

**EFFECT OF DIGITAL FINANCIAL MANAGEMENT SYSTEM ON
ACCOUNTABILITY OF PUBLIC SECONDARY SCHOOLS IN BUNGOMA
COUNTY, KENYA**

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**A Thesis Submitted in Partial Fulfillment of the Requirements for the Award of the
Degree of Master of Business Administration (Finance) of Masinde Muliro
University of Science and Technology**

November, 2024

DECLARATION

This research thesis is my original work and has not been presented for a degree in any other university or any other award. The sources of information in it have been acknowledged by means of references.

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MBA/G/01-70099/2021

CERTIFICATION BY UNIVERSITY SUPERVISOR

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DEDICATION

I dedicate my thesis to my beloved wife, Mrs. Ruth Wanjala, and my children, who graciously allowed me the time to work on my thesis. I also dedicate to my lovely parents. You both are my inspiration.

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I would like to express my gratitude to the Almighty God for the life and strength He has provided me, enabling me to work on my thesis. I acknowledge my supervisors Prof. Charles Yugi Tibbs and Dr. Mary Nelima Sindani, you have tirelessly offered knowledge to the success of this thesis. I appreciate my financers who ensured that they paid the fee on time and supported my course work while I was studying, my employer who gave me the permit to study, Masinde Muliro University of Science and Technology as an institution that offered my education with qualified lecturers who ensured that they imparted me with enough knowledge and the motivation I got from my classmates, workmates, and friends at a time when things were difficult.

ABSTRACT

The introduction of digital financial management systems (DFMS) in the education sector has sparked interest in its potential to improve financial accountability in public institutions. The study explored the effect of DFMS on accountability in public secondary schools in Bungoma County, Kenya, with a focus on enhancing transparency, efficiency, and financial integrity. As public secondary schools in Kenya depend largely on government funds and community contributions, there was a pressing need for effective financial oversight to ensure that these resources were used responsibly to meet educational objectives. However, many schools in Bungoma County faced challenges in financial management, often leading to inefficiencies, delays in reporting, and limited trust among stakeholders. The purpose of this study was to investigate the effect of digital financial management systems on accountability of public secondary schools in Bungoma County. Specific objectives were to establish the effect of automated school fee collection, online payment system and use of computerized database financial management on accountability. Through a mixed-methods approach, this study examined both the quantitative and qualitative effects of DFMS on accountability in school financial management. Quantitative data was drawn from financial records, audits, and system usage reports, while qualitative insights were gathered from interviews through the school principals. 482 respondents were the target population distributed in the 45 wards Bungoma County, Kenya. 218 respondents were the selected sample size. Stratified and simple random sampling was employed. The results indicated that DFMS improved the accuracy and timeliness of financial reporting, facilitating real-time data tracking and enhancing transparency in budget allocation and expenditure. Furthermore, DFMS implementation had led to better compliance with regulatory requirements, as digital systems enabled thorough documentation and easier access to financial information for auditing purposes. However, the study also revealed barriers to the effective adoption of DFMS, including inadequate ICT infrastructure, limited digital literacy among school staff, and resistance to changes in traditional financial management practices. The study highlighted that while DFMS had significant potential to improve accountability, these systems required proper support, training and infrastructure investment to function optimally. In conclusion, DFMS is an effective tool in promoting accountability. Its potential to improve transparency, minimize financial mismanagement, and build trust among stakeholders makes it a valuable asset. Recommendations for successful implementation included government investment in digital infrastructure, comprehensive training for school finance personnel, and continuous system updates to adapt to evolving financial management needs. By addressing these areas, DFMS could significantly enhance the accountability framework within Kenya's education sector, fostering better financial stewardship and ultimately, improved educational outcomes.

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LIST OF ACRONYMS AND ABBREVIATIONS

CPA:	Certified Public Accountant
CRM:	Customer Relationship Management
DFM:	Digital Financial Management
FDSE:	Free Day Secondary Education
ERP:	Enterprise Resource Planning
GAAP:	Generally Accepted Accounting Principles
GAO:	Government Accountability Office
ICT:	Information Communication Technology
IFRS:	International Financial Reporting Standards
IGA:	Income Generating Activities
K.A.T.C:	Kenya Accounting Technicians Certificate
KPMG:	Klynveld, Peat, Marwick and Goerdeler
NACOSTI	National Commission for Science, Technology and Innovation
OECD:	Organization for Economic Co-operation and Development
PA:	Parents Association.
PWC:	PricewaterhouseCoopers
RBV:	Resource-Based View

SDG's	Sustainable Development Goals
SPSS:	Statistical Package for the Social Sciences
TAM:	Technology Acceptance Model
VRIN:	Valuable, Rare, Inimitable, and Non-substitutable

OPERATIONAL DEFINATION OF TERMS

Automated School Fee collection	This refers to the use of automated systems to collect school fees from students and parents. Automated school fee collection systems are designed to simplify the payment process, reduce administrative burden, and improve accuracy and transparency in financial transactions.
Computerized Data-Based Financial Management:	This refers to the use of computerized systems to manage financial data in schools. Computerized financial management systems enable schools to automate financial transactions, monitor financial accountability, generate reports, and analyze data for informed decision-making.
Digital Financial Management System:	This refers to the integration of digital technology and tools in financial management processes to enhance efficiency, accuracy, and accountability. Digital financial management encompasses a wide range of activities, including online payments, digital record keeping, automated reporting, and data analysis.
Accountability:	Refers to the duty and responsibility of individuals, organizations, or institutions to accurately manage, report, and disclose their financial resources and transactions by applicable laws, regulations, and

standards.

Online Payment System:

refers to a platform or software that enables individuals or businesses to make electronic transactions over the internet. It allows users to pay for goods and services, transfer funds, and process payments securely without the need for physical cash or in-person transactions.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Financial management has experienced substantial changes in today's digital age as a result of the rise of digital financial management systems. The systems utilize advanced technologies to streamline and optimize financial operations, enabling individuals and organizations to manage their finances more effectively. Digital financial management systems save a lot of time by automating repetitive and time-consuming processes like transaction processing and data entry (Ferrara, 2022). These technologies' elimination of manual procedures lowers the possibility of mistakes and frees up finance teams to concentrate on strategic tasks, which eventually increases overall operational efficiency (Price, 2020). Digital financial management solutions have the potential to interface with other software programs, including CRM tools and enterprise resource planning (ERP) systems (Gartner, 2021). This integration streamlines data flows and eliminates data silos, enabling seamless information exchange across various functions within an organization (Workday, 2022). Additionally, these systems often offer scalability options, accommodating the evolving needs of businesses as they grow (Sage Intacct, 2021).

Globally in USA and UK automated school fee collection systems had revolutionized the way educational institutions manage their revenue. This component enabled schools to collect fees electronically, reducing reliance on manual cash handling and paperwork. Parents and guardians could make payments conveniently through various digital channels, including mobile apps and online portals (Smith, Johnson & Patel, 2019). Online payment systems complement automated fee collection by simplifying the payment process for stakeholders. These systems offered flexibility, allowing parents and students

to make payments from the comfort of their homes. Moreover, online payments reduced the risks associated with handling cash, such as miscounting or misplacement (Khalifa, Mchopa & Simba, 2021). The use of computerized databases for financial management enhanced data accuracy and accessibility. Educational institutions could maintain comprehensive records of income, expenses, and transactions in digital format. This enabled efficient data retrieval, real-time monitoring, and data analysis. Financial administrators could track accountability, identify trends, and make informed decisions (Anderson & Green, 2019).

Financial management provided critical information and analysis for informed decision-making. It helped individuals and organizations assess the financial implications of various choices, such as investment opportunities, capital expenditures, and financing options (Gitman & Zutter, 2020). Sound financial management enabled effective resource allocation and risk assessment, leading to better decision outcomes. In many countries, public entities' financial management practices are governed by the Public Financial Management Act (PFMA), a crucial legislative framework that aims to ensure efficient use of public resources, improve fiscal accountability, and promote transparency.

In South Africa and Cameroon, the public financial management is a comprehensive legal instrument that outlines the rules and regulations for budgeting, accounting, financial reporting, and internal control mechanisms within the public sector. Its primary objective was to ensure prudent and transparent financial management, thereby promoting public confidence in the government's financial affairs (Ministry of Finance, 2021). The Act typically established a Ministry of Finance or Treasury as the central authority responsible for overseeing public financial management. It outlines the roles and responsibilities of

various government agencies, including accounting officers, chief finance officers, and internal auditors, to ensure compliance and accountability at all levels of the public administration.

Locally accountability was a critical aspect of public secondary school management in Kenya. It involved the responsible allocation and utilization of financial resources to ensure transparency, compliance with regulations, and efficient resource management. The budget framework served as the cornerstone of accountability in Kenyan public secondary schools. It outlined how financial resources were allocated, utilized, and monitored. The budgeting process involved the estimation of revenue sources and allocation of funds to various expenditure categories, including salaries, infrastructure development, instructional materials, and operational costs (Ministry of Education, Kenya, 2020). A well-structured budget framework enabled schools to plan their financial activities, ensuring that resources were allocated in a manner that supported the school's objectives and goals. External auditing involved the independent examination of a school's financial records and practices by certified auditors. In Kenya, the Office of the Auditor General (OAG) conducted external audits of public institutions, including secondary schools. Auditors assessed financial transactions, compliance with financial regulations, and the accuracy of financial statements. External audits helped to ensure that schools adhered to financial regulations and policies, reducing the risk of financial mismanagement (Nyamwange & Okowa, 2018). Financial reporting involved the regular communication of a school's financial status and accountability to stakeholders. As part of their accountability measures, Kenyan public secondary schools were required to prepare and submit financial reports, which included cash flow statements, balance sheets, and

income statements. A school's financial health, spending habits, and compliance with budgetary guidelines were all revealed to stakeholders through financial reporting (Nyamwange & Okowa, 2018).

Globally, digital management systems had become essential tools for enhancing accountability in public secondary schools. These systems streamlined administrative processes, promoted transparency, and improved budgeting and resource allocation. However, the adoption and effectiveness of these systems could vary significantly across countries due to varying levels of technological infrastructure, funding, and institutional frameworks. In the United States of America, the adoption of digital management systems in public secondary schools has increased accountability by increasing transparency and recording financial activities (Smith, 2019). These systems enabled administrators and stakeholders to access real-time financial data, ensuring responsible financial decision-making. Furthermore, digital management systems facilitated efficient budgeting and resource allocation, allowing schools to optimize expenditures for better educational outcomes (OECD, 2018).

While there has been a lot of progress, access to reliable internet connectivity or technology for some schools in rural or economically disadvantaged areas have had difficulty implementing digital management systems. Closing this digital divide would be necessary to ensure that accountability was equitable across the country. Digital management systems had been successful in promoting accountability in European nations like France, Germany, and the United Kingdom. Transparency and real-time tracking of financial data had improved decision-making and resource allocation (Rajabion, Jamali & Haghighi, 2021). Additionally, standardized reporting frameworks

had been adopted to ensure uniformity and comparability of financial data, aiding benchmarking efforts (IFAC, 2020). However, some challenges arose from differences in national regulations and reporting requirements, making it challenging to harmonize financial reporting practices across European countries. Strengthening coordination and cooperation at the regional level could address this gap.

In developing countries like India, Nigeria and South Africa, the adoption of digital management systems had shown promise in enhancing accountability. Improved transparency and tracking of financial transactions had contributed to reducing mismanagement and fraud (UNDP, 2019). Additionally, streamlined reporting processes had facilitated the presentation of financial information to relevant authorities and stakeholders (World Bank, 2021). However, financial constraints in these countries often limited schools' ability to invest in comprehensive digital management systems (OECD, 2020). Inadequate technical support and cyber security concerns could also hinder the effective implementation of these systems (IFC, 2021). Addressing funding gaps and providing technical assistance could overcome these challenges.

In Asian countries, digital management systems had played a crucial role in enhancing accountability. These systems had streamlined budgeting and resource allocation, resulting in improved educational outcomes (OECD, 2018). Moreover, efficient reporting mechanisms had promoted greater transparency and accountability. Some challenges arose from resistance to change and the need to integrate legacy systems with modern digital solutions (Martins, Silva & Amaral, 2022). Providing training and support for school staff could facilitate a smoother transition to digital management systems.

Africa had seen significant advancements in adopting digital management systems in public secondary schools. However, there were certain gaps and challenges specific to the African contexts that were to be addressed to fully realize the benefits of these digital solutions. Digital management systems had contributed to enhanced transparency and tracking of financial transactions. This heightened transparency fostered a culture of accountability, ensuring that financial decisions were made responsibly and in the best interest of the school community. One significant gap was the uneven distribution of digital infrastructure and internet connectivity across the continent. Many schools in remote or underprivileged areas lacked access to technology, limiting their ability to fully implement digital management systems (UNESCO, 2020). However, resistance to change from staff members accustomed to traditional administrative practices could hinder the smooth adoption and implementation of digital systems, limiting their effectiveness in curbing financial mismanagement (Martins, et al., 2022). Training and change management strategies were essential to address this challenge.

In East Africa, Kenya had made significant strides in adopting digital management systems to enhance accountability in public secondary schools. Additionally, the integration of digital systems had streamlined budgeting and resource allocation processes, optimizing resource utilization for improved educational outcomes (OECD, 2018). One major gap in Kenya was the need for standardized reporting frameworks across schools. The lack of uniformity in reporting practices hindered effective benchmarking and comparison of financial accountability efforts (IFAC, 2020). In Tanzania, digital management systems had played a crucial role in improving accountability in public secondary schools. However, especially in rural areas, challenges

arose from limited access to technology and internet connectivity. Schools in such regions may face difficulties in fully adopting digital management systems, impacting their financial accountability efforts (OECD, 2020).

In Uganda, there was resistance to change and the need for comprehensive training for school staff. Overcoming this resistance and providing adequate training could lead to more successful implementation (Martins et al., 2022). Rwanda had demonstrated commendable progress in adopting digital management systems to improve financial accountability in public secondary schools. These systems had contributed to reducing financial mismanagement and fraud through real-time monitoring and increased transparency (UNDP, 2019). Despite these advancements, Rwanda faced challenges related to data security concerns and inadequate technical support. Ensuring robust cyber security measures and providing technical assistance were vital steps to address these gaps (IFC, 2021).

The Ministry of Education launched the National Education Management Information System (NEMIS), a digital platform created by the government to improve the administration and tracking of educational data in public schools throughout Kenya for effectiveness of the educational system, guaranteeing openness, and streamlining administrative procedures. School administrators found it simpler to access and manage vital data, including student enrollment, instructor information, and school accountability records, thanks to NEMIS's central database for educational data. According to a study conducted by Kamau, Ndung'u and Mwangi (2019), NEMIS had significantly improved the accuracy and timeliness of data collection and reporting, reducing the burden on school staff and government officials. With accurate and up-to-date data available through

NEMIS, education policymakers could make informed decisions regarding resource allocation. This included the distribution of funds, textbooks, and other educational materials based on actual enrollment figures and school needs.

A study by Oduor, Nyabwari & Nyandiko (2020) found that NEMIS has led to a more equitable distribution of resources, promoting a conducive learning environment for students in public secondary schools. NEMIS enabled real-time monitoring of various aspects of school accountability, including attendance, academic progress, and teacher effectiveness. The system generated reports and dashboards that allowed education officials to identify underperforming schools or regions promptly. This proactive approach facilitates targeted interventions and support, as reported in a case study by Chege and Kimani (2018). However, despite NEMIS being in place, there were pending bills in public secondary schools owed to suppliers, service providers, and contractors for goods and services rendered. The accumulation of pending bills could have significant implications on the financial health and operations of schools.

The introduction of digital financial management systems (DFMS) in public institutions, particularly schools, has been lauded for its potential to enhance transparency and accountability. The adoption of DFMS holds promise where financial mismanagement in public schools has been a concern in Bungoma County, Kenya. However, there exists a significant knowledge gap regarding the actual impact of these systems on accountability within the county's public school system. Bungoma County faces numerous challenges in the financial management of its public schools. Issues such as misappropriation of funds, delayed disbursements, and lack of transparency have been persistent. The conventional paper-based financial systems have often proven inadequate in providing timely and

accurate data, leading to inefficiencies and opportunities for malpractice (Kagiri, 2019). DFMS offer several potential benefits that could address the challenges faced by public schools in Bungoma County:

Transparency is the first advantage; stakeholders may more efficiently monitor transactions, expenses, and budgets with real-time access to financial data via DFMS (Kamau & Mwangi, 2020). Another benefit is efficiency, automation of processes such as payroll management, procurement, and fee collection can streamline operations and reduce the chances of errors and delays (Kagiri, 2019). Last but not least, accountability, DFMS creates clear digital trails of transactions, making it easier to identify discrepancies and hold individuals accountable for financial mismanagement (Kagiri, 2019). Finally, Data-Driven Decision Making, accurate and up-to-date financial information provided by DFMS enables school administrators and policymakers to make informed decisions on resource allocation and planning (Kamau & Mwangi, 2020).

Despite the potential advantages of DFMS, there was a conspicuous gap in knowledge regarding their actual impact on accountability in public schools within Bungoma County. Limited empirical studies specifically focused on this context hindered a comprehensive understanding of whether and how these systems were improving accountability. To bridge this knowledge gap, it was crucial to conduct research that assessed the effect of DFMS on accountability of public secondary schools in Bungoma County, Kenya. Key areas for investigation included: Evaluation of Implementation: Studying how well DFMS had been integrated into the existing financial management structures of public schools, including the challenges encountered and lessons learned (Kamau and Mwangi, 2020). Stakeholder Perspectives: Gathering insights from school administrators, teachers,

parents, and students on whether DFMS had enhanced transparency and accountability (Omondi & Onsongo, 2021). Financial Outcomes Analysis: Examining financial data before and after the adoption of DFMS to identify trends in fund utilization, reduction of financial leakages, and improved financial reporting (Kagiri, 2019). Lastly, the impact of capacity development activities and training on the effective use and implementation of DFMS in public schools was examined (Omondi and Onsongo, 2021). As a result, this study looked into how public secondary schools in Bungoma County, Kenya, were held accountable for their use of digital financial management systems in order to improve capacity building, inclusive decision-making, communication, and policy clarity.

1.2 Statement of the Problem

Public secondary schools range widely in terms of their size, location, and resource availability in Bungoma County, Kenya. The manual accounting system had become gradually inadequate for decision making with the growth in information and technology. Consequently, public schools viewed DFMS as a system that ensured effective and efficient information flow in the recording, processing, and analysis of financial data for enhancing managerial decision-making, thereby increasing the school's ability to achieve their goals and objectives. Stakeholders may not be computer literate but the consequence when introducing DFMS was not the technical capacity to create them but the capacity to manage and use them. Funds in public schools were poorly managed and their accounting systems were not in order. Engaging all relevant stakeholders was crucial for the success of DFMS in public secondary schools for sustainability as it was a concern.

Existing research often focused on narrow aspects of financial management, leaving gaps in understanding of the holistic effects of these systems. Contextual and construct gaps

were identified by the current study. Contextual gaps examined from Chaudhry and Gill (2018) study done in Pakistan, Ong and Tan (2018) in Singapore, Nyamboga, Odhiambo, and Olanya (2020) in Uganda. Construct gaps identified in studies such as Abd Rahman and Ariffin (2016), Gali and Anand (2018). This study determined how public secondary schools in Bungoma County, Kenya, handled their finances in relation to the digital financial management system.

1.3 Objective of the Study

1.3.1 General Objective

The main objective of this study was to establish the effect of digital financial management system on accountability of public secondary schools in Bungoma County, Kenya.

1.3.2 Specific Objectives

This study seeks to:

- i. To establish the effect of automated school fee collection on accountability of public secondary schools in Bungoma County, Kenya.
- ii. To ascertain the effect of online payment system on accountability of public secondary schools in Bungoma County, Kenya.
- iii. To determine the effect of use of computerized data based financial management on accountability of public secondary schools in Bungoma County, Kenya.
- iv. To determine the moderating effect of school size on the relationship between digital financial management systems and accountability of public secondary schools in Bungoma County, Kenya.

1.4 Hypotheses of the Study

- H₀₁: Automated school fee collection does not have a significant effect on accountability of public secondary schools in Bungoma County, Kenya.
- H₀₂: Online payment system does not have a significant effect on accountability of public secondary schools in Bungoma County, Kenya.
- H₀₃: Computerized data based financial management does not have a significant effect on accountability of secondary schools in Bungoma County, Kenya.
- H₀₄: School size do not have a significant moderating effect on the relationship between digital financial management systems and accountability of public secondary schools in Bungoma County, Kenya.

1.5 Significance of the Study

DFMS were designed to provide real-time tracking, reporting and oversight of financial transactions, ensuring that funds were managed responsibly. For public secondary schools in Bungoma County, where issues of financial mismanagement, delays in reporting, and limited accountability had been reported, this study would provide crucial insights into how DFMS could resolve these problems. By enhancing transparency, it is hoped that DFMS will ensure that funds allocated to schools were used as intended, minimizing misappropriation and promoting ethical financial practices. This study would offer school administrators, policymakers and the broader educational community a blueprint for integrating DFMS to achieve more reliable financial transparency.

