EFFECTS OF ELECTRONIC PAYMENT SYSTEMS ON REVENUE COLLECTION PERFORMANCE IN NANDI COUNTY GOVERNMENT, KENYA

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A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF BUSINESS IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION (FINANCE OPTION)

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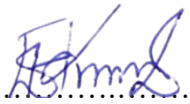
DECLARATION

This research project is my personal work that has not been submitted to any other university for any award.



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DEDICATION

To my loved ones, I offer my heartfelt thanks for prayers and best wishes to soldier on Moreso, lovely wife Hilda who has been instrumental in encouraging me to press harder for success, I appreciate my children Jayden, Jace and Jaysen too for their support. I thank you all.

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ABBREVIATIONS AND ACRONYMS

A2C	Administration-To-Consumer
ANOVA	Analysis of Variance
B2B	Business-To-Business
B2C	Business-To-Consumer
BIS	Bank for International Settlements
CBN	Central Bank of Nigeria
CEG	Center for Economic Governance
CMP	Cashless Mobile Payment
EFT	Electronic Fund Transfer
GePG	Government Electronic Payment Gateway
GoK	Government of Kenya
ICT	Information Communication Technology
KIPPRA	Kenya Institute for Public Policy Research and Analysis
LAIFORMS	Local Authority Integrated Financial Operations Management System
NACOSTI	National Commission for Science, Technology & Innovation
NWSC	National Water and Sewerage Corporation
OCOB	Office of the Controller of Budget
P2P	Person-To-Person
POS	Point of Sale
RBV	Resource-Based View
RE	Random Effect
ROA	Return on Assets
RTGS	Real Time Gross Settlement System
SPSS	Statistical Packages for Social Sciences
TAM	Technology Acceptance Model
URA	Uganda Revenue Authority
USSD	Unstructured Supplementary Service Data
WPU	Web Pay User Volume

ABSTRACT

County governments struggle to gather enough own-source revenues to fund their operations and provide services. To increase revenue and reduce leaks, an electronic payment system was implemented. Nandi County frequently misses revenue objectives. This study examines how electronic payment systems affect Nandi County Government revenue collection. The goals were to assess how e-banking, mobile payments, and web payment control affect revenue collection. Innovation diffusion theory, resource-based view theory, revenue diversification theory, systems theory, and technology adoption model underpinned the study. This study used descriptive and correlational methods. The target population was 135 workers. County revenue officers collected the data. The census method was utilized. A Uasin Gishu County pilot survey was undertaken. We collected quantitative and qualitative data using questionnaires and observation schedules. Data was analyzed using descriptive and inferential statistics, including correlation and regression. The descriptive analysis of quantitative data used mean scores, percentages, and standard deviation, while the inferential analysis used Pearson's product moment correlation and regression models. E-banking, mobile payments, and web payment control systems improved revenue collection dramatically. E-banking promotes electronic cash transfers to county accounts, delivers bank statements online, RTGS payments, streamlines operations, improves compliance, speeds transactions, increases transparency, and lowers costs and errors. Mobile payments increase income, taxpayer compliance, and delays, study finds. The county's web payment control cycle was shortened via e-payment. The e-payment control system had sufficient payment restrictions and security. E-banking, mobile payments, and Web payment control system obtained mean scores of 4.34, 4.28, and 4.38 on a 5-point Likert scale. The study's mean was 4.33, showing a considerable effect on income collection. Changes in independent factors explained revenue collection performance with a R square of 0.708. E-banking, mobile payments, and web payment control system were significantly associated with revenue collection performance, according to ANOVA with a p-value of 0.000b at 95% confidence level. The study found that e-banking improves county revenue collection. Mobile payments make tax compliance easier for taxpayers, which boost county government revenue, according to the study. The study indicated that web payment control has greatly changed the payment cycle. To accommodate more electronic financial transfers, the report advises the County Government of Nandi to invest in e-banking infrastructure. The County shall regularly update electronic services payment legislation and security measures to prevent fraud and protect financial transactions. The County Government of Nandi should accurately keep and quickly access digital records, including receipts and transaction data, to increase financial reporting and monitoring transparency and accountability.

CHAPTER ONE

INTRODUCTION

This section covered background research study, research problem statement, objectives of research study, research hypotheses, significance of the study, scope and delimitation of the study.

1.1 Background of the study

Revenue collection efficiency significantly affects government efficiency and the ability to fund essential services and infrastructure. Government performance is measured by its ability to meet collection goals, reduce leakages, and cut administrative costs. Tax collection efficiency boosts public investment, economic growth, and living standards (Bird & Zolt, 2008). Effective collecting builds public trust since contributions are handled appropriately and transparently (Ahmad et al., 2014).

The US leads the globe in revenue collection. The IRS uses advanced automation to improve collection accuracy and efficiency (IRS, 2021). Brazilian tax systems were heavily digitized to reduce tax evasion and increase compliance. Optimized technology for real-time tax compliance have reduced tax evasion and increased revenue collection efficiency (Pereira & Rodrigues, 2019). The Inland Revenue Authority of Singapore's e-tax system has increased compliance and reduced manual processing costs (Inland et al., 2020).

In China and Taiwan, special municipalities, counties, urban, and rural areas have revenue collecting laws (Estrellana, 2023). Sidhu, Jain, Shukla, Patil, and Sawant (2018) showed that manual revenue collecting in India was inefficient. Turkey has saved a lot by using e-payments (Allahverdi, Alagöz & Ortakarpuz, 2017). Tey and Tan (2023) found that e-banking service quality affects customer satisfaction in Malaysia. Mobile subscribers greatly affect bank performance, according to Bousrih (2023). Cashless payments increase banks' Return on Assets. This means customers will switch to mobile banking, harming profitability.

South Africa's South African Revenue Service (SARS) uses advanced electronic payment technologies to improve tax collection and reduce administrative costs (SARS, 2022). The Integrated Payroll and Personnel Information System (IPPIS) has improved revenue utilization in Nigeria by addressing ghost worker income losses (Ugwoke et al., 2021). Uganda is using electronic technologies to increase taxpayer registration and reduce informal sector tax evasion (Uganda Revenue Authority, 2019).

In Zimbabwe, Chilunjika (2018) found that internet platforms affect small taxpayer registration, filing, and payment. Opuala and Orji (2022) found that electronic payment volume, online pay user volume, and cashless mobile payment increase public revenue in BRICS nations. Kweka and Chikoyo (2022) discovered that electronic revenue collection methods boost municipal revenue collection in Tanzania, however internet connectivity and civic education are issues. The study strongly recommended system automation to improve performance (Oke, Akinkunmi, & Etebefia, 2019).

Electronic payment systems have increased county revenue collection in Kenya. Digital payments have improved tax collection in Nairobi County, reducing human mistake and fraud (Mwangi, 2021). Electronic payment systems reduced income leakages in Mombasa County by boosting transparency and real-time transaction monitoring (Kuria & Kinyua, 2020). Electronic payment methods improved taxpayer compliance and efficiency in Kisumu County (Ochieng & Nyambane, 2020).

Many governments are switching to electronic payment systems to improve tax collection, especially at the county level. Electronic payment solutions reduce manual collection inefficiencies, increase taxpayer compliance by offering many payment methods, and improve accountability through digital transaction records. Real-time payment monitoring and data analysis enable decision-making and resource allocation in this modern manner (Gikonyo, 2019; Gitari, 2021).

Kenya's revenue collection is poor despite 47 County Governments, which the 2010 constitution empowered to collect revenues, promote good government, and provide reliable services (Haruna & Kassim, 2019). Traditional revenue collecting methods are less efficient than automated ones (Karimi, Maina & Kinyua, 2017). However, ineffective tax collection systems in poor nations like Kenya confront many obstacles (Kessy, 2019). County governments must plan and implement revenue-boosting strategies including efficient and effective revenue collecting systems.

1.1.1 Electronic Payment Systems

Electronic payment systems enable easy financial transactions over digital networks. Laudon and Traver (2016) say e-payment systems underpin e-commerce. The need of remote, automated transactions for modern tax collection is highlighted by Ngai and Wat (2002). E-payment systems improve financial services, cut operational costs, and promote financial inclusion, according to Kumbhar (2011) and Salimon et al. (2016). Electronic payment systems require e-banking for online transactions like tax payments. Bauer and Hein (2006) note that e-banking reduces transaction times and costs. E-banking allows direct transfers to government accounts for tax collection, improving transparency and lowering transaction costs. M-Pesa has made mobile payments widely available in Kenya.

Suri and Jack (2016) found that mobile payment solutions increased tax compliance and revenue collection by making payments faster and easier. Mobile payments speed up transactions, helping remote residents pay taxes. Web payment control improves public service efficiency by simplifying internet access. Web payment control has improved tax collection efficiency and transparency for the Kenya Revenue Authority (KRA) (KRA, 2021). The web payment control system lets taxpayers complete transactions quickly and accurately, reducing manual admin delays and errors.

1.1.2 Revenue Collection Performance

A government's revenue collection performance measures its efficiency in collecting taxes and other revenues. Bird (2015) and Alm (2019) define it as tax

authorities' ability to collect taxes while limiting costs. According to Musgrave & Musgrave (1989), an effective system should increase the tax base and reduce revenue losses. Ahmad et al. (2014) say a good revenue collecting system reduces tax evasion and boosts compliance. To meet government income needs, tax collection must be streamlined, effective, and transparent.

Resident revenue helps the government improve services (Mtebe & Sausi, 2021). Parliament and County Assemblies legislate this procedure, which authorized government agencies apply (Yan et al., 2023). County governments need revenue for social and economic growth (Sheikh et al., 2023). Thus, County Governments need a comprehensive revenue-collection mechanism to improve service delivery (Koskei et al., 2019). In poor countries like Kenya, income collection often falls short, creating many performance barriers (Karimi Owuor et al., 2017).

County fiscal inefficiency arises from low local tax collection (Haruna & Kassim, 2019). Eliminating corruption and improving tax collection ensures success. Nairobi, Narok, Kiambu, and Mombasa contributed 50% of own-source revenue in the first half of Financial Year 2023/24) according to a study. The overall own-source revenue for all counties was Sh. 19.9 million, but these four counties generated Sh. 9.9 million. Due to tax-collection automation, counties receiving national government money saw a 52% increase from 2022/2023.

Tax policy efficacy is often measured by the revenue-to-GDP ratio, according to Bird and Zolt (2008). Higher ratios indicate good collection and policy execution, whereas lower ratios may indicate inefficiency or avoidance. Alm (2019) believes income leakages and collection expenses must be decreased to improve performance. Lower administrative costs show resource efficiency, which maximizes revenue.

1.1.3 Nandi County government

Nandi County Government started with manual revenue collecting. The County implemented LAIFORMS to manage local government finances. Due to its

offline nature, this system collected revenues manually and typed them into a centrally available system. The County contracted "the Nandi County Revenue and Management System" in early 2016. This method was designed to fix LAIFORMS' problems. The Nandi County Revenue and Management System, an improvement from previous LAIFORMS, faced several threats, including high maintenance costs (monthly cloud hosting charges), compromised security, poor reports, and inability to capture all revenue streams, which led to significant revenue loss and expanded targets. The County began using the National Bank of Kenya's "Upturn National Bank Revenue Collection System" for revenue collection in 2023.

The e-payment system in Nandi County collects parking fees, single business permits, cess, home and stall rents, and land rates. Corruption, inadequate report generation, and other issues have hampered county revenue collection (Adenya & Muturi, 2017). County revenues can be paid electronically without cash (Koskei et al., 2019).

1.2 Statement of the Problem

The County Government of Nandi, like Kenya, uses electronic payment methods to improve revenue collection. Nandi initially used the offline, inefficient Local Authority Integrated Financial Operations Management System (LAIFORMS), which leaked income. In 2016, the county implemented the "Nandi County Revenue and Management System" to address these issues. Despite developments, this system had high maintenance costs, security risks, and poor reporting, limiting its effectiveness. The county developed the "Upturn National Bank Revenue Collection System" in 2023 to address these issues, but income goals remain unmet. This persistent underperformance calls into question the county's electronic payment systems, particularly e-banking, mobile payments, and web payment control systems, for revenue collection. Kenyan counties need cash to provide public services and socioeconomic projects. The Controller of Budget (2022/2023) reported that only three counties met their revenue collection goals, illustrating the challenges local governments face in raising enough income. The issues include legal and regulatory gaps,

workforce shortages, manual revenue systems, and weak internal controls (KIPPRA, 2024). E-payment technologies to boost revenue collection in Nandi County have not solved the gaps. The County Treasury reported that revenue collections were Ksh 278 million, Ksh 287 million, and Ksh 200 million, respectively, below targets of Ksh 405 million, Ksh 387 million, and Ksh 373 million from 2020/2021 to 2022/2023. This weakness calls into question the usefulness of current electronic payment systems and emphasizes the need for robust revenue collection measures.E-banking, mobile payments, and Web payment control systems have been shown to improve revenue collection in Kenyan counties (Mwangi, 2021; Kuria & Kinyua, 2020), but few studies have examined their effects on Nandi County. Limited evidence exists on electronic payment systems' ability to handle long-term issues like poor internal controls and regulatory shortcomings. This study examines how e-payment systems affect Nandi County revenue collection.

