

## Influence of Environmental Scanning on the Performance of Small and Medium Manufacturing Enterprises in Kenya

\*Karimi Sekere, Peter Kiriri and Kepha Njenga

United States International University – Africa

Email: [sekerekarimi@gmail.com](mailto:sekerekarimi@gmail.com)

\*Corresponding author

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### Abstract

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*This paper addresses the Influence of Environmental Scanning on the Performance of Small and Medium Manufacturing Enterprises in Kenya. Methodically, the study was guided by the positivism research philosophy. The study applied cross-sectional descriptive research design since data collection in this study was carried out in a structured inexpensive and minimal time-consuming manner, assisting in answering the when, who, where, what and how questions and also determine whether a relationship exists between the dependent and independent variables. The population of the study targeted was 622 manufacturing SMEs registered under the Kenya Association of Manufacturers (KAM) membership, based in Kenya. This study adopted stratified random sampling technique to select 243 managers for the study. Primary data was collected using a structured questionnaire that was designed based on the research objectives. Both descriptive and inferential analyses were employed for analysis. Regression analysis found that environmental scanning significantly predicts performance of Small and Medium Manufacturing Enterprises in Kenya,  $R^2 = .398$ ,  $F(1,194) = 63.840$ ,  $p = .000 < .05$ . Hence, the null hypothesis of the study was rejected and the study concluded that environmental scanning significantly influences performance of Small and Medium Manufacturing Enterprises in Kenya. The managers and owners of the SMEs should develop an awareness of their industry and competitors, and consequently scan the environment regularly. In addition, the government should work together with manufacturing SME firms in creating and providing conducive business environments that aid sustainable organizational growth resulting in better business performance.*

**Keywords:** Environmental Scanning, Performance, Manufacturing SMEs in Kenya

### Introduction

One of the concepts that adversely affects the future of organizations today is the creation of strategic management as a discipline (Schmuck, 2020). The Kenyan SMEs are the heart of the Kenyan economy and create about 80 per cent of employment while establishing a new middle class and stimulating the demand for new goods and services. Majority of the SMEs are in the informal sector, which is estimated to constitute 98 per cent of businesses in Kenya, contributing to about 30 percent of jobs and 3 per cent of Kenya's GDP (KAM, 2023; Kenya Economic Survey, 2022). Kenya's manufacturing sector contribution to GDP dropped from 4.9% in the last quarter of 2021 to 3.7% in the first quarter of 2022 (Statista, 2022). This is an issue of concern as it calls for concerted efforts to drive growth to attain the 20% GDP contribution target by 2030 as envisioned by the Big Four Agenda as guided by the four pillars, which if implemented, will transform the economy (KAM, 2023).

For this reason, the Government of Kenya places a high priority on the manufacturing sector and is intentional in increasing its share. This can be done by SME development as SMEs have demonstrated their ingenuity and capacity to meet the nation's needs over the years.

According to Wheelen & Hunger (2012), environmental scanning is the monitoring, evaluating, and disseminating of information from the external and internal environments to significant people within the organization. This is to identify both internal and external factors that are strategic to defining the future of the organization. According to Indris and Primiana (2015), an environment that is within an organization and has a direct impact on the firm is referred to as the internal environment. The strategic internal factors' strengths and weaknesses that enable a firm to take advantage of opportunities presented by the business environment should be identified by business owners and managers (Albert, Kreutzer, & Lechner, 2015).

Strategic management has been shown to be a critical determinant for organizational performance. For instance, a study of twenty micro and small enterprises in the United States of America (USA) concluded that effective strategic management is significantly associated with higher levels of performance in profitability and return on invested capital (Byars, 2020). From an African context, in Nigeria, analysis of the impact of strategic management on the business performance of SMEs was carried out by Agwu (2018) and SMEs competitive advantage and business strategies were found to contribute significantly to increase in their number of customers and market shares respectively. From a Kenyan context, Karendi (2021) studied the relationship between strategic management practices and performance of SMEs in Kenya and concluded that superior strategic management practices positively correlate with organizational performance.