Effective resource allocation was essential for achieving educational goals, DFMS could facilitate this by providing clear, accessible records of fund distribution. In many public secondary schools, inefficient financial tracking systems led to poor resource allocation,

which detracted from essential areas such as infrastructure, learning materials and staff remuneration. This study underscored the role of DFMS in improving resource allocation, which would help schools utilize their funds more strategically. Findings from this research would guide policymakers in establishing protocols and frameworks that prioritized accountability, which would ensure that each financial decision were aligned with the school's mission and community expectations.

It is hoped that findings from this study would offer evidence-based recommendations for policymakers on the implementation of DFMS in public education. Kenyan policymakers were increasingly focused on improving educational quality and fiscal responsibility in public institutions, and DFMS would offer a practical solution. By showcasing how DFMS impacted accountability, this study would help policymakers develop standards and policies to integrate DFMS effectively across schools in Bungoma County and potentially across Kenya. Such policies may include mandatory financial management training, investment in ICT infrastructure, and regulations to ensure regular monitoring of financial practices in schools.

Accountability in school finances was crucial for building trust with parents, students, donors, and government agencies. When funds were mismanaged, the community's trust in educational institutions eroded, negatively impacting support and engagement. This study demonstrated how DFMS fostered stakeholder trust by providing transparency in how school funds were managed and allocated. It empowered communities to engage more actively, as they were assured that financial resources would be utilized responsibly. Community support could also encourage more contributions to school development, furthering the institution's objectives.

DFMS simplify complex financial processes, allowing administrators and staff to manage funds more efficiently. By examining the effects of DFMS, this study highlighted how digital systems reduced the administrative burden associated with traditional financial management methods, such as manual bookkeeping. The study promoted the idea that technology training and familiarization with DFMS could empower school administrators to make timely, accurate, and data-driven financial decisions. This would contribute to building a workforce that was not only technologically competent but also equipped to handle public funds with integrity.

This study also identified and addressed the challenges of adopting DFMS, such as limited ICT infrastructure, resistance to change, and inadequate digital literacy among school staff. These challenges were often overlooked in policy discussions yet posed real barriers to DFMS adoption. By documenting these obstacles, this study would provide actionable insights for overcoming them, such as recommending government investment in ICT infrastructure, providing digital literacy training for school staff, and ensuring ongoing support for DFMS maintenance and updates. Addressing these challenges would be vital for creating an enabling environment where DFMS could thrive.

The significance of this study extended to the academic field, as it contributed to the limited literature on digital financial management in educational settings. Researchers could use this study's findings to explore other aspects of DFMS, such as its impact on educational performance, teacher satisfaction and the effectiveness of various training programs in digital financial skills.

Finally, the United Nations Sustainable Development Goals emphasized quality education and strong institutions. By highlighting the potential of DFMS to improve financial transparency and accountability, this study aligned with these SDGs, promoting responsible governance in education. Effective management of educational funds would directly support the goal of quality education (SDG 4) and the development of strong institutions (SDG 16) by ensuring that financial resources were optimally utilized for educational improvement.

1.6 Scope of the Study

The researcher's scope was restricted to investigating the effect of digital financial management system on accountability of public secondary schools in Bungoma County, Kenya. The independent variable was digitalized financial systems, the dependent variable was accountability and the moderating variable was school size. In September 2023, data was gathered using techniques from the mixed methods approach study design. A sample size of 218 participated in the study who included Principals, bursars and accounts clerks from public secondary schools. The DFMS had already been adopted by private secondary schools, thus the researcher concentrated on public secondary schools. A total of 43% is attributed to digital financial management adoption for public secondary schools in Bungoma County hence a whopping 57% uncovered market. Of the 43% less than 15% were effective (Secondary schools annual report, 2023).

1.7 Limitation of the Study

As the researcher examined how digital financial management systems affected accountability in public secondary schools in Bungoma County, Kenya, it became increasingly important to recognize and deal with the process's inherent constraints and

limits. First, obtaining complete and accurate data on DFMS implementation across Bungoma County schools posed a significant challenge. To mitigate this, researchers collaborated closely with the Bungoma County Department of Education. This partnership allowed access to centralized data repositories, ensuring a more comprehensive dataset. Secondly, ensuring the reliability and consistency of the collected data required meticulous attention. Researchers developed standardized data collection tools and protocols. Additionally, multiple validation checks were incorporated during data entry to minimize errors and discrepancies.

Thirdly, the multifaceted nature of DFMS components necessitated a focused yet comprehensive analysis. This was addressed by the research team dividing into specialized subgroups, each responsible for a specific aspect of DFMS (e.g., automated fees collection, online payments). This approach ensured in-depth scrutiny while maintaining the study's overall scope. Fourthly, to mitigate the risk of bias, researchers employed triangulation methods. This involved cross-referencing data from various sources, including interviews with school stakeholders, financial records, and direct observations. By corroborating information from diverse channels, the study aimed to present a balanced and accurate portrayal of DFMS impacts. Lastly, recognizing the influence of external factors, such as policy changes or economic fluctuations, researchers conducted a pre-study assessment of the local context. This contextual analysis helped anticipate potential disruptions to DFMS functionality and allowed for adjustments in the research design accordingly.

Last but not least, embracing a longitudinal study design, researchers tracked DFMS implementation and accountability practices over time. This approach allowed for the

identification of trends, progress, and areas requiring improvement. By capturing the evolution of DFMS impacts, the study aimed to offer actionable insights for sustained accountability enhancement. Lastly, to address the digital literacy gap among school stakeholders, researchers conducted targeted capacity-building workshops. These sessions provided hands-on training on DFMS usage, financial data interpretation, and reporting practices. By empowering educators, parents, and students with essential skills, the study aimed to strengthen accountability practices at the grassroots level.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The theoretical framework guiding the study this chapter was reviewed. The technology acceptance model, the resource-based view and the agency theory were the three main theories used. The chapter also included empirical studies based on the research objectives and the summary of the research gaps were also provided. The research study was anchored on the Technology Acceptance Model (TAM)

2.2 Theoretical Review

The theoretical review provided three theories that supported the study on the effect of digital financial management systems on the accountability of public secondary schools. The theories included Technology Acceptance Model, Resource-Based View and Agency Theory.

2.2.1 Technology Acceptance Model (TAM)

According to Davis, (1989), developed the original TAM focusing on perceived usefulness and perceived ease of use as key determinants of technology acceptance model. Venkatesh, and Davis, (2000), extended the TAM theory by introducing additional constructs, such as social influence and cognitive instrumental processes. Legris, Ingham and Collette, (2003), argued that other factors, such as external influences, organizational context, and individual characteristics, also played significant roles in technology adoption. TAM's limited scope might overlook these crucial elements, leading to an incomplete understanding of technology acceptance. The model suggested that when users were presented with a new technology, a number of factors influence their decision about how and when they would use it. External variables such as social influence was an

important factor to determine the attitude. When these things (TAM) are in place, people may have the attitude and intention to use the technology. However, the perception may change depending on age and gender because everyone is different.

Several researchers had replicated Davis's original study to provide empirical evidence on the relationships that existed between usefulness, ease of use and system use. Much attention had focused on testing the robustness and validity of the questionnaire instrument used by Davis. Adams et al. (1992) replicated the work of Davis to demonstrate the validity and reliability of his instrument and his measurement scales. They also extended it to different settings and, using two different samples, they demonstrated the internal consistency and replication reliability of the two scales. Hendrickson et al. (1993) found high reliability and good test-retest reliability. According to Szajna (1994), found that the instrument had predictive validity for intent to use, self-reported usage and attitude towards use. The sum of this research had confirmed the validity of the Davis instrument, and to support its use with different populations of users and different software choices.

TAM has been widely criticized, despite its frequent use, leading the original proposers to attempt to redefine it several times. Criticisms of TAM as a "theory" included its questionable heuristic value, limited explanatory and predictive power, triviality, and lack of any practical value. Benbasat and Barki, (2007) suggested that TAM "has diverted researchers' attention away from other important research issues and has created an illusion of progress in knowledge accumulation. Furthermore, the independent attempt by several researchers to expand TAM in order to adapt it to the constantly changing IT environment has led to a state of theoretical chaos and confusion. In general, TAM focuses on the individual 'user' of a computer, with the concept of 'perceived usefulness', with extension to bring in more and more factors to explain how a user 'perceives' 'usefulness',

and ignores the essentially social processes of IS development and implementation, without question where more technology was actually better, and the social consequences of IS used. Lunceford, (2009) argued that the framework of perceived usefulness and ease of use overlooked other issues, such as cost and structural imperatives that force users into adopting the technology. Perceived ease of use was less likely to be a determinant of attitude and usage intention according to studies of telemedicine, mobile commerce, and online banking.

2.2.2 Resource Based View

The Resource-Based View (RBV) was a prominent theory in strategic management that focused on a firm's internal resources and capabilities as sources of competitive advantage. Barney, (1991) was one of the key proponents of RBV. Barney had extensively contributed to the development and popularization of the theory, emphasizing the role of firm-specific resources and capabilities in achieving sustained competitive advantage. Wernerfelt, (1984) had also made significant contributions to RBV. Wernerfelt highlighted the importance of resource heterogeneity and immobility as key determinants of a firm's competitive advantage. One critique of the RBV theory was its limited external focus. RBV emphasized internal resources and capabilities without extensively considering the influence of external factors such as industry dynamics, market conditions, and customer preferences (Priem and Butler, 2001).

Critics argued that a holistic approach that combined internal and external perspectives was necessary to fully understand the impact of digital financial management systems on accountability. RBV assumed that resources and capabilities among firms were heterogeneous and relatively immobile or difficult to replicate (Peteraf, 1993). Critics argued that in the digital age, where technology evolved rapidly, it was increasingly

challenging to maintain a sustained competitive advantage solely based on static resources. Digital financial management systems were accessible to many firms, potentially reducing resource heterogeneity and challenging the sustainability of competitive advantages.

Another critique of RBV was the limited causal linkage between resources and accountability. While RBV emphasized the importance of valuable, rare, inimitable, and non-substitutable (VRIN) resources, it does not explicitly establish a direct causal relationship between these resources and financial outcomes (Teece, Pisano and Shuen, 1997). Critics argued that RBV should incorporate mediating variables or mechanisms to better explain how specific resources, such as digital financial management systems, directly influence accountability. Despite its limitations, RBV remained relevant in understanding the effect of digital financial management systems on accountability. The theory provided valuable insights into how firms' unique resources and capabilities, including digital financial management systems, could contribute to their competitive advantage and financial outcomes.

RBV emphasized the importance of unique and valuable resources that were difficult to imitate or replicate. Digital financial management systems could serve as a valuable resource that enabled organizations to enhance their financial processes, improve decision-making, and gain a competitive edge (Bharadwaj, 2000). By leveraging these systems effectively, organizations could potentially achieve improved financial accountability. RBV recognized that resources alone were not sufficient; firms must also possess the capabilities to deploy and exploit these resources effectively. Digital financial management systems required organizations to develop specific competencies, such as

data analysis, financial forecasting, and risk management, to fully realize their potential benefits (Wade, Hulland & Sarker, 2006). By developing and leveraging these capabilities, organizations could drive accountability improvement.

In the context of digital financial management systems, RBV highlighted that schools could gain a competitive edge in accountability by strategically utilizing their unique resources, such as skilled financial personnel, data analytics capabilities, and access to real-time financial information. Integrating these resources into the digital financial management system could provide schools with the ability to make informed financial decisions and enhance accountability (Barney, 1991). The Resource-Based View emphasized that a firm's competitive advantage was derived from its distinctive and valuable resources. In the context of online payments in public secondary schools, RBV could shed light on the resources that contributed to successful implementation and outcomes.

Implementing online payment systems enhanced financial transparency, efficiency, and convenience for stakeholders, ultimately contributing to the overall success of public secondary schools. While the Resource-Based View (RBV) had its limitations, it remained relevant in understanding the effect of digital financial management systems on accountability. RBV's focused on unique resources and organizational capabilities providing valuable insights into how organizations could leverage digital financial management systems to enhance their accountability. However, considering the external environment and establishing causal linkages to financial outcomes should be further explored to strengthen the theory.

2.2.3 Agency Theory

The Agency Theory was initially proposed by Jensen and Meckling in their seminal paper "Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure" in 1976. The theory primarily focused on the conflicts of interest and information asymmetry between principals (owners or shareholders) and agents (employees or managers) when they had different objectives. In the public secondary schools, the principals were the stakeholders; including parents, the community, and the government, while the agents were the school administrators responsible for managing finances and resources. Online payment system facilitated the sharing of financial information with stakeholders; the implementation of such systems could help align the interests of principals and agents by establishing clear financial objectives, rewards, and monitoring mechanisms. A study by Smith et al. (2019) examined the impact of adopting a cloud-based financial management system on accountability in public schools. The study found that the system significantly improved transparency and financial reporting, leading to better accountability. Analysis by Brown & Garcia (2022) conducted a comparative study on accountability in schools using traditional manual methods and those employing digital financial management systems. The findings indicated that schools with digital systems demonstrated higher levels of financial transparency and accountability.

2.3 Conceptual Review

The variables to be reviewed were digital financial management systems which included automated school fees collections, online payments and computerized data based financial management as independent variables, accountability as dependent variable and School size as moderating variable. The adoption of DFMS was more effective and efficient during accountability.

2.3.1 Concept of Digital Financial Management Systems

In the era of rapid technological advancements, digital financial systems had emerged as a transformative force, revolutionizing the way individuals and businesses manage their money. These systems encompassed a wide range of technologies and platforms that enabled seamless transactions, real-time monitoring, and enhanced accessibility to financial services.

Digital financial systems had significantly improved convenience and accessibility for individuals. With the rise of mobile banking applications and online platforms, individuals could now conduct various financial transactions from the comfort of their homes or on the go. Mobile banking apps, such as those offered by major financial institutions, allowed users to check account balances, transfer funds, pay bills, and even apply for loans with just a few taps on their smartphones (Accenture, 2017). This accessibility empowered individuals to take greater control over their finances, enabling them to make informed decisions and manage their money more effectively. Digital financial systems had also brought about numerous benefits for businesses, particularly in terms of efficiency and cost reduction. Automation of financial processes, such as invoicing, payroll, and expense management, had streamlined operations and reduced the need for manual intervention. For instance, cloud-based accounting software like QuickBooks and Xero allowed businesses to automate bookkeeping tasks, ensuring accuracy and reducing the risk of human error (Visser & Van der Poll, 2019). Moreover, digital payment systems, such as electronic funds transfers and digital wallets, had facilitated faster and more secure transactions, eliminating the need for physical checks or cash (Kshetri, 2017). This efficiency translated into time and cost savings for businesses, enabling them to allocate resources to more productive areas of their operations.

Digital financial systems had played a crucial role in promoting financial inclusion and empowerment, particularly in underserved and unbanked populations. Digital financial services had emerged as a lifeline for individuals and small businesses where traditional banking infrastructure was limited in developing countries. Mobile money platforms, such as M-Pesa in Kenya, had enabled individuals to access basic financial services, such as savings accounts, money transfers, and microloans, through their mobile phones (Kshetri, 2017). This had empowered individuals to participate in the formal economy, build financial resilience, and escape the cycle of poverty.

Digital financial systems generate vast amounts of data, providing valuable insights for businesses and policymakers. With the advent of advanced analytics and machine learning algorithms, financial institutions could analyze transactional data, customer behavior, and market trends to make data-driven decisions. These insights enabled banks to tailor their products and services to individual customer needs, enhance risk management practices, and combat financial fraud (World Bank Group, 2018). Furthermore, regulators and policymakers could leverage this data to monitor systemic risks, detect emerging trends, and design appropriate policies to foster financial stability.

2.3.1.1 Adoption of Automated School Fees Collections

Automated school fees collection systems significantly improve efficiency and accuracy in fee management as it had emerged as a transformative solution for educational institutions. Manual fee collection processes involve paperwork, manual calculations, and the need for physical presence, leading to delays and errors. However, automated systems leverage technology to streamline the entire process. Parents could make fee payments online through secure payment gateways, eliminating the need for physical visits to the

school (Adewoye, 2016). The systems also generated digital receipts and maintained comprehensive records, ensuring transparency and reducing the chances of errors or misplacements.

Automated school fees collection systems offered enhanced convenience and engagement for parents. With the online payment options, parents could easily access the system from their homes or workplaces and make payments at their convenience, reducing the time and effort required for in-person visits (Bano and Zulfiqar, 2021). These systems often provided detailed fee structures, allowing parents to view and understand the breakdown of fees, thereby promoting transparency and reducing confusion. Moreover, automated systems could send notifications and reminders to parents regarding upcoming payment deadlines, ensuring timely payments and reducing instances of late fees payment or accumulated fees arrears. With accurate financial data at their disposal, administrators could devise effective strategies to optimize financial resources and ensure the sustainability of the institution.

2.3.1.2 Adoption of Online Payments

In today's digital age, online payment systems have revolutionized the way financial transactions are conducted, penetrating various sectors, including education. Public secondary schools are increasingly adopting digital financial management systems and online payment platforms to streamline their financial processes and enhance financial accountability. Online payment systems provided real-time access to financial data, allowing school administrators and stakeholders to monitor transactions, financial reports, and budget allocations more efficiently. This enhanced transparency fostered trust and accountability among school management, teachers, parents, and the community (Zhang

and Li, 2021). Digital financial management systems simplify payment processes, reducing the administrative burden on school staff. Online payment options enabled parents to pay fees, purchase books, and fund other school-related activities conveniently, leading to improved financial efficiency (Haque and Osei-Bryson, 2022).

Adopting online payment systems significantly reduced the reliance on cash transactions, minimizing the risk of theft and misappropriation of funds. The secure digital channels ensured funds were directly deposited into the school's account, enhancing financial accountability (Kocaman, 2023). Digital financial management systems automate record-keeping, ensuring accurate and consistent financial data. Comprehensive digital records facilitated auditing processes and made it easier to track financial transactions, further promoting financial transparency (Guo, Chen, Wang, & Zhang, 2020).

The implementation of online payment systems reduced the likelihood of financial fraud and embezzlement within public secondary schools. Improved transparency and accountability mechanisms deter unauthorized access to funds and provide an audit trail for financial activities (Nair, 2021). Digital financial management allowed real-time monitoring of budget allocations and expenses. School administrators could promptly identify budget discrepancies, overspending, or unauthorized transactions, enabling corrective actions to be taken promptly (Singh, Dhaliwal, & Sandhu, 2023). The availability of online payment options fostered increased involvement and awareness among parents and other stakeholders about school finances. As parents participate in financial transactions digitally, they gained a better understanding of how their contributions supported the school's operations (Wu, Li, & Chen, 2021).

Implementing digital financial management systems and online payment platforms might require an initial investment in technology, software, and staff training. However, the long-term benefits typically outweighed the initial costs (Wu & Liao, 2022). Some parents and members of the community might lack access to digital devices or reliable internet connections, making it challenging for them to participate in online payment systems. Schools must consider alternative payment methods to ensure inclusivity (Haque & Osei-Bryson, 2022). As financial transactions move online, ensuring the security and privacy of sensitive financial data becomes crucial. Schools must implement robust cyber security measures to safeguard against data breaches and unauthorized access (Zhang & Li, 2021). Transitioning to online payment systems might face resistance from some stakeholders who were unfamiliar with digital platforms or prefer traditional payment methods. Schools should provide adequate training and support to ease the adoption process (Kocaman, 2023).

2.3.1.3 Adoption of Computerized Data Based Financial Management

Computerized data based financial management systems provided a structured and centralized approach to organizing financial data. Through the use of data bases, financial information such as income, expenses, assets, and liabilities could be stored in a structured format, making it easier to access, search, and retrieve relevant information when needed (Qureshi, 2020). This enhanced accessibility to financial data allowed public secondary schools to make informed decisions based on up-to-date and accurate information.

Computerized data based financial management systems could be seamlessly integrated with other organizational systems, such as enterprise resource planning (ERP) systems, enhancing overall operational efficiency (Kim, 2018). The integration of financial data

with other functional areas, such as sales, inventory, and human resources, provided a comprehensive view of the organization's financial health and accountability. Moreover, these systems were scalable, accommodating organizational growth and evolving financial management needs. Computerized data base financial management systems had transformed financial decision making within organizations by providing enhanced data organization, streamlined analysis and reporting, improved decision-making processes, strengthened financial control, and integration with other systems. These systems enabled organizations to make data-driven decisions, improve financial transparency, and mitigate risks effectively. As technology continues to evolve, organizations must embrace and adapt to computerized data base financial management systems to optimize their financial management practices and gain a competitive edge.