1.3 Objectives of the study

This section outlines the general objective of the study and the specific study's objectives.

1.3.1 General objectives of the study

This study investigated the effects of the electronic payment system on revenue collection performance in Nandi County Government, Kenya.

1.3.2 Specific Objectives of the study

The specific objectives are: -

i. To determine how e-banking system influence revenue collection performance in Nandi County Government, Kenya.
ii. To evaluate the extent to which mobile payments influence revenue collection performance in Nandi County Government, Kenya.
iii. To establish how web payment control system influence revenue collection performance in Nandi County Government, Kenya.

1.4 Research Hypotheses

Ho_1: e-banking system has no significant influence on revenue collection performance.

Ho_2: mobile payment has no significant influence on revenue collection performance.

Ho_3: Web payment control system has no significant influence on revenue collection performance.

1.5 Significance of the study

This study will assist Nandi County Government and all Kenyan counties, including the national government. A roadmap that would help Nandi County implement e-payment and overcome revenue collection challenges would help the county meet its source revenue targets, meet budgetary demands, and boost socio-economic development.

The national government would benefit from this research. Policymakers would grasp how e-payments boost revenue. This would allow the federal government to help counties build capacity and collect more income. This would help counties provide socioeconomic development to their inhabitants.

Scholars benefit from this study's theoretical contribution to e-payment and revenue collection performance. Technology is always changing, making it difficult for researchers to evaluate e-payment systems for effective revenue collection.

1.6 Limitation of the Study

This study studied how the e-payment system affected Nandi County Government revenue collection efficiency. Because the research was limited to one county, it may not truly reflect Kenyan realities and experiences. The investigation only included revenue collecting staff, generating very identical responses. Despite a census survey of 135 department employees, the focus on one unit may have limited the diversity of viewpoints and ideas relevant to the research subject. The study examined e-banking, mobile payments, and online

payments restrictions. This narrow emphasis may require to include other factors affecting income collecting. Thus, the findings may require greater generalizability or more complex financial ecosystem linkages.

1.7 Delimitation of the study

Research conducted in Government County of Nandi, which had historically collected revenues below objectives and struggled to develop an efficient and effective revenue collecting system. The study examined e-banking, mobile, and Web services interface e-payment technologies. The target population was 135 Nandi County Government revenue collecting personnel. The revenue section heads and revenue collection clerks in six sub-counties received questionnaires from the Finance department.

1.8 Assumption of the Study

Several assumptions underpin this study's findings. First, it presupposes that respondents provided honest and impartial data on e-banking systems, mobile payments, web payments control system, and revenue collection performance. It also assumes that the technology infrastructure enabling these digital payment methods remains stable throughout the study without any disruptions that could affect variables.

It is crucial to assume that e-banking, mobile payments, and web payments control systems add value to the model with low revenue overlap. This shows how personal aspects affect revenue collection. The report anticipates digital payment systems will increase or stabilize, emphasizing the necessity of research and revenue collection improvements. The assumptions validate the study and enable digital payment system and revenue collecting research. Variations from these assumptions may influence findings reliability and relevance.

1.9 Definition of Significant Terms

Web Payments Control System Technology that enables customers and the institutions to ensure seamless transactions free from fraud.

E-banking system An electronic payment system that includes electronic cheques, electronic funds transfers and direct deposits, from any bank that can operate electronically.

E-payment system A technology driven platform that allows billing and payments transfers between service seekers and organizations.

Mobile payments Transfer of funds that involves executing and confirming the payment using a mobile device's applications and wallets.

Revenue collection performance the efficiency and timeliness of revenue generated in a financial period.

1.10 Organization of the Study

Study comprises three distinct sections. Initial chapter outlines contextual framework, articulates research issue, defines scope and objectives, presents hypotheses to be examined, discusses the limitations, highlights significance of the study, and details organization of research. This chapter focuses on literature review, examining theoretical foundations, empirical studies, and conceptual framework. Section three outlines methodologies and practices implemented in study. Section four provides an analysis of data and outlines findings. Chapter Five provided a synthesis of findings, conclusions, and suggestions.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

Theories that underpinned the study are discussed. The chapter then presents and discusses empirical literature on the effects of the e-payment system on revenue collection performance. The empirical review is presented according to the research objectives. A summary of review of related literature, conceptual framework and knowledge gap provided.

2.2 Concept of dependent variable

Comprehending the determinants that affect revenue collection performance is crucial for evaluating the efficacy of electronic payment systems in Nandi County, Kenya. The subsequent determinants are anticipated to influence revenue collection performance, as assessed by percentage growth in revenue, punctuality of revenue collection, and simplicity of revenue collection.

2.2.1 Frequency of Electronic Fund Transfer

Revenue collection is heavily influenced by EFT frequency. Increased EFT frequency indicates a greater dependency on electronic payment systems, simplifying collection and reducing delays. The county government's cash flow and revenue stream may improve due to its increased EFT dependence.

Revenue collection is heavily influenced by EFT frequency. EFT frequencies increase dependence on electronic payment systems, streamlining revenue collection by reducing time and labor. Alalouch et al. (2020) claim that electronic systems free revenue departments to focus on strategic duties. EFT frequency improves cash flow by speeding up fund transfers and helps the county government allocate resources (Ali & Kaur, 2021).

Frequent electronic remittances encourage taxpayer compliance. Transaction completion ease increases the chance of timely payments for consumers and enterprises (Mwaura & Karanja, 2021). This is essential for governments that rely on reliable revenue to provide public services and infrastructure. Wang et

al. (2022) stated that fast fund availability reduces financial issues related to payment processing delays.

Automated EFT payment reminders and notifications boost compliance. Informing taxpayers of their obligations can boost county payment timelines. Kamau and Kamande (2020) found that taxpayer engagement is crucial to financial goals, supporting this proactive communication approach.

2.2.2 Number of RTGS Transactions

Another important factor is RTGS transaction volume. RTGS ensures that large sums of money are transferred quickly into the county's accounts, improving revenue collection efficiency. This promptness reduces banking delays, improving revenue collection efficiency.

Real-Time Gross Settlement (RTGS) transactions are vital to Nandi County tax collection. Large-value transactions require fast fund transfers between banks, which RTGS systems provide (Koch & MacDonald, 2018). Instantaneous settlements with RTGS allow the county government to access funds quickly, improving payment system reliability. This skill is crucial for maintaining liquidity and funding public services (Karimi & Ademba, 2020).

RTGS solutions also reduce cheque processing and manual reconciliation hazards. Removing intermediaries ensures secure and efficient transactions, notably for government income (Bofondi & Carpinelli, 2019). RTGS transactions' faster processing time reduces fraud and errors, enhancing revenue collection system integrity.

The ability to manage large transactions using RTGS systems can attract additional investments and boost county business. Businesses may buy permits, licenses, and taxes from the county government if they see a smooth payment mechanism (Kihoro, 2020). This increased company activity may broaden the tax base and improve revenue collection.

RTGS improves financial management in the county's electronic payment systems. With immediate finances, the county administration may better

address financial issues and devote resources to priority areas (Ng'ang'a & Kinyanjui, 2021). Responding to public needs is crucial to maintaining public trust and fulfilling government duties.

2.2.3 Number of Direct Bank Deposits

Direct bank deposits allow taxpayers to deposit funds directly into the county government's bank accounts, eliminating physical transactions. When a procedure is simple, people are more inclined to follow through. Thus, more direct bank deposits may boost revenue collection.

Direct bank deposits are vital to Nandi County tax collection. With direct bank deposits, taxpayers can easily meet their county government financial obligations. Allowing consumers and businesses to deposit payments directly into the county's bank accounts reduces physical interactions and processing times (Mwaura & Karanja, 2021). Since simplicity encourages timely payments, this convenience may boost taxpayer compliance (Ng'ang'a & Kinyanjui, 2021).

Direct bank deposits improve county government cash flow management. By shortening money access time, the county may better plan its budget and allocate resources to priority areas (Bofondi & Carpinelli, 2019). This issue must be resolved quickly to provide funding for key services and infrastructure, allowing the government to meet community demands quickly.

Direct bank deposits also boost revenue collection transparency and accountability. Electronic payments create a visible and verifiable record of all transactions, reducing fraud and fund misallocation (Karimi & Ademba, 2020). Transparency builds taxpayer faith in the correct recording and management of their contributions.

Automated direct bank deposit management systems help boost revenue collection. Integration of payment systems with accounting software allows real-time observation of incoming deposits, improving reconciliation processes (Koch & MacDonald, 2018). The integration may reduce administrative

burdens, freeing personnel to focus on strategic initiatives that improve compliance and revenue development.

2.2.4 Number of Mobile Banking Transactions

Mobile payments have revolutionized Kenyan transactions. The volume of mobile banking transactions indicates revenue collection effectiveness. Mobile payments encourage timely taxpayer contributions, enhancing revenue collection. Mobile payments reduce the need for infrastructure, which could save county government costs.

The number of mobile banking transactions in Nandi County is becoming important for revenue collection. Mobile banking platforms, notably in Kenya, have transformed financial transactions for consumers and businesses (Mwaura & Karanja, 2021). These systems allow taxpayers to pay at their convenience, which may improve compliance and revenue collection (Kamau & Kamande, 2020).

Mobile banking also reduces the administrative burden of the county government. Electronic transaction processing reduces manual intervention and reconciliation, lowering costs and improving revenue collection (Ng'ang'a & Kinyanjui, 2021). This efficiency allows the government to allocate resources wisely and focus on important initiatives to improve public services.

Mobile banking increases payment system accessibility, especially for demographics that conventional banks may not service. Mobile banking might reach people in rural areas without bank facilities, expanding the tax base and allowing all citizens to contribute to revenue (Ali & Kaur, 2021). Inclusivity is essential to public funding equity and sustainability.

2.2.5 Frequency of M-Pesa Payments

The popularity of M-Pesa payments affects tax collection. Kenya's M-Pesa mobile payment network shows that more transactions may indicate taxpayer compliance and ease of use. Engagement may improve tax collection speed and reliability, improving the county's budgetary performance.

The predominance of M-Pesa transactions affects Nandi County's income collection. M-Pesa, Kenya's main mobile payment network, has revolutionized financial transactions by making them convenient, efficient, and safe (Kihoro, 2020). Regular M-Pesa payments can boost revenue collection by encouraging fast taxpayer payments to ensure the county government's financial stability.

M-Pesa's user-friendly interface and widespread use in Kenya boost transaction volumes. The county may see a boost in revenue as more taxpayers use M-Pesa (Ng'ang'a & Kinyanjui, 2021). The convenience of using M-Pesa encourages consumers and businesses to pay their bills on time, improving county government revenue flow.

M-Pesa's involvement in the county's revenue-collecting procedures allows for smooth transactions and rapid processing. This integration speeds up payment processing, ensuring cash for public services and infrastructure (Karimi & Ademba, 2020). Quick access to financial resources improves the county's ability to strategize and distribute resources, strengthening governance and service delivery.

M-Pesa payments also reduce inefficient cash transactions and are prone to fraud. Electronic payments make income collection clearer, helping the county government manage finances (Ali & Kaur, 2021). Transparency is crucial because it builds taxpayer trust and ensures their contributions are safe and well-documented.

2.2.6 Number of Mobile POS Payments

Mobile Point of Sale (POS) systems speed up tax collection and boost revenue collection. The volume of mobile POS payments shows that these technologies streamline transactions, potentially increasing revenue. Mobile POS systems streamline revenue collection, helping the county meet its budgetary goals.

The volume of mobile POS payments affects Nandi County's income collection. Mobile POS systems allow businesses and governments to process payments on

the fly, improving revenue collection (Kihoro, 2020). They can also improve payment efficiency and accessibility, boosting revenue collection.

The ability to process transactions in several places gives mobile POS payments the greatest advantage in expanding the county government's revenue collection efforts. This adaptability is especially useful in rural areas with little financial infrastructure (Ali & Kaur, 2021). By enabling mobile payments, the county government may ensure all taxpayers have convenient payment options regardless of location.

