



# **Nexus between Internal Controls System and Effectiveness in Revenue Collection in Energy Utilities in Tanzania**

**Justine Celestine<sup>1\*</sup> and Emmanuel Matiku<sup>1</sup>**

<sup>1</sup>Jordan University College-Morogoro-Tanzania.

## **Authors' contributions**

*This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.*

## **Article Information**

DOI: 10.9734/AJEBA/2021/v21i1230452

### Editor(s):

(1) Dr. María-Dolores Guillamón, University of Murcia, Spain.

### Reviewers:

(1) Merouani Amar, El Bachir El Ibrahim University, Algeria.

(2) Sukonthip Suphachan, Burapha University, Thailand.

(3) Malushko Elena, Volgograd state university, Russia.

Complete Peer review History: <https://www.sdiarticle4.com/review-history/72820>

**Original Research Article**

**Received 20 June 2021**

**Accepted 01 September 2021**

**Published 04 September 2021**

## **ABSTRACT**

This research examined the nexus between internal controls system and revenue collection effectiveness in energy utilities in Tanzania. Multiple regression analysis was applied to the collected data from respondents. It was revealed that, control environments and control activities have insignificant and positive association with revenue collection effectiveness while risk assessment and monitoring of controls had significant and positive influence to effectiveness in revenue collection. In order to improve revenue collection efficiency in energy utilities and other related public authorities in Tanzania, it is indispensable to support and improve internal controls system like segregation of duties, reconciliations and physical controls so as to bring efficiency in revenue collection. Also, assessment of risk is another control which needs to be undertaken in order to encourage revenue collection effectiveness. For all these controls to be active, monitoring of controls should be highly undertaken on periodic basis. Since our research considered energy sector as the study area particularly at TANESCO in Morogoro region, it is recommended that next studies should take into consideration other sectors and related public bodies.

**Keywords:** *Internal controls system; energy utilities; revenue collection effectiveness; Tanzania.*

\*Corresponding author: E-mail: [justinecelestine@gmail.com](mailto:justinecelestine@gmail.com);

## **1. BACKGROUND TO THE STUDY**

This study intended to examine the factors affecting revenue collection effectiveness in energy utilities in Tanzania, by considering the nexus between internal controls system and effectiveness in revenue collection in energy utilities in Tanzania. One of the necessary aspects in economic development of a country is effective and efficient revenue collection [1]. In order to support operations of a country like construction of infrastructures, administrative functions and provision of social services, adequate revenue collection is necessary [2]. In case of an organization, in order to run its various operations, adequate revenue is highly needed [3]. Effective in revenue collection stimulates achievements of the intended objectives of an entity [4]. On the other hand, efficient revenue collection reduces dependence of public institutions on the government and development partners [5]. The objectives of any public entity can only be realized when revenue is effectively collected and efficiently utilized in strategic activities. Since the resources are limited, public entities need to properly manage their revenues by instituting effective internal controls system accompanied by efficient ways of mobilizing resources, ensuring efficient budget and budgetary control and properly managing cash and cash equivalents [6]. Bearing this into mind, our study takes into consideration Tanzania Electric Supply Company (TANESCO), as one of the energy utility company in Tanzania. TANESCO is a parastatal organization established by Memorandum and Articles of Association incorporated on 26<sup>th</sup> November 1931 which established Tanzania Electric Supply Company Limited (the then Tanganyika Electric Supply Company Limited -TANESCO). The Company generates purchases, transmits, distributes, and sells electricity to Tanzania Mainland and sells bulk power to the Zanzibar Electricity Corporation (ZECO), which in turn sells it to the public in islands Unguja and Pemba. TANESCO owns most of the electricity generating, transmitting, and distributing facilities in Tanzania Mainland with an estimated population of over 60 million [7].

Historically, the German colonialists established the first public electricity supply in Tanzania, the then called Tanganyika in 1908 at Dar es Salaam. It served the railway workshops and a part of the town where the colonialists were mostly staying. In 1920, when Tanganyika territory was put under Great Britain protectorate,

a Government Electricity Department was formed to take over and operate the public supplies left by the Germans. In 1931, the Government handed over the undertaking at Dar es Salaam and those elsewhere upcountry (Dodoma, Tabora, and Kigoma) to private enterprises. One of these companies was the Tanganyika Electric Supply Company Ltd. (TANESCO) and the other Company was the Dar es Salaam and District Electric Supply Company Ltd (DARESCO). The two companies were merged in 1964 and later changed their name into Tanzania Electric Supply Company (TANESCO), [7].

