



# EFFECT OF DIGITALIZED TAX SYSTEM ON REVENUE COLLECTION EFFICIENCY IN KISUMU COUNTY

Ageya Collins Ochieng<sup>1</sup>, Dr. Yasin Kuso Ghabon<sup>2</sup>

<sup>1</sup>Master of Science in Finance (MSc Finance)

<sup>2</sup>Senior Lecturer Maseno University

## ABSTRACT

Kisumu County, Kenya, faces significant challenges in revenue collection, due to inefficiencies in tax administration, high compliance costs and widespread tax evasion, undermining the county's ability to generate adequate own-source revenue (OSR) for development projects. According to the Commission on Revenue Allocation (2022), Kisumu County collected KES 1.2 billion in OSR in the 2022/23 financial year, against a target of KES 2 billion, indicating a shortfall of KES 0.8 billion. The 2023/24 report from the Council of Governors (2023) noted that Kisumu's OSR was KES 1.4 billion, far below the projected KES 2.2 billion, with inefficiencies attributed to manual tax collection processes and limited adoption of digital systems. It is based on these constraints that the current study sought to assess the effect of digitalized tax system on revenue collection efficiency in Kisumu County. The study will be anchored on the Technology Acceptance Model. The study adopted descriptive research design. The target population was 3 chief officers in County treasury, 7 officers from the Kisumu County Revenue Board and 70 revenue collection officers across the 7 sub-counties (10 per sub-county across 7 sub-counties). Therefore, the total target population was 80 officers. Considering the target population was small the researcher used census technique to incorporate all the 80 targeted respondents. The study collected primary data. Questionnaire was used to collect the primary data desirable for the study. Content validity was verified by the expert and supervisor opinions. The study used both descriptive and inferential statistics. Descriptive statistics involved the use of percentages, frequencies, measures of central tendencies (mean) and measures of dispersion (standard deviation). Inferential statistic involves the use of simple bivariate correlation analysis to establish the nature of the relationship between a single independent variable and the dependent variable. After analysis data was presented in the form of a tables. The study established a strong positive correlation between the adoption of digitalized tax systems and revenue collection efficiency in Kisumu County ( $r = 0.541$ ;  $p < 0.05$ ). This indicates that greater use of digital tax systems, such as e-filing, e-payment platforms, and electronic invoicing, is significantly associated with improved revenue collection efficiency. The study recommended that Kisumu County government invest in expanding digital tax infrastructure, such as improving network connectivity and upgrading e-payment platforms, to enhance accessibility and adoption among taxpayers.

**KEY WORDS:** Digitalized Tax System, Revenue Collection Efficiency, Kisumu County

## 1.1 INTRODUCTION

A digitalized tax system is the integration of information and communication technologies (ICT) into tax administration processes, encompassing electronic filing (e-filing), electronic payment (e-payment), electronic invoicing (e-invoicing), and electronic fiscal devices (EFDs) to streamline tax collection and compliance, (Mascagni, Mengistu & Woldeyes, 2021). These systems leverage digital platforms to automate tax processes, reduce manual interventions and enhance transparency and accountability in revenue collection. In the context of county governments, digitalized tax systems are pivotal for improving revenue collection efficiency by minimizing revenue leakages, reducing compliance costs, and enhancing taxpayer accessibility, (Okunogbe & Pouliquen, 2022).

The adoption of such systems facilitates real-time data processing, improves record-keeping, and enables tax authorities to monitor compliance effectively, thereby increasing own-source revenue (OSR) critical for funding local development projects, (Monica & Makokha, 2021). Digital platforms also address challenges such as tax evasion and corruption by providing traceable transaction records and reducing direct interactions between taxpayers and tax officials. In counties, where financial autonomy is essential for sustainable development, digitalized tax systems empower local governments to optimize revenue mobilization, ensuring funds for essential services like infrastructure, healthcare, and education (Mascagni, Mengistu & Woldeyes, 2021).



Revenue collection efficiency is the ability of tax authorities to maximize revenue collection while minimizing administrative costs and taxpayer burden, remains a significant challenge in many county governments, (Mathias Itoe, Enobi Akepe & Mokube, 2023). Inefficient tax systems, characterized by manual processes, high compliance costs, and limited enforcement capacity, often result in revenue shortfalls, tax evasion, and low taxpayer compliance. These inefficiencies are exacerbated by inadequate technological infrastructure, lack of taxpayer awareness, and bureaucratic hurdles that hinder effective tax administration, (Santoro, Amine & Magongo, 2022). Digitalized tax systems address these issues by automating processes, reducing human errors, and improving enforcement through data analytics and real-time monitoring. However, challenges such as digital divides, where less educated or disadvantaged taxpayers struggle to adopt e-services, and inconsistent legal frameworks can limit the effectiveness of these systems. In county governments, where own-source revenue is often a small fraction of total budgetary allocations, enhancing revenue collection efficiency through digitalization is critical to reducing dependency on national government transfers and fostering fiscal sustainability (Commission on Revenue Allocation, 2022).

