University of Dar es Salaam Library Journal
Vol 21, No 1 (2026), pp 86 - 117
ISSN: 0856-1818

Customer satisfaction analysis of e-filing system effectiveness in reporting annual tax returns for individual Tanzanian taxpayers

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Submitted: Jan. 01, 2026; Revised: March 13, 2026; Accepted: April 22, 2026; Published: July 30, 2026

Abstract

The Tanzania Revenue Authority (TRA) introduced e-filing as part of its efforts to modernise its tax systems. Nonetheless, complaints about its accessibility, usability, performance and navigation persist. As a result, only 45 per cent of usage was reported in 2022. As existing research on e-filing in the African context often focuses on its technical functionality, this research addresses the remaining gap in overall taxpayer satisfaction with the system. The study analysed how various factors related to the e-filing system influence user satisfaction. Data were collected through structured questionnaires from randomly sampled taxpayers of the Kinondoni Tax Region. In all, 339 responses were received and analysed using multiple regression. The findings indicate that the system's user-friendliness influences customer satisfaction, the responsiveness of authority staff, and the effectiveness of information dissemination regarding e-filing processes. Likewise, the filing and payment processes, the effectiveness of notifications, and system availability were also important in shaping customer experiences. The study recommends improving the e-filing system by enhancing user training, streamlining communication, and ongoing system enhancements. By addressing these factors, the Tanzania Revenue Authority can significantly improve customer satisfaction and foster greater compliance within Tanzania's tax administration framework.

Keywords: E-filing, Tax system modernisation, Tanzania Revenue Authority, Effectiveness

https://dx.doi.org/10.4314/udslj.v21i1.7

Introduction

The e-filing system refers to an electronic platform that allows taxpayers to submit their tax returns online, minimising the need for physical documentation and reducing interactions with tax authorities (Ayub, 2023). E-filing systems enable taxpayers to submit their returns electronically, thereby minimising the need for traditional paper forms and in-person

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interactions with tax authorities. The filing process in an e-filing system encompasses the steps taxpayers follow to submit their tax returns electronically. It includes user registration, form selection, data entry, final submission, and feedback, i.e., confirmations of filing or assessments (Maharani, 2023). The payment process is the mechanism through which taxpayers settle their tax liabilities via the e-filing platform, which integrates secure payment gateways, allowing users to make tax payments electronically (Setyoko, 2023). E-filing notifications are automated messages sent to users before, during, and after the tax filing process. These notifications include reminders, confirmations, and status updates on submitted returns (Windriati, 2021). System availability refers to the accessibility and uptime of the e-filing platform, ensuring users can access the system whenever needed (Hambali, 2020). System availability also includes the platform's ability to handle high traffic without performance degradation (Alfioni, 2023). Customer satisfaction in the context of e-filing refers to the degree of contentment and positive experience that taxpayers derive from using the online tax filing platform (Alfioni, 2023). Moreover, timely e-filing notifications provide users with essential updates and confirmations, thereby enhancing the user experience (Setyoko et al., 2023). The system's success depends on its ease of use, accessibility, and ability to meet user expectations, thereby contributing to improved tax compliance and customer satisfaction (Gunaasih, 2021).

The shift toward digital tax filing has been a key trend over the last decade, driven by technological advancements and growing demand for efficiency. As Mahmudah and Kartikaningdyah (2020) emphasised, governments worldwide are moving toward more digitised systems to meet public expectations and enhance service delivery. In high-income countries, especially those in the Organisation for Economic Co-operation and Development (OECD), e-filing has grown remarkably, with adoption rates often exceeding 90 per cent (Oktavia, 2023). These systems have proven successful in reducing administrative costs for tax agencies while improving the taxpayer experience, ensuring that users can easily navigate them and submit accurate returns. Windriati et al. (2021) argue that the global success of e-filing systems is largely due to their ability to instil confidence in users in both system reliability and data security.

The transition to e-filing has been well documented, especially in countries such as the United Kingdom and Germany, where its implementation has contributed to higher compliance rates (Nagaratnam, 2021). The European Union (EU) has supported digital initiatives across its member states, aiming to harmonise and standardise tax filing systems (Kresnandita & Prawati, 2023). Research shows that European taxpayers appreciate the convenience, transparency, and flexibility offered by e-filing systems, and satisfaction rates remain high (Christanti, 2020). Similarly, in India, the government has strongly promoted e-filing, particularly among individual taxpayers, to streamline tax administration and improve compliance (Appasaba, 2022).

E-filing systems have attracted significant attention for their role in enhancing user satisfaction and simplifying tax submission processes (Setyoko, 2023). Components such as filing processes, payment systems, e-filing notifications, and overall system availability are identified as key factors influencing customer satisfaction (Gunaasih, 2021). Nonetheless, E-filing systems in Africa face challenges, including poor infrastructure, limited internet access, and low trust in government institutions (Ali et al., 2017). Hence, its adoption remains in its nascent stages across Africa. Nonetheless, research by Ashameena (2021)

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shows that digital tax-filing platforms have seen significant improvements in both compliance and satisfaction rates. Hambali (2020) noted that the adoption of e-filing systems surged during the COVID-19 pandemic, as individuals and businesses sought safer and more efficient methods to fulfil their tax obligations. Effective filing processes ensure that taxpayers can easily navigate the system, whereas payment integration enables seamless, secure financial transactions (Ayub et al., 2023). South Africa's e-filing system, for instance, has successfully reduced queues at tax offices, making the process more transparent and accessible to taxpayers. This is also true for countries such as Kenya.