Tanzania Development Vision 2025 envisages making the country the middle income by 2025; this implies that GDP per Capita will be raised from USD 640 to at least USD 3,000 by 2025. To achieve this target, we need fast economic growth which must be propelled by an adequate, reliable, affordable, and environmentally-friendly electricity supply [7]. Therefore, Generation capacity needs to be increased from 1,583 MW to at least 10,000 MW by 2025. In undertaking its core functions TANESCO is guided by the National Energy Policy of 2003 and Electricity act of 2008. TANESCO Ltd functions under the regulatory guidance of the Energy and Water Utilities Regulatory Authority (EWURA) established by the EWURA Act of 2001. In complying with the above directives, the company has come up with a structure that reduces operational costs without compromising performance and efficiency. It has also considered the National Agenda for Industrialization that aims at transforming Tanzania's economy into middle income [7].

Being the energy utility in Tanzania, TANESCO has been constantly depending on government and development partners' support [7]. Review of the annual reports of the TANESCO shows that, the company has been consistently incurring losses and failing to pay the loan from the Government of Tanzania. For example, the company has advances towards share capital which is a long term liability amounting to TZS: 1,107,131 million for the year ended 30<sup>th</sup> June 2019 (TANESCO Annual Report, 2018/19). This has led the company to fail to pay dividend to the government (TANESCO Annual Report, 2018/2019). To evidence this, examination of the annual reports for various years shows that, for the year ended 30<sup>th</sup> June 2018, the company incurred a net loss of TZS 112,516 million (30<sup>th</sup> June 2017: Loss TZS: 265,297 million, 2016: Loss TZS 349,555 million). On top of that, during

the 18-month period ended 30<sup>th</sup> June 2015, the company incurred a net loss of TZS: 126,066 million (12 month to December 2013: Loss TZS:467,704 million). The company has significant accumulated losses; therefore, the Directors did not recommend the payment of dividend for the stated years. The stated annual report declares that, without government support, the company will operate under no going concern.

As per NAOT [6] review of the efficiency of TANESCO in enhancing and competing in business environment revealed various deficiencies which limit TANESCO from competing in the market and creating conducive business environment. The noted deficiencies relate to financial constraints, inadequate internal controls system accelerated by scant investment in technology and low implementation of strategic projects, longer turnaround days, and slow pace in collection of outstanding receivables which could boost their financial strength and invest in profitable venture.

Moreover, Natujwa [8] identified that some of the challenges facing TANESCO include inability to finance its operations by using its own fund and rely on grants and government subsidies as well as inefficiency revenue collection. This situation significantly reduces the ability to undertake maintenance plan which leaves electric distribution infrastructure system in not in good condition and creates underperformance and inability to meet electricity demand [8]. Taking all these into account, it could state that, they are highly accelerated by inadequate revenue collection and management. Therefore, availability of adequate revenue which is well collected and properly managed, could lead to effective performance of TANESCO. This motivates for the need to explore on the factors affecting revenue collection in energy utility, particularly TANESCO in Morogoro region. Understanding factors affecting revenue collection particularly the influence of internal controls system on revenue collection effectiveness contributes to effective operations of an organization as well as reducing public sector entities reliance on government and donor supports.

Despite the necessity of revenue collection and management, most of the public entities in Tanzania including TANESCO are faced with inadequate funding by the government and under-collection of funds from own sources.

Existence of scant studies which focuses on the nexus between internal controls system and revenue collection effectiveness in Tanzania, particularly at TANESCO in Morogoro region, as per researchers' best understanding and knowledge, has motivated the conduct of this study. For this gap, the researchers intended to examine the association between internal controls system and revenue collection effectiveness in Tanzania, particularly at TANESCO in Morogoro region.

The rest of this paper is organised as follows. The next part discusses empirical evidences related with our current study as well as development of the hypotheses. The methodology of the research is then presented followed by results of the study. Thereafter, discussion of the findings is done. Finally concluding remarks and recommendations for further studies is provided.

## **1.1 Empirical Literature Review**

Researches on the revenue collection have attracted the attention of various stakeholders in both developed as well as emerging economy. Understanding this, we present some of the empirical evidences concerned with our current study, as follows:

Sang [9] did a research on determinants of fraud control procedures in commercial banks and concluded that most of the control environments were weak and inadequate to prevent fraud. The study revealed that, most of the preventive controls were highly ignored. In line with this, Njagi & Mwangi [10] found that presence of effective management control systems advocates adequate internal controls in an organisation. They added that, improved internal audit functions accompanied by enhanced monitoring controls, facilitates strong internal controls. Besides that, Matata, [11] reported the existence of strong association among internal controls and performance of Kenyan water companies. Specifically, the study specified that, control environment, control activities, risk assessment, monitoring and information and communication have an important effect on the performance of Kenyan water companies.