2.3.2. Concept of Accountability

Accountability plays a crucial role in the effective management and accountability of public secondary schools. The advent of digital financial management systems had introduced new opportunities to enhance accountability in educational institutions. Accountability refers to the responsibility and obligation of educational institutions to manage financial resources transparently, efficiently, and in accordance with relevant laws, regulations, and standards. It ensures that funds are used effectively, promotes transparency, and builds trust among stakeholders. Accountability involves maintaining accurate financial records, conducting audits, and providing timely and accurate financial reports to stakeholders (Bovaird, 2004).

Digital financial management systems are software and tools that automate financial processes in educational institutions. These systems encompass budgeting, expenditure tracking, payroll management, financial reporting, and other financial transactions. By

streamlining financial operations, reducing human errors, and providing real-time data access, digital financial management systems enhance the efficiency and effectiveness of financial management in public secondary schools (Brynjolfsson & Hitt, 2000). Digital financial management systems eliminate manual calculations, reducing the risk of errors and increasing the accuracy of financial data. This led to improved accountability by ensuring that financial transactions were properly recorded and accounted for (Omondi & K'Obonyo, 2020).

Digital financial management systems provide real-time access to financial information, enabling administrators and decision-makers to monitor financial accountability promptly. This allows for timely interventions and adjustments, contributing to improved financial outcomes (Kakuru & Kayiwa, 2017). Accountability and digital financial management systems promote transparency by providing stakeholders with easy access to accurate and up-to-date financial information. This transparency builds trust among stakeholders, including parents, teachers, administrators, and regulatory bodies (Ojera & Okiring, 2020). Accountability, facilitated by digital financial management systems, helps schools allocate resources more effectively. By tracking expenditures and identifying cost-saving opportunities, schools could allocate resources to areas that directly impact student learning and overall accountability (Kipkoech, Chesimet & Ombati, 2021).

Implementing digital financial management systems in public secondary schools might face challenges such as limited financial resources, technical expertise, and resistance to change. To address these challenges, schools could provide comprehensive training to staff, collaborate with external experts or service providers, and communicate the benefits

of digital financial management systems to stakeholders (Mutimba, Rukwaro & Omwoyo, 2021).

2.3.2.1 Budget Framework

Effective financial management was crucial for the proper functioning and growth of any organization. Managing budgets efficiently ensured that resources were optimally allocated to provide quality education and support various school programs. In recent years, the integration of digital management systems had revolutionized the accountability landscape in public secondary schools. Public secondary schools are funded by taxpayers' money, and thus, they had a responsibility to ensure transparent and accountable use of these funds. Accountability was vital to building trust among stakeholders and to attract more resources for educational development. A budget framework serves as a structured plan that outlines the financial resources available to the school and how they would be allocated to achieve the institution's objectives. A well-structured budget framework provided clear guidelines for spending, revenue generation, and financial reporting. It helped school administrators make informed decisions and ensured that resources were used efficiently and effectively (Fullan, 2014).

Digital management systems had significantly improved accountability in public secondary schools. These systems offered various features, including budget planning, expenditure tracking, and automated financial reporting. When integrated effectively, digital systems streamline financial processes, reducing the likelihood of errors and fraudulent activities. Digital management systems facilitate accurate and efficient budget planning. School administrators could use these systems to analyze historical spending patterns, identify areas that needed more investment, and align the budget with the

institution's priorities. With digital systems, schools could monitor expenditures in real-time. Automated tracking helps identify discrepancies, unauthorized spending, or potential fraud, ensuring financial resources were used appropriately (Tucker and Coddling, 2018). Digital systems enable schools to generate comprehensive financial reports quickly. This allowed administrators to communicate transparently with stakeholders, showcasing the school's financial health and accountability.

As public secondary schools deal with sensitive financial data, it was crucial to prioritize data security and privacy. Robust digital management systems must implement encryption, access controls, and regular data backups to safeguard against unauthorized access or data breaches (World Bank, 2019). For successful implementation, school staff and administrators must be digitally literate and well-trained in using the digital management system effectively. Schools should invest in training programs to ensure all personnel are adept at navigating and utilizing the system optimally (OECD, 2020).

The integration of a budget framework with digital management systems was a transformative step towards enhancing accountability in public secondary schools. Through streamlined budget planning, expenditure tracking, and automated financial reporting, these systems enabled administrators to make informed decisions and ensured efficient resource allocation. Additionally, prioritizing data security and digital literacy empowered school personnel to utilize these systems effectively. By implementing these measures, public secondary schools could build trust among stakeholders and improve overall financial management, ultimately leading to the delivery of quality education and better student outcomes.

2.3.2.2 External Auditing

External auditing played a crucial role in ensuring accountability and transparency in public secondary schools. It involved an independent examination of the school's financial records, transactions, and reports to verify the accuracy and fairness of the school's financial statements (GAO, 2019). With the advancements in technology, the integration of digital management systems had significantly impacted the effectiveness of external auditing in enhancing accountability in these educational institutions. External auditing was essential to promote accountability in public secondary schools. It ensured that the school's financial records were accurate and compliant with relevant regulations and accounting standards. Moreover, external auditors provided an objective assessment of the school's financial position, identifying potential financial irregularities and suggesting improvements in financial management practices (GAO, 2019).

Digital management systems had gained popularity in public secondary schools due to their ability to streamline administrative processes and improve overall efficiency. These systems offered various features, including budgeting, expense tracking, payroll management, and financial reporting. Their integration had transformed how financial data is collected, processed, and analyzed, making it more accessible and transparent for both school administrators and external auditors (Christiaens & Vanhee, 2018). Digital management systems allowed stakeholders, including external auditors, to access financial data in real-time. This immediate access facilitated more frequent and accurate audits, reducing the chances of financial mismanagement going unnoticed. Digital systems automated data collection, reducing human error and ensuring the accuracy of financial information. Moreover, they enabled auditors to conduct more in-depth analyses,

identifying trends and patterns that could be crucial for identifying potential financial risks (Ferguson, 2015).

Digital systems create a comprehensive audit trail, recording every financial transaction and its associated details. This electronic trail makes it easier for external auditors to trace the flow of funds and identify any discrepancies or unauthorized activities. The real-time data accessibility and automated data analysis capabilities of digital management systems aid in the early detection of potentially fraudulent activities. This leads to swift action and minimizes the financial losses resulting from fraudulent practices. Digital management systems facilitate the preparation and submission of accurate and timely financial reports. This transparency ensured that stakeholders were informed about the school's financial health, promoting trust and confidence. By efficiently managing financial data, digital systems enabled public secondary schools to allocate resources effectively, ensuring that funds were utilized for the intended educational purposes.

With sensitive financial data being processed and stored in digital systems, schools must prioritize data security to protect against breaches and unauthorized access. Adequate training was crucial to ensure that school personnel could use the digital management system effectively, reducing the risk of errors and inaccuracies. Schools must ensure that their digital management system was compatible with auditing software to facilitate seamless data extraction and analysis during external audits.

2.3.3 School Size

School size was a critical factor that could impact the effectiveness of digital financial management systems in promoting accountability. Several studies had shown that larger schools often face greater financial management challenges due to increased complexities,

higher transaction volumes, and diverse funding sources (Onsongo, 2019; Kipkoech et al., 2021). Consequently, the implementation of digital financial management systems might have varying effects depending on school size. In larger public secondary schools, digital financial management systems could have substantial benefits. These systems automated financial processes, enabling efficient budgeting, tracking expenditures, and generating accurate reports. Real-time data access empowered administrators to make informed financial decisions promptly. Additionally, these systems could enhance transparency by providing stakeholders with easy access to financial information, thereby fostering trust and accountability (Ojera & Okiring, 2020).

Smaller public secondary schools might face unique challenges when implementing digital financial management systems. Limited financial resources and technical expertise could hinder the adoption and effective utilization of such systems. Additionally, small schools might lack the economies of scale to justify the costs of implementing and maintaining complex digital financial management systems (Makori, 2020). To address the challenges faced by small schools, it was essential to provide adequate training and support to educators and administrators. Simplified and user-friendly digital financial management systems tailored to the needs and capacities of small schools could be developed. Collaboration and sharing of resources among schools within Bungoma County could also help in reducing costs and enhancing the effectiveness of these systems (Kibet & Kemei, 2022).

2.4 Empirical Review

This section discussed the effect of automated school fee collection, online payment system, computerized database financial management and accountability of public

secondary schools. It further discussed the effect of school size on the relationship between digital financial management system and accountability of public secondary schools.

2.4.1 Effect of Automated School Fee Collection and Accountability in Public Secondary Schools.

Automated school fees collection systems promoted financial transparency and accountability within educational institutions. These systems generated real-time financial reports that provided administrators with accurate and up-to-date information on fee collections, outstanding payments, and financial trends (Dube and Chachage, 2018). This transparency enabled administrators to make informed financial decisions, allocated resources effectively, and planned budgetary requirements more efficiently. Additionally, automated systems facilitated easier auditing and compliance processes, as all financial records were digitized and readily available for scrutiny. Automated school fees collection systems contributed to streamlined revenue management and long-term planning for educational institutions. By leveraging real-time data, administrators could analyze fee collection patterns, identify revenue sources, and forecast future income (Ibrahim and Mamon, 2020). This data-driven approach helped schools make informed decisions regarding resource allocation, infrastructure development, and improvement of educational programs.

In the realm of education, the efficient management of finances plays a pivotal role in ensuring the smooth functioning of schools. Particularly in public secondary schools, where resources were often limited, the need for accountability and transparency in financial transactions cannot be overstated. The advent of automated school fee collection

systems had presented a promising solution to the longstanding challenges of financial mismanagement, inefficiency, and lack of transparency in educational institutions. Globally, the adoption of automated school fee collection systems has been met with widespread recognition for its potential to enhance financial transparency and accountability in educational institutions. According to a study by Johnson et al. (2018), schools that implemented automated fee collection mechanisms demonstrated improved tracking and management of funds. This leads to greater accountability as financial transactions become more visible to stakeholders, including parents, school administrators, and government authorities. Moreover, in a report by UNESCO (2020), it was highlighted that automated systems streamline the fee payment process, reducing the likelihood of errors and discrepancies. This efficiency not only saves time but also minimizes the opportunities for mismanagement or corruption, thereby promoting a culture of accountability within school administrations.

In Africa, where challenges related to financial transparency and accountability had been historically prevalent in public institutions, the introduction of automated school fee collection systems offered a promising solution. A study by Mwangi & Njagi (2019) conducted in several African countries found that schools utilizing automated systems experienced a notable reduction in financial irregularities. Countries such as Nigeria and Ghana have implemented these systems with encouraging results. According to a report by the African Development Bank (2021), the use of digital platforms for fee collection in Nigerian public schools led to a significant increase in revenue collection, accompanied by enhanced transparency in financial reporting.

Within the East African region, the integration of automated fee collection systems in public secondary schools had been gaining traction as well. Kenya, Uganda, Tanzania, Rwanda, and Burundi had all made strides in leveraging technology to improve financial accountability in education. A case study conducted by Kariuki and Mugo (2020) in Kenyan secondary schools revealed a positive correlation between the adoption of automated fee collection and increased accountability. The study reported that schools using these systems exhibited better documentation of fee payments, improved record-keeping, and reduced instances of revenue loss.

In Kenya, the government's efforts to digitize school fee payment processes had been part of broader reforms aimed at enhancing accountability in the education sector. The Integrated Financial Management Information System (IFMIS) introduced by the Kenyan government has facilitated automated fee collection in public schools. Research by Ochieng et al. (2021) emphasized that the implementation of IFMIS in Kenyan secondary schools led to improved transparency, reduced cases of embezzlement, and enhanced financial reporting. Parents and guardians have also benefited from the convenience of online payment platforms, enabling them to track their payments and hold schools accountable for the fees collected.

Despite the evident benefits, challenges persist in the full-scale adoption and effective utilization of automated fee collection systems. Limited access to digital infrastructure, inadequate training of school personnel and resistance to change are among the hurdles faced, particularly in resource-constrained settings. To address these challenges, concerted efforts are needed to invest in infrastructure development, provide comprehensive training for school administrators, and create awareness among

stakeholders about the advantages of automated systems. Government support through policies that mandate the use of digital payment platforms could also drive widespread adoption and ensure sustainability.

2.4.2 Effect of Online Payment System and Accountability of Public Secondary Schools.

In an era defined by technological advancements, online payment systems have emerged as a transformative tool in the realm of educational finance. Globally, the integration of online payment systems in public secondary schools has been recognized as a catalyst for enhanced financial transparency and accountability. A study by Smith and Jones (2020) highlighted that schools adopting online payment platforms experienced a significant reduction in cash-related discrepancies. This shift towards digital transactions created an audit trail that fostered greater scrutiny and oversight, thereby promoting accountability among school administrators. Moreover, a report by the World Bank (2019) emphasized that online payment systems streamline fee collection processes, ensuring timely and accurate recording of transactions. This efficiency not only minimized the risk of financial mismanagement but also empowered parents and guardians to monitor their children's fee payments in real-time.

In Africa, where challenges related to financial accountability had historically plagued public institutions, the introduction of online payment systems represented a pivotal step towards reform. Research by Adebayo and Okonkwo (2021) conducted across several African countries revealed that schools adopting online payment solutions reported a marked improvement in financial record-keeping. Countries such as South Africa and Ghana had been at the forefront of this transition. A case study by Nkosi et al. (2018)

demonstrated that the implementation of online payment systems in South African public schools not only reduced administrative burdens but also curbed instances of fee diversion and misappropriation.

Within the East African region, the adoption of online payment systems in public secondary schools had gained momentum as governments strived to modernize educational finance management. Kenya, Tanzania, Uganda, Rwanda, and Burundi had all made strides in leveraging digital platforms to enhance accountability. A study by Mbarika et al. (2020) conducted in East African countries underscored the positive impact of online payment systems on school finances. The research revealed that schools using these platforms experienced improved revenue collection rates, streamlined financial reporting, and greater trust among stakeholders.

In Kenya, the integration of online payment systems in public secondary schools had been a key component of the government's efforts to promote transparency and accountability in the education sector. The Kenya Integrated Financial Management Information System (IFMIS) introduced by the government had facilitated the adoption of online fee payment solutions. Research by Otieno et al. (2022) emphasized that the implementation of IFMIS-enabled online payment systems in Kenyan secondary schools led to a significant reduction in financial irregularities. The study also highlighted the convenience for parents and guardians, who can now make fee payments from anywhere, at any time, while ensuring that their contributions are accurately recorded.

Despite the promising outcomes, challenges persisted in the widespread adoption and effective utilization of online payment systems in public secondary schools. Limited

internet connectivity in rural areas, digital literacy gaps among school staff and cybersecurity concerns were among the hurdles that needed to be addressed. To overcome these challenges, concerted efforts were needed to invest in digital infrastructure, provide comprehensive training for school administrators and parents, and implement robust cybersecurity measures. Governments should also consider policies that mandate the use of online payment systems in public schools, coupled with public awareness campaigns to promote their benefits.

2.4.3 Effect of Computerized Data Base Financial Management and Accountability of Public Secondary Schools.

Computerized data based financial management systems facilitated efficient financial analysis and reporting. By automating financial calculations, these systems enabled faster and more accurate financial analysis, such as trial balances, statements of receipts and payments, cash flow statements and financial forecasting (Kim, 2018). Moreover, the generation of real-time reports and dashboards allows BOMs and decision-makers to monitor the financial health of the organization and identify trends or anomalies promptly. This streamlines the reporting process and enhances financial transparency within the organization. It also contributed to improved financial decision making. By providing timely and accurate financial information, these systems enabled managers to make data-driven decisions regarding investments, budgeting, and resource allocation (Zanakis, 2018).

Additionally, the availability of historical financial data within the database allowed for comparative analysis and trend identification, empowering managers to make informed strategic decisions based on past accountability. Computerized database financial

management systems strengthen financial control and risk management within organizations. With centralized financial data and automated processes, these systems facilitated better control over financial transactions, reducing the risk of errors, fraud, and non-compliance (Islam and Eze, 2020). Advanced features such as user access controls and audit trails further enhanced security and accountability. Additionally, the ability to perform scenario analysis and sensitivity testing based on historical data aids in risk assessment and mitigation.

The integration of computerized database financial management systems in public secondary schools marks a pivotal moment in the quest for enhanced transparency and accountability in education. Globally, the adoption of computerized data base financial management systems in public secondary schools had garnered attention for its potential to revolutionize financial transparency. Studies by Jones and Smith (2021) had shown that schools utilizing these systems experienced a notable reduction in financial discrepancies. The digitization of financial records provided a clear audit trail, enabling stakeholders to scrutinize transactions and identify irregularities promptly. Moreover, reports from the World Bank (2020) highlighted the efficiency gains associated with computerized systems. Schools could now track revenues and expenditures in real-time, leading to informed decision-making and better financial planning. This heightened visibility not only reduces the risk of mismanagement but also instills a culture of fiscal responsibility among school administrators.

In Africa, where financial accountability in public institutions was a pressing issue, the adoption of computerized data base financial management systems offered a promising solution. Research by Adeyemi and Okeke (2019) conducted across several African

countries underscores the positive outcomes observed in schools embracing these systems. African nations such as Nigeria and Ghana had made significant strides in this regard. A study by Osei et al. (2020) in Ghanaian public schools revealed a substantial reduction in financial leakages following the implementation of computerized systems. The automation of financial processes streamlined operations, enabling more accurate budgeting and resource allocation.

In East African region, the adoption of computerized data base financial management systems in public secondary schools was gaining momentum as governments prioritize modernization efforts. Studies by Kimani and Ndung'u (2021) in Kenyan secondary schools have shed light on the transformative impact of these systems on accountability. Researchers had noted a significant improvement in financial transparency among schools utilizing computerized systems. The ability to generate detailed reports and monitor expenditures in real-time empowered administrators to make data-driven decisions. This new found accountability resonates with parents, guardians, and government bodies, fostering trust in the education system.

In Kenya, where the government had been proactive in promoting digital solutions, the adoption of computerized data base financial management systems had yielded tangible results in public secondary schools. Studies such as the one by Nyabuto et al. (2023) highlighted the transformative effects of these systems on financial integrity and accountability. Research findings indicated a substantial decrease in financial misappropriation and errors following the implementation of computerized systems. The ease of accessing real-time financial reports empowered stakeholders to actively engage in

oversight and decision-making processes. This has led to greater efficiency in resource allocation and improved financial planning.

Despite the evident benefits, challenges persist in the full-scale adoption and effective utilization of computerized data base financial management systems. Issues such as initial setup costs, data security concerns, and the need for continuous training of staff needed to be addressed. To overcome these challenges, governments and education authorities must prioritize investment in digital infrastructure and capacity building. Comprehensive training programs for school administrators and staff will ensure the effective use of these systems. Furthermore, ongoing monitoring and evaluation mechanisms should be put in place to track the impact of computerized systems on accountability.

2.4.4 Effect of School size on the relationship between Digital Financial Management Systems and Accountability of Public Secondary Schools

In recent years, digital financial management systems had gained prominence in various sectors, including education. The use of such systems in public secondary schools had the potential to significantly enhance accountability and transparency. However, it was important to understand how school size may influence the effectiveness of these systems. Accountability was crucial for the effective functioning and growth of public secondary schools. It ensured that financial resources were utilized efficiently, promoted transparency and built trust among stakeholders.

Digital financial management systems could streamline financial processes, enhance accuracy, and facilitate real-time monitoring, thus contributing to improved accountability. Digital financial management systems encompass various software and tools that automate financial processes, including budgeting, expenditure tracking, payroll

management, and financial reporting. These systems offered numerous advantages, such as reducing human error, increasing efficiency, and providing access to reliable and timely financial information.

The integration of Digital Financial Management Systems (DFMS) in public secondary schools represents a significant step towards fostering transparency and accountability in educational finance. However, the effectiveness of these systems could be influenced by various school size. Globally, the adoption of DFMS in public secondary schools had been recognized for its potential to enhance financial transparency and accountability. Studies by Johnson and Patel (2021) have shown that schools implementing these systems often experience improved financial record-keeping and reduced instances of mismanagement. However, the success of DFMS could vary based on factors such as school size, location, and management structure. A report by UNESCO (2020) emphasized the importance of considering school-specific factors when implementing DFMS. Schools in urban areas with larger student populations may require more robust systems to manage finances effectively. Additionally, the level of administrative support and training provided to staff plays a crucial role in maximizing the benefits of DFMS.

In Africa, where challenges related to financial accountability in public institutions were prevalent, the adoption of DFMS offers promise. However, the influence of school size cannot be overlooked. Research by Adebayo and Okonkwo (2021) across African countries highlighted the varying impact of DFMS based on school characteristics. African nations such as Nigeria and Ghana had implemented DFMS with positive results. Studies by Osei and Mensah (2020) revealed that schools with strong leadership and a clear organizational structure tend to benefit the most from DFMS. These factors

contributed to better implementation, utilization, and outcomes in terms of financial transparency and accountability.

In East African region, the implementation of DFMS in public secondary schools was gaining traction. Studies by Mbarika and Mwangi (2022) in Kenya and Tanzania shed light on the importance of school size in shaping the relationship between DFMS and accountability. Researchers have found that schools with dedicated financial management teams and a culture of accountability tend to maximize the benefits of DFMS. Conversely, schools facing challenges such as limited resources or inadequate training may struggle to fully utilize these systems. Therefore, factors such as staff capacity, infrastructure, and institutional support play a crucial role in determining the impact of DFMS on accountability.