The Tanzania Revenue Authority (TRA) has implemented the e-filing system to improve tax compliance and reduce operational costs. According to TRA's quarterly report (2024), the system has garnered positive feedback from users, especially in urban areas like Kinondoni. The adoption of e-filing in Tanzania is part of a broader government initiative to digitise public services. The Tanzanian government has also invested in awareness campaigns to educate taxpayers on how to use the system effectively, as noted by Maharani and Marsasi (2024). Research highlights that improving infrastructure and public awareness can further increase user satisfaction across the continent (Kumar, 2020).

However, challenges such as intermittent system downtimes and payment processing issues have been noted as areas of concern (TRA, 2024). Alfioni (2023) suggests that improving system availability and the quality of user notifications could enhance satisfaction, particularly in less urbanised areas where internet connectivity remains a barrier. In particular, the Tanzania Revenue Authority (TRA) has introduced an e-filing system as part of tax modernisation, yet user satisfaction with e-filing remains mixed. TRA (2023) acknowledges ongoing taxpayer complaints about system accessibility, usability, and overall performance. In addition, Gunaasih (2021) highlights the difficulties taxpayers face in navigating the e-filing platform, which has been linked to a decline in e-filing adoption, as evidenced by TRA's 2022 report of only 45 per cent adoption (TRA, 2022). Other studies, such as Ayub (2023), Al-Kaabi (2023), and Setyoko (2023), tend to focus on the technical functionality of e-filing systems while overlooking their impact on taxpayers' satisfaction with these systems. This creates a critical gap in understanding how customer satisfaction is influenced by the e-filing system, given that most research focuses on the technical aspects of e-filing. Therefore, the current study set out to analyse the effectiveness of the e-filing system in reporting annual tax returns for individual taxpayers on customer satisfaction in Tanzania. Specifically, this study sought to address this gap by examining how the e-filing and payment processes, e-filing notifications, and system availability affect customer satisfaction with the TRA's e-filing system. This is because these aspects can significantly influence user satisfaction.

Theoretical Review

The study was guided by two theories, namely the Technology Acceptance Model and Customer Satisfaction theory. The aim was for the theories to complement each other in explaining the study's variables: the e-filing process, the e-filing payment process, the e-filing notifications, the e-filing system availability, and customer satisfaction.

The Technology Acceptance Model

The Technology Acceptance Model (TAM) was developed by Fred Davis in 1989 to explain how users come to accept and use a particular technology. TAM suggests that two factors,

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Vol 21, No 1 (2026), pp 86 - 117
ISSN: 0856-1818

perceived ease of use and perceived usefulness, are key in determining user acceptance and satisfaction with technology. When users find a system easy to use and perceive it as beneficial, they are more likely to adopt it and, in turn, be satisfied (Ayub et al., 2023). In the context of the e-filing system, TAM is crucial because users must perceive the platform as efficient and user-friendly to be motivated to engage with it. Strengths of TAM include its simplicity and predictive power, which make it widely applicable across various technological platforms (Gunaasih, 2021). TAM provides a valuable framework for this study, as it aligns with the research objectives of assessing how the e-filing system's perceived ease of use and usefulness, through efficient filing processes, payment integration, and system notifications, influence customer satisfaction. Perceived ease of use and usefulness have a significant relationship with satisfaction.

The theory links the effectiveness of filing processes to customer satisfaction through the perceived ease of use of those processes, which is deemed central to user satisfaction. This is possible if users find the e-filing system intuitive and straightforward; in that case, their likelihood of adopting and continuing to use the system increases (Ayub, 2023). TAM helps explain how the user-friendly design of the e-filing process influences customer satisfaction by enhancing usability, which is essential for encouraging widespread adoption of the system. Both theories frame how an efficient, accessible filing process improves user satisfaction and compliance. The effectiveness of the payment process and its perceived usefulness directly influence customer satisfaction. If users find the payment process seamless and beneficial, such as through multiple payment gateways or instant confirmations, they are more likely to adopt and engage with the e-filing system, thereby increasing satisfaction (Gunaasih, 2021).

TAM thus provides insights into how the perceived ease and utility of the payment system affect overall satisfaction and continued use of the platform. The effectiveness of e-filing notifications in enhancing customer satisfaction and perceived usefulness is crucial to system adoption. Users are more likely to appreciate and rely on the e-filing system if they find the notifications, such as filing reminders and status confirmations, beneficial and helpful in managing their tax obligations (Alfioni, 2023). TAM suggests that when these notifications are viewed as adding value to the user experience, they can enhance user satisfaction and increase the likelihood of continued use of the e-filing system. Under the Technology Acceptance Model (TAM), system availability affects both perceived ease of use and usefulness, thereby influencing customer satisfaction. Users are more likely to adopt the e-filing system if it is consistently available, as downtime or inaccessibility can undermine confidence in the system's reliability (Hambali, 2020). TAM emphasises that users must perceive the system as reliable and functional to fully embrace it, with availability being a key factor in ensuring long-term user satisfaction and trust in the platform. Then, the theory underlines the importance of maintaining high system availability to improve overall satisfaction and system usage.

