

STRATEGIC QUALITY MANAGEMENT PRACTICES ON OPERATIONAL PERFORMANCE OF SOFT DRINK MANUFACTURING FIRMS IN ELDORET CITY COUNTY, KENYA

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Abstract: The manufacturing sector in Kenya plays a fundamental role in driving the country's economy, alleviating poverty, promoting industry resilience and sustainability. Being part of the food industry, the conditions for operations are quite stringent and manufacturing firms are expected to consistently adhere to quality requirements that guarantee customer satisfaction. Soft drink manufacturing firms are experiencing ever closer scrutiny of their product quality as the pressure mounts from consumers to have their ever-changing needs and preferences met. This calls upon the organizations to engage in strategic quality management practices in order to survive and achieve their performance. The general objective of this study was to establish the effect of strategic quality management practices on operational performance of soft drinks manufacturing firms in Eldoret City County. Specifically, the study seeks to establish the influence of strategic continuous improvement on operational performance of soft drinks manufacturing firms in Eldoret City County on the operational performance of soft drinks manufacturing firms in Eldoret City County. This research was based on the stakeholder theory, agency theory and Deming's quality management theory to explain the relationship between the study variables. The study intended to collect primary data using questionnaires. A descriptive survey design was adopted. The target population included all the 64 soft drinks manufacturing firms operating in Eldoret City County as at December 2021. A census was conducted on all the 64 soft drinks manufacturing firms. The unit of observation was heads of operations and human resource unit of each soft drinks manufacturing firm. The total target was therefore be 128 respondents. Information assembled was evaluated using descriptive and inferential statistics ranging from frequencies, percentages, correlation and regression. Statistical Package for Social Sciences version 24 was used for data analysis. Based on the findings, the study concluded that strategic continuous improvement has a significant effect on the operational performance of soft drink manufacturing firms in Eldoret City County. ($\beta_1=0.834$, p value= 0.000). The relationship was considered significant since the p value 0.004 was less than the significant level of 0.05. The study concluded that the soft drink manufacturing firm's management should provide a continuous improvement of quality systems and procedures through internal quality audits that contributes to zero defect of quality objectives. The study recommended that there should be a policy for making continuous improvement of products quality for every individual in the company and have firm's benchmarks its quality against other quality management practices best practices as per ISO certification requirements.

Keywords: Strategic Continuous Improvement, Strategic quality management, operational performance.

1. INTRODUCTION

Quality is critical element especially where production or service delivery is concerned. This is because it determines customer satisfaction (Bremer, 2016). Though the term has evolved overtime resulting to divergent views on the term, renowned quality gurus in the likes of Deming, Juran, Crosby, Feigenbaum, Ishikawa and Garvin believed that quality is when there is variety reduction, continuous improvement of products/services and zero defect (Bremer, 2016). Though there is diversity in the definition of quality from different scholars, the commonly agreed definition portrays quality as simply the fitness of use of a product or service (Bremer, 2016; Calingo, 2014; Nzioka, 2016). Many organizational leaders identify quality as an aggressive competitive weapon.

Empirical evidence (Nzioka, 2016) suggests that as quality increases so does productivity and profitability. Studies (Gluck, Kaufman, & Walleck, 2017) have shown that improvement of product quality has a strong relationship to increased market share. Recent studies (Garvin, 2017) suggest that quality is a management function and it is a fundamental component of competitive strategy. A major emphasis on the thinking quality gurus is that quality can be managed only when the top management gets involved. Top management has the duty to make innovative decisions, commit resources to support innovation and continuous improvement. This is what brings the aspect of strategic approach to quality (Bremer, 2016). This means managing quality will involve the formulation of strategies, setting of goals and objectives, developing action plans, implementing plans and utilizing control systems for monitoring feedback as well as taking corrective actions (Uko, 2018).

Strategic quality management has therefore been defined by some scholars (Samer, 2019; Walsh, 2018) as systematic approach to setting and achieving quality objectives throughout the company - starting from the top management. A further definition of strategic quality management was advanced by (Herzallah, Gutiérrez-Gutiérrez & Munoz Rosas, 2019). According to the studies, it is the process of incorporating a set of practices through effective utilization of resources so as to provide better quality products and services. Previous studies have shown that over the years the issue of strategic quality management has been decisively embedded in the list of manufacturing firms' top priorities (Bremer, 2016). Manufacturing firms that have been successful are those that have had an obsession with some form of quality and reliability for their products. Such firms can charge more for their products resulting to higher profit margins making quality an essential component for sustainability of customer satisfaction over the life time of a product (Uko, 2018).

