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The Moderating Effect of Internal Controls on the Relationship Between Supplier Pre-Qualification and Procurement Performance in Public Universities in Kenya

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As publicly funded institutions, public universities are expected to follow a competitive and systematic tendering process when procuring goods 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 tendering process, particularly within public universities. The purpose of this study was to assess the moderating effect of internal controls on the relationship between supplier pre-qualification and procurement performance in public universities in Kenya. The study was anchored on stakeholder theory. A positivist research philosophy and a correlational research design was adopted. 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 was analysed 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 pre-qualification (R², change of 0.075; p<0.05), and procurement performance. The study concluded that pre-qualification of suppliers, was an important factor in determining the procurement performance in public universities because it significantly explained the change in procurement performance. Therefore, the study recommends that public universities improve internal controls to ensure efficiency in the supplier pre-qualification process as well as the procurement performance in public universities 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.

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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 instil stakeholder

confidence and trust in the institutions procurement processes. This ultimately contributes to the university's academic and research objectives (Zadawa et al., 2018; Detkova et al., 2018).

Evaluation of the procurement function is often neglected in many government institutions, despite the efforts made by economic partners such as the United Nations Conference on Trade and Development (UNCTD), World Bank, World Trade Organization (WTO), and International Trade Organization (ITO) to address the importance of this function in the overall performance of the organization. This lack of attention may be due to intentional behaviour or simply a lack of awareness of the importance of procurement to an organization's performance (Kakwezi & Nyeko, 2019). According to Caran *et al.*, (2016), failure to properly evaluate the effectiveness of public organizations' procurement functions can result in incorrect, inappropriate, and biased judgments, which can lead to significant losses to the public sector.

Scholarly literature has identified several possible challenges in the procurement function of public entities. For instance, Chiappinelli (2020) discovered that centralizing the procurement function in Italy led to ineffective procurement procedures in most government organizations.

This was due to the lack of transparency in the tendering process, which resulted in unilateral decision-making. Consequently, there were more instances of unethical actions, resulting in significant losses. The inefficiency in the tendering process also led to delayed delivery, poor quality of goods and services, and inflated prices.

A study by Reis and Cabral (2018) in Brazil indicated that despite the tendering process being effective through competitive bids, supplier pre-qualification exercise was ineffective leading to the selection of suppliers with poor performance history, such as supplying goods past the expected delivery date and compromising on quality. Such delays led to slow service delivery and increased inefficiency. Reeves *et al.* (2017) discovered that in the UK, the tendering periods were needlessly longer than anticipated when analysing the factors affecting Public Private Partnerships (PPP). The length of the tendering process could be significantly cut short through competitive discussion, technological advancements, and enhanced supplier relationship management. Similarly, Laosirihongthong *et al.* (2019), in assessing the holistic approach to supplier evaluation and order allocation towards sustainable procurement in Australian government entities, indicated that poor supplier pre-qualification and management could lead to poor service delivery and loss of public resources through increased costs.

Hannah and Nani (2021) established that existing procurement processes in the selected municipals and metropolitan assemblies in the Ashanti district of Ghana had weaknesses of lack of independence of the procurement function that affected how procurement tasks such as supplier pre-qualification and awarding of tenders were being executed in various institutions. Kakwezi and Nyeko (2019) established a relationship between supplier pre-qualification and procurement performance in public agencies. In addition, supplier pre-qualification process in most public entities was found to be affected by the inefficient internal controls and complacency

of the procurement personnel, unethical practices, such as corruption, nepotism in the award of tenders, and interference from senior government officials.

In assessing factors influencing procurement performance in the Kenya public sector, Chimwani *et al.* (2014) discovered that government organizations such as the State Law Office had laxity in adhering to procurement procedures as required by law leading to poor quality goods and services, increased complaints from stakeholders about poor service delivery and delayed delivery of goods and services. Limo, Iravo, and Lagat (2017) indicated that internal management processes and top management support had a direct effect on the performance of the procurement function of the state agencies. Efficiency in the procurement function such as pre-qualification, supplier evaluation and supplier relationship management could lead to reduced cycle time and reduced cost management.

