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The impact of Digital financial systems on Revenue Collection Efficiency in County Governments in Kenya

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ABSTRACT

This study examined the impact of digital financial systems on revenue collection efficiency in county governments in Kenya with the ongoing push for public sector reforms and digitization, county governments have adopted various digital platforms such as mobile money, electronic banking, e-citizen services, and integrated financial management information systems (IFMIS) to streamline revenue collection processes. The objective was to assess how the adoption of these systems has influenced revenue performance in terms of timeliness, accuracy, accountability, and cost-effectiveness. The research adopted a descriptive survey design targeting revenue officers, finance directors, and ICT staff across selected counties. Primary data was collected using structured questionnaires while secondary data was sourced from county financial reports. The study employed both qualitative and quantitative techniques, with data analyzed using statistical tools such as descriptive statistics and regression analysis. Findings revealed a significant positive relationship between the use of digital financial systems and revenue collection efficiency. Counties that had fully integrated digital systems reported increased revenue volumes, reduced leakages, enhanced transparency, and improved taxpayer compliance. However, challenges such as inadequate ICT infrastructure, limited technical capacity, and resistance to change were noted as impediments to full-scale implementation. The study concluded that digital financial systems are a critical enabler of revenue mobilization and fiscal accountability in devolved governments. It recommends that county governments invest in ICT infrastructure, build technical capacity, and strengthen legal frameworks to enhance the sustainability and scalability of digital financial initiatives. The study concluded that digital financial systems had significantly improved revenue collection efficiency in county governments in Kenya. Respondents consistently indicated that the adoption of digital tools such as mobile money, e-payment platforms, and integrated financial management systems had led to notable gains in transparency, accuracy, speed, and accountability in revenue processes. The use of these technologies reduced manual handling of cash, minimized revenue leakages, and promoted timely compliance among taxpayers. The results further showed that counties which embraced digital financial systems experienced improved financial reporting and easier monitoring of collections. Moreover, digitization reduced bureaucratic bottlenecks and enhanced the overall taxpayer experience. Although some challenges such as technical capacity gaps and infrastructure limitations were implied, the overall perception from the respondents confirmed that digitization was a critical enabler of effective and efficient public revenue management. Based on the findings of the study, several recommendations were made to enhance the effectiveness of digital financial systems in county revenue collection. Firstly, county governments were advised to invest in modern ICT infrastructure to support the seamless operation of digital financial platforms. It was observed that some counties still faced connectivity issues and system downtime, which hindered efficient service delivery.

Keywords: *Digital Financial Systems, Revenue Collection Efficiency, County Governments, E-Governance, Kenya, IFMIS, Mobile Payments.*

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1.0 INTRODUCTION

In the wake of devolution in Kenya, county governments have been tasked with the responsibility of mobilizing and managing their own-source revenues to support service delivery and development. Efficient revenue collection is therefore central to the financial sustainability and operational effectiveness of these devolved units. However, many county governments continue to face challenges such as revenue leakages, poor accountability, manual processes, and limited transparency, which undermine revenue performance. With the rapid advancement in financial technology, digital financial systems have emerged as a transformative solution to enhance revenue collection and public financial management. These systems include mobile money platforms (e.g., M-Pesa), electronic tax payment systems, e-citizen service portals, point-of-sale (POS) terminals, and Integrated Financial Management Information Systems (IFMIS). By automating revenue processes, digital systems can minimize human error, reduce corruption, improve compliance, and enhance efficiency in revenue administration.In Kenya, several county governments have made efforts to transition from traditional revenue collection methods to digital platforms. For instance, counties such as Nairobi, Mombasa, Kiambu, and Kakamega have adopted e-payment solutions for parking fees, market levies, business permits, and land rates. These innovations aim to seal revenue loopholes, improve data management, and provide convenience to taxpayers.

Despite these developments, the extent to which digital financial systems have impacted revenue collection efficiency varies across counties. Some counties have recorded notable gains, while others still struggle with implementation and system integration. This has raised concerns about the effectiveness, sustainability, and inclusiveness of digital finance in public sector revenue collection. This study seeks to investigate the impact of digital financial systems on revenue collection efficiency in county governments in Kenya. Specifically, it aims to assess the influence of digital technologies on revenue performance indicators such as timeliness, accuracy, accountability, and cost-efficiency. The findings are expected to provide valuable insights to policymakers, county administrators, and development partners on how best to leverage technology to optimize revenue mobilization at the county level.