Joseph et al., [12] examined the impact of internal controls on fraud prevention in Kenyan LGAs; and discovered existence of considerable positive connection between fraud prevention and detection and strong internal controls

systems. They recommended that, efficient and effective internal controls systems and policies must be placed in all districts. This will assist in preventing occurrence of fraud in the LGAs. Similarly, while analyzing the effect of anti-fraud awareness and internal control on fraud prevention, [13] found a significant positive effect between anti-fraud awareness and internal control and fraud prevention. Yuniarti & Ariandi, [13] indicated that, for the aim of preventing fraud occurrence, strong internal controls and training on anti-fraud awareness should be encouraged. The study employed multiple regressions to analyse data from 58 respondents in Indonesia. Contrary to the findings of Joseph et al., [12] and Yuniarti & Ariandi, [13]; Kabue & Aduda, [14] studied the impact of Internal Controls on fraud detection and prevention in Kenyan Commercial Banks. They concluded that reconciliation control and financial governance had a significant negative correlation with fraud prevention and detection.

Minani [15] assessed how financial managers use Integrated Financial Management Information System (IFMIS) in decision making at TANESCO and found that, 80.09 percent of the financial managers applies IFMIS in generating financial information leading to efficiency of their financial decisions. This implies that, IFMIS being part of ICT contributes highly in managing resources and achieving organisation efficiency by facilitating decision making as well as in financial management including revenue management. On top of that Ataro, Muturi & Wandera [16] investigated determinants of revenue collection efficiency in Kenyan Counts and concluded that, staff competences and training, strong internal controls system and application of modern information and communication technology (ICT) contributes to revenue collection efficiency. In line with this Mirinaviciene [17] recommended that ICT department should strive to persistently upgrade revenue collection systems so as to keep the systems well updated with the growing capacity of operations and the provision of early attention to any system challenges. As the result internal controls systems will be updated leading to effective collection and management of revenue.

While examining the effects of internal controls on revenue collection in Kenya, Mwachiro [18] stated that, inadequate internal controls particularly poor control activities and control environments as well as monitoring of controls lead to collusion to loss of revenue and

embezzlement of collected revenue. Also, it was found that, there is a significant relationship between revenue collection and internal controls. This implied that, presence of strong internal controls such as control activities, monitoring of controls and control environments as well as use of ICT in revenue collection contributes to effective revenue collection. Aiming at assessing the effects of internal controls on revenue collection at Tanzania Revenue Authority (TRA), Ally [19] documented presence of undesired effect of weaknesses in internal controls system like deteriorating service delivery and ineffective revenue collection. This in turn contributes to loss of public revenue and non-accountability of public employees as well lack of transparency in collected revenue. To overcome this, Ally [19] recommended that, management of the TRA should be familiar with internal controls systems and procedures. This will add value in ensuring effective service delivery and collected of targeted revenue.

In addition to Ally [19], an assessment of the performance of internal controls system in relation to revenue collection was made by Hanau [20] at Zanzibar Municipal Council (ZMC). Findings revealed presence of strong internal controls techniques that supports revenue collection efficiency. Specifically, existing internal controls supporting revenue collection were job rotation, segregation of duties and work supervision as well as management support of internal controls in operations. On the other hand, it was found that, internal audit unit as one of the major parts of internal controls was not effectively working. This could lead to inadequate collection of revenue since internal auditors are perceived as the watch dog of internal controls.

Review of the relationship between internal controls and revenue collection in Kenyan corporations by Mutua [21] by considering five components of internal controls in relation to revenue collections. Results showed a positive and statistically significant relationship between control environment, risk assessment and revenue collection. Also, information and communication as well as controls monitoring revealed significant and positive relationship with revenue collection. To achieve intended motives of internal controls system on revenue collection, Mutua [21] recommended that use of segregation of duties and environment auditing so as to avoid fraud in revenue collection. Also risk assessment should be adequately financed accompanied by adoption of modern internal controls systems.

This includes implementation of Integrated Financial Resource Management Systems (IFRMS) as well as application of periodic risk monitoring and evaluation in revenue collection systems. In turn, this will increase efficiency in revenue collection in public entities. This is also supported by Ndungu [22] and Mwachiro [18] as well as Sigilai [23] who collectively discovered similar findings with Mutua [21].

For the intention of groping the affiliation among internal controls and revenue generation in public sector, Agbenyo et al., [24] found the continuation of considerable effect among internal controls and revenue collection. In this study, internal controls were measured by using risk assessment, control activities, control environments, monitoring and information processing. Agbenyo et al., [24] recommended that, internal controls must be well regulated and monitored.

