Examination of the Effect of Information and Communication Technology (ICT) on Public Fund Management of Ekiti State, Nigeria

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DOI: 10.56201/jafm.v9.no7.2023.pg80.96

Abstract
The extent to which Information and communication technology (ICT) has been effectively utilized in the management of public funds remains a subject of inquiry and exploration. This study sought to explore the influence of ICT on the management of public funds in public institutions located in Ekiti State, Nigeria. Specifically, the study examined the effects of data collection management (DCM), information security management (ISM), and digital communication infrastructure (DCI) on public funds management. To gather the necessary data, a survey research design was employed, and primary data was collected. The target respondents included government officials, financial officers, ICT professionals, and civil society representatives. To ensure the inclusion of individuals with expertise and knowledge in the subject matter, a purposive sampling technique was utilized to distribute questionnaires. A total of 425 questionnaires were distributed to various public institutions, resulting in 358 completed responses. The research instrument's reliability was assessed using the Cronbach Alpha test, which yielded an average score of 80%. Descriptive statistics and regression analysis were employed to analyze the collected data. The findings of the study revealed a significant positive effect between data collection management, information security management, and digital communication infrastructure with public funds management in public institutions. Consequently, the study concluded that ICT plays a vital role in enhancing the management of public funds in Ekiti State, Nigeria. Effective practices in data collection management, information security management, and digital communication infrastructure were

found to positively influence public funds management. As a recommendation, the study suggests that public institutions in Ekiti State prioritize the enhancement of their data collection management practices to improve their fund management processes.

Keywords: *Information and communication technology, data collection management, information security management, digital communication infrastructure, public funds management, public institutions in Ekiti State.*

1. INTRODUCTION

Effective public fund management is crucial for the sustainable development and efficient governance of any state or nation. The utilization of Information and Communication Technology (ICT) has emerged as a powerful tool in enhancing various aspects of public administration, including financial management (Nagata, 2019). By leveraging ICT solutions, governments can streamline processes, improve transparency, and strengthen accountability in the management of public funds. Nigeria, like many other countries, has recognized the potential benefits of incorporating ICT in public financial management (Enomate & Audu, 2022).

This growth has not been without challenges, as budget padding, financial scandals, fraudulent activities, and mismanagement of public funds have plagued public institutions in Nigeria. The increasing occurrence of financial fraud and mismanagement of public funds globally has led to a growing recognition of the importance of ICT in detecting and preventing such activities. However, the extent to which ICT has been effectively utilized in the management of public funds remains a subject of inquiry and exploration (Abdulle et al., 2019). This study focuses specifically on the Ekiti State in Nigeria.

The effective management of public funds is crucial for achieving developmental goals, providing essential services to citizens, and ensuring economic stability (Makubu & Christopher, 2021). Traditionally, public fund management has been characterized by manual and paper-based processes, which are prone to inefficiencies, errors, and even corruption. ICT solutions, on the other hand, offer the potential to revolutionize public financial management by automating processes, improving data accuracy, facilitating real-time monitoring, and enhancing decision-making (Al-Qudah, 2019).

The objective of this study is to comprehensively analyze the impact of ICT on public fund management in Ekiti State, Nigeria. By assessing the current state of ICT adoption and exploring its effects on various dimensions of public financial management, including budgeting, revenue collection, expenditure tracking, and financial reporting, valuable insights can be gained to inform policy recommendations and strategies for improvement. Additionally, this research aims to identify the challenges and barriers faced in implementing ICT-based public fund management systems in Ekiti State. By understanding these obstacles, appropriate measures can be developed to address them and ensure the successful integration of ICT solutions in the financial management practices of the state.

To accomplish these objectives, a qualitative research approach was employed. Data was gathered through surveys and obtained through interviews, well-structured questionnaires, and focus group

discussions, was also utilized. The study engaged key stakeholders involved in public fund management, including government officials, financial officers, ICT professionals, and civil society representatives. The findings of this research are expected to contribute to the existing body of knowledge on ICT-enabled public fund management in Nigeria and provide practical insights for policymakers, administrators, and practitioners involved in financial governance and public administration. The outcomes will inform evidence-based decision-making and support the implementation of effective ICT strategies to enhance the management of public funds in Ekiti State and potentially serve as a model for other regions in Nigeria.

