

INFLUENCE OF TECHNOLOGY ADOPTION ON PERFORMANCE OF KENYA REVENUE AUTHORITY IN NAIROBI CITY COUNTY, KENYA

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Abstract: The Kenya Revenue Authority encounters difficulties in meeting revenue target, with reports showing a decline in performance due to tax collection inefficiencies, low tax compliance and a larger proportion of Kenya's economy is informal, remaining untaxed. Therefore, this study sought to investigate the influence of technology adoption on performance of Kenya Revenue Authority in Nairobi City County, Kenya. The study applied descriptive research design. The target population was Kenya Revenue Authority headquarters in Nairobi City County, Kenya. The respondents were 2813 employees from 15 divisions of the company identified through stratified sampling approach and a sample size of 350 respondents was obtained. A semi-structured questionnaire was used for data collection. Descriptive statistics and inferential statistics were used in the analysis of quantitative data. The found that technology adoption ($\beta=0.585$; $p=0.001$) had a positive significant influence of performance of Kenya Revenue Authority. The study concluded that technology is a central support of current tax administration that has a direct correlation with improved revenue collection and managerial efficiency. The study recommends that the company should establish and upgrade its current information technology systems that delay the full achievement of technological advantages in revenue monitoring.

Keywords: Technology adoption, Organizational Performance, Revenue Collection.

1. INTRODUCTION

The performance of organizations is integral to the health of the national economy because it creates jobs, drives innovation and has a far-reaching social impact and good organizational performance promotes economic growth, and a thriving economy can support even better organizational performance (Kiessling, Richey, Meng & Dabic, 2020). Dethier (2023) observe that effective organizations enhance productivity, leading to increased output and competitiveness in the market. This, in turn, result in higher tax revenues for the government, which can be reinvested into public services and infrastructure, further benefiting the economy as a whole. Therefore, the significance of an organization's effectiveness extends beyond its own operations, impacting the broader economic landscape and contributing to the prosperity of the nation.

The revenue collection agencies are essential to the financial framework of a country by making sure that there is effective tax collection and other government revenue which is achieved through implementation of tax laws, collection of payments from an individual citizen and businesses and enforcement of tax compliance regulations (Haldenwang, Schiller & Garcia, 2020). Fjeldstad and Moore (2023) observe that the revenue collection agencies monitor and manage the flow of cash within the Country's economy which influences fiscal policy and overall economic growth and also educates taxpayers about their rights and responsibilities to promote transparency and trust in the tax system. Therefore, these agencies play a crucial role on a nation's financial health maintenance and sustainability of government functions through sufficient funding.

Anamanjia and Maina (2022) observe that a country attempts to improve on its fiscal health and regenerate its economy, the efficiency of its revenue collection agencies becomes important. However, the way strategies are implemented can have a dramatic effect on the amount of revenue collected. McCarten (2024) observe that proper strategic positioning with the national economic goals results to enhanced allocation of resource, personnel training and innovative technology adoption boosting the financial health of the nation and foster public trust with the tax system which increases the willingness of citizens to adhere to their tax responsibilities. Therefore, the strategic implementation has significant influence on revenue collection agencies as it influences the capability of meeting fiscal targets and supports the development of a nation.

Revenue collection agencies worldwide show significant variation in efficiency, with some countries excelling in practices that boost economic performance. Norway's Skatteetaten, for instance, offers high public services and a strong social welfare system, supported by substantial digital transformation investments. This allows taxpayers to file returns via an interactive online portal and receive continuous feedback (Blom-Hansen, Monkerud & Sørensen, 2021). However, Geys and Sorensen (2023) highlight that Norway's digital platforms for financial transactions face challenges in monitoring and tax collection, resulting in unreported or hard-to-track transactions. Therefore, these issues call for strategic improvements and innovative practices to enhance the operational efficiency of Norway's revenue collection agencies.

Manzano and Scrofina (2023) noted that Venezuela is facing economic uncertainty, which has hindered revenue collection due to rising inflation, a shrinking economy, and corruption. This illustrates the significant impact of political and economic conditions on the country's revenue agencies. Rodríguez, Morales, and Monaldi (2024) state that the National Integrated Service for the Administration of Customs Duties and Taxes (SENIAT) is Venezuela's main tax collection agency, responsible for managing taxes for the National Integrated Service of Customs and tax administration which is vital for funding government expenses, including social services, infrastructure, and public services. Moreover, SENIAT has been modernizing its operations with technology, but ongoing economic issues limit its capabilities. As a result, it has started implementing digital solutions like online tax filing to improve efficiency.

