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MODERATING EFFECT OF ORGANIZATIONAL ENVIRONMENT ON THE LINK BETWEEN RISK MANAGEMENT STRATEGIES AND PROCUREMENT PERFORMANCE OF KENYA'S SUGAR FIRMS

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ABSTRACT

Organizations adopt different strategies to manage risks within their operational environments with an aim of improving performance. However, the level of adoption of these strategies differs from one organization to another, given that they operate in different environmental contexts. Despite adoption of the strategies, procurement performance in Kenya's sugar firms is declining. Studies linking risk management strategies and procurement performance have yielded mixed results. This study aimed at analysing the moderating effect of organizational environment on the relationship between risk management and procurement performance of sugar firms in Kenya. Correlational research was adopted. Primary data were collected using self-administered questionnaires to 70 respondents in all the 10 sugar firms in Kenya. A pilot study was done with 7 respondents in 10% of the sugar firms. Response rate was 71.43%. Cronbach's average α was 0.7444 for reliability while validity was through experts' views. The study findings indicated that organizational environment significantly and positively moderates the relationship between procurement risk management strategies and procurement performance (R^2 change = 0.078, $p < 0.05$). The study concludes that procurement performance of sugar firms is determined by procurement risk management strategies and organizational environment. This study recommends that sugar firms should be keen to the changing business environments and put up measures that would help in adapting to the environmental changes to improve on performance. Sugar firms should also enhance their procurement risk management strategies for improved performance.

KEY WORDS: *Risk Management; Procurement Risk Management Strategies; Organizational Operational Environment; Procurement Performance.*

1.0 INTRODUCTION

Risk management is the process of identifying, assessing and taking necessary steps to reduce risks to an acceptable level within an enterprise [33]. This is in line with [10] which add that risk management is a discipline with specialised knowledge and skills to manage potential and actual events that may have a negative (or positive) impact on outcomes or objectives. Procurement risk management strategy can be defined as a plan that provides a structured and coherent approach to how procurement function adopts risk management policy to avert events that would negatively impact on inbound supply of materials [46]. Organizational environment consist of elements outside the boundary of an organization that have the potential to affect all or part it [21]. [38] also views organizational environment as forces or institutions surrounding an organization that affect performance, operations, and resources. The operational environmental factors expose firms to some level of uncertainty that influence their performance regardless of strategy chosen and the context of operation [15]; [12]. Procurement performance entails effectiveness and efficiency of procurement processes within an organization [26].

Theoretical literature links risk management and organizational environment positively to a firm's performance [35]; [16]; [20]; [29]; [28]. [35] suggest that by implementing risk management, organization can reduce unexpected and costly surprises, and allocation of resources could be more effective. Risk management also improves communication and provides senior management a concise summary of threats, which can be faced by the organization, thus ultimately helping them in better decision making [35]. Inherent risks in the operating organizational environments have seen decrease in firm performance. This is more pronounced in Kenyan manufacturing firms where productions are falling and even closure of some, with sugar firms taking the lead.

Empirical studies in the service industry on the relationship between risk management and procurement performance indicated mixed results. For example, some studies indicated weak association between risk management and organizational performance [35]; [25]. Other studies show strong or no association between risk management and performance [19]; [28]; [32]. On the other hand, [27] generalised the relationship between risk management and organizational performance as direct without giving the strength of the association. Similarly, [31] generalised that risk management are directly and indirectly associated with performance. These mixed empirical findings could be pointers to possible moderation of organizational environment on the relationships.

Moreover, studies by other scholars like [1]; [2] pointed the possibility of organizational environment moderating the relationship between study variables. However, empirical evidence on the possibility of moderation of organizational environment on the relationship between organizational risk management and firm operational performance especially in the manufacturing sector is limited.