2. LITERATURE REVIEW

2.1 Conceptual Review

2.1.1 Information and Communication Technology (ICT)

Information and Communication Technology (ICT) refers to the broad range of technologies, tools, and systems that facilitate the acquisition, storage, processing, transmission, and exchange of information and communication (Belfo et al., 2015). It encompasses hardware, software, networks, and digital technologies that enable individuals, organizations, and societies to access, create, manipulate, and share information effectively (Colin et al., 2015). ICT encompasses various components and applications, including computers, laptops, mobile devices, telecommunications networks, internet services, software applications, databases, cloud computing, digital media, and other digital technologies (Aristovnik, 2012). It involves the use of these technologies to gather, store, retrieve, analyze, and disseminate information, as well as to communicate and collaborate with others across different platforms and channels.

ICT plays a crucial role in transforming and shaping numerous aspects of modern life, including education, healthcare, business, government, entertainment, and social interactions. It enables efficient data management, automation of processes, remote communication and collaboration, access to global information resources, real-time decision-making, and enhanced connectivity between individuals and systems (Akinboade, 2019). The wide-ranging applications of ICT include e-commerce, online banking, digital communication (email, instant messaging, social media), online education and e-learning, telemedicine, digital governance, smart cities, and digital entertainment platforms, among many others (Ajape et al., 2018). ICT has become an integral part of contemporary society, driving innovation, economic growth, and social development. ICT encompasses the technologies and systems that enable the effective handling and exchange of information and communication. It revolutionizes the way individuals, organizations, and societies access, process, and share information, leading to increased efficiency, connectivity, and collaboration in various domains of human activity (Bolaji et al., 2019).

2.1.1.1 Data Collection Management

Data collection management refers to the process of systematically planning, organizing and controlling the collection, storage, and retrieval of data for research, analysis, or other purposes. It involves establishing procedures, protocols, and tools to ensure the efficient and accurate acquisition and management of data throughout its lifecycle (Osaloni et al., 2023). This involves determining the objectives of data collection, identifying the specific data needed, and designing a data collection strategy that aligns with research or project goals. Planning also includes defining

data collection methods, selecting appropriate tools or instruments, and establishing a timeline for data collection activities (Anoke & Fabian, 2022). Developing a data collection protocol involves creating detailed guidelines and instructions for data collectors or researchers. This includes specifying the procedures for data collection, defining variables, ensuring standardization of data collection methods, and addressing ethical considerations and data protection (Thottoli, 2022).

Data collected needs to be stored and organized in a systematic manner to facilitate efficient data retrieval and analysis. This may involve using databases, spreadsheets, or other data management systems. Proper documentation, labeling, and organization of data are essential to maintain data integrity and accessibility. Managing data collection includes implementing measures to protect data security and confidentiality (Ratheeswari, 2018). This may involve applying encryption techniques, access controls, anonymization or de-identification of personal information, and adherence to data protection regulations and ethical guidelines. Comprehensive documentation of data collection methods, instruments, variables, and any modifications made during the process is crucial for data transparency, replicability, and reuse. Metadata, which provides information about the data, such as its structure, format, and context, enhance understanding and interpretation of the collected data. Effective data collection management practices contribute to the reliability, validity, and integrity of collected data, supporting robust analysis, interpretation, and decision-making based on the data (Sharifah & Noorhayati, 2017).

2.1.1.2 Information Security Management

Information security management refers to the systematic approach and set of processes and practices implemented by an organization to protect its information assets from unauthorized access, disclosure, alteration, destruction, and disruption (Thabit et al., 2021). It involves the identification, assessment, and mitigation of information security risks to ensure the confidentiality, integrity, and availability of sensitive and valuable information. The process of identifying and evaluating potential risks and vulnerabilities to the organization's information assets. This includes assessing the likelihood and impact of threats, vulnerabilities, and potential security incidents (Elsaadani, 2015). Establishing a framework of policies, procedures, and guidelines that define the organization's information security objectives, responsibilities, and acceptable use of information assets. This includes policies on access control, data classification, incident response, and employee awareness and training (Imene & Imhanzenobe, 2020).

Implementing mechanisms and controls to manage user access to information resources. This includes authentication methods, user account management, authorization mechanisms, and privilege management to ensure that only authorized individuals can access and modify sensitive information (Hong et al., 2003). Information security management aims to establish a comprehensive and proactive approach to protect the confidentiality, integrity, and availability of information assets. By implementing appropriate controls and practices, organizations can mitigate risks, safeguard sensitive data, maintain customer trust, and prevent financial and reputational damage resulting from security incidents (Oyinkansola, 2018).