In the United States, county governments have increasingly adopted digitalized tax systems to enhance revenue collection efficiency, particularly for property taxes, sales taxes, and local levies. These systems include online portals for e-filing and e-payment, geographic information systems (GIS) for property tax assessment, and data analytics for compliance monitoring, (Ahmed & Gillwald, 2020). Digital platforms have streamlined tax administration by reducing processing times, improving accuracy in tax assessments, and enabling real-time tracking of payments. For instance, counties like Miami-Dade in Florida have implemented integrated tax systems that allow taxpayers to file and pay property taxes online, resulting in reduced administrative costs and improved compliance rates, (Cebreiro, Munoz & Ruggieri, 2022). However, challenges such as cybersecurity risks and the need for continuous system upgrades persist, requiring significant investment in ICT infrastructure. These digital systems have also facilitated better taxpayer engagement through user-friendly interfaces and accessible information, contributing to higher revenue yields for county governments (Alojail, 2022).

South Africa's local governments, including municipalities, have embraced digitalized tax systems to improve revenue collection efficiency, particularly for property rates and service charges. The South African Revenue Service (SARS) and local governments have implemented e-filing and e-payment systems, supported by robust ICT infrastructure, to enhance compliance and reduce revenue leakages, (Simbarashe, 2020). Municipalities like Cape Town have adopted digital platforms for property tax administration, using GIS mapping and automated billing systems to improve assessment accuracy and collection rates. These systems have also reduced corruption by minimizing direct interactions between taxpayers and officials, (Anyanzwa, 2021). Despite these advancements, digital divides and resistance from informal sector taxpayers pose challenges to full adoption. The introduction of direct digital service taxes (DSTs) has further expanded the tax base, targeting digital transactions to capture revenue from the growing digital economy (Atkinson, 2022).

Rwanda has made significant strides in digitalizing its tax system, with the Rwanda Revenue Authority (RRA) implementing e-filing, e-payment, and electronic billing machines (EBMs) to enhance revenue collection efficiency at both national and local levels, (Ndayiragije & Twesige, 2023). These systems have improved compliance by simplifying tax filing processes and reducing compliance costs for taxpayers. In Musanze district, for instance, the adoption of digital payment systems and e-commerce taxation has increased local revenue by providing traceable transaction records and expanding the tax base, (Santoro, Amine & Magongo, 2022). However, challenges such as low digital literacy among taxpayers and unstable network infrastructure in rural areas limit the effectiveness of these systems. Rwanda's focus on taxpayer education and sensitization has been critical in overcoming these barriers, ensuring broader adoption of digital tax platforms (Mugabe, 2021).

In Kenya, county governments have increasingly adopted digitalized tax systems to boost own-source revenue collection, with platforms like e-payment systems and electronic tax registers improving efficiency. Counties such as Nairobi and Mombasa have implemented automated revenue management systems, reduced revenue leakages and increasing collections by significant margins, (Monica & Makokha, 2021). For example, Nairobi's digital platform has streamlined property tax and business permit collections, enhancing transparency and accountability. However, challenges such as inconsistent legal frameworks, low taxpayer compliance due to perceived lack of service delivery, and limited technological infrastructure in rural counties hinder optimal revenue collection, (World Bank, 2021). The Kenya Revenue Authority (KRA) and county governments continue to invest in digital solutions to formalize the informal sector and expand the tax net, critical for financial autonomy (Commission on Revenue Allocation, 2022).

## 1.2 Statement of the Problem

Kisumu County, Kenya, faces significant challenges in revenue collection, due to inefficiencies in tax administration, high compliance costs and widespread tax evasion, undermining the county's ability to generate adequate own-source revenue (OSR) for development projects. According to the Commission on Revenue



Allocation (2022), Kisumu County collected KES 1.2 billion in OSR in the 2022/23 financial year, against a target of KES 2 billion, indicating a shortfall of KES 0.8 billion. The 2023/24 report from the Council of Governors (2023) noted that Kisumu's OSR was KES 1.4 billion, far below the projected KES 2.2 billion, with inefficiencies attributed to manual tax collection processes and limited adoption of digital systems. The Controller of Budget (2024) highlighted that Kisumu County's reliance on national government transfers, which constituted KES 9.8 billion of the KES 11.2 billion total budget in 2023/24, underscores the low OSR contribution of KES 1.4 billion. This reflects persistent challenges such as inadequate ICT infrastructure, low taxpayer awareness and resistance to digital platforms due to digital divides (Controller of Budget, 2024). These shortfalls limit the county's capacity to fund essential services like healthcare, infrastructure, and education, necessitating urgent adoption of effective digitalized tax systems to enhance revenue collection efficiency and reduce dependency on external funding. It is based on these constraints that the current study sought to assess the effect of digitalized tax system on revenue collection efficiency in Kisumu County.

