

# Risk Identification and Organizational Sustainability within the Supply Chain Industry in Kenya: A Case of Kenya Medical Supplies Authority

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## ABSTRACT

Effective risk identification is critical for both private and public sector organizations to enhance their sustainability. The study is prompted by the challenges that have been facing KEMSA, including allegations of corruption and mismanagement of funds. The organization has been accused of irregular procurement practices, overpricing of medical supplies, and misuse of public funds. The main intention of this research was to examine risk identification influence on sustainability of supply chain industry in Kenya. The study was anchored on contingency theory and supported by agency theory and resource-based view theory. An explanatory research design was used in this research. The population of the study was the 389 employees at KEMSA headquarters in Nairobi. Sample size was 198 employees stratified according to their departments. Primary data obtained using questionnaires was collected. Inferential as well as descriptive statistics generated included frequencies and percentages and simple and multiple linear regression respectively. The study revealed a significant positive relationship between risk identification and sustainability of supply chain industry in Kenya. This study concluded that risk identification is essential for KEMSA to use in their endeavor to improve on their sustainability. The study recommends that KEMSA should enhance risk identification to bolster its sustainability in the supply chain industry in Kenya.

**Keywords:** Risk identification, organizational sustainability, enterprise risk management, supply chain industry

## INTRODUCTION

In today's enterprises, risk management has gained importance. With globalization and the rapid pace of technological advancement, organizations are facing increasingly complex risks that are often interconnected (Elahi, 2019). Risk management helps organizations in identifying and managing these risks in a holistic way. Regulatory bodies are also placing greater emphasis on risk management with many requiring organizations to implement risk management frameworks as part of their compliance obligations. This is particularly true in highly regulated industries such as finance, healthcare, and energy (Paape & Speklé, 2022). Further, investors, customers, and other stakeholders are becoming more aware of the risks that organizations face and are increasingly demanding that organizations take a proactive approach to managing these risks.

The first step in the risk management process is risk identification, which entails finding potential hazards that could affect a company's capacity to meet its goals (O'Donnell, 2018). This step involves considering both internal and external risks, such as operational risks, financial risks, strategic risks, and reputational risks. Risk identification can utilize numerous approaches, like brainstorming sessions, risk assessments, and analysis of historical data (Bharathy & McShane, 2020). It is important to involve stakeholders in entire organization in the process of risk identification to guarantee that a comprehensive range of risks is identified. By identifying potential risks in a systematic and comprehensive manner, organizations can advance a more accurate

consideration of their risk profile and make informed judgement regarding how to manage and mitigate these risks (Liebenberg & Hoyt, 2023).

The supply chain industry in Kenya is relatively underdeveloped compared to more developed economies, but it is growing and improving (Kimani, 2017). The sector is vital to the country's economic growth, as it supports various industries, including agriculture, manufacturing, and retail. Poor infrastructure is one of the key challenges facing the supply chain industry in Kenya as the country's road, rail, and port infrastructure is inadequate and requires significant investment to improve efficiency and reduce costs. Further, many Kenyan companies still rely on manual processes and have not fully embraced technology solutions to optimize their supply chain operations (Muhalia, Ngugi & Moronge, 2021).

In Kenya, the medical supply chain process involves various medical organizations, with the Ministry of Health playing a central role. The Ministry of Health is responsible for formulating and implementing health policies, coordinating health services, and overseeing the entire healthcare system (Matuga, 2022). It collaborates with organizations like the Kenya Medical Supplies Authority (KEMSA), which is tasked with procuring, warehousing, and distributing medical supplies to healthcare facilities across the country (Awino, 2021). Additionally, other medical organizations, such as hospitals, clinics, and non-governmental organizations, actively participate in the medical supply chain by providing demand forecasts, ensuring proper storage of medical supplies, and facilitating the distribution of healthcare resources to the end-users (Waweru & Kisaka, 2022).

The state of risk identification in the Kenyan supply chain industry is still relatively low, with many companies in the industry yet to fully embrace the risk identification framework. This is partly due to the fact that many organizations in Kenya are small and medium-sized enterprises that lack the resources and expertise to develop and implement a comprehensive risk identification program (Munyalo, 2020). However, there is a growing recognition of the importance of risk identification in the Kenyan supply chain industry, and some larger organizations are beginning to adopt risk identification practices. These organizations are recognizing the potential benefits of risk identification, such as better decision-making, and enhanced organizational resilience (Kimocho, 2019).