2.1.1.3 Digital Communication Infrastructure

Digital communication infrastructure refers to the underlying technological systems, networks, and resources that enable the transmission, exchange, and processing of digital information and

communication. It encompasses the hardware, software, protocols, and connectivity technologies that support the digital communication ecosystem (Peace et al., 2020). This includes the physical and virtual networks that enable the transmission of data, voice, and video communications. It comprises wired and wireless communication networks, such as fiber optic cables, routers, switches, cellular towers, and satellite systems. Monday (2013) opined that infrastructure required to provide access to the Internet, including Internet service providers (ISPs), data centers, internet exchange points (IXPs), and network protocols like TCP/IP (Transmission Control Protocol/Internet Protocol).

Infrastructure for traditional and digital telecommunication services, such as landline telephone networks, mobile cellular networks, voice-over IP (VoIP) systems, and communication protocols like SIP (Session Initiation Protocol). The network of interconnected devices, sensors, and objects that communicate and exchange data over the internet. IoT infrastructure includes devices, gateways, connectivity protocols, and data processing platforms (Lechman, 2015). Standards and protocols for transmitting and exchanging digital information, such as Ethernet, Wi-Fi, Bluetooth, HTTP (Hypertext Transfer Protocol), and HTTPS (Hypertext Transfer Protocol Secure). Digital communication infrastructure is critical for supporting a wide range of communication technologies and services in today's interconnected world (Elsaadani, 2020). It enables seamless and efficient communication across various channels, facilitates data exchange, collaboration, and enables the delivery of digital services to individuals, businesses, and governments. A strong and reliable digital communication infrastructure is essential for economic development, social connectivity, and technological innovation (Abdulle et al., 2019).

2.1.2 Public Fund Management

Public fund management refers to the process and activities involved in effectively and efficiently managing the financial resources of a government or public sector entity. It encompasses the planning, allocation, utilization, monitoring, and control of public funds to ensure their optimal use and achieve desired outcomes (Nagata, 2019). The process of formulating and implementing budgets that outline the planned revenues and expenditures of a government or public entity over a specific period. It involves setting financial targets, allocating funds to different programs and activities, and prioritizing spending based on policy goals and resource availability. The collection, administration, and control of government revenues from various sources, such as taxes, fees, fines, grants, and investments (Makubu & Christopher, 2021). It involves ensuring proper revenue accounting, compliance with tax regulations, and implementing measures to prevent revenue leakages and enhance revenue generation.

The management of government expenditures in line with approved budgets and financial regulations. This includes processes such as procurement, contract management, payment authorization, and financial controls to ensure transparency, accountability, and value for money in public spending. The preparation and dissemination of financial statements, reports, and disclosures that provide an accurate and transparent overview of the financial activities and position of the government or public entity. It involves adhering to accounting standards, conducting audits, and promoting accountability to stakeholders. The management of cash flows, cash balances, and short-term investments of the government or public entity. It includes cash forecasting, liquidity management, optimizing cash utilization, and investing surplus funds prudently to maximize returns and meet financial obligations.

The identification, assessment, and mitigation of financial risks faced by the government or public entity. This includes managing risks related to revenue volatility, expenditure overruns, fraud, corruption, and external economic factors. Risk management strategies aim to safeguard public funds, ensure compliance with regulations, and enhance financial stability. The ongoing monitoring and evaluation of financial performance, program outcomes, and service delivery to assess the effectiveness and efficiency of public fund management (Al-Qudat, 2019). It involves setting performance indicators, conducting evaluations, and using the findings to improve decision-making and resource allocation. Effective public fund management is crucial for promoting fiscal discipline, achieving public policy objectives, and maintaining public trust. It requires sound financial management practices, strong internal controls, transparency, and accountability in the use of public resources (Bolaji et al., 2019).