Problem Statement

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

Research Hypothesis

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

LITERATURE REVIEW

Theoretical Review

The study was anchored on stakeholder theory which was established by Edward Freeman in the year 1984. The theory stresses on the interconnection existing between an organization and suppliers, investors, customers, communities and other key players who have different interests in the institution. According to this theory, organizations need to create value for all the stakeholders and not only for the shareholder (Freeman, 2023). It is important for the pre-qualification of suppliers' practices that will enhance partnership between all the stakeholders and meet their needs and demands. The process of assessing suppliers for pre-qualification and how the suppliers are going to deliver is a more complicated process. This entails uncertainty and ambiguity relationships which are complex caused by conflicting objectives of the competing stakeholders' values. The values may be in terms of reducing costs in the process of meeting partners' needs and wants (Koros & Kwasira, 2021).

The Stakeholder Theory in public procurement is relevant as there is potential pressure that emanates from the buyer to obtain a good value for their money and the private suppliers to pre-qualify and win the award. According to Zorzini et al. (2015) the stakeholders put pressure on firms with an intention of diminishing negative impacts. However, organizations respond by coming up with capabilities that aid in gaining social legitimacy and improve on their performance. In contrary, the social values create opposing pressure on a firm so that the values can be perceived. Cole and Aitken (2019) exert that public procurement in most cases push for the lowest bidder. However, the end users look for the best quality of product/service and not interested

on the cost. Further the procurement department aims at attaining the general objective that satisfies the external and internal stakeholders.

According to Martin (2018) stakeholder theory is initiated to help institutions to differentiate and examine the stakeholders' characters that are being influenced by the organizational behaviour. The process of pre-qualifying suppliers is conducted under some considerations such as identifying suppliers' interest and needs, interpretation of the suppliers and building a relationship of pre-qualification process along the line of firms' specific goals and objectives. In the long and short run, the buying firm's interest must be upheld for the purpose of yielding better outcome (Limo et al., 2017).

This theory is based on one key assumption that a firm can only be termed as a success if they offer value to their stakeholders and this can be possible when the firm conducts effective, efficient, and transparent supplier pre-qualification process. The stakeholders' concerns must be looked into by the institution to understand whether the concerns are for benefitting the society or institutions long term profitability (Koros & Kwasira, 2021).

The strength of stakeholder's theory is that, through effective supplier prequalification process the institution can be able to maximize their service or product quality and minimize the cycle time. This will help the institution to avoid unnecessary expenses and this will lead to increased saving and foster quality service delivery to stakeholders (Suberi, 2022). However, the theory has been criticized because it is suggested that it is offering unrealistic view on how the institutions operate. The institution is considered as a shell which can be written unto freely by different groups that may lay claims to the institution. The institution may have limited innate interests (Koros & Kwasira, 2021).

Empirical Review

The research analysed previous studies that examined relationship between supplier pre-qualification, internal controls, and performance

of the procurement function in various organizations. The reviewed studies included scholarly research, journal articles, and other publications.

Supplier pre-qualification and procurement performance

The evaluation of potential suppliers of products or services against pre-established criteria is known as pre-qualification. Only pre-qualified vendors are given the opportunity to submit their proposals. Pre-qualification gives the purchasing organization more assurance that the suppliers being invited to submit an offer already possess the capacity to provide the products or services. Pre-qualification lessens the risk and administrative burden brought on by repeated approaches to the market, albeit it does not always remove the chance of contract failure (Mashinini, 2019).

Halizahari et al. (2020) conducted a study to establish the effect of direct negotiations on efficient public procurement delivery in Malaysia. The study used a qualitative research design. Both primary and secondary data collection methods were employed. Content analysis was used to obtain secondary data from the Auditor General's report between 2015 and 2018, while interviews were conducted with procurement officers to obtain primary data. The results established a negative relationship between supplier prequalification and public procurement delivery. It was found that procurement was compromised because of direct negotiations, which led to poor service and delay in delivery, hence inefficient procurement performance. The study recommended that there should be a proper supplier pre-qualification procedure to eliminate direct negotiation and have an open tender method. However, the study relied on qualitative techniques, this study adopted quantitative techniques to collect data.