Finally, the study on the rapport amid Internal Controls and Performance of Higher Learning Institutions in Uganda by Ssuuna [25] documented the presence of significant positive correlation between the two variables. Ssuuna [25] added that, the management is committed in ensuring control environments; monitoring and supervision are actively in place. Not interestingly, the results revealed inadequate functioning of the internal audit unit as it was characterized understaffing, absence internal audit planning and non-provision of internal audit report. Concurring with Ssuuna, [25], Abdullahi & Muturi, [16] conducted the same research in Higher Education Institutions in Somalia, and disclosed that the university's management highly devoted to adequate functioning of the internal controls. This was due to their active involvement in monitoring and supervising of various activities in the workplace. Somehow, contrary to Ssuuna, [25] findings on internal audit, Abdullahi & Muturi, [16] results indicated adequate functioning of the internal audit unit. The unit was well staffed and conducts and provides reports as planned and as required.

## 1.2 Formulation of the Research Hypotheses

Specifically, this study intends to examine the influence of internal controls system on effectiveness in revenue collection in energy utilities in Tanzania. Basing on this, effectiveness in revenue collection stands for dependent variable while internal controls system stands for

independent variables. Effectiveness in revenue collection was measured in a five point likert scale. This was accompanied by various statements which required respondents to indicate how they either strongly agree or strongly disagree basing on the given statements. Internal Control means the controls introduced by the management for the intention of protecting organization's resources. They involve the check and balances put in place to guide the daily functions. Internal controls system as independent variable includes Control environments, Risk Assessment, Control activities, Monitoring and information and communication [19]. There are mixed findings on the relationship between internal controls and effectiveness in revenue collection. Presence of strong internal controls systems enhances effectiveness in revenue collection in an organisation. On the other hand, weak-internal controls limit revenue collection effectiveness. Since internal controls are introduced by the management with the aim of providing check and balances towards organisation resources, they are highly useful in guiding conducts of day to day activities including revenue collection and expenditure management. Therefore, considering such mixed views and selected components of internal controls system, each of these sub-variables is discussed followed by development of the proposed hypothesis as follows:

### 1.3 Control Environments

It establishes the attitude of an entity by influencing the control awareness of its people. A control environment is the key of all other constituents of internal controls. It provides structure and discipline in an organization. Control environment involves application of ethical principles, management philosophy, assignment of power and responsibility and attention towards directives from the governing authority. In their study, [24], concluded existence of a significant correlation between ethical environments and employees commitment to fraud prevention and detection especially in revenue collection. In addition, [24] found that ethical environment has a positive considerable impact with the revenue collection effectiveness. Therefore, basing on this point of view, it is hypothesized that:

*H1: Control environments positively affect effectiveness in revenue collection in energy utilities in Tanzania.*

## 1.4 Risk Assessment

It comprises the analysis and determination of various risks which affect the organisation activities including revenue collection effectiveness. For the aim of determining the effectiveness of risk management, there should be adequate capturing and communication of risk information [26]. From these facts, it is stated that:

*H2: A significant positive correlation exists between risk assessment and effectiveness in revenue collection in energy utilities in Tanzania.*

## 1.5 Control Activities

In order for the day to day activities of an organisation to be effective, there should be procedures, policies and mechanisms. Such procedures and policies help in preventing fraud occurrence and assists in proper guidance of activities such as revenue collection and expenditure management. Control activities make sure that required precautions have been taken with the objective of preventing fraud risk in an organisation. Some of the components of control activities are bank reconciliation, pre-audit and segregation of duties [10,27]. Presence of control activities contributes to the effectiveness in revenue collection in energy utilities in Tanzania. Hence, it is expected that:

*H3: Control activities significantly influence effectiveness in revenue collection in energy utilities in Tanzania.*

## 1.6 Monitoring Activities

To achieving the intended aim of internal control systems, all controls should be monitored. Any control which is not monitored is dead. It accomplished by undertaking separate evaluation and ongoing monitoring of the entity's activities. For monitoring to be most effective in organization activities like revenue collection, employees should be aware about the entity's objectives, mission and vision [13,28]. They should have risk tolerance culture and appreciate their obligations. Therefore, it is proposed that:

*H4: Monitoring activities positively influences effectiveness in revenue collection in energy utilities in Tanzania.*

## 2. METHODOLOGY OF THE STUDY

Basing on study objective and reviewed literature, a survey design was involved [29]. The structured survey instrument is the best instrument for collecting data for the research

variables which are inexpensive to access and difficult to monitor [30]. It is as well considered as a suitable way of exploring and gathering the huge and various population of the study, for the aim of acquiring the appropriate answers of our intended questions [31]. Therefore, for these reasons, a survey design was the appropriate way to meet our research objectives. The study area was at the TANESCO regional offices as well as district offices in Morogoro region. The regional and district offices which were considered are Morogoro Municipal, Mvomero, Ulanga, Gairo, Kilosa and Morogoro Rural. Such area of study has been taken into consideration basing on the researcher's convenience, budget and time factors. The study population was employees working in the departments of accounts and finance, procurement and internal audit as well as information and communication technology (ICT). These were selected due to their knowledge, experience as well as involvement in revenue collection in an organisation.

