

IMPROVING FINANCIAL MANAGEMENT OF THE NIGERIAN PUBLIC SECTOR USING DIGITAL TECHNOLOGIES

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ABSTRACT

This research investigates the potential advantages of incorporating digital technologies into the financial management processes of the Nigerian public sector. The aim of this study is to determine how digital technologies can enhance financial management in the Nigeria public sector. The research used primary data. The research was carried out in seven Ministries, Departments, and Agencies (MDAs) in Nigeria, with a total of 286 participants. Data collection and analysis were conducted using a survey method that utilized a 5-Point Likert Scale. The findings offer valuable insights into key financial management processes that can benefit from the integration of digital technology, such as revenue collection and tracking. The research highlights the difficulties associated with manual data entry, lack of transparency, and accountability in current financial management processes. Approximately 63% of participants reported the adoption of digital technologies in financial management processes, with tax compliance and reporting being the most affected task. The potential benefits identified include improved financial transparency, enhanced decision-making, and increased efficiency and productivity. Challenges such as resistance to change and high implementation costs were also acknowledged. The research emphasizes the importance of establishing a comprehensive framework for the effective implementation of digital technologies in financial management. This framework should encompass clear policies, guidelines, and strategies. Participants recognized the significance of staff training and capacity-building programs, as well as data security and privacy protocols. The commitment and support of top management were identified as crucial factors in driving successful digital transformation. The significance of differences between groups and the relationships between variables were assessed using analysis of variance (ANOVA) and correlation coefficient. The results indicated statistically significant differences between groups and moderate correlations between certain variables. The research recommends conducting organization-specific needs assessments and tailoring technology solutions to address specific challenges.

Keywords: Financial Sector; Public Administration; Bureaucracy; Administrative Processes; Technological Change; Choices and Consequences; Diffusion Processes

INTRODUCTION

In the midst of a rapidly evolving digital landscape, the Nigerian public sector is on the cusp of a transformative shift. With a focus on transparency, efficiency, and accountability in financial management, the integration of digital technologies offers a promising path forward. Nigeria has made significant strides in its digital transformation journey, harnessing cutting-edge technologies to revolutionize financial governance. This shift towards digitalization has led to the implementation of various initiatives, all aimed at improving efficiency, transparency, and accountability in the financial landscape.

One of the key milestones in this journey has been the adoption of digital payment systems, mobile banking, and e-government platforms. These advancements have streamlined financial transactions and service delivery, eliminated bureaucratic hurdles and enhanced overall efficiency. The introduction of digital payment options and wallets has brought convenience to both citizens and government agencies, reducing reliance on traditional cash-based methods (Adeolu, 2018). This not only enables faster and more secure financial transactions but also promotes greater financial inclusion, ensuring that more individuals have access to formal financial services.

Furthermore, the Nigerian government has achieved a significant milestone through the implementation of the Treasury Single Account (TSA) system. This groundbreaking initiative consolidates all public funds into a single account, effectively curbing revenue leakages and minimizing instances of mismanagement and embezzlement. By centralizing funds, financial accountability has been greatly enhanced, as real-time monitoring and tracking of public finances become more accessible and transparent (Adeolu, 2018). This newfound visibility into financial activities enables the government to allocate resources more efficiently and address urgent developmental needs.

Moreover, alongside the digital payment systems and the TSA, the Nigerian government has also embarked on pilot projects to explore the potential of blockchain technology in the public sector. The decentralized and immutable nature of blockchain holds promise in securing financial transactions and promoting transparency within the public sector (Eze, 2021). By leveraging blockchain, the government can enhance the integrity of financial data, reduce the risk of fraud, and establish a more trusted financial ecosystem.

Additionally, the adoption of data analytics and artificial intelligence (AI) further strengthens Nigeria's financial management capabilities. With a vast amount of data generated within the public sector, data analytics plays a crucial role in extracting valuable insights. AI algorithms can then analyse this data, facilitating data-driven decision-making in budgeting and forecasting processes (Anyanwu, 2020). The ability to make evidence-based decisions empowers policymakers to optimize resource allocation, leading to more effective and targeted public spending.

Nigeria has the opportunity to gain valuable insights from the digital transformation efforts of Estonia, Singapore, and the United Kingdom in their respective public sectors. These countries have showcased innovative strategies and best practices that can serve as a blueprint for Nigeria's own journey towards enhancing digital financial management.

Estonia has set a remarkable example with its e-governance system, which prioritizes efficiency and citizen-centricity. The country has pioneered the concept of a digital society, enabling citizens to seamlessly access public services and engage with the government through digital platforms (Vassil, 2019). By establishing a user-friendly and integrated e-government platform, Estonia has improved accessibility, reduced bureaucracy, and fostered greater citizen engagement with public services. Nigeria can follow Estonia's lead by developing a similarly user-centric and efficient e-government ecosystem, empowering citizens to effortlessly access financial services and information.

Singapore's Smart Nation initiatives demonstrate the successful integration of diverse digital technologies into public service delivery and governance. By harnessing emerging technologies like the Internet of Things (IoT), artificial intelligence, and data analytics, Singapore has revolutionized service delivery, making it more responsive and data-driven (Basu, 2020). Nigeria can draw inspiration from Singapore's approach by embracing data-driven decision-making, leveraging AI and data analytics to optimize financial resource allocation, and enhancing budgeting processes. By leveraging smart technologies, Nigeria can achieve more informed and efficient financial management within its public sector.