Customer Satisfaction Theory (Expectancy Disconfirmation Theory - EDT)

Customer Satisfaction Theory (Expectancy Disconfirmation Theory - EDT) was developed by Richard L. Oliver in 1980. The Expectancy Disconfirmation Theory (EDT) posits that the gap between customer expectations and actual performance primarily determines customer satisfaction. If the service exceeds expectations, satisfaction is achieved; if it falls short, dissatisfaction occurs. In the context of e-filing systems, this theory highlights the role

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of communication and service quality, particularly in aspects such as timely notifications, confirmations, and reminders, in enhancing customer satisfaction (Setyoko et al., 2023). Effective communication creates a positive user experience by keeping users informed about the filing process and system updates, reducing uncertainty, and improving user confidence (Ayub et al., 2023). The strengths of EDT lie in its ability to explain how expectations shape satisfaction levels, making it a versatile model for understanding customer behaviour across various service platforms (Alfioni, 2023).

The study used this theory to explore how these factors either meet or exceed user expectations, ultimately affecting overall satisfaction with the e-filing system. The theory relates to the study's objectives as follows. The effectiveness of filing processes on customer satisfaction: The Customer Satisfaction Theory (EDT) emphasises that the efficiency and simplicity of the e-filing process play a critical role in meeting or exceeding user expectations. If the system minimises errors, reduces complexity, and provides clear instructions, users are more likely to be satisfied with the filing process (Setyoko et al., 2023). EDT provides a framework for assessing whether the e-filing process meets users' expectations for convenience and accuracy, thereby shaping their overall satisfaction. EDT explains the effectiveness of the payment process on customer satisfaction by examining whether the payment options integrated into the e-filing system meet or exceed user expectations. Users expect secure, quick, and efficient payment methods that allow them to complete transactions with ease. When these expectations are met, satisfaction with the system is significantly enhanced (Setyoko et al., 2023). EDT highlights the importance of ensuring that the payment process aligns with users' needs for speed and convenience to reduce friction in the tax-filing experience.

In the context of the effectiveness of e-filing notifications on customer satisfaction, EDT indicates a need for timely, clear e-filing notifications (such as reminders or status updates) that may help manage user expectations and reduce uncertainty. When users receive prompt and helpful notifications, they feel more informed and in control, leading to higher satisfaction levels (Mahmudah & Kartikaningdyah, 2020). EDT focuses on how well the notifications align with user expectations, particularly in terms of clarity and timeliness, and how they contribute to overall customer satisfaction by fostering a positive experience. As for the effectiveness of system availability on customer satisfaction, EDT posits that it is a crucial factor in determining user satisfaction. Users expect the e-filing system to be accessible and reliable, especially during peak filing periods. If the system remains consistently available without downtime, it meets or exceeds user expectations, leading to higher satisfaction levels (Setyoko et al., 2023). EDT helps assess how system availability impacts user satisfaction by meeting the basic expectation of consistent, reliable access to the platform.

Empirical findings and hypotheses development

Gunaasih et al. (2021) conducted a study on evaluating the efficiency of e-filing processes and their impact on user satisfaction. The findings revealed that efficient and user-friendly filing processes significantly contributed to higher user satisfaction. Clear and streamlined processes that minimise errors were particularly valued. The study concluded that enhancing filing processes is crucial for improving satisfaction and recommended investing in system enhancements and user training to streamline the filing experience. Al-Kaabi (2023) also

examined the influence of e-filing processes on user satisfaction in Kenya. The findings showed that a well-designed e-filing process, characterised by clarity and efficiency, greatly improved user satisfaction. Participants appreciated systems that simplified filing procedures and reduced errors, thereby enhancing user support, which is vital for improving satisfaction.

Mahmudah and Kartikaningdyah (2020) investigated the effectiveness of e-filing processes in Tanzania, using questionnaires and interviews to collect data from users. The findings highlighted that streamlined and user-friendly filing processes significantly improve taxpayer satisfaction. The study demonstrated that addressing inefficiencies in the filing process and enhancing user interfaces are crucial for increasing satisfaction. A study by Ayub et al. (2023) examining how the payment process in e-filing systems affects user satisfaction found that effective, secure payment methods are vital to user satisfaction. In the same study, users were deemed to prefer systems that offer convenience and reliability in payment processing. The study further showed that improving payment processes is essential to enhancing user satisfaction with the e-filing system.

Awaliah et al. (2024) evaluated the impact of the payment process on user satisfaction in South Africa using surveys and system performance data. Findings indicated that users highly value efficient and secure payment methods, which positively influence their satisfaction. The study concluded that improving payment processes and ensuring seamless transaction integration are crucial to enhancing user satisfaction, and recommended investments in payment system upgrades and user support. Again, Ali et al (2017) investigated the payment process within the Tanzanian e-filing system. Data were collected through user surveys and transaction analysis. The findings showed that efficient and secure payment methods are essential for user satisfaction. The study further indicated that enhancing payment processes and ensuring system reliability are key to improving user satisfaction.