Mobile POS systems can also boost customer satisfaction by enabling seamless transactions. Taxpayers are more likely to obtain permits or remit taxes when they can efficiently pay their bills (Ng'ang'a & Kinyanjui, 2021). This positive experience may increase adherence and fast payments, improving the county's income collection.

2.2.7 Web Payment Cycle

Revenue collection depends on web payment cycle efficiency. A well-designed web payment control system can speed up and secure payments. As payments are made quickly and accurately, efficiency may improve income generation.

Revenue collection in Nandi County depends on the efficiency of the web payment cycle. Web payment control systems enable the county administration and taxpayers to communicate data and transactions (Mwaura & Karanja, 2021). A well-designed web payment control system can speed up and accurately process revenue collection.

A good web payment control system optimizes payment workflows. The county government can significantly cut tax collection processing times by automating operations and reducing manual interventions (Koch & MacDonald, 2018). This efficiency optimizes cash flow and improves taxpayer satisfaction by decreasing delays and inconveniences associated with conventional payment methods. A complete web payment control system can also improve integration with mobile payments, electronic fund transfers, and direct bank deposits. This

integration lets the county offer taxpayers many payment choices, improving ease and speed (Ng'ang'a & Kinyanjui, 2021). A variety of payment choices for taxpayers increases their likelihood of financial compliance.

2.2.8 Web Payment Regulations

Web payment control regulations greatly impact revenue collection performance. Strong rules make electronic payment systems secure and efficient, boosting taxpayer confidence and compliance. A practical regulatory framework can help integrate electronic payment systems, improving tax collection.

Revenue collection in Nandi County depends on web payment control regulations. Strong rules ensure electronic payment systems are secure, transparent, and efficient, boosting taxpayer confidence (Ali & Kaur, 2021). A practical regulatory framework can help the county government integrate electronic payment systems and increase revenue.

Regulations set clear electronic payment system criteria. These standards protect sensitive financial data from fraud and exploitation (Karimi & Ademba, 2020). Establishing a secure payment framework increases taxpayer trust in electronic payment systems, improving compliance and revenue collection.

Regulations also improve county government-financial institution interaction. The legal framework empowers the county to use financial institutions' knowledge and assets to improve tax collection by setting clear collaboration parameters (Koch & MacDonald, 2018). Collaboration can create innovative payment systems that meet taxpayer needs and boost efficiency.

2.2.9 Web Payment Security

Protecting electronic payment systems is crucial. Web payment security protocols greatly impact taxpayer faith in electronic payment systems. Confidence in financial dealings makes fiscally responsible people more likely to use electronic payment systems, which may improve tax collection. High-security measures reduce fraud and protect financial transactions, supporting county government fiscal goals.

Web payment security is crucial to Nandi County revenue collection. Electronic payment systems are becoming more common; thus, they must be secure to protect taxpayer data and maintain revenue collection trust (Ali & Kaur, 2021). Strong web services interfaces secure sensitive financial data and increase compliance and revenue collection.

Advanced encryption technologies are essential for web payment security. These techniques protect sensitive data during transmission (Karimi & Ademba, 2020). When tax contributors are confident in the security of their financial data, they are more likely to use electronic payment methods, improving revenue collection.

Regular security assessments and audits help identify web payment vulnerabilities. By proactively identifying and mitigating security vulnerabilities, the county government can strengthen its electronic payment systems and decrease fraud (Koch & MacDonald, 2018). This innovative approach protects taxpayer data and demonstrates the county's financial responsibility.

Security protocols and guidelines must be clear to build taxpayer trust in the payment system. The county can raise public understanding of information security by spreading security protocols (Ng'ang'a & Kinyanjui, 2021). Understanding electronic payment systems helps improve compliance and engagement.

2.3 Empirical review

This section presents, e banking and revenue collection performance, mobile payments and revenue collection performance and e services payment system on revenue collection performance.

2.3.1 E-banking system and revenue collection performance

Governments use money to fund infrastructure and social welfare programs. County governments need efficient revenue collection to supply services and

grow economically (Chepkoech, Gichana & Agong, 2022). Governments may struggle to address citizens' demands without stable income (Kessy, 2019). Governments need effective revenue mobilization to stay solvent. Effective e-payment systems are crucial to this process (Bousrih, 2023). Electronic payment platforms simplify collection and increase transparency (Al-Khasawneh, 2022). E-payment systems reduce revenue leakage and boost revenue collection efficiency. Due to speedier and safer transactions, successful e-payment systems can boost economic growth (Ejiku, 2019). They facilitate payments for individuals and enterprises, boosting economic activity and entrepreneurship (Yusuf, 2022).

Rapid technological improvements and the digital economy have increased the value of electronic payments. Online payments like e-banking and M-Pesa were vital in 2020 during the COVID-19 pandemic, reducing customer and staff interactions and enabling cashless transactions (Lim, Yeo, Tey & Tan, 2023). Thus, e-banking is popular for bill payments, top-ups, online transfers, and shopping. Business success depends on customer satisfaction, which decreases customer churn and increases loyalty and income. Lim et al. (2023) studied e-banking customer satisfaction in Malaysia. E banking considerably affected customer satisfaction with e-banking services, according to Google Form questionnaires given to 138 target respondents.

Banking services have evolved with various branding and delivery methods, and new financial products and services greatly impact performance. Bousrih (2023) reviewed data from 24 nations, including fintech leaders, between 2012 and 2019 to determine how e-banking affected bank performance pre-pandemic. Mobile users impact bank performance. This trend showed users' readiness to use mobile banking instead of bank accounts. Post-pandemic banking digitalization has increased, but pre-pandemic consequences are less studied. Unlike the banking research, this study was undertaken in county government in the public sector.

Electronic banking, client retention, and income production in Tanzanian commercial banking were examined by Mapesa (2019). The study used

qualitative methods to examine how electronic banking helps Tanzanian commercial banks enroll and retain customers and boost profits. The study collected data using interviews, questionnaires, and focused group discussions. The data showed that e-banking helps commercial banks acquire and keep clients and increase income through transaction fees and commissions. The study also found that network connectivity issues and clients' unfamiliarity with e-banking interface language can hinder service efficacy. Enhance e-banking awareness initiatives and encourage companies to innovate by offering a wider range of e-banking services, allowing users to conveniently access additional financial services. Customer retention was the independent variable, whereas the current study focuses on e-payment systems, creating a conceptual mismatch.

2.3.2 Mobile payments and revenue collection performance

ICT has transformed commerce, creating new financial demands that old payment systems cannot meet. Thus, stakeholders are investigating electronic payment systems and digital currencies (Yusuf, 2022). Technology has greatly affected income collecting (Al-Khasawneh, 2022). IT evolves swiftly, making fiscal systems outdated and requiring new applications to respond to changing financial dynamics (Chilunjika, 2018). Data processing is rising, requiring accessible infrastructure for fiscal procedures (Yusuf, 2022).

Ejiku (2019) examined how electronic tax systems affected Uganda Revenue Authority (URA) revenue collection. A study explored how electronic billing machines and e payments systems affect revenue collection. Simple random sampling and descriptive survey design were used to sample 90 URA Domestic Tax Department respondents. Data was collected using well-designed questionnaires. Revenue collection and electronic tax systems connected positively. In contrast to the Uganda Revenue Authority, this study's unit of analysis is the Nandi county government.

Tax income collection in Nigeria has been debated in accounting literature, raising issues about sustainable development. Revenue targets are hindered by the number of taxes, the lack of a large database, the difficulty of preserving

accurate taxpayer information, the complexity of tax compliance and collection, and the tax refund backlog. Adegbie, Enerson, and Olaoye (2022) used a complete enumeration sample and a survey study approach to distribute 2670 structured questionnaires on e tax management systems and revenue performance. Results showed that computerized tax management systems considerably eased tax return submission. Computerized tax administration systems help boost tax revenue collection. Tax policymakers should ensure that electronic tax systems simplify tax return submission and encourage taxpayer compliance. They should also assist employing qualified tax management system managers. While the study examined national taxpayers, this one examined Nandi County government service users.

Revenue collection efficiency is essential for service delivery and economic growth. Atukunda, Nekemia, and Nuwagaba (2023) examined how diverse factors affect Ugandan government revenue collection efficiency. The study focused on the NWSC's on-the-spot billing system, water expenses, and revenue collection. Cross-sectional questionnaires and interviews were used to collect data on cash management, which prioritizes liquidity. Study participants numbered 108. Payment and automated systems greatly impact NWSC, Mbarara Center income collection, according to the report. These findings led the study to recommend government subsidies for water, customer involvement in pricing and payment methods, pay point expansion, mobile money agents, and on-spot billing and meter reading improvements. Revenue collection could be improved by customer awareness efforts about their NWSC support. Cash management theory led the study, creating a theoretical gap.

2.3.3 Web payment Control systems and revenue collection performance

Atagboro and Ekpulu (2023) examined electronic taxation and revenue efficiency. Descriptive statistics showed that the Bayelsa State Internal Revenue Board's e-tax system has many flaws, which could hinder revenue collection. Thus, the report advised governments to improve the e-tax system to capitalize on taxpayer compliance. It stressed the need for effective monitoring and

control systems to overcome system limits and ensure efficient tax collection, as well as tax information, especially for online payments.

Estrellana (2023) examined how electronic filing and payment affected tax collection. Descriptive-correlational surveying of 226 respondents was used. The study used a poll to assess electronic filing and payment systems' effectiveness. E payments' benefits and efficacy were acknowledged by over 65% of respondents. Concerns about submitting taxes and perceived system issues affected their inclination to use it. The research recommended taxpayer education and information exchange, quicker confirmation receipt issuance, and a payment tracking app. The study examined Web payment control system reliability and accessibility to ensure taxpayers could get services.

E-payment is the online transfer of funds for various purposes, according to Bagudu and Okolie (2022). The CBN introduced cashless payments to reduce Nigeria's high financial system expenses. E-payment methods are safe, convenient, and beneficial. Kweka and Chikoyo (2021) examined whether electronic revenue systems boost revenue. The study sampled 79 people at random. Municipal income collection improves with electronic methods. E-payment challenges included internet connection and revenue payers' lack of civic education on online payments. Online revenue collection solutions enhanced revenue computation accuracy and were well-received by revenue payers, reduced revenue due date lines. Moshi Municipal Council recommended encouraging revenue payers to embrace electronic technologies to eliminate queue and increase income and offering civic education to improve revenue collection. A methodological gap in data analysis and presentation occurred because the study failed to statistically link electronic tax collecting methods to municipal revenue performance.

2.4 Summary of literature review

This chapter systematically reviews the theories and literature on how electronic payment systems affect tax collection in Nandi County, Kenya. The Resource-Based View Theory, Revenue Diversification Theory, Systems Theory, and Technology Acceptance Model are examined. Each hypothesis, including its impact on electronic payment systems and revenue collection efficiency, is

discussed. The literature review explains electronic revenue-collecting methods through previous investigations. In Nairobi County, Chepkoech et al. (2022) examine sustainable revenue-collecting procedures and the need for fiscal capacity-building frameworks. However, their research focuses on qualitative aspects and needs more empirical data linking e-payment systems to revenue performance.

Wekesa, Abuga, and Simotwo (2022) use surveys to obtain data on electronic payment adoption, but they need to examine the key elements that determine user acceptability and performance. Their research reveals a link between electronic payment methods and increased revenue collection, but more research is needed. In addition, Kweka and Chikoyo (2021) find that electronic revenue-collecting methods boost municipal income. Their study's focus on a single category of electronic payment systems may not sufficiently cover revenue-collecting strategies' complexity and variety.

The suggested study uses mixed-methods data collecting and analysis to solve these methodological issues. This method will help explain how electronic payment systems affect revenue collection. The research uses qualitative and quantitative approaches to understand better taxpayer behavior, system efficiency, and the revenue-boosting potential of electronic payment systems.

2.5 Theoretical framework

Data-backed theories are rational arguments made up of interconnected concepts and ideas. A theoretical framework explains observed phenomena' essential causes. Theories help researchers discover new things, improve interventions, and develop new ideas, according to Kivunja (2018). The study used innovation diffusion theory, revenue diversification theory, resource-based view theory, system theory, and technology adoption model.

