

# Effect of Cost Advantage on Organization Value Chain in Selected Manufacturing Firms

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## Abstract

The paper reviewed cost advantage as a factor of organizational value chain considering competitive advantage and superior differentiating cost. Three objectives on economies of scale, project design and operating management concerning value chain were tested using. A sample size of 180 was used. Multiple Regression analysis and tables were used for results. Findings revealed a no significant difference of economies of scale and organization value chain, a significant difference in product design and organization value chain and a significant difference in operating management strategy and organization value chain. It was recommended that more market differentiators, enhanced but dynamic strategy and reduction in cost advantage will grow better value chain and market leadership.

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## INTRODUCTION

For a company to gain competitive advantage, it must differentiate itself. The value chain is a method in which a firm's strategic important activities are broken down to review their impact on cost and differentiation (Hertati & Sumantri, 2016). The firm decides whether to adopt a cost or differentiation strategy based on its resources, capabilities and its distinctive competencies (Hutaibat, 2011). Once identified, the value chain activities operate cohesively and are interdependent of each other. These activities form linkages amongst each other (Sultan & Saurabh, 2013). Value from the chain is achieved from the tangible as well as intangible

aspects of the entire chain. With constant changes in the competitive environment, there is a need to find different ways of using value chain costing and find various perspectives on value chain accounting to optimize internal and external resources (Kirli & Gümüş, 2011).

The objective of cost advantage is to analyse the occurrence of costs and then reducing them as much as possible. This reduction could be done at individual levels or by making modifications like enhanced production process, distribution channels, sales approach, etc. in the value chain (Akhil, Arpit & Shabarisha, 2018). The stronger the cost control compared to the competitors the better it is. Cost leadership

is a strategy used by businesses to create a low cost of operation within their niche with the primary objective of gaining an advantage over competitors; this is achieved by reducing operating costs below that of others in the same industry (Gacheri, 2010).

Sustainable competitive advantage on the other hand is a long-term process that allows a business to remain ahead of its competitors. Unlike short-term advantages, such as being the first to market a new type of product, a sustainable competitive advantage may be built into the fabric of a business and will help maintain its dominance over years and even decades. The development of such an advantage often takes dedicated effort, the ability to consistently innovate, and even some luck. Organizations operate in an environment that is ever-changing and that brings with it challenges and opportunities to these organizations. Some of these changes include increased competition, globalization, fragmented markets, the evolution of new technology, changes in the regulatory frameworks, growing dependency to non-price competition to development and use of knowledge (Mugo, Mbithi & Were, 2017).

This has therefore seen firms especially those operating in highly competitive industries invest more to develop strategies that will see them gain sustainable competitive advantage (SCA) over their rivals, and thereby enhance business performance (Low & Nair, 2010). A firm enjoys a relative cost advantage if its total costs are lower than the market average. This relative cost advantage enables a business to do one of two things: price its product or service lower than its competitors to gain market share and still maintain current profitability, or match the price of competing products or services and increase its profitability. Many sources of cost advantage exist access to low-cost raw materials; innovative process technology; low-cost access to distribution channels or

customers: and superior operating management. A company might also gain a relative cost advantage by exploiting economies of scale in some markets.

## PROBLEM STATEMENT

Superior relative cost position offers equivalent to customer value for a lower price. Superior relative differentiation position offers better customer value for an equivalent price. Organizations that fail to gain competitive advantage through low cost or superior differentiation, or both, are appeared to be stuck-in-the-middle. The cost-leadership strategy seeks to offer the lowest-priced offering in a product or service category to customers by continually lowering costs across the board. Striking a balance between price and quality is essential for cost leaders, as there comes a point where decreases in quality are no longer justified by lower prices in consumers' minds. A cost-leadership strategy is a broad approach to business whereby a significant aspect of a company's strategy is an effort to operate as the lowest-cost business in its industry.

The major challenge with a cost leadership strategy is the ability of competitors to produce at a lower cost. The success of competitors in realizing this would put the cost leader at par with the competitors rendering strategy unsustainable. The ability of competitors to imitate a firm's production process and product also renders the strategy unsustainable. This strategy, therefore, places high demands for organizations to invest in new technology and modern equipment to sustain the strategy.

## THE OBJECTIVE OF THE STUDY

- i. Ascertain the effect of economies of scale on the organization value chain.