Duarte and Sousa (2020) conducted a study to ascertain the effect of supplier pre-qualification on the performance of the Portuguese Construction Sector. The study employed a case

study methodology, and its primary focus was on the listed metal construction companies. Data was obtained by conducting interviews, observation, organizations records, and documents. The data analysed indicated that failure to check on the previous records and supplier capability of meeting specifications led to poor pre-qualification process. This resulted to poor procurement performance of the construction industry. This study focused on the construction companies in Portugal and relied on a case study research design while the current study mainly focused on public universities in Kenya and relied on a correlation research design.

Agonsi et al. (2021) conducted a study to examine the influence of pre-qualification requirements and the tender document on the distribution of building contracts at the Federal Universities in North Central Nigeria. A descriptive survey approach was used when primary data were gathered via a semi-structured questionnaire. The data was descriptively and inferentially analysed. The findings revealed a significant positive relationship between supplier pre-qualification and procurement performance. However, the study revealed that building contractors were not adequately pre-qualified and the documents of the contractors were not spelt out in the Public Procurement Act of 2007. The study specifically focused on constructors in the universities in Nigeria whereas this study focused on procurement performance in Public Universities in Kenya.

Acheamfour et al. (2019), sought to determine on the influence of contractors' pre-qualification on project performance in Ghana. Exploratory design was utilized and structured questionnaires were administered to 121 respondents to obtain data. Partial least square structural equation modeling was used to analyse data. The result revealed that financial capability and technical capability had a positive and significant influence on project performance. However, the study further indicated that capacity to meet specification had insignificant influence on the project performance. The study used PLS-SEM to

analyse data while the current study used descriptive and inferential statistics with the aid of SPSS tool.

Gaylade (2018) conducted a study on factors contributing to supplier pre-qualification on the performance of the Danish refugee council in Kenya. The study adopted an analytic hierarchy processes model, data development analysis model, and total cost of ownership model. A descriptive research design was employed where 40 respondents were used to provide data for the study. Primary data was collected through a self-administered questionnaire. Obtained data were analysed descriptively and inferentially using multiple regression analysis. The results revealed that supplier capacity, financial status, and supplier pricing contributed to supplier pre-qualification processes. The study recommended that organizations take serious consideration on supplier's capacity from the history, ability to deliver after the pre-qualification and financial base of the supplier.

Koros and Kwasira (2021) conducted a study to ascertain the influence of supplier pre-qualification practices on Moi University's procurement department. Using a descriptive study approach, the target population consisted of 298 employees. The Yamane's formula was used to get a sample size of 171. Data were gathered using both primary and secondary data gathering techniques. Descriptive statistics were used to examine the acquired data, and the results were then reported as percentages, frequencies, means, and standard deviation. Additionally, inferential statistics using multiple regression analysis and spearman rank correlation models were used to examine the data. The results of the study showed that supplier pre-qualification had a positive significant relationship with procurement performance at the university. According to the report, improving supplier prequalification procedures is necessary for public institutions in order to improve procurement performance. The study was carried out in Moi University only while this study was undertaken in a number of other selected public universities in Kenya.

Procurement Performance in Public Universities in Kenya

An efficient public procurement process is a key concept of corporate governance in public institutions (Musau, 2016). Abolbashari et al. (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 policy of tendering process could result to effective procurement performance. The effective procurement performance could yield efficient service delivery, 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, the process is efficient, there is quality delivery of goods and services, and the goods and services are delivered on time. Musau (2016) conducted a study to determine the effectiveness and efficiency of 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 sub standards goods and services, and ineffective procurement process hampers performance of procurement in 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 effectiveness and efficiency of the

procurement function by public entities in Uganda. The study focused on establishing non-financial and financial measure of procurement in the public sector. The study targeted staff members at the management level who were privy with the procurement process and activities in their respective institutions. Thus, 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, knowledge of market supply).