The Kenyan government has also recognized the importance of risk identification and has included it as a requirement in some regulations (Awino, 2021). For instance, the Capital Markets Authority requires all listed companies to have a risk identification framework in place. The Central Bank of Kenya (CBK) has also issued guidelines for banks and other financial institutions to develop and implement risk identification programs (Waweru & Kisaka, 2022). Despite these developments, there is still a need for greater awareness and understanding of risk identification in the Kenyan supply chain industry. Organizations should be encouraged to adopt risk management practices, and government agencies and other stakeholders should provide support and resources to help smaller organizations implement risk identification programs (Mwangi, 2018). With the increasing importance of supply chain resilience and sustainability, it is likely that more companies in the Kenyan supply chain industry will begin to adopt risk identification practices in the coming years.

The Kenyan Ministry of Health founded the Kenya Medical Supplies Authority (KEMSA) as a state corporation to offer the Kenyan people with dependable, cost-effective, and high-quality healthcare goods and services (KEMSA 2023). The mission of KEMSA is to acquire, store, and supply medical supplies to Kenya's public health facilities. KEMSA is responsible for the procurement of essential medicines and medical supplies for the public health sector in Kenya (KEMSA 2023). It operates a central medical store that serves as a distribution hub for medical products to public health facilities across the country.

In recent years, KEMSA has faced some challenges, including allegations of corruption and mismanagement of funds (Kiarie & Kamanda, 2020). The organization has been accused of irregular procurement practices, overpricing of medical supplies, and misuse of public funds. These allegations have led to investigations and audits of KEMSA's operations and calls for reforms to address the organization's governance and management issues. Despite these challenges, KEMSA remains a critical player in the Kenyan healthcare system, and its role in ensuring the availability of essential medical supplies and medicines to public health facilities in Kenya cannot

be overstated (Sriyanto et al., 2021). The Kenyan government has taken steps to address the governance and management issues at KEMSA, and it is hoped that the organization will continue to improve its operations to better serve the Kenyan people.

## Statement of the Problem

This study is prompted by the challenges that have been facing KEMSA, including allegations of corruption and mismanagement of funds. The organization has been accused of irregular procurement practices, overpricing of medical supplies, and misuse of public funds. According to governance agencies including the Office of the Auditor General, the Controller of Budgets, and the Ethics and Anticorruption Commission, reported corporate accounting and accounting malpractice in the public sector have also increased. In these incidents, heads of institutions, CEOs, directors, board members, and heads of departments frequently engaged in unethical behavior in the interest of monetary gain. These are all indications of subpar business risk management procedures.

Several studies on risk identification and sustainability have been performed in various sectors. For instance, Smit and Watkins (2022) investigates the relationship between risk identification and financial performance in South African listed companies while Chen, Chuang, Huang, and Shih (2020) examine the risk identification effect on firm value in Taiwanese companies. These studies did not however establish the influence of risk identification on sustainability of Supply chain industry in Kenya which was the focus of the current study. Given the ever-increasing cases of misappropriation of funds and corruption especially among government agencies in Kenya and the scant literature especially on risk identification, there was need to investigate how risk identification influence sustainability of Kenyan Supply chain industry. Therefore, this research sought to examine the effect of risk identification on sustainability of supply chain industry in Kenya; a case study of KEMSA.

## Objective of the Study

The objective of this research was to determine the influence of risk identification on sustainability of supply chain industry in Kenya; a case study of KEMSA.

## LITERATURE REVIEW

Abideen and DeKlerk (2022) conducted a research on the link between risk identification and organizational sustainability of firms in the South African construction industry. A survey research design was used to collect data from 89 construction companies in South Africa. The respondents were required to rate the extent to which risk identification practices affect organizational sustainability. The author found that risk identification positively influences organizational sustainability in the South African construction industry. The study revealed that identifying risks early enables organizations to manage them effectively, reducing the negative impact of risks on organizational sustainability. While the study provided valuable insights into the relationship between risk identification and organizational sustainability in the South African construction industry, the research design was limited to a single industry and the sample size was relatively small.

A study by El-Sayegh, Manjikian, Ibrahim, Abouelyours and Jabbour (2021) titled risk evaluation and identification in UAE sustainable construction projects utilized a cross-sectional survey research design in collecting data from 260 construction professionals in UAE. The data were analyzed using partial least squares structural equation modeling. The authors found that risk identification positively affects the sustainability of construction projects, as it helps to prevent potential risks from materializing and causing harm to the project, leading to better project outcomes. This study focused on UAE's construction projects whose structure and operations are different from supply chain industry which were the focus of the current study with KEMSA as a proxy.

