southwest, Nigeria was confirmed to be directly significant with Q^2 value of sustainable development in Southwest, Nigeria is 0.207. Hence, green public management has a medium degree of predictive relevance with regards to its effects on sustainable development in Southwest, Nigeria; And for this reason, the structural model specified is relevant and has sufficient predictive quality. On the strength of the PLS-SEM summarized results in table 4.XX (*Adj* R^2 =0.461, p=0.000, Q^2 =0.207), this study can conclude that green public management have significant and substantial effect on sustainable development in sustainable development in selected agencies, Southwest, Nigeria hence, the study rejects the null hypothesis two ($H_0$2) which states that green public management has no significant effect on sustainable development in Southwest, Nigeria.

The qualitative finding revealed that effect of green public management practices on sustainable development in selected agencies, Southwest, Nigeria is moderate and it based on the unwillingness on the part of government, ministries and agencies to enforce most of the polices regulations already in place that will ensure healthy and conducive environment in most of government agencies and also lack of commitment of the employee to adhere to rules and regulations that will ensure healthy and quality of goods and services delivered to the public.

The path coefficient of each green public management dimensions (green procurement and green reputation) shows the relative effect of each green public management dimensions on sustainable development in South-west, Nigeria. All green public management dimensions have positive and significant effect on sustainable development. Overall, from the results, green procurement had the highest relative effect on sustainable development in South-west, Nigeria.

The descriptive findings from senior-personnel of employees of the selected agencies revealed that government need to do more on green public management practice and enforcement of policies concerning green management practices in government agencies for good governance and developmental sustainability.

Objective 3: Examine the influence of e-governance and green public management on sustainable development of selected agencies in Ministry of Communication and Digital Economy in South West, Nigeria.

Key Findings:

The relationship between perceived influence of e-governance and green public management on sustainable development of selected, Southwest, Nigeria was confirmed to be directly

significant with Q^2 value of sustainable development in South-west, Nigeria is 0.244. Hence, e-governance and green public management has a medium degree of predictive relevance with regards to its effects on sustainable development, Southwest, Nigeria; And for this reason, the structural model specified is relevant and has sufficient predictive quality. On the strength of the PLS-SEM summarized results in table 4.XX (*Adj* R^2 =0.542, p=0.000, Q^2 = 0.244), this study can conclude that e-governance and green public management have significant and substantial joint effect on sustainable development in sustainable development in selected agencies, Southwest, Nigeria hence, the study rejects the null hypothesis three ($H_0$3) which states that e-governance and green public management has no significant joint effect on sustainable development in South-west, Nigeria.

With respect to influence e-governance and green public management have on sustainable development of selected agencies, Southwest, Nigeria, and findings show relative effect of both have on sustainable development in Southwest, Nigeria. E-governance and green public management have positive and significant effect on sustainable development.

A major factor that features prominently in E-governance development and reformation of the public-sector organizations Nigeria is the nature of the political environment and government policies regarding innovation and use of ICTs for public service delivery. What governments do, and what they fail to do with regards to use and adoption of technology can either promote or impede the development and implementation of E-governance projects and initiatives. The use of ICTs for public service delivery is increasing, and nations are prepared to implement the required ICT policies to support their efforts.

Overall results show that both e-governance and green public management had relative effect on sustainable development in Southwest, Nigeria. Therefore, efforts should be made to

implement the use of ICT tools in public sectors and to ensure the implementation of laws, rules, and regulations that promote a healthy operating environment for the various government agencies and the building of good public service delivery.

Objective 4: Determine various challenges confronting implementation of e-governance for sustainable development in selected agencies, Southwest, Nigeria.

Key Findings

According to results in Table 4.6, findings on various challenges of e-governance and green public management for sustainable development confronting selected agencies, Southwest, Nigeria indicate, 91.2% of the respondents strongly agree that there is absence of team work, 8.2% agree, 0.3 disagree, and 0.3% strongly disagree. On average, the respondents indicated that there is absence of team work has a mean of 1.10. Results also indicated that 49.8% of the respondents strongly agree that there is unequal dispersion of internet services and facilities, 49.2% agree, and 0.9% disagree. On average, the respondents indicated that there is unequal dispersion of internet services and facilities have a mean of 1.51. Results also indicated that 58.3% of the respondents strongly agree that there is unwillingness on the part of the government to share vital information to the public, 36.0% agree, 5.4% disagree, and 0.3% strongly disagree. On average, the respondents indicate that there is unwillingness on the part of the government to share vital information to the public has a mean of 1.48.

