

Organizational Structure and Performance of Large Manufacturing Firms in Kenya: An Empirical Investigation

Zachary B. Awino (University of Nairobi, Kenya)

Abstract: The paper gives an overview of a conceptual theme first coined by Alfred Chandler (1962), who developed a framework of structure-strategy and performance linkage. He argued in his thesis that structure follows strategy to enhance performance. He strongly believed that a strategy is the long-term plan that an organization should develop, but for its success there has to be an organizational structure in place to provide an avenue for its implementation and enhance performance. The paper has followed a more or less similar pattern within the large manufacturing firms in Kenya — but has only used organizational structure as an independent variable and performance as dependent variable. Strategy has been omitted and not aligned to structure instead structure has been aligned to performance. Since this area provides a knowledge gap this study intends to fulfil. A null conceptual hypothesis for the study has been developed which avers that organizational structure does not positively influence performance of large manufacturing firms. The study used a cross-sectional survey where data was collected from 102 large manufacturing firms. The chief executive officers of these firms were interviewed together with the middle-level and top managers. Regression analysis was used to test the hypothesis - it emerged that organizational structure on its own using Return on Assets (ROA) does not influence performance. However a further test using non-financial measures such as internal processes, customer perspective and performance produced a different result which influenced performance of large manufacturing firms. The findings of this study agreed with other previous studies and opens an avenue for further research. It has got an implication in organizations whose performance should not only be viewed using one construct of financial indicators and that non-financial measures may also be considered in the organizational performance but overall there is clear indication that structure influences performance — even without putting in place the strategy for the organization.

Key words: performance; large; manufacturing; firms; empirical **JEL codes:** L1, M1

1. Introduction

Chandler (1962) substantiated "structure follows strategy" thesis based on four case studies of American conglomerates that dominated their industry from the 1920's onward. The ensuing debate on the contingent relationship between strategy, structure, and firm performance flourished in the 1970s and 1980s. Researchers

Zachary B. Awino, Professor, School Of business, University of Nairobi; research areas/interests: strategic management and supply chain. E-mail: zb.awino@uonbi.ac.ke.

have used groundbreaking work by Chandler (1962) to build the Strategy-Structure Performance (SSP) paradigm, which has become the most important sub stream of research on structural contingency theory (Galunic & Eisenhardt, 1994). Rather than seeing each of strategy or structure alone having an important impact on performance, the paradigm holds that it is the linkage between them that is important (Lenz, 1980; Miller, 1988).

According to Akinyele (2011) the organizational structure and strategies adopted by oil and gas marketing companies affect market share positively. Lavie's (2006) gave evidence that the level of organizational structure and strategies is positively related to company effectiveness. Grewal and Tansuhaj (2001) reported that more successful companies have well defined organizational structures in sharp contrast to less successful companies. Focusing on large firms (Ekpu, 2004) found a positive relationship between the unstructured organizational patterns and large firm financial performance. Organizational structure is normally described as the way responsibility and power are allocated, and work procedures are carried out among organizational members.

Robbin and DeCenzo (2005) argue that the OS performs a significant role in the achievement of organizations set objectives and accomplishment of its strategic goals and direction. Organization's structure becomes more relevant when it is in harmony with the objective mission, competitive environment and resources of the organization. They believe "One cap fits all" is non-existence in an organizational structure design as no two firms are entirely similar and as such faces different challenges from its environment.

Mansoor et al. (2012) reportedly assert that performance effect of OS is moderated by changes in the environment and hence, conclude that to attain desired superior performance by an organization adequate attention is required to have OS that can match the prevailing environment dynamism in place. These structures are characterized with different attributes such as control, communication, organizational knowledge, task, prestige, governance and values. Hajipour, Mohammad and Arash (2011) studied on relationship between industry structure, strategy type and organizational characteristics. Results indicate industry structure determines organizational characteristics.

Mansoor et al. (2012) contend that ideal organizational structure is a recipe for superior performance. Organizational structures are discussed in the extant literature with reference to two key factors; formalization and centralization (Bucic & Gudergan, 2004). Organizational structure includes the nature of layers of hierarchy, centralization of authority, and horizontal integration. It is a multi-dimensional construct in which concerns: work division especially roles or responsibility including specialization, differentiation or departmentalization, centralization or decentralization, complexity; and communication or coordination mechanisms including standardization, formalization and flexibility. The main feature of new organizational structures is the flexibility and the ability to acclimatize to the changing environment (Lenz, 1980).

Mintzberg (1979) indicated that an organic structure, with its low degree of formality and high degree of information sharing and decentralization, improves an organization's flexibility and ability to adapt to continual environment change. Organizations having different levels of adaptation would utilize different strategies to match their structural arrangements. According to Miles and Snow's (1978) strategy typology organizations with a high-level of adaptation would exhibit a prospector strategy and organic structure while organizations with a low-level of adaptation would adopt a defendant.