2.1.2 Information and Communication Technology (ICT) and Public Fund Management

Information and communication technology (ICT) plays a significant role in enhancing public fund management processes and outcomes. By leveraging ICT tools, technologies, and systems, governments and public sector entities can streamline financial operations, improve transparency, strengthen accountability, and enhance overall efficiency in managing public funds. Here are some key areas where ICT contributes to public fund management: ICT enables the implementation of robust financial management systems and software that automate various financial processes, such as budgeting, accounting, and reporting (Akinboade, 2020). These systems help in the accurate and timely recording of financial transactions, consolidation of financial data, and generation of comprehensive reports for decision-making and accountability purposes. ICT facilitates the adoption of electronic payment systems, such as online banking, electronic fund transfers, and mobile payment platforms. These systems enable efficient and secure electronic disbursement of funds, reducing the reliance on cash-based transactions and minimizing the risk of fraud and corruption (Imene & Imhanzenobe, 2020).

ICT tools can assist in budget planning, forecasting, and monitoring activities. Advanced budgeting software allows for the development and tracking of budget plans, real-time monitoring of expenditures against allocated funds, and automated alerts and notifications for budget deviations. This improves financial control, ensures adherence to budgetary constraints, and enables effective financial decision-making (Anoke & Fabian, 2022). ICT enables the collection, storage, and analysis of financial data, providing valuable insights into public fund management. Data analytics tools and business intelligence systems help identify trends, patterns, and anomalies in financial information, supporting evidence-based decision-making and improving financial reporting accuracy and transparency. ICT can be utilized to enhance financial transparency by making public financial data easily accessible and understandable to citizens. Open data initiatives and online portals enable the public to access budgetary information, expenditure details, and financial reports, fostering greater accountability and public participation in the management of public funds (Thabit et al., 2021).

ICT assists in strengthening internal controls and facilitating auditing processes in public fund management. It enables the implementation of automated control mechanisms, such as segregation of duties, access controls, and audit trails, reducing the risk of financial mismanagement and facilitating independent audits for ensuring compliance and accountability. ICT tools, such as web-based platforms and collaborative software, support effective communication and collaboration

among stakeholders involved in public fund management (Oyinkola, 2018). It allows for seamless coordination between finance departments, budget units, auditors, and other stakeholders, enabling efficient information sharing and decision-making. By harnessing the power of ICT, governments and public sector entities can enhance the efficiency, transparency, and accountability of public fund management processes. It improves financial control, reduces operational costs, mitigates risks, and ultimately contributes to better utilization of public resources for the benefit of citizens and the achievement of public policy goals (Monday, 2013).

2.2 Theoretical Framework

The study's theoretical framework is the Technology Acceptance Model (TAM), developed by Fred Davis in 1986. TAM predicts and explains individuals' behavior in adopting or rejecting information and communication technology (ICT) usage. It focuses on perceived usefulness and perceived ease of use as influential factors. Perceived usefulness relates to how individuals believe a system enhances their work performance, while perceived ease of use refers to the perceived effortlessness of using the system. TAM is widely used and supported, and it provides insights into the relationships between external variables, user perceptions, attitudes, and actual user behavior (Chuttu, 2009).

In public fund management, the adoption and effective utilization of ICT is crucial for enhancing efficiency and transparency. The TAM is applied in this study to assess the adoption and usage of ICT in public fund management within public institutions in Ekiti State, Nigeria. By using TAM, the study aims to understand users' perceptions of ICT usefulness and ease of use in this context and identify factors influencing their intention to utilize ICT. The study contributes to assessing and improving the utilization of ICT in public fund management, specifically in Ekiti State's public institutions.

2.3 Empirical Review

Osaloni et al. (2023) conducted a study in Nigeria to examine how information and communication technology (ICT) affects the efficiency of accounting practices. The study used a survey research design and collected data through a structured questionnaire administered to 130 respondents, including managers, auditors, chartered accountants, directors in accounting firms, and parastatals in Nigeria. The findings indicated that expanding means of communication, data collection management, and information security management significantly influenced accounting practices in Nigeria.

Enomate and Audu (2022) investigated the impact of ICT on the financial performance of non-financial service firms listed in Nigeria. Their study employed an exploratory research design and selected a sample of 20 non-financial service companies from various industries listed in the Nigeria Stock Exchange between 2016 and 2020. They analyzed the data using descriptive and inferential statistics, including arithmetic mean, standard deviation, minimum and maximum values, and Ordinary Least Squares (OLS) regression technique. The results revealed that investment in ICT infrastructure positively affected the financial performance of listed non-financial firms in Nigeria. However, the influence of ICT personnel on financial performance was positive but not statistically significant.