Strategic quality management has received increased attention at the global arena and leaders of manufacturing firms must adopt some strategic quality practices that support performance. Strategic quality management practices in this regard is concerned with improving quality of goods through integration of key stakeholder efforts of suppliers, customers, employees, competitors and the government in order to meet the expectations of the consumer (Garvin, 2017). Other studies (Uko, 2018) have identified the core concepts of strategic quality management practices as customer focus, strategic benchmarking, leadership, continuous improvement, strategic quality planning, design quality, speed and prevention, people participation and partnership with suppliers and fact-based management. For the purpose of this study, strategic customer management practices, strategic workforce management practices, strategic supplier management practices and strategic benchmarking practices will be discussed to determine the relationship with firm operational performance.

Some other elements of strategic quality management principles, guidelines and techniques are six sigma, business process re-engineering, learning organization, ISO standards among others (Uko, 2018). Six Sigma is a self-propelling continuous improvement technique while business process re-engineering (BPR) is a tool to make a business process efficient in time and cost. It is the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service and speed (Upadhaya, Munir & Blount, 2014). As far as quality is concerned, a learning organization has been viewed by some scholars (Rureri, 2018) as an organization that facilitates the learning of all its members and continuously transforms itself.

With ISO standards, an organization is able to improve its manufacturing process, its service or documentation procedure and has all the requirements for standardization and quality assurance (Rureri, 2018). Adoption of strategic quality practices has seen a number of manufacturing firms in the global arena benefit from improved quality, employee engagement, improved working relationships, customer and employee satisfaction, productivity, effective communication, profitability and increased market share (Rureri, 2018). In a nutshell, strategic quality management practices permit organizations to be committed to quality and customer retention/satisfaction as well as continuously improving their operations.

Operational performance entails having an efficient flow of operations in the organization such as reducing delivery lead time, reducing inventory and ensuring optimal level in the machines (Zhu, Sarkis & Lai, 2018). In order for organization to be competitive they have to make use of the different performance objectives. They are the cost, quality, speed, dependability and flexibility. In order for the firms to strive to remain competitive through strategic quality management practices, an understanding of the complexity and dynamism of operational performance of these firms has potential to provide the platform upon which the success or failure of this important industry could be judged.

Strategic quality management practices can deliver a wide range of benefits which enhance competitiveness and performance of supply chain partners (Hudnurkar, Jakhar & Rathod, 2017). Some of these benefits are; innovative products, cost management, improved efficiency and risk management as well as delivering incremental business value to customers (Giannakis & Papadopoulos, 2016). Effective strategic quality management practices can create an environment that promotes trust between organizations based on a shared understanding and communication that promotes operational performance (Lavastre, Gunasekaran & Spalanzani, 2019).

2. STRATEGIC CONTINUOUS IMPROVEMENT

Quality product comes from a quality process. This means that quality should be built into the process. Quality at the source is the belief that it is far better to uncover the source of quality problems and correct it than to discard defective item after production. If the source is not corrected the problem will continue. Hence TQM focuses on studying, understanding and improving processes (Petersen, 2019).

Process management concerns the value adding system and involves the policies, procedures and practices that are required to control the process. The process management construct examines how key processes are designed, implemented managed and improved to support the organizations strategy and actions plan (Danese, 2018).

TQM emphasizes on Continuous process improvement, this involves ongoing activities aimed at process simplification and reduction or elimination of process waste it systematically seeks to achieve small, incremental changes in processes in order to improve efficiency and quality (Wong & Wong, 2017). This study conceptualizes strategic continuous improvement in terms of system measurements, quality audits and benchmarking.

3. METHODS

This study adopted a descriptive research design. Target population is that population to which a researcher wants to generalize the results of the study (Mugenda and Mugenda, 2003). This study constituted a census survey of the 64 soft drink manufacturing firms in Eldoret City County, Kenya. Heads of operations and human resources were targeted. According to Dale (1979) a sample of 10% of a large population and a 30% of a small population is appropriate for doing a study. The study adopted census survey and therefore all the heads of operations and human resources of the 64 soft drink manufacturing firms were studied. Data collection instrument used was questionnaire and other information relevant to the study. A structured questionnaire was administered to the respondents. Both primary and secondary data was collected. Piloting was done to determine if the full-scale study was conducted in the way that was planned and whether there were some components that should be changed. The study ensured validity by using the experts' opinion on the piloted questionnaires. To ensure reliability the study used Cronbach's Alpha. A coefficient of 0.7 or above implies that there is a high degree of reliability of the data Mugenda and Mugenda (2011). Once data was collected, it was crosschecked and verified for errors, completeness and consistency. It was coded, entered and analysed descriptively using IBM Statistical Package for Social Sciences (SPSS 23). Pearson correlation analysis was used to test the relationship between variables in the study hypotheses. ANOVA multiple linear regression analysis was also be used to determine the statistical relationship between the independent variable and the dependent.

