Effectiveness of Awareness and Willingness to Use EFDs in Sealing Corruption Loopholes in Tanzanian Tax Collection System: A Case of Mbeya City

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Abstract

This study aimed to investigate the effectiveness of awareness and willingness to use Electronic Fiscal Devices (EFDs) in sealing corruption loopholes in the Tanzanian tax collection system. The study used a case study strategy to achieve this goal, involving a sample of 152 EFD users selected from a population of 1500 EFD registered taxpayers in Mbeya city. A validated questionnaire was used to collect respondents' data using a systematic random sampling technique. It also used Cronbach's Alpha coefficient tests to examine the reliability of the scales. Data analyses were done with the help of SPSS, from which descriptive statistical outputs such as percentages were interpreted into meaningful results. The study discovered a statistically significant relationship between taxpayers' awareness and willingness to use EFDs and sealing corruption loopholes in the Tanzanian tax collection system. The study's findings generally show that a high level of taxpayers' awareness of EFDs and their greater willingness to use EFDs aid in sealing corruption loopholes in the Tanzanian tax collection system. Therefore, the study recommends that the Tanzania Revenue Authority (TRA) enhance taxpayers' awareness of EFDs and their willingness to use EFDs to seal corruption loopholes in the Tanzanian tax collection system. This awareness and willingness will increase tax revenue collection, which is vital for the country's social-economic development.

Keywords: Effectiveness; awareness; willingness; Electronic Fiscal Devices (EFDs); corruption loopholes; tax collection system.

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1.   **Introduction**

Collecting taxes is a fundamental way for countries to generate public revenues that make it possible to finance investments in human capital, infrastructure, and services for citizens and businesses [1]. Developing countries fail to generate enough revenue from taxes because some countries face several institutional problems, such as corruption, that contribute to inefficient tax collection and non-tax payment compliance [2]. In strengthening such important tax collection and operational weaknesses, the government of Tanzania introduced more use of Information and Communication Technology (ICT) by deploying the Electronic Fiscal Devices (EFDs) in its tax collection system on 1 July 2010. The aim was to enable Tanzania Revenue Authority (TRA) to elicit sales information from traders, reduce revenue collection costs, close corruption loopholes, reduce tax evasion, and improve revenue collection and compliance [3, 4, 5]. As a result, statistics show that revenue collected by TRA has increased significantly since the introduction of EFDs in the Tanzanian tax collection system. For example, in 2010/2011, TRA collected a total of 890 billion TZS (equivalent to 384 million USD), compared to 756 billion TZS (equivalent to 326 million USD) collected in 2009/2010 [3]. However, such an increase in collected revenue due to using EFDs is not as much as possible due to several malpractices surrounding its use, including corruption [3, 4, 5].

The study conducted by Mandari and his colleagues [6] found that taxpayers' awareness was crucial in accepting and using EFDs in business transactions. Casey & Castro [7] argued in a study conducted in Kenya that awareness strongly influences the adoption of EFDs. They further argued that awareness is necessary for accepting and using ICT-related interventions to reduce corruption. However, a literature review has revealed that little has been done to establish a direct link between EFDs in the Tanzanian tax collection system and preventing corruption. Furthermore, none of the reviewed studies was conducted in Mbeya city, the home of significant agricultural-related producers and several socio-economic activities that attract huge tax collection [8]. As a result of the knowledge gaps mentioned earlier, this study is relevant because it investigates the effectiveness of awareness and willingness to use EFDs in sealing corruption loopholes in the Tanzanian tax collection system, citing Mbeya city as a case study. It also suggests possible improvements and practical steps that TRA, Prevention and Combating of Corruption Bureau (PCCB) and other stakeholders could take to address corruption prevention in the EFD-based tax collection system. Additionally, the findings of this study may serve as a foundation for future researchers interested in conducting studies on related topics.

The rest of this paper is divided into five sections. These are literature reviews followed by the research methods, results, conclusion, recommendations and implications, and ultimately the references.