Li, Xiang, You, Guo, Liu, and Ren (2021) researched on the impact of risk identification on the sustainable development of construction projects. The research utilized a mixed-methods research design to collect data from 150 construction project managers and site supervisors in Hong Kong. The authors used regression analysis

and content analysis to examine the relationship between risk identification and sustainable development in construction projects. The authors investigated the relationship between risk identification and sustainable development in the Hong Kong construction industry. The study found that effective risk identification is critical to achieving sustainable development in construction projects, as it helps to reduce project risks and enhance project outcomes. This was a cross-sectional study covering 150 construction projects while the current study was an in-depth case study of one organization. Moreover, the research was on corporate firms whose social and economic background is diverse from those of public organizations that are the current research focus.

In a study by Hashim et al. (2021) titled "Impact of risk identification on organizational sustainability: A case study of Pakistani textile industry," the authors investigated the relationship between risk identification and organizational sustainability in the Pakistani textile industry. The study utilized a case study research design and collected data from semi-structured interviews with 25 top-level managers in the Pakistani textile industry. The study found that effective risk identification is critical to achieving organizational sustainability in the textile industry, as it helps to identify risks that could potentially impact the industry's performance and take appropriate measures to manage them. The authors recommended that textile companies should adopt proactive risk identification strategies to enhance their sustainability. This study focused on Pakistani textile industry that has a diverse social cultural and economic environment from the current research which focuses on Kenyan supply chain industry with KEMSA as a proxy.

Iwedi, Anderson, Barisua and Zaagha (2020) focused on risk identification and organizational sustainability of selected Nigerian banks. The research utilized a cross-sectional research design to collect data from 105 employees working in five Nigerian banks. The authors used structural equation modeling to analyze the data and examine the relationship between risk identification and organizational sustainability. The study found that effective risk identification positively influences organizational sustainability in the Nigerian banking industry. The authors concluded that effective risk identification can help banks to identify risks that could affect their financial performance and take appropriate measures to manage them, which ultimately contributes to the banks' sustainability. The research was constrained by its small sample size and cross-sectional design, which made it difficult to establish causality. Additionally, the location of this research, Nigeria, differs from Kenya, the location of the current research, in terms of sociocultural and economic conditions.

## **Theoretical Framework**

The segment is a review of theories describing the link between risk identification and sustainability. The study was anchored on contingency theory and supported by agency theory and resource-based view theory. Contingency was relevant in explaining the link between risk identification and organizational sustainability. According to contingency theory, the most effective management approach depends on the specific situation or context. This means that the effectiveness of risk identification in promoting organizational sustainability may depend on the specific factors that are present in each organization. By understanding these situational factors, managers can adapt their risk identification approach to fit the specific needs and challenges of their organization, enhancing the effectiveness of risk identification in promoting organizational sustainability. For instance, in an organization with a strong culture of risk management, managers may be able to rely more heavily on employee engagement and participation in risk identification, while in an organization with a less supportive culture, managers may need to take a more directive approach.

Agency theory is relevant in explaining the relationship between risk identification and organizational sustainability because it focuses on the relationship between owners (shareholders) and managers in a firm. In the context of risk identification, effective risk management practices can help align the interests of shareholders and managers by reducing the potential for losses and protecting the financial health of the organization. However, there may be situations where managers do not prioritize effective risk identification, either due to a lack of understanding of the importance of risk management or because of their own personal interests. In such situations, the organization may be exposed to greater risks and may experience financial losses or reputational damage, which can ultimately impact its sustainability.

The RBV theory is relevant in explaining the relationship between risk identification and organizational

sustainability because it emphasizes that a firm's resources and capabilities are key drivers of its competitive advantage and long-term sustainability. As per RBV, a firm's resources and capabilities must meet certain criteria in order to contribute to its competitive edge. They must be valuable, rare, difficult to imitate, and non-substitutable. Effective risk identification practices can meet these criteria by providing the firm with a valuable resource that is difficult for competitors to imitate or substitute.

## Conceptual Framework

This study was guided by the following conceptual framework that shows diagrammatized representation of the relationship between the variables. This is shown in Figure 1.