1.1 Objectives

The objective of the study was to analyse the moderating effect of organizational environment on the link between procurement risk management strategies and procurement performance of sugar firms in Kenya. The study hypothesized that:

Organizational environment had no significant moderating effect on the link between procurement risk management strategies and procurement performance of sugar firms in Kenya.

1.2 Conceptual Framework

The study conceptualized that organizational environment moderates the relationship between procurement risk management strategies and procurement performance. The schematic representation of the moderation was captured in Figure 1. Organizational environment was measured by assessing the influence of competitors, suppliers, regulators and management style [1]; [14]; [7].

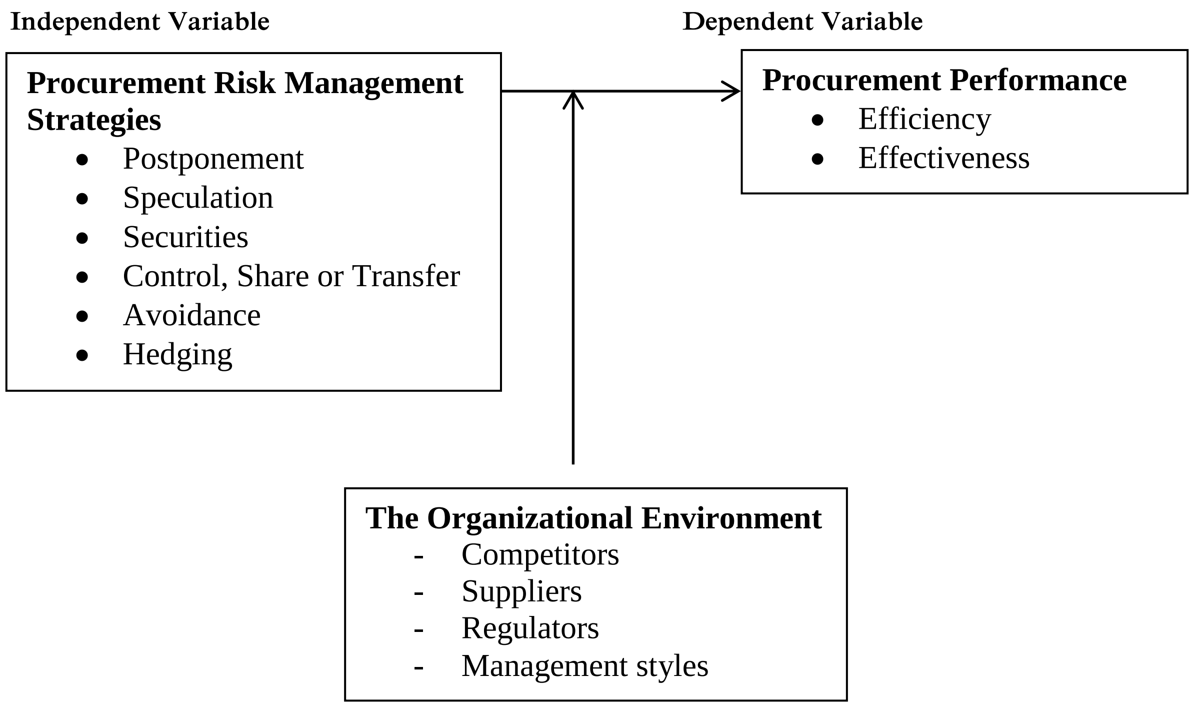

Figure 1: Moderating effect of organizational environment on the relationship between procurement risk management strategies and procurement performance
Adapted from [1], [32].

2.0 LITERATURE

2.1 Enterprise Risk Management (ERM) Framework

Developed by Committee of Sponsoring Organizations of the Treadway Commission (COSO) in 2004, enterprise risk management framework provides firms' boards and management with principles to manage risks, from strategy-setting through execution, and recognises the increasingly important connection between strategy and performance [11]. According to [13], ERM should be a structured approach that aligns strategy, processes, people, technology and knowledge with the objective to assess and manage threats and opportunities that companies face in trying to create value. This means that risk management function within the organization would be responsible for the direct management of the risk management policy of the entity. Risk management policy would consider the coordination within all the operational and business areas of the organization, which would be ultimately responsible for the implementation of risk management, as well as performance, a permanent monitoring procedure [37].