In order to collect data from the respondents, the researcher proposes the use of 162 respondents from TANESCO in Morogoro region. Such sample size has been determined in accordance with Tabachnick and Fidell [32] and Matekele and Komba [33] as well as Matekele and Komba [34], who indicated that for those studies which apply multiple regression analysis the expected sample size should be determined by using the formula  $N \geq 50 + 8 * M$ . In this case, M stands for the number of independent variables while N stands for the expected sample size. As indicated in the conceptual framework under chapter two, this study has 14 independent variables. Therefore, the expected sample size will be 162 respondents. Note that,  $N \geq 50 + 8 * M$ ; whereby M is 14, this gives 162 as expected sample size. After collecting the returned questionnaires, the researcher coded and recorded the collected questionnaires into a computer package known as Statistical Package for Social Science (SPSS Version 20). We employed this package due to researcher's familiarity and the nature of the collected data from the respondents. Actually, returned and collected questionnaires were 150, meaning that 12 questionnaires were not returned. As the result of data cleaning 5 questionnaires were dropped due missing large parts of items. Hence, a total of 145 questionnaires were finally used in the data analysis implying that the sample size of our study is 145 and not 162 as proposed. To examine the nexus between internal controls

system and revenue collection effectiveness in energy utilities in Tanzania, a descriptive statistics and multiple regression analysis were employed.

Descriptive statistics was taken into consideration so as to ascertain the outliers, missing values as well as out of range responses. Also, descriptive analysis was used in establishing overall average and distribution of the collected data from respondents. Multiple regression analysis was applied in order to examine the relationship between two or more independent variables and dependent variable. It should be remembered that, independent variables were internal controls system whereas effectiveness in revenue collection constitutes for dependent variable. Therefore, to examine the nexus between internal controls system and effectiveness in revenue collection, multiple regression analysis was appropriate [35]. This was considered basing on the nature of the study variables which call for establishing the relationship between independent and dependent variables.

### 3. RESULTS

The following section provides results for descriptive statistics and multiple regression analysis.

#### 3.1 Results for Descriptive Analysis

As shown in Table 1.0, five (5) demographic variables were involved in obtaining respondents basic information. This includes gender, age, marital status, academic qualification and working experience. Review of Table 1.0 illustrates that, 75.9 percent of the respondents were male and most of the respondents were under age category of 36 to 45 years (50.3 percent). In case of marital status, large part of the respondents was married represented by 71.03 percent while in terms of academic qualification, 64.8 percent are bachelor degree holders. Working experience was apprehended into two groups as shown in Table 1.0 below. As indicated, 103 respondent's equivalents 71.03 percent have working experience below 5 years. On the other hand, 42 respondents standing for 28.97 percent have working experience of five years and above.

#### 3.2 Empirical Results

Our study anticipated to examine the association between internal controls system and

effectiveness in revenue collection in energy utilities in Tanzania. To achieve this, control environment, control activities, risk assessment and monitoring were taken as independent variables representing internal controls system. Taking into account multiple regression analysis as stated in chapter three, Table 1.1 below depicts the results for the nexus between internal controls system and effectiveness in revenue collection in energy utilities in Tanzania.

Examination of the statistical model and multi-collinearity presented in Table 1.1 above suggest that, our model is statistically acceptable as explained below;

#### 3.3 Control Environment

In table 1.1 findings show that control environment has a positive coefficient but not significant. This is to say, influence of control environment to the effectiveness in revenue collection is positive but it does not significantly affect revenue collection effectiveness. This is conformity with prior expectation that, *control environments positively affect effectiveness in revenue collection in energy utilities (H1)*. Past studies such as Yuniarti & Ariandi, [13] and Ngugi and Kagiri [36] have documented that; control environment is among the principal factors influencing effectiveness in revenue collection. This means that, the way in which top management exhibit their support to the internal controls contributes significantly to revenue collection effectiveness in energy utilities like TANESCO. Generally, from this discussion and findings, it could be concluded that, of control environment affects the activities of revenue collection hence energy utilities must take into account various means of strengthening internal controls particularly control environments.

#### 3.4 Control Activities

Based on the survey results presented in table 1.1, control activities are insignificantly correlated with effectiveness in revenue collection. The coefficient of control activities is positive. This doesn't concur with researcher's prior expectation that, *control activities significantly influence effectiveness in revenue collection in energy utilities (H3)*. Studies by Odoyo et. al [37] and Simangunsong [35] as well as Hay & Cordery [38] have reported that, one of the limiting factors for effectiveness in revenue collection is the inadequate application of control activities like authorization, bank reconciliation,

segregation of duties and physical security. This affects the strength of the energy utilities in revenue collection as well as the effective performance of the revenue collection activities.