The Government Digital Service (GDS) in the United Kingdom has played a crucial role in improving public service delivery through the use of digital platforms. By developing user-friendly online services, the GDS has simplified interactions between citizens and government agencies (Martin, 2019). Nigeria can learn

from the UK's GDS model and establish a centralized digital hub for government services. This hub can offer a comprehensive range of financial management tools and resources, streamlining financial transactions, promoting transparency, and building public trust in the government's financial management practices.

While taking inspiration from global initiatives, Nigeria must also consider its unique challenges and context. Digital transformation is not a one-size-fits-all approach and requires careful adaptation to local needs and limitations. Investing in digital infrastructure, promoting digital literacy among citizens and government employees, and addressing cybersecurity concerns are crucial steps to ensure the success of Nigeria's digital financial management journey.

In some regions, inadequate digital infrastructure and internet connectivity pose obstacles to the widespread adoption of digital financial solutions. It is essential to address these disparities and invest in digital infrastructure to ensure equal access to financial services (Akpabio, 2022).

Moreover, the growing reliance on digital systems brings about cybersecurity risks. The Nigerian government must prioritize cybersecurity measures to protect financial data and defend against potential cyber threats and data breaches (Bello, 2021). Strengthening cybersecurity frameworks will be vital in maintaining public trust and confidence in digital financial management practices.

As digital transformation continues to reshape global economies, Nigeria seeks to harness the potential of these technologies to enhance transparency, efficiency, and accountability in its financial governance. The research will explore contemporary developments in digital financial management within Nigeria and draw insights from successful global initiatives. It will comprehensively analyse the benefits and challenges associated with the integration of digital technologies in the public sector's financial management processes.

LITERATURE REVIEW

Financial management plays a crucial role in ensuring the efficient operation of the public sector. In Nigeria, there is a growing interest in utilizing digital technologies to enhance financial management practices. Unfortunately, the Nigerian public sector has been plagued by mismanagement, financial crimes, corruption, and fraudulent activities. These issues have resulted in the abandonment of viable public projects and the indiscriminate lay-offs of employees (Samuel & Fatai, 2020). To tackle these challenges, the implementation of forensic accounting, e-governance, and the use of ICTs in financial management and internal audits hold great potential. These measures can enhance transparency, accountability, and service delivery while addressing the issues of mismanagement, financial crimes, corruption, and fraudulent practices.

Key Financial Management Processes

In order to enhance financial management processes in the Nigerian public sector, it is crucial to examine the influence of digital technologies on financial control. According to Bochkareva, Kurdyuk, Voronenko, and Farikova (2023), the implementation of digital tools in financial control can have diverse legal consequences, as certain technologies directly address particular financial control tasks while others offer supplementary benefits. Hence, it is imperative to evaluate the precise digital tools and technologies that can optimize financial management processes in Nigeria.

Financial Reporting

Digital technologies have the potential to enhance various financial management processes, and one such process is financial reporting. By leveraging digital tools, organizations can streamline the collection, analysis, and presentation of financial data, resulting in improved efficiency and accuracy. This, in turn, plays a vital role in ensuring transparency and accountability in financial reporting, which is essential for the smooth operation of the public sector (Essen, Engelen, Carney, 2012).

Budgeting and Forecasting

The utilization of digital technologies can greatly enhance the budgeting and forecasting process. Through the automation of budgeting tasks, these tools can increase efficiency and minimize the likelihood of errors. Additionally, they provide real-time data and analytics, enabling more accurate forecasting and informed decision-making (Essen et al., 2012).

Financial Risk Management

Digital technologies also have the potential to improve financial risk management. By harnessing the power of data analytics and artificial intelligence, digital tools can effectively identify and assess financial risks. This proactive approach allows for better risk mitigation and ultimately enhances the overall financial stability of the Nigerian public sector (Essen et al., 2012).

Internal Controls and Audit Processes

The integration of digital technologies can play a crucial role in enhancing internal controls and audit processes. By automating internal control procedures and utilizing advanced analytics, digital tools can effectively detect and prevent financial fraud and irregularities. This, in turn, strengthens the integrity of financial management practices within the Nigerian public sector (Essen et al., 2012).

Adoption of Digital Technologies

Evaluating the degree to which digital technologies have been embraced in the financial management of the Nigerian public sector is crucial for gaining insights into the current landscape. However, there is a dearth of research specifically focused on the adoption of digital technologies in financial management in Nigeria (Samuel & Fatai, 2020). This gap in the existing literature underscores the necessity for further studies to delve into this aspect and broaden the scope to encompass other variables that may impact the implementation of digital technologies in the Nigerian public sector.

The incorporation of digital technologies in financial management can yield numerous advantages, including enhanced efficiency, accuracy, transparency, and accountability. These technologies possess the potential to streamline processes, automate tasks, and provide real-time data and analytics for improved decision-making (Smith, 2019). Nevertheless, the specific challenges and obstacles to adoption in the Nigerian public sector remain largely unexplored.

Factors such as organizational culture, infrastructure, skills and knowledge, funding, and government policies can exert influence on the adoption of digital technologies in financial management. It is imperative to comprehend these factors and their interplay in order to effectively implement and leverage digital technologies in the Nigerian public sector (Brown, C., et al., 2018).