2.5.1 The Innovation Diffusion Theory

Rogers defines innovation as something new. The 1962 Rogers Innovation Diffusion Theory claims that social organizations methodically distribute new ideas. Creation, communication, time, and social systems are emphasized. Innovation seeks technical and organizational improvements for efficiency and practicality. Knowledge dissemination and adoption speed and extent depend

on communication (Rogers, 2003). Individual or social variables affect innovation adoption pace. Finally, social system affects invention dissemination between groups (Wonglimpiyarat & Yuberk, 2019).

This paper explains how Nandi County Government embraced e-payment techniques using Innovation Diffusion Theory. The idea is that e-banking, mobile payments, and online payments control systems increase revenue (Wonglimpiyarat & Yuberk, 2019). This model helps the county handle adoption elements as communication, timing, and social structures (Lee et al., 2021). Communication of e-payment system benefits can increase adoption (Lee et al., 2021). According to social systems, early adopters may affect group acceptability. More people using e-payment systems reduces transaction costs and delays, improving county finances.

Critics believe the Innovation Diffusion Theory simplifies behaviour by assuming linear and predictable adoption (Rogers, 2003). The hypothesis may need to be adjusted for economic, societal, and individual innovation adoption biases. The idea is optimistic about innovation and ignores technology adoption privacy and security risks (Wonglimpiyarat & Yuberk, 2019). The criticisms propose that the County Government of Nandi should employ the Innovation Diffusion Theory as a framework but also address adoption issues like privacy and equitable access to sustain revenue collecting gains.

2.5.2 Resource-based view theory

The Resource-Based View (RBV) Theory in strategic management stresses a firm's resources and capabilities to obtain and maintain a competitive advantage. The Resource-Based View (RBV) thesis asserts that an organization's effectiveness depends on its resources and skills, especially distinctive, valuable, and hard-to-copy ones (Agus, 2020). RBV states that employing resources to create unique, value-oriented strategies gives a firm a durable competitive edge. Based on the Resource-Based View, dynamic capabilities describe strategic processes that enable organizations react to market changes. Adaptability fosters innovation and sustainable value creation (Bulińska et al., 2020).

RBV theory is used to demonstrate how investing in an e-payment system like a Web payment control system boosts revenue. Nandi County may achieve sustainable efficiency, transparency, and cost reduction by strategically controlling and employing this resource. The system accomplishes operational goals including eliminating bureaucracy and improving citizen convenience and positions the county competitively by offering a distinctive public service that fits taxpayers' shifting expectations (Greve, 2021).RBV has positives and cons, especially when seeking distinctive, valuable, and inimitable firm resources.

Greve (2021) advises that external influences may not boost performance when corporations implement new technologies like e-payments, which must be tied to strategic goals. Web payment control systems can be strategic, but they must connect with corporate priorities and long-term goals. Thus, leveraging the RBV approach's benefits requires a forward-thinking management plan that aligns technical investments with county priorities.

2.5.3 Revenue diversification theory

To boost income, revenue diversification theory advocates broadening a firm's products, services, or markets. Reduce single-revenue-source dependence to increase financial and market stability. Based on Modern Portfolio Theory, Revenue Diversification Theory posits that diversified revenue sources promote financial stability (Jimenez & Afonso, 2022). Spreading and balancing income streams across channels decreases financial volatility and promotes revenue stability. Revenue diversification decreases single-income source risks and boosts resilience through market-driven revenue strategies, according to Yan, Mmbaga, and Gras (2023).

Including M-pesa, POS, and mobile banking payments in mobile payment systems diversifies the county's revenue collection channels. These solutions expand the county's reach, reduce cash transactions, and boost revenue. Diversity decreases financial risks by modernising the payment process, allowing taxpayers flexible and convenient payment methods, and enhancing transparency (Jimenez & Afonso, 2022).

Revenue Diversification Theory is questioned because some revenue streams are unprofitable. Excessive diversity in fast-changing markets or technologies can raise costs and reduce efficiency. Integrating income streams without strategic management may neglect the most efficient channels, resulting in inefficiencies (Greve, 2021).

2.5.4 Systems theory

Bertalanffy's 1968 Systems Theory is an interdisciplinary paradigm that considers complex events as wholes (Overwijk, 2021). A system is a collection of interconnected parts that create distinct behaviors and traits, according to this notion. Systems Theory states that a system's efficacy can only be understood by evaluating its elements' interactions and relationships (Katrakazas et al., 2020).

The County Government of Nandi's e-banking relies on systems theory. In revenue-collection, the e-payment system affects technological infrastructure, administrative procedures, taxpayer behavior, and regulatory compliance. Understanding how these components interact helps the county evaluate its revenue-collection operations. The mobile payment system's feedback loops give real-time data and analytics to enable decision-makers detect trends, compliance rates, and areas for development (Overwijk, 2021). This comprehensive strategy promotes taxpayer confidence, adherence, and financial success through clarity and responsibility.

Systems Theory has pros and cons. It may be too difficult for corporations to perform. The extensive technique may make it hard to pinpoint particular issues that need targeted care. Interconnectivity may downplay critical components. E-banking subsystems like accounting and auditing can produce operational inefficiencies if mismanaged. Thus, systems theory helps explain revenue-collecting processes, but integrative and pragmatic strategies are needed to govern distinct portions.

2.5.5 Technology acceptance model

According to Davis' 1986 Technology Acceptance Model (TAM), perceived usefulness and simplicity of use influence consumer acceptance of technology. This paradigm asserts that subjective evaluations of a technology's utility and

simplicity substantially impact adoption and use (Davis, 1986). Users are more likely to adopt a technology if they think it will increase productivity and be easy to use, regardless of the creators' aims (Park & Park, 2020). The TAM helps analyze user behavior across technological environments since technology efficacy and usability determine acceptability.

The Technology Acceptance Model is essential for analyzing how e-payment technologies effect Nandi County Government revenue collection. TAM highlights how perceived usefulness and simplicity effect e-payment system adoption and revenue. Suppose county employees and residents like e-payments. More people using it may reduce transaction delays, mistakes, and transparency (Davis, 1986). Adoption and acceptability boost revenue because efficient processes boost taxpayer compliance. Built with TAM principles, the e-payment system can improve service delivery and governance.

Although useful, the Technology Acceptance Model has been critiqued for its weaknesses. Its narrow focus on perceived usefulness and simplicity may ignore other significant technology acceptability variables, especially in voluntary consumer situations (Park & Park, 2020). The plan must satisfy different user groups and offer precise suggestions for boosting practical utility. The model's multiple parts and interactions may make it difficult to use. The Technology Acceptance Model (TAM) illuminates e-payment system user acceptance. To completely understand technology adoption and revenue collection performance, social and external aspects must be examined.

2.6 Conceptual framework

The study’s independent variables were e banking payment system, mobile payment systems and web payment control system. The dependent variable was revenue collection. This is illustrated in Figure 2.1

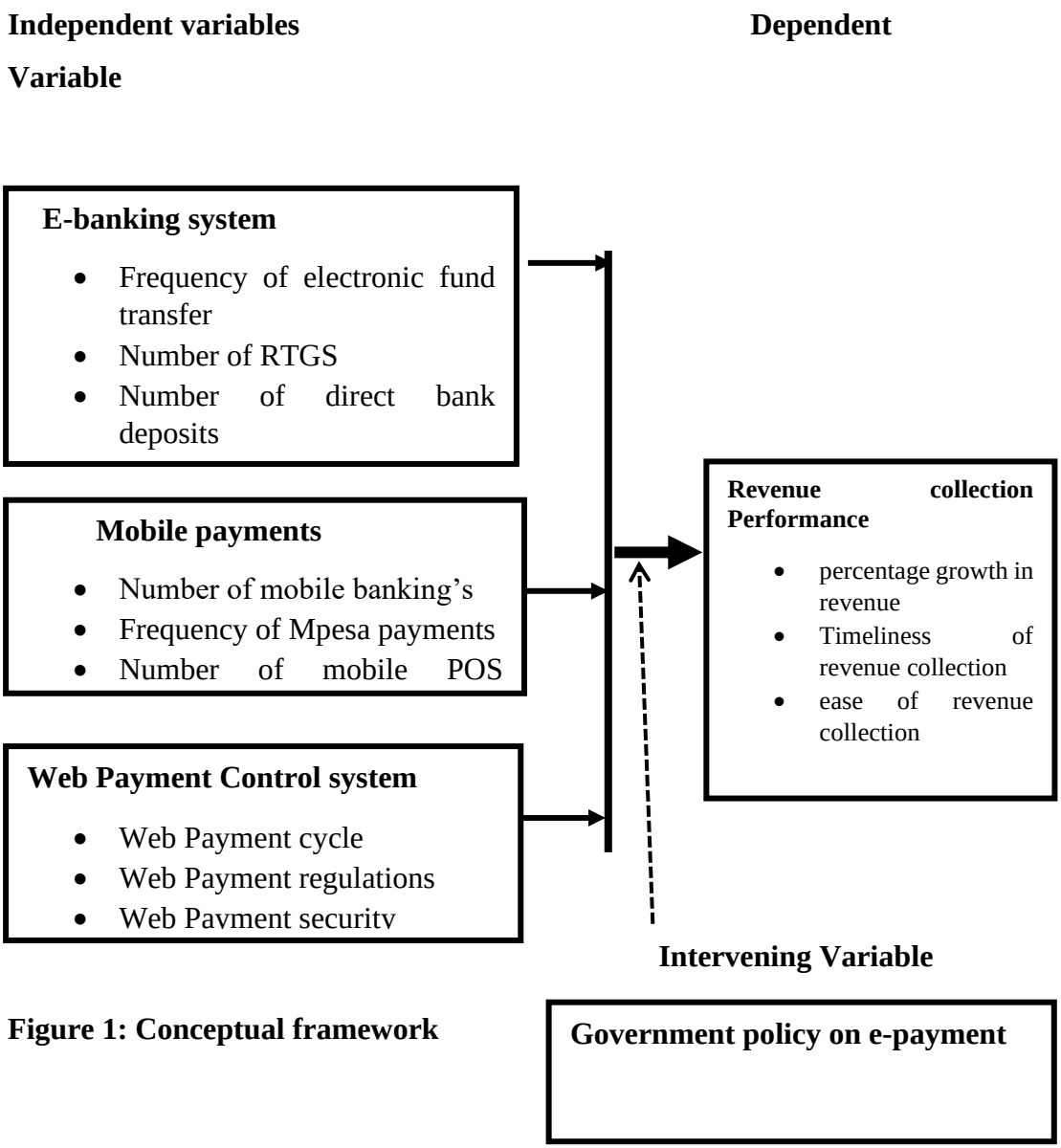

Figure 1: Conceptual framework

Source: Author (2024)

2.7 Knowledge gap

Previous studies present various knowledge gaps, as summarized in Table 2.1: -

Table 2.1: Knowledge gaps

Author(s)	Title	Findings	Gap(s)
Bousrih (2023)	e-banking services and bank performance	The study revealed positive link between e payments and banks' Return on Assets	study was conducted in banking sector, while the proposed study is conducted in

		(ROA), with mobile subscribers significantly influencing bank performance.	county government in public sector, hence different contexts.
Chepkoech et al. (2022)	e-payment systems and revenue collection in Nairobi	Mpesa, mobile payment and web portals payments enhanced revenue collection	Contextual gap as study was conducted in Nairobi County
Wekesa et al. (2022)	effect of mobile and e payments systems in revenue collection in Trans Nzoia	online banking, electronic billing machines, mobile payment systems, and electronic fund transfer payment systems significantly improved revenue collection performance	The study used a questionnaire only in data collection, hence a limitation in data collection. The current study uses questionnaire and observation schedule.
Kweka and Chikoyo (2021)	e revenue collection systems and revenue collection	electronic revenue collection systems improved revenue collection	The study failed to statistically link between electronic revenue collection systems and revenues performance, hence a methodological gap in data analysis and presentation.
Mapesa (2019)	effect of electronic banking on customer retention and revenue generation within the commercial banking sector of Tanzania	findings highlighted the significant role of e-banking in both acquiring and retaining customers for commercial banks, as well as its significant effect on increasing revenue streams through charges and commissions	The study's independent variable was customer retention while the current study focuses on e-payment system, hence a conceptual gap in literature.

		associated with e-banking transactions	
Adegbie et al. (2022)	e tax management systems and efficiency of tax revenue collection	taxpayers' ease of filing tax returns was greatly influenced by computerized tax management systems	The study's unit of observation was national taxpayers, while the proposed study will focus on county government of Nandi services users.
Lim et at. 2023	E banking and customer satisfaction in	E banking services positively influenced customer satisfaction.	Unit of analysis was the banking sector and the study focused on customer satisfaction; this study will be conducted in county government of Nandi and focuses on revenue collection performance.
Estrellana (2023)	E filing effectiveness to taxpayers	Taxpayers' filing was enhanced through online systems	The study's unit of observation was national taxpayers in Lucena, while the proposed study will focus on county government of Nandi services users.
Ejiku (2019)	e tax systems on Uganda Revenue Authority's revenue collection	E tax systems and revenue collection were correlated, positively	Study's unit of analysis was the Uganda Revenue Authority; this study's unit of analysis is the county government of Nandi.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The research design, target population, sample size and sampling procedures were explained. Pilot study was explained, and data collection procedures outlined. Data analysis and ethical consideration were discussed.