- ii. Determine the influence of product design on the organization value chain.
- iii. Examine the effect of operating management strategy on organization value chain

### RESEARCH HYPOTHESES

H<sub>01</sub>: There is no significant difference between economies of scale and organization value chain

H<sub>02</sub>: There is no significant difference between product design and organization value chain

H<sub>03</sub>: There is no significant difference between operating management and organization value chain

### REVIEW OF RELATED LITERATURE COST ADVANTAGE

The cost advantage is an advantage that the firm has over competitors in terms of costs. A company which can keep costs lower can have a great advantage over competitors who have higher costs and therefore the prices of their products and services will be higher. The cost advantage of manufacturing enables the company systematic efforts to increase efficiency in its operations and results in the production cost per unit, lower cost of goods sold and selling price to end-user in the markets (Porter, 2011). The companies with cost advantage create more value for their customers by offering their products and services at a lower price, mainly due to the economies or diseconomies of scale for each activity, learning that improves knowledge and processes independently of scale, the patterns of capacity utilization, and the linkages that are present when, the way the one activity is performed affects another activity (Janet & Stephen, 2010). Cost leadership is achieved not only by rational management of the production function but also by skilful manoeuvring of all the inter-functional relationships within the enterprise system to reduce coordination costs and

enables the firm to use the price weapon with some discretion (Mugo, Mbithi & Were, 2017).

### ORGANIZATION VALUE CHAIN

A value chain is a set of activities that a firm operating in a specific industry performs to deliver a valuable product or service for the market. The idea of the value chain is based on the process view of organizations, the idea of seeing a manufacturing (or service) organization as a system, made up of subsystems each with inputs, transformation processes and outputs. Inputs, transformation processes, and outputs involve the acquisition and consumption of resources – money, labour, materials, equipment, buildings, land, administration and management. How value chain activities are carried out determines costs and affects profits.

The value chain describes the full range of value-adding activities required to bring a product or service through the different phases of production, including procurement of raw materials and other inputs, assembly, physical transformation, acquisition of required services such as transport or cooling, and ultimately a response to consumer demand (Kaplinsky & Morris, 2012).

### INTERNAL COST ANALYSIS

Organizations use the value chain approach to identify sources of profitability and to understand the cost of their internal processes or activities. Hax & Nicolas (2014) assert that the principal steps of internal cost analysis are: identify the firm's value-creating processes; determine the portion of the total cost of the product or service attributable to each value-creating process; identify the cost drivers for each process; identify the links between processes; and evaluate the opportunities for achieving relative cost advantage under four conditions:

Identify the firm's value-creating processes:

- a. Determine the portion of the total cost of the product or service attributable to each value-creating process
- b. Identify the cost drivers for each process
- c. Identify the links among processes
- d. Evaluate the opportunities for achieving a relative cost advantage

### **Economies of Scale and Organization Value Chain**

Economies of scale refer to economic efficiencies that result from carrying out a process on a larger scale (Pearson & Wisner, 2013). In a simple microeconomics nature, neoclassical theory is used to illustrate economies and diseconomies of scale. Economies of scale happen due to size, output, or operation's scale for an enterprise which give them cost advantages, where fixed costs are spread out over more units of output thus lowering down their cost per unit of output as the scale is increasing. Also, Pukeliene & Maksyytiene (2012) have stated that economies of scale are the return of increasing production factors enabling to form competitive advantages in decreasing average fixed costs. Economies of scale are equivalent to a falling long-run average cost function.

Weinzimmer (2011) posits that organizations can gain a lot of benefits from growth and stability in many ways, including greater efficiencies through economies of scale (EOS), increased organisation's power, the ability to withstand environmental changes, increased profits, and increased prestige for organizational members. Bakar, Razak, Yusof & Karim, (2011) stated that a fully developed company can have an advantage when using economies of scale, given the fact that it can be present in nearly every functions of a business, including manufacturing, purchasing, research and

development, marketing, service network, sales force utilization, and distribution.

The predominance of large corporations in most manufacturing and service industries is a consequence of economies of scale. Economies of scale exist wherever proportionate increases in the amounts of inputs employed in a production process result in lower unit costs. Economies of scale have been conventionally associated with manufacturing. Scale economies arise from three principal sources (Ruffin & Ethier, 2011):

- a. Technical input-output relationships:
- b. Indivisibilities
- c. Specialization.