ERM maximizes value of a firm when the decision-makers set strategies and objectives to strike an optimal balance between growth and return goals and the related risks, and efficiently and effectively allocate resources in pursuit of the entity's objectives [10]. [5] stated that the goal of ERM approach is to create, protect and enhance shareholder value by managing uncertainties that could influence the achievement of organizational objectives. According [6], ERM supports value creation by enabling the management to deal effectively with potential future events that create uncertainty and respond in a manner that reduces the likelihood of negative outcomes. Thus risk management strategy in procurement protects and enhances firms' value through management of the uncertainties that would otherwise negatively influence performance. ERM framework provides guidance to identify and analyze the risks, for any of the following actions to be taken: avoidance by aborting actions that contributes to risk, reduction by reducing the likelihood or impact of risk, share or insure risk by transferring or sharing a portion of the risk (impact) and acceptance of risk by taking no action as a result of a cost/benefit decision [45].

Based on the ERM framework, procurement functions should develop risk management strategies to proactively identify, assess and mitigate potential risks that would otherwise impact negatively on their performance and thus enhance firm's value. These strategies should enable proactive and effective management of uncertainties and threats in procurement processes.

2.2 Procurement Risk Management Strategies

Borrowing from [46] as in [44] definition, procurement (supply) risk is the potential occurrence of an unexpected event associated with inbound supply (procurement of materials), from individual supplier failure in which its outcomes result in the inability of the purchasing company to meet its customers' demands. This definition applies to procurement risks as supplies are viewed from the buyer perspective as procurement. Two basic approaches are recommended in responding to supply chain disruptions: adding redundancy and building flexibility [36]; [8]. Adding redundancy involves maintaining excess resources such as inventory and capacity [44].

Applying [8] concept in the procurement context, the best procurement functions identify changes in the environment and develop contingent measures as having more suppliers to prevent possible disruptions. While protecting against disruptions, excess resources can be costly. Flexibility on the other hand can be achieved through the use of a multi-skilled workforce, versatile equipment, and the development of closer relationships with suppliers and customers to accommodate last minute changes [44]. According to [24], flexibility plays a facilitating role in the coordination process and provides a unique ability to help companies to manage the high levels of environmental and operating uncertainty inherent in supply chain operations. Single sourcing has been advocated as a strategy to mitigate supply risks [44]. While it reduces administrative costs, single sourcing leads to overdependence on one single supply source, thus exposing great vulnerability to negative events that may occur at the supplier's plants. Single sourcing also facilitates the building of long-term relationships with suppliers which in turn facilitate effectively managing supply risk. However, as noted by [41], multiple sourcing has been viewed as a means of mitigating supply risk, but this implies that more efforts are require to co-ordinate the supply base.

A study by [24] provides a definition of risk management in the global supply chain as the identification and evaluation of risks and consequent losses, and implementation of appropriate strategies through a coordinated approach among supply chain members with the objective of reducing one or more of the following: losses, probability, speed of event, speed of losses, the time for detection of the events, frequency, or exposure – for supply chain outcomes that in turn lead to close matching of actual cost savings and profitability with those desired. As such, risk management strategies should lead to reduction in loss, probability, speed, frequency, and/or exposure of risk events and thereby improve the supply chain outcomes. This means that a risk management strategy should provide a structured and coherent approach to identifying, assessing and managing risk and builds in a process for regularly updating and reviewing the assessment based on new developments or actions taken in the procurement (supply side) process.