Oyewobi et al. (2013) study on impact of organizational structure and strategies on construction organizations performance, found that organization structure has no direct impact on both financial and non financial performance. Qingmin, Helmut and Juergen (2012) study in Austria and China found that organizational structure influence performance directly and indirectly. According to Robbin and DeCenzo (2005) organization

structure has two essential functions which are control and coordination. Controls involves making sure that decision makers at all levels use the managerial or hierarchial constrains as of one of the criteria in making their decisions. According to Bucic & Gudergan (2004) there are four generic types of control mechanism which include centralization, formalization, outputs and cloning. Robbin and DeCenzo (2005) defines formalization as degree to which jobs are standardized while defines centralization as a situation where decisions are made at the top of the organization. Bucic & Gudergan (2004) consider decentralization as pushing decision authority downward to lower level employees. There are different types of organizational structure which include divisional structure, functional structure geographical structure, horizontal structure, hybrid structure and matrix structure. Waweru (2008) study on large private sector in Kenya found that there was weak correlation of strategy and performance. Kwasi and Moses (2008) study found that significant and positive relationship between strategy and performance.

According to Bucic & Gudergan (2004), organizational structure is the formal system of task and reporting relationships that controls, coordinates and motivates employees so that they cooperate to achieve organizational goals. According to Lenz (1980), organization structure has a direct effect in the success of an organization operation strategy. Lenz (1988) supports the argument that organizational structure shapes performance. Adeoye and Elegunde (2012) found that external environment had impact on organization performance in study of food and beverage industry in Nigeria.

2. Conceptual Hypothesis

The conceptual hypotheses for the study

H: Organizational Structure does not positively influence Performance of Large Manufacturing Firms.

3. Methods and Results

3.1 Methods

The study was a cross sectional survey to collect data at particular point in time rather than over a period of time. Cross sectional studies allow for examining multiple factors and multiple outcomes in one single study.

Chindia (2013) used cross sectional survey in study on forecasting techniques, operating environment and accuracy of performance forecasting for large manufacturing companies in Kenya.

According to Mugenda and Mugenda (2003), cross-sectional survey is appropriate where the overall objective is to establish whether significant associations among variables exist at some point in time. This study sought to determine the effect of organizational structure, on performance of large manufacturing firms in Kenya.

The population of the study was all large manufacturing firms in Kenya (KAM 2011); there are 102 large manufacturing firms in Kenya. In determining the size of the firm, several measures were used such as turnover, capital employed, value of output, asset size and employment level. The indicators of large manufacturing firms in Kenya included a firm with more than 50 employees (Awino, 2007; Kirdi, 2007; Aosa, 1992), sales per employee KShs 60,000 and sales turnover of excess of KShs 400 million (Waweru, 2008). The study used the number of employees to determine the size of the firm. Firms with more than 50 employees are considered large (Awino, 2007; Kirdi, 2007; Aosa, 1992). The use of number of employees is considered most appropriate since the studies were conducted in Kenya under similar conditions. Basing on the number of employees out of 627 manufacturing firms in Kenya, there are 102 large manufacturing firms with over 50 employees (Kam, 2011) and this formed the target population and the study used census survey — given the small size of the population.

The study applied both primary and secondary data; the primary data was collected using questionnaire. The questionnaire incorporated both quantitative and qualitative data. The main reason for this approach was to achieve a more in-depth understanding of the various factors affecting organizations performance. Questionnaire was delivered to top level managers and middle level managers which included Chief Executive Officers (CEOs)/Managing directors and head of departments. The CEO and other senior managers were key informants and were familiar with and responsible for the firm's performance and its relationship with various organizational variables (Mintzberg, 1998).

4. Results

The objective was to determine the influence of organizational structure on performance of large manufacturing firms. To achieve this objective a conceptual hypothesis was tested at 0.05 significance level. The Table 1 indicates the results appropriately. The coefficient of determination is 0.00 indicating that organizational structure does not influence ROA in large manufacturing firms in Kenya. This implies that any changes in the large manufacturing firms studied, does not influence the organizational performance measured in terms of ROA.

The overall test F statistic was 0.000 which was not significant at 0.05 significance level. The null hypothesis gave an accurate prediction of the outcome of the study. Therefore the null hypothesis was not rejected that the organizational structure does not positively influence organizational performance of large manufacturing firms.