### 3.5 Risk Assessment

The findings depicted in table 1.1 states that, risk assessment significantly affects effectiveness in revenue collection. Such influence is statistically positive. Our findings concur with researcher's expectation in which it was hypothesized that, *significant correlation exists between Risk Assessment and effectiveness in revenue collection in energy utilities (H2.)* As per Hay & Cordery, [38] it is well known that, thorough assessment risks affecting an organisation contributes significantly to the effective performance as well as risk management in the concerned entity. This signifies that, risk assessment of contributes in building

competences to staff who are involved in revenue collection. This in turn encourages effective revenue collection.

### 3.6 Monitoring of Controls

As presented in Table 1.1 above, monitoring of controls is one of the major determinants of the effectiveness in revenue collection in an organisation. Results reveal that existence of significant and positive correlation between monitoring of controls and revenue collection effectiveness. This is in parallel with our prior expectations that, *monitoring of controls positively influences effectiveness in revenue collection in energy utilities (H4).* This means that, presence of monitoring of controls in the energy utilities like TANESCO contributes significantly to the effective performance of revenue collection activities.

**Table 1. Demographics characteristics (N=145)**

Variables	Response Categories	Frequency	Percent
Gender	Male	110.00	75.90
	Female	35.00	24.10
	Total	145.00	100.00
Age	18-25 Years	30.00	20.69
	26-35 Years	26.00	17.93
	36-45 Years	73.00	50.30
	46 Years and above	16.00	11.00
	Total	145.00	100.00
Marital Status	Single	35.00	24.10
	Married	103.00	71.03
	Divorced	7.00	4.83
	Total	145.00	100.00
Academic qualification	Certificate/Diploma	23.00	15.90
	Bachelor Degree	94.00	64.80
	Master Degree	28.00	19.30
	Total	145.00	100.00
Working experience	Below 5 Years	103.00	71.03
	5 years and above	42.00	28.97
	Total	145.00	100.00

**Table 1.1. Internal controls and revenue collection effectiveness**

Dependent Variable	Independent Variables	Beta	t value	Sig.
Effectiveness in revenue collection	Constant		(0.67)	0.00
	Control environment	0.00	0.04	0.97
	Control activities	0.06	0.72	0.47
	Risk assessment	(0.33)	(3.94)	0.00
	Monitoring	0.24	2.66	0.00
R <sup>2</sup> =0.95, ANOVA(F)=4.017, P< 0.00, N=145				



#### 4. DISCUSSION

It was reported that, control environments and control activities have insignificant and positive association with revenue collection effectiveness. This is to say, influences of control environment and activities to the effectiveness in revenue collection is positive but it does not significantly affect revenue collection effectiveness in energy utilities particularly at TANESCO in Morogoro region. This is supported by our regression model which shows  $R^2=0.95$ , ANOVA (F)=4.017 and  $P < 0.00$ . In one way or another, our findings go parallel with Mutua [21] who reviewed the relationship between internal controls and revenue collection in Kenyan corporations by considering five components of internal controls in relation to revenue collections. Mutua [21] showed a positive and statistically significant relationship between control environment, risk assessment and revenue collection. Also, information and communication as well as controls monitoring revealed significant and positive relationship with revenue collection. To achieve intended motives of internal controls system on revenue collection, Mutua [21] and Matamande et.al [39] recommended that use of segregation of duties and environment auditing so as to avoid fraud in revenue collection. Also risk assessment should be adequately financed accompanied by adoption of modern internal controls systems. This includes implementation of Integrated Financial Resource Management Systems (IFRMS) as well as application of periodic risk monitoring and evaluation in revenue collection systems. In turn, this will increase efficiency in revenue collection in public entities.

Also, it was revealed presence of significant and positive correlation between monitoring of controls and revenue collection effectiveness. For monitoring of controls being positively related to revenue collection effectiveness implies that, in energy utilities like TANESCO taking into account monitoring of controls related with revenue collections increases performance of the entity while widening revenue efficiency. Consideration of related studies in Tanzania by Ally [19] and Hanau [20], add value to our results. Aiming at assessing the effects of internal controls on revenue collection Ally [19] documented presence of undesired effect of weaknesses in internal controls system like deteriorating service delivery and ineffective revenue collection. This in turn contributes to loss of public revenue and non-accountability of

public employees as well lack of transparency in collected revenue. To overcome this, Ally [19] recommended that, management should be familiar with internal controls systems and procedures. This will add value in ensuring effective service delivery and collected of targeted revenue. In addition, to Ally [19], an assessment of the performance of internal controls system in relation to revenue collection was made by Hanau [20]. Findings revealed presence of strong internal controls techniques that supports revenue collection efficiency. Specifically, existing internal controls supporting revenue collection were job rotation, segregation of duties and work supervision as well as management support of internal controls in operations. On the other hand, it was found that, internal audit unit as one of the major parts of internal controls dealing with monitoring of was not effectively working. This could lead to inadequate collection of revenue since internal auditors are perceived as the watch dog of internal controls. This is also supported by Mutua [21], Ndungu [22] and Mwachiro [18] as well as Sigilai [23] who collectively discovered related findings with our study.