4. DISCUSSION

4.1 Strategic Continuous Improvement on the operational performance of soft drink manufacturing firms in Eldoret City County, Kenya

The first specific objective of the study was to determine the effect of strategic continuous improvement on operational performance of soft drink manufacturing firms in Eldoret City County. The respondents were requested to indicate their level of agreement on statements relating to the strategic continuous improvement on operational performance of soft drink manufacturing firms in Eldoret City County. The results were as presented in Table 4.1.

From the results, the respondents agreed that the company has continuous improvement of quality systems that contributes to zero defect of quality objectives. This is supported by a mean of 3.911 (std. dv = 0.821). In addition, as shown by a mean of 4.862 (std. dv = 0.755), the respondents agreed that there is continuous monitoring and improvement of quality systems and procedures through internal quality audits. Further, the respondents agreed that Quality audits are carried out continuously as per ISO certification requirements. This is shown by a mean of 3.561 (std. dv = 0.843). The respondents also agreed that there is a policy for making continuous improvement of products quality for every individual in the company. This is shown by a mean of 3.786 (std. dv = 0.814).

With a mean of 3.483 (std. dv = 0.733), the respondents agreed that the firms benchmarks its quality against other quality management practices best practices. The respondents also agreed that the company has set time limit to meet efficiency of products delivery and set benchmarks for internal quality realization and conformity. This is shown by a mean of 3.721 (std. dv = 0.836).

Table 4.1: Strategic Continuous Improvement on Operational Performance of Soft Drink Manufacturing Firms in Eldoret City County;

	Mean	Std. Deviation
The company has continuous improvement of quality systems that contributes to zero defect of quality objectives.	3.911	0.821
There is continuous monitoring and improvement of quality systems and procedures through internal quality audits	4.852	0.755
Quality audits are carried out continuously as per ISO certification requirements	3.831	0.823
There is a policy for making continuous improvement of products quality for every individual in the company	3.786	0.814
The firms benchmarks its quality against other quality management practices best practices	3.483	0.733
The company has set time limit to meet efficiency of products delivery and set benchmarks for internal quality realization and conformity	3.721	0.836
Aggregate	3.872	0.865

4.2 Effect of Operational Performance of Soft Drink Manufacturing Firms in Eldoret City, County.

The objective was to assess the effect of operational performance of soft drink manufacturing firms in Eldoret City County. The respondents were requested to indicate their level of agreement on various statements relating to the effect of operational performance of soft drink manufacturing firms in Eldoret City County. A 5 point Likert scale was used where 1 symbolized strongly disagree, 2 symbolized disagree, 3 symbolized neutral, 4 symbolized agree and 5 symbolized strongly agree. The results were as presented in table 4.2.

From the results, the respondents agreed that the organization provides cost effective service to customer. This is supported by a mean of 4.261 (std. dv = 0.957). In addition, as shown by a mean of 3.958 (std. dv = 0.802), the respondents agreed that strategic supplier management reduces administrative costs, average unit manufacturing cost as well as inventory to minimum level to the extent that does not hinder the continuation of work. The respondents further agreed that SQM has led the organization to choose their suppliers on the basis of high-quality, assisted in improving the quality of goods, works and services offered to the beneficiary. This is shown by a mean of 3.803 (std. dv = 0.752). The respondents also agreed that strategic supplier management leads to proper storage conditions according to the specifications, an increased quality information sharing in order to enhance operational efficiency and increased customer satisfaction levels. This is shown by a mean of 3.792 (std. dv = 0.843). With a mean of 3.743 (std. dv = 0.925), the respondents agreed that the firm introduces new products from competitors to ensure competition to meet major customer's requirement. The respondent also agreed that SQM helps organization through suppliers have enhanced more conformity with technical set specifications, high response to dynamic customer needs as well as providing a high level of customer service to its major customers. This is shown by a mean of 3.761 (std. dv = 0.901).

Table 4.2: Operational Performance of Soft Drink Manufacturing Firms in Eldoret City, County.

	Mean	Std. Deviation
The organization provides cost effective service to customer	4.261	0.957
Strategic supplier management reduces administrative costs, average unit manufacturing cost as well as inventory to minimum level to the extent that does not hinder the continuation of work	3.958	0.802
SQM has led the organization to choose their suppliers on the basis of high quality, assisted in improving the quality of goods, works and services offered to the beneficiary	3.803	0.752
Strategic supplier management leads to proper storage conditions according to the specifications, an increased quality information sharing in order to enhance operational efficiency and increased customer satisfaction levels	3.792	0.843
The firm introduces new products from competitors to ensure competition to meet major customer's requirement.	3.543	0.925
SQM helps organization through suppliers have enhanced more conformity with technical set specifications, high response to dynamic customer needs as well as providing a high level of customer service to its major customers	3.761	0.901
Aggregate	3.797	0.826

4.3 Inferential Statistics

Inferential statistics in the current study focused on correlation and regression analysis. Correlation analysis was used to determine the strength of the relationship while regression analysis was used to determine the relationship between dependent variable (the operational performance of soft drink manufacturing firms in Eldoret City County and the independent variable (strategic continuous improvement, strategic customer management, strategic supplier management and strategic workforce management).

