***GNOSI:* An Interdisciplinary Journal of Human Theory and Praxis**
Volume 8, Issue 1, January-June, 2025
ISSN (Online): 2714-2485

E-Filing System as a Determinant of VAT Revenue Collection in Tanzania: A Case of Large Taxpayers

Heriel E. NGUVAVA
Institute of Tax Administration (ITA),
P. O. Box 9321, Dar es Salaam, Tanzania
Email: hnguvava@yahoo.com

Levina ANATORY
University of Dar es salaam, Tanzania
Email: levinaanatory95@gmail.com

(**Received**: November-2024; **Accepted**: June -2025; Available **Online**: June-2025)

ABSTRACT

This study examined the Electronic Tax Filing (E-filing) system as a determining factor of Value Added Tax (VAT) revenue collection in Tanzania, with a focus on large taxpayers. The specific objectives were to examine the relationship between e-filing and VAT revenue collection and to assess the association between e-filing and VAT revenue collection. Guided by the Technological Acceptance Model (TAM), which emphasizes the accessibility, rate of usage, and perceived usefulness of technology, this study employed a quantitative descriptive design utilizing both primary and secondary data. Time series data covering the period 2015 to 2024 were sourced from the Tanzania Revenue Authority (TRA), while primary data were collected using structured questionnaires distributed purposively to selected TRA officials and large taxpayers. Statistical methods for data analysis included descriptive statistics, Pearson correlation analysis, and multiple linear regression controlling for GDP growth and inflation. Findings revealed a strong positive correlation ($r = 0.792$) between system accessibility and VAT revenue collection. After controlling for macroeconomic factors, results showed that system accessibility retains a statistically significant and positive effect on VAT revenue collection ($\beta = 22.45$, $p = 0.028$). These results imply that e-filing significantly contributes to VAT collection by enhancing efficiency, reducing errors, and promoting timely compliance. This study recommends that the Government of Tanzania continuously invest in e-filing infrastructure, enforcement strategies, and digital literacy programs to maximize the benefits of digital tax administration.

Keywords: E-Filing System; VAT Revenue; Large Taxpayers; Tax Compliance; Digitalization.

INTRODUCTION

The digital transformation of tax systems has become a global phenomenon, driven by the need to streamline revenue collection, improve compliance, and reduce fraud (OECD, 2019). Central to these reforms, especially in developed economies, are Electronic Tax Filing (E-filing) systems for Value Added Tax (VAT). E-filing systems for Value Added Tax (VAT) collection have been central to these reforms, especially in developed economies. The European Union (EU), for example, has made significant strides in modernizing VAT collection mechanisms. The "VAT in the Digital Age" (ViDA) proposal launched in 2022 aimed at addressing inefficiencies in VAT collection across Europe by using digital platforms to facilitate cross-border transactions and reduce the VAT gap, which reached EUR 93 billion in 2020 (European Commission, 2022). The initiative also introduced systems such as the One-Stop Shop (OSS) and Import One-Stop Shop (IOSS) to simplify VAT compliance for businesses engaging in international trade. These reforms reflect a global trend where governments are leveraging technology to improve VAT collection while addressing fraud and operational inefficiencies (Cnossen, 2023).

In Latin America, countries like Peru have adopted similar reforms with notable results. By 2013, Peru mandated large firms to adopt e-invoicing systems for VAT, with the government later extending the system to small and medium-sized enterprises (SMEs). Research conducted between 2010 and 2017 revealed that e-invoicing significantly improved VAT compliance among businesses, with a 7.4% increase in taxable sales reported after its implementation. Additionally, VAT liabilities increased by 8%, indicating the positive impact of e-invoicing on overall tax compliance (Bellon et al., 2022). These findings demonstrate the effectiveness of digital reforms in promoting transparency and reducing the influence of the informal economy on VAT collections (VoxDev, 2020). Moreover, this success has prompted other nations, including those in Africa, to consider similar digital reforms as part of their strategies to improve tax revenue collection (Mascagni & Mengistu, 2019).

In Africa, the implementation of e-filing systems has been critical to improving tax administration, particularly in VAT collection. Kenya's Revenue Authority (KRA) introduced the iTax platform in 2014, which significantly improved tax compliance rates across all taxpayer categories. By 2021, KRA reported a substantial reduction in the VAT gap, especially among SMEs that previously faced challenges with manual filing and compliance (KRA Annual Report, 2021). The introduction of the integrated tax management system also helped the Kenyan government tackle VAT fraud and tax evasion more effectively. Moreover, the system provided an easier and more accessible way for taxpayers to file returns and track their payments, aligning with global best practices in digital taxation (Muthusi, 2020). South Africa, another leader in tax digitalization on the continent, implemented similar systems through the South African Revenue Service (SARS). Between 2020 and 2023, SARS reported increased tax compliance rates and a reduction in the time taken to process VAT claims, contributing to an overall increase in VAT revenues (SARS Annual Report, 2022). These African success stories highlight the importance of technology in modernizing tax systems and ensuring efficient VAT collection (VoxDev, 2020).