Results also indicated that 65.6% of the respondents strongly agree that there is policy summersault, 31.1% agree, 3.0% disagree, and 0.3% strongly disagree. On average, the respondents indicated that there is policy summersault has a mean of 1.38. Results also indicated that 69.8% of the respondents strongly agree that there is absence of competent

personnel to handle ICT infrastructures, 27.2% agree, 2.1% disagree, and 0.9% strongly disagree. On average, the respondents indicated that there is absence of competent personnel to handle ICT infrastructures has a mean of 1.34. Results also indicated that 67.7% of the respondents strongly agree that there is corruption among government personnel, 28.7% agree, 2.7% disagree, and 0.9% strongly disagree. On average, the respondents indicated that there is corruption among government personnel has a mean of 1.37. All these challenges are critical to successful implementation of e-governance in the organizations investigated**.**

Also in line with quantitative findings and key informant interview (KII) using semi-structured questionnaire method was also adopted to confirm the influence of e-governance and green public management for sustainable development. From the findings, key challenges associated with e-governance and green public management for sustainable development such as challenges your agency encounters using Information Communication Technology (ICT) in public service delivery, most of the challenges your agency encounters in their drive towards sustainable development. The views of the Interviews are summarized as follow:

The unwillingness of the government to provide the public with important information has finally led to the implementation of policies that are not beneficial to the populace and the creation of government websites with little or no information.

Low rate of literacy in information and communication, it is rather tough to gain access and manipulate using official websites to obtain information. There is an unequal dispersion of internet services and facilities, connecting to the internet can be expensive, and in certain cases, the speed of connection to the internet is slow because of low penetration rates.

One of the biggest obstacles in e-governance adoption is the absence of team collaboration and lack of inter-connection or linkage among government institutions. Although each ministry has its own website, there is no connection or connectivity between them, so the system is not interactive.

The findings also showed lack of transparency and accountability in most government institutions, lack of initiative on the part of the relevant agencies to implement e-governance, policy summersault by the government, lack of ICT infrastructure, particularly in rural regions, lack of experienced or trained personnel to handle ICT equipment, and low and inconsistent power supply, which frequently prevents access to the internet. Despite these obstacles, the government is still implementing a number of programs to promote the growth of e-governance in the country.

The analysis of interview schedule questionnaire on challenges of e-governance and green public management on Sustainable Development in Southwest, Nigeria revealed that the major challenges of many agencies accouter are due to lack of transparence and accountability and lack of initiative of e-readiness of respective agencies and government down play in implementation of e-governance that will enhance effective and efficiency service delivery for sustainable development in Nigeria.

5. 2 Conclusion

From the literature review, research visits, and surveys conducted for this research work, the researcher realized that concept of e- governance and green public management reform in Nigerian society is agreeable becoming evident the most powerful determinants with the potential to assist governments, if applied appropriately, to alleviate extreme poverty, promote inclusiveness in governance, provide economic opportunities, ensure healthy life

and environment and also to deliver valuable public-sector services for all the citizens towards sustainable development in both public and private sector in Nigeria as demonstrated in the outcome of the agencies of government surveyed in this research work. A country public service aspiring to become world-class in public service delivery must be able to adopt the use of ICT and practice green management in administration for good governance towards sustainable development.

The current study has provided insight into the realization of the multiple benefits of development of e-governance and green public management administrative operations of many emerging countries especially in Nigeria public institutions due to evolving nature of the global system which includes; improved efficiency, greater transparency in government roles in society, accountability for public office holders, improve the use of government data by the public, improve network and community cohesion and participatory democracy that is more people-centered, build institutional linkages across multiple governmental agencies that promote interconnectedness among various socioeconomic and environmental activities across the country that strengthens the implementation of e-governance in public agencies which in turn promotes efficiency foster cordial relations and reduces wastages of limited and essential resources that could have otherwise been used effectively for the common good of the people that enhances sustainable development of a country.

In addition, the study pointed out that most African country Nigeria inclusive has seen that e-governance is an important innovation tool for improving governance and promoting democracy. Government agencies that are able to network and integrate their services via ICT, electronic governance strengthen ties between the government and the general population. E-governance could be used to reduce the country's ongoing political instability.

If e-governance is correctly applied, Nigeria's culture, openness, and accountability can be enhanced. With the introduction of computerized technologies in all areas of administration, there will be less demand for human resources. Hence, it becomes necessary and imperative for government at all levels especially in Nigeria to embrace e-governance and green management in public agencies to harness the benefits towards achieving sustainable development in Nigeria.

This finding supported the argument of some available evidence in literatures that points to the fact of an increasing number of governments around the world are implementing e-governance platforms to improve citizen participation, monitor government initiatives, ensure accountability, and circulate information between sectors, with the objective of providing a Simple, Moral, Accountable, Responsive and Transparent (SMART) governance towards achieving sustainable developmen. The United Nations E-government surveys over the last decade have also shown examples of how governments around the world have leveraged the powers of ICTs and the Internet to improve relationship between the government, businesses, and the citizens.