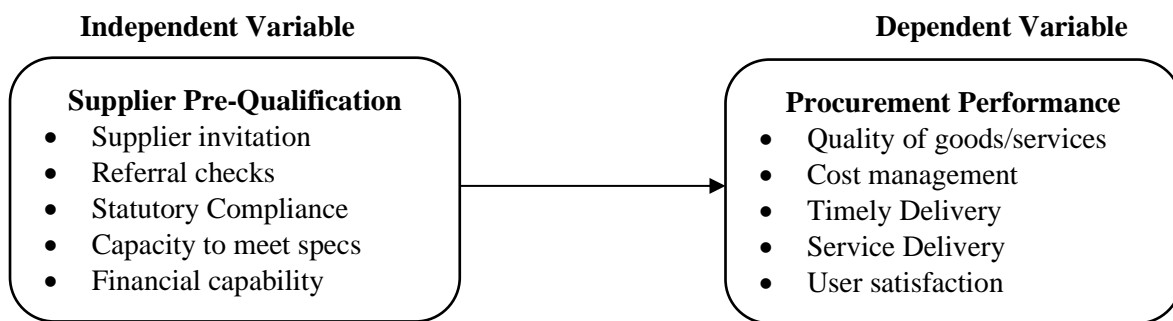
Chebet and Kwasira (2016) examined the role of public procurement practices in enhancing procurement cost reduction in Embu University in Kenya, the study examined the role of the tendering process, outsourcing and inventory control management practices and e-procurement

practices. The study was anchored on general systems theory, transactional 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 the 250 employees of Embu university. Primary data was collected using structured questionnaire from a sample of 75 employees. The study findings revealed that the tendering processes had a positive effect on cost reduction at the university.

Conceptual Framework

In *Figure 1*, supplier pre-qualification is the independent variable whose parameters are supplier invitation, referral checks, statutory compliance, capacity to meet specifications and financial capability. Procurement performance is the dependent variable measured by quality of goods/services, cost management, timely delivery, service delivery and user satisfaction.

Figure 1: Conceptual Framework



MATERIALS AND METHODS

This study adopted a correlational research design to determine the moderating effect of internal controls on the relationship between supplier pre-qualification and procurement performance in public universities in Kenya. A correlational research design was considered ideal because it allows the researcher to explore the extent to which variations in the supplier pre-qualification may correspond with variations in the performance outcomes of the selected public universities (Rotich et al., 2015). The target population of the study was 1,016 employees working in the user department, 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 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 was used to test the internal consistence 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.

RESULTS AND DISCUSSION

Demographic Characteristics

The researcher obtained 284 completed questionnaires out of the 287 issued questionnaires 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 Ph.D. 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, which

accounts 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%) respondents worked in the procurement department, and 88 (31%) 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.

Descriptive Statistics

The study aimed to evaluate the relationship between supplier pre-qualification, and procurement performance in 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.

Supplier Pre-Qualification

The study provided statements on supplier pre-qualification process at the selected public universities. The frequencies, mean, and standard deviation of the findings are tabulated in *Table 1*.

The findings in *Table 1* showed that the procurement department carries out a supplier pre-qualification exercise periodically since 178 (62.7%) respondents strongly agreed, 83 (29.2%) respondents agreed, 17 (3%) respondents were undecided, while those who disagreed were 3 (1.1%) respondents and strongly disagreed were 3 (1.1%) respondents. A mean of 4.514 and standard deviation of 0.749 also showed that the procurement department actually carries out a pre-qualification exercise periodically.