3.2 Research design

A researcher's methodical approach to an investigation is research design. This research was descriptive. Descriptive study methodology uses frequencies, means, standard deviation, and percentages to observe and examine variables without manipulation (Abutabenjeh & Jaradat, 2018). Data collection, classification, measurement, analysis, and interpretation are used to gain insights (Siedlecki, 2020). The design assessed how e-banking, mobile payments, and Web payment control affected Nandi County revenue collection. Descriptive study approach lets researchers create mathematical and expressive statistics to determine how factors affect revenue collection performance.

3.3 Target population

It is defined as members sharing comparable characteristics (Adam, 2020). This study focused on the 135 employees in the revenue section of the Finance Department of the County Government of Nandi, distributed across County. The study specifically targeted all officers in revenue section whom are revenue section heads and revenue collection clerks, who are directly involved in revenue collection processes**.**

3.4 Sampling and Sampling Procedure

Census was used for this investigation. Researchers collect data from every member of a population using this method. This method emphasizes complete enumeration to account for every person or item (Gumpili & Das, 2022). Instead of using a sample, the census approach examines the complete population to gain accurate demographic, economic, and social information. This thorough

method benefits decision-makers and institutions who need exact data for resource allocation, strategic service planning, and social trends (Maduga, 2020). To ensure extensive and systematic population coverage, the census technique requires significant time, effort, and financial investment. Because the employee population was small and accessible, this study used a census method. Table 3.1 details the sample design.

Table 3.1: Census Method

Category	Population
Heads of Revenue- Sub Counties	7
Revenue collection Clerks	128
Total population	**135**

Source: County Government of Nandi (2024)

3.5 Data collection methods

Research made use of mixed methods in data collection. Questionnaires and observation schedules were utilized in study.

3.5.1 Questionnaires

The employees in the revenue section, Finance department across the county who included sub county revenue heads and revenue collection clerks were issued with questionnaires. The questionnaires contained five sections, including respondents' background data and data on each of the variables. They comprised Likert scale statements on each variable. The questionnaires provided quantitative data on the e-payment system's effect on revenue collection performance.

3.5.2 Observation schedule

The study employed an observation guide to monitor the e-payment systems' effect on the performance of revenue collection. The observation schedule

included a checklist of items at the county revenue offices, such as the presence of computers, scanners, printers, point of service terminals, servers, networking equipment, printed invoices, printed receipts, storage devices, and peripheral devices.

3.6 Pilot study

The piloting process was executed to evaluate the reliability and validity of the data collection instruments. The pilot study was conducted in Uasin Gishu County Government, Revenue collection officers. The research included 14 respondents selected at random, representing about 10% of the anticipated sample size (Connelly, 2008). The pilot respondents received information regarding the study's objectives, and the duration required to complete the questionnaires was determined. Participants' concerns were documented.

3.6.1 Validity

A pilot test evaluated data-gathering instruments' efficacy, appropriateness, and sufficient and made any necessary changes. Pilot participants completed questionnaires after learning the study's objectives. The researcher measured survey completion time and assessed processes and activities for issues. Participants' queries' readability and clarity concerns were addressed. Construct, content, and criterion assessed data-gathering instrument validity. Criterion validity used correlation analysis to establish instrument testing consistency, content validity focused on study objectives, and construct validity assured instruments accurately captured intended concepts.

3.6.2 Reliability

A consistent instrument to measure variables ensures equivalent or almost identical results when the same test is conducted (Mohajan, 2017).

Data collecting instrument reliability was assessed using test-retest and internal consistency metrics. Test-retest was used to assess response temporal consistency. This involved giving the same instrument to the same group at different times and assessing their responses to determine consistency. Conversely, internal consistency assessed instrument question coherence. The study examined construct-measurement question alignment. The Cronbach's

Alpha coefficient examined instrument dependability. A Cronbach's Alpha of 0.7 or higher implies a credible instrument that measures the intended variables (Segal & Coolidge, 2018). Pilot research reliability results are in Table 4.2.

Table 3.2: Reliability results

Variable	Item	Alpha Value	Recommendations
e-banking system	5	0.701	Reliable
mobile payments	5	0.729	Reliable
web payment control system	5	0.714	Reliable
revenue collection performance	5	0.728	Reliable

Source: Research Data

Every variable was given its unique Cronbach alpha coefficient, which was computed. As seen in the table above, the coefficients for each variable were as follows. Because of this, all variables had reliability values greater than 0.7, which was deemed sufficient for the study.

3.7 Data analysis

According to Kothari (2004), it is the process of organizing, altering, and considering the significance of the data that has been acquired. For this study, quantitative and qualitative data analysis approaches were utilized.

3.7.1 Analysis of quantitative data

Numbers are interpreted using mathematical computations and statistical tests in quantitative data analysis. In this study, descriptive and inferential statistics were used. Quantitative data would be collected and analyzed throughout the trial. Data was analyzed using descriptive statistics like mean and standard deviation. Tables displayed quantitative data. Mathematically calculated correlation coefficients determined the variables' strength of relationship. ANOVA was used to explain the variable relationships. The variables' relationship was described via a multiple linear regression analysis model equation. How the audience saw the model equation:

$$Y=\beta_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\acute{\varepsilon}$$

Where Y= revenue collection performance

$\beta 0$ is a constant

βi; i=1, 2, 3 are the independent variables' Beta coefficients

X_1= e-banking system

X_2= mobile payments

X_3= web services interface payments system

$\acute{\varepsilon}$ is the error term

The study will test hypothesis as per objectives, at 95% confidence level.

3.7.2 Analysis of qualitative data

Qualitative data analysis revealed recurring themes and patterns, organized respondents into clusters, and constructed sequences of events (Muthiah, Naidu, Badzis, Nayan, Rahim & Abdul, 2020). In contrast, qualitative data was conveyed through descriptive means. The methodology employed content analysis to categorize, condense, and quantify qualitative data, whereas narrative analysis involved transcription to reinterpret responses in light of participants' experiences.

3.7.3 Operationalization of variables

Objective	Variable	Indicator	Measurement	Scale	Research approach	Type of analysis
To determine how e-banking system influence performance of revenue collection in the County Government of Nandi, Kenya.	Revenue collection performance,	Growth, Timeliness, efficiency in revenue collection	Frequency	Ordinal	quantitative; qualitative	Inferential; descriptive
	E-banking Payment system	frequency of EFTs; number of RTGS; direct deposits	frequency	ordinal	quantitative; qualitative	inferential; descriptive
To evaluate the extent to which mobile payments	Mobile payment system	number of mobile bankings; frequency of mpesa	frequency	ordinal	quantitative; qualitative	inferential; descriptive

influence performance on revenue collection in the County Government of Nandi, Kenya.		payments; number of mobile pos payments				
			frequency	ordinal	quantitative; qualitative	inferential; descriptive
To establish how of web-payment control system influence performance on revenue collection in the County Government of Nandi, Kenya.	web-Payment control system	Web Payment cycle; web payment regulations: web payment security				

This is illustrated in Table 3.3

Table 3.3: Operationalization of variable

3.8 Ethical Considerations

The University provided the researcher with an introduction letter, then sought a permit from NACOSTI. These documents were presented to the County Government of Nandi for data collection from respondents. The researcher identified and trained a research assistant, after which a data collection schedule was prepared. Confidentiality measures were implemented, including secure storage systems, restricted access to sensitive information, and anonymization techniques. Only authorized personnel had access to identifiable data, and results were disseminated in an anonymized manner.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

The fourth chapter covered the data analysis, presentation, and subsequent analysis. This chapter presents the study's response rate, demographic information, and qualitative and quantitative analysis.

4.2 Response Rate

One hundred thirty-five questionnaires were distributed to participants within the revenue collection section of the Finance department at the County Government of Nandi, with 131 being duly completed and returned. The allocation of questionnaires disseminated, and the associated percentage of responses received is presented in Table 4.1.

Table 4.1: Response rate

Responses	Frequency	Percentage
Valid Questionnaires	131	97
Not Returned	4	3
Total	**135**	**100**

Source: Research Data (2024)

The remarkable 97% questionnaire response rate among Nandi County tax collection employees is seen in Table 4.1. The response rate exceeds Sammut, Griscti, and Norman (2021), who recommended 70% for statistical analysis and inference-making. For analytical purposes, Shiyab, Ferguson, Rolls, and Halcomb (2023) recommend response rates of 50% or above. This study on electronic banking and revenue creation in Tanzania by Mapesa (2019) had 95% response. Thus, the study had a 97% response rate, which is perfect, satisfactory, and reliable. Persistent prompts to complete questionnaires and the researcher's promise of non-victimization increased response rates.

4.3 General information

Data about the respondents' general information was analyzed. The experience of the participants was taken into account in the study. The background

knowledge was essential to comprehend the impact of these elements on the efficiency of the County Government of Nandi's e-payment system for collecting taxes.

4.3.1 Distribution of Respondents by work experience

Data on work experience was sought. This was done to ascertain the normality of distribution of respondents between the different categories of work experience because this was a census of revenue collection staff. The findings are displayed in Table 4.2.

Table 4.2 Respondents experience

Experience	Frequency	Percent (%)
2-5 years	38	29
6-9 years	74	56
+10 years	19	15
Total	**131**	**100**

Source: Research Data (2024)

38(29%) of the 131 people who answered had between 2 and 5 years of experience, 74(56%) had between 6 and 9 years, and 19 (15%) had more than 10 years of experience. Based on this breakdown, most respondents had between 6 and 9 years of work experience. This implies that work experience distribution was skewed towards those with 6-9 years. This finding agrees with that of Atukunda, Nekemia and Nuwagaba (2023), who evaluated the effect of various factors on the efficiency of revenue collecting in Ugandan governmental institutions, and found that most respondents had over 7 years work experience. This means that the County Government of Nandi employed retained its revenue collection staff and these staff had adequate experience to handle their duties.

4.4 Descriptive Statistics

The researcher concluded and established the study's key findings using descriptive statistics presented in this part. This analysis is carried out in accordance with the research objectives, which are as follows: to ascertain the effect of the e-banking system on revenue collection performance in the County

Government of Nandi; to assess the degree to which mobile payments impact this performance; and to establish the impact of the web payment control system on performance of revenue collection in County Government of Nandi.

4.4.1 e-banking system and performance of revenue collection

E-banking's impact on Nandi County Government income collection was evaluated, interpreted, and discussed. Analysts reported descriptive data as mean scores and standard deviations. Electronic financial transfers, online bank statements, RTGS payments, direct bank deposits, and efficient record keeping and reporting are common in e-banking. Participants used a 5-point Likert scale to answer five questions. For each item, mean scores and standard deviations assessed agreement or disagreement. Table 4.3 shows e-banking system item analysis.

Table 4.3: Descriptive statistics on e- banking system

Statements	N	Mean	Std. Deviation
There is increased frequency in electronic funds transfers to county's bank accounts	131	4.28	0.611
Bank statements for banked revenues are accessed and generated online	131	4.20	0.574
Customers use RTGS to make their payments for county services	131	4.47	0.545
The number of direct bank deposits has increased in the county	131	4.38	0.561
Online banking allows for efficient record keeping and reporting	131	4.36	0.569
Composite Mean		**4.34**	**0.572**

Source: **Research Data (2024)**

In Table 4.3, 37% strongly agreed, 55% agreed, and 8% were doubtful that county bank accounts got more electronic money transactions (Mean=4.28; SD=0.611). Additionally, 28% strongly agreed that bank statements for banked revenues were accessed and generated online, 63% agreed, and 9% were unsure (Mean=4.20; SD=0.574). Fifty percent strongly agreed that county service clients paid with RTGS, 48% agreed, and 2% doubted (Mean=4.47; SD=0.545). 42% strongly agreed county direct bank deposits had increased, 54% agreed,

and 4% were doubtful (Mean=4.38; SD=0.561). 40% strongly agreed that online banking facilitates record keeping and reporting, 55% agreed, and 5% were unsure (Mean=4.36; SD=0.569). The composite averages of 4.34 and standard deviation of 0.572 showed that respondents agreed e-banking improves County Government of Nandi income collection.