Readiness of the Nigerian Public Sector

Assessing the preparedness of the Nigerian public sector for digital financial management is a critical aspect in understanding the current landscape and identifying areas for enhancement (Plantin & Punathambekar, 2018). To assess this readiness, factors such as infrastructure, digital literacy, and organizational culture must be thoroughly examined

Infrastructure

The availability and reliability of internet connectivity, hardware, software, and other technological resources are essential for the adoption and integration of digital technologies (Plantin & Punathambekar, 2018). A robust digital infrastructure is crucial for the efficient utilization of digital tools and platforms in financial management processes.

Digital Literacy

Another key factor influencing readiness for digital financial management is digital literacy, which refers to the skills, knowledge, and capabilities needed to effectively utilize digital technologies (Gray Gerlitz, & Bounegru, 2018). Improving digital literacy among employees in the Nigerian public sector is vital to ensure their proficiency in using digital tools for financial management. Implementing training programs and initiatives can help enhance digital literacy and empower employees to leverage digital technologies effectively.

Organizational Culture

Organizational culture also plays a significant role in the readiness for digital financial management, encompassing attitudes, beliefs, values, and norms that influence an organization's approach to technology adoption and innovation (Plantin & Punathambekar, 2018). A culture that embraces digital transformation, encourages experimentation, and promotes continuous learning can facilitate the successful implementation of digital technologies in financial management processes.

Furthermore, the readiness for digital financial management can be influenced by various factors, including risk perception, value proposition, and psychological barriers. Risk perception refers to how consumers perceive the potential risks associated with adopting digital innovations, such as the fear of financial burden and uncertainty in decision-making. On the other hand, value proposition focuses on comparing the performance-to-price value of different alternatives. Lastly, psychological barriers, such as traditional beliefs and image-related concerns, are linked to consumers' habits and their perceptions of past practices. By comprehending these factors and their impact on the Nigerian public sector, valuable insights can be gained regarding the challenges and opportunities for digital transformation.

Benefits and Drawbacks of Digital Financial Management

Analysing the potential advantages and disadvantages of digital financial management in the Nigerian public sector is essential for making informed decisions and developing effective policies. Although there is a lack of specific research on this subject in Nigeria, valuable insights can be gained from studies conducted in other countries.

Benefits

Enhanced Accountability

One significant benefit of digital financial management is the improvement in accountability and transparency. Utilizing digital tools allows for real-time access to financial data, facilitating easier tracking and monitoring of financial transactions. This, in turn, reduces the risk of fraud and corruption. Moreover, digital financial management can enhance the quality of financial reporting by automating processes and minimizing the likelihood of errors (Wamukoya & Mutula, 2005).

Increased Efficiency and Cost-Effectiveness

Another advantage is the increased efficiency and cost-effectiveness. Digital tools streamline financial processes, automate tasks, and reduce the need for manual paperwork, resulting in time and cost savings (Su, Peng, Kong, & Chen, 2021). These saved resources can then be allocated to other crucial areas of public sector operations.

Promotion of Financial Inclusion

Digital financial management also plays a role in promoting financial inclusion. By providing access to digital payment systems and financial services, it enables individuals and businesses, including those in rural areas, to participate in the formal financial system (Su, Peng, Kong, & Chen, 2021). This, in turn, contributes to

economic growth and development.

Limitations

Cybersecurity Vulnerabilities

One significant drawback is the presence of cybersecurity vulnerabilities. With the increasing digitization of financial transactions and data, it becomes imperative to establish robust cybersecurity measures to safeguard against data breaches, hacking, and unauthorized access (Yang, Chiu, & Lin, 2020).

Lack of Skills

Another challenge lies in the deficiency of adequate training and capacity building. The successful implementation of digital financial management necessitates individuals equipped with the necessary skills and knowledge to effectively utilize digital tools and platforms (Wamukoya & Mutula, 2005). Therefore, investing in training programs and capacity building initiatives becomes crucial to ensure workforce readiness.

Resistance to Change

There might be resistance to change and a preference for traditional methods within the public sector. Overcoming this resistance and fostering a culture of digital transformation may require employing change management strategies and effective communication to address concerns and instill trust in digital financial management systems (Wamukoya & Mutula, 2005).

Framework for Effective Implementation

A framework for effectively implementing digital technologies in the financial management of the Nigerian public sector can be developed by considering the following factors:

Infrastructure Development

Ensuring the availability of reliable digital infrastructure, including internet connectivity, hardware, and software, is crucial to support the implementation of digital financial management systems.

Capacity Building

Providing training and capacity building programs to enhance the digital literacy and skills of employees in the Nigerian public sector will enable them to effectively utilize digital tools and platforms for financial management.

Stakeholder Engagement

Foster collaboration and engagement with stakeholders, such as government agencies, financial institutions, and the general public, to ensure their involvement and support in the implementation of digital financial management systems.

Policy Support

Developing and implementing supportive policies and regulations that promote the adoption and use of digital technologies in financial management is essential. These policies should also address concerns such as cybersecurity risks and data protection.

Financial Reporting Quality

Implementing international accounting standards, such as the International Public Sector Accounting Standards (IPSAS), will improve the quality of financial reporting and enhance transparency and accountability in the Nigerian public sector.

Forensic Accounting and Litigation Support

Utilizing forensic accounting expertise and litigation support services will help prevent and detect financial crimes, fraud, and corruption in the Nigerian public sector.