2. Literature Review

2.1. Conceptual Review

Corruption: Gray & Kaufmann [9] defined corruption as the misuse of public office for personal gain through bribery, extortion, fraud and embezzlement. Grand and petty corruptions are two types of corruption [10]. According to PCCB [11], grand corruption involves high-ranking public officials, a sum of at least 1 billion TZS

(equivalent to 431,400 USD) or an issue of public interest. Petty corruption involves middle and lower-ranking public officials in social-economic service provision areas. In this study, corruption was defined as an action where a public official does or refrains from doing something that disrupts the normal order of things for personal advantage.

Loophole: A loophole is an ambiguity or inadequacy in the law, a set of rules, or a gap that permits an unethical person to take advantage of it for personal interest. Firstly, the employment of English rather than Swahili as the medium of instruction in EFDs is a corruption loophole. This is because most Tanzanian traders are not as fluent in English as in Swahili. Therefore, utilizing just the English language in EFD instructions leads to a lack of proper awareness of EFDs, making their use inconvenient for several taxpayers. Another corruption loophole exists when taxpayers are unwilling to use EFDs correctly or not use them for some sales during their business transactions. As a result, unethical tax officials can take advantage of their positions by colluding with those non-compliant taxpayers in exchange for a share of the money saved. Finally, the weak internal control mechanism of TRA, which leads to a low probability of identifying malpractice and mild punishment for unethical tax officials, is another corruption loophole. Tax officials will have viewed corruption as the least profitable and risky act if the internal investigation unit of TRA is effective and unethical tax officials detected engaging in corrupt acts are severely punished.

EFD: Refers to a machine designed for efficient management controls in sales analysis and stock control systems and conforms to the requirements specified by the laws [3]. They enable TRA to monitor business transactions, collect the proper VAT amount from a VAT registered business, and accurately estimate tax returns from non-VAT registered traders.

Tax and tax compliance: Tax is a mandatory fee levied by TRA on individuals or businesses following Tanzanian tax laws. Tax compliance is the willingness of an individual EFD registered taxpayer to pay tax using EFDs without tax authority (TRA) enforcement and by positive mutuality of the taxpayer.

2.2. Theoretical Framework

This study was guided by both Social Control Theory and Principal-Agent Theory.

Social Control Theory

In this theory, the desire to commit a crime is resisted due to costs associated with fear and behaviour. As a result, in the absence of fear of punishment or consequences, little can be done to deter people from enriching themselves at the expense of others. As this trend continues, it becomes accepted as a norm, as it is currently with some forms of corruption in many developing nations, including Tanzania. Thus, according to this theory, rather than administrative aspects, taxpayers' willingness to use EFDs throughout their business transactions is rooted in individual taxpayers' social norms and behaviour patterns.

Principal-Agent Theory

This theory operates based on the relationship between the principal and the agent. The principal delegates work to the agent who performs that work on behalf of the principal [12]. The problem occurs when the two parties have opposing interests and information asymmetry. As stated by Eisenhardt [12], agency problem arises due to the conflicting goals of the principal and the agent and from the difficulty in verifying the agent's behaviour. Such conflicting interests may lead agents to betray their trust and abuse their power to earn more income by engaging in corrupt acts. The principal-agent problem gets solved by aligning the interests of both parties. Also, information asymmetry between principal and agent should be avoided for a principal to be aware of the agent's actions.

Organizations (principals) like TRA should invest in information technologies to control agents' (employees') opportunism. Centralized information systems, such as the TRA's Electronic Fiscal Devices Management System, decrease information asymmetry, strengthen supervision of agent's actions, and lead to fewer unethical practices such as corruption among tax officials. Bakos & Kemerer [13] argued that factors influencing corrupt practices, particularly in EFDs tax collection system, can be explained and guided by theoretical perspectives drawn from the Principal-Agent theory. According to this theory, the tendency of unethical TRA tax officials to solicit and receive corruption from non-compliant EFD registered taxpayers are rooted in the fact that tax officials have personal interests in enriching themselves. Also, they have an informational advantage over TRA management about what is going on among EFD registered taxpayers.