2.3 Organizational Environment

An organization does not exist in isolation; on the contrary, it interacts with its environment. Given that managers are operating in the context of their organizations' environment, the attributes of this environment affect the scope of their actions [16]. An organization's environmental factors consist of both physical and social factors that have the potential to influence the firm in various ways. According to the resourced based theory, the organization is managed and controlled by its environment. [34] explains the concept of organization's environment by classifying its structure into two broad categories: internal environment and external environment. He defines internal environment as a relationship and interaction amongst the members of the organization, and considers other organizations and individuals as external environment of the organization.

Organization's external environment can be specific (the task environment) or general [14]; [22]. The external environment includes a wide variety of needs and influences that can affect the organization, but which the organization cannot directly control. According to [22], the external environments that affect business organizations can categorized as general or specific. General environmental influences can be political, economic, ecological, societal and technological in nature while specific environment include the customers, suppliers, competitor, regulators and strategic partners [22]. The players in the external environment make demands on other organizations in different ways like competitive prices and desirable goods and services.

[14] views the specific environment to include sectors with which the organization interacts directly and that have a direct impact on the organization's ability to achieve its goals. They are: the industry (competitors), raw materials (suppliers), and market sectors (customers), and perhaps the human resources (regulators) and international sectors (partners). According to [7], the specific environment may create asymmetric information between core employees and their direct supervisors; asymmetric information creates opportunities for hidden action by employees and uncertainty about outcomes for supervisors. They further argue that complex, variable and non-routine tasks require employees' knowledge of specific circumstances and ability to deal with problems as they emerge, and consultation among co-workers to address particularly complicated situations.

[22] noted that management can identify environmental factors of specific interest rather than having to deal with more abstract dimension of the general environment. These include: suppliers, customers, competitors, regulators (government agencies), competitors and strategic partners. These affect business organizations in various ways: competitors – influence the policies of a firm as it tries to be ahead of competition; customers – customers satisfaction ensures a firm's survival; suppliers – ensures steady inflow of quality raw materials; regulators – control, regulate or influence an organization's policies and practices; and, strategic partners – influences the activities of a firm in various ways.

2.4 Procurement Performance Measurement

An essential component to success in any organization is having holistic insight into activities and drivers that define the organization's mission. According to [9], efficiency and effectiveness metrics; and structural issues such as; talent management, internal alignment and complexity; can be used to track and drive improvements in procurement performance. Efficiency and effectiveness represent different competencies and capabilities for procurement organisations. Efficiency reflects that the organisation is 'doing things right', whereas effectiveness relates to the organisation 'doing the right thing'. Highly efficient organisation may spend less than peers; however, quality and value may suffer. Organisations focussed on efficiency tend to make decisions based on cost and investment pay back likelihood; whereas effectiveness focussed organisations make decisions based on quality and value rather than costs and productivity. The challenge for procurement organisations is targeting and achieving the right balance between the two. An organisation can be highly effective, yet not efficient and vice versa.

Depending on the organization, several procurement performance metrics are available. For example, [18] suggested eighty-nine measures which are grouped into six categories which can be used to measure efficiency or effectiveness or both: Purchase Cost Savings / Avoidance ; Managing Supplier Base; Internal Customer Satisfaction; Procurement Cost; Resource Utilization. Some authors propose product price variance, effective contract utilization, supplier performance, procurement cycle time, procurement cost [40]; [47], staff training, transparent price information, transparent tendering [40].

Performance provides the basis for an organisation to assess how well it is progressing towards its predetermined objectives, identifies areas of strengths and weaknesses and decides on future initiatives with the goal of how to initiate performance improvements. Procurement performance starts from purchasing efficiency and effectiveness in the procurement function in order to change from being reactive to being proactive to attain set performance levels in an entity [23]. Purchasing performance is a result of two elements: purchasing effectiveness and purchasing efficiency [42].