Hambali (2020) investigated how e-filing notifications affect user satisfaction during the pandemic through surveys and user feedback. The findings indicated that timely and clear notifications, such as confirmations and reminders, play a crucial role in enhancing user satisfaction by keeping users informed and reducing confusion. The study highlighted that optimising notification systems is essential for improving user satisfaction. Gusti and Giantari (2022) studied the impact of notifications on user satisfaction with e-filing systems. Data were collected through user surveys and feedback on notification features. Findings showed that timely, clear notifications positively affect user satisfaction by reducing anxiety and keeping users informed, which is crucial for improving satisfaction. A study by Christanti (2020) that assessed the relationship between system availability and user satisfaction across various developed countries found that consistent, reliable system availability is critical to user satisfaction, especially during peak filing periods. The study concluded that ensuring high system availability is essential for maintaining user satisfaction.

Avania and Widodo (2023) conducted a study on how system availability impacts user satisfaction in Ghana. The study used performance data and user surveys. Findings showed that users highly value uninterrupted access to e-filing systems and that this significantly impacts their satisfaction. The study concluded that maintaining high system availability is



crucial to improving user satisfaction and recommended better infrastructure and regular system upgrades. Further, Kumar (2020) conducted a study on system availability. The research used surveys to assess user experiences with the Tanzanian e-filing system. Findings revealed that users highly prioritise system availability, with disruptions negatively affecting their satisfaction. The study concluded that improving system availability is vital in increasing user satisfaction.

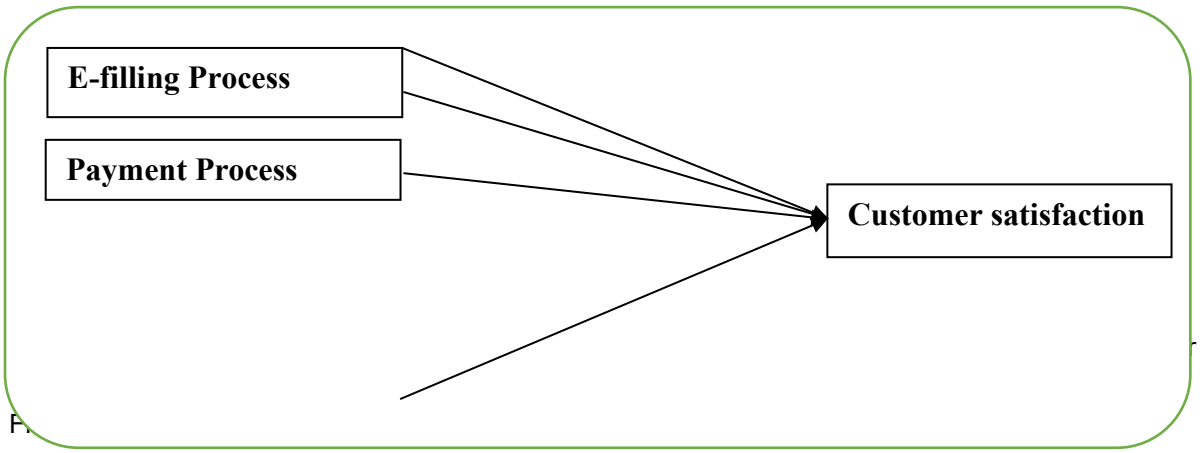
Research gap

Previous studies have extensively explored various dimensions of e-filing systems across different contexts. For instance, Gunaasih et al. (2021) and Setyoko et al. (2023) examined the efficiency of filing and payment processes in e-filing systems, emphasising their impact on user satisfaction. However, these studies have primarily focused on specific geographic locations, such as Jakarta and Indonesia, with limited exploration of broader contexts or regional variations in user experiences. Similarly, Hambali (2020) and Mahmudah and Kartikaningdyah (2020) highlighted the significance of system notifications and availability in enhancing user satisfaction. Nevertheless, they did not sufficiently address the unique challenges faced in diverse geographic settings.

Although studies by Setyoko et al. (2023) and Hambali (2020) provide valuable insights into user satisfaction and system efficiency, there is a notable knowledge gap regarding the comparative effectiveness of different e-filing system components, particularly in less-studied regions of Africa, including East Africa. Consequently, this study set out to bridge this gap by systematically analysing how filing processes, payment methods, notifications, and system availability collectively influence user satisfaction, using a comprehensive dataset from the Kinondoni Tax region, Tanzania. In this regard, the study contributes to a more comprehensive understanding of e-filing systems by addressing these research gaps, integrating theoretical frameworks, employing advanced quantitative methods, and expanding the geographical focus to include Tanzania.

Conceptual framework and hypotheses development

A conceptual framework serves as a theoretical foundation that clarifies and connects key concepts and variables, providing a structured approach to understanding and analysing a phenomenon. According to Johnson and Lee (2023), it delineates the relationships among theoretical constructs and aids in organising empirical data, thus offering insights into complex systems. Kumar (2023) further underscores that this framework is instrumental in guiding research methodology by defining how variables interact and influence one another, thereby enhancing the reliability and validity of the research findings. Patel et al. (2023) stress that a well-developed conceptual framework is essential for interpreting results within a consistent theoretical context and for facilitating a systematic exploration of the phenomenon under study.