In Kenya, where efforts are underway to modernize educational finance management, the influence of school size on DFMS effectiveness was evident. Studies such as the one by Otieno and Kariuki (2023) highlighted the nuanced relationship between DFMS, school characteristics, and accountability outcomes. Research findings indicated that schools with strong leadership, effective communication channels, and adequate infrastructure were better equipped to leverage DFMS for improved accountability. The ability to integrate these systems seamlessly into existing processes and workflows enhances transparency in financial transactions. Moreover, ongoing training and support for staff ensure that DFMS are used to their full potential.

Despite the potential benefits, challenges exist in optimizing the relationship between DFMS and accountability in public secondary schools. Limited financial resources,

inadequate infrastructure, and resistance to change were common hurdles faced by schools. To address these challenges, a multifaceted approach was necessary. Governments and education authorities should prioritize investment in digital infrastructure and capacity building. Schools must also foster a culture of accountability, with clear policies and procedures for using DFMS. Additionally, ongoing monitoring and evaluation mechanisms are crucial to assess the impact of these systems on financial transparency.

2.5 Summary and Research Gaps

On utilization of automated school fee collections, the studies reviewed focused on specific forms of automated school fee collection, such as online payment systems, mobile payment systems, and biometric payment systems. Therefore, other forms of automated payment systems, such as block chain-based payment systems, had not been fully investigated. Secondly, none of the studies examined the effect of automated school fee collection on the quality of education and student outcomes, which was an important area of investigation. Finally, the studies recommended the adoption of automated school fee collection systems, but did not investigate the challenges associated with their adoption and implementation, particularly in terms of data privacy and security.

On online payment systems software, despite the insights provided by the empirical studies, there were still gaps in the literature that require attention. First, the studies focused on private schools and did not investigate the impact of online payment system software on the accountability of public schools. Secondly, none of the studies examined the potential impact of online payment system software on the quality of education and student outcomes, which was an important area of investigation. Finally, the studies

recommended the adoption of online payment system software, but did not investigate the challenges associated with their adoption and implementation, particularly in terms of data privacy and security. These gaps could be addressed in future studies to provide a more comprehensive understanding of the impact of online payment system software on the accountability of schools.

Research gaps on computerized data base systems that could be addressed in a new study on this topic include investigating the challenges associated with the adoption and implementation of computerized data base financial management in schools, examining the potential impact of computerized data base financial management on the quality of education and student outcomes, and exploring the cultural and contextual factors that may influence the adoption and effectiveness of computerized data base financial management in different settings.

Table 2. 1: Research Gap Summary

Author & Year	Title	Methodology	Findings	Gap
Omondi & Ng'etich. (2019)	Assessing the Effectiveness of Digital Financial Management Systems in Enhancing Financial Accountability: Perspectives from Public Secondary Schools in Kenya	Mixed-methods study involving a combination of surveys, interviews, and financial data analysis	The study found that the adoption of digital financial management systems improved financial accountability by enhancing transparency, streamlining financial processes, and promoting accurate record-keeping. However, challenges related to data security, system maintenance, and resistances to change were identified as areas requiring attention.	The research focused solely on perspectives from schools in Kenya, suggesting the need for comparative studies across different countries or regions to explore contextual variations in the impact of digital financial management systems on financial accountability.

Jones & Lee (2019)	Examining the Effects of Digital Financial Management System on Secondary School Financial Accountability	Case study approach, combining qualitative interviews and financial analysis	Digital financial management adoption positively impacted financial accountability through enhanced financial control, reduced errors, and improved budgeting and planning processes	Limited generalizability due to a small sample size of secondary schools studied.
Smith, A. (2019)	Exploring the Role of Staff Training in Enhancing Financial Accountability through Digital Financial Management Systems in Public Secondary Schools"	Mixed-methods approach including surveys and interviews	The research highlighted the importance of staff training in effectively utilizing digital financial management systems for improved financial accountability.	The study did not thoroughly examine the long-term impact of staff training on sustained financial accountability and did not address the specific challenges faced during the training process.

Johnson, R. (2020)	Examining the Impact of Digital Financial Management Systems on Financial Accountability in Public Secondary Schools.	Quantitative survey-based research	The study found a positive correlation between the implementation of digital financial management systems and financial accountability in public secondary schools.	The study did not delve into the specific challenges and considerations that may arise during the implementation process.
Kabui, et al., (2020)	Staff Training and Competency in Digital Financial Management Systems: Implications for Financial Accountability in	The study employed a qualitative research approach, conducting interviews and focus group discussions with school administrators, teachers, and financial	The study found that staff training and competency played a significant role in financial accountability when implementing digital financial management systems. Engaged and trained staff members	The study did not explore the specific training approaches or methodologies that were most effective in enhancing staff competency. Future research could investigate

	Kenyan Public Secondary Schools.	personnel in Kenyan public secondary schools.	demonstrated higher levels of financial accountability.	the specific training strategies that contribute to improved financial accountability in the context of digital financial management systems.
Lee & Kim (2020)	Exploring the Impact of Digital Financial Management Systems on Financial Accountability in Public Secondary Schools: A Qualitative	Qualitative case study involving in-depth interviews with school administrators, analysis of financial documents, and observation of	The study revealed that the implementation of digital financial management systems enhanced accountability by improving efficiency in financial processes, facilitating accurate financial	The research focused on a limited number of case studies, suggesting the need for a broader and more diverse sample to gain a comprehensive understanding of the

	Case Study Approach	system usage		reporting, and enabling effective financial analysis. However, challenges related to system customization, staff training, and resource allocations were identified as potential barriers.	impact of digital financial management systems on financial accountability in public secondary schools
Johnson & Smith (2021)	The Impact of Digital Financial Management Systems on Financial Accountability in Public Secondary Schools: A Comparative Analysis	Quantitative utilizing questionnaires financial data analysis	study survey and	The study found a positive correlation between the adoption of digital financial management systems and financial accountability in public secondary schools. Schools that implemented such systems demonstrated improved transparency, accuracy in financial reporting, and adherence to financial policies.	The study did not delve into the specific factors that may mediate or moderate the relationship between digital financial management systems and financial accountability, leaving room for further exploration in future research.

Brown, E. (2021)	Understanding the Role of Organizational Culture in Enhancing Financial Accountability with Digital Financial Management Systems in Public Secondary Schools	Qualitative case study approach	The research identified the significance of organizational culture in shaping the effectiveness of digital financial management systems in promoting financial accountability.	The study did not explicitly explore the potential challenges that may arise in aligning organizational culture with the implementation of digital financial management systems.
Wang, et al., (2021)	The Impact of Organizational Culture on the Relationship between Digital Financial	This study employed a mixed-methods approach, combining surveys and interviews to collect data from school	The study revealed that a positive and supportive organizational culture, emphasizing transparency, accountability, and ethical practices, strengthened	The study did not investigate the role of other organizational factors in the relationship between digital financial

	Management Systems administrators, teachers, the impact of digital financial management systems and	Financial and financial staff in management systems on financial accountability.	
	Accountability in public secondary financial accountability in public	Further research could	
	Public Secondary schools. secondary schools.	explore the combined	
	Schools.	influence of organizational	
		culture, leadership, and	
		other factors on financial	
		accountability.	
Thompson, L. (2022)	Examining the Impact of Digital Financial Management Systems and on Financial Reporting Accuracy in Public	Comparative analysis of financial reports before digital financial implementation of digital financial	The study demonstrated that digital financial management systems led to improved accuracy in financial reporting in integrity that may impact
			The research did not address the potential challenges and limitations related to data quality and

Secondary Schools

management systems

public secondary schools.

financial

reporting

accuracy in the context of
digital systems.

Source: Researcher (2023)

2.6 Conceptual Framework

A conceptual framework is a depiction in graphical or diagrammatic form of the links between the study's variables. There were three variables included in this study: independent variables, dependent variables, and moderating variables. Digital Financial Management success was correlated with the study's independent variables, which highlighted the factors that shape and define public secondary schools while accountability was the dependent variable. School size was the moderating variable in the DFMS.

Independent variables

Digital Financial Management

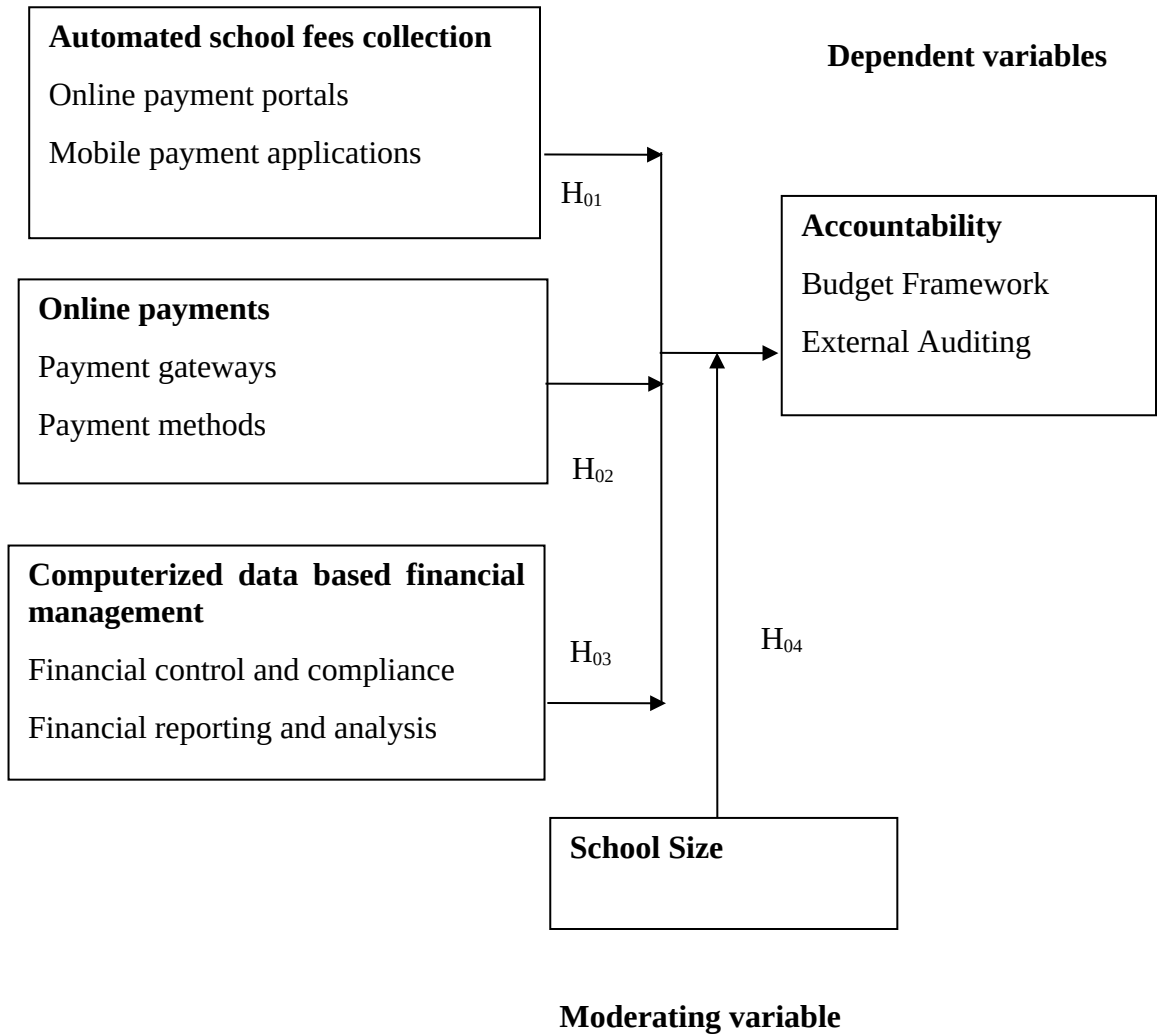


Figure 2.1: Conceptual Framework

Source: Researcher's conceptualization, (2023)

DFMS comprises several technological components aimed at optimizing financial processes within public secondary schools. Automated School Fee Collection: This component automates the fee collection process, reducing manual handling and improving accuracy in revenue collection (Smith, Johnson & Patel, 2019). Online Payment System: Online payment systems simplify payment processes, increasing convenience for parents and guardians while reducing the risk of financial discrepancies (Khalifa, Mchopa & Simba, 2021). Computerized Database Financial Management: DFMS included digital databases that store and manage financial data, ensuring accuracy and accessibility for authorized personnel (Anderson & Green, 2019). Online Financial Reporting: Online reporting tools provided real-time financial tracking and reporting, making financial information readily available to stakeholders (Ministry of Education, Kenya, 2020).

Accountability as dependent variable within public secondary schools encompassed several key elements. Budgeting Framework: A well-structured budgeting framework outlined how financial resources were allocated and spent within the school, serving as a guiding document for financial planning (World Bank, 2018). External Auditing: External audits involved independent assessments of financial records and practices to ensure compliance with financial regulations and policies (Anderson & Green, 2019). Financial Reporting: Transparent and regular financial reporting offered stakeholders insights into the school's financial health, expenditure patterns, and adherence to budgetary guidelines (World Bank, 2018).

School size as Moderators, school-specific size could significantly influence the dynamics between DFMS, financial accountability, and educational outcomes. School size: The size of a school could impact the implementation and effectiveness of DFMS. Larger schools

might have more complex financial operations, potentially altering the impact of these systems (Otieno & Mukonyezi, 2021). Comprehending the multifaceted relationships between DFMS, accountability, and school-specific factors was crucial for optimizing financial management in public secondary schools. This conceptual framework provided a structured approach for further research endeavors, policy development, and decision-making aimed at improving financial transparency, resource management, and educational outcomes (Khalifa et al., 2021).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presented information on the study area, research design, population, and sample size that was selected for the study. The researcher also discussed the study instruments used, their validity and reliability, and the methods used to analyze and display the collected data.

3.2 Study Area

The examination was conducted in Kenya's Bungoma Region, one of the 47 Counties covered by the 2010 Constitution. The County of Bungoma Region, with its capital in Bungoma town, was formerly part of Kenya's Western Territory. There are 812,146 men and 858,389 women among its 1,670,535 residents (Registration, 2019). Bumula, Kabuchai, Kanduyi, Kimilili, Mt. Elgon, Sirisia, Tongaren, Webuye East, and Webuye West are its nine electorates. The latitude and longitude of Bungoma County is 0.569525N and 34.558376E respectively. The majority of the Bungoma Region's economy is horticultural, with a focus on the maize and sugarcane industries. The reason for selecting Bungoma County as the study area, the researcher noted the following; adverse audit opinions from the Auditor General's audit report, it was among the populated county in Kenya with highest number of schools going children, had witnessed conflicts among community and BOMs over financial mismanagement, had the highest number of secondary schools and finally it was among the counties that received the highest FSE capitation from MOE.

3.3 Research Design

The study adopted a mixed methods approach design to establish the effect of digital financial management system on accountability of public secondary schools in Bungoma County, Kenya. A mixed-methods approach design combines quantitative and qualitative research methodologies, leveraging the strengths of both to provide a more comprehensive analysis of a research problem. This approach was highly appropriate because it enabled both statistical measurement of the system's impact and a deeper exploration of contextual factors and stakeholder experiences.

A mixed-methods approach enabled the collection of a broad range of data, it captured the quantitative impact of DFMS, such as financial accuracy and reduced misuse, alongside qualitative insights into the user experience and challenges faced by school administrators. By combining quantitative and qualitative data, mixed methods enhanced the validity and reliability of the research. Triangulation helped confirm findings, ensuring that the conclusions drawn on DFMS impact were robust and trustworthy.

The quantitative component focused on objective measures of accountability, such as the number of financial discrepancies, audit issues, compliance rates, and timely reporting since implementing DFMS. Quantifying these variables established a clear baseline for evaluating DFMS effectiveness. Statistical tools, such as descriptive statistics and inferential tests (e.g., t-tests or ANOVA), analysed the collected data, identifying any significant differences in financial accountability before and after DFMS adoption. Hypotheses were established to determine whether DFMS implementation significantly reduced financial discrepancies, enhanced compliance, or led to faster reporting times. The quantitative findings tested these hypotheses, providing an empirical basis for the impact of DFMS on accountability.

The qualitative component allowed for a deeper exploration of stakeholders' experiences and perceptions. Interviews with school principals provided insight into the perceived changes in accountability, transparency, and efficiency. Qualitative data helped understand the contextual factors influencing DFMS effectiveness, such as staff digital literacy, resource availability, and user training. Exploring these factors revealed potential challenges of DFMS adoption in a school setting. Qualitative data analysis involved coding and thematic analysis which identified recurring themes and patterns.

3.4 Target Population

According to Babbie & Mouton (2019), a target population is a group of individuals or units that share common characteristics and are the focus of a research study. The target population for this study was the public secondary schools in Bungoma County, Kenya, and the selected respondents were school principals, bursars and accounts clerks of the schools. The total target population for the study therefore was 482 respondents distributed in the 45 wards of Bungoma County according to the official website of the Independent Electoral and Boundaries Commission (IEBC) of Kenya, as of the 2022 general elections.

Table 3.1: Target Population

Category	Population	Percentage
Principals	241	50
Bursars/ Accounts Clerks	241	50
Total	482	100

Source: (Secondary Schools Bungoma County, Kenya, 2023)

3.5 Sampling Frame, Sampling Procedure and Sample Size

3.5.1 Sampling Frame

The first stage of sample selection involved the identification of schools' employees who participated in the study. Purposive sampling was used to select the schools. The Bungoma County had been in existence for over ten years and share similar characteristics in terms of the digital financial management system and accountability. According to Mutai (2000), purposive sampling is a non-probability sample selected based on the characteristics of a population. The researcher relied on his judgment when choosing members of a population to participate in the study. This was a suitable method for selecting a sample that could serve as primary sources of data due to nature, design and objectives of the study. The Bungoma County had been selected through purposive sampling due to its characteristics and objectives of the study. The schools selected were public secondary schools in 45 wards in Bungoma County.

3.5.2 Sampling Procedure

Stratified random and purposive sampling techniques were used to select the respondents. In strata, sampling subjects were selected in such a way that the existing subgroups in the population were more or less reproduced in the sample. In this sample, the strata were formed based on the schools' employees each being a stratum. A random sample from each was taken in a number proportional to the stratum size when compared to the population. These subsets of the strata were then pooled to form a random sample.

3.5.3 Sample Size

The sample size for this study was determined using the formula for sample size calculation for a finite population based on the Yamane Formulae (Babbie & Mouton, 2019):

$$S_n = N / (1 + N(e)^2)$$

Where:

Sn = sample size

N = Target population size

e = error margin

Assuming a 95% confidence level and a margin of error of 5%, the sample size for this study would be:

$$\begin{aligned} &= \frac{N}{1 + N(e)^2} \\ &= \frac{482}{1 + 482(0.05)^2} \\ &= \frac{482}{1 + 1.205} \\ &= 218 \end{aligned}$$

However, since the researcher was also selecting participants from each school, the actual sample size was 218. The number of participants to be selected from each school depended on the size of the school and the roles of the participants in financial management. It is worth noting that all National and Extra County schools have adopted DFMS and over 70% of county schools have adopted moreso larger schools.

Table 3.2: Sample Size

Schools	Population	sample
Principals	241	
Bursars/Accounts Clerks	241	
Total	482	218

Source: (Secondary Schools Bungoma County, Kenya, 2023)

3.6 Data Collection instruments

Research instruments refer to the tools that are used to collect data from the respondents in a research study. Data was collected using structured questionnaires and interview schedules.

Questionnaires were used to collect data from bursars and accounts clerks. The questionnaires contained closed-ended questions that helped to gather data on the level of adoption of digital financial management systems and their effects on the accountability of public secondary schools. The use of questionnaires was appropriate as it allowed for a large number of respondents to be reached, and it was cost-effective and efficient in collecting data (Kim, 2019).

Interview guides were used to collect data from principals. The interview guides were semi-structured and contained open-ended questions that allowed for a deeper exploration of the research topic. The use of interview guides was appropriate as it allowed for the collection of in-depth and detailed information from the respondents (Bryman, 2019).

3.7 Reliability and Validity of Instruments

Validity and reliability are two important aspects of research methodology that help to ensure the accuracy and credibility of the data and findings.

Validity refers to the extent to which a research instrument measures what it is supposed to measure. The study employed content validity, expert opinion was sought to evaluate the relevance and appropriateness of the questions for measuring the constructs of d adoption digital financial management system on accountability. The experts reviewed the questions in the research instruments to assess their clarity, comprehensiveness, and relevance to the research objectives.

In addition, the study also utilized the Cronbach's alpha test to measure the internal consistency reliability of the research instruments. Cronbach's alpha test is a statistical method used to determine the reliability of research instruments by assessing the consistency of the items that measure a particular construct. In this study, to assess the reliability of the research instruments, Cronbach's alpha test was used for the different respondents.