SMEs continue to perform below capacity underpinned by challenges such as lack of managerial training, lack of adequate finance and limited access to credit, rapid technology changes, new laws and regulations, inadequate skills and knowledge, poor infrastructure, poor resource management, inadequate government support, access to markets among others (Kenya Agribusiness and Agroindustry Alliance, 2023). The SMEs should not be ignored as they are the backbone of restoring a crippled economy to its feet. Although the significance of SMEs' contribution to economic development is emphasized, it is satisfactory to ensure that SMEs' performance contributes to the country's development (Mandhachitara & Allapach, 2017).

Thus, for SMEs to mitigate these challenges, improve their performance and attain overall competitive advantage, the focus should be to reduce their weak points and build up on their strengths by considering the importance of the application of strategic management in developing SMEs. The study explored environmental scanning in reference to both the internal and external environments to provide an in depth understanding of how the environment affects the performance of Small and Medium Manufacturing Enterprises in Kenya. The results of this study will help in explaining the importance of the strategic management process on the performance of Small and Medium Manufacturing Enterprises in Kenya.

### **Problem Statement**

According to Wanjohi et al. (2018), the manufacturing sector across various economies has played a key role in promoting and maintaining economic growth, increasing employment prospects, and driving competitiveness in countries expedited by exports. It has been an

uphill task for most countries to record economic growth without the manufacturing sector's leading role. Kenya is not an exception as it has been unable to record impressive economic growth due to the inability to develop the manufacturing sector. According to Písař and Tomášková (2019), factors that contribute to challenges that are faced by SMEs include intense competition from multinationals firms, innovation, technology, globalization, and lack of managerial ineptness which have a significant impact on performance of the SMEs sector.

From a practice gap perspective, according to Majama and Magang, (2017), several studies have focused on SMEs' poor performance and failure rate due to poor management, misappropriation of funds, a lack of funding and skilled labor. Even with the availability of such resources, most of these SMEs do fail due to a lack of application of strategic management resulting from lack of managerial education and initiative. From a knowledge gap perspective, the strategic management process needs to be given priority in research as in the case of Aytar and Selamet (2021) the study focused on SME owners and managers in Karaman province, Turkey while Addae-Korankye and Aryee (2021) focused on SMEs in Ghana.

From a policy gap perspective, Mwasiagi (2019) recommended that the government should work towards creating a favorable business environment for firms in the manufacturing sector by reducing tax charges, creating flexible regulations, reducing bureaucracy by adopting information technology, and encouraging transparency by holding government officials accountable. Therefore, this study aimed to determine the influence of environmental scanning on the performance of Small and Medium Manufacturing Enterprises in Kenya.

## **Literature Review**

This study is anchored on the Strategic Management Model by Wheelen and Hunger (2012) and the Balance Scorecard Framework by Kaplan and Norton (2001).

### ***Strategic Management Model by Wheelen and Hunger (2012)***

The strategic management process is best conceptualized by the strategic management model which is a rational prescriptive planning model that encompasses of four critical steps that are: Environmental scanning, strategy formulation, strategy implementation, and evaluation and control. In Environmental scanning this is the first stage where the gathering of information occurs by monitoring, evaluating, and disseminating information from the external and internal environments to significant people within the organization to identify both internal and external factors that are strategic to define the future of the organization (Wheelen & Hunger, 2012). The critics of this model state that it requires the organization to anticipate the future environment in order to develop plans, as we all know, predicting the future is not an easy undertaking (Katsanos, 2019; Langat & Wainaina, 2019). Despite the criticism, the strategic management model continues to help examine what companies facing overwhelming competition should do and what strategies to apply to enable them to compete with their competitors.