### 1.3 Objective of the Study

The general objective of the study was to assess the effect of digitalized tax system on revenue collection efficiency in Kisumu County.

### 1.4 Hypothesis of the Study

**H0<sub>1</sub>:** Digitalized tax system has no statistically significant effect on revenue collection efficiency in Kisumu County.

## 2.0 LITERATURE REVIEW

### 2.1 Theoretical Framework

The study will be anchored on the Technology Acceptance Model (TAM). The TAM model was developed by Davis (1989), is a widely recognized framework that explains how users accept and adopt new technologies based on two primary constructs: perceived usefulness (PU) and perceived ease of use (PEOU). PU refers to the degree to which users believe a technology will enhance their performance, while PEOU reflects the extent to which users perceive the technology as effortless to use, (Venkatesh & Davis, 2000). In the context of a digitalized tax system, TAM posits that taxpayers and tax administrators in county governments are more likely to adopt digital platforms for tax filing, payment, and compliance if they perceive these systems as useful in improving revenue collection efficiency and easy to navigate, (Chuttur, 2009).

The simplicity and focus on two core construct perceived usefulness and perceived ease of use make the TAM model adaptable across various technological contexts, including tax administration systems, (Alryalat, Rana & Dwivedi, 2015). The model's predictive power is well-documented, as it effectively explains user behavior by linking perceptions to actual technology use, which is critical for understanding how digital platforms can enhance revenue collection efficiency, (King & He, 2015). TAM's applicability in public sector contexts, such as e-government services, has been validated, demonstrating its relevance for assessing taxpayer and administrator acceptance of digital tax systems. Additionally, TAM's flexibility allows it to be extended with external variables, such as trust or infrastructure availability, to address specific contextual factors in county governments, thereby providing a comprehensive framework for analyzing adoption barriers and facilitators, (Lee, Kozar & Larsen, 2017).

Despite its strengths, the Technology Acceptance Model has notable limitations that warrant consideration. Critics argue that TAM's focus on individual perceptions of usefulness and ease of use oversimplifies the complex socio-economic and institutional factors influencing technology adoption, such as digital divides, cultural resistance, or inadequate ICT infrastructure, which are particularly relevant in developing countries like Kenya, (Marangunic & Granic, 2020). The model assumes users have access to technology and the skills to use it, which may not hold true for rural taxpayers or under-resourced tax administrators in counties like Kisumu, where digital literacy and infrastructure gaps persist, (Wixom & Todd, 2021). Additionally, TAM does not adequately account for external factors like policy frameworks, cybersecurity concerns, or organizational readiness, which can significantly impact the adoption of digital tax systems. These limitations suggest that TAM may need to be supplemented with other theories or contextual variables to fully capture the dynamics of digitalized tax system adoption in county governments (Al-Adwan, Yaseen & Alsoud, 2022).

The Technology Acceptance Model is highly relevant to the study because by focusing on perceived usefulness and perceived ease of use, TAM provides a framework to evaluate how taxpayers and tax administrators in Kisumu County perceive and adopt digital tax platforms, such as e-payment and e-filing systems, and how these perceptions influence revenue collection outcomes. For instance, if taxpayers find digital systems user-friendly and effective in reducing compliance costs, they are more likely to comply, thereby increasing own-source revenue. Similarly, tax administrators' acceptance of digital tools can enhance efficiency



in tax assessment and collection processes, reducing leakages and administrative costs. TAM's emphasis on user perceptions aligns with the study's aim to identify factors that enhance or hinder the effectiveness of digital tax systems in Kisumu County, offering insights into designing interventions like taxpayer education or system improvements to boost adoption and revenue efficiency.

## 2.2 Digitalized Tax System on Revenue Collection Efficiency

Okunogbe and Pouliquen (2022) conducted a study on the impact of digitalized tax systems on tax compliance in Tajikistan's revenue authority. A quasi-experimental research design was employed, utilizing a difference-in-differences approach with administrative tax data. The study sampled 2,000 SMEs, selected through purposive sampling to compare adopters and non-adopters of ESRMs. Data were collected from tax returns and payment records over five years, analyzed using regression models. Descriptive findings revealed higher tax payments and reported sales among ESRM adopters compared to non-adopters. Inferential analysis showed a significant positive effect, with ESRM adoption increasing tax compliance by boosting reported sales by 15,000 TJS annually and reducing compliance costs. The study concluded that digitalized tax systems significantly enhance tax compliance by improving transaction transparency.