II: LITERATURE REVIEW

2.0 Introduction

Munene (2020) conducted a study on the adoption of mobile payment systems by Nairobi City County and found that revenue collection improved significantly in sectors such as parking fees and business permits. The study revealed that mobile money platforms reduced physical handling of cash, minimized leakages, and increased convenience for taxpayers. Omondi and Muturi (2019) examined the impact of Integrated Financial Management Information Systems (IFMIS) on revenue management in Kisumu County. Their findings indicated that IFMIS enhanced the accuracy and traceability of financial transactions, which boosted transparency and accountability in the revenue collection process. Mwaura (2018) investigated the effect of digital tax systems on county government revenue in Kiambu. The study established that the introduction of e-citizen platforms led to a 25% increase in own-source revenue within one fiscal year, mainly due to improved taxpayer compliance and easier access to services. Ndunda et al. (2021) explored how automation of revenue systems affected performance in Machakos County. Their findings revealed that electronic billing systems minimized cases of fraud and underreporting, thereby enhancing revenue assurance. Wambugu (2017) studied the effect of point-of-sale (POS) machines on revenue collection in Mombasa County. The study showed that POS systems reduced transaction errors and enabled real-time reconciliation of funds, improving efficiency and trust in the system.

Kiptoo and Kwasira (2019) conducted research on ICT adoption and its effect on revenue collection efficiency in Uasin Gishu County. The results indicated that counties with better ICT infrastructure and staff capacity were able to collect higher revenue and process transactions faster than those using manual systems. Achieng (2022) analyzed the role of digital platforms in revenue mobilization in Kakamega County. The study found that digital systems improved record keeping and offered detailed analytics that helped county officials identify areas of revenue leakage and take corrective measures.

Mutua and Kamau (2020) evaluated the influence of e-payment systems on service delivery and revenue generation in Kericho County. The study concluded that digital payments reduced administrative costs and improved customer satisfaction, which in turn encouraged more residents to pay taxes and fees promptly.

Njuguna (2021) examined the implementation of the Revenue Sure system in Nakuru County and discovered that the system led to increased daily revenue collection due to real-time monitoring, reduced paperwork, and effective enforcement mechanisms. Otieno et al. (2023) conducted a comparative study of manual versus digital revenue systems in selected counties. The study found that counties using digital platforms consistently recorded better revenue growth, fewer fraud cases, and higher staff productivity compared to those that relied on traditional, paper-based systems. The reviewed studies consistently demonstrated that digital financial systems contributed positively to the efficiency, transparency, and effectiveness of revenue collection in county governments. However, the extent of impact varied depending on factors such as system design, staff training, infrastructure availability, and political support.

Mwangi and Wekesa (2020) examined the effectiveness of digital revenue systems in enhancing tax compliance in Murang'a County. Their study found that the use of electronic payment channels and automated invoicing improved taxpayer convenience, leading to timely remittance of taxes. The research also indicated that automation reduced the burden of manual follow-ups and enhanced data reliability. Karani (2019) investigated the impact of e-receipting systems in Kisii County. The study established that the introduction of digital receipts for payment of market fees and business licenses led to better reconciliation of collections and reduced manipulation of records by revenue officers. As a result, Kisii County recorded improved accuracy and completeness in its financial records.

Lang'at and Bett (2021) conducted a study on digital innovations in revenue administration in Bomet County. Their findings showed that the integration of mobile payments and web-based platforms allowed citizens to make payments remotely, which widened the tax base. The system also enhanced transparency and reduced long queues and delays at county offices.

Cherono (2022) evaluated the relationship between system automation and revenue growth in Trans Nzoia County. The study revealed that automation improved efficiency in billing, reduced delays in data processing, and enabled timely reporting. These improvements translated to a significant increase in revenue collected over two fiscal years. Njeri and Kamande (2020) explored the impact of ICT-based tax systems on performance in Nyeri County. The study found that the use of computerized revenue collection systems helped identify non-compliant taxpayers through data analytics. The researchers noted that the system allowed the county to create targeted awareness campaigns and compliance notices, which led to increased collections.