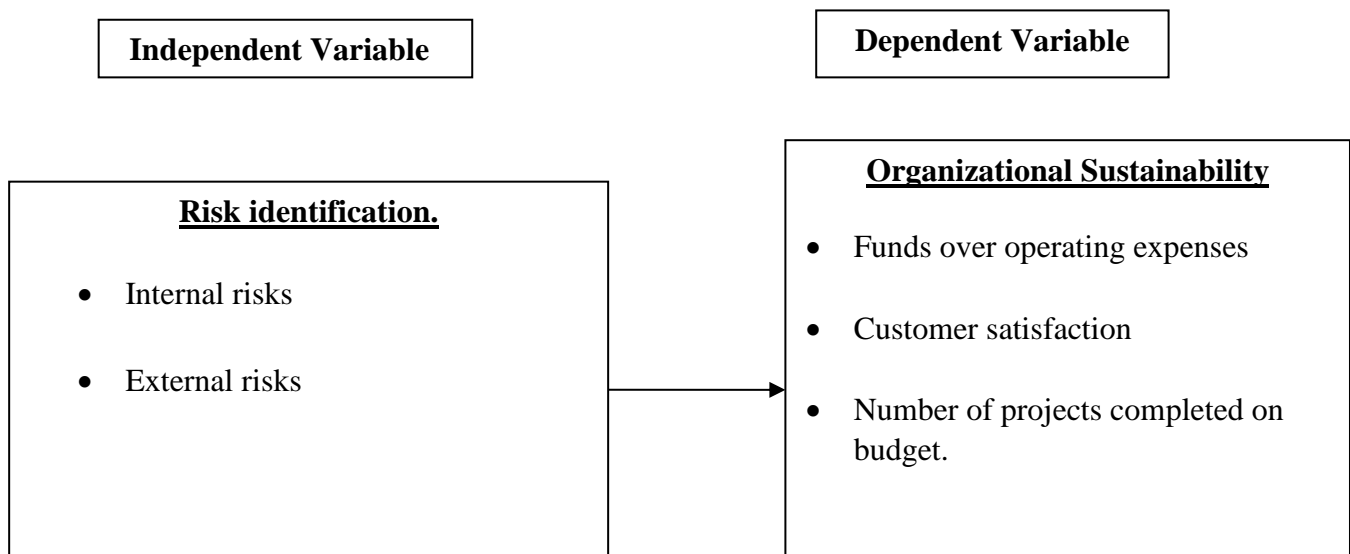


Figure 1: Conceptual Framework

Source: Author

## RESEARCH METHODOLOGY

The research adopted an explanatory research design to establish the impact of risk identification on sustainability. The population of the study was 389 employees at KEMSA headquarters. The study adopted Yamane (1967) formula with assumption of 95% of confidence level to estimate the sample size. The sample size for the study was 198 respondents. Simple random sampling was used to arrive at the individual respondents in each department. This study collected primary data by aid of a questionnaire. The study issued the questionnaire to selected employees through Google forms. A Pilot study was done to determine the feasibility of conducting a complete study. This involved 20 KEMSA employees (10% of the target population) who filled in the questionnaires and its accuracy tested. The 20 respondents were not involved in the final study to ensure non-compromise of the research data.

The data was reviewed for completeness and the variables with missing or incomplete data removed. Version 27 of the Social Sciences Statistical Package (SPSS) method was used to analyze data. The data was analyzed for descriptive statistics as well as correlation analysis. Diagnostic tests such as normality, multicollinearity, and autocorrelation and correlation analysis were undertaken to test if the multi-regression model was well specified as per the assumptions of linear regression. Multiple regression analysis was also applied while ANOVA, F-test and t-test were carried to test the relationship between risk identification and sustainability. The research hypothesis was tested using regression analysis. The following empirical model was adopted.

$$Y = \beta_0 + \beta_1 X_1 + \epsilon$$

Where:

Y = Sustainability

$\beta_0$  = Constant term

$\beta_i$  = Beta coefficient of variable i measuring change Y to change in i

X<sub>1</sub> = Risk identification

Both descriptive and inferential statistics results were presented in tables and figures which were accompanied by pertinent interpretations and discussions.

## RESULTS OF THE STUDY

### Descriptive Statistics

Table 1 shows the descriptive results for risk identification. The findings revealed that KEMSA regularly identifies potential risks to its operations as shown by a mean score of 3.86 ( $\pm 0.81$ ). This suggests that, on average, respondents believe that KEMSA somewhat regularly identifies potential risks to its operations. The statement that KEMSA uses a systematic approach to identify risks has a mean score of 4.05 ( $\pm 0.77$ ), implying that respondents generally perceive KEMSA as employing a systematic approach for risk identification. The findings further revealed that KEMSA considers both internal and external risks when identifying potential risks as shown by a mean score of 4.09 ( $\pm 0.60$ ), indicating that respondents believe KEMSA is effective at considering both internal and external risks during risk identification. KEMSA also reviews and updates its risk identification process on a regular basis as shown by a mean score of 3.77 ( $\pm 0.95$ ). This suggests that respondents perceive KEMSA as somewhat regular in its review and update of the risk identification process.