Monitoring and Evaluation

Establishing mechanisms for monitoring and evaluating the effectiveness and impact of digital financial management systems, including regular audits and assessments of financial processes and outcomes, is crucial. By considering these factors and implementing the necessary measures, the Nigerian public sector can effectively leverage digital technologies for efficient financial management.

Methodology

This study utilized a quantitative research approach to examine the enhancement of financial management in the Nigerian public sector through the implementation of digital technologies. The research methodology involved the gathering and analysis of numerical data to address the research objectives.

Sample Selection:

The target population for this study consisted of employees working in various Nigerian MDAs involved in financial management processes. These MDAs included the Ministry of Finance, Budget and National Planning, Office of the Accountant General of the Federation, Central Bank of Nigeria, Office of the Auditor General of the Federation, Federal Inland Revenue Service, Bureau of Public Procurement, and Debt Management Office. A total of 300 staff members were chosen as the sample for this study.

Data Collection:

The primary data for this study will be obtained through a survey using a closed-ended questionnaire. The questionnaire will be designed to measure the variables related to financial management and the utilization of digital technologies. It will be adapted from previous studies that have assessed collaborative innovation Mata (2023) and financial management performance in small and medium-sized enterprises (SMEs) (Karadağ, 2017). The questionnaire will consist of multiple-choice questions and Likert scale items to evaluate the respondents' opinions and perceptions. It will be distributed to the selected staff members in the MDAs, and their responses will be collected.

Data Analysis

The collected data underwent thorough analysis using appropriate statistical techniques. To summarize the demographic characteristics of the respondents, descriptive statistics such as frequencies and percentages were utilized. Additionally, inferential statistics including correlation analysis and analysis of variance (ANOVA) were employed to examine the relationships between variables and test the research hypotheses.

RESULTS AND DISCUSSION

Demographic Characteristics of Respondents

The analysis of the demographic characteristics of the respondents in the study on enhancing financial management of the Nigerian public sector through digital technologies provides valuable insights.

Firstly, it is worth noting that the study had a slightly higher participation rate of males (54.20%) compared to females (45.80%). This gender distribution is crucial to consider when interpreting the findings and formulating recommendations.

Furthermore, the age distribution of the respondents indicates a diverse range of participants, with the majority falling within the age range of 35-44 years (37.76%), followed by 45-54 years (31.12%). However, there is a relatively low representation of younger age groups, such as 18-24 years (4.90%), which limits the insights from younger professionals.

The marital status of the respondents reveals that the majority are married (48.95%), followed by single (26.57%) and widowed (11.89%). This reflects the diverse personal circumstances of the participants.

In terms of educational qualifications, the majority of respondents hold either a Bachelor's degree (41.96%) or a Professional Certification (44.41%). This indicates that they possess the necessary knowledge and expertise in utilizing digital technologies to enhance financial management. However, individuals with higher educational qualifications, such as Master's degrees (26.22%) and Doctorate/Ph.D. degrees (4.20%), are less represented in the survey.

Among those with Professional Certification (127), the most commonly reported certifications are ANAN (15.73%), ICAN (9.09%), and CIMA (3.85%). These certifications highlight the respondents' specialized knowledge and expertise in analyzing and recommending digital technologies for financial management.

The respondents also exhibit a diverse range of experience levels, with a significant proportion having 6-10 years (28.32%) or 11-15 years (34.27%) of experience. This extensive experience provides them with a comprehensive understanding of financial management practices.

The distribution of respondents across different Ministries, Departments, and Agencies (MDAs) sheds light on their areas of expertise and responsibilities. The Ministry of Finance, Budget, and National Planning has the highest representation (15.73%), followed by the Office of the Accountant General of the Federation (15.03%) and the Central Bank of Nigeria (13.64%). This ensures that the survey captures diverse perspectives from various sectors.

Furthermore, the breakdown of job positions/designations reveals that the study encompasses perspectives from various financial management roles, including accountants, financial analysts, budget officers, auditors, procurement officers, and program analysts/IT officers. This comprehensive representation provides a holistic understanding of financial management practices.

The results of the survey indicate that a significant majority of respondents (78.32%) are actively involved in the decision-making processes related to financial management. This suggests that they have a direct role in making financial decisions. However, a smaller proportion (25.87%) reported using digital technologies in their financial management practices in the past two years, indicating that there is room for improvement in terms of adopting and utilizing these technologies.

Among those who reported using digital technologies, the majority (23.78%) use them on a daily basis, while a significant portion (25.87%) use them on a weekly basis. On the other hand, a notable percentage of respondents (5.59%) reported using digital technologies rarely, and a significant proportion (36.01%) reported never using them. This highlights the need for further investigation into the frequency of usage and potential barriers that may be preventing wider adoption.

Thematic Survey Analyses

The survey aimed to analyse the adoption and potential benefits of digital technologies in the financial management processes of the Nigerian public sector. The findings provide valuable insights that can inform strategies for improving financial management through digitalization.

Financial Management Processes for Improvement using Digital Technologies

The survey also identified specific financial management processes that can benefit from the integration of digital technologies. Revenue collection and tracking emerged as the most critical process, with 34.97% of

respondents selecting this option. Budget preparation and allocation (14.69%) and expenditure monitoring and control (12.59%) were also identified as areas with potential for improvement through digital technologies.

Furthermore, manual data entry for financial transactions (30.07%) and budget forecasting and planning (20.28%) were recognized as the tasks most susceptible to human errors in financial management.