Makabu and Christopher (2021) assessed how ICT impacted funds management in the public service sector in Kenya. The study used a survey research design and collected data through

interviews +and well-structured questionnaires. The study included 196 respondents, with a sample size of 151 determined through purposive sampling. The data were analyzed using both descriptive and inferential statistics. The findings showed that digital communication infrastructure, information security management, and data collection management significantly enhanced transparency and accountability in public funds management in Nairobi.

Imene and Imhanzenobe (2020) investigated the changes brought about by information technology (IT) in the accounting profession in Nigeria. Their study had a qualitative design and involved a comparative analysis of prior literature on various areas of IT and its impact on accounting practices. The findings revealed the emergence of sophisticated IT tools that enable accountants to prepare and present financial statements more promptly and accurately.

Oladejo and Yinus (2020) evaluated the effectiveness of electronic accounting practices in enhancing financial reporting quality in Nigerian deposit money banks. The study aimed to assess the impact of e-accounting practices on the financial reporting quality of banks in Nigeria. The researchers collected primary data using a questionnaire and secondary data from the annual reports of selected banks covering the period from 2010 to 2017. The study concluded that variables such as BS, CID, PEOU, and PB influenced the adoption of e-accounting and that e-accounting practices improved accounting procedures, timeliness of report generation, and financial reporting quality in banks.

Akinboade (2020) conducted a study to examine the usage of ICT and its impact on the financial performance of manufacturing companies in Lagos State, Nigeria. The research focused specifically on quoted manufacturing companies in Lagos State. The study employed a survey design and utilized both primary and secondary data. Primary data was collected through interviews and questionnaires, while secondary data covering a period of 10 years was retrieved from the published annual reports of the companies. A total of 44 companies were sampled, but only 31 companies returned the questionnaires. The findings revealed that the sampled quoted companies had implemented ICT in various departments, although the level of usage varied. There was a positive relationship between investment in ICT and financial performance, as evidenced by significant differences in sales turnover, profit before tax, profit after tax, and net asset/shareholders' fund. However, the use of ICT did not result in any significant difference in earnings per share. The study recommends future research to explore the effect of ICT use on other financial variables and to include more financial data to assess the impact of ICT adoption in Nigerian manufacturing companies.

Al-Qudah (2019) aimed to identify the relationship between information technology and the financial performance of Jordanian industrial companies listed on the Amman Financial Market (AFM). The study utilized descriptive and analytical statistical techniques and included Jordanian industrial companies that employed computer software programs and implemented new technology. The participants consisted of company managers, financial managers, and IT managers. One hundred twenty questionnaires were distributed, and 100 valid questionnaires were returned for analysis. The results indicated a positive relationship between the financial performance of Jordanian industrial companies and information technology. Given the competitive market environment, the study suggests that Jordanian industrial companies should adopt new and up-to-date technology to remain competitive and prioritize technology improvement for better utilization of information technology, software programs, performance measurement, and human resources.

Nagata (2019) investigated the relationship between ICT and public funds management in Nairobi. The study utilized a survey research design, collecting data through interviews and well-structured questionnaires. Both descriptive and inferential statistics were employed for data analysis. The findings demonstrated that digital communication infrastructure, information security management, digital governance, internet facilities, and data collection management non significantly enhanced transparency and accountability in public funds management in Nairobi.

The literature reviewed provides insights into the impact of information and communication technology (ICT) on various aspects of accounting practices, financial performance, funds management, and the accounting profession in different regions. However, there is a notable gap in the literature concerning the effect of ICT on public funds management specifically in public institutions in Ekiti State, Nigeria. To address this gap, further research is needed to investigate how ICT influences public funds management in Ekiti State, Nigeria. Based on these, the null hypotheses will be stated as follows:

H_{01}: There is no significant difference between data collection management and public funds management in public institutions in Ekiti State, Nigeria.

H_{02}: There is no significant difference between information security management and public funds management in public institutions in Ekiti State, Nigeria.

H_{03}: There is no significant difference between digital communication infrastructure and public funds management in public institutions in Ekiti State, Nigeria.

3. METHODOLOGY

The study employed a survey research design and utilized various data collection methods such as interviews, structured questionnaires, and focus group discussions. The targeted respondents included government officials, financial officers, ICT professionals, and civil society representatives. A purposive sampling technique was used to distribute questionnaires among the respondents, ensuring that individuals with knowledge and expertise in the subject matter were included. A total of 425 questionnaires were sent to different public institutions, resulting in 358 completed responses. Specific details regarding the surveyed institutions and the corresponding number of responses can be found in Table 1. The reliability of the research instrument was confirmed with a Cronbach Alpha test result averaging 80%. The data collected were analyzed using descriptive statistics and regression analysis.

