Relationships among Structural Adaptations, Strategy Implementation and Performance of Manufacturing Small and Medium Firms in Thika, Kenya

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Authors' contributions

This work was carried out in collaboration between all authors. Author PK designed the study, managed literature searches, analyzed data, did critical review of the comments on the manuscript and finalized the manuscript. Author JK guided on the methodology and the statistical aspects of the entire manuscript including interpretation of the results. Author HB guided on the strategic aspects and supervised the writing up of the final manuscript. All authors read and approved the final manuscript.

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ABSTRACT

This paper examined the relationship between structural adaptations during strategy implementation and performance of small and medium manufacturing firms (SME) in Thika Sub-County in Kenya. Three structural dimensions investigated in this study included the formalization, centralization and specialization of functions. The study is underpinned in McKinsey's 7-S/Higgins 8-S strategy frameworks and the Dynamic Capabilities View of the firm. Guided by the philosophy of logical positivism, a mixed research design was adopted. A self-administered questionnaire was

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used to collect primary data from 115 SME manufacturing firms using a simple random sampling procedure from a total population of 165 SME manufacturing firms. Pearson's correlation and OLS regression analysis was used for data analysis. The study found statistical evidence that structural adaptations of the SME firm ($r=.442$**, $P<.001$) are positively and significantly related to its performance. Among the structural dimensions examined, the study found that formalization ($r=.456$**, $P<.001$) and specialization ($r=.350$**, $P<.001$) are positively and significantly related to SME's performance. However, centralization ($r=.159$, $P=.09$) was found to be positively related to the SME's performance but the relationship is statistically insignificant.

1. INTRODUCTION

The strategic management literature has identified structural adaptations of the firm as one of the key drivers in successful strategy implementation process. The three structural dimensions that affect communication, co-ordination and decision making, which are core to strategy implementation, are formalization, centralization and specialization [1]. The relationship between structure and strategy an organization adopts was first championed by Chandler [2]. He argued that the strategy of an organization determines the long term goals and objectives. In order to do this better, there is the need, in the organization, to determine the course of actions, allocate adequate resources and determine the appropriate structure that supports a given strategy.

Organizational structure and strategy are related because organizational strategy helps the organization to define and build an appropriate organization structure that enables the accomplishment of the set goals and objectives. A good structure in an organization defines how employees work together and it clearly establishes the roles and responsibilities each employee performs in order to support the achievement of the set goals and objectives. The type of structure adopted in an organization also determines the number of employees and managers required. Due to the market dynamics such as competition, demographic changes, technological advancements and other environmental changes, strategy formulation and implementation is a dynamic process and organizations generates new strategies from time to time that dictates structural revisions and new alignments to suit the environmental dynamism and the resultant strategic changes that take place in a given industry.

This study intended to establish whether the structural adaptations adopted by SME manufacturing firms significantly influence its performance. The study found statistical evidence that structural adaptations of the manufacturing SME firm, in deed, have a positive and significant relationship with its performance. Among the structural dimensions identified by Oslon, Slater and Hult [1] the study established that formalization and specialization in the SME's structure are the key determinants of superior performance among these firms while centralization of the decision making does not necessarily contribute to better performance.

In an environment that is highly competitive like the one that SME manufacturing firms finds themselves today, there is the need to follow proper procedures of doing work, maintain strong rules and regulations that ensures that these firms move in the right direction, produces superior products and sustain a desirable competitive edge among the rival firms. It is also observed from this study that the SME manufacturing firms that allow employees to work in areas that they have ample skills and training performs better than their rival firms in the industry. Centralization of the decision making process does necessarily leads to better performance in an organic environment that characterizes the operations of SME manufacturing firm's environment in Kenya today. The economy is getting liberalized each day and SME's find themselves competing with products from a global platform hence the need to decentralize their decision making processes in order to remain competitive.

1.1 Statement of the Problem

Strategy implementation involves effective translation of the chosen strategy into various actions and activities that leads to the realization of organizational goals and objectives [3]. Implementation of a strategy is an important activity in an organization which is even more important than strategy formulation itself [4].

Past studies in strategic management have documented a high failure rate in strategy implementation globally. Between 60 to 80 % of all organizations engaged in strategic planning either fails or seriously struggles during strategy implementation process and this makes it difficult for firms to fully realize and achieve their dreams [4,5]. In Kenya, the manufacturing sector has performed poorly over the years with the medium and large scale enterprises lagging behind micro and small manufacturing firms in terms of growth and employment creation [6]. The 2013 Kenyan Economic Report documents a decline in the growth and performance in the manufacturing sector only contributing 14.2 percent of total value addition. According to this report, the dismal performance in the manufacturing sector in Kenya is likely to slow down the country's economic growth and the realization of vision 2030 strategic plan.

To improve performance, the manufacturing SME firms need to fully embrace strategic planning and focus keenly on what is required of them in order to accomplish their goals and objectives. However, past studies show that not all SME firms in Kenya undertake strategy management practices [7]. While previous studies in the western world have documented a positive relationship between strategy implementation and SME's firm's performance [8] no such a study has been conducted a developing economy like Kenya. The review of literature also indicated that there is very little empirical evidence on how strategy implementation influences the performance of SME's in the developing countries.

Several studies have been carried out in the past on the SME's strategic management practices in Kenya [7,9,10,11]. However, these studies focused their attention on strategic planning at the expense of strategy implementation. None of the previous studies in Kenya attempted to relate strategy implementation and performance of manufacturing SME firms. This study, therefore, undertook to fill this gap by examining whether strategy implementation relates positively to the performance of manufacturing SME firms operating in Thika Sub-County in Kenya and whether structural adaptations variable is a major driver influencing strategy implementation and performance in the manufacturing SME's in Thika Sub-County in Kenya.