Respondents also highlighted two major bottlenecks in the current financial management processes. The first is the lack of transparency and accountability in financial operations, which was mentioned by 27.62% of respondents. The second is the prevalence of manual and paper-based processes leading to errors, which was mentioned by 26.22% of respondents. These findings emphasize the need for addressing these issues in order to improve financial management practices.

Digital Transformation in Financial Management

Around 63% of participants noted that their companies have embraced digital technologies for financial management processes, with 30.77% stating widespread adoption across all areas. Tax compliance and reporting (34.62%) were highlighted as the most affected financial management task due to digital technology adoption, followed by accounts payable and receivable (13.29%). Participants also pointed out that the main reasons for adopting digital technologies in financial management were to enhance accuracy and data integrity (33.22%) and to improve efficiency and productivity (25.87%).

Embracing Digital Solutions in Financial Management

Roughly 64% of survey respondents mentioned that their organizations are either moderately equipped (29.02%) or inadequately equipped (34.62%) with the necessary technological infrastructure to support digital financial management initiatives. Moreover, only 16.43% of respondents reported having comprehensive training programs, while 36.36% have conducted occasional workshops and webinars. However, 47.21% of participants have not yet received any training or have no plans for it. Approximately 60% of respondents indicated that top management and decision-makers are somewhat committed but require more support (39.16%) or were neutral and uncertain about their commitment (26.57%).

Benefits and Drawbacks of Digital Financial Management

The potential advantages identified encompass improved financial transparency and accountability (23.78%) as well as enhanced decision-making through data-driven insights (25.17%). The main obstacles identified include resistance from staff due to change (24.13%) and high initial implementation costs (20.28%). Respondents have suggested robust data security and privacy protocols (27.97%) and the establishment of clear policies and guidelines (26.22%) as measures to mitigate risks. Comprehensive staff training and capacity-building (16.08%) have also been acknowledged as crucial factors in maximizing the benefits of digital financial management.

Framework for Effective Implementation of Digital Technologies

A framework for effective implementation of digital technologies in financial management is recognized as important by approximately 72.38% of respondents. Staff training and capacity-building programs (26.92%) and data security and privacy protocols (25.17%) have been identified as essential components of this framework. Respondents have emphasized the role of top management in promoting open communication and feedback (21.33%) and demonstrating commitment to digital transformation (16.78%). Approximately 56% of respondents have recommended conducting organization-specific needs assessments (27.62%) and tailoring technology solutions to address specific challenges (28.32%).

Mean Scores of Respondents

The mean scores provided by the respondents offer insights into their perceptions and attitudes towards various aspects of financial management in the Nigerian public sector, as well as the utilization of digital technologies to enhance these processes. These scores are presented in Table 1 below.

Key Financial Management Processes for Improvement using Digital Technologies	Digital Technologies Adoption	Readiness for Digital Financial Management	Benefits and Drawbacks of Digital Financial Management	Framework for Effective Implementation of Digital Technologies
4.0	3.0	2.4	3.8	3.3

Key Financial Management Processes for Improvement using Digital Technologies (Mean = 4.0)

The high mean score of 4.0 indicates a strong belief among participants in the potential of digital technologies to enhance financial management processes in the Nigerian public sector. This positive perception highlights the benefits and opportunities that digital technologies can bring to financial management practices.

Digital Technologies Adoption (Mean = 3.0)

The mean score of 3.0 suggests a moderate level of adoption of digital technologies in financial management processes within the Nigerian public sector. While there is some adoption, there is still room for improvement and further integration of digital technologies in financial management practices.

Readiness for Digital Financial Management (Mean = 2.4)

With a mean score of 2.4, there may be challenges or barriers to the full implementation and readiness for digital financial management in the Nigerian public sector. This underscores the need for additional attention and efforts to enhance readiness and preparedness for adopting digital technologies in financial management processes.

Benefits and Drawbacks of Digital Financial Management (Mean = 3.8)

The average score of 3.8 for Benefits and Drawbacks of Digital Financial Management demonstrates that the participants have a strong recognition of the potential advantages that digital financial management can offer, such as enhanced financial transparency and accountability. However, they also acknowledge the presence of potential disadvantages or challenges, including concerns about data security and privacy. This emphasizes the importance of addressing these challenges and maximizing the benefits while minimizing the risks associated with digital financial management.

Framework for Effective Implementation of Digital Technologies (Mean = 3.3)

The mean score of 3.3 for the Framework for Effective Implementation of Digital Technologies indicates that there is a moderate level of recognition and understanding regarding the necessity of a structured framework to guide the implementation of digital technologies in financial management processes. This highlights the significance of establishing clear policies, guidelines, and strategies to ensure the successful and efficient implementation of digital technologies.

Reliability Statistics: Cronbach's Alpha

Cronbach's alpha is a measure of internal consistency reliability, ranging from 0 to 1. In this particular case, the Cronbach's alpha value is 0.65. As the Cronbach's alpha value exceeds 0.6, it suggests a moderate level of internal consistency among the items used in the survey. Although a Cronbach's alpha of 0.65 indicates some

degree of internal consistency, it implies that the scale could benefit from further refinement to achieve a higher level of reliability.

Correlation Coefficients

The results in Table 2 show the correlation coefficients (Pearson correlations) between different variables in the study. Where;

- **PROCESSES:** Key Financial Management Processes for Improvement using Digital Technologies
- **ADOPTION:** Digital Technologies Adoption
- **READINESS:** Readiness for Digital Financial Management
- **BENEFITS:** Benefits and Drawbacks of Digital Financial Management
- **FRAMEWORK:** Framework for Effective Implementation of Digital Technologies.

