

Original Article

The Moderating Effect of Internal Controls on the Relationship between Supplier Evaluation and Procurement Performance of Public Universities in Kenya

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Abstract - As publicly funded institutions, public universities are expected to follow a competitive and systematic evaluation process when procuring goods, works or services. Despite legislation and regulations aimed at ensuring adherence to international best practices and promoting integrity and accountability, there have been instances of inefficiencies in the evaluation process, particularly within public universities. The purpose of this study was to assess the moderating effect of internal controls on the relationship between supplier evaluation and procurement performance of public universities in Kenya. The study was anchored on Fuzzy Set Theory. A positivist research philosophy and a correlational research design were adopted. The target population of the study was 1,016 employees from the selected public universities. The study adopted stratified and simple random sampling to select a sample of 287 respondents. Primary data was obtained using a structured questionnaire, which was self-administered using a drop-and-pick later technique. The validity of the research instrument was ensured through an extensive literature review and consultation with subject experts and supervisors from the procurement department. The reliability of the instrument was examined through a pilot study involving 29 respondents from the University of Kabianga, where a Cronbach Alpha Coefficient of 0.834 was obtained. The obtained quantitative data were analyzed descriptively using means, frequencies and standard deviation, and inferentially, correlation and regression analysis were used. The study established that internal controls had a positive moderating effect on the relationship between supplier evaluation (R^2 , change of 0.127; $p < 0.05$) and procurement performance. The study concluded that supplier evaluation was an important factor in determining the procurement performance of public universities since it significantly explained the change in procurement performance. Therefore, the study recommends that public universities improve internal controls to ensure efficiency in the supplier evaluation process as well as the procurement performance of public institutions in Kenya. The study findings could be significant to the management of public institutions and policymakers in public procurement, enhancing knowledge in academia and theory development in procurement activities.

Keywords - Supplier Evaluation, Internal Controls, Procurement Performance, Public Universities.

1. Introduction

Efficient procurement practices are crucial for the smooth functioning of government operations and public service delivery. Procurement performance measures the effectiveness of public entities such as state corporations in managing the entire procurement process, from identifying needs, advertising tenders, evaluating and selecting vendors, awarding contracts, and executing them (Hashmi et al., 2020). When public institutions adopt efficient procurement practices, it leads to cost management and optimal utilization of budget, enabling them to allocate resources effectively and achieve more with the available resources (Hannah & Nani, 2021). This, in turn, ensures financial accountability and compliance with regulations, thereby safeguarding the responsible use of public funds (Tinali, 2021).

The rapidly changing business environment demands that public universities and other institutions re-evaluate and revamp their contractual relationships with suppliers to achieve optimal performance (Thai, 2017). Robust internal

controls should be implemented to ensure that tendering practices comply with the procurement framework established by regulatory authorities. Adequate internal controls help optimize resource efficiency, prevent waste and unauthorized expenses, and instill stakeholder confidence and trust in the institution's procurement processes. This ultimately contributes to the university's academic and research objectives (Zadawa et al., 2018; Detkova et al., 2018).

Supplier evaluation is a tool that can be used to influence the behaviour of a supplier organization and a buyer organization. The connection of procurement targets that ascertain the supplier's competence enables the organization to obtain high supplier performance, leading to better procurement performance (Jepchumba & Kibet, 2019).

Laosirihongthong et al. (2019) explored a holistic approach to supplier evaluation and order allocation in cement manufacturing companies across South-East Asia, focusing on sustainable procurement. The study found that economic factors, particularly pricing, play a significant role in supplier evaluation, while production capacity also contributes to enhancing procurement sustainability. Although the research offered valuable insights through its analytical approach, a key gap is its narrow focus on specific industries and regions, limiting broader applicability.

Mukarumongi, Mulyungi, and Saleh (2018) studied the effect of supplier assessment on procurement performance in Rwandan government ministries, focusing on the Ministry of Health. The results indicated that procurement performance was significantly influenced by supplier factors, such as manufacturing capacity, quality, and competence. However, a gap in the study is its limited focus on a single ministry, restricting the generalization of its findings to other sectors. In contrast, the current study employed a descriptive correlational design to provide a broader examination of the procurement performance of public universities in Kenya.

Jepchumba and Kibet (2019) examined the impact of supplier assessment on service quality at Moi University using an explanatory research design. The study targeted 219 administrative and procurement staff, with a sample of 142 respondents selected through stratified and random sampling techniques. Data was collected using semi-structured questionnaires and interviews, with descriptive statistics (means, frequencies, standard deviations) and inferential statistics (Pearson correlation and multiple regressions) employed for analysis. The study concluded that supplier evaluation was significantly and positively related to service delivery, enhancing efficiency and cost management. However, this study's focus on a single university limits the generalisation of its findings. The current study instead employed a correlational research design to explore a wider context, focusing on public universities in Kenya.

Wilbroda and Miroga (2021) carried out a study to determine the influence of supplier evaluation on county government procurement performance in Nairobi County, Kenya. The study was anchored on fuzzy set theory, where the study employed a descriptive survey research design. The respondents were chosen from the department, and they comprised 94 employees. Due to the small number of respondents, the study adopted a census technique. Primary data was collected using semi-structured questionnaires. Both descriptive and inferential statistics were employed to analyse data. The results indicated that supplier evaluation was positively and significantly related to county government procurement performance. The study was conducted in the county government and relied on primary data, while the current study was carried out in public universities and used both primary and secondary data.