1.2 The Purpose of the Study

This study intended to establish the relationships among structural adaptations, strategy implementation and performance of manufacturing SME firms in Thika Sub-County in Kenya.

1.3 Specific Objectives of the Study

This study was guided by the following specific objectives;

1. To establish the relationship between structural adaptation during strategy implementation and performance of SME manufacturing firm in Thika Sub-County.
2. To determine whether formalization during strategy implementation influences performance of SME manufacturing firm in Thika Sub-County.
3. To find out whether centralization of decisions during strategy implementation influences performance of SME manufacturing firm in Thika Sub-County.
4. To establish whether specialization of functions during strategy implementation influences performance of SME manufacturing firm in Thika Sub-County.

1.4 Research Questions

This study sought to answer the following questions;

1. What is the relationship between adaptations in the organizational structure and performance of SME manufacturing firms in Thika Sub-County, Kenya?
2. Is there a relationship between formalization in the structure and performance of the manufacturing SME firms in Thika Sub-County, Kenya?
3. Is there a relationship between centralization of decision making and performance of the manufacturing SME firms in Thika Sub-County, Kenya?
4. Is there a relationship between specialization of functions and performance of manufacturing SME firms in Thika Sub-County, Kenya?

2. LITERATURE REVIEW

A structure is a hierarchical arrangement of duties and responsibilities, lines of authority, communications and coordination in an organization. It refers to the shape, division of labour, job duties and responsibilities, distribution

of power and decision making procedures within a company [12]. Higgins [13] views an organizational structure in terms of five different elements that make a structure namely, the job itself, the line of authority to perform these jobs, the grouping of jobs in a given order that allows achievement of the objectives, the coordination mechanism applied by managers to supervise jobs effectively and the span of control that shows the number of subordinates that a manager can effectively supervise. He posits that the success in a given organization is determined by how well the organization is structured along its business strategy.

Studies on organizational structure dates back in1960s when Alfred Chandler studied hundreds of American large companies in order to establish the relationship between organization's strategy and its structure [14]. His study came into a conclusion that modifications in the strategy of these companies led to changes in their structure. Expansion of the production line in these companies necessitated revision of their structures so that they can cope with the increased output and conform to the new strategies. According to Chandler [2] an organization structure must follow her strategy for better performance. Companies with limited product lines initially had centralized structures with less complexity and formality but when they increased and diversified their production lines, they were forced to adapt different structures that matched their new strategy. Chandler [2] concluded that when an organization diversifies, they must employ different structure compared to firms that follow single-product strategy [14]. Burns and Stalker [15] studied about 20 British and Scottish companies with an aim of finding out how their managerial activities and structures differed in relation to changes in the environment. They found out that the structures adopted by organizations operating under stable environmental conditions differed from those operating in a dynamic environment. In a stable environment, organizations tended to adopt a mechanistic structure that is characterized by low differentiation of tasks, low integration between departments and functional areas, centralization of decision making and standardization and formalization of tasks. Organizations operating in a dynamic environment tended to adopt a more flexible organic structure that allows for changes to be made in line with the environmental changes. Organic structures are characterized by high differentiation of tasks, high integration of departments and functional areas with rapid communication and information sharing, decentralized decision making mechanisms and little formalization and standardization of tasks and procedures. They came to a conclusion that firms will adopt a structure in relation to the environment they are operating in. Most of businesses today operate in a dynamic and turbulent environment and therefore are likely to adopt an organic structure that allow for changes and modifications to be made in line with changes taking place in the environment [14].

However, variant to Burns and Stalker's study, Sine, Mitsuhashi and Kirsch [16] posits that the effect of structure is contingent to the stage of development in an organization. In their study, they found out that structures increases performance of new ventures even in the context of very dynamic sector. This applies to small organizations and start-ups where the study also found out that firms with a larger number of employees tended to outperform those with small number and that new ventures that formalize functional assignments and assign important tasks to team members who specialize in those assignments outperform firms whose founding teams have relatively undefined roles. They came to a conclusion that in a dynamic, turbulent and uncertain environments, new and mature organizations face fundamentally different challenges requiring different approaches to organizational structure. Whereas mature organizations with well-defined structure and embedded practices need to become more organic and flexible in order to adapt to dynamic environments, the opposite is true for new ventures because they are already flexible and attuned to the environment but what they need are the benefits of organizational structure which they lack, lower role ambiguity, increased individual focus and discretion, lower coordination costs and higher levels of organizational efficiency. This leads to the following null and alternative hypotheses;

H_{01}: The relationship between structural adaptations during strategy implementation and performance of manufacturing SME firm in Kenya is insignificant.

H_1: There is a significant positive relationship between attention to structural requirements during strategy implementation and performance of SME manufacturing firm in Kenya.

A study of 200 senior managers in United States of America by Oslon et al. [1] revealed that

performance of an organization is largely influenced by how well a firm's business strategy is matched to its organizational structure and behavioral norms of its employees. The researchers identified three structural dimensions that affect strategy implementation and performance in an organization that is formalization, centralization and specialization. Formalization is the degree to which decisions and working relationships are governed by formal rules and procedures. The benefits of using rules and procedures include defining and shaping of employee behaviour, problems are solved easily, activities are organized to the benefit of individuals and the organization, efficiency and lower administrative costs and the firm is able to exploit previous discoveries and innovations. This leads to the following alternative null and alternative hypotheses;

H_{02}: The relationship between formalization and performance of manufacturing SME firm in Kenya is insignificant.