The Ghana Revenue Authority (GRA) has laid determining goals for improving its tax revenue collection and economic reinforcement using public-private partnerships and strategic improvements but a large number of its citizens still lack enough knowledge on benefits of paying taxes (Adu, Buabeng, Asamoah & Damoah, 2020). Frimpong (2021) observe that GRA performance on tax collection has been tremendous irrespective of global pandemic through rolling out digital strategic approaches meant to simplify the process of paying taxes, educating taxpayers about their tax obligations, improving on transparency and nurturing public trust. Therefore, with proper strategies and involvement, GRA has improved its performance.

Kawale, Grant and Pagliari (2020) observe that the Malawi Revenue Authority (MRA) has experienced a series of changes designed to improve its capacity in the implementation of modern technologies and improvement of service delivery to the citizens though it has been faced with challenges. According to Musongole (2023), the MRA struggles with matters like tax compliance, a bigger number of businesses in the informal sector operate outside tax net which has reduced the overall revenue, inefficient administrators, corruption and sometimes lack of public trust. However, the government has created comprehensive tax policies that accommodate the micro and macro enterprises. In addition, it has built a strong relationship with tax authority and the businesses.

The major tax collection revenue agency in Kenya is Kenya Revenue Authority (KRA) that is accountable for ensuring adherence to tax regulations, tax collection and finally, promoting the national development, though KRA has managed a steady revenue collection increase over the years there has been reported issues on some individuals evading tax, a large informal economy and occasionally lack of public trust (Anamanjia & Maina, 2022). Ochuodho and Ngaba (2020) observe that KRA has adopted Integrated Financial Management Information System (IFMIS) to improve monitoring of revenue collection and also the company has introduced digital tax compliance system which has increased the number of registered taxpayers and transparency resulting to increased revenue collection despite global economic instability.

The implementation of strategic practices comprises on of a number of scheduled activities and procedures that is in line with the aims and targets of the organization with the aim of improving the efficiency, adaptability to changes in the market and achievement of competitive advantage (Ramadan & Safavi, 2022). Hovmand and Gillespie (2024) observe that importance of implementing strategic practice is because of their capability in fostering innovation, simplifying operations and eventually boost organizational growth and profitability. Therefore, the knowledge and making strategic implementation a priority is crucial for any organization that wants to survive in a vibrant business environment.

Lakhwani, Dastane, Satar and Johari (2020) observe that technology adoption comprises of the incorporation of new technology into the existing organizational systems and workflows such as cloud computing, communication platforms to enhance efficiency, improve communication and eventually drive growth. Irwin, Hoffman and Geiger (2021) indicate adoption of technology exerts a considerable impact on the performance of the organization by facilitating smooth communication irrespective of location, harnesses the strength of data analytics that enable the organization to make improved better decision making and simplifies tasks enabling employees to focus on higher valued work thus driving business results.

The Kenya Revenue Authority (KRA) is the main governmental body tasked with the valuation, gathering, and administration of state revenue in Kenya. Established in 1995, KRA acts an essential part in the country's economic growth by guaranteeing that the government has the necessary funds for the implementation of strategies and programs. The primary responsibility of KRA is to improve revenue gathering for the government. Its essential functions include: Tax Collection, that includes the gathering of different taxes like income tax, Value-Added Tax (VAT), excise duty, and customs duties. The agency guarantees adherence to tax laws and guidelines to optimize collection of revenues.

2. STATEMENT OF THE PROBLEM

KRA has experienced difficulties that have adversely affected its performance as current reports indicates that there has been a decrease in achieving their revenue collection targets which has been a concern from its stakeholders. KRA, in the financial year 2022/2023 fell short of its approximate 200 billion Kenya Shillings target by collecting a about 1.8 trillion Kenya Shilling which is an indicator of challenges of efficiency with tax collection process (KRA report, 2024). Moreover, the rate of tax compliance is very low as evidenced by 20% of the only qualified tax base eligibility to the national revenue. During the 2023/2024 fiscal year, KRA had targeted to achieve 2.03 trillion Kenya Shilling. However, it collected 1.88 trillion leaving a gap of 7.3% below the target. In addition, the informal sector within Kenya accounts for 80% of the country's economy which is a very big number outside the tax network (KRA report, 2024).