The test was used to calculate the coefficient alpha, which is a measure of the internal consistency of the research instrument. A coefficient alpha value of 0.70 or higher is considered acceptable for research instruments used in social science research (DeVellis, 2016). Therefore, the research instruments were considered reliable if the coefficient alpha value is 0.70 or higher.

Expert opinion and Cronbach's alpha test are important in ensuring the validity and reliability of the research instruments, which in turn enhances the quality of data collected for analysis.

3.8 Piloting

Piloting was conducted in the public secondary schools, Kakamega county. This involved selecting a small sample size of respondents to test the instruments before using them on the larger sample. According to Kothari (2019), a sample size of at least 10% is recommended for piloting. The study used 22 respondents on pilot study who included 11 principals who were interviewed and 11 bursars/accounts clerks who filled the questionnaires. The selected respondents were asked to complete the research instruments and provide feedback on the clarity of the questions, the relevance of the items, and the overall usability of the instruments. The feedback obtained from the piloting was used to make necessary adjustments to the instruments to improve their quality before they are used in the main study.

3.9 Data Collection Procedure

The data collection procedure for the study involved several stages. First, the researcher submitted the research proposal to the Masinde Muliro University of Science and Technology (MMUST) for clearance. Once the proposal was approved, the researcher sought permission from the National Commission for Science, Technology and Innovation (NACOSTI).

After obtaining clearance from MMUST and permission from NACOSTI, the researcher sought permission from the County Director of Education in Bungoma County to conduct the study in the selected schools. The researchers' then scheduled appointments with the principals, bursars and accounts clerks. The date and time of data collection was communicated to the respondents in advance to allow for adequate preparation.

Data collection was done through the use of structured questionnaires and interview schedules for all the two categories of respondents' principals, bursars and accounts clerks. The questionnaires were administered in person and the researchers were present to provide clarifications where necessary. Respondents filled the questionnaire over lunch hour. The researchers also conducted interviews with the principals of the public secondary schools in Bungoma County, Kenya to obtain additional information on the implementation of digital financial management systems in secondary schools. Interviews took about 30 minutes. All data collected was kept confidential and only used for the purpose of the study.

3.10 Data Analysis and Presentation Techniques

As indicated by Kothari (2009), information investigation is an assessment of what has been gathered and making derivation and surmisings. Prior to handling the reactions, the finished polls were altered for culmination and consistency. Information investigation was finished by gathering information from surveys into different classifications prior to being coded and examined. The analyst gathered both quantitative and subjective information which was dissected utilizing both clear and inferential measurements. The spellbinding factual apparatuses assisted the analyst with depicting the information and decide the degree to be utilized. The Likert scale was utilized to dissect the frequencies and rates.

The coded information was then taken care of into the IBM Measurable Bundles for Sociologies (IBM SPSS) Variant 23 utilizing engaging and inferential measurements. In graphic examination, the review utilized frequencies, rates, mean and standard deviation. Inferential measurements were finished through Pearson relationship coefficient to see if there was connection between the review factors to create the upsides of the coefficients in frequencies and rates. As per (Martin, Kelly, Daniel, Kurosu, and Robert, 2002).

Thematic analysis was used to analyze qualitative data. The interviews were transcribed, and the transcripts were analyzed to identify themes and patterns in the data. The themes and patterns were used to develop a comprehensive understanding of the perceptions of principals, bursars and accounts clerks regarding the adoption of digital financial management systems on accountability of public secondary schools in Bungoma County, Kenya.

Various relapse models were utilized to figure out the connection between the autonomous factors and the reliant variable. Different relapses were additionally used to decide the strength of relationship between the indicators (autonomous) and subordinate factors execution among its aspects. Various leveled relapse was embraced for directing variable impact. The test for meaning of coefficient of not set in stone by the utilization of f-test. The study employed diagnostic tests thus multicollinearity, normality, linearity and heteroscedacity tests proceeding to regression tests.

The following regression models were used:

Without moderator

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon$$

With moderator

$$Y = \beta_0 + \beta_1 X_1 M + \beta_2 X_2 M + \beta_3 X_3 M + \epsilon$$

Where;

Y = Accountability

B_0 = Y intercept (constant) whose influence on the model is insignificant

X_1 = Automated School Fee Collection

X_2 = Online Payment System

X_3 = Computerized Data Based Financial Management

M = School size

β_1, β_2 & β_3 = Model coefficients which are significantly large to have significant influence on the model.

ε = is the error term.

3.10. 1 Diagnostic Tests

3.10.1.1 Normality

Normality test was used to establish whether data has been drawn from a normally distributed population (Razali & Wah, 2011). For normality checking the study utilized Shapiro-Wilk tests. In this review Shapiro - Wilk tests depended on the importance level, $\alpha = 0.05$. Shapiro-Wilk tests are factual trial of speculation that the dissemination of information overall digresses from an equivalent typical dispersion. In the event that the P-value is not exactly or equivalent to the importance level, $\alpha = 0.05$, the choice is to dismiss the invalid speculation and reason that information doesn't follow a typical dissemination. If the P-value is more noteworthy than the importance level, the choice is to neglect and dismiss the invalid speculation.

3.10.1.2 Linearity Test

In this analysis, normal probability plots were used to check for linearity between the dependent variables (Accountability) as well as the independent variables (Automated school fee collection, online payment system, use of computerized data based financial management) and moderator school size.

3.10.1.3 Multicollinearity

Multicollinearity is a situation that arises if the correlation rate is high amongst predictor variables (Kothari 2010). This may result to decreased reliability therefore providing misleading results. Hair et al., (2010) indicated that multicollinearity would inflate the size of the error term size thus weaken analysis. Variance inflation factor (VIF) and tolerance value were used to test multicollinearity. VIF measured the correlation level between variables whereas tolerance measured the variance amount in the independent variable that was not explained by other independent variables. The tolerance value should be between 0.2 and 1 it should not exceed one while VIF should be between 1 and 10 (Christensen et al., 2014). This indicated an absence of high correlation amongst variables.

3.10.1.4 Homoscedasticity

According to Ghasimi & Zahediasi, (2012) homoscedasticity occurs when there is uniformity in variance, across the data. This was tested using the scatter plot. Where there is no uniformity in variance across data homoscedasticity occurs (Ombaka, 2014) which introduces bias in the standard errors. The standard errors are critical in determining both **T** and **F** statistics. When the graph indicates that residuals are evenly distributed around the horizontal line which means the data is actually fit for regression. On the other hand, nonappearance of homoscedasticity was effortlessly found in a normalized disperse plot. At the point when a disperse plot of normalized anticipated subordinate variable is relapsed against the normalized residuals in disperse plot, it ought to show an irregular example across the whole scope of the reliant variable (David, 2012). Assuming the disperse plots show that minor departure from one or the other side of the pattern line are practically equivalent (homogenous) and that implies that information is good for relapse.

3.11 Ethical consideration

The integration of digital financial management systems (DFMS) into the accountability structures of public secondary schools brought several ethical considerations to the forefront. As those systems had the potential to transform financial transparency, enhance efficiency, and ensure proper fund allocation, they also introduced ethical issues that required careful assessment. The researcher obtained informed consent from research participants. Researchers provided comprehensive information about the study purpose, procedures, potential risks and benefits, and participants' rights. Informed consent ensured that individuals made voluntary and well-informed decisions about their participation, while protecting their autonomy and privacy.

Researchers ensured that the data collected was kept confidential and that participants' identities remained anonymous. Safeguarding sensitive information promoted trust and encouraged participants to share their experiences openly. Researchers conducted their studies with honesty, transparency, and intellectual rigor. This involved accurately representing data, avoiding fabrication of results, and properly acknowledging the contributions of others. Researchers had a responsibility to minimize any potential harm to participants. This included assessing and mitigating physical, psychological, emotional, or social risks associated with the study. Researchers also considered vulnerable populations, ensuring they received special protections and benefits. Researchers considered the potential positive outcomes of their studies and strived to maximize benefits while minimizing harm.

Additionally, researchers ensured equitable distribution of research opportunities and avoided exploiting against certain groups. Researchers were obligated to seek ethical

review and approval from relevant institutional review boards before conducting their studies. These bodies evaluated the proposed research to ensure it adhered to ethical guidelines, protecting the rights, welfare, and safety of participants. Researchers handled data responsibly, securely, and in accordance with legal and ethical standards. Researchers maintained accurate records, stored data appropriately, and used it only for the purposes outlined in the research. When publishing research findings, researchers prioritized honesty, transparency, and proper attribution of contributions.

Finally, researchers demonstrated cultural sensitivity and respect for diverse perspectives, traditions, and values. This included acknowledging and accommodating cultural differences, seeking informed consent in culturally appropriate ways, and avoiding harmful stereotypes or biases.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter presents results according to the four study objectives which were ; to establish the effect of automated school fee collection on accountability of public secondary schools in Bungoma County, Kenya, to ascertain the effect of online payment system on accountability of public secondary schools in Bungoma County, Kenya, to determine the effect of use of computerized data based financial management on accountability of public secondary schools in Bungoma County, Kenya and to determine the moderating effect of school size on the relationship between digital financial management systems and accountability of public secondary schools in Bungoma County, Kenya.

4.2 Response Rate

Table 4. 1: Response Rate

Instrument	Category	Sample	Percentage
Questionnaire	Response	84	77.0
	None response	25	23.0
	Total	109	100.0
Interviews	Response	69	63.3
	None response	40	36.7
	Total	109	100.0

Source: Field Data (2023)

The population of this study include all public secondary schools in Bungoma County Kenya. Out of the one hundred and nine distributed questionnaires on school bursars and

accounts clerks, the number of respondents who managed to correctly fill out and return the questionnaires were eighty-four, resulting in 77% return rate. On interviews schedule out of one hundred and nine only 69 fully participated giving a response rate of 63.3%. This backs the assertion by (Zikmund, *et al*, 2010) that a response rate of more than 50% was needed for generalization of the results. Additionally, Mugenda & Mugenda (2012) asserted that, a response rate of 50% was appropriate, and a response rate of more than 70% was exceptional for any academic report study as well as presentation.

4.3 Reliability test

A pilot study test was carried out in Kakamega County in public secondary schools where 22 respondents were involved. The 5-point Likert scale was tested if it was reliable enough where coefficient alpha was used to determine if the proposed threshold of 0.7 for adequate reliable research instrument was attained (Kendell & Jablensky, 2003). The findings were shown in the following subsections.

Table 4.2: Reliability Test Results

Variables	Items	Cronbach alpha	Decision
Automated school fee collection	3	0.721	Reliable
Online payment system	3	0.723	Reliable
Use of computerized data base	3	0.743	Reliable
School size	3	0.812	Reliable
Accountability	9	0.901	Reliable

Source: Field Data (2023)

Cronbach alpha coefficients for all variables exceeded the minimum average of 0.7, as seen in table 4.2. (Kendell, 2003); Accountability = 0.901, automated school fee collection=0.721, Online payment system=0.723, Use of computerized databased =0.743, School size =0.812. Therefore, the study concluded that the 5-point Likert scale adopted by the research structures was measured in an accurate and suitable manner.

4.4 Demographic Characteristics

Table 4.3: Academic and Professional Qualifications

Academic	Frequency	Percent
Masters	1	1.2
Degree	19	22.6
Diploma/Certificate	57	67.9
Secondary	7	8.3
Total	84	100.0
Professional	Frequency	Percent
K.A.T.C II	10	11.9
CPA Part I	15	17.9
CPA Part II	28	33.3
CPA Part III	31	36.9
Total	84	100.0

Source: Field Data (2023)

The study revealed that respondents had some level of academic and professional qualifications. Majority 67.9% academically had Diploma/Certificate qualifications, those

with degrees were 22.6%, and secondary merit at 8.3% and 1.2% had masters for bursar and accounts clerk category. Furthermore, professional qualifications only 36.9% were fully CPA compliant at CPA Part III qualifications, CPA Part II were 33.3%, CPA Part I 17.9% and K.A.T.C II 11.9%. These qualifications indicated they were in a position to clearly articulate responses on digital financial management system and accountability of public secondary schools in Bungoma County, Kenya.

Table 4.4: Working Experience

Experience	Frequency	Percent
Less than 1 year	5	6.0
1-3 years	7	8.3
4-6 years	72	85.7
Total	84	100.0

Source: Field Data (2023)

The study established that school bursars and accounts clerks had worked for at least 4-6 years as indicated by 85.7%, those at 1-3 years were 8.3% and those at less than 1 year were 6%. The experience among respondents confirmed ability to articulate responses on digital financial management system and accountability of public secondary schools in Bungoma County, Kenya.

Table 4.5: Working Category

Designation	Frequency	Percent
Bursar	57	67.9
Accounts Clerk	27	32.1
Total	84	100.0

Source: Field Data (2023)

The results from table 4.5 indicated that the school bursars were 67.9% and accounts clerk 32.1%. of respondents confirmed ability to articulate responses on digital financial management system and accountability of public secondary schools in Bungoma County, Kenya.

Table 4.6: School Population Size

	Frequency	Percent
Less than 100	1	1.2
101-500	4	4.8
501-1000	29	34.5
1001 or more	26	31.0
Over 2001	24	28.6
Total	84	100.0

Source: Field Data (2023)

From the result in table 4.6 at least 24 schools 28.6% had population size of Over 2000 students, 26 schools 31% had over 1000 students, 29 schools 34.5% had 1000-1500 students, 4 schools 4.8% had 501-1000 as 1 school 1.2% had Less than 100 students. The school resources were determined by population size based on capitation needs.

Table 4.7: School Annual Budget

	Frequency	Percent
Less than Ksh. 2,000,000	6	7.1
Ksh. 2, 000,001 - Ksh. 10,000,000	31	39.3
Ksh. 10,000,001 - Ksh. 50,000,000	24	28.6
Ksh. 50,000,001 or more	21	25.0
Total	84	100.0

Source: Field Data (2023)

The study established that 39.3% had annual budget Ksh. 2, 000,001 - Ksh. 10,000,000, those at Ksh. 10,000,001 - Ksh. 50,000,000 were 28.6%, schools with a budget of Ksh. 50,000,001 and above were 25% as only 7.1% had a budget of less than Less than Ksh. 2,000,000. It was noted that school budget is determined by a number factors majorly school population size.

Table 4.8: Source of Funding in Schools

	Frequency	Percent
Parent contributions/fees	51	60.7
Government funding	28	33.3
CDF	5	6
Total	84	100.0

Source: Field Data (2023)

Table 4.8 shows that school funding depend on parents at 60.7% as the major facilitators for fee payment and project development. The government had a capitation figure per child in public schools in Bungoma County hence government funding was noted as source of funding at 33.3% with 6% supporting constituency development fund initiatives on supporting school projects.

4.5 Descriptive of the Study Variables

The respondent reactions were evaluated on a five-point Likert scale appearing how much the respondents concur or contradict the specialist explanations. Information was broken down comparable to each examination objective by producing the mean from SPSS adaptation 23 programming.

4.5.1 Digital Financial Management

Table 4.9: Descriptive of Automated School Fee Collection and Accountability

Statement	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree	Mean	Std
The automated school fee collection has improved the financial accountability of your school.	0 0%	4 4.8%	11 13.1%	38 45.2%	31 36.9%	3.55	1.03
The automated school fee collection system has made it easier for parents/guardians to pay fees in your school.	1 1.2%	12 14.3%	19 22.6%	22 26.2%	30 35.7%	3.30	1.01
The automated school fee collection system has increased the accuracy and efficiency of financial reporting in your school.	0 0%	23 27.4%	11 13.1%	27 32.1%	23 27.4%	3.58	1.21

Source: Field data (2023)

The researcher established that on whether automated school fee collection had improved the accountability of your school 45.2% agreed as 36.9% strongly agreed giving a total agreement of 82.1% with a mean 3.55 and standard deviation 1.03. Furthermore, regarding automated school fee collection system making it easier for parents/guardians to pay fee in school 26.2% agreed as 35.7% strongly agreed giving a total agreement of 61.8% with a mean 3.30 and standard deviation 1.01. On whether the automated school fee collection

system had increased the accuracy and efficiency of financial reporting in school 32.1% agreed as 27.4% strongly agreed giving a total agreement of 61.9% with a mean 3.58 and standard deviation 1.21. The school principals on interviews indicated that utilization of automated school fee collection enhanced accountability of public secondary schools in Bungoma County. They gave their satisfaction to the approach as it reduced direct interaction with funds. However, two principals were of a different opinion as they stated it led to inconvenience due to a lot of procedures involved in the process.

One of the primary advantages of these automated systems is their ability to minimize cash handling. Traditionally, the manual collection of school fees involved the physical exchange of cash, leaving room for errors and potential misappropriation. By transitioning to automated methods, the risk of financial discrepancies is significantly reduced. Moreover, these systems generate a transparent digital trail of transactions, granting administrators and stakeholders immediate access to financial data. This transparency cultivates a culture of accountability, as it becomes easier to monitor how funds are allocated within each school. For instance, research by Okumu & Wanyama (2019) indicates that schools with automated fee collection systems experienced a 30% decrease in financial discrepancies and an 18% increase in financial accountability.

Table 4.10: Descriptive of Online Payment System and Accountability

Statement	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree	Mean	Std
The use of online payment system has improved the financial accountability of your school.	4 4.8%	0 0%	11 13.1%	38 45.2%	31 36.9%	3.56	1.02
The online payment system has made it easier for parents/guardians to pay fee in your school.	1 1.2%	11 13.1%	19 22.6%	22 26.2%	31 36.9%	3.31	1.01
The online payment system has increased the accuracy and efficiency of financial reporting in your school.	0 0%	23 27.4%	11 13.1%	27 32.1%	23 27.4%	3.55	1.03

Source: Field data (2023)

Table 4.10 shows on whether the use of online payment system had improved accountability of schools, 45.2% agreed as 36.9% strongly agreed giving a total agreement of 82.1% with a mean 3.56 and standard deviation 1.02. Furthermore, online payment system had made it easier for parents/guardians to pay fee in school. 26.2% agreed as 36.9% strongly agreed giving a total agreement of 63.1% with a mean 3.31 and standard deviation 1.01. On whether online payment system had increased the accuracy and efficiency of financial reporting in school 32.1% agreed as 27.4% strongly agreed giving a total agreement of 59.5% with a mean 3.55 and standard deviation 1.03. The school principals on interviews indicated that online payment system software increased the level of financial transparency that enhanced accountability. However, principals unanimously responded that online system was prone to challenges of system failures at some occasions that delayed certain financial transactions though the challenge could not supersede the merits of online payment system. Research by Ngure et al. (2022) found that schools

implementing online payment systems in Kenya experienced a substantial decrease in financial discrepancies and an increase in financial transparency.

Table 4.11: Descriptive of Use of Computerized Data Based Financial Management and Accountability

Statement	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree	Mean	Std
The use of computerized data based financial management has improved the accountability of your school.	0 0%	5 6%	10 11.9%	38 45.2%	31 36.9%	3.5	1.05
The use of computerized data based financial management has made it easier to track and manage your school finances.	2 2.4%	12 14.3%	18 21.4%	30 35.7%	22 26.2%	3.28	1.01
The use of computerized data based financial management has increased transparency in financial transactions your school.	0 0%	10 11.9%	22 26.2%	28 33.3%	24 28.6%	3.58	1.00

Source: Field data (2023)

Tables 4.11 shows on whether the use of computerized data based financial management had improved the accountability of schools, 45.2% agreed as 36.9% strongly agreed giving a total agreement of 82.1% with a mean 3.5 and standard deviation 1.05. Furthermore, regarding computerized data based financial management system having made it easier to track and manage school finances 35.7% agreed as 26.2% strongly agreed giving a total agreement of 61.9% with a mean 3.28 and standard deviation 1.01. On whether computerized data based financial management system had increased transparency in financial transactions of schools 33.3% agreed as 28.6% strongly agreed giving a total agreement of 61.9% with a mean 3.58 and standard deviation 1.00. The school principals

on interviews indicated that computerized data based financial management increased accuracy thus enhancing accountability. However, the principals noted that computerized data based financial management was only effective based on personnel handling the system and suggested more training skills to school bursars and accounts clerks to make the process better. Research by Mwangi & Nyangau (2021) found that schools implementing computerized data-based financial management systems in Kenya experienced a significant decrease in financial irregularities and an increase in financial transparency.