The study further revealed some of the obstacles that is hampering the achievements of these benefits; and they are: unwillingness on the side of the government to provide essential information to the public, the unequal dispersion of internet services and facilities, one of the biggest obstacles in e-governance adoption is the absence of Network processes and Cross-agency collaboration processes among government institutions, problem of E-readiness of government ministries and agencies, low literacy of information communication technology, Lack of adequate ICT Infrastructures, low and erratic power supply, policy summersault high-level of investment cost to participate in E-government, lack of adequate government

policies and regulations to support E-government projects, Complexity in understanding ICT systems and management technical abilities, Lack of accountability and transparency on the part of government, workers and organization leaders, resistance to change on the part of some organization Departments and their workers, high costs connected with the acquisition and training of public workers in ICT skills, insufficient funds allocated to e-governance projects, difficulty streamlining various e-government projects already existing or being implemented prior to the creation of the Ministry of Communication Technology, country's digital divide, disparity exist between urban and rural residents or those with low literacy levels in accessing the internet, risk of eroding citizens' privacy and many more must be tackled in order to release the benefits of e-governance for efficient public service delivery for developmental sustainability.

More effort should be made to ensure that public agencies move away from continuous use of manual/physical method in the administration public services that have damaging consequences in public service in Nigeria and more so importantly to sustainable development as it is no more desirable especially in this emerging global trend of the use of ICT in every aspect of human endeavor.

Deliberate efforts must be made to move away from Weberian bureaucratic practices that are hierarchical, rigid, and governed by rules must be actively pursued and encouraged by the government across all public institutions. To achieve these changes in governance, public organizations and its structures must undergo fundamental changes as well. Re-engineering of government activities should be centered on making extensive use of computing systems and Internet enable technologies to revolutionize how public service is created and delivered. ICTs should support governmental reforms in all aspects, placing it at the very core of

government reformation agenda and made to sit at the core of public-services should be a top government priority if E-government is to succeed in Nigeria, Nigerian government must keep in mind that an evolutionary process of government based on restructuring services through technology is a must.

From the theoretically based literatures concerning green management, this finding supported argument strategies of applying green Management innovation to achieving economic sustainability business in order to reduce waste, encourage social responsibility, that embrace environmental goals and strategies that are fully integrated with the organization's goals and plans, without compromising future needs. This implies the opportunity for business to provide a long-term solution that will enhance the quality of the workplace and natural environment towards achieving the core mandate of sustainable development, that is to end poverty, protection of the planet and ensure peace and prosperity for all.

Therefore, it can be concluded that implementing the use of e-governance and green management in Nigerian public organizations is something that needs urgent attention and must be pursued. This is because the developmental sustainability of public institutions of any country especially Nigeria resides in its ability to adopt the use of e-governance and green public management in the administration process for good governance towards achieving sustainable development.

5.3 Recommendations

Based on the quantitative and qualitative findings of this study, the following recommendations were made in line with stated research objectives

Research Objectives 1: Ascertain the influence of e-governance implementation on sustainable development in selected agencies, Southwest, Nigeria.

Recommendations

(1) The Nigerian government and agencies of government should take the initiative to ensure that information and communication technology (ICT) is implemented and used in all government establishments and also ensure team collaboration among government institutions. All government websites should be linked together or interconnected to create an efficient, interactive system.

(2) Government should work to upgrade resources and infrastructure by establishing ICT infrastructure in all government agencies in accordance with cutting-edge global best practices by ensuring steady supply of electricity. These measures will increase efficiency, cut costs, increase accountability for public office holders, promote greater transparency on how the government functions in society, and foster a democracy that is more centered on the needs of its citizens.

(3) Government should develop institutional and national level policy frameworks with the aim of improving on e-governance and green management practice through the execution of policies that are helpful to the population and construction of government websites with easy in gaining access by the citizen for information, training and re-training of staff on (ICT) for maintenance of ICT infrastructure and to increase the rate of Information and Communication Literacy rate in government agencies in order to guarantee effective service delivery and long-term viability of these agencies.

(4) Nigeria must constantly assess and improve its current e-governance capabilities in order to strengthen its telecommunications infrastructures, internet penetration, online service delivery, as well as human capacity development through targeted ICT skills

and knowledge that is capable of quickly accelerating e-governance development in Nigeria, primarily the mobile telephony innovative approach to engage the citizens and enable them to be more involved in government.