H_2: There is a significant positive relationship between formalization and performance of SME manufacturing firms in Kenya.

Centralization is the decision making authority which is held by the top, middle or lower level managers in a firm. In a centralized structure, the top layer of management has most of the decision making power and has tight control over departments and divisions. Communication much easier and faster, while there are only few innovative ideas, implementation is much straight forward and faster once the decision has been made. The benefits of a centralized structure are only realized in stable noncomplex environments while specialization refers to the degree to which tasks and activities are divided in an organization [1]. This leads us to the following null and alternative hypotheses;

H_{03}: The relationship between centralization and performance of manufacturing SME firm in Kenya is insignificant.

H_3: There is a significant positive relationship between centralization and performance of SME manufacturing firms in Kenya.

A study by Meijaard, Brand and Mosselman [17] entitled "organizational structure and performance of Dutch small firms" found out that small firms occur in a wide variety of organizational structures with various degree of departmentation. Secondly, departmentation in these firms has a strong correlation with firm's size. A third finding is that decentralized structures perform well in several contexts notably in business services and manufacturing. Firms with strong centralization and strong vertical specialization only occur and only perform well in relatively simple structures. Apparently for large firms, strict vertical specialization requires at least some decentralization in order to be efficient. The fourth finding is that hierarchical, centralized structure with strong specialized employees occurs frequently in SMEs and performs well in terms of growth. In combination with complex coordination mechanisms, hierarchically structured and departmentalized firms with formalized tasks and specialized employees perform well in terms of growth as well, particularly in manufacturing and financial services. Non specialized, simple organizational structures in business services perform well in term of profit to sale ratios. They finally concluded that given contextual conditions, different types of organizational structures perform well. This leads us to the following null and alternative hypotheses;

H_{04}: The relationship between work specialization and performance of manufacturing SME firm in Kenya is insignificant.

H_4: There is a significant positive relationship between work specialization and performance of SME manufacturing firms in Kenya.

Organizations need to pay more attention to their structures and restructure according to the environmental needs from time to time achieve better performance. A study by Leitao and Franco [18] on the individual entrepreneurship capacity and SMEs performance found out that the economic performance of SMEs is positively affected by maintenance of efficient organizational structure and at the same time the non-economic performance of SMEs is also affected by enthusiasm at work, incentives and maintenance of efficient organizational structure in a dynamic environment. These findings reinforce the idea that organizational structure affects organizational performance.

3. CONCEPTUAL FRAMEWORK

The conceptualized framework on the linear relationships between structural adaptations during strategy implementation and performance of manufacturing SME firms is presented in Fig. 1. The four alternative hypotheses that were tested are also included.
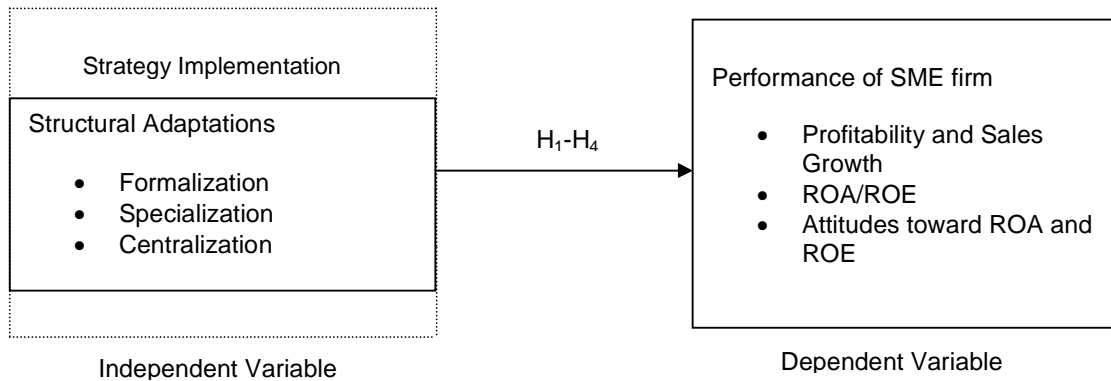
Fig. 1. Relationship between structural adaptations and manufacturing SME's performance

4. THEORETICAL FRAMEWORK

4.1 Higgins 8-S Framework

Higgins [13] revised the original McKinsey's 7-S framework and developed the 8-S framework for implementing strategies in organizations. The famous and widely applied 7-S strategy implementation framework was developed in 1980's by Tom Peters and Bob Waterman [19]. In their study of the "best run" American companies, Peters and Waterman identified seven key components that managers need to pay attention when implementing organizational strategies. These components [20] include the system, structure, systems, skills, staff, style and shared values which are all intertwined.