### **Balance Scorecard Framework**

The balanced scorecard (BSC) has greatly contributed to the success of several organizations from all frontiers around the world (Kaplan & Norton, 2001). In yesteryears, financial considerations were highly prioritized during the strategy development process in most

organizations for they were considered money makers (Ardito & Dangelico, 2018). The BSC is categorized into four main perspectives: financial, customer, internal, learning, and growth. Linard and Dvorsky (2018) criticized BSC by stating that it presents lack of clear formalization of the delay in time between the main indicators and the past; for Barnabè (2020), BSC presents limited support as rigorous mechanism of validation and analysis of scenarios of the relations between the performance indicators, that is, the relations between the KPI in the strategic map do not express the dynamic relations. The BSC is an efficient tool to transmit organizational perspective and strategy, proposed by the senior management, to all personnel and people within an organization and announces the key criteria and objectives that are supposed to be pursued by the organization (Atkinson, 2016). This theory informs the dependent variable of performance in this study.

De Jong, Phan and Van Ess (2021) found that the business environment in which a firm is embedded does not significantly contribute to its performance. Kowo and Owotutu (2018) concluded that the external business environment namely, political, economic, technological, and sociocultural have an impact on organizational performance. Oppong-Mensah (2020) findings revealed that business environmental scanning and ethics positively affect performance of small scales. Saadeghvazir, Khaef, Motaqi and Estahani (2019) showed that scanning the competitor's environment was the only factor influencing performance and not the scanning of economic, political, legal, sociocultural, technological, and supplier environments. However, a study by Sawyerr et al. (2020) who discovered that scanning frequency did not appear to affect organizational financial performance as measured by self-reported return on equity and profit margin.

## **Methodology**

The study applied cross-sectional descriptive research design since data collection in this study was carried out in a structured inexpensive and minimal time-consuming manner, assisting in answering the when, who, where, what and how questions and also determine whether a relationship exists between the dependent and independent variables. The population of the study targeted was 622 manufacturing SMEs registered under the Kenya Association of Manufacturers (KAM) membership, based in Kenya. This study adopted stratified random sampling technique to determine the sample size. That is comprised of 243 business owners or managers.

Primary data was collected using a structured questionnaire that was designed based on the research objectives. Both descriptive and inferential analysis were employed for analysis. The study used descriptive statistics such as mean, standard deviation and frequency distributions to comprehend the data. Inferential statistics namely factor analysis, correlation analysis, Analysis of Variance (ANOVA), chi-square and Linear Regression Analysis were used. A significance level of  $p \leq .05$  was used by the study to depict a significant association between the dependent and independent variables. Diagnostic tests were conducted for Normality, Linearity, Homoscedasticity, and Multicollinearity tests. The data was presented in tables and figures.

## **Results**

### ***Demographic Profile***

Of the distributed questionnaires, 196 were returned for analysis giving a response rate of 80.8%. This is considered high and sufficient for the study. In reference to the respondents'

gender, 53.0% were male, while 47.0% were female. The education level for respondents resulted in the majority being degree holders, masters' holders at 31.6%, diploma holders at 17.3% and the least number of respondents at 4.1% were doctoral holders. The majority of the respondents were aged between 30-39 years (44.9%), 40-49 years (37.2%), 50-59 years (10.7%), 20-29 years (6.1%) and above 60 years (1.0%). Regarding the current position held in the organization, 73.0% were holders in senior management (Director/Head of Department) while 27.0% were business owners (Founder/Co-founder/CEO).

Number of years worked in the firm: 42.9% have worked in the organization for a period of 5-9 years, 10-14 years (23.5%), 0-4 years (18.4%), 15-19 years (12.8%) and above 20 years (2.6%). Moreover, 93.8% indicated that their company has been in existence for more than 4 years, and only 6.2% had been in existence for less than 4 years. There was sufficient representation of the SMEs under the 14 manufacturing categories. Concerning the contribution to the creation of the business strategic plan for the organization, 44.9% indicated top-level management, business owners at (34.2%), middle-level management (17.9%), and entry-level management (3.1%). Lastly, 58.0% indicated that their company is a limited company, 23.0% indicated it's a sole proprietor company and 19.0% indicated the company is registered as a partnership.

**Factor Analysis**

The adequacy and suitability of the sample for factor analysis was checked using the Kaiser Meyer-Olkin (KMO) measure. Based on the analysis, KMO had a value of 0.893 while Bartlett's Test of sphericity was  $X^2 (210, N=196) = 1979.468, p=0.000 \leq 0.05$ . Since KMO value is high and Bartlett's test provides a statistically significant value ( $p \leq 0.05$ ), the results reveal that factor analysis is appropriate for variables for Environmental Scanning.