Cebreiro, Munoz and Ruggieri (2022) investigated the effect of digitalized tax systems on revenue mobilization efficiency in the European Union's tax administrations. A panel research design was used, analyzing data from 28 EU countries over a 10-year period. The study employed a stratified random sampling technique, selecting 1,500 tax administration records from the International Survey on Revenue Administration (ISORA). Data were collected via secondary sources, including tax revenue reports, and analyzed using fixed-effects regression models. Descriptive findings indicated higher revenue collections and reduced administrative costs in countries with advanced e-filing systems. Inferential results confirmed that e-filing adoption significantly increased revenue mobilization by 20,000 euros per capita annually. The study concluded that digital tax systems enhance revenue efficiency through automation and reduced evasion. Recommendations include harmonizing digital tax platforms across EU states and addressing cybersecurity risks.

Mascagni, Mengistu and Woldeyes (2021) examined the impact of digitalized tax systems on value-added tax (VAT) compliance in Ethiopia's Revenue and Customs Authority. A difference-in-differences research design was adopted, using administrative tax data. The study sampled 3,000 businesses, selected through stratified random sampling to ensure representation across sectors. Data were collected from tax returns and ESRM adoption records, analyzed using regression and propensity score matching. Descriptive findings showed increased VAT payments and reported sales among ESRM adopters. Inferential analysis revealed that ESRM adoption led to a significant 48,000 ETB increase in VAT revenue per firm annually, driven by improved compliance. The study concluded that digital tax systems significantly enhance VAT compliance through real-time monitoring.

Santoro, Amine, and Magongo (2022) studied the effect of digitalized tax systems on revenue collection efficiency in Eswatini's Revenue Authority. A mixed-methods research design was used, combining quantitative tax data analysis with qualitative interviews. The study sampled 1,200 taxpayers, selected through cluster sampling across urban and rural regions, and conducted 10 in-depth interviews with tax officials. Data were collected via tax records and structured questionnaires, analyzed using multiple regression and thematic analysis. Descriptive findings indicated higher revenue collections and faster payment processing in urban areas with e-filing. Inferential results showed that e-filing increased revenue collection by 10,000 SZL per taxpayer annually, though rural adoption lagged due to connectivity issues. The study concluded that digital tax systems improve collection efficiency but require infrastructure investment.

Ndayiragije and Twesige (2023) explored the impact of digitalized tax systems on revenue generation in Rwanda's Musanze District. A cross-sectional research design was employed, using a survey methodology. The study sampled 800 taxpayers, selected through systematic random sampling from business registries. Data were collected via structured questionnaires and tax records, analyzed using correlation and regression analysis. Descriptive findings showed increased revenue and compliance rates among EBM users. Inferential analysis indicated that EBM adoption significantly boosted revenue by 5,000 RWF per business monthly, driven by reduced evasion. The study concluded that EBMs enhance revenue generation through improved compliance and transparency.

Agyei-Ababio, Wandaogo, and Jalloh (2023) investigated the effect of digitalized tax systems on tax compliance in Ghana's Revenue Authority. A causal research design was used, employing structural equation modeling (SEM). The study sampled 278 taxpayers, selected through purposive sampling targeting digital economy participants. Data were collected via Google Form questionnaires, analyzed using SEM and descriptive statistics. Descriptive findings revealed higher compliance and reduced evasion among e-tax platform users. Inferential results showed that digitalization significantly reduced tax evasion by 12,000 GHS annually per taxpayer, mediated by ease of use and awareness. The study concluded that e-tax platforms



enhance compliance by simplifying processes and reducing corruption. Recommendations include expanding digital infrastructure and conducting awareness campaigns.

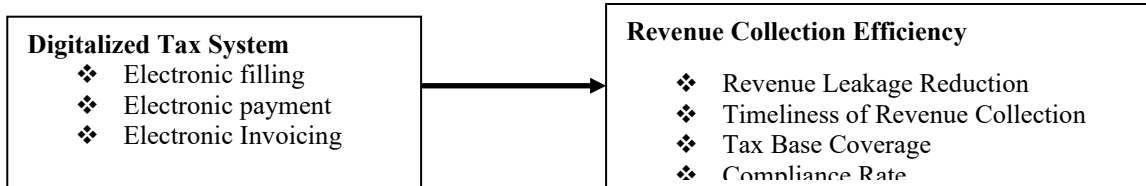
Ackom, Ocansey, and Asamoah (2025) conducted a panel data study on the influence of digitalization, tax system efficiency, and tax compliance on revenue mobilization in Sub-Saharan Africa, moderated by religion and culture. Using panel data across ten SSA countries from 2010–2022, the study applied a random effects regression model with diagnostic tests including multicollinearity, heteroskedasticity, and stationarity to ensure model robustness. Descriptive results indicated a rising uptake of digital tax tools and growing fiscal digitization across SSA. Inferential findings showed that digitalization significantly predicted revenue mobilization ( $\beta = 0.422, p < 0.01$ ), while tax compliance burden negatively influenced revenue outcomes ( $\beta = -0.271, p < 0.05$ ). Religion had a negative moderating effect on digitalization ( $\beta = -0.113, p < 0.05$ ), while culture positively influenced the tax system-revenue relationship ( $\beta = 0.147, p < 0.05$ ). The study concluded that digital tax systems enhance revenue mobilization when supported by conducive socio-cultural environments and efficient tax structures. It recommends that policymakers simplify compliance procedures and integrate cultural insights into fiscal reforms.