Higgins [13] then revised and improved the McKinsey's 7-S model by adding the 8th S component (Strategic performance) which is the derivative or outcome of the interaction of 7-S's components contained in the original McKinsey's 7-S's framework. He also replaced skills as one of the contextual "S" with Re-Sources since
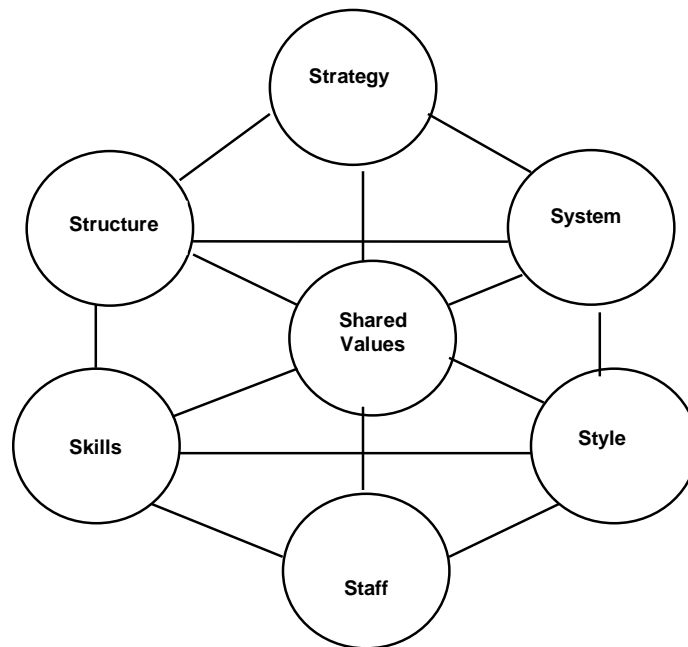
Fig. 2. McKinsey 7-S Framework: Adopted from McKinsey's 7-S Framework: (Pearce & Robinson, 1991)

organization cannot successfully implement strategy without marshalling additional resources such as money, information, technology and time.

Higgins [13] pointed out that the 8-S's framework enables a manager to work more efficiently and effectively in managing the cross-functional duties and activities associated with strategy implementation. He observed that executives who realize that strategy implementation is as important as strategy formulation usually spend a lot of their time and efforts in strategy execution and this enables their organizations achieve better performance.

The 8-S's framework states that successful strategy implementation revolves around aligning the key organizational components (the 8-S's) with the strategy that the organization intends to implement. However, due to environmental dynamism and changes that take place in organization's business environment now and then, it is important for managers to continue reshaping their strategies in line with these changes. Therefore, this call for a continuous realignment of the 8-S's components in line with the new strategy and this presents the greatest challenge to managers in their endeavor to successfully implementation strategies.

Since the 8-S's components are intertwined, the executives in the organizations must continuously align all these eight cross-functional components with the new strategy for successful strategy execution and better performance [13].

4.2 The Dynamic Capability View of the Firm

The Dynamic Capabilities View of a firm, which was launched by David Teece in early 1990s, is based on the works of Barney [21], Rumelt [22] and Wernerfelt [23]. The framework is an advancement of the Resource-Based View (RBV) of the firm which views resources as the key to superior organization performance. The dynamic capability theory [24] is based on the concept that organizations will always attempt to renew their resources in a way that suits the changes taking place in a dynamic environment. According to Teece, Pisano and Shuen [25], the dynamic capability view examines how firms are able to integrate, build, and reconfigure their specific competencies (internal or external) into new competencies that match changes taking place in a turbulent environment [26]. The theory is based on the assumption that firms with greater dynamic capabilities will always outperform those with smaller dynamic capabilities. Therefore, operations in a dynamic
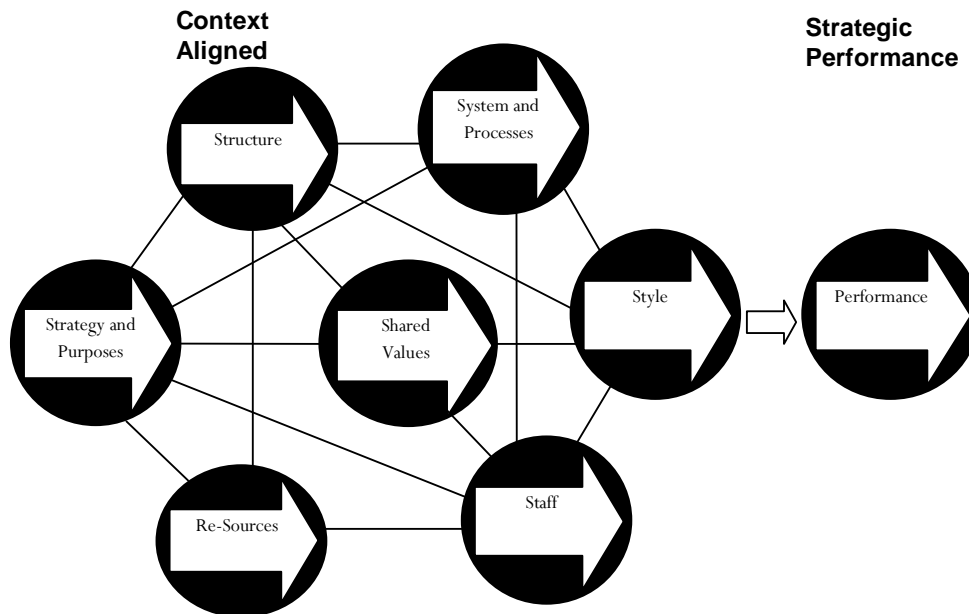
Fig. 3. Higgin's 8-S framework
Source: Higgins, (2005):6, Journal of Change Management 5 (1)

environment call for firms to continuously renew, re-engineer and regenerate their internal and external firm's specific capabilities in order to remain competitive [27]. The dynamic capabilities are hard to develop and difficult to transfer because they are tacit and are embedded in a unique set of relationships and histories of a firm. Ordinary capabilities, according to RBV, are about doing things right whereas dynamic capabilities are about doing right things at the right time based on unique processes, organizational culture and prescient assessments of the business environment and technological opportunities surrounding a firm [27]. Strong dynamic capabilities [28] include processes, business models, technology, and leadership skills needed to effectuate high performance sensing, seizing and transforming an organization.