**Table 1. KMO and Bartlett's Test for Environmental Scanning**

<b>KMO and Bartlett's Test</b>		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.854
Bartlett's Test	Approx. Chi-Square	1979.468
of Sphericity	df	210
	Sig.	.000

Furthermore, for Environmental Scanning, the contribution of the two variables namely; the internal environment (structure and resources) and external environment (natural, societal and task) were explained by investigating their total variance. Factor analysis extracted variances into a common score, each having its associated quality score, eigenvalue. The findings revealed in Table 4.1 show that the first factor accounts for 35.953% of the variance in Environmental Scanning, while the second factor accounts for 8.573% of the variance in SME performance.

Based on the analysis, 2 components were extracted with a factor loading of >0.4 for each question. The highest factor loading was 0.697 and the lowest factor loading was 0.403. This shows that the questions loading on the five components of the Environmental Scanning were strong. Component 1 comprised of 11 items while component 2 comprised of 10 items. The table below provides the various items and their factor loadings.

**Table 2. Rotated Component Matrix for Environmental Scanning**

<b>Rotated Component Matrix<sup>a</sup></b>	
	<b>Component</b>
	<b>1      2</b>
Environmental factors influence revenue growth of the organization	.723
The organization’s management takes into consideration the strengths and weaknesses during the strategic decision-making process	.697
The organization structure allows for quick decisions to be made to achieve organizational goals and objectives	.692
The organization structure encourages employees to give feedback	.674
The current organizational structure assists in speeding up the implementation of strategies in the organization	.650
The organization’s management takes into consideration environmental issues like global warming during the production of environmentally friendly products or processes	.642
The organization gathers information about its distributors’ when identifying the current/future opportunities and threats of the organization	.595
The organization’s management takes into consideration the opportunities and threats during the strategic decision-making process	.536
The organization gathers information about its suppliers’ when identifying the current/future opportunities and threats of the organization	.513
The organization gathers information about its competitors when identifying the current/future opportunities and threats of the organization	.484
The organization has a clear reporting structure that employees are aware of who they report to	.402
Technological environmental force currently affects the organization’s ability to compete competitively in the business environment	.751
The business owner/ management involves employees during the strategic decision-making process	.750
Natural environmental factors influence market share growth of the organization	.742
The organization has flexible structures that allow for quick changes to be made within the organization	.629
Economic environmental force currently affects the organization’s ability to compete competitively in the business environment	.590
Resources like time, money and skilled personnel are provided for by management to identify the strengths and weaknesses of an organization	.570
Socio-cultural environmental force currently affects the organization’s ability to compete competitively in the business environment	.551
The competitive ability of the organization is affected by the natural environment	.520
Political environmental force currently affects the organization’s ability to compete competitively in the business environment	.516
The organization gathers information about customers’ preferences and needs in the market when identifying the current/future opportunities and threats of the organization	.444

Extraction Method: Principal Component Analysis.  
 Rotation Method: Varimax with Kaiser Normalization.  
 a. Rotation converged in 3 iterations.

**A. Correlation Analysis**

As shown in the table, the relationship between the two was statistically significant;  $r(196) = .601, p < .05$ . This shows that environmental scanning and performance of Small and Medium Manufacturing Enterprises in Kenya were positively and significantly correlated.

**Table 3. Correlation between Environmental Scanning and Performance**

Proxy	Coefficient (r)	P-Value
Environmental Scanning	0.601	0.000

**B. Regression Analysis**

The hypothesis of study was:

*H0<sub>1</sub>: There is no significant influence of Environmental Scanning on performance of Small and Medium Manufacturing Enterprises in Kenya.*

The table shows that the adjusted R-square ( $R^2$ ) was .398 which shows 39.8% of the changes in performance of Small and Medium Manufacturing Enterprises in Kenya were explained by environmental scanning as one of the strategic management processes.