4.5.2 School size

Table 4.12: Descriptive of School size

Statement	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree	Mean	Std
There exist a large number of students in your school.	1 1.2%	12 14.3%	23 27.4%	18 21.4%	30 35.7%	3.74	1.04
Space available in your school is it accommodative for expansion of more learning buildings.	0 0%	11 13.1%	22 26.2%	27 32.1%	24 28.6%	3.38	1.34
There exist enough learning resources that accommodate all the students in your school	38 45.2%	11 13.1%	0 0%	31 32.1%	4 4.8%	3.74	1.06

Source: Field data (2023)

The findings in table 4.12 shows on whether there existed a large number of students in schools, 21.4% agreed as 35.7% strongly agreed giving a total agreement of 57.1% with a mean 3.74 and standard deviation 1.04. Furthermore, on whether space available in schools was accommodative for expansion of more learning buildings 32.1% agreed as 28.6% strongly agreed giving a total agreement of 60.7% with a mean 3.38 and standard deviation 1.34. On whether there existed enough learning resources that accommodated all the

students in schools 32.1% agreed as 4.8% strongly agreed giving a total agreement of 36.9% with a mean 3.74 and standard deviation 1.06. This implied that schools lacked enough learning resources. The school principals on interviews indicated that the student number to resources available was not enough, for instance learning resources student to text book ratio was below recommendable ratio. The laboratory facilities and number of classrooms were not enough. The school size on basis of number of students were noted high for national schools and extra county schools and fairly county schools. School size therefore had a key role on DFMS in public schools in Kenya.

School size often determines the allocation of resources, both financial and human. Larger schools tend to have more students, necessitating a larger teaching staff, more classrooms, and additional facilities. Effective management of these resources is crucial for accountability. Research by Mwambakana (2017) found that larger schools with adequate resource allocation systems tend to exhibit higher levels of accountability, as they can effectively track and manage funds.

Table 4.13: Descriptive of Accountability

Statement	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree	Mean	Std
There exists budget framework in your schools	1 1.2%	12 14.3%	23 27.4%	18 21.4%	30 35.7%	3.74	1.04
There exists participation in decision making during budgeting in your school.	0 0%	24 28.6%	22 26.2%	27 32.1%	11 13.1%	3.38	1.34
The budget factors all necessary materials for the academic year in your school	0 0%	11 13.1%	4 4.8%	31 32.1%	38 45.2%	3.71	1.21
There exists external auditing in your school	4 4.8%	14 16.7%	21 25%	26 31%	19 22.6%	3.32	1.02
The external auditing done in your school is it transparent.	0 0%	24 28.6%	22 26.2%	27 32.1%	11 13.1%	3.77	1.25
There exist anomalies during external auditing in your school.	1 1.2%	12 14.3%	30 35.7%	20 23.8%	21 25%	3.81	1.05
There exists effective and efficient financial reporting in your school.	1 1.2%	12 14.3%	23 27.4%	18 21.4%	30 35.7%	3.12	1.25
The school provides necessary information if required by the stakeholders	0 0%	2 2.4%	10 11.9%	28 33.3%	44 52.4%	3.21	1.71
There exists proper accountability of resource used during financial reporting in your school.	0 0%	2 2.4%	12 14.3%	27 32.1%	43 51.2%	3.31	1.21

Source: Field data (2023)

The findings in table 4.13 shows on whether there existed a budget framework in schools, 21.4% agreed as 35.7% strongly agreed giving a total agreement of 57.1% with a mean 3.74 and standard deviation 1.04. Furthermore, on whether there exists participation in decision making during budgeting in schools 32.1% agreed as 13.1% strongly agreed giving a total

agreement of 45.2% with a mean 3.38 and standard deviation 1.34. On whether school budget factors all necessary materials for the academic year in schools 32.1% agreed as 45.2% strongly agreed giving a total agreement of 77.3% with a mean 3.71 and standard deviation 1.21.

On whether there exists external auditing in schools 31% agreed as 22.6% strongly agreed giving a total agreement of 53.6% with a mean 3.32 and standard deviation 1.02. Furthermore, on whether the external auditing done in schools was transparent. 32.1% agreed as 13.1% strongly agreed giving a total agreement of 45.2% with a mean 3.77 and standard deviation 1.25. On whether there existed anomalies during external auditing in school 23.8% agreed as 25% strongly agreed giving a total agreement of 48.8% with a mean 3.81 and standard deviation 1.05.

On whether there exists effective and efficient financial reporting in school 21.4% agreed as 35.7% strongly agreed giving a total agreement of 57.1% with a mean 3.12 and standard deviation 1.25. Furthermore, on whether the school provides necessary information if required by the stakeholders 33.3% agreed as 52.4% strongly agreed giving a total agreement of 85.7% with a mean 3.21 and standard deviation 1.71. On whether there existed proper accountability of resource used during financial reporting in schools 32.1% agreed as 51.2% strongly agreed giving a total agreement of 83.3% with a mean 3.31 and standard deviation 1.21.

The school principals on interviews indicated that the student number to resources available was not enough, for instance learning resources student to text book ratio was below recommendable ratio. The laboratory facilities and number of classrooms was not enough. The school size on basis of number of students were noted high for national

schools and extra county schools and fairly county schools. School size therefore had a key role on the relationship between digital financial management system and accountability of public secondary schools in Bungoma County, Kenya.

4.6 Test of Linear Regression Assumptions

The relationship between digital financial management system and the accountability of Public secondary schools in Bungoma County, Kenya was modelled using a simple linear regression model in this examination. To ensure that the linear regression findings were reliable, the study assessed for the following linear regression assumptions; normality, linearity and homoscedasticity. The following are the results of these assumptions tests.

4.6.1. Normality Test

The aim of the analysis was to see whether the scores for the digital financial management system and Accountability were normally distributed. The Shapiro-Wilk test was utilized to do this; the null hypothesis was that the variable scores did not vary significantly from a normal distribution. The results were shown in Table 4.14.

Table 4.14: Test for Normality

Variables	Shapiro-Wilk test		
	Statistic (W)	Df	p-value
Financial Accountability	0.939	84	0.780
Automated school fee collection	0.972	84	0.336
Online payment system	0.949	84	0.730
Use of computerized data based financial management	0.932	84	0.111
School size	0.951	84	0.710

Source: Field data (2023)

The Shapiro-Wilk test outcomes (table 4.14) shows that for all the variables, p-values were

more than 0.05 level of significance; Accountability ($W=0.939$, $p\text{-value}=0.780>0.05$); Automated school fee collection ($W=0.972$, $p\text{-value}=0.336>0.05$); Online payment system ($W=0.949$, $p\text{-value}=0.730>0.05$); Use of computerized data based financial management ($W=0.932$, $p\text{-value}=0.111>0.05$) and School size ($W=0.951$, $p\text{-value}=0.710>0.05$). We therefore reject the null hypothesis and conclude that the variable scores were significantly normally distributed.

4.6.2. Linearity Test

In this analysis, normal probability plots were used to check for linearity between the dependent variables (Accountability) as well as the independent variables (Automated school fee collection, online payment system, use of computerized data based financial management) and moderator school size.

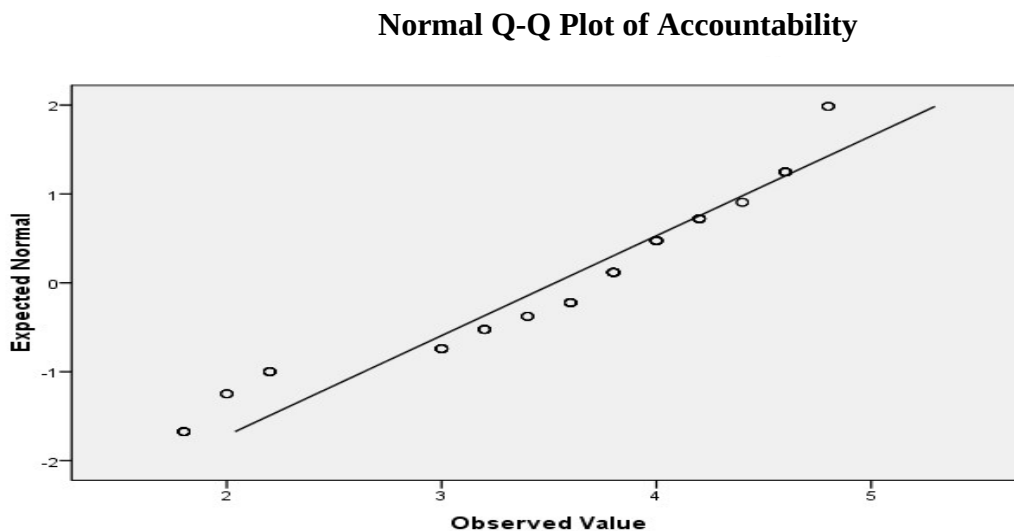


Figure 4.1: Normal Q-Q Plot for Accountability

Source: Field data (2023)

The points in figure 4.1 lay along a relatively straight diagonal line from bottom left to top right, indicating the presence of a linear association. Therefore, the assumption of linearity holds.

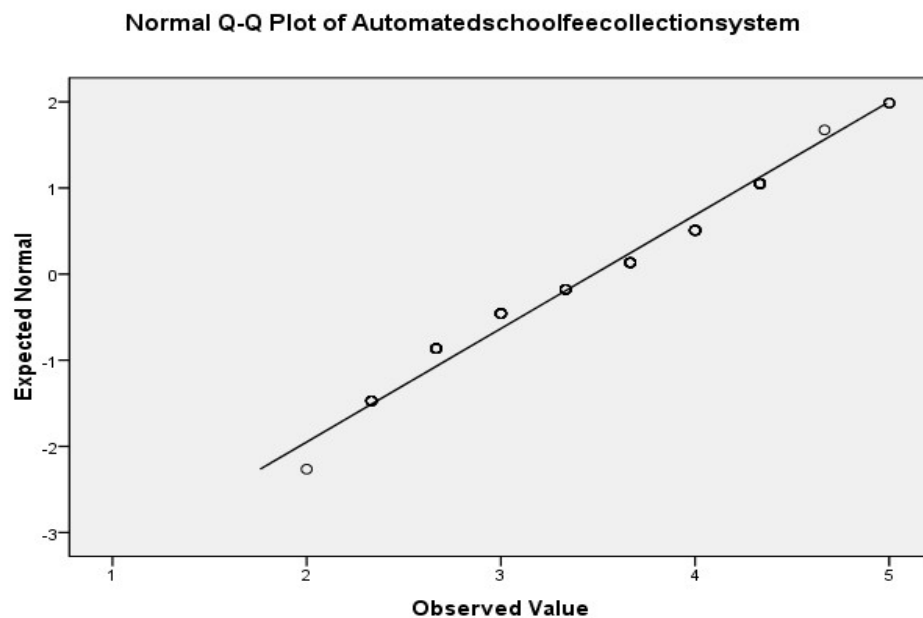


Figure 4.2: Normal Q-Q Plot for Automated School Fess Collection system

Source: Field data (2023)

The points in figure 4.2 are arranged in a relatively straight diagonal line from bottom left to top right, indicating the presence of a linear association between automated school fees collection system and the accountability of public secondary schools in Bungoma County Kenya. Therefore, the assumption of linearity holds.

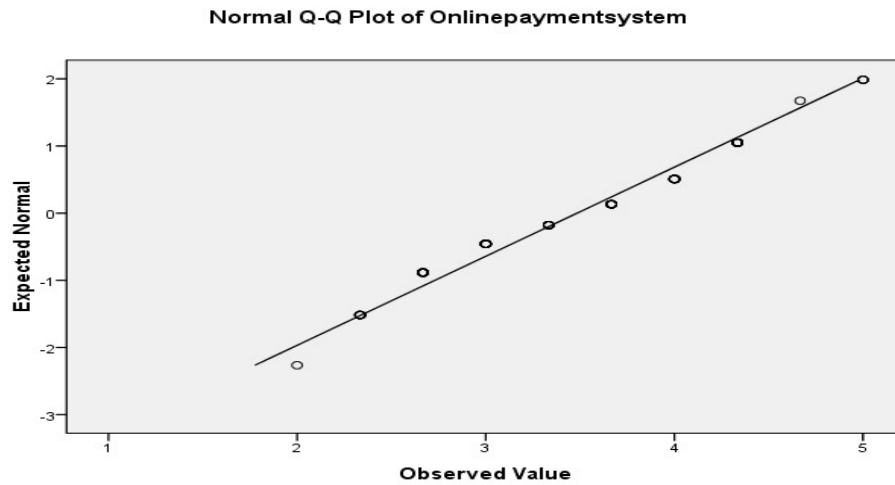


Figure 4.3: Normal Q-Q Plot for Online Payment system

Source: Field data (2023)

The points in figure 4.3 are arranged in a relatively straight diagonal line from bottom left to top right, indicating the presence of a linear association between online payment system and the accountability of public secondary schools in Bungoma County Kenya. Therefore, the assumption of linearity holds

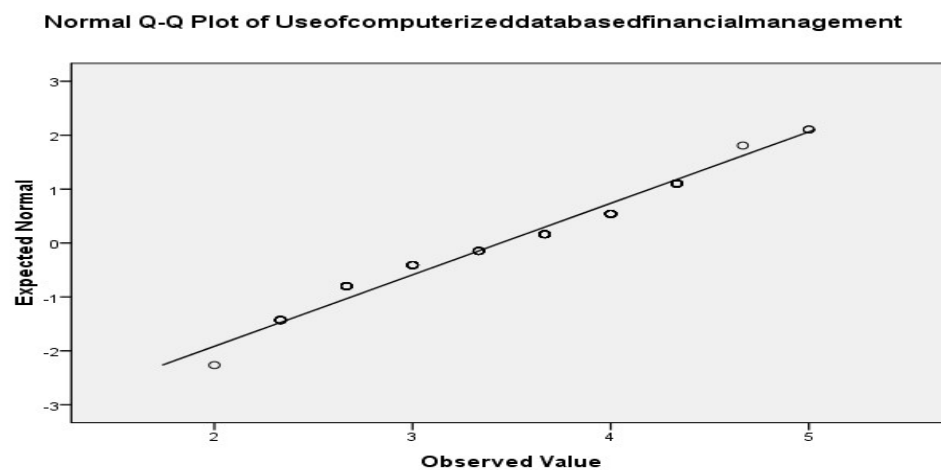


Figure 4.4: Normal Q-Q Plot for Use of computerized database financial management

Source: Field data (2023)

The points in figure 4.4 are arranged in a relatively straight diagonal line from bottom left to top right, indicating the presence of a linear association between use of computerized database financial management and the accountability of Public secondary schools in Bungoma County Kenya. Therefore, the assumption of linearity holds.

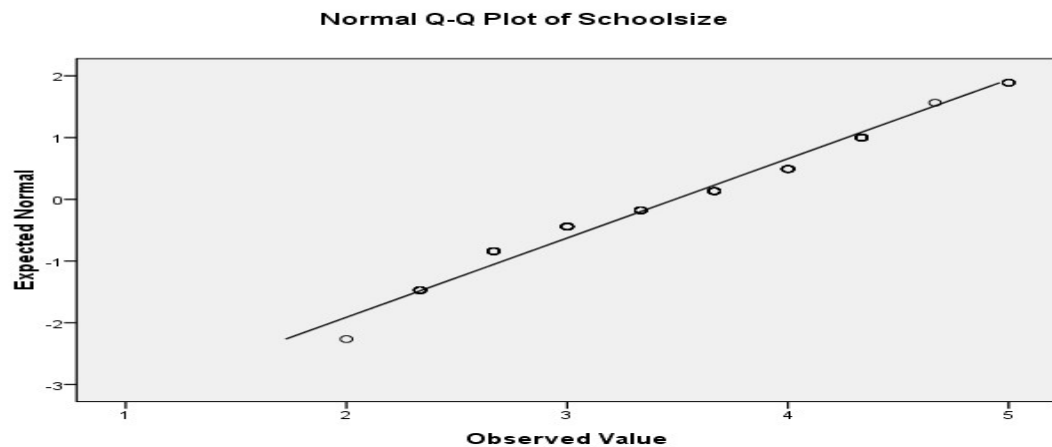


Figure 4.5: Normal Q-Q Plot for School Size

Source: Field data (2023)

The points in figure 4.5 are arranged in a relatively straight diagonal line from bottom left to top right, indicating the presence of a linear association between school size and the accountability of public secondary schools in Bungoma County Kenya. Therefore, the assumption of linearity holds.

4.6.3. Homoscedasticity Test

When the error term is similar for all values of the independent variables, it is called homoscedasticity; otherwise, it is called heteroscedasticity. The research used the Breusch-Pagan test to check for homoscedasticity, which is intended to identify any linear type of heteroscedasticity. The null hypothesis is that all error variances are equal, while the

alternative hypothesis is that as the expected values of the dependent variable increase, error variances increase (or decrease). Table 4.15 summarizes the results.

Table 4.15: Breusch-Pagan test for heteroscedasticity

Independent Variable	Chi-square	df	p-value
Automated school fee collection	4.09	1	0.0741>0.05
Online payment system	7.23	1	0.179>0.05
Use of computerized data based financial management	5.20	1	0.085>0.05
School size	5.89	1	0.0807>0.05

Source: Field data (2023)

The Chi-square test results for Automated school fee collection []; Online payment system []; Use of computerized data based financial management [] and school size [] are insignificant as the p-value >0.05 (table 4.15). Therefore, we fail to reject the null hypothesis and resolved that there is absence of heteroscedasticity in the dataset hence satisfying the assumption of homoscedasticity.

4.6.4 Multicollinearity

Collinearity occurs when one predictor variable in a multiple regression model can be accurately determined linearly from the others because of the anomaly among the independent variables, the regression model closely fits the data, but none of the explanatory variables has a significant effect on predicting the outcome (O'brien, 2007).

Table 4.16 shows the effects of the collinearity test.

Table 4.16: Multicollinearity Test

Variable	Tolerance (1/VIF)	VIF
----------	-------------------	-----

Automated school fee collection	.672	1.488
Online payment system	.599	1.668
Use of computerized data based financial management	.753	1.328
School size	.703	1.422

Source: Field data (2023)

Table 4.16 shows that all three variables have tolerance values greater than 0.20 and less than 1, additionally the VIF values are less than 10. This points out that the independent variables were not collinear, s, the multiple linear regression model used all three independent variables. The research dataset appeared to meet all of the linear regression analysis assumptions, allowing it to be used to model the relationship between Digital financial management system and the Accountability of Public secondary schools in Bungoma County Kenya.

4.7 Inferential Analysis

The study sought to establish the Effect of Digital Financial Management System on Accountability of Public Secondary Schools in Bungoma County, Kenya. Data was analyzed in relation to each research objective by generating correlation and regression coefficients from SPSS version 23 software. The aim of correlation analysis was to test the strength and significant relationship that existed between Digital Financial Management System and Accountability, regression analysis was meant to test for research hypothesis whether to reject or fail to reject.

4.7.1. Correlation Analysis in testing relationship existing between Study Variables

This section presented the results on the test of the relationship that existed between Digital Financial Management System on Accountability of Public Secondary Schools in Bungoma County, Kenya as per the research objectives using Pearson Product Moment Correlations. The calculated correlation coefficients were all below 0.9 indicating that there was no multicollinearity. This was because a correlation coefficient of 0.9 and above indicates serious multicollinearity among the study variable (Elam, 1979).

4.7.1.1 Relationship between Digital Management System and Accountability

The findings were demonstrated in table 4.17.

Table 4.17: Pearson Correlation Analysis

		Automate d school fee collection system	Online payment system	compute rized database financial manage ment	School size	Account ability
Automated school fee collection system	Pearson Correlation	1	.859**	.739**	.798**	.752**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	84	84	84	84	84
Online payment system	Pearson Correlation	.859**	1	.821**	.844**	.687**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	84	84	84	84	84
Use of computerized database financial management	Pearson Correlation	.739**	.821**	1	.823**	.717**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	84	84	84	84	84
School size	Pearson Correlation	.798**	.844**	.823**	1	.698**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	84	84	84	84	84
Accountability	Pearson Correlation	.752**	.687**	.717**	.698**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	84	84	84	84	84

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

Source: Field data (2023)

Table 4.17 displays that bivariate correlation coefficients for all the study variables were significant at 5% level of significance (p-values < 0.05); that is, there existed a moderate

positive correlation between Accountability and Digital financial management system (automated school fee collection, online payment system and computerized data based financial management) among Public secondary schools in Bungoma County Kenya as indicated by; $r = 0.752$, $p\text{-value} = 0.000 < 0.05$; $r = 0.687$, $p\text{-value} = 0.000 < 0.05$; $r = 0.717$, $p\text{-value} = 0.000 < 0.05$ respectively. For School size had $r = 0.698$, $p\text{-value} = 0.000 < 0.05$. The study showed that there existed a moderate positive relationship between dependent variable (Accountability of Public Secondary schools in Bungoma County Kenya) and independent variables (automated school fee collection, online payment system and computerized data based financial management).

4.7.2. Linear Regression Analysis for testing the Study Variables

In this examination, simple linear regression analysis was utilized to test for the study hypothesis, that is; assessing the significant effect of each individual independent variable (automated school fee collection, online payment system and computerized data based financial management) on the dependent variable (accountability of public secondary schools in Bungoma County, Kenya). The multiple linear regression was utilized to evaluate the effect of the digital financial management system (automated school fee collection, online payment system and computerized data based financial management) on the accountability of public secondary schools in Bungoma County Kenya, and also determining which of the three independent variables had highest effect in predicting the accountability. The outcomes were presented in the subsections below.