(5) Governments should make effort to work closely with manufacturers and sellers of IT and ICT devices with the view to producing more affordable electronic gadgets that people with limited financial resources may afford to purchase and maintain. Additionally, to improve E-government development in Nigeria, government must pay attention to the chronic problem of erratic and low power supply. It is no gainsaying that without power, E-government simply cannot work. Governments are encouraged to commit more resources to improving the generation and distribution of electricity throughout the country.

(6) Efforts towards bridging the digital divide between rural and urban cities must also be stepped up to allow wider participation of citizens. Instead of concentrating national resources on urban areas alone, government should invest more in rural communities which plays host to a larger percentage of the country's population. Enlightenment programmes and trainings that will offer less privileged individuals in the communities with ICT skills that are necessary to operate electronic devices must be prioritized either through direct government interventions or by engagement through the public-private-partnership programmes.

(7) Nigerian Government Information Networks must be developed in a manner that allows for cross-agency collaboration throughout the entire length and breadth of the public-sector organizations in Nigeria. Since E-government thrives on connectivity between government agencies, a whole-of-government approach to service delivery

should be actively pursued and implemented across all tiers of government. Inter-operational frameworks and network standards must be designed and developed in a way that not only allows for cross-agency collaboration, but also facilitate a uniform and a common approach to data and information processing and sharing by government Agencies in a centralized and coordinated manner irrespective of lines their physical geographical locations and useful to the government to improve relationships between the government, businesses and the citizens in a truly transformative approach to governance that facilitates a paradigm shift from a bureaucratic, hierarchy and sluggish forms of government to one that is agile, accountable, effective and efficient in meeting the demands and aspirations of the 21st century information society.

(8) Conclusively, E-governance in Nigeria could be improved by reducing failures of technically oriented IT/ICT projects by conducting careful assessments and evaluation prior to development and implementation of the technical and organizational capacity of Nigeria alongside its organizational structures, cultural values and economic realities.

Research Objectives 2: Investigate the effect of green public management practices on sustainable development in selected, Southwest, Nigeria.

Recommendations

(1) Government, Ministries and agencies should work to create new environmental policies and ensure that majority of existing ones are enforced in order to provide a healthy and conducive environment in most government agencies.

(2) Organizations should ensure staff adherence to rules and regulations that promote a healthy way of life within the environment and high-quality goods and services for the general public.

(3) The organization must take into consideration their social responsibility within the environment they operate and ensure compliance.

(4) Government, Ministries and agencies should put in development programmes that will be at the forefront of advocating for capacity building through educational and training programmes in green management and similar areas.

(5) Governments must demonstrate a sincere interest and commitment to the reform process, to achieve a reformed public-sector organization that can respond to the demands of the citizens in a political environment that is transformative in nature and supportive in its approach to "change" initiatives.

Research Objectives 3: Examine the influence of e-governance and green public management on sustainable development of selected, Southwest, Nigeria.

Recommendations

(1) Private and public organizations should eliminate or drastically reduce the use of the manual/physical method in the delivery of public services; this practice is no longer desirable, especially in light of the emerging global trend toward the integration of ICT into all facets of human endeavor. It slows down government administrative procedures with its bureaucratic bottleneck that stifles progress, breeds corruption and inefficiency, which have negative effects on Nigeria's public sector. Instead, they should adopt the SMART (Simple, Moral, Accountable, Responsive, and Transparent) ICT administration process to increase citizen participation, monitor government

initiatives, ensure accountability, enhance team collaboration and inter-connection or linkage between every ministry web page and help in easy and fast circulate of information between sectors towards achieving sustainable development.

(2) To maintain the long-term viability of public institutions for enhanced public service delivery, e-governance and green management implementation in Nigerian public organizations require immediate attention in all government institutions.

(3) Public institutions should endeavor to apply green Management innovation and enact environmental policies, goals and strategies in order to reduce waste, achieve economic sustainability in business, encourage social responsibility that will not compromise future needs and also provide a long-term solution that enhances the quality of workplace and natural environment towards achieving sustainable development.

(4) The government, ministries, and agencies should promote the creation and implementation of national policies and plans to encourage e-governance-related activities in Nigeria. It is also important for government and agencies to develop national plans and policies to encourage the use of ICTs in national and economic sectors. Government should be at the forefront of advocating for the development of capacity through educational and training programs in ICTs and related fields. A political environment that is transformative in nature and supportive in its approach to "change" initiatives is necessary to achieve meaningful reforms that demand sincere interest and commitment on the part of governments. This is necessary to achieve a reformed public-sector organization that can respond to the demands of the citizens.

Research Objectives 4: Determine challenges confronting implementation of e-governance for sustainable development in selected agencies, Southwest, Nigeria.