#### 5. CONCLUSION

Examination of the association between internal controls system and effectiveness in revenue collection in energy utilities in Tanzania was the central objective of this study. Internal controls systems as independent variable involved four constructs namely control environment, control activities, risk assessment and monitoring of controls. It was reported that, control environments and control activities have insignificant and positive association with revenue collection effectiveness while risk assessment and monitoring of controls had significant and positive influence to effectiveness in revenue collection in energy utilities in Tanzania, especially at TANESCO. For efficiency and effective revenue collection, it is necessary to support and improve internal controls system at TANESCO and other related entities. For example, entities must strengthen control activities like segregation of duties, reconciliations and physical controls so as to bring efficiency in revenue collection. Also, assessment of risk is another control which needs to be done in order to encourage revenue collection effectiveness. For all these controls to be active, monitoring of controls should be highly undertaken on periodic basis.

Since our research considered energy sector as the study area particularly at TANESCO in Morogoro region, it is recommended that next studies should take into consideration other sectors and related public bodies. This will help in determining factors affecting revenue collection aiming at improving and increasing revenue collections in Tanzania and abroad.

In order to improve revenue collection efficiency at TANESCO and other related public authorities in Tanzania, it is necessary to consider advanced applications which are emerging as the results of changes in information and communication technology (ICT). Traditional methods of revenue collections should be stopped. This means, application of bank agents, mobile money payments and other online revenue collections methods add value on revenue collection effectiveness, hence encouraging attainment of targeted revenue.

Our research used primary data which is inclined to preconception and biasness. It is recommended that future studies should take into account employment of secondary data.

More studies should consider other methods of data collection like focus group discussion, observations and interviews. Such data collection methods will aid in exploring factors affecting revenue collection not only in energy sector like TANESCO but also in other public sector entities.

Finally, since descriptive and multiple regression analyses were used in exploring the nexus between revenue collection efficiency and internal controls system, particularly at TANESCO in Morogoro Region, further statistical analysis methods are hereby recommended to be applied for related studies in the future and in other related areas.

## DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

## REFERENCES

1. Ngotho J, Kerongo F. Determinants of revenue collection in developing countries: Kenya's tax collection perspective. *Journal of management and business administration*. 2014;1(1).
2. Kira AR. The perceptions of taxpayers on the adoption of electronic fiscal devices (EFDs) in revenue collection in Tanzania: The case of Dodoma. *International Journal of Academic Research in Business and Social Sciences*. 2016;6(12):39-55.
3. Chatama YJ. The impact of ICT on taxation: The case of large taxpayer department of Tanzania revenue authority. *Developing Country Studies*. 2013;3(2):91-100.
4. Ngicuru PN. Effect of selected factors affecting revenue collection in Nairobi city county government, Egerton University;2016.
5. Tagkalakis AO. The determinants of VAT revenue efficiency: recent evidence from Greece. *Bank of Greece*;2014.
6. National Audit Office. CAG Reports, United Republic of Tanzania;2021.
7. TANESCO. Annual Reports and Financial Statements;2019.
8. Natujwa N. Investigation of challenges facing the management of electric power distribution infrastructures in Dar es Salaam, UDSM;2018.
9. Sang MJ. Determinants of fraud control measures in commercial banks: A survey of selected commercial banks in Nakuru town, Kenya. *International Journal of Science and Research*, 2014;3(10):2178–2183.
10. Njagi AW, Mwangi M. Effect of internal controls on revenue collection of level five hospitals in Kiambu County. *International Academic Journal of Economics and Finance*. 2019;3(3):98–116.
11. Matata LM. The effect of internal controls on the performance of water companies in Kenya. Unpublished MBA Project;2015.
12. Joseph ON, Albert O, Byaruhanga J. Effect of Internal Control on Fraud Detection and Prevention in District Treasuries of Kakamega County. *Int. J. Bus. Manag. Invent*. 2015;4(1):47–57.