2.3. Empirical Review

The study conducted in the motor industry in Zimbabwe [14] showed that EFDs are more effective and efficient in calculating VAT than manual methods. According to the study, EFDs have positively impacted the motor sector by improving tax collection, saving time in tax collection, and minimizing direct interaction between tax collectors and taxpayers, thus reducing corruption. A study conducted in Taiwan [15] found that perceived ease of use and perceived usefulness directly affect willingness to accept and use technology. Vlassenroot & Brookhuis [16] indicated that willingness to use new technology is positively related to awareness of the user of the technology. Corruption is perceived to be high in developing countries, affecting taxpayers' trust in authorities and willingness to pay taxes.

Developing countries fail to generate enough revenue from taxes because some countries face several institutional problems like corruption and political instability [2]. A study conducted in Nigeria reported that corruption, accountability, and transparency significantly impacted voluntary tax compliance [17]. The study concluded that for taxpayers to comply with tax laws, the government must be perceived as accountable, transparent and committed to reducing corruption. Citizens' perception of tax payment could be probably traced to non-transparency, non-accountability and a high rate of corruption, which discourage voluntary tax compliance [18]. Augustine and Enyi [19], who conducted a study in Nigeria, argued that governments should implement better strategies for combating corruption in tax matters. These strategies include overhauling internal control mechanisms, establishing state anti-corruption agencies, and imposing stiff penalties for fraudulent activity involving tax revenue generation, with zero tolerance for corruption being seen and practised. They concluded that control of corruption and trust in government positively correlate with individual voluntary

tax compliance behaviour.

In the study on the effectiveness of the administration of EFDs in revenue collection performance conducted in Tanzania [20], it was discovered that most respondents (53%) were unwilling to issue correct fiscal receipts as required by law. The study by Temba [21] on user acceptance of EFDs as a new tool for tax collection found that traders had partial elementary skills on the usefulness of EFDs in their business. Furthermore, Temba [21] discovered that 56% of respondents were unwilling to use EFDs in their daily business transactions due to the long time it takes to process a single transaction and the high price of EFDs. Others have difficulty in obtaining EFD maintenance if it encounters a problem and an unreliable network problem that sometimes makes transactions less effective. Taxpayers feel more concerned about paying taxes when there is high institutional quality in terms of trustworthy and observable paid taxes contribution to the country's social-economic development; otherwise, they will refuse to pay tax voluntarily [22].

3. Methods

The study adopted a case study design because it allowed for in-depth investigation and close attention to a specific problem. The population for the study was 1,500 EFD registered taxpayers in Mbeya city [3]. A sample size of 152 EFD registered taxpayers was determined using Taro Yamane's (1967) formula with the error term of 7.7%. A validated questionnaire was used to collect data from respondents employing systematic random sampling techniques. The reliability test of the three scales of the instrument showed that awareness of the use of EFDs, willingness to use EFDs, and loopholes of corruption in the EFDs tax collection system of Tanzania had Cronbach's alpha coefficients of 0.732, 0.850, and 0.723 respectively. This test result indicated that the instruments were reliable for the study as the values were above the minimum level of 0.7 as recommended by Nunnally, 1978 in [23]. As shown in a conceptual framework in Figure 1, the dependent and independent variables were measured using a five-point Likert scale to collect the primary data with relevant questions applicable to each variable. The data was collected through interviews and surveys involving taxpayers and related stakeholders. The data analysis was done using SPSS software, the most relevant and efficient data analysis tool commonly used by researchers.
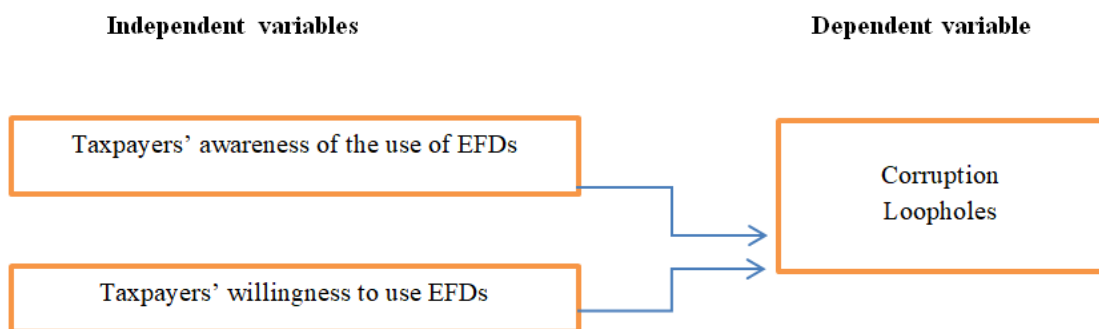