1.1. Procurement performance of public universities in Kenya.

An efficient public procurement process is a key concept of corporate governance in public institutions (Musau, 2016). Abolbashari, Chang, Hussain and Saberi (2018) indicate that irregular procurement practices in public organizations create a loophole for easy embezzlement or misappropriation of funds. However, where there is an open system or a policy of tendering process, it could result in effective procurement performance. The effective procurement performance could yield efficient service delivery, a timely frame for delivery and cost effectiveness.

A study by Chiappinelli (2020) on decentralization and performance of public procurement indicated that procurement performance is enhanced when the institutions lower the costs of procurement, when the process is efficient, when there is quality delivery of goods and services and when the goods and services are delivered on time. Musau (2016) conducted a study to determine the effectiveness and efficiency of the procurement process and

performance. It was found that cycle time, purchasing effectiveness and quality of the products determined procurement performance.

Nyakundi and Muturi (2017) and Omollo (2018) in their studies revealed that delay in service or product delivery, procuring substandard goods and services and ineffective procurement process hampers the performance of procurement in an organization. Therefore, in their conclusion, for organizations to enhance their procurement performance, they need to focus on the efficiency of the procedures, non-financial and financial outcomes, effectiveness, and ability to establish a relevant range of indicators to measure performance. The current study adopted cost-effectiveness, timely delivery and quality of goods and services delivered as key measures of procurement performance.

Kakwezi and Nyeko (2019) sought to assess the procurement process and performance with a main focus on the effectiveness and efficiency of the procurement function by public entities in Uganda. The study focused on establishing non-financial and financial measures of procurement in the public sector. The study targeted staff members at the management level who were privy to the procurement process and activities in their respective institutions. Thus, the purposive sampling technique was used. The study findings established a small variance between financial measures (vendor rating, budgetary controls, cost accounting, and purchasing audit) and non-financial measures quality of products, cycle time, flexibility, customer satisfaction, purchasing effectiveness, and knowledge of market supply.

Chebet and Kwasira (2016) examined the role of public procurement practices in enhancing procurement cost reduction in Embu University in Kenya. The study examined the role of the tendering process, outsourcing and inventory control management practices and e-procurement practices. The study was anchored on general systems theory, transaction cost economics theory, public value theory and theory of procurement contracts. The study adopted a cross-sectional research design with the target population of all 250 employees of Embu University. Primary data was collected using a structured questionnaire from a sample of 75 employees. The study findings revealed that the evaluation processes had a positive effect on cost reduction at the university.

1.2. Problem Statement

The procurement function in public universities plays a crucial role in supporting the main mandate of public universities by ensuring the requisite goods and services are obtained in a timely and cost-effective manner. However, the procurement performance of public institutions, public universities included, in Kenya has been declining as evidenced by losses in billions by the government, which are linked to inadequate procurement practices as indicated by the Ethics and Anti-Corruption Commission. Several measures have been suggested to enhance procurement performance, including laid down supplier evaluation procedures. Despite these measures, the inefficiencies in the procurement function have persisted. It is not clear whether internal controls can enhance the effectiveness of supplier evaluation owing to the limited studies in the extant literature. Therefore, there is a need for a study to examine the moderating effect of internal controls on the relationship between supplier evaluation and procurement performance of public universities in Kenya.

1.3. Research Hypothesis

H₀₁ Internal Controls have no moderating effect on the relationship between supplier evaluation and procurement performance of public universities in Kenya.

2. Literature Review

2.1. Theoretical Review

The study was anchored on Fuzzy Set Theory, which was established by Lotfali Zadeh in the year 1965. According to Zadeh, Fuzzy Sets Theory is adopted purposely for the process of decision making, which is based on vague and imprecise information, for instance, the judgment of decision makers. This theory seeks to address the uncertainty and imprecision that come from human judgment in the process of making decisions through the use of membership degrees and linguistic terms.

Supplier evaluation decision is a multi-criteria problem in the context of actual business, and this can be solved only where there is no precise information. For this to be attained, the purchase decision process could be structured and modeled in a more realistic way Lin et al, (2020). Different authors have adopted the FST I modelling imprecision and uncertainty in evaluating the choice of the supplier. According to the study by Hemalatha, Babu, Rao and Venkatasubaiah (2015), they indicated the FST outranking method for evaluating and selecting suppliers using very minimal operators for combining the discordance and concordance indices of other alternative suppliers so as to arrive at suppliers who have credible values. The Fuzzy Set Theory is considered to be the best in evaluating the general performance of suppliers (Pitchipoo, Venkumar, Rajakarunakaran & Ragavan, 2018).

Wilbroda and Miroga (2021) adopted this theory in examining the influence of supplier evaluation on county government procurement performance. The purpose of using the theory was to represent data that had ambiguity. The FST was used with the objective of assessing supplier dependability. Further, it was adopted to analyze production facilities and their capabilities, delivery competence and services rendered as indicators of supplier evaluation, as well as how they are integrated into the evaluation of the supplier's dependability. The study adopted fuzzy set theory to propose a method to be used in addressing supplier evaluation problems. It helped in cutting procurement costs and increasing institutional competitiveness. Therefore, the study concluded that FST provides a basis for institutions' procurement decisions.