4.7.2.1 Simple Linear Regression Analysis between Automated school fee collection and Accountability

The first objective of the study was to establish the effect of automated school fee collection on accountability of public secondary schools in Bungoma County, Kenya. To achieve this,

the researcher pursued the testing of the following hypothesis (H_{01}); H_{01} : Automated school fee collection does not have a significant effect on accountability of public secondary schools in Bungoma County, Kenya. Table 4.15 summarizes the outcomes.

Table 4.18: Simple Linear Regression Analysis between Automated school fee collection and Accountability of Public Secondary Schools

Model Summary ^b										
				Std. Error of	R Square	Change Statistics				
Model	R	R Square	Adjusted R Square	the Estimate	Change	F Change	df1	df2	Sig.	
1	.752 ^a	.566	.561	.59030	.566	106.864	1	82	.000	
a. Predictors: (Constant), Automated school fee collection										
b. Dependent Variable: Accountability										
ANOVA ^b										
Model		Sum of Squares		Df	Mean Square		F	Sig.		
1	Regression	37.238		1	37.238		106.864	.000 ^a		
	Residual	28.574		82	.348					
	Total	65.811		83						
a. Predictors: (Constant), Automated school fee collection										
b. Dependent Variable: Accountability										
Coefficients ^a										
Model		Unstandardized Coefficients		Standardized Coefficients						
		B	Std. Error	Beta	t			Sig.		
1	(Constant)	.459	.304		1.509			.135		
	Automated school fee collection	.882	.085	.752	10.338			.000		

Source: Field data (2023)

From the Table 4.18, the results on model summary showed that R square was 0.566 indicating that automated school fees collection accounted for 56.6% of the variability in the accountability of public secondary schools in Bungoma County, Kenya. The results also showed that there was a positive effect on automated school fees collection on accountability of public secondary schools in Bungoma County, Kenya ($R=0.752$).

The ANOVA results showed that $F(1, 82) = 106.864$, $P = 0.000 < 0.05$, indicating that the dependent variable can reliably predict the independent variable hence dataset was well-suited to the Simple Linear Regression model.

The overall results reveal that simple linear regression model was significant in determining the applicability of the model to measure the study variables. This means that there was satisfactory between automated fee collection and accountability of public secondary schools in Bungoma County, Kenya. The use of regression model to either accept or reject the research hypothesis was thus justified.

Based on the study beta coefficient results, the equation simple linear regression model could be written as $Y = 0.459 + 0.882X_1 + \epsilon$. Where Y = accountability, X_1 represent automated fee collection and ϵ represent error term. A beta of 0.882 means that in every 0.882 units of automated fee collection, there was a corresponding 1 unit increase in accountability of public secondary schools in Bungoma County, Kenya. The results also showed that automated fee collection was statistically significant $\alpha = 0.000$ and $p\text{-value} = 0.05$. Since the t-statistic was significant, the study rejects the first null hypothesis and concluded that automated fee collection had a significant and a positive effect on accountability of public secondary schools in Bungoma County, Kenya. Results agrees with the findings by Omondi & Ng'etich, (2019) who found that the adoption of automated digital financial management system improved accountability by enhancing transparency, streamlining financial processes, and promoting accurate record-keeping in public schools. To validate the questionnaire results when one of the respondents was asked about the automated fee collection these were the responses:

“Our school has embraced the digital management system and access to modern tools, such as electronic record systems and online service portal. It has helped the school to automate school fee payment which is convenient for the parents and students thus making accounting of funds easier thus creating a positive image for the school”.

Source: Interview by researcher (2023)

4.7.2.2 Simple Linear Regression Analysis between Online Payment System and Accountability of Public Secondary Schools in Bungoma County, Kenya.

The second objective of the study was to ascertain the effect of online payment system on accountability of public secondary schools in Bungoma County, Kenya. To achieve this, the researcher pursued the testing of the following hypothesis (H_{02}); H_{02} : Online payment system does not have a significant effect on financial accountability of public secondary schools in Bungoma County, Kenya. Table 4.19 summarizes the results;

Table 4.19: Simple Linear Regression Analysis between Online Payment System and Accountability of Public Secondary Schools in Bungoma County, Kenya.

Model Summary^b

Model	R	Adjusted R Square	Std Error of the estimate	R Square Change	F Change	Df1	Df2	sig
1	.687 ^a	.472 .466	.65076	.472	73.402	1	82	.000

a. Predictors: (Constant), Online payment system

b. Dependent Variable: Accountability

ANOVA^b

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	31.085	1	31.085	73.402	.000
	Residual	34.726	82	.423		
	Total	65.811	83			

a. Predictors (Constant): Online payment system

b. Dependent Variable: Accountability

Coefficients^a

Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.
		B	Std. Error	Beta	
1	(Constant)	.701	.338		2.077 .000
	Online payment system	.812	.095	.687	8.568 .000

a. Dependent Variable: Accountability

Source: Field Data (2023)

Based on study findings in Table 4.19, the results on model summary showed that R-square was 0.472 indicating that online payment system accounted for 47% of variability in the accountability of public secondary schools in Bungoma County, Kenya. The result also

showed that there was a positive effect of online payment system on the accountability of public secondary schools in Bungoma County, Kenya ($R=687$). The ANOVA results showed that $F(1, 82) = 73.402$, $P = 0.000 < 0.05$, indicating that the dataset was well-suited to the Simple Linear Regression model.

The overall results reveal that simple linear regression model was significant in determining the applicability of the model to measure the study variables. This means that there was satisfactory between online payment system and accountability of public secondary schools in Bungoma County, Kenya. The use of regression model to either accept or reject the research hypothesis was thus justified.

Based on the study beta coefficient results, the equation simple linear regression model could be written as $Y = 0.701 + 0.812X_2 + \epsilon$. Where Y = accountability, X_2 represent online payment system and ϵ represent error term. A beta of 0.812 means that in every 0.812 units of online payment system, there was a corresponding 1 unit increase in accountability of public secondary schools in Bungoma County, Kenya. The results also showed that online payment system was statistically significant $\alpha=0.000$ and $p\text{-value}=0.05$. Since the t-statistic was significant, the study rejects the second null hypothesis and concluded that online payment system had a significant and a positive effect on accountability of public secondary schools in Bungoma County, Kenya. The study agrees with Jones and Lee (2019) who studied online digital financial management finding its adoption to be positive and significant on accountability. The study disagrees with Brown (2021) who found online payment systems as insignificant in promoting accountability.

The analysis of the interview schedule of respondents regarding digital financial management system concurs with the questionnaires responses because one respondent argued that:

“Our school allowed online payment because it had really improved the accountability of funds in public secondary schools compared to the manual payment which was tedious and sometimes records were not easily accessed though it works better where there is internet connectivity and banks interlinked with the schools”.

Source: Interview by researcher (2023).

4.7.2.3. Simple Linear Regression Analysis between Use of Computerized Databased Financial Management and Accountability of Public Secondary Schools in Bungoma County, Kenya.

The third objective of the study was to determine the effect of use of computerized data based financial management on accountability of public secondary schools in Bungoma County, Kenya. To achieve this, the researcher pursued the testing of the following hypothesis (H_{03}); H_{03} : Computerized data based financial management does not have a significant effect on accountability of public secondary schools in Bungoma County, Kenya. Table 4.20 summarizes the results.

Table 4.20: Linear Regression Analysis between Computerized Data Based Financial Management and Accountability Public Secondary Schools

Model Summary^b

Model	R	Adjusted R Square	Std Error of the estimate	R Square Change	F Change	Df1	Df2	sig
1	.717 ^a	.514 .508	.62485	.514	86.561	1	82	.000

a. Predictors: (Constant): Use of computerized data based financial management

b. Dependent Variable: Accountability

ANOVA^b

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	33.796	1	33.796	86.561	.000
	Residual	31.015	82	.390		
	Total	65.811	83			

a. Predictors (Constant): Use of computerized data based financial management

b. Dependent Variable: Accountability

Coefficients^a

Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.
		B	Std. Error	Beta	
1	(Constant)	.614	.321		1.913 .000
	Online payment system	.846	.091	.717	9.304 .000

a. Dependent Variable: Accountability

Source: Field Data (2023)

Based on study findings in Table 4.20, the results on model summary showed that R-square was 0.514 indicating that use of computerized data base financial management accounted

for 51% of variability in the accountability of public secondary schools in Bungoma County, Kenya. The result also showed that there was a positive effect of use of computerized data based financial management on the accountability of public secondary schools in Bungoma County, Kenya ($R=0.717$). The ANOVA results showed that $F(1,82)=86.561$, $P = 0.000 < 0.05$, indicating that the dataset was well-suited to the Simple Linear Regression model.

The overall results reveal that simple linear regression model was significant in determining the applicability of the model to measure the study variables. This means that there was satisfactory between use of computer data base financial management and accountability of public secondary schools in Bungoma County, Kenya. The use of regression model to either accept or reject the research hypothesis was thus justified.

Based on the study beta coefficient results, the equation simple linear regression model could be written as $Y=0.614+0.846X_3+\epsilon$. Where Y = accountability, X_3 represent use of computer data base financial management and ϵ represent error term. A beta of 0.846 means that in every 0.846 units of use of computer data base financial management, there was a corresponding 1 unit increase in accountability of public secondary schools in Bungoma County, Kenya. The results also showed that use of computer data base financial management was statistically significant $\alpha=0.000$ and $p\text{-value}=0.05$. Since the t-statistic was significant, the study rejects the third null hypothesis and concluded that use of computer data base financial management had a significant and a positive effect on accountability of public secondary schools in Bungoma County, Kenya.

The above findings agree with Johnson (2020) who found a positive correlation between the implementation of use of computerized data base financial management and

accountability in public secondary schools. The study disagrees with Kabui, et al. (2020) that found that use of computerized data base financial management as insignificant on accountability.

From the interview schedule regarding digital management system, the study analysis showed that there was consistency with questionnaires results due to assertion by one respondent that:

“Our school has implemented computerized database financial management for accountability because the data can be easily accessed and retrieved whenever required during auditing and also by the schools’ stakeholders”.

Source: Interview by researcher (2023).

4.7.2.4 Multiple Regression Analysis

The effect of digital financial management system (automated school fee collection, online payment system and computerized data based financial management) on accountability of public secondary schools in Bungoma County Kenya was determined using a multiple linear regression model in this study. The outcomes of this analysis were as shown in Table 4.21.

Table 4.21: Multiple Linear Regression Analysis

Model Summary ^b									
				Std.		Change Statistics			
		R	Adjusted R	Error of	R				Sig. F
Model	R	Square	Square	the	Square	F	Change	df1	Change
1	.758 ^a	.575	.553	.59528	.575	26.681		4	.000
a. Predictors: (Constant): Automated school fee collection system, Online payment system and Use of computerized database financial management									
b. Dependent Variable: Accountability									

ANOVA ^b						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression		37.818	4	9.454	.000 ^a
	Residual		27.994	79	.354	
	Total		65.811	83		
a. Predictors: (Constant): Automated school fee collection system, Online payment system and Use of computerized database financial management.						
b. Dependent Variable: Accountability						

Coefficients ^a					
		Unstandardized Coefficients	Std. Error	Standardized Coefficients	
Model		B		Beta	t
1	(Constant)	.669	.256		2.993
	Automated school fee collection system	.772	.258	.659	2.998
	Online payment system	.781	.261	.701	3.110
	Use of computerized database financial management	.774	.260	.661	3.000
a. Dependent Variable: Accountability					

Source: Field data (2023)

Study findings in Table 4.21 on model summary showed that R-square was 0.575 indicating that digital financial management system (automated school fee collection system, Online payment system and Use of computerized database financial management)

accounted for 57.5% of variability in the accountability of public secondary schools in Bungoma County, Kenya. There was a positive relationship between digital financial management system and accountability with ($R=0.758$). The ANOVA results showed that $F(4, 79) = 26.681$, $P = 0.000 < 0.05$, indicating that the dataset was well-suited to the Multiple Linear Regression model.

From the findings, the examination detected that the automated school fee collection system, Online payment system, Use of computerized database financial management and online financial reporting had a significant effect in predicting the accountability of public secondary schools in Bungoma County Kenya as indicated by; $\beta = 0.669$, $t = 2.993$, $p\text{-value} = 0.003 < 0.05$; $\beta = 0.772$, $t = 0.2998$, $p\text{-value} = 0.004 < 0.05$; $\beta = 0.781$, $t = 3.110$, $p\text{-value} = 0.000 < 0.05$; and $\beta = 0.774$, $t = 3.000$, $p = 0.002 < 0.05$ respectively. These findings indicated that the individual digital financial management system affects accountability of public secondary schools in Bungoma County, Kenya.

The null hypotheses H_{01} , H_{03} were therefore rejected implying digital financial management system had a statistically significant influence on the accountability of public secondary schools in Bungoma County, Kenya. The Multiple Linear Regression model equation that was used to envisage accountability of Public secondary schools in Bungoma County Kenya when given the level of digital financial management system (automated school fee collection system, online payment system, Use of computerized database financial management and online financial reporting) was:

$$Y = .669 + 0.772 X_1 + 0.781 X_2 + 0.774 X_3 + \epsilon$$

Where;

Y = Accountability

X ₁	=	Automated school fee collection
X ₂	=	Online payment system
X ₃	=	Use of computerized data base financial management
E	=	Error

These findings concur with Thompson, (2022) who demonstrated that digital financial management system led to improved accuracy in accountability of public secondary schools.

4.7.2.5 Hierarchical Regression Analysis

The study examined the moderating effect of school size on the relationship between digital financial management systems and accountability of public secondary schools in Bungoma County, Kenya. Hierarchical Regression Analysis outcomes of this analysis were as shown in Table 4.22.

Table 4.22: Hierarchical Regression Analysis Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			Sig. F Change
						F Change	df1	df2	
1	.758 ^a	.575	.553	.59030	.575	106.864	1	82	.000
2	.761 ^b	.573	.562	.58946	.003	1.236	1	81	.002
3	.769 ^c	.572	.557	.59247	.007	.177	1	80	.003

Source: Field data (2023)

The study indicated that the R² values were at decreasing though p= 0.000<0.05 hence remained significant. The (R²) change model 1 to model 2 was 0.001 and that of model 2 to 3 was 0.000 this shows that digital financial management led to an increase on

accountability though by small margin. Thus, in (1st) first model digital financial management account for 57.5% of variance in accountability. In the (2nd) second model when school size was added, digital financial management and school size accounted for 57.3% of variance in accountability. While in the (3rd) third model digital financial management and interactions term accounted for 57.2% of variance in accountability. This showed the addition of school size had a significant positive effect the relationship between digital financial management and financial accountability of public secondary schools in Bungoma County Kenya.

Table 4.23: Hierarchical Regression ANOVA

		ANOVA ^f				
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	37.238	1	37.238	106.864	.000 ^a
	Residual	28.574	82	.348		
	Total	65.811	83			
2	Regression	37.667	2	18.834	54.204	.000 ^b
	Residual	28.144	81	.347		
	Total	65.811	83			
3	Regression	37.729	3	12.576	35.828	.000 ^c
	Residual	28.082	80	.351		
	Total	65.811	83			

Source: Field Data (2023)

The F values though decreasing rate all models were significant indicating school size retained significance $p < .000$) at model 3. This shows that on addition of school size had a significant positive effect the relationship between digital financial management and accountability of public secondary schools in Bungoma County Kenya.

Table 4.24: Hierarchical Regression Coefficients

		Coefficients^a				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	.669	.256		2.993	.003
	Automated school fee collection system	.772	.258	.659	2.998	.004
	Online payment system	.781	.261	.701	3.110	.000
	Use of computerized database financial management	.774	.260	.661	3.000	.002
2	(Constant)	.723	.166	.617	4.352	.000
	Automated school fee collection system	.772	.258	.659	2.998	.004
	Online payment system	.801	.250	.683	3.209	.002
	Use of computerized database financial management	.882	.085	.752	10.338	.002
	School size	.774	.260	.661	3.000	.002
3	(Constant)	.617	.322		1.967	.005
	Automated school fee collection system x School size	.801	.250	.683	3.209	.002
	Online payment system x School size	.781	.261	.701	3.110	.000
	Use of computerized database financial management x School size	.838	.091	.715	9.255	.000
	Digital financial management x School size	.765	.260	.653	2.946	.004

Source: Field Data (2023)

School size had a moderating effect in model 1 ($p=0.000 < 0.05$). Model 2 ($p=0.000 < 0.05$). Model 3 Digital financial management (Automated school fee collection system, Online payment system and use of computerized data base financial management in addition to

school size $p=0.04 < 0.05$) and $t=2.946$. This shows that the t values confirmed significance; equally all models recorded < 0.05 significance level. The study agrees with Wang, et al. (2021) found moderating effect of school size on digital financial system and financial accountability.

Table 4.25: Hypothesis Results

Hypothesis	Findings	Decision
HO₁: Automated school fee collection does not have a significant effect on accountability of public secondary schools in Bungoma County, Kenya.	Automated school fee collection has a statistical significant positive effect on accountability of public secondary schools in Bungoma County, Kenya.	Reject
HO₂: Online payment system does not have a significant effect on accountability of public secondary schools in Bungoma County, Kenya.	Online payment system has a statistical significant positive effect on accountability of public secondary schools in Bungoma County, Kenya.	Reject
HO₃: Computerized data based financial management does not have a significant effect on accountability of secondary schools in Bungoma County, Kenya.	Computerized data based has a statistical significant positive effect on accountability of public secondary schools in Bungoma County, Kenya.	Reject
HO₄: School size do not have a significant effect on the relationship between digital financial management systems and accountability of public secondary schools in Bungoma County, Kenya.	School size has a statistical significant positive moderating effect on the relationship between digital financial management and accountability of public secondary schools in Bungoma County, Kenya.	Reject

Source: Field Data (2023)

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This study was guided by Effect of Digital Financial Management System on Accountability of Public Secondary Schools in Bungoma County, Kenya. The specific objectives were: To establish the effect of automated school fee collection on accountability of public secondary schools in Bungoma County, Kenya, to ascertain the effect of online reporting system on accountability of public secondary schools in Bungoma County, Kenya, to determine the effect of use of computerized data base financial management on accountability of public secondary schools in Bungoma County, Kenya and to determine the moderating effect of school size on the relationship between digital financial management system and accountability of public secondary schools in Bungoma County, Kenya.

5.2 Summary of Findings

5.2.1 Effect of Automated School Fee Collection on Accountability of Public Secondary Schools in Bungoma County, Kenya

The first objective of the study was to establish the effect of automated school fee collection on accountability of public secondary schools in Bungoma County, Kenya. This was tested through the first hypothesis stated. From the first objective, the study sought the following hypothesis; H_{01} : Automated school fee does not have a significant effect on accountability of public secondary schools in Bungoma County, Kenya. The study established that descriptive statistics revealed that automated fee collections influenced accountability with a mean of 3.55 (between unsure and agree) and a standard deviation of 1.03. The study found that automated school fee collection had a positive significant effect on accountability of public secondary schools in Bungoma County, Kenya. Pearson

correlation showed $r = 0.752$, $p\text{-value} = 0.000 < 0.05$. Simple linear regression results ANOVA was $F(1, 82) = 106.864$, $P = 0.000 < 0.05$ and R Square of 0.566. Findings showed that automated school fee collection has a significant effect on accountability of public secondary schools in Bungoma County, Kenya hence the null hypothesis was rejected.

5.2.2 Effect of Online Payment System on Accountability of Public Secondary Schools in Bungoma County, Kenya

The second objective of the study was to ascertain the effect of online payment system on accountability of public secondary schools in Bungoma County, Kenya. This was tested through the second hypothesis stated. From the second objective, the study sought the following hypothesis; H_{02} : Online payment system does not have a significant effect on accountability of public secondary schools in Bungoma County, Kenya. The study established that descriptive statistics revealed that online payment system influenced accountability with a mean of 3.56 (between unsure and agree) and a standard deviation of 1.02. The study found that online payment system had a positive significant effect on accountability of public secondary schools in Bungoma County, Kenya. Pearson correlation showed $r = 0.687$, $p\text{-value} = 0.000 < 0.05$. Simple linear regression results ANOVA was $F(1, 82) = 73.402$, $P = 0.000 < 0.05$ and Adjusted R Square of 0.472 hence the null hypothesis was rejected.

5.2.3 Effect of Use of Computerized Data Base Financial Management on Accountability of Public Secondary Schools in Bungoma County, Kenya

The third objective of the study was to determine the effect of use of computerized data base financial management on accountability of public secondary schools in Bungoma County, Kenya, this was tested through the third hypothesis stated. From the third objective, the study sought the following hypothesis; H_{03} : Use of computerized data base

financial management does not have a significant effect on accountability of public secondary schools. The use of computerized data base financial management influenced accountability with a mean of 3.28(between unsure and agree) and a standard deviation of 1.01. The study found that use of computerized data base financial management had a positive significant effect on accountability of public secondary schools in Bungoma County, Kenya. Pearson correlation showed. $r = 0.717$, $p\text{-value} = 0.000 < 0.05$. Simple linear regression results ANOVA was $F(1,82) = 86.561$, $P = 0.000 < 0.05$ and Adjusted R Square of 0.514 hence the null hypothesis was rejected.