3.1. Reliability Test

As shown in Table 1, the Cronbach Alpha values for different dimensions of the study indicate the internal reliability of the scale items. Public fund management (PFM) exhibited a Cronbach Alpha of 0.761, encompassing a total of 6 items. Data Collection Management (DCM) yielded a Cronbach Alpha of 0.874 across 10 items, while Information Security Management (ISM) achieved a Cronbach Alpha of 0.830 with 10 items. Additionally, Digital Communication Infrastructure (DCI) obtained a Cronbach Alpha of 0.732, covering 10 items. These results indicate that all the scale items demonstrate good internal reliability, as the Cronbach Alpha values exceed 0.

Table 1: Reliability Test Results

S/N	Variable	No. of Items	Cronbach's Alpha
1	Public Fund Management (PFM)	6	0.761
2	Data Collection Management (DCM)	10	0.874
3	Information Security Management (ISM)	10	0.830
4	Digital Communication Infrastructure (DCI)	10	0.732

Source: **Researcher's Computation (2023)**

3.2. Model Specification

To investigate the relationship between information and communication technology (ICT) and public funds management in Ekiti State, Nigeria, the study developed a model based on a similar study conducted by Bolaji et al. (2019) that focused on ICT and bank operations. The model is specified as follows: Public Fund Management (PFM) is a function of Data Collection Management (DCM), Information Security Management (ISM), and Digital Communication Infrastructure (DCI). This model is represented as PFM = f(DCM, ISM, DCI)……..(3.1) in the study.

From equation 3.1, the model can be stated in econometric form:

$$PFM = \beta_0 + \beta_1 DCM + \beta_2 ISM + \beta_3 DCI + \mu \ldots\ldots\ldots\ldots\ldots\ldots\ldots 3.2$$

Where:

PFM = Public Funds Management

DCM = Data Collection Management

ISM = Information Security Management

DCI = Digital Communication Infrastructure

μ = Error Term

The *a priori* expectation for the examination of information and communication technology (ICT) and public funds management in Ekiti State, Nigeria is provided in equation 3.3.

$$\frac{\delta FP}{\delta EHS} > 0 \ \frac{\delta FP}{\delta CD} > 0 \text{.,} \ \frac{\delta FP}{\delta ENR} > 0 \text{.....3.3}$$

4. DATA ANALYSIS AND DISCUSSION OF FINDINGS

4.1. Descriptive Statistics

Table 2 presents the descriptive statistics for the variables used in the regression analysis, aiming to examine their characteristics. The results showed that the average value of public funds management (PFM) in Ekiti State, Nigeria was 4.2714, indicating a relatively high mean score on a 5-point scale. The standard deviation of 0.42226 suggested low variability as it was significantly smaller than the mean value. The Skewness value indicated that public funds management exhibited a long-left tail due to its negative value. Additionally, the Kurtosis value of 0.14 indicated a platykurtic distribution, as it was less than 3.

In contrast, the mean values for data collection management (DCM), information security management (ISM), and digital communication infrastructure (DCI) were 3.8573, 4.3723, and 4.2089, respectively. The standard deviations of 0.41558, 0.35518, and 0.903 for DCM, ISM, and DCI, respectively, indicated low variability as their values were significantly smaller than the corresponding mean values. The Skewness values for all independent variables were negative, suggesting a long-left tail. Furthermore, the Kurtosis values of -0.603, 0.187, and 0.903 for DCM, ISM, and DCI, respectively, indicated a platykurtic distribution as they were less than 3.