### **Economies of Learning**

Modern economies can be characterised as learning economies in which knowledge is the crucial resource and learning is the most important process. Different kinds of learning and economically relevant types of knowledge can likewise be identified. It is argued that pure market economies if such existed, would have severe problems in terms of learning and innovation. The 'learning economy' is a mixed economy in a fundamental sense. The experience curve is based primarily on learning-by-doing on the part of individuals and organizations. Repetition develops both individual skills and organizational routines. Learning curves are exceptionally steep in semiconductor fabrication.

### **Product Design and Organization Value Chain**

Design refers to the form characteristics of a product that provide utilitarian, hedonic, and semiotic benefits to the user (Bloch, 2011). The term "form" is not limited to the tangible characteristics of a product it also considers elements such as the scent of a car interior or the beat of music download. Design-for-manufacture, designing products for ease of production rather than simply for

functionality and esthetics – can offer substantial cost savings, especially when linked to the introduction of new process technology (Bloch, 2011).  
staff to the firm's growth and survival.

### **Operating Management Strategy and Organization Value Chain**

Operations strategy fundamentals are based on strategic thinking and strategic thinking is related to a system perspective (Liedtka, 2010). System thinking focuses on the system as the whole and the efficiency of the whole system is not optimized unless the efficiency of each subsystem is at the optimal point (Gardner, 2014). Thus, the operational efficiency, as a component of the whole efficiency of an organization, affects the overall performance of a firm and measuring the operational efficiency helps the firm to maximize its overall efficiency.

### **Theoretical Review Dynamic Capabilities Theory**

The Dynamic Capabilities Theory introduced by Teece, Pisano & Shuen (1994) as an extension of the Resource-Based Theory was used as it best suits the variables under study. Dynamic Capability refers to the specificity of certain resources to firms and is not easily imitated. Dynamic capabilities theory examines how firms integrate, build and reconfigure their internal and external firm-specific competencies into competencies that match their turbulent environment (Teece, Pisano & Shuen, 1997). In essence, the Dynamic Capabilities Theory tries to make use of competencies that are unique to firms to gain competitive advantage and explains how these competencies are developed, deployed and protected (Teece et al., 1997). The theory holds that firms with greater dynamic capabilities will outperform the firms with smaller dynamic capabilities. Additionally, the theory focuses on how firms use dynamic capabilities to gain

competitive advantage by responding to and creating appropriate environmental changes. Thus according to this theory, the firm with a greater dynamic capability is more likely to have more advanced strategies put in place value chains (Gibbon & Bair 2008).

### **Empirical Review**

Mugo, Mbithi & Were (2017) examined how cost advantage affected competitive advantage in the nine selected integrated poultry firms in Kenya. The study adopted a descriptive survey design. The target population of the study was all the 151 managers of the selected poultry firms. The researcher used descriptive design to collect data to get the data from the target population in its natural operational environment. Data collected was cleaned, pretested, validated, coded, summarized and analyzed using statistical package of SPSS V21. Inferential statistics were used to test for the relationship between the variables. The study found that 67.6% of competitive advantage in the selected integrated poultry production firms in Kenya was attributed to a combination of the independent factors that relate to cost advantage investigated in this study. This study recommends that organizations should have to either reinforce or modify customers' perception or image. Organizations can, therefore, ensure that processed chicken is delivered in hygienic condition to ensure long shelf life, the carcass quality produced by the broilers is higher to create more demand and lastly, they should ensure that day-old chicks have minimal mortality (high livability) to enhance more returns to the customer.

Syazwana, Sabariah, Hairuddin & Siti & Riduan (2016) examined the factors of economies of scale (EOS) for different grade of contractors in Kluang, Johor. The factors were validated through structured interviews with selected contractors. Data was firstly collected by using literature analysis before structured interviews were conducted to verify the central phenomena.

The former was analysed through looping system screening and the latter by using NVivo v.8 software. Six (6) contractors from grade G1, G2, and G7 were interviewed. The outcome shows that there are seven (7) imperative factors of EOS namely; 1) required capital for large machinery and machine, 2) materials for bulk buying and bulk selling, 3) backbone industries for service and expertise, 4) factors on divisional of labour, 5) support for research and development, and last but not least is on 6) administrative economy and 7) available loan facility. Furthermore, although it was found that the opinions and answers given by the respondents were somewhat analogous, several prominent factors have been frequently used by the respondent which consequently gave positive impacts on the profitability and stability of the company. Some suggestion for further investigation is on a particular topic in the broader environment of construction as in designing, management and construction phase in throughout Malaysia due to the need for enhancing the findings and research contribution.