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University of Dar es Salaam Library Journal
Vol 21, No 1 (2026), pp 86 - 117
ISSN: 0856-1818

Fi mework

E-filing Notifications
System availability

Source: Researchers (2024)

Based on the empirical findings and the conceptual framework provided in Figure 1, the following propositions were hypothesised and tested:

H1: *The e-filing process positively influences customer satisfaction of individual taxpayers in Kinondoni Municipal, Tanzania.*

H2: *The e-filing payment process positively influences customer satisfaction of individual taxpayers in Kinondoni Municipal, Tanzania.*

H3: *E-filing notifications positively influence individual taxpayers' satisfaction in Kinondoni Municipal, Tanzania.*

H4: *The availability of the e-filing system positively influences individual taxpayers' customer satisfaction in Kinondoni Municipal, Tanzania.*

Methodology

In this study, the research design was grounded in a quantitative methodology for its effectiveness in examining the relationship between independent variables and customer satisfaction in Tanzania. The approach enabled precise measurement of the e-filing system. It allowed the researchers to quantify relationships and draw statistically valid conclusions about their influence on customer satisfaction in e-filing services.

The study was carried out in Kinondoni Tax Region, a prominent area characterised by its advanced adoption of e-filing systems for tax administration. Kinondoni Tax Region covers hubs like Oysterbay, Masaki, Mikocheni, Makumbusho, Sinza, Ubungo, and Kimara. The region has nearly 10 per cent of Tanzania's taxpayers, i.e., 203,008**.** The region is also the hub for the service industry (TRA, 2024). Hence, the Kinondoni Tax Region was deemed an ideal context for examining the effectiveness of e-filing on customer satisfaction, given its extensive integration of digital tax solutions and the nature of its taxpayers. As for the study population, Tanzania had 2,055,543 registered taxpayers, and the Kinondoni Tax Region had 203,008 taxpayers (TRA, 2024). The target population for this study was taxpayers within the Kinondoni Tax Region who interacted with the e-filing system. This group was chosen because they were the primary users of the e-filing system, providing direct insights into its effectiveness and its impact on customer satisfaction.

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The sample size was determined using Krejcie and Morgan's (1970) sample size table, a widely accepted resource for calculating sample sizes in research studies. As a result, with 203,008 taxpayers in the Kinondoni Tax Region, the recommended sample size at a 95% confidence level and a ±5% margin of error was 384 potential respondents. This sample size ensured that the study captured a diverse representation of taxpayers, enabling robust analysis of the effectiveness of E-filing in improving customer satisfaction. The sample size was designed to provide sufficient statistical power to detect meaningful relationships and variations in satisfaction with E-filing across different taxpayer groups, thereby enhancing the study's reliability and validity. In this study, the sampling technique employed was simple random sampling. This method involves selecting a sample from a population so that every individual or unit has an equal chance of being chosen. It was utilised to ensure that every taxpayer in the Kinondoni Tax Region who engages with the e-filing system had an equal opportunity to be included in the study. For this study, the list of taxpayers was systematically enumerated, and all taxpayers with odd numbers were selected until the sample size was reached. This ensured that the taxpayers had an equal opportunity of being selected (Creswell et al., 2009).

Primary data were obtained using structured questionnaires. The questionnaire employed was a structured, closed-ended instrument using a 5-point Likert scale. This design was preferred as it allowed respondents to indicate their level of agreement or satisfaction with various aspects of the e-filing system, ranging from “strongly disagree” to “strongly agree.” Using a Likert scale facilitated quantitative data analysis, enabling measurement of e-filing effectiveness across the filing process, e-filing notifications, payment processes, and system availability. This approach ensured consistency in responses, making it easier to statistically analyse and compare data to assess the overall impact of the e-filing system on customer satisfaction.

The questionnaire employed in this study was developed using indicators for specific variables adopted from Setyoko et al. (2023). Indicators were as follows: filling process (filing process efficiency, clarity of instructions, error handling, ease of online filing, ability to follow instructions, and error resolution); e-filing notifications (timeliness of notifications, relevance of notifications, clarity of notification content, timeliness of reminder notifications, usefulness of notifications, and comprehensibility of notification messages); payment processes (convenience of payment options, transaction security, confirmation timeliness, user-friendliness of payment process, adequacy of security measures, and clarity of payment confirmations); and system availability (system availability, speed of access, accessibility during peak times, reliability of the system, efficiency of access, and meeting user expectations). The questionnaires were shared with all participants (384 taxpayers) in the Kinondoni Tax Region. At the end of the data collection phase, a total of 339 questionnaires were received, equal to an 88 per cent response rate. The data analysis for this study utilised multiple regression analysis techniques to establish relationships between independent and dependent variables related to e-filing systems and user satisfaction.