Recommendations

(1) Government should ensure that every ministry and agencies has its own website to allow easy but inter-connection or linkage between them, to promote agency collaboration among government institutions and shift from traditional Weberian hierarchical models and reduction of bureaucratic bottlenecks related with public agencies, ensuring that decentralizing government activities through inter-departmental linkage, information exchange and networking processes by various agencies strengthens the development of e-governance in Nigerian public agencies, minimize time, space, manpower and reduce cost of government operations because collaborating and agencies linkage tends to share resources and data base across agency boundaries that foster strong friendly relationship among various socioeconomic and environmental activities across the country. Organization leaders in Nigeria government, information Networks must see themselves as Network collaborators and change facilitators with a common mind working towards a common set of Network goals for better public service delivery.

(2) Government should make it easy for citizen to access and use official websites to obtain information, whiling lowering the cost of excessing internet service in Nigeria, higher penetration rate to enable increase in the speed connected to the internet in order to increase the level of information and communication literacy and also for equal dispersion of internet service and facility among the citizen.

(3) Government should implement a number of initiatives to promote the development of ICT infrastructure in the nation, offer incentives like giving citizens more control over certain types of services that might otherwise differ from government preferences, and other enabling factors by governments to encourage citizen's acceptance the use E-governance, and ensure constant supply of electricity for maintenance of these infrastructures and for easy access of internet with overall goals of improving the relationships of government and citizens, delivering effective and efficient public service, promoting accountability and transparency in government, and encouraging citizen participation in governance.

(4) To remain relevant and alive to the needs of the modern society, Nigerians must adopt the concept of New Public Management (NPM) reforms in various government agencies. These reforms will increase efficiency and encourage an entrepreneurial and competitive culture similar to that found in private-sector by utilizing the creative capabilities of ICTs to develop digital solutions to the economic, political, social, and environmental needs of the Nigerian people, which should be planned to take into account the socio-technical realities and cultural values of the locals to avoid unexpected consequences.

(5) Government's desire to support notions of innovation in the public-sector organizations should be reflected in the policy thrust for an all-inclusive reformation agenda, not only as lip service but as active participation and driving force behind such changes. In order to promote good governance and encourage democratic participation and values for all citizens, the government should, among other things, establish practical guidelines and support mechanisms that encourage the

development, implementation, and use of ICTs within and throughout public-sector organizations.

(6) Ministries of government should be willing to provide essential information for better construction of government websites that will eventually resulted in the execution of policies that will be helpful to the public.

(7) Government should ensure transparence in it operation to avoid corruption among government personnel by implementing the use of ICT tools that is Simple, Moral, Accountable, Responsive and Transparent (SMART) in government establishment.

(8) Government should ensure the security of life and properties of the citizen in these ministries and agencies. It is only in a conducive and secured environment that people can operate, local and foreign investors can invest their resources. So government needs to work in securing the life of the citizens for good service and for economic growth that will enhance growth and development of a country.

(9) Ministry should ensure the use of trained and competent personnel to handle ICT infrastructures to avoid waste of resources in the purchase of ICT infrastructure without competent personnel to handle it.

(10) Government should endeavor to develop good policies framework, stick to them and avoid policy summersault, upheld the principle of rule of law at all times and ensure enforcement both public and private organization as well as citizens for healthy life and quality of goods and services provided to the public.

(11) The government should actively pursue programmes that allow for open and collaborative system of governance. An open and collaborative system of governance for Nigeria should entail a gradual and consistent move on the side of the government

to reform the public-sector organizations, focusing on achieving a paradigm shift from the bureaucratic and top-down governance approach currently practised in Nigeria to a system of governance which is innovative, proactive and responsive to the demands and aspirations of the citizens through value co-creation in public services.

(12) The study establish the fact that it is important to note that for e-governance and green public management implementation to succeed anywhere in Nigeria, all the challenges and critical components vis-à-vis Technology, Organization, and the Environment policy issues raised must be considered with the citizens at the center while at the same time maintaining a careful balance of a top-down, bottom-up approach to governance hindering e-governance and green public management implementation are addressed by the government, ministries and agencies. Efforts should be made to put in place institutions that can effectively tackle corruption at every level of government and ensure that public officials are held accountable for their actions.

5.4 Contributions to Knowledge

This study is in response to high level influence e-governance and green public management implementation and use of ICT have among staff in public agencies in Nigeria in order to develop measures that will enhance sustainable development. Against this background, this study provided empirical display on the determinants of e-governance and green public management (influence of e-governance implementation, effect of green public management practices, influence of e-governance and green public management on sustainable development and various challenges confronting implementation of e-governance) for

sustainable development. Thus, providing institutional and national level policy frameworks that aims to improve public service delivery towards sustainable development in government agencies in Nigeria.