5.2.4 Moderating effect of School size on the relationship between Digital Financial Management Systems and Accountability of Public Secondary Schools in Bungoma County, Kenya

The study established the moderating effect of school size on the relationship between digital financial management systems and accountability of public secondary schools in Bungoma County, Kenya. The study found that school size had moderating significant effect of on the relationship between digital financial management systems and accountability of public secondary schools in Bungoma County, Kenya. The Pearson correlation for school size had $r = 0.698$, $p\text{-value} = 0.000 < 0.05$. Simple linear regression results ANOVA was $F(21,138) = 21.138$, $p = 0.000 < 0.05$ and Adjusted R Square of 0.575. The H_{04} : School size do not have a significant effect on the relationship between digital financial management systems and accountability of public secondary schools in Bungoma County, Kenya was therefore rejected.

5.3 Conclusion

Based on the study findings, the study concludes that:

Automated school fee collection had a positive significant effect on accountability of public secondary schools in Bungoma County, Kenya. Therefore, the study established that 56.6% of accountability of public secondary schools in Bungoma County, Kenya was accounted for by automated fee collection.

Online payment system had a positive significant effect on accountability of public secondary schools in Bungoma County, Kenya. Therefore, the study established that 47% of accountability of public secondary schools in Bungoma County, Kenya was accounted for by Online payment system.

Computerized data based financial management had a positive significant effect on accountability of public secondary schools in Bungoma County, Kenya. Therefore, the study established that 51% of accountability of public secondary schools in Bungoma County, Kenya was accounted for by Computerized data based financial management.

School size had moderating significant effect of on the relationship between digital financial management systems and accountability of public secondary schools in Bungoma County. Therefore, an increase in school size led to improved relationship between digital financial management systems and accountability.

5.4 Recommendations

The study recommends the following that:

Fee collection should be automated through mobile payment such as pay bills options for efficiency when being used by the stakeholders.

Public secondary schools should avail online payment system to parents and all forums that provide funding to public secondary schools for easier accountability.

Public secondary schools should provide financial control and compliance means to enable transparency and accountability on matters of finances.

Public secondary schools should improve learning resources, solicit more students so as to build ability to influence digital financial management and financial accountability.

5.5 Suggestion for Further Research

The study examined accountability; further studies can examine financial performance of learning institutions. The study adopted school size (school size) as the moderator further studies can adopt school resources as moderator. The study examined digital financial management system hence further studies can examine integrated financial management system or NEMIS in public secondary schools' accountability. Further studies can be done in other regions given current study was in Bungoma County.

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APPENDICES

APPENDIX I: INTRODUCTION LETTER

Dear Sir/Madam,

**RE: QUESTIONNAIRE ON EFFECT OF DIGITAL FINANCIAL MANAGEMENT
SYSTEM ON ACCOUNTABILITY OF PUBLIC SECONDARY SCHOOLS IN
BUNGOMA COUNTY, KENYA**

I am Nathan Wanjala Sipenji, a student from Masinde Muliro College of Science and Innovation, postgraduate. I am conducting an investigation on the aforementioned topic. In light of the aforementioned, I humbly ask that you take a moment to note the poll and respond to the questions that I will provide in the surveys that are attached to this message. Read the accompanying guidelines with compassion, and respond to the questions as appropriate. I further request that you provide me with the necessary records and information about “*Effect of Digital Financial Management system on Accountability of Public Secondary Schools in Bungoma County, Kenya*”. This will help me obtain the crucial data that I need to conduct the examination and, as a result, meet the review's objectives. Your provided data will remain confidential and will only be used for this examination—not for any other purpose at all. Your response and cooperation in this subject will be greatly appreciated. Thank you so much in advance.

Yours Faithfully,

Nathan Wanjala Sipenji

Signature

APPENDIX II: QUESTIONNAIRE FOR SCHOOL BURSARS AND ACCOUNTS CLERKS

Dear Respondent,

I am a student at Masinde Muliro University of Science and Technology. I am carrying out a study on “*Effect of Digital Financial Management on Accountability of Public Secondary Schools in Bungoma County, Kenya*”. The information you will provide shall be treated with utmost confidentiality and it is purely for academic purposes **ONLY**.

Guidelines

1. Use a tick (✓) for appropriate response
2. Do not indicate your name on the questionnaire

SECTION A: DEMOGRAPHIC INFORMATION

1. What is your highest level of academic qualification attained?

Primary school	[]
Secondary school	[]
College diploma	[]
Bachelor's degree	[]
Master's degree	[]
Doctorate degree	[]
2. What is your highest level of professional qualification attained?

K.A.T.C I	[]
K.A.T.C II	[]
CPA Part I	[]

CPA Part II []

CPA Part III []

Other (please specify):_____

3. How many years of experience do you have in financial management in schools?

Less than 1 year []

1-3 years []

4-6 years []

7-9 years []

10 or more years []

4. What is your current position/title in the school?

School Bursar []

Accounts Clerk []

Other (please specify):_____

5. What is the size of the school in terms of the number of students?

Less than 100 [] 501-1000 []

100-500 [] 1001 or more []

6. What is the average annual budget of the school?

Less than Ksh. 2,000,000 []

Ksh. 2, 000,001 - Ksh. 10,000,000 []

Ksh. 10,000,001 - Ksh. 50,000,000 []

Ksh. 50,000,001 or more []

7. What are the main sources of funding for the school?

Government funding [] Donor funding []

Parent contributions/fees [] CDF []

SECTION B PART I: STATEMENTS BASED ON RESEARCH OBJECTIVES

In this section please tick (✓) the most appropriate response for each of the statements in the table below with the following scores in mind. **Strongly Disagree (SD=1), Disagree (D=2), Not Sure (NS=3), Agree (A=4), and Strongly Agreed (SA=5).**

DIGITAL FINANCIAL MANAGEMENT SYSTEMS	STATEMENTS	5	4	3	2	1
Automated School Fee Collection System	The automated school fee collection has improved the accountability of your school.					
	The automated school fee collection system has made it easier for parents/guardians to pay fee in your school.					
	The automated school fee collection system has increased the accuracy and efficiency of financial reporting in your school.					
Online Payment System	The use of online payment system has improved the accountability of your school.					
	The online payment system has made it easier for parents/guardians to pay fee in your school.					
	The online payment system					

	has increased the accuracy and efficiency of financial reporting in your school.					
Use of Computerized Data Based Financial Management	The use of computerized data based financial management has improved the accountability of your school.					
	The computerized data based financial management system has made it easier to track and manage your school finances.					
	The computerized data based financial management system has increased transparency in financial transactions for your school.					

SECTION B PART II: SCHOOL SIZE

SCHOOL SIZE	STATEMENTS	5	4	3	2	1
School size	There exist a large number of students in your school.					
	Space available in your school is it accommodative for expansion of more learning buildings.					

	There exist enough learning resources that accommodate all the students in your school					
--	--	--	--	--	--	--

SECTION B PART III: ACCOUNTABILITY

In this section please tick (✓) the most appropriate response for each of the statements in the table below with the following scores in mind. **Strongly Disagree (SD=1), Disagree (D=2), Not Sure (NS=3), Agree (A=4), and Strongly Agreed (SA=5).**

ACCOUNTABILITY	STATEMENTS	5	4	3	2	1
Budget Framework	There exists budget framework in your schools					
	There exists participation in decision making during budgeting in your school.					
	The budget factors all necessary materials for the academic year in your school					
External Auditing	There exists external auditing in your school					
	The external auditing done in your school is					

	it transparent.					
	There exist anomalies during external auditing in your school.					

APPENDIX III: INTERVIEW SCHEDULE FOR SCHOOL PRINCIPALS

- i. What are the effects of utilization of automated school fee collection on accountability of public secondary schools in Bungoma County?

- ii. What are the effects of online payment system software on accountability of public secondary schools in Bungoma County?

- iii. What are the effects of computerized data based financial management on accountability of secondary schools in Bungoma County?

**APPENDIX IV: LIST OF TARGETED PUBLIC SECONDARY SCHOOLS IN
BUNGOMA COUNTY, KENYA**

SN	SCHOOL	S/COUNTY
1	Friends Sch Kamusinga	Kimilili
2	Lugulu Girls	Wby West
3	Kibabii High Sch	Bgm South
4	Living Hope High Sch	Bgm Central
5	Cardinal Otunga Girls High	Bgm South
6	Friends Sec Kimugui Girls	Bgm South
7	Teremi Boys High Sch	Bgm Central
8	Highway Academy	Bgm South
9	Namawanga Girls	Wby West
10	St. Cecilia G. Misikhu	Bgm East
11	Chebukaka Girls	Bgm Central
12	Khasoko High Sch	Bumula
13	Moi Girls Kamusinga	Kimilili
14	Bungoma High Sch	Bgm South
15	Chesamisi Boys High Sch	Kimilili
16	Nzoia Sugar Girls Sec Sch	Bgm South
17	St Lukes Kimilili Boys High	Kimilili
18	Friends Sch Bokoli	Wby West
19	Mt Carmel Girls Sec Sch	Kimaeti
20	Mitua Girls High. Sch	Tongaren
21	Mbakalo Boys	Bgm North
22	Kimobo Friends	Mt. Elgon
23	St. Teresa's Kabula Sec Sch	Bumula
24	Naitiri Boys	Bgm North
25	Kapsokwony Boys	Mt. Elgon
26	Chwele Girls	Bgm West
27	Mabuusi Sec Sch	Bgm South
28	Namachanja High Sch	Bgm South
29	Emmanuel Namunyu	Bgm Central
30	Cheptais Boys	Cheptais
31	Ndivisi Girls	Bgm East
32	St.Marys Girls Webuye	Bgm East
33	Kimaeti High Sch	Kimaeti
34	Kim Girls	Cheptais
35	Namisi Sec Sch	Bgm South
36	Bungoma Baptist Girls High	Bgm South
37	Friends Sec Sch Lwanda	Bgm South
38	A C Butonge High Sch	Bgm West
39	Kaptama Girls	Mt. Elgon
40	St. Peter's Sang'alo Sec	Bgm South
41	Chebosi Sa Sec	Wby West
42	St. Xavier High Sch	Bgm South

43	Namwela Boys	Bgm West
44	St.Joseph's Nalondo Girls	Bgm Central
45	Chemweisus S.A	Mt. Elgon
46	St. Mary's Sec,- Mukhuma	Bumula
47	Sa Kuywa Girls	Bgm Central
48	Kuywa Friends Sec	Wby West
48	Milo Friends Boys	Wby West
50	Kipsis	Cheptais
51	St. Mary's Sosio Girls	Kimilili
52	Luuya Girls Sec Sch	Bgm Central
53	Musembe Friends	Bgm North
54	St Christopher Mabanga Girls	Bgm Central
55	Kibuk Girls	Mt. Elgon
56	Bishop Anyolo, Kakamwe	Tongaren
57	Toroso High	Cheptais
58	Compel High Sch	Bgm East
59	Mungore Girls Sec Sch	Bumula
60	Napara Sec Sch	Kimaeti
61	St. Francis Makemo	Bgm East
62	Kibisi Friends	Bgm North
63	St. Kizito Mayanja Mixed	Kimaeti
64	Nabing'eng'e Friends	Bgm North
65	Wamalwa Kijana Sec Sch	Kimilili
66	Kamusinde Boys High Sch	Kimilili
67	St Pau'ls Miluki Sec Sch	Kimaeti
68	Kimugui Sec Sch	Bgm South
69	St. Paul Nzoia Rc S. S.	Bgm East
70	Maliki Boys	Bgm North
71	St. Jude Syoya Sec Sch	Bumula
72	St.Mary Magdaline Kimatuni	Bumula
73	Brenda Girls Sec	Wby West
74	St.Bridgid Nangwe Girls	Bgm Central
75	St. Martins Mwibale Sec	Bgm South
76	St. Augustine Girls Lukhuna	Tongaren
77	Friends Sec Sch Misanga	Bgm South
78	Ndivisi Boys S.S	Bgm East
79	Khachonge Girls	Bgm Central
80	St. Patrick's Kimukungi Girls	Bgm South
81	St. Teresa's Sio High Sch	Bgm South
82	St. Peters High, Musikoma	Bgm South
83	Kapkateny Ack Sec	Kopsiro
84	Bunangeni Sec Sch	Wby West
85	Sipala S. S.	Bgm East

86	Kaptama Boys	Mt. Elgon
87	Sitikho Friends Sec	Wby West
88	Kapkirwok Sec.	Kopsiro
89	Matulo Girls Friends	Wby West
90	St. Theresa's Girls Kimilili	Kimilili
91	Eluuya Girls	Bgm North
92	Chemuche Sec Sch	Bgm South
93	Nalondo Cbm	Bgm Central
94	St. Veronica High Sch Ranje	Bgm South
95	Friends Sch Lwanda Boys	Bgm South
96	Friends Sec Sch Bukembe	Bgm South
97	Mikuva S. S.	Bgm East
98	St. Peters Nakalira	Kimilili
99	Pwani Friends	Bgm North
100	Tongaren DEB Sec. Sch	Tongaren
101	SA Wabukhonyi Sec	Bgm Central
102	St.Johns Karima	Bgm North
103	St.Joseph's Nalondo Boys	Bgm Central
104	Chepkube Sa	Cheptais
105	Milimani Sa Sec. Sch	Tongaren
106	Luyekhe Mixed Sec Sch	Bgm South
107	Mukuyuni Girls	Bgm North
108	Marobo Girls	Bgm Central
109	St. Monica Bukokholo Girls	Bgm West
110	Friends Namaanga Sec Sch	Bgm South
111	Nabiswa Sec	Bgm North
112	Muji S. S	Bgm East
113	Lugulu Mixed Sec	Wby West
114	Kimilili Friends Girls	Kimilili
115	St. Mary Magdalene Namamuka	Bgm South
116	Misikhu Friends Boys	Wby West
117	Matili Sec Sch	Kimilili
118	St Peter 'S Siboti Sec Sch	Kimaeti
119	St Mary's Namatotoa Sec Sch	Bumula
120	Mateka Sec Sch	Bumula
121	Musokho Sec Sch	Bgm Central
122	Ack Mungore Boys Sec Sch	Bumula

123	Kituni Sec Sch	Wby West
124	St. Tadeos Ndengelwa Sch	Bgm South
125	Mbakalo Girls	Bgm North
126	St.Mourice Namboko	Bgm North
127	Friends Sch Kitale	Bgm South
128	Karibuni Girls	Bgm West
129	Mwiruti Girls Sec Sch	Bumula
130	St Charles Lwanga, Bwake	Bgm Central
131	St.Stephen's Sikusi Boys	Bgm Central
132	Sikalame S.A Sec Sch	Bgm South
133	St. Martin's Kitinda Sec Sch	Bgm South
134	Namusasi Sec Sch	Bumula
135	Cardinal Otunga Sichei	Bgm Central
136	Maliki Mixed	Bgm North
137	Makhonge Friends Sec	Bgm Central
138	Misimo S.S.	Bgm East
139	Marobo Friends Boys Sec	Bgm Central
140	Kimalewa Sec Sch	Bgm Central
141	Bishop Atundo Girls Sec. Sch	Tongaren
142	St. Kizito Girls	Bgm North
143	Tembelela S.A Mixed sec Sch	Bgm South
144	Makuselwa S.S.	Bgm East
145	Matumbufu Girls Sec Sch	Bgm South
146	Samoya Sec Sch	Bgm South
147	Kikai Girls	Bgm West
148	Webuye DEB Sec Sch	Wby West
149	St. Peters Namaika Sec Sch	Bumula
150	Starlight Sec Sch	Bgm South
151	Bitobo Sec Sch	Kimaeti
152	St. Antony Naburereya Sec	Bumula
153	St Marys Ng'oli Sec Sch	Kimaeti
154	Bisunu Friends	Bgm West
155	Chekulo Friends Sec Sc	Bgm Central
156	St. John's Lutungu Sec Sch	Bgm South
157	Mukwa Sec Sch	Kimaeti
158	Chesikaki Rc	Cheptais
159	St. Patrick's Netima Sec Sch	Kimaeti
160	St. Anthony Sirisia	Bgm West
161	Khaoya Friends	Bgm South
162	St. Kizito Masielo Sec Sch	Kimaeti
163	Bunambo Sec. Sch	Tongaren
164	St Paul's Sec. Narati	Tongaren
165	St Annes Maloho	Wby West
166	St. Monica's Mungeti Sec Sch	Bgm South

167	Myanga Sec Sch	Kimaeti
168	Nang'eni Girls Sec Sch	Kimaeti
169	St. Elizabeth Malinda Sec	Bumula
170	Ndakaru S.A	Bgm West
171	Namunyiri R.C.E.A Girls Sec.	Tongaren
172	Nalutili S.A Girls Sec Sch	Bgm South
173	St Peters Sec. Sch Ndalu	Tongaren
174	Bishop Wabukala	Bgm West
175	ACK,Good Shepherd,Kibabii	Bgm South
176	Kisuluni S.A Mixed Sec Sch	Bgm South
177	Friends Sec. Sch Kiminini	Tongaren
178	Hon Moses Weta Mikayu	Bgm Central
179	Namawanga Bahai Sec	Kimilili
180	St John's Savanna Rc	Bgm East
181	St Kizito Mukhweya Girls	Bgm Central
182	Namarambi Boys S. S.	Bgm East
183	Busakala Sec Sch	Bgm Central
184	St Jude Namanze Sec Shool	Bumula
185	St Marys Bokoli Sec	Wby West
186	Wamalwa Kijana High Sch	Bgm South
187	Chelebei Sec	Kopsiro
188	St. Jan Sec Sch	Kimilili
189	St. Joseph Kamusinde	Kimilili
190	St. Michael Nasaka	Bgm Central
191	Namwacha Sec Sch	Bgm South
192	Lukhuna Friends Sec. Sch	Tongaren
193	St Jude Muanda Sec Sch	Bumula
194	Kongit Sec	Mt. Elgon
195	Lunyu DEB	Bgm North
196	Miendo Friends Sec	Wby West
197	Bumula Friends Sec Sch	Bumula
198	St Peters Chemwa Sec	Bgm Central
199	Ngwelo Friends Sec	Wby West
200	Chebukwa Sec Sch	Bgm Central
201	St. Mathews Ack	Bgm East
202	Sirende Sec Sch	Wby West
203	Naitiri Girls	Bgm North
204	Misikhu Rc High Sch	Wby West
205	Kimabole	Cheptais
206	St. Longinus Sec Sch Kongoli	Bgm South
207	Moyokwe Sec Sch	Wby West
208	Kaptola Sec	Mt. Elgon
209	St Paul's Wamunyiri Sec Sch	Bumula

210	Bilibili	Bgm North
211	St. Juliana Sec. Sch Narati	Tongaren
212	Lutacho S.S	Bgm East
213	Nakhwana Sec Sch	Kimaeti
214	Bishop Okiring	Mt. Elgon
215	Madisi Sec Sch	Bgm Central
216	St. Joseph's Lumboka Mem.	Bumula
217	Makunga S.A	Bgm North
218	Bituyu Sec Sch	Kimilili
219	Sa Kabuchai Girls	Bgm Central
220	Bungoma Muslim Sec Sch	Bgm South
221	S.A Lwanda Secondry Sch	Kimilili
222	Chiliba Sec Sch	Bumula
223	Kebee Sec	Kopsiro
224	Friends Mixed Sec Chesamisi	Kimilili
225	Terem S.A. Sec	Kopsiro
226	Tabani Friends Sec. Sch	Tongaren
227	St. Elizabeth Lunao	Bumula
228	Maeni Girls Sec Sch	Kimilili
229	St. Emmanuel Miruri	Kimilili
230	Friends Sec Sch Fuchani	Bgm South
231	Kijana Wam. Mem, Mwomo	Kimaeti
232	Sirakaru S.A	Bgm North
233	St. Mary's Kamba Sec Sch	Bgm South
234	Friends Sch- Kibunde	Kimilili
235	Milo Friends Girls	Wby West
236	Friends Sch Kisioyi Sec Sch	Kimaeti
237	St. Anthony Tulukuyi	Kimaeti
238	Chemoge Sec	Mt. Elgon
239	Lwandanyi	Bgm West
240	Chenjeni Friends Sec Sch	Bgm Central
241	Sikulu Friends Sec. Sch	Bgm Central

APPENDIX V: RESEARCH PERMIT

 REPUBLIC OF KENYA Ref No: 295778	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION. Date of Issue: 26/October/2023
RESEARCH LICENSE	
	
This is to Certify that Mr. Nathan Wanjala Sipenji of Masinde Muliro University of Science and Technology, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Bungoma on the topic: EFFECT OF DIGITAL FINANCIAL MANAGEMENT SYSTEM ON FINANCIAL ACCOUNTABILITY OF PUBLIC SECONDARY SCHOOLS IN BUNGOMA COUNTY, KENYA for the period ending : 26/October/2024.	
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