2.5 The Moderating Effect of Organizational Environment on the Relationship between Procurement Risk Management Strategies and Procurement Performance

[3] conducted a study on organizational culture and organizational efficiency: the moderating role of organizational environment in Istanbul, Turkey. The study of 40 top managers found out that organizational culture types are related to some organizational efficiency dimensions. The stability or variability of internal and external organizational environment and the top managers' values (self-direction and stimulation) play a moderator role on this relationship. A model study in the United States in 2005 by [17] determined the moderating effect of environmental dynamism on the relationship between entrepreneur leadership behaviour and new venture performance. The findings indicated that environmental dynamism has a significant positive moderating effect on the relationship between transformational leadership and new venture performance, and a significant negative moderating effect on the relationship between transactional leadership and new venture performance. Performance was measured using the sales growth rate and absolute sales volume of the new ventures. The model explained 36% of the variance in sales growth and 65% of the variance in actual sales. [4] investigated the possible moderating effects of environmental dynamism, environmental complexity, and environmental munificence on the relationships between changes in top management teams and board of directors and firm performance in Texas, USA. The study showed that the three dimensions of environment do not moderate the relationship between the rate of change in top management teams and firm performance.

In African, [1] examined the moderating effect of organizational environment on intraprenuerial orientation and performance of 51 beverage and 91 bakery firms in Kampala, Uganda. The found that organizational environment positively affects the relationship between intrapreneurial orientation and firm performance. [43] in a mixed method surveyed sixty (60) firms enlisted in the Nairobi Stock Exchange (NSE) in Kenya. The study, which investigated the moderating effect of organizational factors on the relationship between competitive intelligence practices and performance, indicated that organizational factors moderate the relationship between competitive intelligence practices and performance.

From the foregoing literature, a number of studies are documented on procurement performance with only a few in Kenya [43] and around the globe on the moderating effect of organizational environment on relationship variables [3]; [4]; [17]; [1]. Not a single of the studies determined the possibility of moderation of organizational environment on relationship between firm risk management and performance. Moreover, the findings of the studies on the moderating effect of organizational environment on the study variables indicate some variations [3]; [4].

3.0 RESEARCH METHODOLOGY

The moderating effect of organizational environment was analysed using multiple regression analysis (MRA). Prior to conducting multiple regression analysis, preliminary analyses were done to ensure that there were no validation of assumptions of normality, linearity, and homoscedasticity. To determine the presence of moderating effect of organizational environment, MRA model represented by equation 1 was used.

$$Y_i = \beta_0 + \beta_1 X_i + \beta_2 M_i + \beta_3 X_i * M_i + \varepsilon_i \ldots\ldots (1)$$

Where: Y_i = predicted procurement performance, X_i = Procurement risk management strategies, M_i = Moderator variable (Organizational Environment), X_i*M_i = the moderation/interaction term between the Predictor variables X_i and M_i β_0 = regression parameter when X = 0; M = 0 (the y - intercept), β_1 = simple regression coefficient of X when M = 0, β_2 = simple regression coefficient of M when X = 0 and β_3 = regression coefficient that measures the interaction (moderating effect) between independent variable, X and moderator variable, M. [39].

Quantitative data were obtained through self-administered questionnaires that contained dimensions of organizational environment, procurement risk management strategies and procurement performance. All these were measured based on ordinal scale. Reliability of the instrument was 0.705 for procurement risk management strategies and 0.754 for organizational environment, obtained through pilot-testing of the instrument with seven respondents from 10% of the sugar firms in Kenya.

4.0 RESULTS

Table 1 shows the results of multiple regression analysis of the interaction term of organizational environment and procurement risk management strategies (independent variables) on procurement performance (dependent variable).