		PROCESSES	ADOPTION	READINESS	BENEFITS	FRAMEWORK
PROCESSES	Pearson Correlation	1	0.534	0.147	0.807	0.421
	Sig. (2-tailed)		0.354	0.814	0.099	0.48
	N	5	5	5	5	5
ADOPTION	Pearson Correlation	0.534	1	0.159	0.495	-0.534
	Sig. (2-tailed)	0.354		0.799	0.397	0.354
	N	5	5	5	5	5
READINESS	Pearson Correlation	0.147	0.159	1	0.701	-0.156
	Sig. (2-tailed)	0.814	0.799		0.187	0.802
	N	5	5	5	5	5
BENEFITS	Pearson Correlation	0.807	0.495	0.701	1	0.192
	Sig. (2-tailed)	0.099	0.397	0.187		0.757
	N	5	5	5	5	5
FRAMEWORK	Pearson Correlation	0.421	-0.534	-0.156	0.192	1
	Sig. (2-tailed)	0.48	0.354	0.802	0.757	
	N	5	5	5	5	5

INTERPRETING THE RESULTS

Processes and Adoption

The Pearson correlation coefficient of .534 indicates a moderate positive correlation between processes and adoption. Nevertheless, the p-value of .354 suggests that this correlation is not statistically significant at the 0.05 level. Therefore, there is insufficient evidence to support a significant relationship between the key financial management processes and the adoption of digital technologies.

Processes and Readiness

The Pearson correlation coefficient of .147 shows a weak positive correlation between processes and readiness. However, the p-value of .814 implies that this correlation is not statistically significant. Hence, there is no strong indication of a significant relationship between the key financial management processes and the readiness for digital financial management.

Processes and Benefits

The Pearson correlation coefficient of .807 reveals a strong positive correlation between processes and benefits. Nonetheless, the p-value of .099 indicates that this correlation is not statistically significant at the 0.05 level. Therefore, there is no compelling evidence to suggest a significant relationship between the key financial management processes and the perceived benefits and drawbacks of digital financial management.

Processes and Framework

The Pearson correlation coefficient of .421 suggests a moderate positive correlation between processes and framework. However, the p-value of .480 indicates that this correlation is not statistically significant. Therefore, there is no strong evidence to suggest a significant relationship between the key financial management processes and the framework for effective implementation of digital technologies.

Analysis of Variance (ANOVA)

The ANOVA results in Table 4.3 present the sum of squares, degrees of freedom, mean square, F-value, and significance level for the between people, within people between items, residual, and total variations. Additionally, the grand mean is provided.

		Sum of Squares	df	Mean Square	F	Sig
Between People		1.042	4	0.261		
Within People	Between Items	8.806	4	2.202	14.104	0
	Residual	2.498	16	0.156		
	Total	11.304	20	0.565		
Total		12.346	24	0.514		
Grand Mean = 3.2880						

Interpretation

The ANOVA outcome presented in Table 3 evaluated the significance of disparities among groups or conditions. The most crucial finding in the table is the F-value, which determines whether there are statistically significant differences between the groups. In this instance, the F-value is 14.104, and the corresponding p-value is 0.000 (represented as .000). Since the p-value is lower than the chosen significance level (typically 0.05), there exists a statistically significant difference among the groups. The outcomes suggest that there is a notable distinction between the groups or individuals being compared, as indicated by the significant F-value. This implies that there are variations in the data that can be attributed to the disparities among the groups or individuals.

Discussion of Findings

The findings of the study offer valuable insights into the perceptions and attitudes of individuals towards various aspects of financial management in the Nigerian public sector and the utilization of digital technologies to enhance these processes.

The analysis results indicate that revenue collection and tracking are perceived as the most critical financial management processes that can benefit from the integration of digital technology in the Nigerian public sector. This finding aligns with the existing literature, which emphasizes the potential of digital technologies in improving revenue-related processes (Ifinedo, 2011). There is a strong belief in the potential of digital technologies to significantly enhance financial management processes in the Nigerian public sector. This aligns with the existing literature, which highlights the transformative impact of digital technologies on financial management (Nurfadilah, Suhardi, & Suhardi, 2022; Qi, 2023). Digital technologies can enhance the efficiency and accuracy of revenue collection and tracking, leading to improved financial management outcomes.

Manual data entry for financial transactions and budget forecasting and planning have been identified as the financial management tasks most susceptible to human errors. This discovery aligns with previous studies that underscore the potential of automation and digitization in reducing errors and enhancing accuracy in financial data entry and forecasting (Dessaint, Foucault, & Frésard, 2020; Dexiang, & Shengdong, Liu, Jijian, & Chaolung, 2023). This consistency with existing literature underscores the importance of embracing digital technologies in financial management (Kavediya, Saxena, & Joshi, 2021; Saxena & Goyal, 2023). Through the implementation of digital tools, organizations can minimize errors and improve the reliability of financial management processes.

The challenges identified in current financial management processes, such as lack of transparency, accountability, and reliance on manual and paper-based methods leading to errors, emphasize the necessity of digital transformation in the Nigerian public sector. Digital solutions can address these issues by streamlining processes, enhancing data accuracy, and improving transparency and accountability (Shenkoya, 2022; Mohaiyadin, & Aman, Palil, Said, 2022).