Rwanda is another African country that has embraced digital tax reforms. In 2020, the Rwanda Revenue Authority (RRA) introduced an e-filing system for VAT that simplified the filing process for businesses and improved VAT collection. By 2023, RRA reported that 90% of registered businesses were filing their VAT returns electronically, contributing to a 12% increase in VAT revenue compared to pre-e-filing levels (RRA Annual Report, 2023). These results reflect the growing impact of e-filing systems on VAT compliance and the potential for other African countries to adopt similar reforms in their

tax systems (Hakizimana & Santoro, 2023). Such initiatives not only reduce administrative burdens but also help governments in the region combat widespread tax evasion and improve public revenue generation (Fjeldstad & Heggstad, 2021).

In Tanzania, the Tanzania Revenue Authority (TRA) has been proactive in improving VAT collection through the introduction of the e-filing system. Introduced in 2015, the system initially targeted large taxpayers, who contribute the majority of VAT revenue in the country. The system aimed to improve VAT collection, reduce the manual errors associated with paper-based filing, and address the widespread issue of VAT evasion. A study conducted by TRA in 2021 indicated that the adoption of e-filing among large taxpayers increased VAT compliance, leading to a 13% rise in VAT revenue between 2020 and 2022. Furthermore, the system significantly reduced the time required for taxpayers to file returns, enhancing the overall efficiency of VAT collection in the country (TRA Annual Report, 2022).

Moreover, the Tanzanian government has invested in taxpayer education to ensure businesses, particularly large taxpayers, fully understand how to use the e-filing system. In 2021, TRA reported that 85% of large taxpayers were actively using the system, contributing to the smooth running of the VAT collection process. These efforts have reduced the cost of compliance for businesses and minimized the risk of non-compliance due to unfamiliarity with tax laws and regulations (TRA Annual Report, 2021).

Despite these advancements, challenges remain, which is why there have been e-filing improvements from time to time; for example, the last VAT e-filing advancement was launched in 2023. Some large taxpayers have cited the initial costs of transitioning to the e-filing system, such as upgrading IT infrastructure, as a barrier to full adoption (Luwongo & Kabelwa, 2020). Additionally, the TRA has identified issues related to data accuracy and system downtimes, which have occasionally disrupted the filing process. Nevertheless, the overall impact of the e-filing system on VAT collection in Tanzania has been positive, with the government expecting further improvements as digital infrastructure continues to evolve. By addressing these challenges and extending the system to all taxpayer categories, Tanzania aims to further increase VAT revenue and reduce tax evasion in the coming years (TRA Annual Report, 2023). This study seeks to explore the specific contribution of the e-filing system to VAT revenue collection among large taxpayers in Tanzania.

Contextually, Tanzania's economic landscape is characterized by a significant informal sector, which poses challenges for effective tax collection. Recent estimates suggest that the informal economy accounts for approximately 35% of Tanzania's GDP (World Bank, 2022). This reality complicates the task of revenue authorities in ensuring that all eligible taxpayers comply with VAT regulations. Furthermore, rapid technological advancements and increasing digital literacy among businesses present both opportunities and challenges in the adoption of e-filing systems. Despite the growth of VAT revenue collection in recent years, there is insufficient empirical evidence to substantiate the relationship between E-filing system accessibility and its associated contribution towards VAT revenue collection in Tanzania. This is the focus of the current study.

THEORETICAL REVIEW

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), originally developed by Davis in 1989, remains relevant in modern studies as it explains how users accept and use new technologies based on system accessibility, perceived usefulness, and ease of use (Davis, 1989). TAM asserts that when taxpayers find an e-filing platform efficient and simple to navigate, their attitude and behavioral intention toward using the system become more positive, which in turn influences actual usage behavior (Venkatesh & Davis, 2000). The

strength of TAM lies in its predictive ability in technological environments, particularly within e-government services (Carter & Bélanger, 2005). Nonetheless, its limitation lies in underestimating the influence of external environmental factors such as regulatory frameworks or policy enforcement, which are particularly critical in the tax context of developing countries (Njeza, 2022).

In relation to this study, the model provides a framework to understand how taxpayers' perceptions of system accessibility and usefulness influence their compliance behavior, ultimately affecting the volume and consistency of VAT remittances. These insights are key in identifying user-related factors that either facilitate or hinder the success of e-filing systems in enhancing VAT collection performance.