5. RESEARCH METHODOLOGY

5.1 Study Population and Sample

This study was guided by the philosophy of logical positivism which argues that a statement is only meaningful if it can be proven to be true or false. Under this philosophy, knowledge is accumulated through logical reasoning and empirical experience [29,30]. A triangulation of three designs was used which incorporated the quantitative, qualitative and descriptive. This approach had been used by several scholars in the past in similar studies because of its ability to increase validity of the outcomes while at the same time compensating for the weaknesses of each method used [31,32,33].

From a total population of 165 manufacturing firms in Thika Sub-County, a sample of 115 firms was selected using a simple random sampling procedure. To collect data, a self-administered questionnaire was issued to the owner/CEO or lead manager in each firm selected. Data was collected for a period of eight months from August 2015 to February 2016 and all questionnaires were filled hence the response rate was 100%.

5.2 Reliability Test

To test the internal consistency of the questionnaire, reliability test was carried out on the dependent and the explanatory variables and the Cronbach's alpha was obtained. Performance of the SME firm recorded an alpha of 0.815 while structural adaptations recorded

alpha of 0.705. According to Cronbach [34], an alpha level of 0.7 to 1.0 is acceptable.

5.3 Data Analysis

The descriptive statistics comprising of the mean scores and standard deviations on performance and structural adaptations psychometric constructs were obtained and the results are shown in Tables 1 and 2 respectively.

The Spearman's Rho was used to indicate the relationship between dependent and independent variables of this study and their corresponding p-values. The OLS univariate and multiple regression analysis were then used to test the proposed hypotheses and also to show the nature of the relationships between structural adaptations and manufacturing SME firm's performance. The F-Statistics was also used to show the model validity while R^2 was used to show the model's goodness of fit.

5.4 Research Model

The functional relationship equations representing the interactions between structural adaptations variable (X_1), structural dimensions and manufacturing firm's performance used in this study are stated respectively as follows;

$$Yf(X_1) + \varepsilon \qquad (1)$$

$$Yf(X_{11}, X_{12}, X_{13}) + \varepsilon \qquad (2)$$

Where;

Y is the SME manufacturing firm's performance.

X_1 is the structural adaptations of the SME firm.

X_{11} is the formalization of the SME structure.

X_{12} is the centralization in the SME structure.

X_{13} is the specialization of functions in the SME structure.

ε is the error term.

From equations (1) and (2), the following univariate and multiple regression models respectively were derived respectively;

$$Y= \beta_0 + \beta_1X_1 + \varepsilon \qquad (3)$$

$$Y= \beta_0 + \beta_1X_{11} + \beta_2X_{12} + \beta_3X_{13} + \varepsilon \qquad (4)$$

Where

β$_0$ is the constant
β$_i$ is the coefficient of X$_i$ for i = 1, 2, 3

6. MEASUREMENT OF VARIABLES

6.1 Manufacturing Firm's Performance

The performance of a firm was measured by the degree of satisfaction on the levels of profitability, Return on Assets (ROA), Return on Equity (ROE) and sales turnover. Due to the sensitivity of obtaining information related to financial performance where owners of a firm were not willing to cooperate or information was not available, A 5 point Likert scale psychometric instrument [35] was developed to capture financial information using indirect measures of performance which were based on owner's perceptions on SME performance for a period of five years. The scale ranged from (1= Strongly Disagree, 2= Disagree 3= Not Sure, 4=Agree, 5= Strongly Agree). The mean score was then calculated as an average of the 5 items examined on the enterprises' perceived performance. The higher the score, the better the statement is in terms of the firm's perceived performance.

6.2 Structural Adaptations of the Manufacturing SME Firm

Structural Adaptations in a manufacturing SME firm was measured by the extent to which the firm matches her new strategy with a good structure that supports what the manufacturing SME firm want to achieve. The variable was broken down into three main structural dimensions identified by the literature namely; formalization, specialization and centralization. In order to measure the structural adaptations during strategy implementation process, a 5-items Likert scale psychometric instrument was used [35] which ranged from (1= Strongly Disagree, 2= Disagree 3= Not Sure, 4=Agree, 5= Strongly Agree). The mean score was then computed as the average of the 5 items. The higher the score, the more the variable is important to the performance of small and medium manufacturing firms in Kenya.

7. RESULTS AND DISCUSSION

The study results in Table 1 revealed that the respondents agreed with most of the Likert-based psychometric performance constructs apart from the following two statements; we are highly satisfied by the returns from assets (ROA) invested (mean score, 3.37) and that the number of employees has been rising every year (mean score, 3.18). The driving force is that the performance of a firm is largely influenced by how well the firm's business strategy is matched to its organizational structure and behavioral norms of its employees.

According to Oslon et al. [1], business firms are structured along three different dimensions that affect strategy implementation namely formalization, centralization and specialization. The tool developed in this study to measure different structural dimensions consisted of 15 items out of which nine items measured formalization (item 1, 2, 3, 5, 7, 9, 12, 13 & 15), three items measured centralization (item 4, 6 & 8) and three items measured specialization (item 10, 11 & 14) as shown in Table 2.