The fuzzy set model helps to minimize defects that can be found in other models and thus helps in improving institutional competitiveness and capabilities. FST can also help in addressing the evaluation and selection of suppliers' concerns. The model may provide vital bases that can be used by different learning institutions in executing supplier evaluation and selection policies. However, the theory has a weakness associated with it. Due to the competitiveness of supplier evaluation and selection, there are several alternatives to consider, and this makes it difficult to choose the best alternative.

Therefore, this theory serves as the basis of examining the relationship between supplier evaluation and procurement performance of public universities in Kenya, where suppliers may be evaluated on the basis of mandatory requirements, technical requirements, bid price and production capacity. The theory, therefore, supports the objective of the study.

2.2. Empirical Review

The researcher analysed previous studies that examined the relationship between supplier evaluation, internal controls and performance of the procurement function in various organizations. The reviewed studies included scholarly research, journal articles, and other publications.

2.2.1. Supplier Evaluation and procurement performance

Supplier evaluation is a tool that can be used to influence the behaviours of a supplier organization and a buyer organization. The connection of procurement targets that ascertain the supplier's competence enables the organization to obtain high supplier performance, leading to better procurement performance (Jepchumba & Kibet, 2019).

Laosirihongthong, Samaranayake, and Nagalingam (2019) explored a holistic approach to supplier evaluation and order allocation in cement manufacturing companies across South-East Asia, focusing on sustainable procurement. They combined analytical and case study methodologies, ranking suppliers using fuzzy analytical hierarchical processes, with data gathered from multiple decision-makers. The study found that economic factors, particularly pricing, play a significant role in supplier evaluation, while production capacity also contributes to enhancing procurement sustainability. Although the research offered valuable insights through its analytical approach, a key gap is its narrow focus on specific industries and regions, limiting broader applicability. In contrast, the current study utilized a descriptive correlational research design, focusing on public universities in Kenya, to investigate a wider range of factors impacting procurement performance.

Mukarumongi, Mulyungi, and Saleh (2018) studied the effect of supplier assessment on procurement performance in Rwandan government ministries, focusing on the Ministry of Health. Using a descriptive research approach, they targeted 650 employees and sampled 65 respondents through stratified and simple random sampling. Data was gathered through self-administered structured questionnaires and interviews, complemented by secondary data from ministry reports. The study used descriptive statistics for quantitative analysis and thematic analysis for qualitative data. The results indicated that procurement performance was significantly influenced by supplier factors, such as manufacturing capacity, quality, and competence. However, a gap in the study is its limited focus on a single ministry, restricting the generalizability of its findings to other sectors. In contrast, the current study employed a descriptive correlational design to provide a broader examination of the procurement performance of public universities in Kenya.

Jepchumba and Kibet (2019) examined the impact of supplier assessment on service quality at Moi University using an explanatory research design. The study targeted 219 administrative and procurement staff, with a sample of 142 respondents selected through stratified and random sampling techniques. Data was collected using semi-structured questionnaires and interviews, with descriptive statistics (means, frequencies, standard deviations) and inferential statistics (Pearson correlation and multiple regressions) employed for analysis. The study concluded that supplier evaluation was significantly and positively related to service delivery, enhancing efficiency and cost management. However, this study's focus on a single university limits the generalizability of its findings. The current study instead employed a correlational research design to explore a wider context, focusing on public universities in Kenya.

Wilbroda and Miroga (2021) carried out a study to determine the influence of supplier evaluation on county government procurement performance in Nairobi County, Kenya. The study was anchored on fuzzy set theory, where the study employed a descriptive survey research design. The respondents were chosen from the department, and they comprised 94 employees. Due to the small number of respondents, the study adopted a census technique. Primary data was collected using semi-structured questionnaires. Both descriptive and inferential statistics were employed to analyse data. The results indicated that supplier evaluation was positively and significantly related to county government procurement performance. The study was conducted in the county government and relied on primary data, while the current study was carried out in public universities and used both primary and secondary data.

2.3. Conceptual Framework

In Figure 1.1, supplier evaluation is the independent variable whose parameters are supplier bid price, the technical committee, Mandatory requirements, technical requirements and production capacity. Procurement performance is the dependent variable measured by quality of goods/services, cost management, timely delivery, service delivery and user satisfaction.