Figure 1: Conceptual framework **- Source**: Authors' construction (2022)

4. Results

The collected data were analyzed per the conceptual framework in Figure 1 and are presented in this section.

4.1. Taxpayers' Awareness of Use of EFDs

When respondents were asked whether learning to use EFD is very easy, 49.4% agreed, as shown in Figure 2. This result indicates that almost half of EFD registered taxpayers have no adequate awareness of using EFDs. When respondents were asked if there are no serious problems in using EFDs, 58.6% agreed. Therefore, this implies that most taxpayers do not face problems from EFD usage. This result complies with Kira [24], where 57.3% of respondents revealed that they were not encountering problems using EFDs. When respondents were asked whether the English language used in EFDs is a challenge to them, 48.7% agreed. Therefore, it implies in this study that the English language used in EFDs is a challenge to almost half of all EFD registered taxpayers. This result is consistent with Casey & Castro [7], whose findings revealed that the universal requirement of English as the primary language in the devices poses a challenge in adopting EFDs technology. When respondents were asked whether they would be more aware if the Swahili language is used in EFDs instead of English, 67.8% agreed. This result indicates that most EFD users prefer Swahili to be used as a language of instruction in EFDs over English. When respondents were asked if EFD is easy to use, only 48.7% agreed. These results are in line with Temba [21], whose findings showed that traders had partial elementary skills on the usefulness of EFDs. The results are also consistent with Mandari and his colleagues [6], who found that awareness of the EFDs and their benefits in business is critical for traders to accept and use the devices.
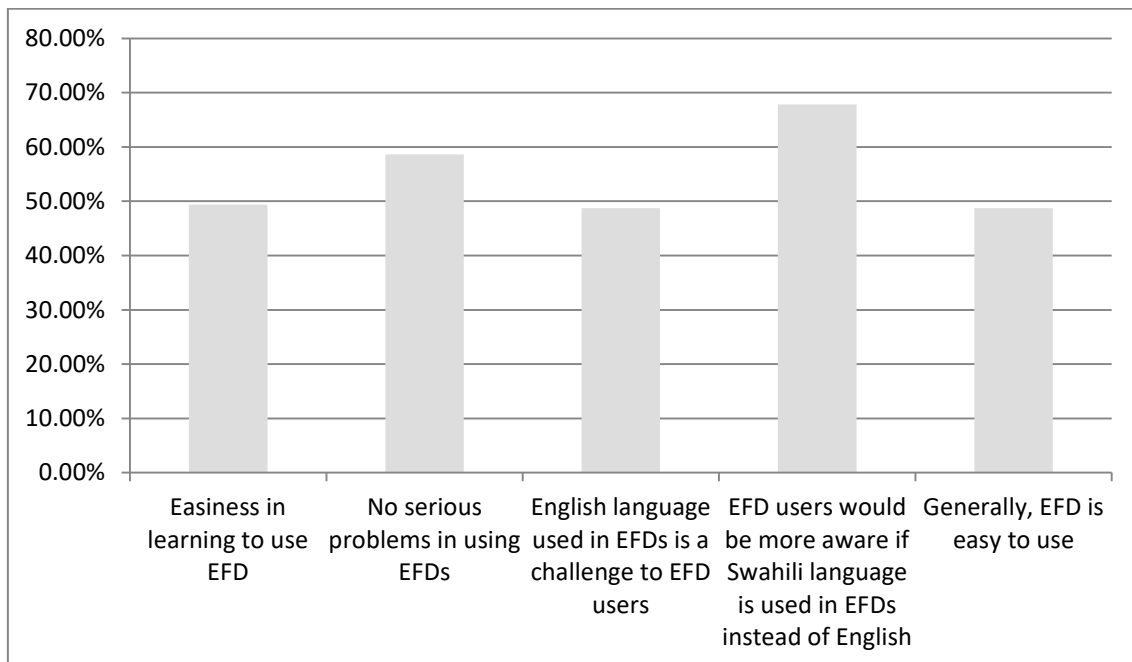