The moderate level of digital technology adoption in financial management processes indicates that there is still room for further integration and implementation. Organizations should prioritize the adoption of digital tools to fully capitalize on their benefits, including enhanced financial transparency, improved decision-making, and cost savings through process automation (Gherasim & Ionescu, 2019; Aslam, 2023).

The Nigerian public sector is moderately prepared for digital financial management, as organizations have varying levels of technological infrastructure and training programs. However, there are perceived challenges and barriers hindering full implementation. Therefore, there is a need for increased attention and efforts to enhance readiness for digital financial management. The literature underscores the significance of organizational readiness for successful digital transformation. To improve readiness, the Nigerian public sector must invest in technological infrastructure, offer comprehensive training programs, and secure top management commitment (Kumar & Gupta, 2017; Galimova, 2019). Digital financial management offers benefits like enhanced financial transparency, accountability, and decision-making (Gherasim & Ionescu, 2019; Aslam, 2023). While the literature supports these benefits, organizations must also address potential drawbacks such as high implementation costs, staff resistance to change, and data security concerns. Mitigating these risks requires robust security protocols, clear policies, and thorough staff training (Morol, 2022; Choi, & Williams, (2021).

It is evident that a comprehensive framework is crucial for effectively implementing digital technologies in financial management. The research findings indicate a moderate level of recognition and understanding regarding the importance of a structured framework to guide the implementation of digital technologies in financial management processes. This demonstrates the participants' comprehension of the significance of establishing clear policies, guidelines, and strategies to ensure successful and effective implementation of digital technologies. The literature highlights the necessity of a comprehensive framework for guiding digital transformation in financial management (Kerpedzhiev, König, Röglinger, & Rosemann, 2020; Ghosh, 2021). This framework should take into account technological infrastructure requirements, staff training and capacity-building programs, data security and

privacy protocols, as well as change management strategies (Dovgyi, & Kozlov, 2022). Additionally, it is crucial to customize the framework to meet the unique needs and requirements of organizations.

CONCLUSION AND RECOMMENDATION

The study's findings have provided valuable insights into how participants perceive and approach the integration of digital technologies in financial management processes within the Nigerian public sector. The results indicate a positive outlook on the potential of digital technologies to greatly enhance financial management practices, specifically in areas such as revenue collection and tracking, budget preparation and allocation, and expenditure monitoring and control.

Although the analysis shows a moderate level of digital technology adoption in financial management processes, there is still room for improvement and further integration to fully capitalize on the benefits of technology. The study's mean score for readiness in digital financial management has highlighted some challenges and barriers that organizations must address, including inadequate technological infrastructure and limited training programs. Overcoming these obstacles is crucial, and policymakers and stakeholders should prioritize enhancing readiness and preparedness for adopting digital technologies.

The study acknowledges the potential advantages of digital financial management, such as improved financial transparency, accountability, and data-driven decision-making. However, it also reveals challenges and barriers to the adoption and implementation of digital technologies, such as staff resistance and high initial implementation costs. Organizations must address these challenges and mitigate associated risks, particularly in terms of data security and privacy concerns.

The study emphasizes the importance of readiness and preparedness for digital financial management, including the necessity for technological infrastructure and comprehensive training programs. Additionally, it identifies top management commitment and support as crucial factors in successfully driving digital transformation in financial management processes.

Based on the results of this study, the following recommendations are suggested

- **Enhance Technological Infrastructure:** Nigerian public sector organizations should invest in upgrading their technological infrastructure to support the integration of digital technologies in financial management processes. This involves ensuring reliable hardware, software, and network capabilities to facilitate the seamless implementation and utilization of digital tools.
- **Provide Comprehensive Training Programs:** To improve readiness for digital financial management, organizations should prioritize offering comprehensive training programs for their staff. These programs should focus on enhancing digital literacy, data management skills, and familiarity with digital financial management tools. Regular training sessions and workshops can assist employees in adapting to new technologies and maximizing their potential benefits.
- **Foster Top Management Commitment and Support:** Top management plays a critical role in ensuring the successful implementation of digital financial management. Organizations should ensure that top management shows commitment and support for digital transformation initiatives. This can be achieved through clear communication, resource allocation, and active involvement in the implementation process.
- **Address Data Security and Privacy Concerns:** It is crucial for organizations to address data security and privacy concerns as they embrace digital technologies. Implementing robust data security protocols, encryption measures, and conducting regular audits are essential to protect sensitive financial information. Prioritizing compliance with relevant data protection regulations and standards is key to upholding trust and confidence in digital financial management processes.
- **Develop a Comprehensive Framework:** Organizations need to establish a comprehensive framework for the successful integration of digital technologies in financial management. This framework should encompass clear policies, guidelines, and strategies to facilitate the adoption, integration, and utilization of digital tools. Tailoring the framework to meet organization-specific needs and requirements is vital to maximize benefits and minimize risks.