Validity and reliability

In this study, validity was established through the careful selection of research methods and data collection techniques designed to evaluate customer satisfaction regarding the effectiveness of e-filing systems in the Kinondoni Tax Region. The research instruments

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Vol 21, No 1 (2026), pp 86 - 117
ISSN: 0856-1818

were meticulously validated to ensure they accurately measured the constructs under investigation, such as customer perceptions of the efficiency, convenience, and overall service quality of the e-filing process. Reliability in this study was measured using Cronbach's alpha coefficient, which assesses the internal consistency of the research instrument. Cronbach's alpha was calculated for items related to e-filing process efficiency, payment process, system availability, and notification effectiveness. As indicated in Table 1, all variables had high Cronbach's alpha (typically above 0.7), indicating strong internal consistency and signalling that the items within each construct consistently measure the same underlying concept:

Table 1: Reliability Statistics

Variables	Cronbach's Alpha	N of Items
The effect of the e-filing process	.890	6
The effectiveness of the payment process	.965	6
The effectiveness of e-filing notifications	.993	6
The effectiveness of the system's availability	.967	6

Source: Field Data (2024)

Despite some variables indicating strong correlations, in social sciences, as in the current study, where surveys were employed to capture data from the target population, such correlations are acceptable. This is because the existence of these correlations suggested that the dimensions of the e-filing system were interrelated and that the variables were associated (Janse et al., 2021; Mukaka, 2012). Strong correlations between variables are common and acceptable in social science surveys because social phenomena are complex and often involve multiple interconnected factors that can lead to such relationships. Although correlation does not imply causation, these strong links observed in survey data are valuable for identifying predictive relationships and understanding the patterns within the social system under study (Bujang & Baharum, 2016; Ratner, 2009). Therefore, all four variables have high reliability, with Cronbach's Alpha values significantly above the acceptable threshold of 0.7. This suggests that the items used to measure these variables are consistent and reliable, providing confidence that the collected data accurately reflect the constructs being studied.

Findings

Regression analysis

Regression analysis examines the relationships between variables (independent and dependent variables). In this study, regression analysis was employed to explore how various factors related to the e-filing system influence user satisfaction. Table 3 presents the model summary for this study.

Table 3: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.978[a]	.956	.956	.20133

Source: Field Data (2024)

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Table 3 summarises the regression model used to analyse the relationship between the independent variables and customer satisfaction. The model summary includes key statistics that indicate the model's overall fit and explanatory power. The R value of 0.978 indicates a very strong positive correlation between the independent variables and customer satisfaction (dependent variable). This suggests that as the effectiveness of the payments process, e-filing notifications, and system availability increase, customer satisfaction tends to increase significantly.

With an R-squared of 0.956, the model accounts for about 95.6% of the changes in customer satisfaction. This high percentage indicates that the independent variables included in the model are highly effective in predicting customer satisfaction. The Adjusted R Square value is also reported as 0.956, which is similar to the R Square value. This adjusted value accounts for the number of predictors in the model and suggests that the model is well-specified and not overfitting, retaining a high level of explanatory power even with multiple variables. Finally, the Standard Error of the Estimate is 0.20133, representing the average distance between observed values and the regression line. A smaller standard error relative to the data's range indicates a more precise prediction of customer satisfaction. Therefore, the model summary indicates that the regression model effectively explains a significant portion of the variance in customer satisfaction, highlighting the strong relationships among the variables under investigation. Table 4 presents the findings of the regression analysis performed.

Table 4: Coefficients of variables

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
	(Constant)	.005	.044		.105	.916	-.081	.090
	E-filling process	.566	.158	.498	3.58	.001	.250	.882
	Payments process	.238	.022	.249	10.606	.000	.194	.282
	E-filing notifications	.524	.026	.488	19.935	.000	.473	.576
	System availability	.256	.014	.318	18.116	.000	.228	.283
Dependent variable: Customer satisfaction								

Source: Field Data (2024)

Table 4 presents the results of a regression analysis, showing the relationship between four independent variables and the dependent variable (customer satisfaction). The constant (B = 0.005, p = 0.916) represents the value of customer satisfaction when all independent variables are zero. In this case, the constant is not statistically significant (p = 0.916), indicating it does not meaningfully contribute to customer satisfaction on its own. As for the e-filing process (B = 0.566, p = 0.001), the results indicate that for each one-unit increase in the e-filing system's effectiveness, customer satisfaction increases by 0.566 units, holding other variables constant. The Beta value (0.498) indicates that this variable has a moderately strong effect on customer satisfaction. The result is statistically significant (p = 0.001),

indicating that the e-filing process has a meaningful impact on customer satisfaction. The 95% confidence interval for B [0.250, 0.882] suggests that the true effect of this variable lies between these values.

The effectiveness of payment processes (B = 0.238, p = 0.000) indicates that a one-unit improvement in payment processes is associated with a 0.238 increase in customer satisfaction. The Beta value (0.249) reflects a moderate impact of this variable on customer satisfaction. The result is highly statistically significant (p = 0.000), confirming that effective payment processes are strongly associated with customer satisfaction. The 95% confidence interval [0.194, 0.282] indicates the likely range of the true effect. Regarding the effectiveness of e-filing notifications (B = 0.524, p = 0.000), the result indicates that for every 1-unit increase in notification effectiveness, customer satisfaction increases by 0.524 units.