RESEARCH METHODOLOGY

Research Philosophy

This study adopts a positivism research philosophy, which emphasizes objectivity, empirical evidence, and the use of quantifiable data to draw conclusions. It enables the researcher to remain neutral and detached while using statistical tools to assess the contribution of the e-filing system to VAT revenue collection among large taxpayers in Tanzania. It ensures the findings are replicable, measurable, and policy-relevant, supporting evidence-based decision-making in tax administration.

Research Design

This study used a quantitative descriptive design. Specifically, it employed quantitative and statistical aspects of data organization, presentation, and analysis through figures, numbers, and tables. Deductive reasoning was used whereby the researcher collected data during the investigation of the problem, subjected the data to analysis, and thereafter drew inferences and logical conclusions. A longitudinal strategy was applied for this design.

Study Population

This study's target population included all 590 taxpayers registered for VAT in the Large Corporate Taxpayers category under the mandate of the Large Taxpayers Department (LTD) of TRA as of 2025. These taxpayers were selected based on their significant contribution to the national economy, as firms in the LTD accounted for over 43% of the total tax collections by the Tanzania Revenue Authority.

Sampling Techniques and Sample Size

This study employs a non-probabilistic sampling method where a purposive sampling technique was used. A purposive sample of 86 respondents was drawn from large taxpayers registered with the TRA. These respondents, selected from various sectors, were directly involved in VAT filing and had experience accessing and using the e-filing system.

Sample Size Calculation:

To get the sample size of 86 from the total population of 590 taxpayers, this study used Yamane's Formula (1967), which is suitable for determining sample size when the population is known:

Yamane's Formula: $n = N / (1 + N(e)^2)$

Where:

- n = sample size
- N = population size (590 taxpayers)
- e = margin of error (commonly 0.10, 0.05, or 0.03)

A 95% confidence level, which corresponds to a margin of error of 0.10 (10%):
n = 590 / (1 + 590(0.10)^2)
n ≈ 86
Using Yamane's formula (1967) with a 10% margin of error and a population of 590 VAT-registered taxpayers, the minimum required sample size was calculated to be approximately 86 respondents.

Data Collection Techniques
This study employed both primary and secondary data collection techniques to assess the contribution of the e-filing system to VAT collection among large taxpayers in Tanzania. Secondary data were obtained from credible sources including Tanzania Revenue Authority (TRA) reports, annual tax collection statistics, government publications, and policy documents from the period 2015 to 2024. These documents provided in-depth insights into VAT collection trends, the transition from manual to electronic filing, and the broader impact of digital tax systems on revenue mobilization (TRA, 2021, 2022, 2023). The use of secondary data ensured consistency, reliability, and a comprehensive macro-level perspective on tax compliance patterns over time.

In addition to secondary sources, primary data were collected through structured questionnaires distributed to selected large taxpayers. These respondents were drawn from top VAT-contributing companies such as Tanzania Breweries Limited, Bakhresa Group, and Tanzania Cigarette Company. The primary data aimed to capture taxpayers' perceptions of accessibility and the effectiveness of e-filing compared to the traditional manual filing system.

Data Processing and Analysis
This study's analysis relied on statistical tools to examine the relationship between e-filing and VAT collection. Secondary time-series data were utilized for econometric analysis. The study employed a multiple linear regression model to measure the effect of e-filing on VAT revenue collection while controlling for key macroeconomic factors, thereby providing a more robust and unbiased estimate (Wooldridge, 2020).

Multiple Linear Regression Model
To analyze the effect of the e-filing system on VAT collection, the following multiple linear regression model was used:
$$\mathbf{VATC_t = \beta_0 + \beta_1 EF_t + \beta_2 GDP_t + \beta_3 INF_t + \varepsilon_t}$$

Where:
VATCt = VAT revenue collection (in TZS Billion) at time t.
EFt = E-filing adoption rate (%) at time t.
GDPt = Gross Domestic Product growth rate (%) at time t, included to control for the overall state of the economy (Mascagni et al., 2021).
INFt = Inflation rate (%) at time t, included to control for changes in the price level that affect nominal revenue figures (Slemrod, 2019).
β0 = Intercept term.
β1, β2, β3 = Coefficients of the independent variables.
εt = Error term accounting for random variation not explained by the model.

Data for GDP growth and inflation were sourced from the World Bank Development Indicators and the Bank of Tanzania to ensure reliability

Data Validity and Reliability
To ensure data validity, 10% of questionnaires were tested to confirm their suitability for gathering the intended data for further analysis. For reliability measurement, a unit root test was conducted to ensure the variable mean, variance, and autocorrelation remain constant across time.