Table 1. Descriptive statistics on the manufacturing SME' performance

Performance constructs	N	Mean	Std. dev
Our total profits (Total sales – costs) have been increasing yearly	115	4.139	.475
The volume of sales has been increasing ever yearly	115	4.078	.664
The number of employees has been rising every year	115	3.183	1.064
The geographical market size of our products has been expanding	115	3.635	.921
We are highly satisfied by the returns from assets invested (ROA)	115	3.374	1.013
We are highly satisfied by the returns from borrowed money (ROE)	115	3.504	.921
The number of our satisfied customers has been rising each year	115	3.913	.695
The size of our organization has been expanding for the last five years	114	3.895	.643
The quality of our products has improved considerably	114	3.851	.755
Efficiency of our internal work processes has improved tremendously	115	3.965	.576
Valid N (listwise)	113		

Note: Reliability α – Manufacturing SME Performance = 0.815: Ranked on a scale where 1=Strongly Disagree, 2= Disagree, 3=Not Sure, 4=Agree, 5=Strongly Agree

Table 2. Descriptive statistics on the structural adaptations of the manufacturing SME firm

Structure constructs	N	Mean	Std. dev
We revise and creates appropriate structures to match the changes in strategy requirements	115	4.165	.561
Our organization gives adequate information before a new strategy is implemented	115	3.357	1.01
We are governed by a clear system of with rules, regulations, policies and procedures	113	4.089	.600
We have a central command center that oversees strategy implementation	114	4.079	.597
Strategic work activities are well coordinated across sections, departments and divisions	114	4.061	.485
Our structure allows quick decisions and feedback	112	3.875	.773
We have a well-designed reporting authority and employees know to whom they report to	113	4.115	.395
We have a centralized decision structure that allows quick decisions to be made	115	3.913	.615
Structures are flexible enough to allow changes to be effected quickly and timely	115	3.696	.880
Our organization makes sure that employees have adequate knowledge, experience and skills	114	3.842	.837
Our organization encourages division of work and specialization	113	4.027	.604
There is adequate level of supervision in every section, department or divisions	113	4.009	.605
Our management encourages team work	115	3.504	1.07
Jobs in our organization are well structured with no overlaps, conflicts or ambiguity	115	3.887	.646
We encourages employees to refer to the past experience when implementing a new strategy	115	3.774	.784
Valid N (listwise)	103		

Note: Reliability α – Structural Adaptations = 0.705

The findings in this study, as shown in Table 2, indicated that the structures adopted by manufacturing SME firms in Thika Sub-County are highly specialized (composite mean score, 3.68), formalized (composite mean score, 3.67) and centralized (composite mean score, 3.54). Specialization of functions was highly ranked by the respondents as a very important structural dimension followed by structure formalization and lastly centralization of decision making. These findings implied that manufacturing SME firms need to encourage specialization of functions and have proper formal procedures and regulations that govern how work is done. Centralization of decisions was perceived last in driving better performance in these firms.

Table 3 shows the bivariate linear correlations between structural adaptations and manufacturing SME performance. This study revealed that SME's structural adaptations (X_1) has a positive and significant relationship with the manufacturing SME performance (r =.442[**], *P* <.001. According to Sorooshian et al. [8], the structure of the firm has been identified by the literature as one of the key drivers under strategy implementation that positively influences organization performance. The results in this study implies that as the manufacturing SME firm re- adjusts its structure to match the new strategy requirements, a significant positive change in its performance is experienced.

Table 3. Bivariate correlation results between structural adaptations and SME's performance

		Y	X_1
Performance (Y)	Pearson correlation	1	
	Sig. (2-tailed)		
	N	115	
Structure (X_1)	Pearson correlation	.442[**]	1
	Sig. (2-tailed)	.000	
	N	115	115

[**]. Correlation is significant at the 0.01 level (2-tailed)

The univariate regression analysis was performed to obtain the regression weights of the variables under investigation in this study. The regression model $Y = \beta_0 + \beta_1 X_1 + \varepsilon$ was used to determine the effect of structural adaptations on the performance of the SME manufacturing firm. This model was found to be valid $F_{(1, 113)} = 27.480$, *P* <.001, meaning that the explanatory variable under investigation (X_1) is a good predictor of performance in the manufacturing SME firms in Thika Sub-County as shown in Table 4.

Table 4. Structural adaptations and SME performance: Model validity

Model	Sum of squares	df	Mean square	F	Sig.
Regression	5.194	1	5.194	27.480	.000[b]
Residual	21.359	113	.189		
Total	26.553	114			
a. Dependent variable: Performance					
b. Predictors: (Constant), Structural Adaptations (X_1)					

The findings in this study in Table 5 further revealed that the structural adaptations of the SME manufacturing firm (X_1) explains 19.6% of the total variations in the performance of the firm (R^2 = .196). The value of the constant in table indicate that structural adaptations in the manufacturing SME firm will always exist at a certain minimum (β_0 = 3.753, P < .001). This implies that the manufacturing SME firm will always have some form of a structure even when the structural adaptation variable (X_1) is not a significant predictor of performance. Study results also indicated that the structural adaptations variable (X_1) is positively and significantly related to the SME's performance (β_1 = .677, P < .001). This means that as the manufacturing SME firms adapts a new structure that reflects and supports the strategy being implemented, her overall performance will also improve significantly.

7.1 Test of Hypothesis One

H_1: A significant positive relationship exists between structural adaptations and performance of manufacturing SME firms in Kenya.

This hypothesis intended to test whether structural adaptations during strategy implementation positively influence the performance of the manufacturing SME firm's i.e. H_{01}: $\beta_1 = 0$ versus H_1: $\beta_1 \neq 0$ was tested. The findings from the bivariate correlations in Table 2. showed a significant and positive relationship between structural adaptations and SME firms performance (r=.442[**], P<.001). On the other hand, the univariate regression results in Table 5 also showed a positive and significant relationship between structural adaptations of the

manufacturing SME firm and its performance (β_1 = .677, P<.001). This led to the rejection of the null hypothesis (H_{01}) hence the conclusion that a positive and significant relationship exists between the structural adaptations of the manufacturing SME firm during strategy implementation and its performance in Thika Sub-County, Kenya.