4.3.1 Correlation Analysis

The present study used Pearson correlation analysis to determine the strength of association between independent variables (strategic continuous improvement, strategic customer management, strategic supplier management and strategic workforce management option) and the dependent variable (the operational performance of soft drink manufacturing firms in Eldoret City County) dependent variable. Pearson correlation coefficient range between zero and one, where by the strength of association increase with increase in the value of the correlation coefficients. The current study employed Taylor (2018) correlation coefficient ratings where by 0.80 to 1.00 depicts a very strong relationship, 0.60 to 0.79 depicts strong, 0.40 to 0.59 depicts moderate, 0.20 to 0.39 depicts weak.

Table 4.3: Correlation Coefficients

		Operational performance of soft drink manufacturing firms	Strategic continuous improvement	Strategic customer management	Strategic supplier management	Strategic workforce management
Operational performance of soft drink manufacturing firms	Pearson	1				
	Correlation					
	Sig. (2-tailed)					
	N	55				
Strategic continuous improvement	Pearson	.816**	1			
	Correlation					
	Sig. (2-tailed)	.002				
	N	55	55			
Strategic customer management	Pearson	.868**	.253	1		
	Correlation					
	Sig. (2-tailed)	.001	.067			
	N	55	55	55		

Strategic supplier management	Pearson	.973**	.164	.174	1	
	Correlation					
	Sig. (2-tailed)	.000	.077	.083		
Strategic workforce management	N	55	55	55	55	
	Pearson	.955**	.185	.189	.263	1
	Correlation					
	Sig. (2-tailed)	.000	.076	.083	.075	
	N	55	55	55	55	55

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

From the results, there was a very strong relationship between strategic continuous improvement and the operational performance of soft drink manufacturing firms in Eldoret City County. ($r = 0.816$, $p \text{ value} = 0.002$). The relationship was significant since the $p \text{ value}$ 0.002 was less than 0.05 (significant level).

Table 4.4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.801	.735	.728	1.119

a. Predictors: (Constant), strategic continuous improvement, strategic customer management, strategic supplier management and strategic workforce management.

The model summary was used to explain the variation in the dependent variable that could be explained by the independent variables. The r -squared for the relationship between the independent variables and the dependent variable was 0.735. This implied that 73.5% of the variation in the dependent variable (the operational performance of soft drink manufacturing firms in Eldoret City County) could be explained by independent variables (strategic continuous improvement).

4.4: Analysis of Variance

Table 4.5: Analysis of Variance

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	201.334	4	50.334	830.943	.001 ^b
Residual	10.237	51	.069		
Total	211.271	55			

a. Dependent Variable: the operational performance of soft drink manufacturing firms

b. Predictors: (Constant), strategic continuous improvement, strategic customer management, strategic supplier management and strategic workforce management

The ANOVA was used to determine whether the model was a good fit for the data. F calculated was 830.943 while the F critical was 2.024. The $p \text{ value}$ was 0.000. Since the F -calculated was greater than the F -critical and the $p \text{ value}$ 0.000 was less than 0.05, the model was considered as a good fit for the data. Therefore, the model can be used to predict the influence of strategic continuous improvement on the operational performance of soft drink manufacturing firms.

Table 4.6: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		Sig.
		B	Std. Error	Beta	t	
1	(Constant)	.711	.108		6.583	.000
	Strategic continuous improvement	.834	.350	1.647	2.383	.000

a Dependent Variable: Operational performance of soft drink manufacturing firms

The regression model was as follows:

$$Y = 0.711 + 0.834X_1 + \varepsilon$$

According to the results, strategic continuous improvement has a significant effect on the operational performance of soft drink manufacturing firms in Eldoret City County. ($\beta_1 = 0.834$, $p \text{ value} = 0.000$). The relationship was considered significant since the $p \text{ value}$ 0.004 was less than the significant level of 0.05.

5. CONCLUSIONS AND RECOMMENDATIONS

Based on the findings, the study concluded that strategic continuous improvement has a significant effect on the operational performance of soft drink manufacturing firms in Eldoret City County. $\beta_1=0.834$, p value= 0.000). The relationship was considered significant since the p value 0.004 was less than the significant level of 0.05. The study concluded that the soft drink manufacturing firm's management should provide a continuous improvement of quality systems and procedures through internal quality audits that contributes to zero defect of quality objectives. The study recommended that there should be a policy for making continuous improvement of products quality for every individual in the company and have firm's benchmarks its quality against other quality management practices best practices as per ISO certification requirements.

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