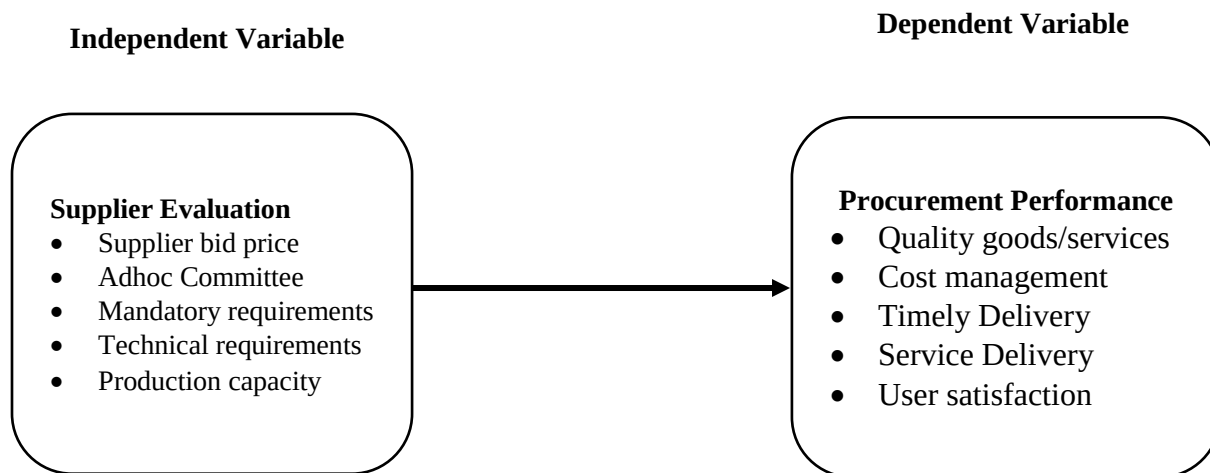


Fig. 1 Conceptual Framework

3. Materials and Methods

This study adopted a correctional research design to determine the moderating effect of internal controls on the relationship between supplier evaluation and procurement performance of public universities in Kenya. A correlational research design was considered ideal since it allows the researcher to explore the extent to which variations in the supplier evaluation may correspond with variations in the performance outcomes of the selected public universities (Mutai, Justus Kiprotich, and Barrack Okello, 2016). The target population of the study was 1,016 employees working in the user departments, procurement department and accounting department in the selected universities; that is, Moi University, Bomet University, Masai Mara University, Egerton University, Laikipia University and the University of Eldoret. The study adopted stratified and simple random sampling to select a sample of 287 respondents. The study relied on primary data, which was collected using a self-administered structured questionnaire whose validity was enhanced through an extensive literature review and consultation with subject experts. Reliability of the research instrument was measured through carrying out a pilot study at the University of Kabianga using 29 respondents, being 10% of the sample size. The obtained data from the pilot study were used to test the internal consistency of the research instrument using Cronbach's alpha coefficient, where an alpha coefficient of 0.834 was obtained, and this was considered sufficient, as per the recommendation of Mugenda and Mugenda (2013), that a Cronbach's alpha of 0.7 and above is acceptable. The obtained data were analysed descriptively using means, frequencies, and standard deviation, and inferentially using correlation and multiple regression analysis. The findings were presented using frequency tables.

4. Results and Discussion

4.1. Demographic Characteristics

The researcher obtained 284 completed questionnaires out of the 287 which were issued, representing a response rate of 98.9%. This response rate was considered adequate for the study (Mugenda & Mugenda, 2013). In examining the demographic attributes of the respondents, the study revealed that 149 (52.5%) of the respondents were male, while 135 (47.5%) were female. The study ensured gender parity as the difference between the number of male and female respondents was small. On the age distribution, the study found that 37 respondents (13%) were between 18-27 years of age, 96 respondents (33.8%) were between 28-37 years old, 102 respondents (35.9%) were between 38-47 years old, and 49 respondents (17.3%) were over 48 years old. Based on these results, it can be inferred that the majority of the respondents were in the age range of 38-47 years. In assessing the highest academic qualification, the findings revealed that 17 (6%) of the respondents had obtained a PhD degree. The majority, which amounts to 112 (39.4%) respondents, had completed their master's degree, followed by 100 (35.2%) respondents who had completed their undergraduate degree. Additionally, 48 (16.9%) respondents held a diploma, and only 7 (2.5%) respondents held a certificate.

It is worth noting that most of the respondents had attained either a master's or bachelor's degree, which suggests that they were highly knowledgeable and could comprehend the research instrument's items with ease. On the length of service at the university, the findings revealed that 18 respondents, who account for 6.3% of the total number of respondents, had worked for less than one year. 108 respondents, or 38% of the total, had worked for 1-5 years and 77 respondents, or 27.1% of the total, had worked for 6-10 years. Finally, 81 respondents, or 28.5% of the total, had worked for over ten years at their respective departments of the University. Finally, the study revealed that 76 (26.8%) of the respondents worked in the user department, 120 (42.3%) of the respondents worked in the procurement department, and 88 (31%) of the respondents worked in the accounting department in the said institutions. The findings imply that most of the respondents were drawn from the procurement department, where most procurement activities take place.

4.2. Descriptive Statistics

The study aimed to assess the relationship between Supplier Evaluation and procurement performance of selected public universities in Kenya. The participants were asked to rate their level of agreement on a scale of 1 to 5, with 1 being "Strongly Disagree" and 5 being "Strongly Agree" in response to various statements related to the variables being studied. The results were analysed and presented using tables showing the responses' frequency, mean, and standard deviation.

4.2.1. Supplier Evaluation

The study provided statements on the Supplier Evaluation process at the selected public universities. The frequencies, mean, and standard deviation of the findings are tabulated in.