Chepkoech, Gichana, and Agong (2022) examined the effect of e-payment systems on sustainable revenue collection in Nairobi City County Government. A cross-sectional research design was used with a census of 241 county and KRA staff. Data were collected using semi-structured questionnaires. Descriptive findings showed widespread use of mobile payment systems such as Mpesa and USSD codes by the County Government. Inferential analysis showed that e-services had the strongest influence on revenue collection ( $\beta = 0.574, p < 0.01$ ), followed by e-banking ( $\beta = 0.489, p < 0.05$ ) and mobile payment systems ( $\beta = 0.372, p < 0.05$ ). The study concluded that digital payment systems significantly improve sustainable revenue collection in urban county governments. It recommends increasing public awareness of e-payment systems and strengthening mobile and web-based infrastructure to boost compliance.

Apollo (2023) assessed the effect of digitalization on VAT compliance among SMEs in Embakasi Central Sub-County, Nairobi. An explanatory research design was adopted, targeting 190 VAT-registered SMEs with a sample size of 129 respondents selected using stratified random sampling. Primary data were collected using structured questionnaires. Descriptive findings indicated a growing preference for automated systems and improved compliance among SMEs using digital tools. Inferential statistics showed that all digitalization components significantly influenced VAT compliance, with VAT automated assessment systems having the highest impact ( $\beta = 0.296, p < 0.001$ ), followed by digital payment systems ( $\beta = 0.283, p < 0.01$ ). The study concluded that digital technologies substantially improve VAT compliance among SMEs. It recommends further investment in taxpayer education and expansion of automated platforms for improved VAT compliance outcomes.

### 2.3 Conceptual Framework Independent Variables

### Dependent Variable



### 3.0 RESEARCH METHODOLOGY

The study adopted descriptive research design. The target population was 3 chief officers in County treasury, 7 officers from the Kisumu County Revenue Board and 70 revenue collection officers across the 7 sub-counties (10 per sub-county across 7 sub-counties). Therefore, the total target population was 80 officers. Considering the target population was small the researcher used census technique to incorporate all the 80 targeted respondents. The study collected primary data. Questionnaire was used to collect the primary data desirable for the study. Content validity was verified by the expert and supervisor opinions. The study used both descriptive and inferential statistics. Descriptive statistics involved the use of percentages, frequencies, measures of central tendencies (mean) and measures of dispersion (standard deviation). Inferential statistic involves the use of simple bivariate correlation analysis to establish the nature of the relationship between a single independent variable and the dependent variable. After analysis data was presented in the form of a tables.

### 4.0 RESEARCH FINDINGS AND DISCUSSION

#### 4.1 Response Rate

The study issued 80 questionnaires to respondents out of which 69 responses were represented this represented 86% response rate.



#### 4.2 Gender of the Respondents

The respondents were requested to indicate the gender distribution of the respondents.

**Table 1: Gender of the Respondents**

Gender	Frequency	Percentage
Female	23	34
Male	46	66
<b>Total</b>	<b>69</b>	<b>100</b>

**Source: Research Data (2023)**

From the findings 34% of the respondents were female while 66% of the respondents were male. This implies that majority of the respondents were male who were involved in revenue collections in Kisumu County.

#### 4.3 Digitalized Tax System on Revenue Collection Efficiency in Kisumu County

The researcher sought to assess the effect of digitalized tax system on revenue collection efficiency in Kisumu County. The findings were as indicated in table 2

**Table 2: Digitalized Tax System on Revenue Collection Efficiency in Kisumu County**

Statement	SD	D	U	A	SA	Mean	STD
The electronic tax filing system is easy for taxpayers to navigate.	5	7	7	28	53	4.135	0.493
Electronic tax filing has reduced the amount of paperwork	6	9	8	32	45	3.858	1.231
Taxpayers submit tax returns on time because of the electronic filing system.	4	7	10	33	46	3.722	1.538
Paying taxes through digital platforms feels secure for taxpayers.	5	6	9	36	44	3.889	1.683
Taxpayers spend less time making tax payments because of electronic systems.	3	6	10	38	43	3.691	1.494
Digital payment options have made it more convenient for me to pay taxes.	4	5	8	35	48	3.805	1.328
Electronic invoicing helps ensure that my tax records are accurate.	5	6	9	34	46	3.574	1.582
Invoices are received promptly after completing tax-related transactions.	3	6	7	38	46	3.751	1.497
The use of electronic invoices has reduced manual errors in tax documentation.	4	7	8	34	47	3.412	1.831