It also bridges methodological gap towards the strength of the existing literature. The theoretical contributions that this study has made to literature include:

(1) This study contributed to existing literature on e-governance and green public management on sustainable development

(2) It has identified and suggested areas for further study, in improving e-governance and green public management practices locally and internationally.

(3) This study has gathered and analyzed data that can serve as foundation for longitudinal studies on the study area, and that will enhance robust future researches.

(4) Alongside other existing literature, this work provided indicators on how best to adopt the e-governance and green public management in Nigeria agencies.

(5) The findings provide a model linking determinants of e-governance and green public management intention on sustainable development.

The methodological contributions that this study has made to existing knowledge include:

(1) This study established the usefulness of multivariate analysis, specifically the use of PLS- Structural Equation Modeling in determining the confirmatory factor analysis (CFA). This provides insights on the interrelatedness between latent and observed variables, that is, e-governance and green public management (influence of e-governance implementation, effect of green public management practices, influence of e-governance and green public management on sustainable development and

various challenges confronting implementation of e-governance) for sustainable development in Nigeria's public agencies.

(2) This study also applied robust, statistical, analytical and deductive techniques to establish the interrelatedness of dormant concepts in the study.

(3) The study has also showed that sustainable development has no significant effect between e-governance and green public management.

5.5 Suggested Areas of Further Research

Limitations of the Study and Suggestions for Future Research

There are limitations to this study as it will be with any research. The acknowledged limitations in this study have given direction for further studies as numerated below:

(1) The study was limited in that it covered only a few government agencies in the ministry of communication and digital economy, considering the number of ministries and agencies in Nigeria.

It would have been much more representative if it covered more public and private organization in Nigeria, hence the researcher suggests that a future study should cover more ministries and agencies as well as private establishment in Nigeria

(6) The study targeted only the adoption of ICT tools and green management practice in public agencies without consideration for issues requiring manual/physical presences maintenance of this ICT equipment's and their safety as well as welfare of staff in this government agencies.

Future research can extend the scope to include maintenance of ICT equipment's and their safety as well as welfare of staff government agencies

(7) The study focused on some selected concepts to measure determinants of e-governance and green management (influence of e-governance implementation, effect of green public management practices, influence of e-governance and green public management on sustainable development and various challenges confronting implementation of e-governance) on sustainable development.

There could be other contributing factors that influence and effect e-governance and green management to the departure or the quit decision process and their preferred destinations that could be looked into by future researchers.

(8) The study adopted a cross-sectional time horizon in which the data was a snapshot at a particular time and in no means can the findings of the research be concluded for more government agencies in Nigeria.

Longitudinal research is suggested for future engagement to understand the trends regarding the influence and effect of adoption e-governance and green management practice in various agencies of government in Nigeria.

(9) Network process, Interoperability framework, and Cross agency collaboration that are most beneficial to government, ministries and agencies could be used from further study that investigates whether there exist some form of interconnection or

relationships between the various concept and whether these elements can strengthen Nigeria Government Information Networks (GINs) of integration services and structural reformations of the government public-sector organizations in Nigeria.

(10) Other E-governance researchers might find it interesting to research on why and how public-sector organizations in Nigeria could leverage on new and emerging technologies on existing models of E-governance and green management frameworks and best practices in Nigeria to improve public-sector service delivery and e-participation among the citizens for sustainable development.

(11) Finally, it is suggested that the study be projected to cover other organization, including both the public and private sectors in Nigeria.

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Appendix i

Research Questionnaire

Department of Politics and International Relations

Programme Public Administration

Lead City University, Ibadan

Dear Respondent,

I am a Ph.D. student at the Department of Politics and International Relations, Faculty of Management and Social Sciences, Lead City University. I am researching on E-Governance and Green Public Management for Sustainable Development of Selected Agencies, Southwest Nigeria.

I would like to request your cooperation in completing the attached questionnaire. The question seeks your opinions regarding the use of information technology in governance for enhance efficiency and effective public service delivery for sustainable development in

Nigeria. This is solely for academic purpose and all information provided will be kept confidential.

The survey will take approximately 10 minutes. Your contribution will be greatly appreciated.

If you have any question regarding this project, please feel free to e-mail me at diala.augusta@lcu.edu.ng

Thank you.

Diala Augusta, O.
Department of Politics and International Relations
Faculty of Management and Social Science
Lead City University

Appendix ii

Section A

Personal Details/ Generational Differences

Please provide the following information about yourself by marking a "√" on one of the blank spaces provided.