				Model Summary				
Model	R	R Square		Adjusted R Square		Std. Error of the Estimate		
1	0.000^{a}	0.000		-0.011		0.07143		
a. Predictor	rs: (Constant),	Organizational Struc	cture	•				
				ANOVA ^a				
Model		Sum of Squares	df	Mean Square	F		Sig.	
	Regression	0.000	1	0.000	0.000		0.007 ^b	
1	Residual	0.464	91	0.005			0.997	
	Total	0.464	92					
a. Depende	nt Variable: R	OA		·				
b. Predictor	rs: (Constant),	, Organizational Struc	cture					

Table 1 Relationship between Organizational Structure and Return on Assets (ROA)

Source: (2014) Research data

The relationship of organizational structure and performance was determined using internal process as the measure of performance. Table 2 indicates that organizational structure explains 27 percent of variation in internal process of large manufacturing firms in Kenya. The 73 percent is explained by other factors not within this study. The overall test of significance using F statistic is 34.058 which is significant and therefore individual significance using t test was carried out. The null hypothesis did not give accurate prediction of study outcome and therefore is rejected which means that organizational structure positively influences performance. Table 2 indicates that the constant and the organizational structure coefficients are significant.

Internal processes = 2.639 + 0.435 organizational structure.

$$(0.000)$$
 (0.000)

This implies that a unit marginal change in organizational structure results into additional 0.435 units to internal processes of large manufacturing firms.

Model Sum	mary									
Model	R	R Square			Adjusted R Square			Std. Error of the Estimate		
1	0.520 ^a	0.270			0.262			0.42392		
a. Predictors	s: (Constant), Organiz	ational Stru	icture							
ANOVA ^a										
Model		Sum of	f Squares	df			Mean Square			Sig.
	Regression	6.120		1		6.120		34.058		0.000 ^b
1	Residual	16.533		92		0.180				
	Total	22.653		93						
a. Depender	nt Variable: Internal Pr	rocesses								
b. Predictor	s: (Constant), Organiz	ational Stru	icture							
Coefficients	a									
Model			Unstandardized Co		coefficients		Standardized Coefficients		t	Sig.
			В		Std. Error		Beta			U
1	(Constant)		2.639		0.339				7.782	0.000
1	Organizational Structure		0.435		0.075		.520		5.836	0.000
a. Depender	nt Variable: Internal Pr	rocesses								

Table 2 Relationship between Organizational Structure and Internal Processes

Source: (2014) Research data

The relationship of organizational structure and performance was determined using customer perspective as the measure of performance. Table 3 indicates that organizational structure explains seven percent of variation in customer perspective of large manufacturing firms in Kenya. The 93 percent is explained by other factors not within this study. The overall test of significance using F statistic is 6.814 which is significant at 0.05 significance level and therefore t test was carried out. The null hypothesis did not give accurate prediction of the outcome of the study and therefore is rejected. This means that organizational structure positively influences organizational performance. Table 4 indicates that the constant and the organizational structure coefficients are significant.

Customer perspective = 2.920 + 0.359 organizational structure.

(0.000) (0.011)

This implies that a unit marginal change in organizational structure results to increase of customer perspective of large manufacturing firms by 0.359 units.

The relationship of organizational structure and performance was determined using non financial performance indicators. This is the composite of internal process and customer perspective Table 4 indicates that organizational structure explains 29.1 percent of variation and performance measured in terms of non financial performance. The 70.9 percent is explained by other factors not within this study. The overall test of significance using F statistic is 37.679 and is significant at 0.05 significance level and therefore t test was carried out. The null hypothesis did give accurately predict of the study outcome and therefore rejected which means that organizational structure positively influences organizational performance. Table 4 indicates that the constant and the organizational structure coefficients are significant.

Non financial performance = 2.734 + 0.410 organizational structure.

(0.000)(0.000)

This implies that a unit marginal change in organizational structure results to increase of non financial performance of large manufacturing firms by 0.410 units.

Model	Summary										
Model R		R Square		Adjusted R Square			Std. Error of the Estimate				
1	0.264 ^a	0.070		0.059			0.71161				
a. Prec	lictors: (Constant), Orga	nizational Structure		•			-				
ANOV	/A ^a										
Model		Sum of Squares	Df		Mean Square	F		Sig.			
	Regression	3.450	1		3.450	6.814		0.011 ^b		1 ^b	
1	Residual	46.082	91		0.506						
	Total	49.532	92								
a. Dep	endent Variable: Custom	ner Perspective									
b. Prec	lictors: (Constant), Orga	nizational Structure									
Coeffi	cients ^a										
Model		Unstandardized Coeffic		cients	Standardized Coefficients Beta		cients	t		с. [.]	
		В	Std. Error							51g.	
	(Constant)	2.920	0.628					4.649	0.	.000	
1	Organizational Structure	0.359	0.138		0.264			2.610		0.011	
a. Dep	endent Variable: Custom	ner Perspective									

Table 3 Relationship between Organizational Structure and Customer Perspective

Source: (2014) Research data

Table 4 Relationship between Organizational Structure and Non-financial Performance