According to the findings, 53% of respondents strongly agreed, 28% agreed, 7% were undecided, 7% disagreed and 5% strongly disagreed that the electronic tax filing system is easy to navigate, with a mean of 4.135 and a standard deviation of 0.493. This suggests that the majority of taxpayers in Kisumu County find the electronic tax filing system user-friendly, facilitating efficient interaction with the tax system. The findings are in agreement with those of Lee, Kozar, and Larsen (2017), who found that perceived ease of use in digital tax systems significantly enhances taxpayer adoption in public sector e-services, as user-friendly interfaces reduce barriers to compliance and improve interaction with tax platforms.

Moreover, the findings indicate that 45% of respondents strongly agreed, 32% agreed, 8% were undecided, 9% disagreed, and 6% strongly disagreed that electronic tax filing has reduced the amount of paperwork they deal with, with a mean of 3.858 and a standard deviation of 1.231. This implies that electronic tax filing substantially decreases paperwork, streamlining tax processes for users. The findings are in agreement with those of Alryalat, Rana, and Dwivedi (2015), who found that e-filing systems in government services reduce administrative burdens by automating documentation, thereby improving efficiency and user satisfaction in tax compliance.

According to the findings, 46% of respondents strongly agreed, 33% agreed, 10% were undecided, 7% disagreed, and 4% strongly disagreed that they are able to submit tax returns on time because of the electronic filing system, with a mean of 3.722 and a standard deviation of 1.538. This suggests that electronic filing systems enable timely submission of tax returns, enhancing compliance efficiency. The findings are in agreement with those of King and He (2015), who found that digital tax filing platforms improve timeliness in tax submissions by simplifying processes and providing automated reminders, leading to higher compliance rates.



In addition, 44% of respondents strongly agreed, 36% agreed, 9% were undecided, 6% disagreed, and 5% strongly disagreed that paying taxes through digital platforms feels secure, with a mean of 3.889 and a standard deviation of 1.683. This indicates that most taxpayers perceive digital payment platforms as secure, fostering trust in the system. The findings are in agreement with those of Carter, Schaupp, and McBride (2017), who found that perceived security in e-government tax systems significantly influences taxpayer trust and adoption, as secure platforms reduce fears of data breaches and encourage usage.

Moreover, 43% of respondents strongly agreed, 38% agreed, 10% were undecided, 6% disagreed, and 3% strongly disagreed that they spend less time making tax payments because of electronic systems, with a mean of 3.691 and a standard deviation of 1.494. This implies that electronic systems significantly reduce the time required for tax payments, enhancing efficiency. The findings are in agreement with those of Fu, Farn, and Chao (2016), who found that digital tax payment systems reduce transaction times by automating processes, allowing taxpayers to complete payments quickly and efficiently.

The findings revealed that 48% of respondents strongly agreed, 35% agreed, 8% were undecided, 5% disagreed, and 4% strongly disagreed that digital payment options have made it more convenient to pay taxes, with a mean of 3.805 and a standard deviation of 1.328. This suggests that digital payment options enhance convenience, encouraging taxpayer compliance. According to the findings, 46% of respondents strongly agreed, 34% agreed, 9% were undecided, 6% disagreed, and 5% strongly disagreed that electronic invoicing helps ensure that tax records are accurate, with a mean of 3.574 and a standard deviation of 1.582. This indicates that electronic invoicing contributes to accurate tax record-keeping, reducing errors. The findings are in agreement with those of Chan, Cheung, and Lee (2016), who found that electronic invoicing systems in tax administration enhance record accuracy by automating data entry and reducing manual errors, leading to reliable tax documentation.

The findings show that 46% of respondents strongly agreed, 38% agreed, 7% were undecided, 6% disagreed, and 3% strongly disagreed that they receive invoices promptly after completing tax-related transactions, with a mean of 3.751 and a standard deviation of 1.497. This suggests that electronic invoicing ensures prompt delivery of invoices, improving taxpayer experience.

Finally, from the findings, 47% of respondents strongly agreed, 34% agreed, 8% were undecided, 7% disagreed, and 4% strongly disagreed that the use of electronic invoices has reduced manual errors in tax documentation, with a mean of 3.412 and a standard deviation of 1.831. This implies that electronic invoicing significantly minimizes errors in tax documentation, enhancing efficiency. The findings are in agreement with those of Tan, Ooi, and Lin (2015), who found that electronic invoicing systems reduce manual errors in tax administration by automating data capture, ensuring accurate and reliable tax records.