Table 2: Descriptive Statistics

Variables	PFM	DCM	ISM	DCI
Obs	358	358	358	358
Mean	4.2714	3.8573	4.3723	4.2089
Std. Deviation	0.42226	0.41558	0.35518	0.3176
Minimum	2.33	2.9	3.1	3.3
Maximum	5	4.5	4.9	4.8
Skewness	-0.391	-0.217	-0.712	-1.094
Kurtosis	0.14	-0.603	0.187	0.903

Source: Researcher's Compilation (2023)

4.2. Test of Variables

4.2.1. Multicollinearity Test

The presence of multicollinearity among variables is an important assumption in regression analysis, and Table 3 and 4 provide the results of the multicollinearity test. Tolerance and Variance

Inflation Factor (VIF) were utilized to assess multicollinearity. For instance, the tolerance values for DCM, ISM, and DCI were 0.931, 0.917, and 0.944, respectively, all exceeding the threshold of 0.10. This indicates the absence of multicollinearity among the variables. Similarly, the VIF values for DCM, ISM, and DCI were 1.075, 1.090, and 1.059, respectively, all below 10, which is considered acceptable according to Pallant's (2011) recommendation.

Table 3: Multicollinearity Test

Tolerance	VIF	1/VIF
.931	1.075	0.931
.917	1.090	0.917
.944	1.059	0.944
Mean VIF	1.075	

Sources: Researcher's Computation (2023)

Table 4: Post-Estimation Test Results

Test for the Overall Significance of the Whole Model (F-Statistics)		
Null Hypothesis	**Statistics**	**Probability**
There is no overall significance in the research model (P<0.05)	50.417	0.000
Tolerance and VIF Value		
Null Hypothesis	**VIF**	**1/VIF**
There is no multicollinearity among the variables (1/VIF >0.10)		1.07

Source: Researcher's Computation (2023)

4.2.3. Correlation Matrix

Table 5 presents the findings regarding the relationship between public funds management (PFM) and the variables of data collection management (DCM), information security management (ISM), and digital communication infrastructure (DCI) in Ekiti State. The results indicate significant and positive relationships between PFM and both DCM and DCI. Specifically, the coefficient for the relationship between PFM and DCM is 0.328, suggesting that an increase in data collection management corresponds to a rise in public funds management in Ekiti State. Similarly, the coefficient for the relationship between PFM and ISM is 0.140, indicating that an increase in information security management will enhance funds management expertise by 14%. This coefficient is statistically significant with a probability value of 0.008, indicating a strong relationship.

Furthermore, the coefficient for the relationship between PFM and DCI is positive and statistically significant at a value of 0.333. This implies that an increase of one unit in digital communication infrastructure will lead to a 0.333 unit increase in public funds management in public institutions in Ekiti State, Nigeria. This coefficient is highly significant, as indicated by the P-value of 0.000. Moreover, the relationships between DCM and the other two explanatory variables (ISM and DCI) are significant and negative, with coefficients of 0.254 and 0.225, respectively. However, these negative relationships do not indicate multicollinearity issues, as the values of the explanatory variables do not exceed the expected threshold of 0.7.

Table 5: Correlation Analysis of Study Variables

	PFM	DCM	ISM	DCI
PFM	1.0000			
DCM	0.328**	1.0000		
	(.000)			
ISM	0.140**	-0.254**	.0000	
	(.008)	(0.000)		
DCI	0.333**	-0.225**	0.291**	1.0000
		(0.000)	(0.000)	(0.000)

Source: Researcher's Computation, (2023)

4.3. Information and Communication Technology (ICT) and Public Funds Management in Public Institutions in Ekiti State, Nigeria

To assess the collective impact of information and communication technology (ICT) in Ekiti State, Nigeria, the study examined the R-squared (R2) and adjusted R-squared (R2) values, as presented in Table 6. The R2 of 0.799 and adjusted R2 of 0.763 indicate that the independent variable accounts for approximately 76% of the variation in the dependent variable. The remaining 24% represents the error term. Additionally, Table 7 illustrates the extent to which the independent variables jointly explain the dependent variable, along with the F-statistics. The results in Table 7 indicate that the independent variables are collectively significant at a 1% level of significance (p-value = 0.000), and the F-statistics of 50.417 confirm their joint significance.

Moving on to Table 8, it presents the individual analysis of the variables. The beta coefficient, t-statistics, and p-values are reported. Regarding data collection management (DCM), the analysis reveals a positive and significant effect on public funds management, with a coefficient of 0.453, t-statistics of 9.708, and a p-value of 0.000. This suggests that a unit increase in DCM will result in a 0.453 unit increase in public funds management. Similarly, information security management (ISM) exhibits a positive and significant effect on public funds management, with a coefficient of 0.140, t-statistics of 2.956, and a p-value of 0.003. Thus, a unit increase in ISM will lead to a 0.140 unit increase in public funds management. Lastly, digital communication infrastructure (DCI) shows a positive and significant effect on public funds management, with a coefficient of 0.394, t-statistics of 8.355, and a p-value of 0.000. This implies that a unit increase in DCI will result in a 0.394 unit increase in public funds management.