Table 1 Pre-qualification of suppliers

Statement on Pre-Qualification of Suppliers	5 (SA)	4 (A)	3 (UD)	2 (D)	1 (SD)	N	Mean	SD
The procurement department carries out a supplier pre-qualification exercise periodically.	178 (62.7)	83 (29.2)	17 (3)	3 (1.1)	3 (1.1)	284	4.514	0.749
The University invites potential suppliers to apply for the pre-qualification exercise through public media.	151 (53.2)	119 (41.9)	11 (3.9)	3 (1.1)	0 (0)	284	4.472	0.626
The supplier pre-qualification process is done transparently.	154 (54.2)	88 (31)	36 (12.7)	6 (2.1)	0 (0)	284	4.373	0.785
The potential supplier's financial capability is assessed during the pre-qualification exercise.	121 (42.6)	89 (31.3)	50 (17.6)	21 (7.4)	13 (1.1)	284	4.070	0.996
During the pre-qualification exercise, the statutory compliance of the potential supplier is assessed.	133 (46.8)	118 (41.5)	30 (10.6)	3 (1.1)	0 (0)	284	4.341	0.708
The pre-qualification exercise assesses the capacity to meet product/service specifications.	133 (46.8)	93 (32.7)	37 (13)	18 (6.3)	3 (1.1)	284	4.180	0.958
Referral checks are done to assess the potential supplier's ability to deliver.	103 (36.3)	131 (46.1)	20 (7)	27 (9.5)	3 (1.1)	284	4.070	0.952
Overall Mean							4.314	

From the findings, the University invites potential suppliers to apply for the pre-qualification exercise through public media as revealed by 151 (53.2%) respondents who strongly agreed and 119 (41.9%) respondents who agreed. However, 11 (3.9%) respondents were undecided and only 3 (1.1%) respondents disagreed. The study obtained a mean of 4.472 and standard deviation of 0.626 which reveals that the University invites potential suppliers to apply for the pre-qualification exercise through public media.

When asked if the supplier pre-qualification process was done transparently, 154 (54.2%) respondents strongly agreed, 88 (31%) respondents agreed, 36 (12.7%) respondents were undecided and 6 (2.1%) respondents disagreed. This showed that the supplier pre-qualification process is done transparently. This is also proven by the mean of 4.373 and standard deviation of 0.785.

The study showed that potential supplier's financial capability was assessed during the pre-qualification exercise, as 121 (42.6%) respondents strongly agreed, 89 (31.3%) respondents agreed, 50 (17.6%) respondents were undecided, 21 (7.4%) respondents disagreed and

3(1.1%) strongly disagreed. The mean was 4.070 and standard deviation was 0.996.

The results indicate that, during the pre-qualification exercise, the statutory compliance of the potential supplier was assessed. This is shown as 133 (46.8%) respondents strongly agreed, 118 (41.5%) respondents agreed 30 (10.6%) respondents were undecided and 3 (1.1%) respondents disagreed. The mean was 4.341 and standard deviation was 0.0.708.

The study showed that the pre-qualification exercise assesses the capacity to meet product/service specifications. 133 (46.8%) respondents strongly agreed, 93 (32.7%) respondents agreed, 37 (13%) respondents were undecided, 18 (6.3%) respondents disagreed and 3(1.1%) strongly disagreed. The mean was 4.180 and standard deviation was 0.988.

As per the result, referral checks are done to assess the potential supplier's ability to deliver since 103 (36.3%) respondents strongly agreed, 131 (46.1%) respondents agreed, 20 (7%) respondents were undecided, 27 (9.5%) respondents disagreed, and 3 (1.1%) strongly disagreed. This is also

revealed by the mean of 4.070 and the standard deviation of 0.952.

Therefore, the study found that most respondents in this study agreed (grand mean=4.314) that supplier pre-qualification has a significant relationship with procurement performance. These findings concur with Agonsi et al. (2021), who established a significant positive relationship between supplier pre-qualification and procurement performance at the Federal Universities in North Central Nigeria. Similarly, the findings were also supported by those of Acheamfour et al. (2019), Gaylade (2018), and Koros and Kwasira (2021), which found that supplier pre-qualification had a positive significant relationship with procurement performance.