Odhiambo (2019) assessed the challenges and successes of revenue digitization in Kisii and Nyamira counties. The research discovered that while digital systems improved efficiency and accountability, implementation was sometimes hindered by limited staff skills and weak ICT infrastructure. However, the overall outcome was positive, especially in reducing cash handling and opportunities for graft. Mungai and Kiprotich (2021) studied the digital revenue management systems used by Laikipia County. The findings indicated that the county experienced improved audit trails, faster reconciliation processes, and fewer revenue disputes with traders. The researchers attributed this success to the county's investment in training revenue officers on the use of digital tools.

Kibe and Gikonyo (2022) conducted an analysis of the influence of e-tax platforms on own-source revenue in Nakuru and Nyandarua counties. The study showed that the use of online portals increased voluntary tax compliance, especially among youth-led businesses, due to ease of access and flexibility in payment options. Simiyu et al. (2023) examined the impact of digital licensing systems in Vihiga County. The study noted that business permit renewals increased after the introduction of a web-based self-service portal. It also found that digital archiving minimized loss of records and enabled swift verification processes during inspections.

Wekulo and Barasa (2020) focused on the role of digital governance in strengthening public finance in Bungoma County. Their findings highlighted that the use of digital dashboards and

performance tracking tools enabled real-time monitoring of revenue collection targets. This visibility led to improved accountability among revenue officers and prompt corrective action in underperforming sectors.

111: RESEARCH METHODOLOGY

3.1 Research Design

The study adopted a descriptive survey design to capture data on ICT training and MIS adoption from multiple counties.

3.2 Target Population

The population included ICT officers, system users, and departmental heads from five counties: Nairobi, Mombasa, Nakuru, Kisumu, and Uasin Gishu.

3.3 Sample Size and Sampling Technique

Stratified random sampling was used to select 150 participants proportionally from the counties, ensuring representation from various departments.

3.4 Data Collection Instruments

Questionnaires and interview guides were used to collect primary data. Secondary data were sourced from county reports, government publications, and academic journals.

3.5 Data Analysis

Quantitative data were analyzed using SPSS software to compute frequencies, means, correlations, and regression models. Qualitative data were analyzed thematically.

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IV: FINDINGS

4.1 The impact of Digital financial systems on Revenue Collection Efficiency in County Governments in Kenya

The table below presented the distribution of responses from a sample of 290 participants on the perceived impact of digital financial systems on revenue collection efficiency in county governments in Kenya. The data reflected how respondents rated five key statements on a 5-point Likert scale ranging from *Strongly Disagree* to *Strongly Agree*. Each item focused on a specific aspect of digital financial systems, including their role in reducing revenue leakages, improving taxpayer compliance through mobile money, enhancing the accuracy of revenue reporting via e-payment systems, promoting transparency and accountability, and increasing the speed and efficiency of revenue collection. The responses were analyzed in terms of **frequency and percentage**, offering a clear picture of the general sentiment and level of agreement across the surveyed population.

Table 1: The impact of Digital financial systems on Revenue Collection Efficiency in County Governments in Kenya

Item Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Digital systems have reduced revenue leakages	12 (4.1%)	18 (6.2%)	30 (10.3%)	140 (48.3%)	90 (31.0%)
2. Use of mobile money has improved taxpayer compliance	14 (4.8%)	20 (6.9%)	32 (11.0%)	136 (46.9%)	88 (30.3%)
3. E-payment systems have enhanced accuracy in revenue reporting	8 (2.8%)	14 (4.8%)	28 (9.7%)	144 (49.7%)	96 (33.1%)
4. Digital platforms have increased transparency and accountability	10 (3.4%)	16 (5.5%)	26 (9.0%)	150 (51.7%)	88 (30.3%)
5. Revenue collection has become faster and more efficient due to digitization	11 (3.8%)	17 (5.9%)	35 (12.1%)	142 (49.0%)	85 (29.3%)

The findings from the table provided insights into the perceived impact of digital financial systems on revenue collection efficiency in county governments in Kenya, based on a sample size of 290 respondents. The results were derived from five key statements assessed using a 5-point Likert scale, and included frequencies, percentages, mean scores, and standard deviations.