PRESENTATION OF FINDINGS AND DISCUSSION

Descriptive statistics

The descriptive statistics show that the average filing rate for large taxpayers in Tanzania between 2015 and 2024 is 96.24%, with a standard deviation of 5.32, indicating a relatively consistent high compliance rate. The mode of 83.85% suggests that the lowest compliance level in 2015 is the most frequently occurring lower boundary before the full adoption of the e-filing system. On the other hand, VAT revenue has a mean of TZS 1,779.06 billion and a standard deviation of TZS 579.90 billion, highlighting substantial annual fluctuations, especially in later years where compliance peaked.

Table 1. Statistical Distribution for Filing Rate and VAT collection:

Statistic	Filing Rate	VAT Revenue (TZS Billion)
Mean	96.24	1,779.06
Mode	83.85	1,062.13
Standard Deviation	5.32	579.90
Skewness	-1.47	0.85
Kurtosis	0.94	-0.16
Correlation (R)	0.69	0.69

Source: Author, (2025)

The distribution of data for both e-filing rate and VAT revenue collection between 2015 and 2024 reveals distinct patterns that offer insight into taxpayer behavior and revenue performance. The e-filing rate demonstrates a left-skewed distribution (skewness = -1.47), meaning that most years recorded high filing compliance levels, clustering toward the upper limit (approaching 100%). The standard deviation of 5.32 confirms that variability is relatively low, indicating consistent improvements in compliance among large taxpayers. The kurtosis value of 0.94 suggests a slightly peaked distribution, meaning most values are concentrated near the mean (96.24%), particularly in the latter half of the decade. This reflects the successful adoption and institutionalization of the e-filing system in Tanzania over time.

On the other hand, VAT revenue collection shows a positively skewed distribution (skewness = 0.85), suggesting that while most annual revenues were below the maximum (TZS 2,979.21 billion in 2024), a few high values in later years pull the distribution's tail to the right. This is further supported by a high standard deviation (TZS 579.90 billion), which indicates significant variation in VAT collection over the years. The kurtosis of -0.16 reflects a flatter distribution, suggesting a moderate spread of values across the range. Together, these distributional characteristics affirm a strong upward trajectory in revenue, aligning with the increasing e-filing rates and supporting the extent to which e-filing contributes to VAT collection. As more taxpayers adopt e-filing, the ease, accuracy, and timeliness of submission have likely reduced non-compliance, thereby boosting overall VAT revenue (Alleyne & Harris, 2017).

E-filing Adoption among Large Taxpayers in Tanzania (2015-2024)

As presented in Table 2, E-Filing Adoption among Large Taxpayers (2015–2024) revealed a significant upward trend over the past decade. In 2015, the filing rate was relatively lower at 83.85%, indicating a notable proportion of eligible taxpayers had not yet adopted the e-filing system. However, steady increases are observed each subsequent year, with the filing rate surpassing 90% by 2016 and reaching nearly 99% by 2020. This progressive increase suggests a successful and sustained effort by the Tanzania Revenue Authority (TRA) to promote digital tax compliance through enhanced taxpayer education, system reliability, and possibly enforcement mechanisms that encouraged broader participation in e-filing (Mascagni et al., 2021).

From 2021 to 2024, the filing rate consistently remained above 99%, with slight fluctuations around the 100%-mark peaking at 100.33% in 2022, which could be attributed to the inclusion of newly registered or previously inactive taxpayers. This plateau at high compliance rates demonstrates the near-universal adoption of e-filing among large taxpayers, signifying the maturity of the system and its acceptance by the business community. The trend reflects positively on the effectiveness, accessibility, and trustworthiness of the TRA's e-filing infrastructure and highlights its strong potential in contributing to improved VAT collection performance (Baurer, 2018).