Wanjiru (2010) examined the competitive strategies adopted by mobile phone companies in Kenya. The study found that mobile phone companies had adopted several strategies which include cost leadership, differentiation, marketing strategies, diversification, expansion, technology strategies, customer service and corporate social responsibly and according to the respondents, all of them have been successful to their companies. The study was able to identify the strategies generally without a comparison of the strategies adopted by each company. This study aims at shedding more light to this.

Kapto & Njeru (2014) conducted a study on the strategies adopted by mobile phone companies in Kenya to gain competitive advantage. The study found out that there existed a strong relationship between strategies adopted by the mobile phone

companies to gain competitive advantage, cost leadership, differentiation and focus also positively affected competitiveness. Therefore the purpose of adopting competitive strategies is to enable institutions to promote healthy competition. Though the study was able to establish the effect the strategies have in gaining competitive advantages, it did not comprehensively compare the competitive strategies adopted by the leading mobile service providers; Safaricom and Airtel Kenya.

## METHODOLOGY

The study was carried out primarily through a survey method which entails the administration of the questionnaire. A sample size of 180 was obtained from a population of 325 at 5% error tolerance and 95% level of confidence, using Taro Yamane's statistical formula. The questionnaire was designed in a Likert scale format. Multiple regression was used in testing the hypothesis.

Taro Yamane's formular

$$\frac{n}{1 + N(e)^2}$$

Where;

$n$  = the required sample size to be captured;  
 $N$  = the total number of members in the population;

$e$  = the tolerable error margin for the selection of appropriate representative unit of the population.

$$n = \frac{325}{1 + 325(0.05)^2}$$

$$n = \frac{325}{1.6} =$$

$$179.5 \approx 180$$

A total number of 180 respondents were selected.

## RESULTS

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.459 <sup>a</sup>	.211	.197	.392

a. Predictors: (Constant), OPERATING MANAGEMENT STRATEGY, PRODUCT DESIGN, ECONOMIES OF SCALE

**ANOVA<sup>a</sup>**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	7.221	3	2.407	15.676	.000 <sup>b</sup>
Residual	27.024	176	.154		
Total	34.244	179			

a. Dependent Variable: ORGANIZATION VALUE CHAIN

b. Predictors: (Constant), OPERATING MANAGEMENT STRATEGY, PRODUCT DESIGN, ECONOMIES OF SCALE

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.572	.110		5.187	.000
	PRODUCT DESIGN	.140	.024	.477	5.852	.000
	ECONOMIES OF SCALE	.001	.023	.005	.063	.950
	OPERATING MANAGEMENT STRATEGY	.065	.020	.230	3.188	.002

a. Dependent Variable: ORGANIZATION VALUE CHAIN

**TEST OF HYPOTHESIS**

**Hypothesis one**

H<sub>01</sub>: There is no significant difference between economies of scale and organization value chain

Since the P-value calculated is greater than the critical level of significance (.950>0.05), the null hypothesis was accepted while the alternate hypothesis was rejected this implies that there is no significant difference of economies of scale and organization value chain.

**Hypothesis Two**

H<sub>02</sub>: There is no significant difference between product design and organization value chain

Since the P-value calculated is lesser than the critical level of significance ( $.000 < 0.05$ ), the null hypothesis was rejected while the alternate hypothesis was accepted this implies that there is a significant difference of product design and organization value chain.

### **Hypothesis Three**

H<sub>03</sub>: There is no significant difference between operating management and organization value chain

Since the P-value calculated is lesser than the critical level of significance ( $.002 < 0.05$ ), the null hypothesis was rejected while the alternate hypothesis was accepted this implies that there is a significant difference of operating management strategy and organization value chain.

## **FINDINGS**

Findings from previous studies reviewed showed that cost advantage affects the organization value chain. If a company offers a unique product or service, it is harder to maintain an edge in the market based on price alone. The company must offer something more valuable to the consumer besides just a low price (Porter, 2011). Mugo, Mbithi & Were (2017) findings showed that cost leadership is achieved not only by rational management of the production function but also by skilful manoeuvring of all the inter-functional relationships within the enterprise system to reduce coordination costs and enables the firm to use the price weapon with some discretion.