However, the findings are inconsistent with those of Halizahari et al. (2020), who studied the effect of direct negotiations on efficient public

procurement delivery in Malaysia and established a negative relationship between supplier pre-qualification and public procurement delivery. The study found that procurement in the public sector was compromised because of direct negotiations, which led to poor service and delays in delivery, hence inefficient procurement performance. Similarly, Duarte and Sousa (2020), in assessing the effect of supplier pre-qualification on the performance of the Portuguese Construction Sector, found that supplier pre-qualification did not have any significant effect on the procurement performance of the construction industry.

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 tendering 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 tendering process enhance 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 tendering 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 tendering 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 tendering 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 tendering 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, including pre-qualification, supplier management, negotiation, and inventory control practices had a positive and significant relationship with procurement performance.

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 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.

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 signoffs 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	

When questioned whether segregation of duties at the procurement department ensures that no single personnel have 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 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 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 of 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 signoffs 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 et al. (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.

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 pre-qualification and procurement performance of public universities in Kenya.

Table 4: Correlation analysis

		Board Composition	Financial Performance
Pre-qualification	Pearson Correlation	1	0.514**
	Sig. (2-tailed)		0.000
	N	284	284
Procurement Performance	Pearson Correlation		1
	Sig. (2-tailed)		
	N		

The results on *Table 4* show that there exists a positive significant correlation between pre-qualification of suppliers and performance of the procurement function ($r = 0.514, p < 0.05$). These findings were supported by Agonsi et al. (2021), who established a significant positive relationship between supplier pre-qualification and procurement performance at the Federal Universities in North Central Nigeria. Similarly, the findings were also supported by those of Acheamfour et al. (2019), Gaylade (2018), and Koros and Kwasira (2021), who found that supplier pre-qualification had a positive

significant relationship with procurement performance.

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

The hypothesis of the study stated that internal controls have no statistically significant moderating effect on the relationship between

supplier pre-qualification and procurement performance in public universities in Kenya. However, before determining the moderating effect, the study examined the direct

relationship between supplier pre-qualification and procurement performance in public universities. The results are presented in *Table 5*.

Table 5: Model summary for the direct relationship between supplier’s pre-qualification and procurement performance

Model	R	R ²	Adjusted R ²	Std. Err of the Estimate	Change Statistics					
					R ² Change	F Change	df1	df2	Sig. F Change	
Pre-qualification	1	0.514 ^a	0.264	0.261	0.72681	0.264	101.107	1	282	0.000

The results presented in *Table 5* reveal that the significance test results for supplier pre-qualification shows a positive relationship between pre-qualification and procurement performance (R=0.514, R²= 0.264) and (F (1, 282) = 101.107, p<0.000). The obtained R² of 0.264 implies that 26.7% of the variation in procurement

performance in public universities can be explained by supplier pre-qualification. Subsequently, the moderating effect of internal controls on the relationship between pre-qualification and procurement performance was examined and the results presented in *Table 6*.

Table 6: Model summary for the moderating effect of internal controls on the relationship between supplier prequalification and procurement performance

Model	R	R ²	Adjusted R ²	Std. Err of the Estimate	Change Statistics					
					R ² Change	F Change	df1	df2	Sig. F Change	
Pre-qualification	1	0.582 ^a	0.339	0.337	0.68874	0.339	144.622	1	282	0.000

Table 6 presents the results obtained after the interaction of the moderator variable (pre-qualification*internal controls) was introduced in the regression model. The findings reveal a positive relationship between pre-qualification and procurement performance of public universities (R=0.582, R²= 0.339) and (F (1, 282) = 144.622, p<0.000). The obtained R² of 0.339 implies that 33.9% of the variation in procurement performance in public universities can be accounted for by supplier pre-qualification*internal controls. The inclusion of the moderator variable resulted in a change of the coefficient of determination of 0.075 which implies that the moderation effect accounts for 7.5% of the variation in procurement performance above and in addition to the variation that was accounted for supplier pre-qualification. Therefore, the moderating effect of internal

controls on the relationship between supplier pre-qualification and procurement performance in public universities in Kenya shows a significant effect.