The revenue-collecting offices had computers, scanners, printers, POS terminals, and networking equipment. Invoices, receipts, data storage, thermal rolls, statements, and peripherals are printed. The county recorded financial transactions efficiently with several tools. Chepkoech et al. (2022) found that e-payment systems hindered Nairobi County's tax collection. Revenue increased with e-receipting, services, billing, and invoicing. The survey showed Mpesa and its websites made money. Electronic banking, client retention, and income output in Tanzania's commercial banking sector were evaluated by Mapesa (2019). Data showed that e-banking helps commercial banks gain and retain customers and earn transaction fees and commissions.

4.4.2 Mobile payments and performance on revenue collection

Mobile payments' impact on Nandi County Government income collection was presented, researched, and discussed. Mean scores and standard deviation measures were used to analyze descriptive data. Mobile banking, consumer payments, POS systems, and online payments were associated with mobile payments. Participants rated five things on a 5-point Likert scale. For each item, mean scores and standard deviations assessed agreement or disagreement. Table 4.4 shows the findings of a detailed mobile payment item analysis:

Table 4.4: Mobile payments and revenue collection performance

Statements	N	Mean	Std. Deviation

Mobile banking for county services has been on the rise.	131	4.33	0.561
M-Pesa enabled for county customer payments has increased.	131	4.26	0.576
Mobile POS system allows for credit card settlements	131	4.37	0.559
Mobile POS payments have increased over time.	131	4.23	0.549
Online mobile payments have greatly improved revenues	131	4.23	0.549
Composite Mean		**4.28**	**0.559**

Source: Research Data (2024)

Of the 131 replies, 37% strongly agreed that mobile banking for county services was growing, 58% agreed generally, and 5% were uncertain (Mean=4.33; SD=0.561). The county has successfully incorporated mobile banking. 33% strongly agreed that county consumer payments via Mpesa had increased, 60% agreed, and 7% were uncertain (Mean= 4.26; SD=0.576). Thus, most increased county clients' transactions. 41% strongly agreed that mobile POS systems might help settle credit cards, 55% agreed, and 4% were unsure (Mean= 4.37; SD=0.559). 29% strongly agreed that mobile POS payments have increased, 65% agreed, and 6% were uncertain (Mean= 4.23; SD=0.549). Thus, consumers had better payment alternatives. 29% strongly agreed that internet mobile payments had increased revenues, 65% agreed, and 6% were uncertain (Mean=4.23; SD=0.549). The composite mean of 4.28 and standard deviation of 0.559 indicate that many respondents agreed that mobile payments improve revenue collection in the County Government of Nandi.

Ejiku (2019) found that mobile payments significantly and positively connected with Uganda Revenue Authority revenue collection performance. Adegbie et al. (2022) evaluated e-tax management systems and revenue performance, finding that mobile tax management systems made tax returns easier for taxpayers.

4.4.3 Web payment control system and revenue collection performance

We presented, analyzed, and discussed the impact of the Nandi County Government's Web payment control system on the efficiency and effectiveness of revenue collection. Mean scores and standard deviation were used to illustrate descriptive data. The web payment system highlighted documentation about electronic payments systems, security features, authorization levels, the cycle of electronic payments, and legislation governing electronic services payments. Using a 5-point Likert scale, each responder stated their thoughts on five items. We determined the mean score and standard deviation for each item to see how much people agreed or disagreed. Table 4.5 displays the results of an analysis performed on payment items in the Web services interface.

Table 4.5: Web payment control system and revenue collection performance

Statements	N	Mean	Std. Deviation
The web payment cycle in the county is shortened due to the e-payment system	131	4.59	0.524
There are adequate web payment regulations in the county	131	4.23	0.576
There are adequate security features in the web payment system	131	4.55	0.499
Authorization for web payments is done online	131	4.21	0.578
The web payment documentation generated by online systems is accurate	131	4.37	0.544
Composite Mean		**4.38**	**0.543**

Source: Research Data (2024)

From 131 responses, 60% strongly agreed that the e-payment system shortened the county's web payment cycle, 38% agreed, and 2% were unsure (Mean= 4.59; SD= 0.524). This implies simple payments. 31% strongly agreed that the county has good web payment legislation, 62% agreed, and 7% doubted (Mean=4.23; SD=0.576). So Nandi County government web payment services were trusted.

55% strongly and 45% agreed that the web payment system had acceptable security features (Mean= 4.55; SD=0.499). Web payments were safe and leak-free. 29% strongly agreed that web payment authorization occurs online, 63% agreed, and 8% were uncertain (Mean=4.21; SD=0.578). 40% strongly agreed that online systems' web payment documentation was accurate, 57% agreed, and 3% were uncertain (Mean=4.37; SD=0.544). The composite mean of 4.38 and standard deviation of 0.543 show that respondents agreed the Web payment control system increased County Government of Nandi income collection.

Technological improvements have considerably impacted tax collection (Al-Khasawneh, 2022). IT changes quickly, making fiscal systems obsolete and needing new applications to adapt to financial dynamics (Chilunjika, 2018). Growing data processing requires accessible fiscal infrastructure (Yusuf, 2022). Governments may need reliable income to meet residents' needs (Kessy, 2019). Governments need income mobilization to survive. This requires efficient e-payment systems (Bousrih, 2023).

4.4.4 Revenue collection performance

The revenue collection performance within the county government of Nandi was presented, analyzed, and deliberated upon. The analysis thoroughly examined descriptive data given through mean scores and standard deviation. The dependent variable was characterized by increased revenue collection, prompt revenue collection, effective revenue collection, precise revenue tracking, and the presence of payment channels. Respondents offered input on five items, utilizing a 5-point Likert scale for their evaluations. Mean scores and standard deviations were computed for each item to evaluate the extent of agreement or disagreement. The performance of revenue collection items was analyzed, and the findings are presented in Table 4.6:

Table 4.6: Revenue collection performance

Statements	N	Mean	Std. Deviation

The county collects more revenue due to e-payment systems	131	4.30	0.536
Revenue for the county is collected and reported in a timely way	131	4.22	0.572
The implementation of our e-payment system has significantly improved the efficiency of revenue collection processes	131	4.40	0.537
The county's e-payment system has increased the accuracy of revenue tracking on enforcement and reporting	131	4.23	0.549
The e-payment system has facilitated easier access to payment channels	131	4.37	0.544
Composite Mean		**4.30**	**0.55**

Source: Research Data (2024)

From 131 responses, 33% strongly agreed that e-payment systems improve county revenue, 63% agreed, and 4% were unsure (Mean=4.30; SD=0.536). Thus, electronic payments have increased revenue. To offer services and prosper economically, county governments need revenue (Chepkoech et al., 2022). 30% strongly agreed that the county's money was collected and reported immediately, 63% agreed, and 7% doubted (Mean=4.22; SD=0.572). Thus, Nandi's county government soon gathered revenue. 43 percent strongly agreed that the e-payment system enhanced revenue collection efficiency, 55% agreed, and 2% were uncertain (Mean=4.40; SD=0.537).

29% strongly agreed that the county's e-payment system had increased revenue tracking for enforcement and reporting, 65% agreed, and 6% doubted (Mean=4.23; SD=0.549). No manual errors occurred in the electronic payment system. 40% strongly agreed that the e-payment system enhanced payment channel accessibility, 57% agreed, and 3% were uncertain (Mean= 4.37; SD=0.544). This demonstrates county residents found local government transactions simple. Al-Khasawneh (2022) says electronic payment platforms

simplify collection and promote transparency. E-payment systems boost revenue collection and prevent leakage.

Electronic payment systems that speed up and secure transactions can increase economic growth (Ejiku, 2019). They encourage economic activity and entrepreneurship by offering flexible payment choices for consumers and enterprises (Yusuf, 2022). Respondents support Nandi County government income collection with a composite mean of 4.30 and standard deviation of 0.55. Nandi County needs a questionnaire to boost revenue collection. Advanced digital payment options and taxpayer promotion could boost county revenue. Web payment control systems, mobile payment training, and public awareness promote compliance and convenience. Regularly updating and maintaining digital infrastructure may assure efficient and error-free transactions. Also advised were capturing all revenue streams and establishing a backup generator for office power shortages. Early payment incentives and late payment penalties increase compliance. Data analytics might help track and analyze revenue streams, find areas for development, and improve financial management, respondents said.

4.5 Correlation Analysis

This section presents correlation analysis statistics of the study.

4.5.1 Correlation Analysis

An analysis of Pearson correlation was conducted to ascertain the relationship between the variables, with the findings presented in Table 4.7. The results are presented in Table 4.7:

Table 4.7 : Correlation analysis

Variable	e-Banking System	Mobile Payments	Web Payment Control system	Revenue Collection Performance
e-Banking System	1.000	.803 **	.658 **	.803 **
Sig. (2-tailed)	-	.000	.000	.000

N	131	131	131	131
Mobile Payments	.803 **	1.000	.681 **	.681 **
Sig. (2-tailed)	.000	-	.000	.000
N	131	131	131	131
Web Payment control system	.658 **	.681 **	1.000	.658 **
Sig. (2-tailed)	.000	.000	-	.000
N	131	131	131	131
Revenue Collection Performance	.803 **	.681 **	.658 **	1.000
Sig. (2-tailed)	.000	.000	.000	-
N	131	131	131	131
**Correlation is significant at the 0.01 level (2-tailed).				
*.Correlation is significant at the 0.05 level (2-tailed).				

Source: Research Data (2024)

Table 4.7 shows a strong positive link between Nandi county government income collection and the e-banking system (r = 0.803, p = 0.000). A strong positive correlation of 0.803 was found between mobile payment system and revenue collection. Mobile payments positively correlate with Nandi County government income collection (r = 0.681, p = 0.000). Mobile payments and revenue collection have a strong positive correlation of 0.681. Nandi county government income collection is positively correlated with the Web payments control system (r = 0.658, p = 0.000). The Web payments Control system and revenue collection have a strong positive correlation of 0.658.

4.6 Regression Analysis and Hypotheses testing

Table 4.8: Regression Analysis

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson

1	.841[a]	.708	.691	.28309	1.753

a. Predictors: (Constant), e-Banking System, Mobile Payments, Web Payments Control System

b. Dependent Variable: Revenue Collection Performance

Source: Research Data (2022)

Linear regression was used to determine how electronic payment system characteristics affected revenue collection. Table 4.8 summarizes the model with 0.708 R Square. The study found that independent variables explain 70.8% of dependent variable variation. An ANOVA test is needed to establish data significance since the model efficiently finds variable relationships. E-banking, mobile payments, and Web Payments control systems account for 70.8% of revenue collection performance variance (R-squared = 0.708). Significant association was discovered between variables at 0.841.

The results reveal that e-banking, mobile payments, and web payments control systems predict revenue-collecting performance, underlining their importance.

4.6.1 Analysis of Variance (ANOVA)

Table 4.9 : Analysis of Variance

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	13.218	3	4.406	55.075	.000b
Residual	5.450	127	.043		
Total	18.667	130			

a. Dependent Variable: Revenue Collection Performance

b. Predictors: (Constant), e-Banking System, Mobile Payments, Web Payment control system

Source: Research Data (2024)

An analysis of variance (ANOVA) was performed to investigate whether e-banking systems, mobile payments, and web payments control systems predict Revenue Collection Performance. Total model statistical significance was confirmed with $F(3,127)=55.075$ and $p<.001$. This suggests that predictors explain a lot of Revenue Collection Performance variance. The Mean Square

value of 4.406 and Regression Sum of Squares value of 13.218 showed the independent variables' variance. Mean Square = 0.043; Residual Sum of Squares = 5.450. This figure shows the percentage of variation no other mechanism can explain. The Total Sum of Squares, 18.667, shows that the model's predictors explain 70.8% of Revenue Collection Performance variance. Based on the significance value of 0.000, it is below 0.05. The significant outcome suggested a link between the components. The study found that electronic payment technologies, particularly the Banking System, Mobile Payments, and Web Payments management system, improved Nandi County Government revenue collection.