Weinzimmer (2011) posits that organizations can gain a lot of benefits from growth and stability in many ways, including greater efficiencies through economies of scale (EOS), increased organization's power, the ability to withstand environmental changes, increased profits, and increased prestige for organizational members. Bakar, Razak,

Yusof & Karim, (2011) stated that a fully developed company can have an advantage when using economies of scale, given the fact that it can be present in nearly every functions of a business, including manufacturing, purchasing, research and development, marketing, service network, sales force utilization, and distribution.

Bloch (2011) reported that the design-for-manufacture, designing products for ease of production rather than simply for functionality and esthetics – can offer substantial cost savings, especially when linked to the introduction of new process technology. McIntosh (2012) discovered that engineering changes arise frequently for continual improvement of the system/product and determines approximately 70 to 80% of the final product cost. The goal of engineering change is to enhance the redesigned products performance and to be produced effectively. If Engineering changes (EC) in the product are not managed properly throughout the product lifecycle, it will result in a severe loss.

Operations strategy fundamentals are based on strategic thinking and strategic thinking is related to a system perspective (Liedtka, 2010). System thinking focuses on the system as the whole and the efficiency of the whole system is not optimized unless the efficiency of each subsystem is at the optimal point (Gardner, 2014). Thus, the operational efficiency, as a component of the whole efficiency of an organization, affects the overall performance of a firm and measuring the operational efficiency helps the firm to maximize its overall efficiency. Furthermore, Schniederjans & Cao (2010) findings showed that alignment of business strategies can bring a positive contribution to the performance of the organizations and misalignment contributes negatively to the performance of the organization. That is to say that Operations management goes hand in hand with operation management strategies; which are strategies put in place to ensure the



operation management succeeds in playing the role it was intended for.

### CONCLUSION

Cost competitive advantage is when a company can utilize its skilled workforce, inexpensive raw materials, controlled costs, and efficient operations to create maximum value to consumers. Cost advantages are known as positional advantages since they describe the firm's position in the industry as a leader in cost. Lower cost advantage to a section of market segments with basic services offered to higher-priced market leaders is also a strategy acceptable in the corporate world. A value chain is a set of activities that a firm operating in a specific industry performs to deliver a valuable product or service for the market.

Economies of scale happen due to size, output, or operation's scale for an enterprise which give them cost advantages, where fixed costs are spread out over more units of output thus lowering down their cost per unit of output as the scale is increasing. Economies of scale are the economic efficiencies that result from carrying out a process on a larger scale.

Product design is the form characteristics of a product that provide utilitarian, hedonic, and semiotic benefits to the user. Here, the term "form" is not limited to the tangible characteristics of a product it also considers elements such as the scent of a car interior or the beat of music download. Design-for-manufacture – designing products for ease of production rather than simply for functionality and esthetics – can offer substantial cost savings, especially when linked to the introduction of new process technology. Configuration Management (CM) is an engineering process for ensuring the requirements, design and operational information by product's functional, performance and physical attributes throughout its life cycle.

Operations management is central to the business organization. One of the major roles of operations management is to understand the needs of the business and develop clear visions and establish directions of how the operations should help the organization to achieve both short term goals (tactics) and long term goals. The ability to demonstrate the capacity to adapt to changes in the business environment is very important to maintain the company's directed positions for sustainable development. Operation management refers to a transformation of how the firm conducts its daily operations. Operation management is the decisions and actions which set the role, objectives and activities of the running of a particular organization.

### RECOMMENDATION

1. Market differentiators should focus on integrating environmentalism into product innovation, especially when facing fierce competition.
2. A cost-leadership strategy help firms to derive profits from green process innovation, and such a role will be more salient in situations of high competition intensity. Firms aiming to obtain a cost-leader position should make more effort to upgrade their manufacturing process with advanced green technology so that they can establish and then maintain their efficiency advantage.
3. The mismatch between cost advantage and value chain will reduce the potential competitiveness to be derived from a competitive advantage. Hence, managers should be cautious about the potential tensions between differentiation strategy and value process innovation, and between cost-leadership strategy and value chain.
4. The management should ensure that their firms are leaders in the adoption of the most efficient strategies. This will ensure that their

firms are profitable and have superior products.

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