These study findings agree with those of Agonsi *et al.* (2021), who established a significant positive relationship between supplier pre-qualification and procurement performance at the Federal Universities in North Central Nigeria in a study examining the influence of pre-qualification requirements and the tender document on the distribution of building contracts at the Federal Universities in North Central Nigeria and that of Duarte and Sousa (2020) which examined the effect of supplier pre-qualification on the performance of the Portuguese Construction Sector

Table 7: ANOVA results for the moderating effect of internal controls on the relationship between supplier pre-qualification and procurement performance in public universities in Kenya

	Model		Sum of Squares	Df	Mean Square	F	Sig.
Pre-Qualification	1	Regression	53.410	1	53.410	101.107	0.000 ^b
		Residual	148.966	282	0.528		
		Total	202.376	283			
	2	Regression	68.604	1	68.604	144.622	0.000 ^b
		Residual	133.772	282	0.474		
		Total	202.376	283			

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

Table 8: Coefficients for the moderating effect of internal controls on the relationship between supplier pre-qualification and procurement performance in public universities in Kenya.

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error			
1 (Constant)	1.092	0.320		3.412	0.001
	Pre-qualification	0.743	0.074	0.514	10.055
2 (Constant)	0.183	0.343		0.533	0.595
	Pre-qualification	0.956	0.079	0.582	12.026

Table 8 demonstrate that the moderating effect of internal controls on the relationship between pre-qualification of suppliers and procurement performance in public universities was positive and significant ($\beta=0.183$, $p<0.05$), implying that internal controls have an insignificant moderating effect on supplier pre-qualification and procurement performance in public universities in Kenya. This implies that when supplier pre-qualification increases by an additional unit, procurement performance is predicted to increase by 0.183 given that internal controls are held constant. The beta coefficient of the moderating variable (internal controls) was 0.956 with a p -value <0.05 , implying that internal controls have a significant moderating effect on the effect of supplier pre-qualification and procurement

performance in public universities in Kenya. Thus, the null hypothesis (H_{01}) was rejected indicating that internal controls have a statistically significant moderating effect on the relationship between supplier pre-qualification and procurement performance in public universities in Kenya. This implies that the contribution of supplier pre-qualification to the procurement performance variable can be enhanced by internal controls.

Joint Relationship Between Supplier Pre-qualification and Procurement Performance

The study examined the joint relationship between supplier pre-qualification and procurement performance.

Table 9: Model summary for the joint relationship between tendering process and procurement performance

Model	R	R2	Adjusted R ²	Std. Err of the Estimate	R ² Change	Change Statistics			
						F Change	df1	df2	
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), Pre-Qualification

2. Predictors: (Constant), Pre-Qualification, 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 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 pre-qualification and procurement performance

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	0.106	0.330		0.323	0.747
Pre-Qualification	0.155	0.064	0.107	2.421	0.018
2 (Constant)	0.067	0.346		0.195	0.845
Pre-Qualification	0.144	0.064	0.100	2.250	0.026

a. Dependent Variable: Procurement Performance

The findings in *Table 10* show that after moderation, the beta coefficient for supplier pre-qualification was 0.144 with 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 significant moderating effect on the effects of the supplier pre-qualification and procurement performance in public universities in Kenya.

CONCLUSION AND RECOMMENDATION

The study concluded that internal controls have a statistically significant positive moderating effect on relationship between pre-qualification of suppliers and procurement performance in public universities. Also, there exists a positive significant correlation between pre-qualification of suppliers and performance of the procurement function. The study recommended that in order to achieve good procurement performance in public universities, pre-qualification of suppliers should be carried out periodically and transparently. It also recommended that the pre-qualification exercise involved assessment of supplier financial capability, statutory compliance and their capacity to meet product/service specifications. Proper supplier pre-qualification procedures result in efficient procurement performance in public universities.

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