4.6.2 Coefficients

Table 4.10: Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	p
	B	SE	β		
(Constant)	0.845	0.220		3.841	.000
e-Banking System	0.432	0.051	0.621	8.471	.001
Mobile Payments	0.218	0.063	0.295	3.460	.001
Web Payments Control System	0.154	0.047	0.220	3.277	.002

a. Dependent Variable: Revenue Collection Performance
Source: Research Data (2024)

$$Y = 0.845 + 0.432X1 + 0.432X2 + 0.218X3 + 0.154X4 + e$$

Table 4.10 shows the relationship between Revenue Collection Performance and e-banking, mobile, and web payments control systems. The study found that the e-banking system significantly improves Revenue Collection Performance, with a significance level of $p<.001$, significantly below the 0.05 threshold. This suggests that e-banking System functionality improvements boost revenue collection. Mobile Payments have a p-value of.001, showing that increased usage and efficiency improve Revenue Collection Performance. Finally, the

Web Payments control System has a p-value of.002, indicating that a well-developed Web Services Interface for payment processing improves revenue collection. Modern digital platforms improve revenue efficiency and collection outcomes, as the study shows that digital payment system innovations significantly improve Revenue Collection Performance.

4.7 Hypotheses testing

This study investigated theories on how e-banking technologies, mobile payments, and web payments control systems affected Nandi County Government revenue collection performance. Each hypothesis is accepted or rejected based on regression analysis and p-values.

Hypothesis 1: E-banking systems improve revenue collection performance.

Findings: E-banking systems improve revenue collection with a regression coefficient of 0.432 and a p-value of.001. We reject the null hypothesis and accept the alternative hypothesis since the p-value is below 0.05. This supports the idea that e-banking systems improve revenue collection.

2. Hypothesis 2: Mobile payments enhance revenue collection.

Results: Mobile payments have a favorable correlation with revenue collection performance (coefficient = 0.218, p-value =.001). A p-value below 0.05 allows us to reject the null hypothesis and accept the alternative. As mobile payment usage and efficiency increase, revenue collection improves.

Hypothesis 3: Web payments control systems improve revenue collection performance.

Results: Web payments control system has a statistically significant coefficient of 0.154 and p-value of.002. The p-value is less than 0.05, thus we reject the null hypothesis and accept the alternative hypothesis, confirming that a strong web payment control system improves revenue collection.

4.8 Discussion of Findings

4.8.1 Effect of e-banking system on revenue collection performance in the County Government of Nandi

E-banking boosted revenue. E-banking enhances revenue collection efficiency and dependability (regression coefficient 0.432, p-value.001). As the county adds EFT, RTGS, and direct bank payments, tax collection becomes faster and more precise, reducing administrative delays and improving revenue growth.

The study studied how e-banking affects Nandi County Government revenue. County bank accounts saw more electronic funds transfers. Online bank statements for banked revenues were generated routinely. RTGS paid for county services as direct bank deposits surged. Internet banking simplified reporting and record keeping.

Online banking simplified payment operations, minimizing banking hall trips, respondents stated. This accelerated compliance and transactions. Open and accountable digital records increased payment monitoring and financial reporting. The internet platform reduced corruption, administrative costs, time, and human errors.

Internet payments from anywhere boosted compliance. It shortened physical office wait times by processing transactions faster. Automation eliminated human errors and improved financial record accuracy, speeding revenue collection.

Reduced cash pilferage made payment records more accessible and boosted system confidence. The audit trail of digital transactions made tracking payments and discrepancies easier. Trust increased when taxpayers received fast payment confirmation. Transparency improved Nandi County Government revenue collection by reducing corruption and financial mismanagement.

4.8.2 Effect of mobile payments on revenue collection performance in the County Government of Nandi

A coefficient of 0.218 and p-value of.001 show that mobile payments enhance revenue collection. M-Pesa and mobile POS payments are convenient and fast for citizens, improving compliance. Data show that promoting mobile payment channels helps the county collect income faster and reach more individuals.

The study studied how mobile payments affected Nandi County Government revenue. Mobile banking for county services was popular in Nandi County. County clients paid more using M-Pesa. Credit card settlements via mobile POS systems have increased, providing customers new payment options. Online mobile payments boosted sales.

Mobile payments were convenient and accessible, enhancing taxpayer compliance and minimizing delays, respondents indicated. Real-time mobile transactions simplified and reduced errors. Digital receipts and records made payments easier to handle and discover irregularities, improving transparency. Mobile payments cut administrative and infrastructure costs, enhancing efficiency. Other respondents mentioned issues like the need for strong internet connectivity to use online services.

Mobile payments make paying dues from anywhere easier, increasing compliance. This ease of use enhanced payment speed, reduced delinquent accounts, and increased revenue. Mobile payment processing automation speed up transactions and decreased manual intervention, providing the County Government of Nandi with faster and more accurate revenue collection.

4.8.3 Effect of web payments control system on revenue collection performance in the County Government of Nandi

The web payments control system increased revenue collection by 0.154 and p-value 002. This implies that secure, well-regulated web payment systems that enable online transactions and e-commerce integration simplify taxpayer interactions. Good web payments control systems improve user experience, eliminate paper-based transaction errors and risks, and increase revenue collection efficiency and accuracy.

The study studied how web payments control affects Nandi County Government income collection. Nandi County's e-payment system streamlined taxpayer payments, according to data. Electronic service payment regulations made county government web payments trustworthy. Strong security prevented e-payment income leakage. The online payment authorization system generated proper documentation. Most agreed that the web payment control method increased County Government of Nandi income collection.

The web payment control system made online payments easier and more compliant for taxpayers, respondents said. The real-time financial record processing and updating system reduced delays and errors. Full transaction records and digital receipts increased accountability. Automation reduced manual processing expenses and administrative duties.

E-payment methods in Nandi County increased revenue. Revenue collection and reporting on time increased service delivery and economic growth. The e-payment technology greatly improved revenue collection, tracking, reporting, and human error. County residents' transactions were simplified by the system's payment channels.

To increase revenue, respondents suggested the Nandi county government adopt innovative digital payment options and promote taxpayer use. Public education on e-services and mobile payments would improve compliance and convenience. Regularly updating and maintaining digital infrastructure ensures efficient and error-free transactions. Capturing all revenue streams, rewarding early payments, and penalizing late payments may increase compliance. Data analytics may also track and analyze income streams, discover improvement opportunities, and improve financial management.

Additional online platforms and mobile payment methods like USSD payment codes could simplify taxpayer payments and boost revenue. Training taxpayers on payment methods and benefits through workshops, seminars, and online resources will improve system use. To speed up resolution and compliance, better customer service and guidance were advised.

With an R-squared value of 0.708, e-banking systems, mobile payments, and online services interface payments explain 70.8% of revenue collection performance variation. Modernizing and strengthening tax collection methods and promoting openness, accountability, and accessibility in the county requires electronic payment solutions.

The model is statistically significant because the ANOVA test has an F-value of 55.075 and a significance level of.000. This suggests that the study's independent components accurately predict revenue collection success and that

Nandi County Government's financial operations depend on digital payment systems.

The statistics suggest e-payment infrastructure investments could increase revenue. Nandi County can boost revenue, cut transaction costs, and improve compliance by promoting e-banking, mobile payments, and web payment control. The paper emphasizes digital transformation in public sector finance management and offers a model for other nations.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This section encapsulates the findings regarding the impact of the e-payment system on the efficacy of revenue collection within the County Government of Nandi. The chapter draws inferences from the research findings. Furthermore, the conclusions drawn from the findings have led to the formulation of recommendations**.**

5.2 Summary of findings

The findings of each variable are discussed in this part.

5.2.1 Effects of e-banking system on revenue collection performance

E-banking boosted revenue. E-banking enhances revenue collection efficiency and dependability (regression coefficient 0.432, p-value.001). As the county adds e-banking options including electronic fund transfer, real-time gross settlement (RTGS), and direct bank deposits, revenue collection becomes faster and more accurate, reducing administrative delays and enhancing revenue growth.

E-banking technology significantly affected revenue collection, with a mean of 4.34. Bousrih (2023) observed e-banking boosts revenue. Electronic money transfers to county bank accounts are increasing. We produced online bank statements of deposited income and made RTGS county service payments.

Digital platforms cut administrative expenditures and errors. Electronic fund transfers, RTGS transactions, and direct bank deposits greatly impact revenue collection, according to Nandi County. Lim et al. (2023) say e-banking boosts income collection. Thus, Nandi County's tax collection and income collection depend on e-banking.

5.2.2 Effects of mobile payments on revenue collection performance

A coefficient of 0.218 and p-value of.001 show that mobile payments enhance revenue collection. M-Pesa and mobile POS payments are convenient and fast

for citizens, improving compliance. Data show that promoting mobile payment channels helps the county collect income faster and reach more individuals. Mobile payments and revenue collection were positively correlated, with a mean noise 4.28. Wekesa et al. (2022) found mobile payments increase income. Mobile banking for county services grew. Mpesa-enabled county customer payments grew. Credit card settlements using mobile POS. Easy mobile payments improved taxpayer compliance, reduced delays, and increased revenues. Real-time transactions on mobile platforms simplified collecting and reduced errors. Mobile payments added digital receipts and records to trace payments and find discrepancies, decreasing administrative costs and infrastructure needs and enhancing efficiency. Some respondents highlighted concerns including the requirement for a strong internet connection for online services. Mobile payments favorably correlated with Uganda Revenue Authority revenue collection, according to Ejiku (2019). Adegbie et al. (2022) found that mobile tax administration systems simplified tax returns and improved revenue performance.

5.2.3 Effects of web payments control system on revenue collection performance

The web payments control system increased revenue collection by 0.154 and p-value 002. This implies that secure, well-regulated web payment systems that enable online transactions and e-commerce integration simplify taxpayer interactions. Good web payment control systems improve user experience, eliminate paper-based transaction errors and risks, and increase revenue collection efficiency and accuracy.

The study examined how Web payment control influenced Nandi County Government income collection. The web payments control system, with a mean of 4.38, greatly affected revenue collection. Chilunjika (2018) says web payment control methods greatly effect revenue collection. E-payment shortened the county's Web payment cycle. Web payment laws and security were adequate in the control system. Online payments were approved. Technological improvements greatly impacted revenue collection. Internet

payments make taxpayer payments easier and more compliant. It promoted accountability and openness. Automation reduced manual processing, costs, and administrative issues.

5.3 Conclusions

E-banking, mobile payments, and web payment control systems boost Nandi County Government revenue, according to research. E-banking boosts electronic funds transfers, indicating a move toward automated, trustworthy payments. Traditional banking slows, while real-time financial control lets the county government keep current records. Real-Time Gross Settlement (RTGS) systems safely and efficiently manage high-value transactions, improving cash flow and resource allocation.

Mobile payments simplify tax compliance and increase revenue. Businesses and consumers can trade anywhere, anytime, reducing late payments. Instant mobile payment processing speeds county account funding and reduces delays. The research reveals that mobile payments increase tax collection transparency and eliminate errors. An audit trail from digital receipts and transaction information boosts taxpayer confidence in payment papers. Mobile payment platforms eliminate physical infrastructure and data entry, reducing administrative costs and human error.

Technology has shortened transaction times in web payment control systems, changing the payment cycle. For efficient county management, this technology processes payments quickly and maintains financial records. The online services system prevents fraud and illegal access with extensive web payment restrictions and security. A study found that automating payment and online authorization reduces wait times and unpleasant office hours. Accessibility boosts county revenue by encouraging compliance and on-time payments. The web services interface system's rich digital documentation boosts taxpayer confidence in the county's revenue collection.

Digital payment techniques boost tax collection efficiency, reliability, and transparency for the County Government of Nandi, according to this study.

Financial management and income sustainability will improve with these changes.

5.4 Recommendations

Digital transactions have transformed public financing, prompting governments to upgrade payment systems. Nandi County Government is adopting EFTs, mobile payments, and web payment control solutions. The county must build a comprehensive e-payment infrastructure to meet taxpayers' changing convenience and efficiency expectations.

To accommodate more electronic money transfers, the research suggests the County Government of Nandi invest in e-banking infrastructure. Internet bank statements and RTGS payment access must be reliable and simple. By teaching individuals about digital and mobile payment methods, the county can increase compliance and streamline the payment process.

The County Government of Nandi should improve web payment laws and security to avoid fraud and secure financial transactions. Regularly review and improve security protocols. To simplify payments and satisfy taxpayers, the county should adopt new technology. Real-time financial record processing eliminates delays and errors.

The County Government of Nandi should accurately save and rapidly access digital receipts and transaction data to improve financial reporting and monitoring transparency and accountability. Automation and constant monitoring cut administrative and manual handling costs. Improve operating efficiency by investing in infrastructure-reducing technologies. E-banking and mobile payment systems should be regularly assessed by the County Government of Nandi for improvements. User feedback changes strategy and ensures systems meet needs.