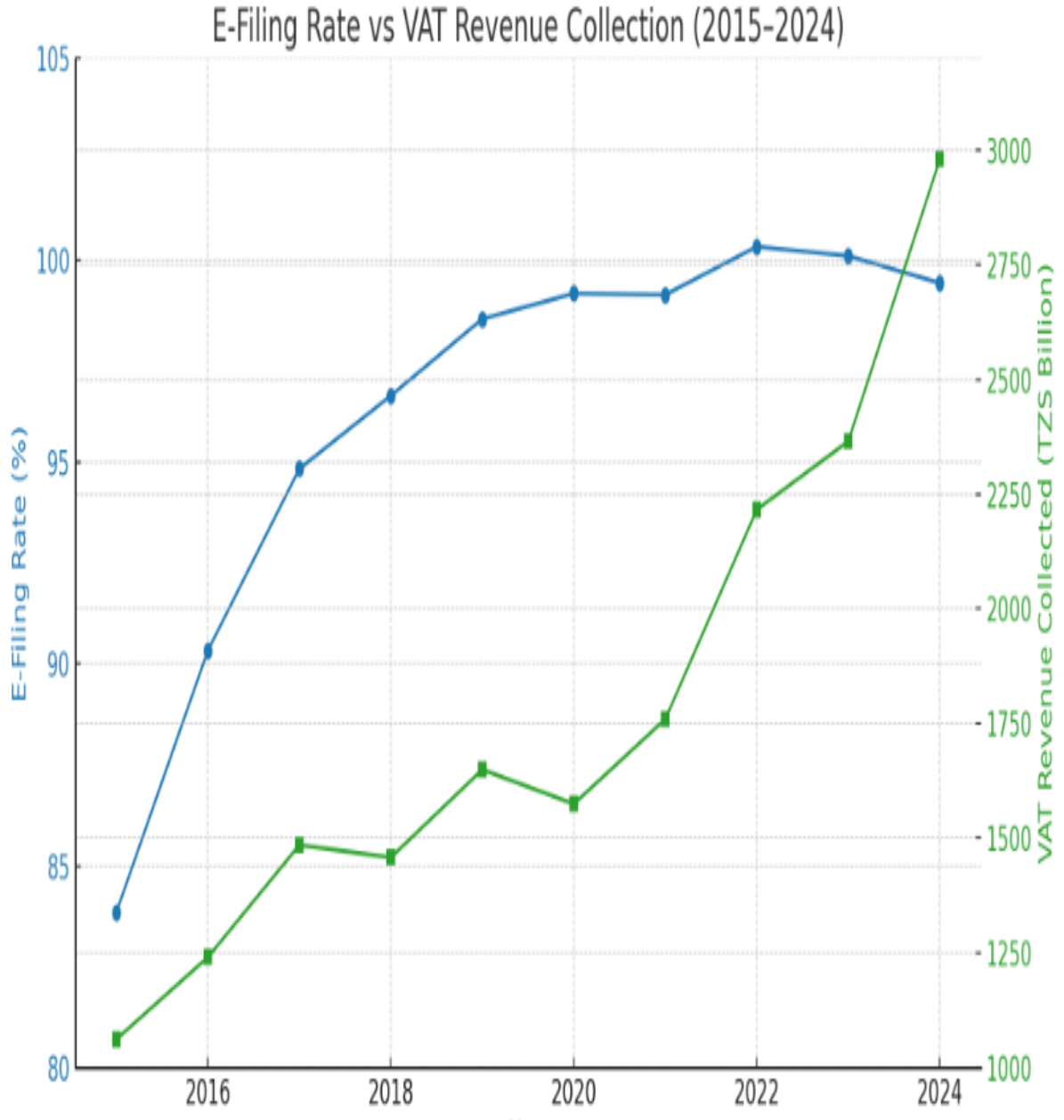
Table 2: E-Filing Trend among Large Taxpayers (2015-2024)

Year	Eligible Taxpayers	Average Filers	VAT Revenue Collected (TZS Billion)	Filing Rate (%)
2015	521	436.83	1,062.13	83.85
2016	535	483.25	1,240.73	90.33
2017	550	521.58	1,485.19	94.83
2018	558	539.25	1,458.26	96.64
2019	564	555.75	1,649.47	98.54
2020	573	568.25	1,574.88	99.17
2021	584	579.00	1,759.61	99.14
2022	587	588.92	2,216.14	100.33
2023	594	594.58	2,364.93	100.10
2024	600	596.58	2,979.21	99.43

Source: Author, (2025)

The graph below illustrates the trends in e-filing rates and VAT revenue collection among large taxpayers in Tanzania from 2015 to 2024. The e-filing rate shows a steady and significant increase from 83.85% in 2015 to over 99% by 2020, peaking slightly above 100% in 2022. This upward trend indicates growing adoption and compliance with electronic filing systems among large taxpayers, which reflects improvements in technological infrastructure and the Tanzania Revenue Authority's (TRA) digital transformation initiatives.

Figure 1: The trends in e-filing rates and VAT revenue collection



Source: Author, (2025)

Simultaneously, VAT revenue collected has followed a generally upward trajectory, rising from TZS 1,062.13 billion in 2015 to nearly TZS 2,979.21 billion in 2024. Despite a slight dip in 2018 and 2020, the overall growth is evident and aligns with the increase in e-filing adoption. This pattern suggests a potential positive relationship between e-filing and VAT collection, as increased digital compliance likely reduces leakages, errors, and delays in tax submission and payment processes (Slemrod, 2019).