Table 1: Supplier Evaluation

Statements on supplier evaluation	5 (SA)	4 (A)	3 (UD)	2 (D)	1(SD)	N	M	SD
The procurement department evaluates bidders every time they are received.	163 (57.4)	92 (32.4)	29 (10.2)	0 (0)	0 (0)	284	4.472	0.675
The procurement department selects a competent committee to evaluate suppliers.	139 (48.9)	117 (41.2)	19 (6.7)	6 (2.1)	3 (1.1)	284	4.349	0.785
The university sets mandatory requirements to be met by suppliers.	154 (54.2)	102 (35.9)	25 (8.8)	3 (1.1)	0 (0)	284	4.433	0.698
The university sets technical requirements to be met by suppliers.	118 (41.5)	144 (50.7)	22 (7.7)	0 (0)	0 (0)	284	4.338	0.616
Bid price is used as a critical determinant in the supplier evaluation process.	97 (34.2)	120 (42.3)	37 (13)	27 (9.5)	3 (1.1)	284	4.433	4.098
Production capacity is used as a critical determinant in the supplier evaluation process.	85 (29.9)	143 (50)	39 (13.7)	15 (5.3)	3 (1.1)	284	4.025	0.863
Efficient supplier evaluation influences procurement performance.	121 (42.6)	130 (45.8)	33 (11.6)	0 (0)	0 (0)	284	4.310	0.669
Overall Mean							4.337	

The findings showed that the procurement department evaluates bidders every time they are received, with 163 (57.4%) respondents strongly agreeing, 92 (32.4%) respondents agreeing. However, 29 (10.2%) respondents were undecided. The mean of 4.472 and the standard deviation of 0.675 also showed that the procurement department evaluated bidders every time they were received.

When asked whether the procurement department selects a competent committee to evaluate suppliers, 139 (48.9%) respondents strongly agreed, 117 (41.2%) respondents agreed, 19 (6.7%) respondents were undecided, 6(2.1%) respondents disagreed, and 3 (1.1%) strongly disagreed. The findings revealed that the procurement department selects a competent committee to evaluate suppliers. This was also reiterated by the mean of 4.349 and the standard deviation of 0.785.

The responses to whether the university set mandatory requirements to be met by suppliers show that 154 (54.2%) respondents strongly agreed, 102 (35.9%) respondents agreed, and 25 (8.8%) respondents were undecided, while 3(1.1%) respondents disagreed. The majority of the respondents, as shown by a mean of 4.433 and a standard deviation of 0.698, also showed that the university sets mandatory requirements to be met by suppliers.

The study showed that the university sets technical requirements to be met by suppliers, as 118 (41.5%) respondents strongly agreed, 144 (50.7%) respondents agreed, and 22 (7.7%) respondents were undecided. The mean of 4.338 and the standard deviation of 0.616 also showed that most of the respondents agreed that the university sets technical requirements to be met by suppliers.

According to the findings, bid price is used as a critical determinant in the supplier evaluation process. This is because 97 (34.2%) respondents strongly agreed, 120 (42.3%) respondents agreed, 37 (13%) respondents were undecided, 27(9.5%) respondents disagreed, and 3 (1.1%) strongly disagreed. The mean was 4.433, and the standard deviation was 4.098.

The study findings show that production capacity is a critical determinant in the supplier evaluation process. This is shown as 85 (29.9%) respondents strongly agreed, 142 (50%) respondents agreed, and 39 (13.7%) respondents were

undecided. However, 15(5.3%) respondents disagreed, and 3 (1.1%) strongly disagreed. The mean of 4.025 and the standard deviation of 0.863 also revealed that production capacity is a critical determinant in the supplier evaluation process.

Regarding the findings, efficient supplier evaluation influences procurement performance. This was indicated by 121 (42.6%) respondents who strongly agreed, 130 (45.8%) respondents who agreed, and 33 (11.6%) respondents who were neutral. This was also proven by the mean of 4.310 and the standard deviation of 0.669.

4.2.2. Procurement Performance

The study provided statements on procurement performance at the selected public universities. The frequencies, mean, and standard deviation of the findings are tabulated in *Table 2*.

Table 2: Procurement Performance

Statements on procurement performance	5 (SA)	4 (A)	3(UD)	2 (D)	1(SD)	N	Mean	SD
An efficient evaluation process improves the quality of services and goods delivered.	183 (64.4)	90 (31.7)	11 (3.9)	0 (0)	0 (0)	284	4.606	0.563
The procurement department obtains goods and services at the most cost-effective prices.	132 (46.5)	96 (33.8)	32 (11.3)	18 (6.3)	6 (2.1)	284	4.162	0.999
An effective evaluation process enhances the timely delivery of goods and services to the University.	135 (47.5)	105 (37)	35 (12.3)	3 (1.1)	3 (1.1)	284	4.732	4.245
The University consistently achieves value for money in its procurement activities.	108 (38)	103 (36.3)	55 (19.4)	15 (5.3)	3 (1.1)	284	4.049	0.938
The quality of goods and services procured by the University meets expectations.	93 (32.7)	129 (45.4)	47 (16.5)	15 (5.3)	0 (0)	284	4.056	0.839
An efficient evaluation process enhances cost management.	129 (45.4)	124 (43.7)	22 (7.7)	9 (3.2)	0 (0)	284	4.313	0.750
Stakeholders (end-users, departments) are satisfied with the procurement services provided	99 (34.9)	129 (45.4)	29 (10.2)	21 (7.4)	6 (2.1)	284	4.035	0.969
Overall Mean							4.279	

Table 2 shows that the majority of the respondents agreed that an efficient evaluation process improves the quality of services and goods delivered. This was evident as 183 (64.4%) respondents strongly agreed, 90 (31.7%) respondents agreed, and 11 (3.9%) respondents were neutral. A mean of 4.606 and a standard deviation of 0.563 also confirm that most respondents agreed on this.