The Beta value (0.488) suggests a strong positive impact on customer satisfaction. The result is statistically significant (p = 0.000), showing that effective notifications have a meaningful positive effect on customer satisfaction. The confidence interval [0.473, 0.576] supports the reliability of this estimate. Regarding the system availability construct, the effectiveness of system availability (B = 0.256, p = 0.000) indicates that a 1-unit increase in system availability is associated with a 0.256-unit increase in customer satisfaction. The Beta value (0.318) indicates that system availability has a moderate influence on customer satisfaction. The result is highly significant (p = 0.000), confirming that system availability plays an important role in shaping customer satisfaction. The confidence interval [0.228, 0.283] suggests the range of the true effect. Generally, all four variables of the e-filing process, payment process, e-filing notifications, and system availability have a statistically significant and positive effect on customer satisfaction. Among them, the e-filing system and e-filing notifications have the strongest effects, as indicated by their higher Beta values. These results suggest that improvements in the efficiency of the e-filing system, notifications, payment processes, and system availability are likely to significantly enhance customer satisfaction.

Table 5: ANOVA

Model	Sum of Squares	DF	Mean Square	F	Sig.
Regression	297.711	3	99.237	2448.321	.000[b]
Residual	13.578	335	0.041		
Total	**311.289**	**338**			

Source: Field Data (2024)

Table 5 presents the results of the Analysis of Variance (ANOVA) for the regression model evaluating the effectiveness of payment processes, e-filing notifications, and system availability on customer satisfaction. The ANOVA table summarises the partitioning of the total variance in the dependent variable (customer satisfaction) into two components: the variance explained by the regression model and the variance due to residuals (error).

The "Sum of Squares" for the regression is 297.711, indicating the amount of variation explained by the independent variables. In contrast, the residual sum of squares is 13.578, representing the variation in customer satisfaction that the model does not explain. The degrees of freedom (df) for the regression are 3, corresponding to the number of predictors

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in the model, while the residual degrees of freedom are 335, calculated as the total number of observations minus the number of predictors minus 1. The mean square for the regression is 99.237, obtained by dividing the regression sum of squares by its degrees of freedom (297.711/3). The mean square for the residual is 0.041, calculated by dividing the residual sum of squares by its degrees of freedom (13.578/335).

The F-value of 2448.321 is calculated by dividing the mean square for the regression by the mean square for the residual (99.237/0.041). This high F-value indicates a statistically significant relationship between the independent variables and customer satisfaction. The significance value (Sig.) is reported as .000, which is less than the common alpha level of 0.05. This indicates that the regression model is statistically significant, and we can reject the null hypothesis that the independent variables do not significantly predict customer satisfaction. Therefore, the ANOVA results confirm that the regression model is highly significant, explaining a substantial amount of the variance in customer satisfaction, and supporting the effectiveness of the payments process, e-filing notifications, and system availability as key predictors of customer satisfaction.

Discussion of findings

Effectiveness of the E-Filing Process on Customer Satisfaction

The positive and significant relationship between the e-filing process and customer satisfaction in the current study indicates that users perceive it as user-friendly, clear, and efficient, leading to high satisfaction and confidence in the system. This success is attributed to a well-structured, error-minimising process design and the provision of effective training and clear instructions. A significant majority expressed satisfaction with the clarity and efficiency of the filing system, underscoring the importance of user-friendly interfaces. This highlights that when filing processes are well-structured and designed to minimise errors, users are more likely to feel satisfied and confident in their interactions with the system. Moreover, the data suggest that effective training and clear instructions are essential to optimising the filing experience, indicating a strong connection between process design and overall user satisfaction**.** Therefore, future e-filing system development should prioritise intuitive design, user-friendliness, and comprehensive user support to maximise user satisfaction. These findings align closely with those of Gunaasih et al. (2021) and Al-Kaabi (2023), emphasising the importance of efficient, user-friendly e-filing processes in enhancing user satisfaction. Similarly, the current findings relate to Al-Kaabi (2023), who noted that a well-designed e-filing system, characterised by clarity and efficiency, significantly improves user satisfaction.

Effectiveness of the Payments Process on Customer Satisfaction

The study reveals that users' priority of secure and efficient payment methods is a critical factor influencing their satisfaction. The analysis reveals that users require reliable payment options that enable seamless, rapid financial transactions, as these factors directly contribute to positive sentiment. The analysis indicates that users are more likely to express satisfaction when their financial transactions are processed quickly and securely. Additionally, the findings suggest that enhancing payment systems through improved integration and user support is vital for fostering a positive user experience, reinforcing the idea that payment processes play a significant role in overall satisfaction.

University of Dar es Salaam Library Journal
Vol 21, No 1 (2026), pp 86 - 117
ISSN: 0856-1818

The analysis of the payment process in the current study aligns with the findings of Ayub et al. (2023) and Awaliah et al. (2024), both of which emphasise the importance of effective and secure payment methods for enhancing user satisfaction. Ayub et al. (2023) also found that users prefer systems that prioritise effective and secure payment options, recommending investments in payment security and system efficiency. This parallel suggests that improvements in payment processes could substantially elevate user satisfaction. Additionally, the study's findings resonate with the conclusions of Awaliah et al. (2024), who highlighted that users highly value seamless payment integration in e-filing systems. The current study's emphasis on the need for reliable payment methods aligns with the findings of Awaliah et al. (2024), suggesting that enhancing payment processes and ensuring seamless transaction integration are pivotal to user satisfaction.