3. LITERATURE REVIEW

Theoretical Literature Review

Diffusion of Innovation Theory

Rogers (1962) introduced the diffusion of innovation theory, illustrating that the dissemination of innovations can be analyzed through five essential components: innovation (the distinctiveness of an idea), channels of communication (the methods used to transmit messages from one point to another), social system (the number of individuals who have embraced the innovation), time (the duration required for adoption and distribution), and adopter categorization classified by their adoption rates. Furthermore, Rogers (1962) emphasizes how new ideas and technologies integrate into cultures and societies by providing a framework for understanding the processes of innovation adoption.

Sartipi (2020) builds upon the Diffusion of Innovation theory by examining how unique scientific ideas supplant previous ones, positing that change occurs only when a significant number of individuals within a community begin to reject the older systems in favor of newly introduced alternatives. Nevertheless, Mustonen-Ollila and Lyytinen (2023) critiques the theory of planned behavior, asserting that a more adaptable and comprehensive understanding of the diffusion of innovation is necessary. Moreover, suggests that rather than following a linear trajectory, the adaptation and spread of innovations may be more complex and influenced by various factors, including socio-economic conditions and organizational structures.

The theory is important to the study because it gives an explanation of the way new concepts and technologies spreads within the organization and to its stakeholders which is crucial to KRA as it looks for ways to enhance its tax collection and compliance. Therefore, KRA can understand the innovation adoption stages, awareness, interests, evaluation, trial and adoption and have effective strategic implementation of new systems and processes that simplify operations and increases efficiency. In addition, the theory emphasizes the importance of communication pathways and social structures which is important for KRA to use in engaging taxpayers and effective promotion of new strategies that can enable KRA to evaluate the impact of innovative methods like digital tax filing and automated systems on operational efficiency and taxpayer contentment.

Empirical Literature Review

Alhassan, Adam, Musah, and Wahaga (2021) assessed the influence of ICT implementation on the efficacy of the public sector: does the mediating function of HR Quality possess importance? They employed archival information from 140 nations. The evaluation of the data, executed through partial least squares-structural equation modeling, reveals that while

ICT implementation impacts HR quality, it does not have a direct effect on public sector efficacy. Nonetheless, HR quality was recognized as exerting a beneficial influence on public sector efficacy. Furthermore, HR quality was demonstrated to significantly moderate the connection between ICT implementation and public sector efficacy.

Ferrer-Dávalos (2023) studied how technology adoption affects organizational performance of Paraguayan microenterprises. The case study involved thirty-two microenterprise owners and managers who took part in four stages of action research: a preliminary phase to determine requirements, a planning phase for initial performance evaluation, an implementation phase, and a post-implementation evaluation phase for subsequent performance measurement. Results from the Student's T-test showed a significant positive change, with most participants agreeing that the implementation improved administrative tasks, enhancing efficiency, accuracy, and speed. This indicates that tailored information and communication technologies can positively impact microenterprise administrative performance.

Wandabwa (2025) assessed the impact of e-Government Adoption in improving performance within public service organizations within developing nations. The research utilized a survey research design that incorporated two methodologies: qualitative and quantitative. The study's population consisted of Kenyan civil servants who are involved in the implementation and utilization of government services through e-government initiatives. The results concerning the influence of e-government adoption on the participants showed that there was no notable difference in performance linked to e-government adoption, as perceived by the three levels of management.

Owusu (2024) evaluated the technology adoption by the government of Ghana in enhancing service delivery. This method primarily involves gathering information from existing resources, which is favored due to its cost-effectiveness in comparison to field research. The effect of technology adoption on the efficacy of government service delivery is both significant and intricate. Automated systems had solved administrative obstacles, resulting to faster response to citizen request.

4. RESEARCH METHODOLOGY

The study applied descriptive research design. The target population was Kenya Revenue Authority headquarters in Nairobi City County, Kenya. The respondents were 2813 employees from 15 divisions of the company identified through stratified sampling approach and a sample size of 350 respondents was obtained. A semi-structured questionnaire was used for data collection. Descriptive statistics and inferential statistics were used in the analysis of quantitative data. The finding was presented using tables.

5. FINDINGS

The descriptive statistics results using percentages, mean and standard deviation to indicate that level of respondents' agreement on statements regarding technology adoption of Kenya Revenue Authority are presented in Table 1.