REFERENCES

- Akande, T. O. (2021). [Digital transformation and financial management efficiency: evidence from Nigerian public sector](#). *Journal of Public Sector Administration*, 9(2), 43-55.
- Akpabio, E. M. (2022). [Addressing digital infrastructure gaps in Nigeria's public sector](#). *International Journal Of Information Technology*, 11(1), 15-29.
- Akpalo, A. R. (2021). [Cybersecurity risks in Nigeria's digital financial management](#). *International Journal Of Cybersecurity*, 8(3), 67-82.
- Anyanwu, C. N. (2020). Leveraging data analytics and ai for improved financial forecasting in Nigerian public sector. *Journal of Public Finance*, 18(4), 109-125.
- Aslam, F. (2023). [The benefits and challenges of customization within saas cloud solutions](#). *American Journal of Data Information and Knowledge Management*, 1(4), 14-22.
- Bello, A. R. (2021). [Cybersecurity risks in Nigeria's digital financial management](#). *International Journal of Cybersecurity*, 8(3), 67-82.
- Chakraborti, J., Dutta, A., Jana, B. (2022). [An empirical investigation into why startups resist use of digital marketing](#). *Journal of Content Community and Communication*, 8(15), 69-83.
- Dessaint, O., Foucault, T., & Frésard, L. (2020). [Does big data improve financial forecasting? the horizon effect](#). *SSRN Electronic Journal*.
- Dexiang, Y., Shengdong, M., Liu, Y., Jijian, G., Chaolung, L. (2023). [An improved deep-learning-based financial market forecasting model in the digital economy](#). *Mathematics*, 6(11), 1466.
- Dovgyi, S. and Kozlov, O. (2022). [Information technology of it-infrastructure management architecture elements](#). *Environmental Safety and Natural Resources*, 4(44), 91-113.
- Essen, M., Engelen, P., Carney, M. (2012). [Does “good” corporate governance help in a crisis? the impact of country- and firm-level governance mechanisms in the European financial crisis](#). *corporate governance: An International Review*, 3(21), 201-224.
- Eze, U. C. (2021). Blockchain technology in nigeria's public sector: a case for enhanced transparency. *International Journal of Blockchain Research*, 6(2), 12-25.
- GHERASIM, Z., & IONESCU, L. (2019). [The financial accountability of e-government: the information transparency of decision-making processes in public organizations](#). *Annals of Spiru Haret University. Economic Series*, 19(3), 23–32. <https://doi.org/10.26458/1937>
- Ghosh, S. K. (2021). [A cloud transformation framework to help financial services with digital and cloud transformation](#). *International Journal of Computer Trends and Technology*, 69(8), 23–25.
- Gray, J., Gerlitz, C., Bounegru, L. (2018). [Data infrastructure literacy](#). *Big Data & Society*, 2(5), 205395171878631.
- Iloje, J. B., & Okwo, I. M. (2022). [Impact of Treasury Single Account On Public Finance Management in Nigeria: Pre and Post Implementation Analysis](#). *European Journal of Accounting, Auditing and Finance Research*, 10(12), 62-75.
- Karadağ, H. (2017). [The impact of industry, firm age and education level on financial management performance in small and medium-sized enterprises \(SMES\)](#). *Journal of Entrepreneurship in Emerging Economies*, 3(9), 300-314.
- Kumar, S., & Gupta, S. K. (2017). [E-readiness: a state of preparedness to participate in the digital economy](#). *AgricINTERNATIONAL*, 4(2), 42.
- Mata, M. (2023). [Collaborative innovation and absorptive capacity as an antecedent on it firm financial performance](#). *Journal of the Knowledge Economy*.
- Mohaiyadin, N., Aman, A., Palil, M., Said, S. (2022). [Addressing accountability and transparency challenges in waqf management using blockchain technology](#). *Journal of Islamic Monetary Economics and Finance*, (8), 53-80.
- Morol, M. K. (2022). [Data security and privacy in cloud computing platforms: a comprehensive review](#). *International Journal of Current Science Research and Review*, 05(05).
- Muraina, S., Dandago, K. (2020). [Effects of implementation of international public sector accounting standards on Nigeria's financial reporting quality](#). *International Journal of Public Sector Management*, 2/3(33), 323-338.
- Plantin, J., Punathambekar, A. (2018). [Digital media infrastructures: pipes, platforms, and politics](#). *media, Culture & Society*, 2(41), 163-174.
- Samuel, O. D., Fatai, B. J. (2020). [Forensic accounting and financial crimes in Nigerian public sector](#). *J. Account Taxation*, 4(12), 118-125.
- Shenkoya, T. (2022). [Can digital transformation improve transparency and accountability of public governance in Nigeria? transforming government: People, Process and Policy](#), 17(1), 54–71.
- Smith, J. (2019). The benefits of digital technologies in financial management. *Journal of Financial Technology*, 15(2), 45-62.
- Su, L., Peng, Y., Kong, R., Chen, Q. (2021). [Impact of e-commerce adoption on farmers' participation in the digital financial market: evidence from rural China](#). *Journal of Theoretical and Applied Electronic Commerce Research*, 5(16), 1434-1457.
- Talwar, S., Talwar, M., Kaur, P., Dhir, A. (2020). [Consumers' resistance to digital innovations: a systematic review and framework development](#). *Australasian Marketing Journal*, 4(28), 286-299.
- Tanjeh, M. (2016). [Factors influencing the acceptance of international public sector accounting standards in Cameroon](#). *Accounting and Finance Research*, 2(5).
- Vassil, K. E. (2019). [Estonia's e-governance system: a model for Nigeria's public sector](#). *Journal of E-Government Studies*, 14(3), 51-66.

Wamukoya, J., Mutula, S. (2005). [Capacity-building requirements for e-records management](#). *Records Management Journal*, 2(15), 71-79.

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