Table 6: Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.947[a]	.799	.763	.80479

a. Dependent Variable: FP

b. Predictors: (Constant), ENR, EHS, CD

Table 7: Analysis of Variance (ANOVA)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	97.962	3	32.654	50.417	.000[b]
	Residual	229.279	354	.648		
	Total	327.240	357			

a. Dependent Variable: PFM
b. Predictors: (Constant), DCM, ISM, DCI

Table 8: Coefficient of Variation

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.770	.452		1.703	.089
	DCM	.496	.051	.453	9.708	.000
	ISM	.212	.072	.140	2.956	.003
	DCI	.495	.059	.394	8.355	.000

a. Dependent Variable: PFM
b. Predictors: (Constant), DCM, ISM, DCI

Source: Researcher's Field Survey (2023)

4.4. Discussion of Findings

This study aimed to investigate the impact of information and communication technology on public funds management in public institutions located in Ekiti State, Nigeria. The findings revealed a significant positive relationship between data collection management and public funds management in these institutions. This outcome aligns with the anticipated expectations outlined in this study and is consistent with the research conducted by Makubu and Christopher (2021) and Osaloni et al. (2023), among others. However, it contradicts the empirical findings reported by Nagata (2019).

Similarly, information security management was found to have a significant and positive association with public funds management in public institutions in Ekiti State, Nigeria. This result also aligns with the expected hypothesis and supports the previous research conducted by Makubu and Christopher (2021) and Osaloni et al. (2023), among others. However, it contradicts the findings reported by Nagata (2019).

Lastly, digital communication infrastructure demonstrated a significant positive impact on public funds management in public institutions in Ekiti State, Nigeria. This finding is consistent with the

research conducted by Makubu and Christopher (2021) but contradicts the findings of Nagata (2019) reviewed in this study.

5. SUMMARY, CONCLUSION, AND RECOMMENDATIONS

This study examined the influence of information and communication technology (ICT) on public funds management in public institutions in Ekiti State, Nigeria. The study revealed significant positive relationships between data collection management, information security management, and digital communication infrastructure with public funds management in these institutions.

Conclusion

The study concludes that information and communication technology play a crucial role in enhancing public funds management in public institutions in Ekiti State, Nigeria. Specifically, effective data collection management, information security management, and digital communication infrastructure positively impact the management of public funds. These findings contribute to the understanding of the relationship between ICT and public funds management and provide valuable insights for policymakers and practitioners in the field.

Recommendations

Based on the study's findings, several recommendations can be made. Firstly, public institutions in Ekiti State should prioritize the improvement of data collection management practices to enhance their fund management processes. This may involve implementing efficient data collection systems and ensuring the accuracy and reliability of collected data. Secondly, it is crucial for institutions to invest in robust information security management measures to safeguard public funds. This includes implementing robust cybersecurity protocols, training staff members on data protection, and establishing stringent access controls. Thirdly, public institutions should focus on developing and maintaining a robust digital communication infrastructure. This involves investing in reliable communication networks, promoting digital literacy among staff, and leveraging digital platforms for effective fund management and communication.

Contributions to Knowledge

This study contributes to the existing body of knowledge by examining the impact of ICT on public funds management specifically in the context of Ekiti State, Nigeria. The findings affirm the importance of data collection management, information security management, and digital communication infrastructure in enhancing the management of public funds. This study adds empirical evidence to the literature and provides valuable insights for policymakers, practitioners, and researchers in the field of ICT and public finance management. It has also been noted through the interview conducted that introduction of ICT had helped Ekiti State Government in Nigeria to run a transparency and accountability government.

Suggestions for Future Studies

To build upon this study, future research could investigate the impact of specific ICT interventions or strategies on public funds management. Additionally, exploring the role of organizational culture, leadership, and staff capacity in implementing ICT-based fund management systems would provide further insights. Comparative studies across different states or countries could also shed light on the contextual factors influencing the relationship between ICT and public funds management. Furthermore, longitudinal studies tracking the long-term effects of ICT adoption on public finance management would be valuable in understanding the sustainability and effectiveness of such interventions.

Ethical Disclosure Statement

We declare that there is no conflict of interest whatsoever.

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