5.5 Suggestions for Further Research

This study studied how electronic payments affected Nandi County Government income collection. The study examined Nandi County Government, which may reflect Kenya's other counties. More studies elsewhere

may increase comprehension. County revenue collectors were examined. Future tax collecting industry studies may involve more department personnel than the 135 already evaluated. This would show how innovation influences County Government operations. Regression analysis showed that e-banking, mobile, and web payment control systems affected the County Government of Nandi's income collection by 70.8%. External factors account for 29.2% of revenue collection fluctuations. Future research may explore revenue collection performance elements.

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APPENDICES

APPENDIX I: LETTER OF INTRODUCTION

Respondents,

Nandi County Government,

P.O. Box 802,

Kapsabet.

Dear Respondents,

RE: REQUEST FOR PARTICIPATION IN PROVIDING INFORMATION

I Elly Kipkemboi Limo a student at Koitaleel Samoei University do write to request your participation in giving information on my research topic: Effects of e payment systems on revenue collection performance in County Government of Nandi. The goal is to evaluate the revenue collection performance basing on the variables that will be presented to you.

I assure you of total confidentiality, your candid responses will assist in getting reliability and accuracy data. The responses will be utilized exclusively for academic research purposes. I am kindly requesting your time and cooperation for the success of this process.

For any questions or clarification, please email me at limo.elly@gmail.com.

Thanks for your consideration of this novel course, looking forward to your active engagement.

Yours sincerely,

Elly Kipkemboi limo

Koitaleel Samoei University.

(A Constituent of University of Nairobi)

APPENDIX II : QUESTIONNAIRE

Please answer the following questions to the best of your knowledge. Please indicate your response by ticking () in the box provided.

PART A: DEMOGRAPHIC CHARACTERISTICS

1. Indicate your years of experience in revenue collection at the county?

i. 2 - 5 years ( )
ii. 6-9 years ( )
iii. 10 years or more ( )

PART B: e-banking system and revenue collection performance

In this area, use the following scale and tick. (√) as applicable. Scale: ***5=strongly agree ,4= agree, 3=not sure, 2=disagree and 1=strongly disagree***

Statement	**5**	**4**	**3**	**2**	**1**
There is increased frequency in electronic funds transfers to county's bank accounts.					
Bank statements for banked revenues are accessed and generated online.					
Customers use RTGS to make their payments for county services.					
The number of direct bank deposits has increased in the county.					
Online banking allows for efficient record keeping and reporting.					

How does e-banking system facilitate revenue collection in the county?

_____

_____

PART C: Mobile payments and revenue collection performance

In this area, use the following scale and tick. (√) as applicable. Scale: **5=*strongly agree ,4= agree, 3=not sure, 2=disagree and 1=strongly disagree***

Statement	**5**	**4**	**3**	**2**	**1**
Mobile banking for county services have been on the rise.					
Mpesa enabled for county customer payments have increased.					
Mobile POS system allows for credit cards settlements.					
Mobile POS payments have increased over time.					
Online Mobile payments have greatly improved revenues.					

Explain how mobile payments has affected revenue collection in the county.

_____

_____

_____

_____

PART D: Web services interface payments system and revenue collection performance

In this section, use the following scale and tick. (√) as applicable. Scale: **5=*strongly agree ,4= agree, 3=not sure, 2=disagree and 1=strongly disagree***

Statement	**5**	**4**	**3**	**2**	**1**
The web services payment cycle in the county is shortened due to the e payment system.					
There are adequate electronic services payment regulations in the county.					
There are adequate security features in the e payment services system.					
Authorisation for electronic payments is done online.					
The electronic services payments documentation generated by online systems are accurate.					

How does web services interface payments system affect revenue collection performance?

PART E: Revenue Collection and performance

In this section, use the following scale and tick. and tick (√) as applicable. Scale:

5=strongly agree ,4= agree, 3=not sure, 2=disagree and 1=strongly disagree

Statement	**5**	**4**	**3**	**2**	**1**
The county collects more revenue due to e payment systems.					
Revenue for the county is collected and reported in a timely way.					
The implementation of our e-payment system has significantly improved the efficiency of revenue collection processes.					
The county's e-payment system has increased the accuracy of revenue tracking on enforcement and reporting.					
The e-payment system has facilitated easier access to payment channels.					

How could the county government of Nandi improve its revenue collection performance?

_____

_____

_____

_____

_____

THANK YOU

APPENDIX III: OBSERVATION SCHEDULE

Instructions for Respondents:

By selecting "Yes" or "No" in the corresponding column, indicate whether each item is available in your department. This information will help evaluate the sufficiency of the technological resources required to collect revenue and implement e-payment systems effectively. Your input is indispensable for comprehending the present state of resources and pinpointing potential areas for enhancement. I am grateful for your involvement.

Item	**Availability**
Computers	
Scanners	
Printers	
Point of sale terminals	
Networking equipment	
Printed invoices	
Printed receipts	
Data storage devises	
Thermal rolls	
Printed statements	
Peripheral devises	

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR
SCIENCE,TECHNOLOGY& INNOVATION

Ref No: 951121

Date of Issue: **09/August/2024**

RESEARCH LICENSE

This is to Certify that Mr.. ELLY KIPKEMBOILIMO of Koitaleel Samoei University College, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nandi on the topic: EFFECTS OF EPAYMENT SYSTEM OF REVENUE COLLECTION PERFORMANCE IN THE COUNTY GOVERNMENT OF NANDI, KENYA for the period ending: 09/August/2025

License No: **NACOSTI/P/24/38985**

951121

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See overleaf forconditions

THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013 (Rev. 2014)
Legal Notice No. 108: The Science, Technology and Innovation (Research Licensing) Regulations, 2014

The National Commission for Science, Technology and Innovation, hereafter referred to as the Commission, was the established under the Science, Technology and Innovation Act 2013 (Revised 2014) herein after referred to as the Act. The objective of the Commission shall be to regulate and assure quality in the science, technology and innovation sector and advise the Government in matters related thereto.

CONDITIONS OF THE RESEARCH LICENSE

1. The License is granted subject to provisions of the Constitution of Kenya, the Science, Technology and Innovation Act, and other relevant laws, policies and regulations. Accordingly, the licensee shall adhere to such procedures, standards, code of ethics and guidelines as may be prescribed by regulations made under the Act, or prescribed by provisions of International treaties of which Kenya is a signatory to
2. The research and its related activities as well as outcomes shall be beneficial to the country and shall not in any way;
    i. Endanger national security
    ii. Adversely affect the lives of Kenyans
    iii. Be in contravention of Kenya's international obligations including Biological Weapons Convention (BWC), Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO), Chemical, Biological, Radiological and Nuclear (CBRN).
    iv. Result in exploitation of intellectual property rights of communities in Kenya
    v. Adversely affect the environment
    vi. Adversely affect the rights of communities
    vii. Endanger public safety and national cohesion
    viii. Plagiarize someone else's work
3. The License is valid for the proposed research, location and specified period.
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5. The Commission reserves the right to cancel the research at any time during the research period if in the opinion of the Commission the research is not implemented in conformity with the provisions of the Act or any other written law.
6. The Licensee shall inform the relevant County Director of Education, County Commissioner and County Governor before commencement of the research.
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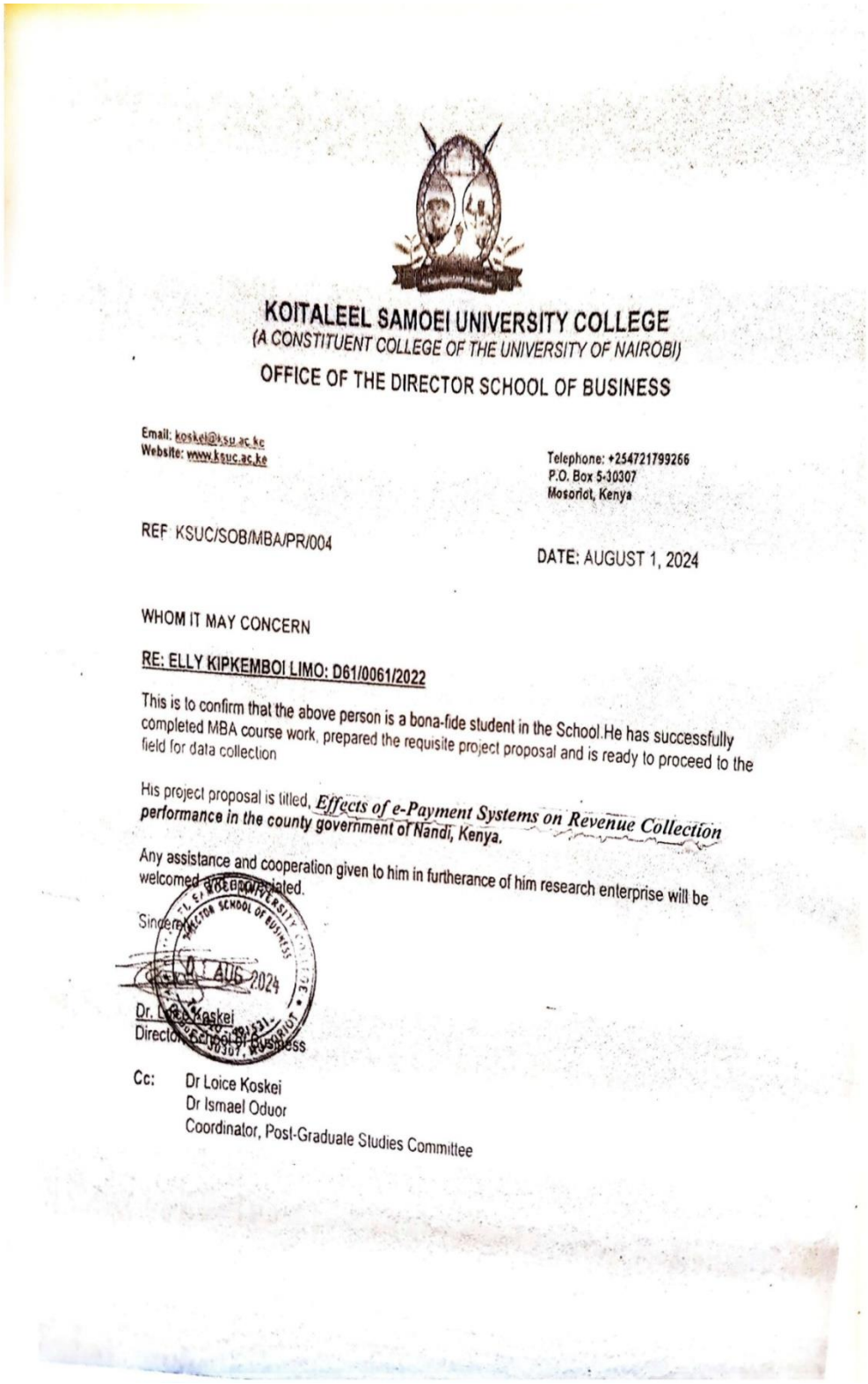
14. The Commission shall have powers to acquire from any person the right in, or to, any scientific innovation, invention or patent of strategic importance to the country.
15. Relevant Institutional Scientific and Ethical Review Committee shall monitor and evaluate the research periodically, and make a report of its findings to the Commission for necessary action.

National Commission for Science, Technology and
Innovation(NACOSTI),
Off Waiyaki Way, Upper Kabete,
P. O. Box 30623 - 00100 Nairobi, KENYA
Telephone: 020 4007000, 0713788787, 0735404245
E-mail: dg@nacosti.go.ke
Website: www.nacosti.go.ke



KOITALEEL SAMOEI UNIVERSITY COLLEGE
(A CONSTITUENT COLLEGE OF THE UNIVERSITY OF NAIROBI)
OFFICE OF THE DIRECTOR SCHOOL OF BUSINESS

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Telephone: +254721799266
P.O. Box 5-30307
Mosoriot, Kenya

REF: KSUC/SOB/MBA/PR/004

DATE: AUGUST 1, 2024

WHOM IT MAY CONCERN

RE: ELLY KIPKEMBOI LIMO: D61/0061/2022

This is to confirm that the above person is a bona-fide student in the School.He has successfully completed MBA course work, prepared the requisite project proposal and is ready to proceed to the field for data collection

His project proposal is titled, ***Effects of e-Payment Systems on Revenue Collection performance in the county government of Nandi, Kenya.***

Any assistance and cooperation given to him in furtherance of him research enterprise will be welcomed and appreciated.

Sincerely,

1 AUG 2024

Dr. Loice Koskei
Director, School of Business

Cc: Dr Loice Koskei
Dr Ismael Oduor
Coordinator, Post-Graduate Studies Committee

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