TABLE 1

The Moderating Effect of Organizational Environment and Procurement Risk Management Strategies on Procurement Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.713	.509	.497	.41119	.509	44.534	1	43	.000	
2	.804	.647	.630	.35262	.138	16.471	1	42	.000	
3	.852	.725	.705	.31497	.078	11.641	1	41	.001	1.721

a. Predictors: (Constant), Procurement Risk Management Strategies(PROCRISK)

a. Predictors: (Constant), Procurement Risk Management Strategies, Organizational Environment (ORGENVT)

c. Predictors: (Constant), Procurement Risk Management Strategies, Organizational Environment, Interaction Term (PROCRISK*ORGENVT)

d. Dependent Variable: Procurement Performance

Source: Survey data, 2018

From Table 1, R^2 change = 0.078, [$F (1, 41) = 11.641$, $p < 0.05$] indicates statistically significant interaction (moderation) between procurement risk management strategies and organizational environment in predicting procurement performance. The R^2 change of 0.078, $p < 0.05$ implies that the moderating effect of organizational environment significantly and positively explains 7.8% variance in predicted procurement performance over and above the variance explained by procurement risk management strategies and organization environment. This means that when organizational environment and procurement risk management are combined, procurement performance improves significantly. This confirms that an organization environment significantly and positively moderates the effects of procurement risk management strategies on procurement performance. Therefore the alternative hypothesis is accepted. The Durbin-Watson value was 1.721 lies between the recommended critical values of 1.5 < d < 2.5 [30], indicating absence of autocorrelation between the variables.

The regression analysis also gave collinearity statistics as per Table 2.

Table 2:
Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	1.598	.277		5.771	.000		
PROCRISK	.579	.087	.713	6.673	.000	1.000	1.000
(Constant)	.875	.297		2.948	.005		
PROCRISK	.378	.089	.466	4.234	.000	.694	1.441
ORGEVNT	.402	.099	.447	4.058	.000	.694	1.441
(Constant)	1.619	.343		4.717	.000		
PROCRISK	.100	.114	.124	.880	.384	.340	2.941
ORGEVNT	.140	.117	.155	1.192	.240	.395	2.532
PRODUCT	.095	.028	.625	3.412	.001	.200	5.000

a. Dependent Variable: Procurement Performance
Key: PROCRISK = Procurement Risk Management Strategies
ORGEVNT = Organizational Environment
PRODUCT = Product of the Independent variables
Source: Survey data, 2018

Table 2shows that the variance inflation factor (VIF) corresponding to the interaction term was 5.000. The VIFs are indices which measure how much variance of estimated regression coefficients are increased because of multicollinearity. As a Rule of Thumb, if any of the VIF values exceeds 5 or 10, it implies that the associated regression coefficients are poorly estimated because of multicollinearity (Montgomery, 2001). The VIF values were 5.000 or less. These VIF values lie within the acceptable range indicating that there were no existences of severe multicollinearity among the variables.

5.0 DISCUSSION

Contrary to the expectation, organization environment plays a significant role in moderating the relationship between procurement risk management strategies and procurement performance of sugar firms in Kenya. This means that relationship between procurement risk management strategies and procurement performance is stronger if organizational environmental factors are taken into consideration. This is consistent with study findings by [1] that revealed that organizational environment significantly and positively moderates the relationship between intrapreneurial orientation and firm performance. The findings further support those of a study by [39] who found that organizational tenure significantly affected the relationships between competency and performance. However, findings of a study by [2] indicated partial moderation of government assistance on the relationship between product-market refocusing strategies and turnaround success hence is only partially supported. Also, the current study findings contradict those by [4] who found that organizational environment does not moderate the relationship between Post-IPO corporate governance changes and firm performance.

6.0 CONCLUSION

From the results, it is evident that organizational environment significantly and positively moderates the relationship between procurement risk management strategies and procurement performance. On this basis, hypothesis H_1 which predicted that there is no moderating effect of the organizational environment on the relationship between procurement risk management strategies and procurement performance is therefore rejected. The implication of the results of this objective is that procurers of sugar firms should continuously scan the task environment in order to identify the challenges and opportunities available for appropriate action. Positive interaction between procurement departments of sugar firms and their operating environment will lead to dramatic improvements in their performance.

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