The study showed that the procurement department obtains goods and services at the most cost-effective prices since 132 (46.5%) respondents strongly agreed, 96 (33.8%) respondents agreed, and 32 (11.3%) respondents were undecided. However, 18 (6.3%) respondents disagreed, and 6 (2.1%) respondents strongly disagreed. A mean of 4.162 and a standard deviation of 0.999 showed that most respondents agreed that the procurement department obtains goods and services at the most cost-effective prices.

According to the findings, the majority of the respondents agreed that an effective evaluation process enhances the timely delivery of goods and services to the University. The findings were that 135 (47.5%) respondents strongly agreed, 105 (37%) respondents agreed, 35 (12.3%) respondents were undecided, 3 (1.1%) respondents disagreed, and 3 (1.1%) respondents strongly disagreed. A mean of 4.732 and a standard deviation of 4.245

The findings revealed that the University consistently achieves value for money in its procurement activities, as 108 (38%) respondents strongly agreed, 103 (36.3%) respondents agreed, 55 (19.4%) respondents were undecided, 15 (5.3%) respondents disagreed, and 3 (1.1%) respondents strongly disagreed. A mean of 4.049 and a standard deviation

of 0.938 also imply that most respondents agreed that the University consistently achieves value for money in its procurement activities.

The results showed that the quality of goods and services procured by the University meets expectations, as 93 (32.7%) respondents strongly agreed, 129 (45.4%) respondents agreed, 47 (16.5%) respondents were undecided, and 15 (5.3%) respondents disagreed. The mean was 4.056, and the standard deviation was 0.839, showing that the majority of the respondents agreed that the quality of goods and services procured by the University meets expectations.

Most respondents agreed that an efficient evaluation process enhances cost management. This is because 129 (45.4%) respondents strongly agreed, 124 (43.7%) respondents agreed, 22 (7.7%) respondents were undecided, and 9 (3.2%) respondents disagreed. The statement was also proven by the mean of 4.313 and the standard deviation of 0.750.

As per the findings, stakeholders (end-users, departments) are satisfied with the procurement services provided since 99 (34.9%) respondents strongly agreed, 129 (45.4%) respondents agreed, 29 (10.2%) respondents were undecided, 21 (7.4%) respondents disagreed, and 6 (2.1%) strongly disagreed. The mean was 4.035, and the standard deviation was 0.969. These findings showed that most respondents agreed (Grand mean=4.279) that stakeholders are satisfied with the procurement services provided.

The findings are supported by those of Chiappinelli (2020), Nyakundi and Muturi (2017), Omollo (2018), Kakwezi and Nyeko (2019), and Chebet and Kwasira (2016), who established that the tendering process, which includes supplier evaluation, had a positive and significant relationship with procurement performance.

4.2.3. Internal controls

The study provided statements on internal control practices at the selected universities. The frequencies, mean, and standard deviation of the findings are tabulated in *Table 3*.

Table 3: Internal Controls

Statements on Internal Controls	5 (SA)	4 (A)	3(UD)	2 (D)	1(SD)	N	Mean	SD
The University has established specific internal controls for different stages of the procurement process.	135 (47.5)	116 (40.8)	24 (8.5)	9 (3.2)	0 (0)	284	4.327	0.762
Segregation of duties at the procurement department ensures that no single personnel has absolute control over the procurement process.	144 (50.7)	99 (34.9)	32 (11.3)	9 (3.2)	0 (0)	284	4.331	0.799
The University has a system for monitoring the effectiveness of internal controls in the procurement process.	96 (33.8)	144 (50.7)	32 (11.3)	12 (4.2)	0 (0)	284	4.141	0.776
Feedback from internal control assessments is used to enhance the procurement control environment.	108 (38)	119 (41.9)	42 (14.8)	15 (5.3)	0 (0)	284	4.127	0.852
The procurement department efficiently documents and keeps records of all the procured items.	114 (40.1)	137 (48.2)	27 (9.5)	6 (2.1)	0 (0)	284	4.384	0.755
The University has established sufficient authorization controls that allow approvals and sign-offs at every stage of the tendering process.	114 (40.1)	137 (48.2)	27 (9.5)	6 (2.1)	0 (0)	284	4.264	0.716
Internal controls significantly contribute to the overall performance of procurement activities in our University.	163 (57.4)	88 (31)	24 (8.5)	9 (3.2)	0 (0)	284	4.426	0.778
Overall Mean							4.286	

Table 3 shows that the university has established specific internal controls for different stages of the procurement process since 135 (47.5%) respondents strongly agreed, 116 (40.8%) respondents agreed, 24 (8.5%) respondents were undecided, and 9 (3.2%) respondents disagreed. The mean was 4.327, and the standard deviation of 0.762 also reiterated the same.

When questioned whether segregation of duties at the procurement department ensures that no single personnel has absolute control over the procurement process, 144 (50.7%) respondents strongly agreed, 99 (34.9%) respondents agreed, 32 (11.3%) respondents were undecided, and 9 (3.2%) respondents disagreed. The findings showed that the majority of the respondents agreed that the segregation of duties at the procurement department ensured that no single personnel had absolute control over the procurement process. This was also proven by the mean of 4.331 and the standard deviation of 0.799.