**Table 4. Model Summary of Environmental Scanning and Performance**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.631 <sup>a</sup>	.398	.392	4.42533

The Table reveals that the ANOVA was significant  $F(2,193) = 63.840, p = .000 < .05$  which shows the linear regression model was suitable to test the hypothesis. The last output of linear regression is the coefficient which shows the Beta values of the influence.

**Table 5: ANOVA table of Environmental Scanning and Performance**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2500.438	2	1250.219	63.840	.000 <sup>b</sup>
	Residual	3779.623	193	19.584		
	Total	6280.061	195			

a. Dependent Variable: Performance

b. Predictors: (Constant), Internal environment, external Environment

As indicated in the table, environmental scanning influences performance ( $\beta = .382, t = 10.483, p < .05$ ). This shows that a unit increase in environmental scanning would lead to 0.382 units increase in performance.

**Table 6. Coefficient table of Environmental Scanning and Performance**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	31.661	3.233		9.794	.000
1 Environmental Scanning	.382	.036	.601	10.483	.000

a. Dependent Variable: Performance

$$Y = \beta_0 + \beta_1 X_1 + \varepsilon \dots \text{Model (i)}$$

$$Y = 31.661 + .382X_1 + \varepsilon$$

Where:

Y = Dependent variable (Performance)

$\beta_0$  = Constant term

$X_1$  = Independent variable (Environmental Scanning)

$\varepsilon$  = Error term (standard error)

From this, the null hypothesis of the study was rejected and the study concluded that statistically environmental scanning significantly influences performance of manufacturing SMEs in Kenya.

### Discussions of Findings

The study established that environmental scanning influenced performance. In the Kenyan context, the findings support Okwemba & Njuguna (2021) who revealed that both internal and external environments have a significant correlation with organizational performance whether in a large or small enterprise. Opong-Mensah (2020) findings revealed that business environmental scanning and ethics have a positive effect on performance of small-scale enterprises. These findings are consistent with the findings of Siddique (2019) and Ngamkroekjoti & Johri (2018) who found that environmental scanning impacts positively the business performance of SMEs.

Nyagaki et al. (2021) revealed that collectively, environmental scanning has a positive influence on organizational performance in a case study of commercial-based parastatals in Nairobi County, Kenya. Okwoyo et al. (2017) found that environmental scanning has a positive relationship with the performance of Matatu Saccos. However, the findings differ with Sawyerr et al. (2020) who discovered that scanning frequency did not appear to affect organizational financial performance as measured by self-reported return on equity and profit margin.

### Conclusion

The objective of the study was to determine the influence of Environmental Scanning on the performance of Small and Medium Manufacturing Enterprises in Kenya. The study found that Environmental Scanning influences the performance of Small and Medium Manufacturing Enterprises in Kenya ( $\beta = .382, t = 10.483, p < .05$ ).

Therefore, the study rejected the null hypothesis of the study and concluded that statistically, environmental scanning significantly influences the performance of Small and Medium

Manufacturing Enterprises in Kenya. The study concludes that firms must scan their internal and external environments as this has an impact on their performance. This includes the scanning of their task, structure, resources, natural and societal areas.

### **Recommendations and Areas for Further Research**

Based on the findings, the study firstly recommends that the government should work together with manufacturing SME firms in creating and providing conducive business environments that aid sustainable organizational growth resulting in better business performance. The managers and business owners of SMEs should develop an awareness of their industry, competitors and consequently scan the environment regularly. Environmental scanning is a prerequisite for strategy formulation and performance. The results of this study show that successful SMEs have clear goals, vision, and mission statements that they work towards. They should be aware of the firm's strengths and weaknesses and be ready to exploit the firm's strengths and improve weaknesses.

The study secondly recommends an extension of the study to SMEs in other sectors, to further understand the role and influence strategic management process plays and provide a generalization of the findings. Secondly, this study focused on perceptual measures to measure business performance. Future research could apply financial measures of performance such as Return on Investments (ROI), Net Profit Margin and Return on Equity (ROE) thus providing rich and valid results. Additionally, other moderating variables can be featured in further research such as employee commitment and job satisfaction.

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