#### 4.4 Revenue Collection Efficiency in Kisumu County

The researcher also sought to assess the efficiency of revenue collection in Kisumu County, the findings were as indicated in Table 3.

**Table 3: Revenue Collection Efficiency in Kisumu County**

Statement	SD	D	U	A	SA	Mean	STD
I believe tax leakages have decreased due to improved tracking in the digital system.	4	6	8	36	46	3.851	1.475
Automated processes have enhanced accountability in tax collection.	3	5	9	38	45	3.975	1.192
There is greater transparency in how tax revenue is recorded and managed.	4	7	10	36	43	3.764	1.674
The tax collection process is now prompter due to automation.	3	6	9	38	44	3.693	1.715
Digital notifications and confirmations reduce delays in tax payments.	3	5	7	36	49	4.135	0.493
Digital tools have made it easier to identify new sources of revenue.	4	5	10	34	47	3.614	1.497
Online registration platforms have improved accessibility to the tax system.	3	6	8	37	46	3.589	1.722
Automation has reduced cases of delayed or missed tax payments	3	5	10	36	46	3.587	1.653
The transparency of digital platforms encourages voluntary compliance	3	5	7	36	49	4.135	0.493

The findings indicate that 46% of respondents strongly agreed, 36% agreed, 8% were undecided, 6% disagreed, and 4% strongly disagreed that tax leakages have decreased due to improved tracking in the digital system, with a mean of 3.851 and a standard deviation of 1.475. This suggests that digital systems enhance tracking capabilities, reducing revenue leakages. The findings are in agreement with those of Mascagni, Mengistu, and Woldeyes (2021), who found that electronic sales register machines in Ethiopia's tax system improved



transaction tracking, significantly reducing tax evasion and increasing revenue collection efficiency. In addition, 45% of respondents strongly agreed, 38% agreed, 9% were undecided, 5% disagreed, and 3% strongly disagreed that automated processes have enhanced accountability in tax collection, with a mean of 3.975 and a standard deviation of 1.192. This implies that automation fosters greater accountability in tax collection processes. The findings are in agreement with those of Okunogbe and Pouliquen (2021), who found that digital tax systems in Tajikistan enhanced accountability by providing traceable records, reducing opportunities for corruption and improving revenue outcomes.

The study also revealed that 43% of respondents strongly agreed, 36% agreed, 10% were undecided, 7% disagreed, and 4% strongly disagreed that there is greater transparency in how tax revenue is recorded and managed, with a mean of 3.764 and a standard deviation of 1.674. This indicates that digital systems improve transparency in revenue management. According to the findings, 44% of respondents strongly agreed, 38% agreed, 9% were undecided, 6% disagreed, and 3% strongly disagreed that the tax collection process is now prompter due to automation, with a mean of 3.693 and a standard deviation of 1.715. This suggests that automation accelerates the tax collection process, improving efficiency. The findings reveal that 49% of respondents strongly agreed, 36% agreed, 7% were undecided, 5% disagreed, and 3% strongly disagreed that digital notifications and confirmations reduce delays in tax payments, with a mean of 4.135 and a standard deviation of 0.493. This implies that digital notifications significantly minimize payment delays, supporting timely revenue collection. The findings are in agreement with those of Carter, Schaupp, and McBride (2017), who found that digital notifications in e-government tax systems reduce payment delays by providing timely reminders, improving compliance and collection efficiency.

According to the findings, 47% of respondents strongly agreed, 34% agreed, 10% were undecided, 5% disagreed, and 4% strongly disagreed that digital tools have made it easier to identify new sources of revenue, with a mean of 3.614 and a standard deviation of 1.497. This indicates that digital tools expand the tax base, enhancing revenue mobilization. The findings are in agreement with those of Atkinson, Cebreiro-Gómez, and Munoz (2021), who found that digital tax systems in African countries expanded revenue sources by integrating informal sector transactions, increasing overall revenue yields. The findings show that 46% of respondents strongly agreed, 37% agreed, 8% were undecided, 6% disagreed, and 3% strongly disagreed that online registration platforms have improved accessibility to the tax system, with a mean of 3.589 and a standard deviation of 1.722.

According to the findings, 46% of respondents strongly agreed, 36% agreed, 10% were undecided, 5% disagreed, and 3% strongly disagreed that automation has reduced cases of delayed or missed tax payments, with a mean of 3.587 and a standard deviation of 1.653. This implies that automation minimizes missed or delayed payments, improving collection efficiency. The findings are in agreement with those of Fu, Farn, and Chao (2016), who found that automated tax systems in Asian countries reduced payment delays by streamlining processes and providing instant confirmations, enhancing revenue collection.