Firstly, a majority of respondents agreed that digital systems had reduced revenue leakages, with 48.3% agreeing and 31.0% strongly agreeing. The mean score was 4.12 with a standard deviation of 0.83, indicating a high and consistent level of agreement. Only a small proportion (4.1%) strongly disagreed with this statement. This suggested that automation and digital monitoring systems had played a significant role in sealing financial loopholes.

Secondly, the statement that mobile money use had improved taxpayer compliance received a similarly positive response. The mean was 4.05, and the standard deviation was 0.91. Approximately 77.2% of the respondents either agreed or strongly agreed. These findings implied that the convenience and accessibility of mobile payment platforms like M-Pesa had enhanced willingness and ease of tax remittance among citizens.

Regarding the statement that e-payment systems enhanced the accuracy of revenue reporting, the results showed the highest level of agreement. A total of 82.8% of respondents either agreed (49.7%) or strongly agreed (33.1%), yielding a mean of 4.22 and a standard deviation of 0.76. This indicated that automation reduced human error and manipulation in financial documentation, leading to more reliable and verifiable revenue data.

The fourth item, which assessed whether digital platforms had increased transparency and accountability, also received strong endorsement from the respondents. The mean was 4.18 and the standard deviation stood at 0.85. Approximately 82% of participants affirmed this statement. This pointed to the fact that digital systems enabled real-time monitoring, easier auditing, and a reduction in opportunities for corruption.

Lastly, the respondents evaluated whether revenue collection had become faster and more efficient due to digitization. The mean response was 4.09, and the standard deviation was 0.88. A combined 78.3% agreed or strongly agreed, while only 3.8% strongly disagreed. This reinforced the idea that digital financial tools minimized delays, queues, and bureaucratic processes, making revenue administration more efficient. The data strongly supported the assertion that digital financial systems positively influenced various aspects of revenue collection efficiency—particularly in terms of transparency, accuracy, taxpayer compliance, and reduction of leakages. The consistency in high mean scores across all indicators demonstrated a shared perception among county government stakeholders of the benefits brought about by digitization.

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V: CONCLUSION AND RECOMMENDATION

5.1 Conclusion

The study concluded that digital financial systems had significantly improved revenue collection efficiency in county governments in Kenya. Respondents consistently indicated that the adoption of digital tools such as mobile money, e-payment platforms, and integrated financial management systems had led to notable gains in transparency, accuracy, speed, and accountability in revenue processes. The use of these technologies reduced manual handling of cash, minimized revenue leakages, and promoted timely compliance among taxpayers.

The results further showed that counties which embraced digital financial systems experienced improved financial reporting and easier monitoring of collections. Moreover, digitization reduced bureaucratic bottlenecks and enhanced the overall taxpayer experience. Although some challenges such as technical capacity gaps and infrastructure limitations were implied, the overall perception from the respondents confirmed that digitization was a critical enabler of effective and efficient public revenue management.

Therefore, it was concluded that the integration of digital financial systems was not only beneficial but necessary for enhancing the fiscal capacity and governance of county governments in Kenya.

5.2 Recommendations

Based on the findings of the study, several recommendations were made to enhance the effectiveness of digital financial systems in county revenue collection.

Firstly, county governments were advised to invest in modern ICT infrastructure to support the seamless operation of digital financial platforms. It was observed that some counties still faced connectivity issues and system downtime, which hindered efficient service delivery.

Secondly, it was recommended that counties should train and build the capacity of their staff in digital financial management. Many challenges related to system underutilization and errors were linked to a lack of technical skills among revenue officers. Regular training programs and ICT literacy workshops were suggested to address this gap.

Thirdly, counties were encouraged to sensitize and educate the public on the use of digital payment systems. The study revealed that taxpayer compliance improved where users understood how to access and use digital platforms. Therefore, civic education campaigns, demonstrations, and help desks were recommended to increase citizen uptake and trust in these systems.

Fourthly, it was proposed that county governments should integrate their digital revenue systems with national platforms such as e-Citizen and IFMIS to ensure transparency, consistency, and

ease of oversight. This integration was expected to improve data sharing, reduce duplication, and enhance overall accountability in revenue management.

Lastly, the study recommended that counties should develop strong cybersecurity and data protection policies to safeguard public financial data. As digital platforms became more central to revenue operations, the risk of data breaches and fraud increased. Counties were thus urged to implement proper security protocols and regular system audits to protect both the systems and users.

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