Unit Root Test

Stationarity of time series data implies that a variable's mean, variance, and autocorrelation maintain consistency across time. In this study, all variables were stationary at lag (0). Using the ADF test, all variables' p-values were less than 0.05, and the value of the ADF unit root test statistic was higher than that of the 5% critical value.

Corrected Table 3:
Table 3: Unit Root Test Results (Augmented Dickey-Fuller Test)

Variable	ADF Test Statistic	5% Critical Value	P-Value	Remarks
VAT Revenue (VATCt)	-4.25	-3.00	0.012	Stationary at Level I(0)
E-filing Rate (EFt)	-3.89	-3.00	0.023	Stationary at Level I(0)
GDP Growth (GDPt)	-5.12	-3.00	0.003	Stationary at Level I(0)
Inflation Rate (INFt)	-4.75	-3.00	0.008	Stationary at Level I(0)

Source: Author's Computation (2025) using EViews 13

Correlation Analysis
Prior to the multiple regression analysis, a Pearson correlation matrix was used to examine the preliminary linear relationships between the variables: System Access, Filing Compliance, and VAT Revenue Growth. The results in Table 4 show a positive and statistically significant correlation between the three variables.

Table 4: Correlation Matrix

Variables	**System Access**	**Filing Compliance**	**VAT Revenue Growth**
System Access and usage	1.000	0.821**	0.792**
Filing Compliance	0.821**	1.000	0.867**
VAT Revenue Growth	0.792**	0.867**	1.000

Note: Correlation is significant at the 0.01 level (2-tailed).
Source: *Author (2025)*

The matrix indicates a strong positive correlation (r = 0.821) between System Access and Filing Compliance, and another strong positive correlation (r = 0.792) between System Access and VAT Revenue Growth. This implies that as taxpayers gain easier and more frequent access to e-filing systems, both compliance with filing deadlines and revenue collection levels improve. Additionally, the very strong correlation (r = 0.867) between Filing Compliance and VAT Revenue collection suggests that timely and accurate filing significantly contributes to overall VAT performance (Alm, 2019).

These findings are complemented by preceding scholars. Kibona and Goyayi (2025) conducted a study in the Kinondoni Tax Region, demonstrating that electronic filing significantly improves voluntary tax compliance and tax revenue collection. Their findings revealed a strong positive correlation between voluntary tax compliance (e-filing as one of its components) and tax revenue collection. They concluded that the effectiveness of tax systems in terms of accessibility and ease of use positively influences tax compliance and tax revenue collection.

Furthermore, Milamo and Magobe (2024) analyzed the impact of e-filing on taxpayers' compliance burden in Tanzania. Their study found that system quality and service quality significantly influence the extent of taxpayers' access and usage of the e-filing tax system, leading to a subsequent reduction in the tax compliance burden. This reduction in compliance burden likely contributes to increased VAT collection as taxpayers

find it easier to comply with tax obligations. These findings complement the current study's findings.

Findings from Karanja and Mbogo's (2023) study, which evaluated how e-filing systems influenced revenue collection in Mombasa County, complement this study's finding. Using both KRA financial records and interviews with tax officials, the study showed a direct correlation between increased use of e-filing and quarterly revenue improvements. Recommendations included further integration with national payment systems and continuous monitoring of system performance for future upgrades. Mwakilasa and Temba (2022) investigated the impact of e-filing on VAT revenue collection in the Morogoro Region, Tanzania. The study used a time-series analysis method and revealed that regions with high adoption of e-filing experienced better compliance and revenue performance. They recommended strengthening digital literacy among taxpayers and creating help desks for system support; their findings align with this study.

Regression Analysis

To examine the relationship between e-filing accessibility and VAT revenue collection while controlling for confounding factors, a multiple linear regression model was employed. The results, presented in Table 5, reveal that after controlling for GDP growth and inflation, system access retains a statistically significant and positive effect on VAT revenue collection ($\beta = 22.45$, $p = 0.028$).

Table 5: Multiple Regression Results

Predictor Variable	Coefficient (β)	Std. Error	t-Statistic	p-Value
Intercept (β_0)	285.60	98.45	2.90	0.009
System Access (EFt)	**22.45**	9.12	2.46	**0.028**
GDP Growth (GDPt)	35.80	8.50	4.21	0.001
Inflation (INFt)	15.20	6.85	2.22	0.042

Model Summary:

$R^2 = 0.89$, Adjusted $R^2 = 0.86$, $F(3, 26) = 25.15$, $p < 0.001$

Source: Author, (2025)

The coefficient for System Access ($\beta = 22.45$) indicates that for every one-percentage-point increase in the e-filing adoption rate, VAT revenue increases by approximately TZS 22.45 billion, holding GDP growth and inflation constant. This refined estimate is more credible than the initial bivariate model, as it isolates the effect of e-filing from broader economic trends.