In addition, the findings indicate that 49% of respondents strongly agreed, 36% agreed, 7% were undecided, 5% disagreed, and 3% strongly disagreed that the transparency of digital platforms encourages voluntary compliance, with a mean of 4.135 and a standard deviation of 0.493. This suggests that transparent digital platforms foster voluntary tax compliance. The findings are in agreement with those of Chan, Cheung, and Lee (2016), who found that transparent digital tax systems in public administration increase voluntary compliance by enhancing trust and accountability in revenue management.

#### 4.5 Correlation Analysis

The study further examined the correlation between digitalized tax system on revenue collection efficiency in Kisumu County. The findings are presented in Table 4

**Table 4: Digitalized Tax System on Revenue Collection Efficiency**

Digitalized Tax System	Pearson Correlation	Revenue Collection Efficiency
		.541*
	Sig. (2-tailed)	.023
	N	69

\*. Correlation is significant at the 0.05 level (2-tailed).

The study established a strong positive correlation between the adoption of digitalized tax systems and revenue collection efficiency in Kisumu County ( $r = 0.541$ ;  $p < 0.05$ ). This indicates that greater use of digital tax



systems, such as e-filing, e-payment platforms, and electronic invoicing, is significantly associated with improved revenue collection efficiency. The positive correlation suggests that digital systems enhance compliance, reduce administrative bottlenecks, and improve the accuracy of tax collection processes, thereby increasing OSR in Kisumu County. These findings are in agreement with those of Okunogbe and Pouliquen (2022), who found that the iTax system significantly improved tax collection efficiency by automating processes, reducing manual errors, and enabling real-time monitoring, which led to higher compliance rates and revenue yields.

#### 4.6 Regression Analysis

The regression analysis was conducted to determine the predictive relationship between digitalized tax systems and revenue collection efficiency in Kisumu County. The results are presented in Table 7.

**Table 7: Regression Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
	1 (Constant)	.038	.145		
Digitalized Tax System	.323	.106	.360	3.052	.003

The interpretation of the findings follows the regression model:

$$Y = 0.038 + 0.323X + e \dots\dots\dots 4.1$$

According to the intercept ( $\beta_0$ ), when the digitalized tax system variable is held constant, the baseline revenue collection efficiency in Kisumu County is 0.038, indicating a minimal level of efficiency without digital intervention. Furthermore, holding all other factors constant, a unit increase in the adoption of digitalized tax systems leads to a 0.323 increase in revenue collection efficiency ( $p = 0.003$ ), demonstrating a statistically significant positive effect. This suggests that digital tax systems, such as e-payment and e-invoicing platforms, are strong predictors of improved revenue collection efficiency, as they streamline processes, enhance transparency, and reduce compliance costs. These findings are in agreement with those of Mascagni, Mengistu, and Woldeyes (2021), who found that electronic sales register machines in Ethiopia significantly increased VAT compliance and revenue collection by automating transaction records, reducing evasion, and improving administrative efficiency.

Likewise, the findings align with those of Santoro, Amine, and Magongo (2021), who demonstrated that e-filing and mobile payment systems in Eswatini enhanced revenue collection efficiency by minimizing leakages and improving accountability in tax administration. The implication of these findings is that investing in digital tax systems in Kisumu County can significantly boost revenue collection efficiency, enabling the county to mobilize more OSR for development projects like infrastructure and healthcare. This underscores the need for policies that promote digital adoption, address infrastructure gaps, and enhance taxpayer education to maximize the benefits of digitalization.

## 5.0 CONCLUSIONS AND RECOMMENDATIONS

### 5.1 Conclusions of the Study

The study concluded that digitalized tax systems significantly enhance revenue collection efficiency in Kisumu County by improving ease of navigation, reducing paperwork, and ensuring timely tax submissions, as evidenced by high agreement levels (mean scores ranging from 3.412 to 4.135) among taxpayers for statements related to electronic filing, payment, and invoicing systems. The strong positive correlation ( $r = 0.541$ ;  $p < 0.05$ ) and significant regression coefficient ( $\beta = 0.323$ ,  $p = 0.003$ ) further confirm that digital tax systems are a key driver of revenue efficiency, reducing leakages, enhancing accountability, and promoting voluntary compliance.

### 5.2 Recommendations

The study recommended that Kisumu County government invest in expanding digital tax infrastructure, such as improving network connectivity and upgrading e-payment platforms, to enhance accessibility and adoption among taxpayers. Additionally, the study recommended intensifying taxpayer education and training programs to improve digital literacy and awareness, thereby maximizing compliance and revenue collection efficiency.



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