1. Institution of the Respondents

(a). Nigerian Communications Commission (NCC) Ibadan and Lagos ☐

(b). National Information Technology Development Agency (NITDA) Ibadan and Lagos ☐

(c) National Identity Management Commission (NIMC) Ibadan ☐

(d). Nigerian Postal Service (NIPOST) Ibadan ☐

2. Age : 20 – 38 years ☐ 39 – 54 years ☐ 55 – 73 years ☐

3. Gender: Female ☐ Male ☐

4. Marital status: Single ☐ Married ☐ Separated ☐

5. Educational qualification years of working experience:

(a) 0–3 years ☐ (b) 4-6 years ☐ (c) 7-9 years ☐

(d) 10-12 years ☐ (e) 13-15 years ☐ (f) 16 years and above ☐

6. Years of working experience at Present Agency

(a) 0–3 years ☐ (b) 4-6 years ☐ (c) 7-9 years ☐

(d) 10-12 years ☐ (e) 13-15 ☐ (f) 16 years and above ☐

8. **Present Position**

(a) Deputy Director ☐ (b) Chief Administrative Officer ☐

(c) Assistant Chief Administrative Officer ☐ (d) Principal Administrative Officer ☐

(e) Senior Administrative Officer ☐ (f) Administrative Officer 1 ☐

(g) Administrative Officer 2 ☐ (h) Clerical Officer ☐

Section B

E-Governance of your Organization.

Please indicate with a tick, which number most appropriately captures your response to the statements. Key: 1= Strongly Agree (SA) 2 = Agree (A) 3 = Disagree (DA) 4 = Strongly Disagree (SDA). We are interested in the number that best shows your intention.

S/N	**E-Governance Implementations**	SA	A	DA	SDA
Online Service Delivery					
1.	Citizens find it easy to locate information on e-government platforms in my country.				
2.	Ever since the emergence of e-governance in my country, government processes, businesses has been simplified.				
3.	Online service delivery of my agency is top-notch.				
4.	Record keeping on e-governance platforms in my country has been fantastic.				
Telecommunication Infrastructure					
5.	E-governance in government agencies has been used to evaluate government performance of my country overtime				
6.	The Information Communication Technology (ICT) activities of government agencies, has promoted accountability and transparency among government officials.				
7.	The Information Communication Technology ICT activities in government agencies have brought about free flow of information				

	among government parastatals.				
8.	E-governance activities of Ministry of Communication and Digital Economy have simplified the way and manner the government of my country carry out her day-to-day operations.				
9.	The e-governance practices of government agencies has brought about new leadership style, new methods of making decisions on policies and investment				
10.	E-commerce activities of my country were as result of e-governance policies in Ministry of Communication and Digital Economy				
Human Capacity Development					
11.	E-governance in government agencies has fostered inter-government relationships in my country.				
12.	Since the creation of e-governance platforms in my country, more jobs have been created.				
13.	To large extent e-governance of government agencies has been economically benefiting to my country at large.				
14.	I think e-governance should never be scrapped by future governments rather it should be sustained				
15.	All in all, e-governance has done more good than harm to the economic development of my country.				

Section C:

Green Public Management of your Organization.

Please indicate with a tick, which number most appropriately captures your response to the statements. Key: 1= Strongly Agree (SA) 2 = Agree (A) 3 = Disagree (DA) 4 = Strongly Disagree (SDA). We are interested in the number that best shows your intention.

S/N	**Green Public Management of your Organization**	SA	A	DA	SDA
Green Reputation					
1.	System of operation has improved overtime.				
2.	Managerial practices in government agencies have brought about operational efficiency.				
3.	I can say that public service operation has improved generally overtime in my country.				
Green Economy					
4.	Cost efficiency and service effectiveness has improved tremendously in government agencies.				
5.	The adoption of green public management in government agencies has brought about restructuring				

	and reduction in the size of employees in the public sector.				
6.	Reforms introduced in the public sector of my country have really been effective.				
7.	Green public management in my country enabled the government of the day save a lot of resources.				
8.	I will recommend that the government of the day should take green public management practices seriously.				
9.	I think every parasternal should take cognizance of green public management.				
10.	All in all, green public management is a welcome development in government agencies				

Section D:

Sustainable development of your organization

Please indicate with a tick, which number most appropriately captures your response to the statements. Key: 1= Strongly Agree (SA) 2 = Agree (A) 3 = Disagree (DA) 4 = Strongly Disagree (SDA). We are interested in the number that best shows your intention.

S/N	**Economic Sustainability**	SA	A	DA	SDA
1.	Government agencies see that economic development is necessary for sustainable development in my community.				
2.	Government agencies uphold the tenet that improving people's health and opportunities for a good life contribute to sustainable development.				
3.	Access to good education is one of the goals of government agencies.				
4.	The operations of government agencies have impacted lots of lives economically.				
5.	The economic operations of government agencies have done more good than harm to her employees.				
Social Sustainability					
6.	To a large extent, I think government agencies has carried out her social corporate responsibility efficiently.				
7.	Activities of government agencies are pretty much socially impacting to communities around her.				