Figure 2: Taxpayers' Awareness of Use of EFDs **- Source:** Field Survey Data (2022)

4.2. Taxpayers' Willingness to Use EFDs

When respondents were asked if they use EFDs in all their business transactions, 79.6% agreed, as shown in Figure 3. This outcome implies that most EFD registered taxpayers use their EFDs every time they make a business transaction. When respondents were asked if they always print and issue correct fiscal receipts from their EFDs, 68.5% agreed. The percentage implies that the majority of EFD users willingly use them correctly. This result is contrary to the results obtained by Walter [20], where 53% of respondents were unwilling to issue correct fiscal receipts as required by law. When respondents were asked whether they use EFDs correctly even when there is no TRA inspection, 59.8% agreed. This indicates that most taxpayers use EFDs correctly of their own will and not due to TRA enforcement. When respondents were asked whether they feel morally obliged to honestly declare all their sales returns for tax purposes through EFDs, 43.4% agreed. This outcome implies that more than half of EFD registered taxpayers are unwilling to declare all their sales returns for tax purposes through EFDs. When respondents were asked whether they have willingly accepted the responsibility of paying tax through EFDs, only 29.6% agreed. The result indicates that most taxpayers have not accepted the responsibility of paying taxes via EFDs willingly. This outcome is in line with the results of Temba [21], who found that most respondents (56%) were unwilling to use EFDs in their daily business transactions.
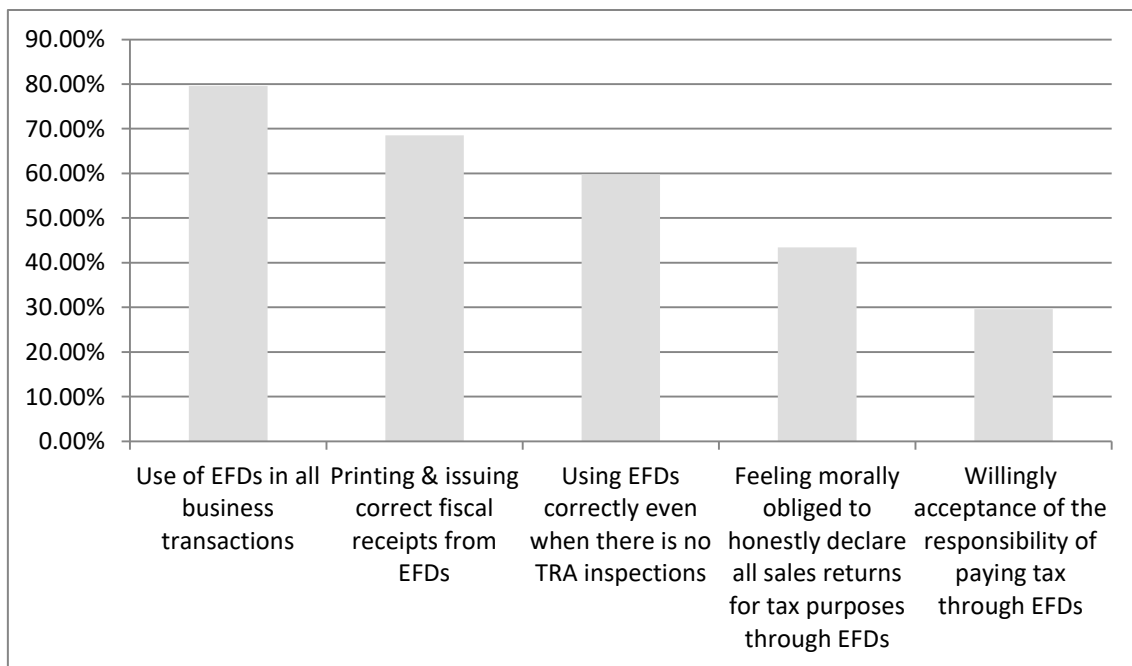