The study revealed that the University has a system for monitoring the effectiveness of internal controls in the procurement process. 96 (33.8%) respondents strongly agreed, 144 (50.7%) respondents agreed, 32 (11.3%) respondents were undecided, and 12 (4.2%) respondents disagreed. The mean was also 4.141, and the standard deviation was 0.776. These results showed that most universities had a system for monitoring the effectiveness of internal controls in the procurement process.

According to the study, feedback from internal control assessments is used to enhance the procurement control environment. This is because 108 (38%) respondents strongly agreed, 199 (41.9%) respondents agreed, 42 (14.8%) respondents were undecided, and 15 (5.3%) respondents disagreed. The mean of 4.127 and the standard deviation of 0.852 also implied that feedback from internal control assessments is used to enhance the procurement control environment.

As per the findings, the procurement department efficiently documents and keeps records of all the procured items. 114(40.1%) respondents strongly agreed, 137 (48.2%) respondents agreed, 27 (9.5%) respondents were undecided, and 6 (2.1%) respondents disagreed. The mean was 4.384, and the standard deviation was 0.755. These findings showed that the University's procurement department efficiently documents and keeps records of all the procured items.

The results revealed that the universities had established sufficient authorization controls that allowed approvals and sign-offs at every stage of the tendering process. This is because 114 (40.1%) respondents strongly agreed, 137 (48.2%) respondents agreed, 27 (9.5%) respondents were undecided, and 6 (2.1%) respondents disagreed. The mean was also 4.264, and the standard deviation was 0.716. These findings implied that the majority of the respondents agreed with this statement.

The study showed that internal controls significantly contributed to the overall performance of procurement activities in the Universities. 163(57.4%) respondents strongly agreed, 88 (31%) respondents agreed, 24 (8.5%) respondents were undecided, and 9 (3.2%) respondents disagreed. The mean was 4.426, and the standard deviation was 0.778. Therefore, in conclusion, most respondents agreed (Grand total =4.285) that internal controls significantly contributed to the overall performance of procurement activities in the Universities.

This study's findings were supported by Rendon and Rendon (2016), who established that most fraud incidents happened during supplier selection and contract administration. In addition, Abd Aziz, Said, and Alam (2015), in a study assessing internal control systems among different sectors and departments in the public sector in Malaysia, established that the majority of the departments had in place several internal control mechanisms; however, the priority of the practices was different among the service schemes. However, Omollo (2018) found that internal controls in the government agencies were not effectively used, thus negatively affecting procurement performance.

4.3. Inferential Statistics

The study examined the direction and nature of the research variables using the Pearson moment correlation coefficient, analysis of variance, and regression analysis. The study also used the moderated regression analysis to assess

the moderating effect of internal controls on the relationship between the supplier evaluation and procurement performance of public universities in Kenya.

Table 4: Correlation analysis

		Board Composition	Financial Performance
Supplier Evaluation	Pearson Correlation	1	0.383**
	Sig. (2-tailed)		0.000
	N	284	284
Procurement Performance	Pearson Correlation		1
	Sig. (2-tailed)		
	N		

The results in Table 4 show that there exists a positive and significant correlation between supplier evaluation and performance of the procurement function ($r = 0.383$, $p < 0.05$). These findings concur with those of Laosirihongthong *et al.* (2019), who established a significant positive correlation between supplier evaluation and procurement performance. Specifically, other studies that revealed similar findings include those of Mukarumongi *et al.* (2018), who found that supplier assessment had a significant effect on procurement performance in Rwandan government ministries, a study by Hamad (2020) investigated the effects of supplier assessment on procurement performance in the public health sector in Zanzibar, Tanzania, Jepchumba and Kibet (2019) on the effect of supplier assessment on quality service delivery at Moi University and Wilbroda and Miroga (2021) who carried a study to determine the influence of supplier evaluation on county government procurement performance in Nairobi County, Kenya.

4.3.1. Testing of the Research Hypothesis

The study conducted a regression analysis to test the research hypotheses. Linear regression was carried out on the predictor variable to assess the effect of the independent variable on the dependent variable.

The moderating effect of internal controls on the relationship between supplier evaluation and procurement performance of public universities in Kenya.

The hypothesis of the study stated that internal controls have no statistically significant moderating effect on the relationship between supplier evaluation and procurement performance of public universities in Kenya. However, before determining the moderating effect, the study examined the direct relationship between supplier evaluation and procurement performance of public universities. The results are presented in Table 5.

Table 5: Model Summary for the Direct Relationship Between Supplier's Evaluation and Procurement Performance

	Model	R	R Square	Adjusted R-Square	Std. Error of the Estimate	Change Statistics				
						R Square Change	F Change	df 1	df 2	Sig. F Change
Supplier evaluation	1	0.383 ^a	0.146	0.143	0.78269	0.146	48.357	1	282	0.000

The significance test results for supplier evaluation presented in Table 4.16 show a positive relationship between supplier evaluation and procurement performance ($R=0.383$, $R^2=0.146$) and ($F_{1, 282} = 48.357$, $p=0.000<0.05$). The obtained R^2 of 0.146 implies that 14.6% of the variation in procurement performance in public universities can be explained by supplier evaluation. Further, the study examined the moderating effect of internal controls on the relationship between supplier evaluation and procurement performance and the results are presented in Table 4.17.