Model S	Summary								
Model	R	R Square		Adjusted R Squa	ire S	Std. Error of the I		Estimate	
1	0.539 ^a	0.291		0.283	0.283 0.3		37974		
a. Predi	ctors: (Constant), Org	anizational Structure							
ANOVA	A ^a								
Model		Sum of Squares	Df	Mean Square	F		Sig.		
	Regression	5.433	1	5.433	37.679	37.679)	
1	Residual	13.267	92	0.144					
	Total	18.700	93						
a. Depe	ndent Variable: Non-F	inancial Performance	•	·			•		
b. Predi	ctors: (Constant), Org	anizational Structure							
Coeffici	ients								
Madal		Unstandardized Coefficients		Standardized	Standardized Coefficients			C:~	
Model		В	Std. Error	Beta	Beta			Sig.	
	(Constant)	2.734	0.304			8.999		0.000	
1	Organizational Structure	0.410	0.067	0.539		6.138		0.000	

Dependent Variable: Non-Financial Performance

Source: (2013) Research data

5. Discussion and Conclusion

The objective of the study was to determine the influence of organizational structure on performance of large manufacturing firms. To achieve this objective null hypothesis H: organizational structure does not positively influence performance of large manufacturing firms was tested at 0.05 significance level.

The relationship of organizational structure and performance was determined using ROA as the measure of performance. The coefficient of determination is 0.00 indicating that organizational structure does not influence ROA in large manufacturing firms in Kenya. The overall test F statistic was 0.000 which was not significant at 0.05 significance level. And therefore null hypothesis gave an accurate prediction of the outcome of the study.

Therefore the null hypothesis was not rejected that organizational structure does not positively influence organizational performance of large manufacturing firms. The results are consistent with Ogolla (2012) who found that ROA was not related to the independent variable. Similarly Zheng (2010) found that structure had negative effect on organizational effectiveness. Bergen and Karabay (2013) study on 1000 largest manufacturing firms in Turkey found that firm related factors do not significantly influence performance. In contrast Chen (2010) showed firm factors explain a substantial part of Korean and Taiwanne firm performance.

The relationship of organizational structure and performance was determined using internal process as the measure of performance. Results indicate that organizational structure explains 27 percent of variation in internal process of large manufacturing firms in Kenya. The 73 percent is explained by other variables not within this study. The overall test of significance using F statistic is 34.058 which is significant. The null hypothesis did not give accurate prediction of study outcome and therefore is rejected which means that organizational structure positively influences organizational performance. The results of the study are consistent with Lavie (2006) study that found that organizational structure was positively related to company effectiveness which was a non financial performance measure. The results also consistent with Ekpu (2004) study which found positive relationship between unstructured organizational patterns and large firm performance.

Zheng et al. (2010) study observed negative effect of structure on organizational effectiveness therefore inconsistent with this study. Oyewobi et al. (2013) study on impact of organizational structure on performance, found that it had no direct impact on financial and non financial performance. Qingmin, Helmut and Juergen (2012) study in Austria and China found that organizational structure influence performance directly and indirectly.

The relationship of organizational structure and performance was determined using customer perspective as the measure of performance. Results indicate that organizational structure explains seven percent of variation in customer perspective of large manufacturing firms in Kenya. The 93 percent is explained by other variables not within this study. The overall test of significance using F statistic is 6.814 which is significant at 0.05 significance level. The null hypothesis did not give accurate prediction of the outcome of the study and therefore is rejected. This means that organizational structure positively influences organizational performance. The results of the study are consistent with Lavie (2006) study that found that organizational structure was positively related to company effectiveness which was non financial performance measure. The results also consistent with Ekpu (2004) study which found positive relationship between unstructured organizational patterns and large firm performance. The results were inconsistent with Zheng et al. (2010) study which found a negative effect of structure on organizational effectiveness.

The relationship of organizational structure and performance was determined using non financial performance indicators. This is the composite of internal process and customer perspective. Results indicate that organizational structure explains 29.1 percent of variation in performance measured in terms of non financial performance. The 70.9 percent is explained by other variables not within this study. The overall test of significance using F statistic is 37.679 and is significant and therefore null hypothesis did not give accurate prediction of the study outcome and therefore rejected which means that organizational structure positively

influences organizational performance.

6. Implication of the Study

A further research needs to be done to test on other financial indicators other than return on assets alone before a conclusion is made that financial measurements has got no influence on structure-performance relationship. One construct alone may not be strong enough to measure financial performance. Equally it may be useful to factor in other non-financial indicators other than internal processes and customer perspectives alone. And in responding to chandler's study of structure follows strategy, there is need to investigate which side of performance measurement is critical, since this study has revealed a gap in knowledge that non-financial indicators of measuring performance is more critical than financial indicators.

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