Table 1: Technology Adoption

Statements	SD (%)	D (%)	N (%)	A (%)	SA (%)	M	St.dev
KRA's revenue collection has improved since the introduction of automation	0.0	0.0	0.7	39.2	60.1	4.57	0.429
The automation has enhanced transparency in the tax collection process	11.8	7.1	0	28.2	52.9	3.97	1.028
The performance metrics established by KRA are aligned with the integrated systems	14.1	4.7	7.1	32.9	41.2	3.66	1.340
The integrated systems empower employees to meet their targets more effectively	3.5	12.9	0.0	31.8	51.8	4.55	0.447
The customer engagement allows KRA to gauge how much customers feel their opinions are considered in decision-making processes	0.0	1.7	9.4	41.5	47.5	4.35	0.709
KRA has a website that allows for more accessibility to enhance customer experience and interaction with KRA	0.0	1.1	5.3	39.4	54.3	4.47	0.651
Aggregate score	4.9	4.6	3.8	35.5	51.3	4.26	0.767

Source: Research Data (2026)

The results demonstrate that the respondents perceived highly on effectiveness of KRA's technology adoption owing to the aggregate mean of 4.26 and higher agreement rate of 86.8% established. The aggregate standard deviation of 0.767 is very low which confirms consistent positive perception amongst most of the respondents. However, 10.1% and 3.8% of the respondents indicated disagree and neutral view respectively which suggests that there are few who perceived challenges or perceive gaps within the present current technological implementation by the company. Alhassan, Adam, Musah, and Wahaga (2021) who assessed the influence of ICT implementation on the efficacy of the public sector observe that while ICT implementation impacts HR quality, it does not have a direct effect on public sector efficacy.

Inferential Statistics Results

The inferential statistics involved correlation analysis and regression analysis.

Correlation Analysis Results

Table 2: Correlation Analysis Results

		Technology adoption	Performance
Performance	Pearson Correlation	.794**	1
	Sig (2-tailed)	.003	
	N	315	315

Source: Research Data (2026)

Technology adoption of KRA was found to positively correlated with performance ($r=0.794$; $p=0.003$). The finding highlighted that digital transformation was a principal driver of the company's operational achievement and a higher level of technology adoption presented a direct link to improved KRA performance. The finding is consistent with Wandabwa (2025) research observation that influence of e-government adoption on the participants showed that there was no notable difference in performance linked to e-government adoption, as perceived by the three levels of management.

Regression Analysis Results

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error Estimate
1	0.891	0.794	0.742	0.003

Source: Research Data (2026)

The study revealed the value of adjusted R-squared was 0.742 which signified a variation of 74.2% of performance of Kenya Revenue Authority due to the influence of technology adoption. Therefore, other strategies implemented by KRA not examined could be represented by 25.8%.

Table 4: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.591	0.215		2.749	0.003
	Technology Adoption	0.802	0.254	0.585	3.157	0.001

Source: Research Data (2026)

The results indicate that Kenya Revenue Authority performance would be at 0.591 when technology adoption is kept constant. The resultant regression model is expressed as;

$$\text{Performance} = 0.591 + 0.585(\text{technology adoption})$$

The study established that technology adoption resulted to a beta value of 0.585 (58.5%) which was symbol that for each unit increase in technology adoption, the KRA performance would reach a considerable 58.5% improvement. The significance level was lower at 0.001 which confirmed that these results were statistically strong, emphasizing that

technology was strong influencing factor in improving KRA performance. The finding is consistent with Owusu (2024) which indicated that the effect of technology adoption on the efficacy of government service delivery is both significant and intricate.

6. CONCLUSIONS

The company's digital transformation and the reconstruction of technical systems are crucial supports for improving its operational efficiency and service distribution, hence improved performance. An improved level of technology adoption is positively linked with improved KRA performance, implying that embracing modern technology adoption led to positive influence of the company's performance results. Technology is the main catalyst for attaining long-term revenue targets. Innovation raises public trust through ensuring transparency and automated procedures. A digital-first culture is vital for the company growth sustainability.

7. RECOMMENDATIONS

The company can implement wider range of digital training programs for its employees and streamline the incorporation of computerized tax systems. The company can establish a stronger IT infrastructure and incentivize the utilization of digital platforms to boost efficiency for significant performance improvements. The company should create stronger internal policies that support quick technology onboarding and data safety procedures. The company should prioritize budgeting for the higher impact digital systems that have demonstrated a 58.5% performance relationship.

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