The structural adaptations variable (X_1) was further broken down into specific structural dimensions identified in the literature by Oslon [1] as responsible for influencing organization's performance. This led to the revision of the univariate model Y = $\beta_0 + \beta_1X_1 + \varepsilon$ in order to include these specific structural dimensions leading to a new multiple linear regression model Y = $\beta_0 + \beta_1X_{11} + \beta_2X_{12} + \beta_3X_{13} + \varepsilon$ where: Y= Manufacturing SME's performance, β_0 = Intercept, β_1, β_2 and β_3= slope coefficients representing the influence of the associated independent variable over the dependent variable, X_{11}=Formalization of the manufacturing SME structure, X_{12}= Centralization of decision making in the manufacturing SME structure, X_{13} = Specialization of functions in the manufacturing SME structure and ε = Error term. A bivariate correlation matrix was then obtained as shown in Table 6.

The results obtained from the bivariate linear correlation as shown in Table 6 revealed that formalization of the manufacturing SME firm structure has a significant positive relationship with firm's performance (r=.456[**],P<.001), followed by specialization of the functions (r=.350[**],P<.001). The relationship between centralization of decision making and performance of the manufacturing SME firm was found to be insignificant (r=.159, P=.09).

Table 5. Structural adaptations and SME performance: Regression weights

Model	Unstandardized coefficients		Standardized coefficients	R^2	t	Sig.
	B	Std. error	Beta			
Constant	3.753	.041			92.570	.000
X_1	.677	.129	.442	.196	5.242	.000
a. Dependent variable: Performance						

Table 6. Bivariate correlation results among specific structural dimensions of the SME manufacturing firm

		Y	X_{11}	X_{12}	X_{13}
Performance (Y)	Pearson correlation	1			
	Sig. (2-tailed)				
	N	115			
FORMAL (X_{11})	Pearson correlation	.456**	1		
	Sig. (2-tailed)	.000			
	N	115	115		
CENTR (X_{12})	Pearson correlation	.159	.433**	1	
	Sig. (2-tailed)	.090	.000		
	N	115	115	115	
SPECIAL (X_{13})	Pearson correlation	.350**	.611**	.107	1
	Sig. (2-tailed)	.000	.000	.253	
	N	115	115	115	115

**. Correlation is significant at the 0.01 level (2-tailed)

The three structural dimensions were further subjected to a multiple regression analysis to test their combined effects on the manufacturing SME's firm's performance. The model containing all the three structural dimensions was found to be valid, $F_{(3, 111)} = 10.255$, $P < .001$ meaning that these structural dimensions are good predictors of performance in manufacturing SME firms in Kenya (see Table 7).

The combined structural dimensions in Table 8 were found to explain 21.7% of the total variations in the manufacturing SME firm's performance ($R^2 = .217$). The constant in the multiple regression model indicated that structural adaptations will be always exist at a certain significant minimum ($\beta_0 = 1.156$, $P = .03$). Formalization of the structure was found to be highly significant and positively related to the manufacturing SME's performance ($\beta_1 = .599$, $P = .001$). However, the relationships among centralization of decision making ($\beta_2 = -.028$, $P = .78$), specialization of functions ($\beta_3 = .100$, $P = .33$) and the manufacturing SME firm's performance (Y) were found to be statistically insignificant (See Table 8).

7.2 Test of Hypotheses Based on Specific Structural Dimensions

The study findings in Table 6 and Table 8 were used to test the three alternatives hypotheses based on specific structural dimensions according to Oslon et al. [1].

H₂: There is a significant positive relationship between formalization in the structure and performance of SME manufacturing firms in Kenya.

H₃: There is a significant positive relationship between centralization in the structure and performance of SME manufacturing firms in Kenya.

H₄: There is a significant positive relationship between work specialization and the performance of SME manufacturing firms in Kenya.

The findings in Tables 6 and 8 showed that formalization (X_{11}) has a positive and significant relationship with the manufacturing SME firm's performance (r =.456**, $P < .001$), and ($\beta_1 = .599$, $P < .001$) respectively. This led to the rejection of the null hypothesis (H_{02}) and the conclusion that there is a significant positive relationship between formalization in the structure and performance of the manufacturing SME firms in Kenya. This finding implies that the SME leaders who maintain proper procedures, rules, policies and regulations in their firms help their organizations to perform better. The study results also revealed that specialization of functions (X_{13}) showed mixed results where the bivariate correlation in Table 6 indicated that specialization on its own is positively and significantly related to SME firm's performance (r=.350**, $P < .001$) while the multiple regression results in Table 8 indicated that specialization has an insignificant relationship with the firm's performance ($\beta_3 = .100$, $P = .33$). The univariate regression in Table 9 showed a positive relationship between work specialization and firm's performance ($\beta_1 = .327$, $P < .001$).