13. YR RD, Ariandi I. The effect of internal control and anti-fraud awareness on fraud prevention (A survey on inter-governmental organizations). *Journal of Economics, Business & Accountancy Ventura (JEBAV)*. 2017;20(1):113–124.
14. Kabue LN, Aduda J. Effect of internal controls on fraud the detection and prevention among commercial banks in Kenya. *European Journal of Business and Strategic Management*, 2017;2(1):52–68.
15. Minani I. An assessment of how integrated financial management information system enhances financial decision making at TANESCO and TTCL, Tanzania. In *Information and knowledge management* 2012;2.
16. Abdullahi MH, Muturi W. Effect of Internal Control Systems On Financial Performance Of Higher Education Institutions in Puntland. *International Journal of Economics, Commerce and Management*. 2016;4:12.
17. Mirinaviciene S. Internal Control And Fraud Prevention: Prior Research Analysis. *Science and Studies of Accounting and Finance: Problems and Perspectives*. 2014;9(1):173–179.
18. Mwachiro DB. Effects of internal controls on revenue collection: a case of Kenya Revenue Authority (University of Nairobi);2013.
19. Ally M. Effects of Internal Controls on Revenue collection: Tanzania revenue authority Kimara branch Dar Es salaam (Mzumbe University);2020.
20. Hanau VMD. Assessment of internal control systems performance In revenue collection in Tanzania A case study of Zanzibar municipal council (ZMC) (Mzumbe University);2014.
21. Mutua EM. The relationship between Internal Controls and revenue collection for Commercial State Corporations in Kenya (University of Nairobi);2017.
22. Ndungu H. The effect of internal controls on revenue generation: A case study of the University of Nairobi Enterprise and Services Limited (University of Nairobi);2013.
23. Sigilai DK. Assessment of internal control systems effects on revenue collection at Nakuru Level Five Hospital (COHRED-JKUAT);2017.
24. Agbenyo W, Jiang Y, Cobblah PK. Assessment of Government Internal Control Systems on Financial Reporting Quality in Ghana: A Case Study of Ghana Revenue Authority. *International Journal of Economics and Finance*. 2018;10(11):40–50.
25. Ssuuna PM. Effects of internal control systems on financial performance in an institution of higher learning in Uganda: A case of Uganda Martyrs University: Uganda Martyrs University;2011.
26. Kimani J. Fraud Risk Assessment Plan for Barclays Bank of Kenya;2011.
27. Njiru D. The effect of internal controls on financial performance of public water companies in Kenya: KCA University; 2016.
28. Zakaria KM, Nawawi A, Salin ASAP. Internal controls and fraud—empirical evidence from oil and gas company. *Journal of Financial Crime*. 2016;23(4):1154–1168.
29. Mihret DG, James K, Mula JM. Antecedents and organisational performance implications of internal audit effectiveness: Some propositions and research agenda. *Pacific Accounting Review*. 2010;22(3):224–252.
30. Kothari CR. *Research methodology: Methods and techniques: New Age International*;2004.
31. Spira LF. Audit committees: Begging the question?. *Corporate Governance: An International Review*. 2003;11(3):180–188.
32. Tabachnick BG, Fidell LS, Ullman JB. *Using multivariate statistics*. Boston, MA: Pearson;2007; 5:481-498.
33. Matekele CK, Komba GV. Factors Influencing Implementation of Accrual Based International Public Sector Accounting Standards in Tanzanian Local Government Authorities. *Asian Journal of Economics, Business and Accounting*. 2019;1-25.
34. Matekele CK, Komba GV. The Influence of Demographic Attributes in the Implementation of Accrual-Based International Public Sector Accounting Standards. *Journal of Economics and Business*. 2020;3(1).
35. Simangunsong R. The impact of internal control effectiveness and internal audit role toward the performance of local government. *Research Journal of Finance and Accounting*. 2014;5(7):50–58.
36. Ngugi JN, Kagiri AW. Factors Influencing Optimal Revenue Collection in County

- Governments in Kenya: A Case of Kiambu County Government. *International Journal of Innovations, Business and Management (IJIBM)*. 2016;10(4): 10.
37. Odoyo CO, Moses O, John MO, Aila FO, Ojera PB, Siringi EM. Effect of information systems on revenue collection by local authorities in Homa Bay county, Kenya. *Universal Journal of Accounting and Finance*. 2013;1(1):29-33.
38. Hay D, Cordery C. The value of public sector audit: Literature and history. *Journal of Accounting Literature*. 2018;40:1–15.
39. Matamande W, Nyikahadzoi L, Taderera E, Mandimika E. The effectiveness of internal controls in revenue management: A case study of Zimbabwe Revenue Authority (ZIMRA)(2011-2012). *Journal of Case Research in Business and Economics*. 2014;5(1).

---

© 2021 *Celestine and Matiku*; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

*Peer-review history:*

*The peer review history for this paper can be accessed here:*  
<https://www.sdiarticle4.com/review-history/72820>