Table 6: Model Summary for the Moderating Effect of Internal Controls on the Relationship between Supplier Evaluation and Procurement Performance

	Model	R	R Square	Adjusted R-Square	Std. Error of the Estimate	Change Statistics				
						R Square Change	F Change	df1	df2	Sig. F Change
Supplier evaluation	1	0.523 ^a	0.273	0.271	0.72221	0.273	105.997	1	282	0.000

Table 6 presents the results obtained after the interaction of the moderator variable (supplier evaluation *internal controls) was introduced in the regression model. The findings reveal a positive relationship between supplier evaluation and procurement performance of public universities ($R=0.523$, $R^2= 0.273$) and ($F_{1, 282} = 105.997$, $p=0.000<0.005$). The obtained R^2 of 0.273 implies that 27.3% of the variation in procurement performance in public universities can be accounted for by supplier evaluation *internal controls. The inclusion of the moderator variable resulted in a change of the coefficient of determination of 0.127, which implies that the moderation effect accounts for 12.7% of the variation in procurement performance above and in addition to the variation that was accounted for by supplier evaluation. Therefore, the moderating effect of internal controls on the relationship between supplier evaluation and procurement performance in public universities in Kenya shows a significant effect.

The findings of this study concur with those of Jepchumba and Kibet (2019) and Laosirihongthong, Samaranayake, and Nagalingam (2019), who established a significant positive relationship between supplier evaluation and procurement performance in the cement industry and supplier assessment on quality service delivery at Moi University.

Table 7: ANOVA Results for the Moderating Effect of Internal Controls on the Relationship between Supplier Evaluation and Procurement Performance of Public Universities in Kenya

	Model		Sum of Squares	Df	Mean Square	F	Sig.
Pre-Qualification	1	Regression	29.623	1	29.623	48.357	0.000 ^b
		Residual	172.752	282	0.613		
		Total	202.376	283			
	2	Regression	55.287	1	55.287	105.997	0.000 ^b
		Residual	147.089	282	0.522		
		Total	202.376	283			

The results in Table 7 indicate that the models (for direct relationship and moderated relationship) were statistically significant. This implies that the coefficients of the model were not equal to zero, suggesting that the model significantly fit the data.

Table 8: Coefficients for the Moderating Effect of Internal Controls on the Relationship between Supplier Evaluation and Procurement Performance of Public Universities in Kenya

		Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
				B	Std. Error	Beta		
	1	(Constant)		2.321	0.285		8.131	0.000
		S. Evaluation		0.452	0.065	0.383	6.954	0.000

2	(Constant)	0.460	0.344		0.338	0.
	S. Evaluation	1.389	0.131	0.902	8.136	0.000

Table 8 demonstrates that the moderating effect of internal controls on the relationship between supplier evaluation and procurement performance of public universities was positive and significant ($\beta=1.389$, $p<0.05$). This implies that when supplier evaluation increases by an additional shilling, procurement performance is predicted to increase by 1.389 as moderated by internal controls. Thus, the null hypothesis (H_{01}) was rejected, indicating that internal controls have no statistically significant moderating effect on the relationship between supplier evaluation and procurement performance of public universities in Kenya. This implies that the contribution of supplier evaluation to the procurement performance variable can be enhanced by internal controls.

4.3.2. Joint relationship between supplier evaluation and procurement performance

The study examined the joint relationship between supplier evaluation and procurement performance.

Table 9: Model Summary for the Joint Relationship between Supplier Evaluation and Procurement Performance

Model	R	R Square	Adjusted R-Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	0.789 ^a	0.590	0.587	0.66640	0.388	44.176	1	279	0.000
2	0.781 ^a	0.611	0.609	0.66452	0.393	36.058	2	278	0.000
1. Predictors: (Constant), Evaluation									
2. Predictors: (Constant), Evaluation, and internal controls									

The findings presented in *Table 9* indicate that R^2 in the moderated model changed from 59% to 61.1%, indicating a 2.1% increase in variation as a result of the interaction effect of the moderating variable. Further, the increase was statistically significant since the probability value of 0.000 was less than 0.05 ($P<0.05$).

Table 10: Coefficients for the Joint Relationship between Supplier Evaluation and Procurement Performance

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.106	0.330		0.323	0.747
	Evaluation	0.140	0.068	0.134	2.059	0.044
2	(Constant)	0.067	0.346		0.195	0.845
	Evaluation	0.139	0.068	0.133	2.029	0.040
a. Dependent Variable: Procurement Performance						

The findings in *Table 4.26* show that after moderation, the beta coefficient for supplier evaluation was 0.139 with a p-value < 0.05 . The results also indicate that the beta coefficient of the moderating variable (internal controls) was 0.190 with a p-value > 0.05 , implying that internal control has a significant moderating effect on the effects of the supplier evaluation and procurement performance of public universities in Kenya.

5. Conclusion And Recommendation

The study concluded that internal controls have a statistically significant positive moderating effect on the relationship between the evaluation of suppliers and the procurement performance of public universities. Also, there exists a significant positive correlation between the evaluation of suppliers and the performance of the procurement function. The study recommended that, in order to achieve good procurement performance of public universities, the evaluation of suppliers should involve the selection of a competent committee to evaluate suppliers based on pre-set mandatory and technical requirements to be met by suppliers. Most universities use critical determinants in the

evaluation process, which include bid price and production capacity. Proper supplier evaluation procedures result in efficient procurement performance in public universities.

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