The univariate regression results in Table 9 showing the relationship between specialization of functions and SME performance ($\beta_1 = .327$, $P < .001$) and the bivariate correlation results

Table 7. Specific structural dimensions and SME performance: Model validity

Model	Sum of squares	df	Mean square	F	Sig.
Regression	5.762	3	1.921	10.255	.000[b]
Residual	20.791	111	.187		
Total	26.553	114			

a. Dependent variable: Performance
b. Predictors: (Constant), SPECIAL (X_{11}), CENTR (X_{12}), FORMAL(X_{13})

Table 8. The combined structural dimensions: Regression weights

Model	Unstandardized coefficients		Standardized coefficients	R^2	t	Sig.
	B	Std. error	Beta			
Constant	1.156	.511			2.264	.026
X_{11}	.599	.179	.402		3.356	.001
X_{12}	-.028	.099	-.027		-.279	.780
X_{13}	.100	.101	.107	.217	.988	.325

a. Dependent variable: (Y) Performance

Table 9. Work specialization and SME performance: Regression weights

Model	Unstandardized coefficients		Standardized coefficients	R^2	t	Sig.
	B	Std. error	Beta			
Constant	2.472	.325			7.606	.000
Special	.327	.082	.350	.123	3.974	.000

a. Dependent variable: (Y) Performance

between specialization and SME performance (r=.350**, P<.001) in Table 6 showed a positive and significant relationship between specialization and manufacturing SME's performance. This led to the rejection of the null hypothesis (H_{04}) and the conclusion that specialization of functions is positively and significantly related to the performance of the manufacturing SME firm. The findings on the relationship between centralization of decision making (X_{12}) and performance of the manufacturing SME in both the bivariate correlation (r=.159, P=.09) in Table 6 and multiple regression (β_2= -.028, P=.78) in Table 8 showed insignificant results. Therefore, this study failed to reject the null hypothesis (H_{03}) and concluded that the relationship existing between centralization of decision making and the manufacturing SME performance is insignificant in Thika Sub-County in Kenya.

8. DISCUSSION OF FINDINGS

The results from the bivariate correlation (r =.442**, *P*<.001), in Table 3, univariate regression analysis (β_1=.677, *P*<.001) in Table 5 revealed that the structural adaptations of the small and medium manufacturing firms in Kenya is significant and positively related to the SME firm's performance. This implies that the SME manufacturing firms need to examine and re-adjust their structures in line with changes in the environment and new strategies being implemented if superior performance is to be achieved. According to the Dynamic Capability View of the firm [27], an organizational structure is a dynamic capability and firms that are able to adjust their structures in line with changes taking place in the environment experiences superior performance. These findings concur with various conclusions made by several researchers and scholars in strategic management who have studied organizational structure. This study confirmed the work of Chandler [2] who contended that an organization structure must follow her strategy for better performance, Burns and Stalker [15] who observed that firms will adopt a structure in relation to the environment they are operating in, Sine et al. [16] who observed that structures increases performance of new ventures in the context of very dynamic sector, Oslon et al. [1] who concluded that

performance of an organization is largely influenced by how well an organization's strategy is matched to its structure.

A further analysis on the specific structural dimensions practiced by manufacturing small and medium firms revealed that formalization (r = .456[**], $P<.001$) and work specialization (r=.350[**], $P<.001$) in Table 6 are positively and significantly related with the performance of manufacturing SME firms. On the other hand, centralization (r=.159, $P=.09$) has a positive relationship which is insignificant. This is in line with the conclusions made by Oslon et al. [1] who identified the three structural dimensions along which organizations are structured which are formalization, centralization and specialization. The study further noted that the benefits of centralization of decision making are only realized in stable non-complex environments. This is not the case of the manufacturing SME's in Kenya since these firms operate in a complex and highly competitive environment. Leitao and Franco [18] found out that the economic performance of SMEs is positively affected by maintenance of efficient organizational structure while non-economic performance of SMEs is also affected by enthusiasm at work, incentives and maintenance of efficient organizational structure in a dynamic environment. The findings of this study also confirm the works of Meijaard et al. [17] in a study entitled "organizational structure of Dutch small firms". The study found out small firms is structured along many dimensions with various degree of departmentation. The study concluded that departmentation is strongly correlated with the size of the firm, centralization perform well in relatively small structures and decentralized structures perform well in firms engaged in business services and manufacturing, in combination with complex coordination mechanisms hierarchically structured and departmentalized firms with formalized tasks and specialized employees perform well in terms of growth especially in manufacturing and financial services and finally, deviating from the findings of this study, the centralized structure with strong specialized employees occur frequently in SMEs and performs well in terms of growth.

9. CONCLUSION

This study found statistical evidence that a positive and significant relationship exist between structural adaptations of the manufacturing SME firm during strategy implementation and its performance. The findings are in agreement with McKinsey's/Higgins 8-S strategy implementation framework where structure is one of the key important 7-S/8-S components respectively in strategy implementation. This study further strengthens the Dynamic Capability View of the firm where organizational structure is seen as one of the key dynamic capabilities of the firm required to maintain a superior performance [28].

Oslon et al. [1] observed that the key important dimensions in an organizational structure are formalization, specialization and centralization. This study found out that when it comes to manufacturing SME firms in Thika Sub-County in Kenya, only formalization and specialization of function variables are important. Centralization of decision making does not improve the firm's performance significantly. This study, therefore, concluded that the structure of a manufacturing SME firm is a key dynamic capability that leads to better performance and a competitive edge among the rival firms in the industry.

10. RECOMMEDATIONS

According to the findings in this study, it is recommended that the CEOs and or owners of the manufacturing SME firms should re- adjust their structures and always match them to the requirements of the new strategy being implemented. They are also required to ensure that there is adequate level of formalization in form of proper procedures, policies, rules and regulations. There is the need to encourage specialization of functions where each employee work in that area he is well trained. This will enable their organizations to produce superior products and to compete effectively with the rival firms in the industry.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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