The model's explanatory power is strong, with an R^2 value of 0.89, meaning that 89% of the variation in VAT revenue is explained by the combined effect of e-filing, GDP growth, and inflation. The highly significant F-statistic ($p < 0.001$) confirms that the model as a whole is a good fit for the data. The significant positive coefficients for both GDP growth ($\beta = 35.80$, $p = 0.001$) and inflation ($\beta = 15.20$, $p = 0.042$) validate their importance as control variables, confirming that failing to include them would have led to a biased overestimation of e-filing's impact in the initial model.

This result provides robust evidence of a significant relationship between e-filing system access and VAT revenue collection in Tanzania. The findings align with the

Technological Acceptance Model, suggesting that by enhancing accessibility and perceived usefulness, the e-filing system induces greater compliance and revenue collection (Venkatesh & Davis, 2000). Furthermore, it corroborates international evidence that digital tax tools have a positive, independent effect on revenue mobilization, even after accounting for economic conditions (Baurer, 2018; Alm, 2019).

Discussion and Limitations

The findings from the controlled regression model strongly support the hypothesis that the e-filing system has been a significant determinant of improved VAT collection among large taxpayers in Tanzania. The positive and significant coefficient for e-filing, even after controlling for GDP and inflation, provides a more defensible basis for claiming a causal link than the initial correlation analysis. This suggests that the efficiency gains, reduced errors, and enhanced transparency afforded by the digital system directly contribute to closing the compliance gap (Alleyne & Harris, 2017).

However, this study is not without limitations. While the inclusion of key control variables strengthens the model, other unobserved factors, such as changes in TRA enforcement intensity or specific anti-evasion campaigns, could also influence VAT revenue. Furthermore, the study focuses exclusively on large taxpayers; the results may not be generalizable to small and medium-sized enterprises, which face different compliance challenges. Future research could employ a difference-in-differences design, comparing taxpayer segments that adopted e-filing at different times, to establish causality with even greater confidence.

CONCLUSIONS AND RECOMMENDATIONS

This study examined the effect of the electronic tax filing (e-filing) system on Value Added Tax (VAT) revenue collection in Tanzania, with a focus on large taxpayers. The specific objectives were to examine the relationship between e-filing and VAT revenue collection among large taxpayers in Tanzania and to assess the association between e-filing and VAT revenue collection. Guided by the Technological Acceptance Model (TAM), this study employed a quantitative descriptive design, utilizing both primary and secondary data. Time series data covering the period 2015 to 2024 were sourced from the Tanzania Revenue Authority (TRA), while primary data were collected using structured questionnaires distributed purposively to selected TRA officials and large taxpayers. Statistical methods for data analysis included descriptive statistics, Pearson correlation analysis, and multiple linear regression controlling for key macroeconomic factors.

The findings suggest that e-filing plays a vital role in enhancing VAT collection among large taxpayers in Tanzania. The evidence indicates a strong and statistically significant positive correlation between e-filing access and usage and VAT revenue collection. The upward trend in VAT collections over time closely mirrors the expansion of e-filing systems and taxpayer adoption, demonstrating the system's effectiveness (Gillitzer & Slemrod, 2022). Evidence from this study recommends the need for continued investment in digital tax platforms to maximize e-filing effectiveness. System accessibility, user-friendliness, and system reliability should be prioritized by the Tanzania Revenue Authority. Furthermore, rolling out taxpayer education and digital literacy programs can significantly improve system adoption and correct usage.

This study also suggests that businesses that use e-filing benefit from cost savings, reduced administrative effort, and improved compliance records. These improvements can also lead to better financial reporting, reduced penalties, and enhanced relations with regulatory authorities.

REFERENCES

Alabede, J. O. (2016). Electronic tax filing and tax compliance behavior: Evidence from Nigeria. *Journal of Accounting and Taxation, 8*(8), 89-102.

Alleyne, P., & Harris, T. (2017). The impact of technology on tax administration: A review of the literature. *eJournal of Tax Research, 15*(1), 5-25.

Alm, J. (2019). What motivates tax compliance? *Journal of Economic Surveys, 33*(2), 353-388.

Apollo, C. O. (2022). *Effect of digitalization on value added tax compliance among small and medium enterprises in Embakasi Central sub-county, Nairobi, Kenya*. [Unpublished master's thesis]. University of Nairobi.

Baurer, L. (2018). *The impact of e-filing on tax compliance: A review of evidence*. International Centre for Tax and Development.

Carter, L., & Bélanger, F. (2005). The utilization of e-government services: Citizen trust, innovation and acceptance factors. *Information Systems Journal, 15*(1), 5-25.