Effectiveness of E-Filing Notifications on Customer Satisfaction

The study also found a positive impact of timely, clear notifications on user satisfaction in the e-filing system. Many respondents indicated that receiving timely updates and confirmations significantly alleviated their anxiety during the filing process, allowing them to navigate the system more confidently. The findings suggest that effective notification management, in which users are kept informed of their filing status and any necessary actions, contributes substantially to a smoother user experience. This implies that optimising notification systems is crucial for enhancing user satisfaction, as users value consistent communication that helps them feel supported throughout the e-filing process.

The findings align well with research by Hambali (2020) and Gusti and Giantari (2022), both of which emphasise the crucial role of timely, clear notifications in enhancing user satisfaction. In addition, Hambali (2020) found that effective notifications significantly reduce confusion and enhance user satisfaction. The need to optimise notification systems to improve the user experience is echoed in both studies, suggesting that well-managed notifications can significantly bolster satisfaction. Furthermore, the findings of Gusti and Giantari (2022) reinforce the importance of notifications in maintaining user satisfaction. Their study indicated that timely notifications positively impact user satisfaction by keeping users informed and alleviating anxiety.

Effectiveness of System Availability on Customer Satisfaction

The findings of this study demonstrate that system availability profoundly impacts user satisfaction with the e-filing system. Participants cited uninterrupted system access as a key factor in their positive experience, while any downtime or accessibility issue provoked significant user frustration. The study underscores the critical role of system availability in ensuring user satisfaction with the e-filing system. These findings underscore the imperative to maintain a robust infrastructure that guarantees consistent system availability, particularly during peak filing periods. Ensuring high system performance and rapidly addressing potential disruptions are vital steps for boosting user satisfaction. Overall, these results highlight that prioritising system availability is vital for maintaining a positive user experience in the e-filing context. These findings align with Christanti's (2020) findings that consistent and reliable system availability is essential for maintaining user satisfaction, especially during peak filing periods. Additionally, the findings resonate with Avania and Widodo (2023), who found that users place high importance on uninterrupted access to e-filing systems, which significantly impacts their satisfaction.



Conclusion

The findings reveal that the e-filing process significantly enhances customer satisfaction. Users said it is straightforward and user-friendly, aligning with their expectations for efficiency. This demonstrates that a well-designed e-filing process is vital for fostering user satisfaction, directly impacting users' willingness to adopt and continue using the system. The analysis also shows that the payment process within the e-filing system plays a crucial role in user satisfaction. Regarding this, users expressed a need for secure, efficient payment methods, emphasising that convenient payment processing is essential for a positive experience. As for the e-filing notification, users appreciated receiving confirmations and reminders during the filing process, which helped reduce confusion and anxiety about their submissions. These notifications serve not only as a reassurance but also as a vital communication tool that keeps users engaged and informed. Finally, the findings highlight that consistent, reliable system availability is critical to user satisfaction. Users reported that disruptions or downtime negatively affected their filing experience, often leading to frustration and a lack of trust in the system's reliability. The importance of uninterrupted access to the e-filing system cannot be overstated, especially during peak periods when users are most active.

Implications

Based on the findings, the study highlights critical implications for tax authorities, developers, and policymakers aiming to improve e-filing systems. The important implication is that technological adoption (e-filing) is no longer just about mere existence but about the quality of the user experience and perceived trust. The study suggests that by implementing these recommendations, the tax authority, Tanzania Revenue Authority, in this case, can achieve a simplified process, which is a user-friendly system that reduces user intimidation. As a result, higher satisfaction with the system will lead to higher compliance rates among e-filing users. The following are the key implications from the current study:

Strategic implications for system development: To enhance satisfaction, the e-filing system needs to shift from complex, form-heavy interfaces to intuitive, streamlined steps that reduce taxpayers' cognitive load. Moreover, the system may include real-time error checks and guided, clear instructions rather than just displaying failure messages. This reduces user frustration and prevents premature abandonment of the filing process. Further, establishing a continuous, formal feedback loop that transforms user complaints into developmental insights is important. This will foster user ownership of the system, which can lead to increased long-term loyalty and user satisfaction.

Operational implications for payment processing: The findings of the current study highlight the importance of trust. Thus, for the Tanzania Revenue Authority to implement secure, authenticated payment methods is crucial to overcoming users' fear of online transactions in the e-filing system. User-friendly payment processes need to be seamless to reduce transaction friction. Again, in building user trust, educating them about the security features of new payment options is just as important as the technology itself, helping ensure trust and encourage higher adoption rates.

Policy and administrative implications: The findings suggest that tax authorities should act as "service providers" rather than merely as tax collectors, thereby enhancing the service

climate and increasing voluntary compliance. E-filing systems also require ongoing updates and maintenance to meet evolving user needs and technological standards. This approach will lead to increased voluntary compliance, improved taxpayer trust, and more efficient administration.

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