Figure 3: Taxpayers' Willingness to Use EFDs **- Source**: Field Survey Data (2022)

4.3. Relationship between Awareness to Use EFDs, Willingness to Use them and Corruption Loopholes in Tax Collection System

When respondents were asked whether unethical tax officials take corruption from non-compliant EFD users, 40.1% agreed, as shown in Figure 4. The result indicates that corrupt practices prevail in the EFD tax collection system. When respondents were asked if lack of awareness of the use of EFDs motivates corruption in the EFDs

tax collection system, 72.4% agreed. This result indicates that low awareness of the use of EFDs among taxpayers increases corruption practices in the tax collection system. When respondents were asked if lack of willingness to use EFDs motivates corruption in the EFDs tax collection system, 76.3% agreed. This outcome indicates that a low willingness to use EFDs among taxpayers encourages corruption practices in the tax collection system. When respondents were asked whether being aware of how to use EFDs correctly in every business transaction avoids giving Corruption to TRA officials, 89.5% agreed. The result indicates that a high level of taxpayers' awareness of the use of EFDs reduces corruption practices in the tax collection system. When respondents were asked whether using EFDs willingly in all business transactions avoids giving corruption to TRA officials, 90.8% agreed. This outcome indicates that increased taxpayers' willingness to use EFDs reduces corruption practices in the tax collection system.
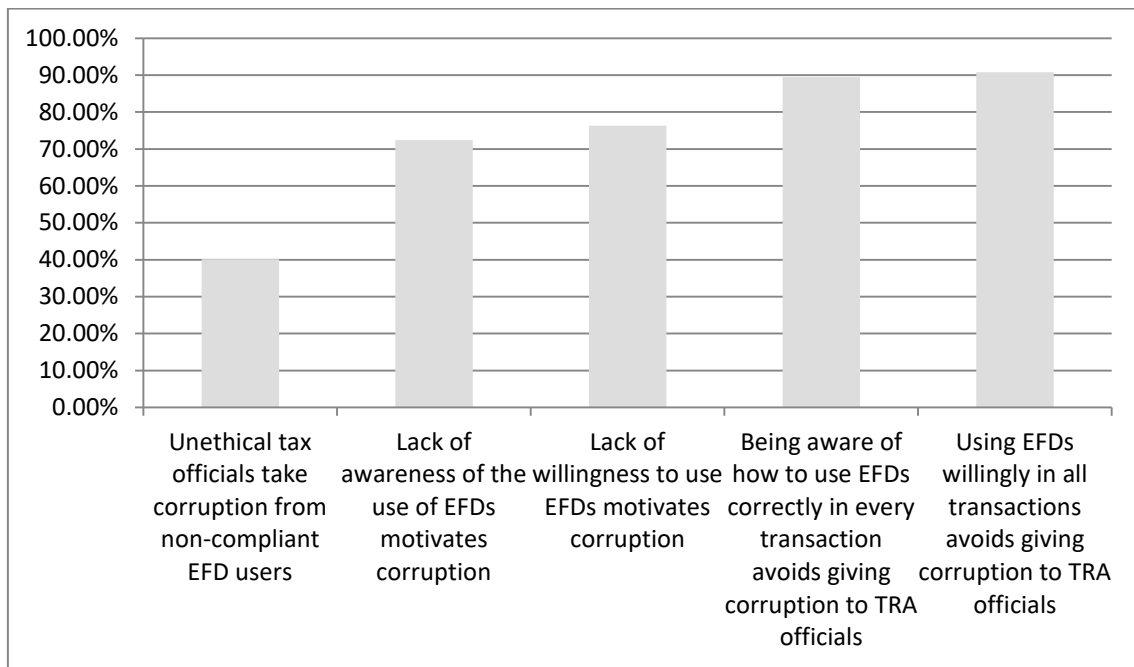