Further, the results revealed that KEMSA communicates identified risks to relevant stakeholders as shown by a mean score of 4.05 ( $\pm 0.77$ ), indicating that respondents generally believe that KEMSA effectively communicates identified risks to relevant stakeholders. The statement that KEMSA has a dedicated team responsible for risk identification and management received the highest mean score of 4.64 ( $\pm 0.48$ ). This high mean score indicates a strong consensus among respondents that KEMSA has a dedicated team responsible for risk identification and management. In summary, KEMSA is generally viewed positively in terms of employing a systematic approach, considering both internal and external risks, and having a dedicated team for risk management as shown by an average mean of 4.05.

**Table 1: Descriptive Statistics on Risk Identification**

Statements	N	Mean	Std. Dev
KEMSA regularly identify potential risks to its operations	154	3.86	0.81
KEMSA use a systematic approach to identify risks	154	4.05	0.77
KEMSA involves all relevant stakeholders in the risk identification process	154	3.91	0.95
KEMSA consider both internal and external risks when identifying potential risks	154	4.09	0.60
KEMSA reviews and update its risk identification process on a regular basis.	154	3.77	0.95

KEMSA communicates identified risks to relevant stakeholders.	154	4.05	0.77
KEMSA have a dedicated team responsible for risk identification and management	154	4.64	0.48
Overall mean Score	154	4.05	0.57

### Correlation Analysis

Correlation analysis was done to establish the association between risk identification and sustainability. The findings were as shown in Table 2. The correlation findings shown that the relationship amongst risk identification and sustainability was positive ( $r=0.485$ ,  $p=0.000$ ). The implication here was that risk identification positively relates to sustainability at KEMSA.

**Table 2: Correlation Matrix for Risk Identification and Sustainability**

		Sustainability
Risk identification	Pearson Correlation	.485**
	Sig. (2-tailed)	0.000

### Regression Analysis

Regression determined the effect of risk identification on sustainability. The appropriateness of fit as exhibited in Table 3 demonstrates that the findings showed that the R square was 0.235 indicating that risk identification explain 23.5% of the variation in sustainability and therefore 76.5% is of the variation is explained by other factors not included in this study.

**Table 3: Model Fitness for Risk Identification and Sustainability**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.485 <sup>a</sup>	.235	.230	.547352
a. Predictors: (Constant), Risk identification				

The ANOVA results in Table 4 exhibited that the overall model used to assess the relationship between risk identification and sustainability was significant. This was supported by a significance level of 0.000 that was below 0.05 with confidence level being at 95%.

**Table 4: ANOVA Results for Risk Identification and Sustainability**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.002	1	14.002	46.735	.000 <sup>b</sup>

	Residual	45.538	152	.300		
	Total	59.540	153			
a. Dependent Variable: Organizational sustainability						
b. Predictors: (Constant), Risk identification						

The regression coefficient results indicated that risk identification positively and significantly relate with sustainability ( $\beta=0.533$ ,  $p=0.000$ ). This suggested that a unit increase in risk identification would result in 0.533 increases in sustainability as in the model. The t value (6.836) was higher than the t critical of 1.96 which further supports the findings.

$$Y=1.057+0.533X$$

Where:

Y= Sustainability and

X = Risk identification

**Table 5: Regression Coefficients for Risk Identification and Sustainability**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.057	.319		3.313	.001
	Risk identification	.533	.078	.485	6.836	.000
a. Dependent Variable: Organizational sustainability						

## SUMMARY OF FINDINGS

The objective of the study was to assess the influence of risk identification on sustainability of Supply chain industry in Kenya. Results demonstrate that the KEMSA have largely adopted risk identification. This is supported by the fact that on a five-point likert scale, the mean scores for attributes related to risk identification were greater than 3. The correlation analysis conducted was aimed at testing the association between the risk identification and firm sustainability. These results revealed a significant positive association between risk identification and sustainability. The null hypothesis was rejected, and conclusion made that risk identification significantly influenced the KEMSA sustainability. The results established that a unit change in risk identification would result in 0.500 change of sustainability. This was a confirmation also that there was a significant positive influence of risk identification on sustainability of Supply chain industry in Kenya.

## CONCLUSIONS

The study concluded that risk identification plays a crucial role in influencing the sustainability of the supply chain industry in Kenya, with a positive and significant impact. These results underscore the importance of robust risk identification practices within the supply chain sector, as they contribute to better-informed decision-



making and strategic planning, ultimately bolstering sustainability.

## RECOMMENDATIONS

Based on the positive influence of risk identification on sustainability, KEMSA should further strengthen its risk identification practices. This can be achieved by implementing a systematic and continuous risk assessment process that involves all relevant stakeholders. Regular risk workshops and brainstorming sessions can be conducted to identify potential risks comprehensively.

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