8.	ICT activities of Ministry of Communication and Digital Economy recognised by international bodies.				
9.	I have a strong feeling that in the nearest future, government agencies, ICT activities will attract much investment to my country.				
10.	All in all the social activities of government agencies is nationally impacting.				
Environmental Sustainability Development					
11.	In government agencies, our ICT activities have been extended to communities around her.				
12.	I think that government agencies has a smooth running relationship with other government agencies in the country.				
13.	Government agencies to a large extent have fulfilled United nations sustainable development goals as regards environmental sustainable development.				
14.	Government agencies are known for her innovative prowess when it comes to carrying out ICT functions.				
15.	All in all, the goals of government agencies are in tandem with the overall goals of United Nations goals on sustainable development.				

Section E:

Challenges confronting implementation of e-governance in your organization

Please indicate with a tick, which number most appropriately captures your response to the statements. Key: 1= Strongly Agree (SA) 2 = Agree (A) 3 = Disagree (DA) 4 = Strongly Disagree (SDA). We are interested in the number that best shows your intention.

S/N	**Challenges Confronting Implementation of E-governance in your organization**	SA	A	DA	SDA
1.	Absence of team work				
2.	Unequal dispersion of internet services and facilities				
3.	Unwillingness on the part of the government to share vital information to the public				
4.	Policy summersault				
5.	Absence of competent personnel to handle ICT infrastructures.				
6.	Corruption among government personnel				

Appendix iii

Interview Schedule Questionnaire on E-Governance and Green Public Management for Sustainable Development

1. Kindly mention certain challenges your agency encounters on the use of Information Communication Technology (ICT) in governance

2. Kindly mention some challenges your agency encounters in delivery of public service to the public

3. Kindly mention most of the challenges your agency encounters on their drive towards

sustainable development.

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Biodata

A. Personal Data

Full Name:	Diala Augusta Odiche
Address:	No. 11, Latinwo Olaifa Close, Askar Paint Road, Eleyele, Ibadan
E-mail:	augustaodiche329@gmail.com
Phone No:	08068104571
Date of Birth:	August 28, 1972
Place of Birth:	Uba Umuaka, Njaba LG, Imo State
Nationality:	Nigeria
Next of Kin:	Mr. Modesty Diala
Address:	No. 11, Latinwo Olaifa Close, Askar Paint Road, Eleyele, Ibadan

B. Educational Background

2020 - 2023	:	Lead City University, Ibadan Oyo State (PhD) in Public Administration
2014 – 2016	:	University of Ibadan, Oyo State (M.Sc), Political Science

2007 - 2013	:	University of Ibadan, Oyo State (B.Sc), Political Science
2000 – 2002	:	University of Ibadan, Oyo State (MPP), Personnel Psychology
1994 – 1997	:	The Polytechnic Ibadan, Oyo State (HND), Secretarial Administration
1990 – 1992	:	The Federal Polytechnic Oko, Anambra State (OND), Secretarial Studies
1999		Apex Computers, Ibadan (Certificate in Desktop Publishing)
1983 – 1988	:	Girls Technical secondary School Umuaka, Imo State, General Certificate in Education (G. C. E)
1977 – 1983	:	Amakohia Uratta Primary School, Owerri

C. Working Experience with Dates

Lead City University, Ibadan (Senior Assistant Registrar)	-	2005 – Till Date
NITEL Ibadan (Customer Complaint Service Officer)	-	2002 – 2005
Adefag Computers (Administrative /Sales Officer, NYSC)	-	1997 – 1998
IITA International Institute for Tropical Agriculture, Ibadan (Computer Operator, During Industrial Training IT)	-	1993 – 1994

D. Membership of Academic and Professional Bodies

i. Associate Member, Nigerian Institute of Management (AMNIM)

E. Publications

Learned Journals

i. Digitalization of Election Process in Nigeria: Prospects and Challenges, Zenith International Journal of Multidisciplinary Journal Research, 12(12), 2022.

ii. Critical Overview of the Relevance of E-Governance to Sustainable Development, International Journal of Human Resource and Social Sciences 9(12), 2022

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Signature **Date**

University Compliance Certification

This is to certify that this thesis by Diala Augusta Odiche with Matriculation number LCU/PG/001486 Department of Public Administration, Faculty of Management and Social Sciences, Lead City University, Ibadan is in full compliance with the approved University Format and Style.

…….. ……

Name Date