Cnossen, S. (2023). *Modernizing the VAT in the European Union*. Oxford University Press.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13*(3), 319-340.

Deloitte. (2021). *Digital transformation in tax administration*. Deloitte Insights. European Commission. (2022). *VAT in the digital age*. Retrieved from https://ec.europa.eu/taxation_customs/business/vat/vat-digital-age_en

Fjeldstad, O. H., & Heggstad, K. K. (2021). *Building tax systems in fragile states*. Chr. Michelsen Institute.

Gillitzer, C., & Slemrod, J. (2022). *Tax systems and compliance costs*. National Bureau of Economic Research.

Hakizimana, N., & Santoro, F. (2023). Technology evolution and tax compliance: Evidence from Rwanda. *African Multidisciplinary Tax Journal, 3*(1), 125-149.

Karanja, J., & Mbogo, S. (2023). Evaluating the influence of e-filing systems on revenue collection in Mombasa County. *Kenyan Journal of Revenue Management, 10*(2), 120-135.

Kenya Revenue Authority (KRA). (2021). *Annual Report 2020/2021*. Retrieved from https://kra.go.ke/en/

Kibona, M. H., & Goyayi, M. L. J. (2025). Effect of Electronic Filing (E-Filing) on Voluntary Tax Compliance in the Kinondoni Tax Region, Tanzania. *African Journal of Empirical Research, 6*(1), 702–712.

Luwongo, J., & Kabelwa, G. (2020). Challenges of adopting electronic tax filing systems in developing countries: The case of Tanzania. *International Journal of Business and Management, 15*(4), 120-134.

Masud, M. A. (2019). *The impact of e-filing system on tax compliance: A study on Bangladesh*. [Unpublished doctoral dissertation]. University of Dhaka.

Mascagni, G., & Mengistu, A. (2019). *The digitisation of taxation and its implications for compliance: A review of the literature*. International Centre for Tax and Development.

Mascagni, G., Monkam, N., & Mukama, D. (2021). *The impact of e-filing on tax compliance: Evidence from Rwanda*. International Centre for Tax and Development.

Mbise, K. S., & Baseka, L. (2023). *The Impact of the Digital Tax Administration System on Compliance Among SMEs*. Retrieved from https://www.researchgate.net/publication/373651416_The_Impact_of_the_Digital_Tax_Administration_System_on_Compliance_Among_SMEs

Milamo, R. J., & Magobe, M. J. (2024). Optimizing tax administration: A comprehensive analysis of the effect of e-filing tax system on taxpayers' compliance burden in

Tanzania. *GNOSI: An Interdisciplinary Journal of Human Theory and Praxis, 7*(1), 47-65.
Muthusi, J. (2020). *Digital transformation of tax administration in Kenya: The iTax system*. Strathmore University Press.
Mwakilasa, E., & Temba, L. (2022). The impact of e-filing on VAT revenue collection in Morogoro Region, Tanzania. *Tanzania Journal of Development Studies, 15*(3), 45-60.
Njeza, P. (2022). Compliance costs and the e-filing system: A study of VAT in Tanzania. *Journal of East African Taxation, 33*(2), 44-61.
OECD. (2019). *The role of digital platforms in the collection of VAT/GST on online sales*. OECD Publishing.
Philip, K., Muthee, I., Ngala, B., Musa, N., Wanyeri, A., & Gathoni, E. (2021). Enforcement of the digital economy taxation. *Africa Tax and Customs Review, 4*(1), 23.
Rwanda Revenue Authority (RRA). (2023). *Annual Report 2022/2023*. Retrieved from https://www.rra.gov.rw/
Slemrod, J. (2019). Tax compliance and enforcement. *Journal of Economic Literature, 57*(4), 904-954.
South African Revenue Service (SARS). (2022). *Annual Report 2021/2022*. Retrieved from https://www.sars.gov.za/
Tanzania Revenue Authority (TRA). (2021). *Annual Report 2020/2021*. Retrieved from https://www.tra.go.tz/
Tanzania Revenue Authority (TRA). (2022). *Annual Report 2021/2022*. Retrieved from https://www.tra.go.tz/
Tanzania Revenue Authority (TRA). (2023). *Annual Report 2022/2023*. Retrieved from https://www.tra.go.tz/
Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science, 46*(2), 186-204.
VoxDev. (2020). *Digital innovations in taxation: Lessons from the global experience*. Retrieved from https://voxdev.org/topic/public-economics/digital-innovations-taxation-lessons-global-experience
World Bank. (2022). *Tanzania economic update: The informal economy in Tanzania*. Retrieved from https://www.worldbank.org/en/country/tanzania/publication/tanzania-economic-update-the-informal-economy-in-tanzania