Figure 4: Relationship between Awareness and Willingness to use EFDs and the Corruption Loopholes in Tax Collection System **- Source**: Field Survey Data (2022)

5. Conclusion, Recommendations and Implications

5.1. Conclusion

From the study findings, 72.4% of respondents responded that lack of awareness of use of EFDs motivates corruption, and 76.3% responded that lack of willingness to use EFDs encourages corruption. Also, 89.5% of respondents responded that being aware of how to use EFDs correctly in every business transaction avoids giving Corruption to TRA officials, and 90.8% responded that using EFDs willingly in all business transactions avoids giving corruption to TRA officials. Therefore, the findings indicate that taxpayers' awareness of the use of EFDs and their willingness to use EFDs in their business transactions significantly influence the sealing of corruption loopholes in the tax collection system. In general, the findings indicate that a high level of taxpayers'

awareness of the use of EFDs and their greater willingness to use EFDs contribute to sealing corruption loopholes in the Tanzanian tax collection system.

5.2. Recommendations

(i) TRA should strongly emphasize raising taxpayers' awareness of EFDs since the current taxpayers' awareness of EFDs is still low. This emphasis could be done through innovative textual, audio and visual-audio clips through all available cost-effective analogue and digital or ICT-based channels using English and Swahili. For example, taxpayers have reported that when they purchase EFDs from agents authorized by TRA, those agents do not bother providing any awareness training. They issue written instructions on operating EFDs, which are insufficient and written in English, which is fluently spoken by a minority.

(ii) TRA should enhance its communication platform with EFD registered taxpayers by educating them on the benefits of paying taxes to society. Instead of depending on enforcement approaches, this voluntary tax compliance mechanism will increase taxpayers' willingness to pay taxes through EFDs.

(iii) TRA should establish or enhance an informants' protection mechanism through widespread analogue and digital channels to encourage EFD users to report unethical tax officials who solicit corruption from them. A high level of taxpayers' awareness of the use of EFDs and their greater willingness to use EFDs raise taxpayers' confidence in reporting to TRA unethical tax officials who solicit and receive corruption from them. When unethical tax officials realize that the probability of being reported to TRA is high if they solicit and receive corruption from taxpayers, they will stop engaging in corrupt practices because they view corruption as the least profitable and risky act.

5.3. Implications to Research, Practitioners and Decision Makers

Tanzania aspires to become an industrial economy and resume its middle-income economic status, which has been lost recently. Therefore, it is more critical than ever for practitioners and decision-makers to design analogue and digital or ICT-enabled strategies to ensure sufficient and sustainable domestic revenue. Based on the results of the current study, the government can formulate the most appropriate policies and practices on EFDs usage in revenue collection. This formulation could be by considering further the effectiveness of awareness and willingness to use EFDs in preventing corruption in the Tanzanian tax collection system, which will increase the amount of tax revenue collected. Although the results and conclusion of the current study are not affected, it is still crucial to highlight the limitation that respondents for the present study were exclusively EFD registered taxpayers. Thus, the analysis was only based on taxpayers' responses and did not consider buyers' perceptions of EFD usage. This coverage might result in respondents' biases and subjectivity. Therefore, researchers suggest that future research may also involve buyers of goods and services as respondents to get insights into their views on EFDs usage in the Tanzanian tax collection system.

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