

Analysis of the Impacts of Total Quality Management Pillars On Kenyan Sugar Industry, A Case Of Nzoia Sugar Company

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ABSTRACT : Total Quality Management (TQM) philosophy has not only gained grounds as a strategic management tool in Kenyan firms but also internationally. It has received global attention from researchers and practitioners with developed nations taking the lead. Development and implementation of this strategy has posed a challenge to Kenyan organizations in terms of sustainability. This study aims to determine the effectiveness of TQM in Nzoia Sugar Company Limited. Focus is on different levels of employees since they are the driving resource to this strategy. Data was collected, validated and analyzed with aid of SPSS. TQM was taken as the dependent variable whereas different pillars as independent variables. Communication had weak correlation with strategic planning and process centered. Different pillars have different levels of influence on TQM hence different approaches of enforcement must be invoked to ensure sustainability of each. Culture affects TQM negatively and this is exhibited among staff as age advances. Further research need to be conducted to unearth the underlying reasons why communication has been a setback to the process of TQM implementation. The study proposed a framework for sustainability of TQM for company.

KEYWORDS : Total Quality Management, Quality, Regression

I. INTRODUCTION

Total Quality Management (TQM) can be defined as “a management philosophy that fosters an organizational culture committed to customer satisfaction through continuous improvement” (Kanji, 2002). Total Quality Management (TQM) theory grew out of existing organizational management theories, in part, as a response to the problems in those theories. Edwards Deming, Joseph Juran, Philip Crosby and Kaoru Ishikawa are most responsible for the development of TQM. Deming and Juran began work on TQM in the 1920s and continued shaping the management model into the 1990s. During the 1930s, Deming and Juran studied with Walter Shewhart who developed Statistical Quality Control (SQC) theory. SQC theory argued that “as quality improves, costs go down and productivity increases.”

The commitment to TQM originates at the corporate to business level and then functional level. The accomplishment of quality is thus achieved by personal involvement and accountability, devoted to a continuous improvement process, with measurable levels of performance by all concerned. It involves every department, function and process in a business set up and the active involvement of all employees to meeting customers' needs. In this regard the customers of each organization are separately and individually identified (John, 1996). Saraph et al (1989) examined how quality management has been developed in twenty two (22) manufacturing and service industries in the USA and came up with eight success factors of TQM. They include leadership and quality policies quality department, training, product and service design, supplier quality management, process management, quality data and reporting and finally employee relations. The work of Seraph further suggests that Critical Success Factors (CSF) of Quality Management can be used to evaluate the status of the Quality Management efforts and identify areas of improvement. In the work of Powell (1995) it is found that successful implementation of TQM depend on certain tactics, behaviors and features e.g. top management commitment, effective communication, and employee involvement.

In turkey, a research conducted on TQM showed that top management support, employee involvement and commitment, customer focus, quality education and training, team work, and use of statistical techniques are the factors that successfully contribute to TQM efforts (Bayazit, 2003). A research was done in Iran on TQM and the findings were as follows, top management commitment, strategic quality planning for quality, employee involvement, team work and quality culture, management by fact to solve problems, continuous improvement, focus on suppliers and partners and monitoring and evaluation of quality are the Critical Success Factors of Quality Management (Rad, 2005). Abdullah and Uli et al., (2008) identified the soft factors that can influence the quality improvement practices and organization performances of Malaysia manufacturing companies. In the previous studies, not much is said which pillar affects TQM to which extent and this is what this paper endeavors to do. The success of TQM will result in improved employee involvement, improved communication, increased productivity, improved quality and less reworks, improved customer satisfaction, reduced costs of poor quality and improved competitive advantage (Antony et al., 2002). I agree with the work of Antony et al., (2002).

II. STUDY AREA

Nzoia Sugar Company Limited (NSC) is one of the key players in Kenya's Sugar Industry. It is located in Bungoma County, 5 Kilometres from Bukembe, off the Webuye-Bungoma highway. The Company serves close to 67,000 farmers in the larger Bungoma and Kakamega counties with a through put of 3000tonnes per day. It is situated at a latitude of 0°35'N and a longitude of 34°40'E, and an altitude of between 1420-1490 meters above sea level. The Company was established in 1975, under the Company's Act Cap. 486 of the Laws of Kenya. Operations for the company begun in 1978. The Government of Kenya is the majority shareholder owning 98% shares while Fives Cail Babcock (FCB) and Industrial Development Bank owning the remaining. Annual rainfall experienced by the company ranges between 1500-1800mm and air temperature is between 13°C - 32°C. The company is endowed with water resources from Chalicha Springs and River Kuywa, which traverses its Nucleus Estate. The soils on which sugar crop is grown are predominantly loamy. Sandy loams are found on the uplands while clay loams are found on the lowlands.

III. OBJECTIVES

The study had one main objective;

To analyze the Impact of Total Quality Management Pillars on Kenyan Sugar Industry, a Case of Nzoia Sugar Company Limited.

Specific objectives

1. To establish the relationship between pillars of TQM in Nzoia Sugar Company Ltd.
2. To establish the challenges of implementing TQM to internal and external customers in Nzoia Sugar Company limited.
3. To establish the commitment of employees toward their work in the company towards sustaining TQM.
4. To determine how each pillar affects the overall enhancement of TQM

IV. PROBLEM STATEMENT

TQM has been embraced as a management strategy in Nzoia Sugar Company limited. Implementation of the same does not directly tell its building pillars, however the appointed ISO team has followed the framework of Quality management system as stipulated in the ISO 9001:2008 standard. The gap here to determine the weak and strong pillars and further suggest long term approaches of sustaining the same. Also there is need to identify the level of influence of different carders of employees to the process of TQM implementation

V. METHODOLOGY

This study used is a case study method of research in Nzoia Sugar Company. It takes the form of a qualitative research with qualitative phenomenon. Data collection instruments were questionnaires, interviews and documentary reviews. Mugenda and Mugenda, (1999), explain that the target population should have some observable characteristics, to which the researcher intends to generalize the results of the study A total of 107 questionnaires were returned out of the 139 that were sending out. This research measure the impact of individual pillars or critical success factors of TQM in Nzoia Sugar Company Limited, the effectiveness of how it changes the culture of employees and the profitability of the industry and the overall continuous improvement of the firm.A conceptual framework is designed to link the dependent variable to independent variables. This consisted of ten independent and one dependent variable. A minimum of four questions and a maximum of eight questions were administered to the employees of different cadres in the company on the ten independent variables below.

A separate set of questionnaire was orally administered to the ISO cycle leader to rate the level of TMQ success in the company. The first ten variables in table 2 were considered as independent variables whereas experience and level of education as intervening variables

Dependent variable Y =Direct and Indirect Benefits to Organization (TQM)

Independent Variables

X₁= Customer Focus and Satisfaction

X₂ = Employee Involvement

X₃ =Process Centered

X₄ = Integrated Approach

X₅ = Continuous Improvement

X₆=Fact Based Decision Making

X₇=Communication

X₈ =Top Management Commitment

X₉=Strategic Planning For TQM

X₁₀=Operations Efficiency

The linear regression equation estimated from sample data take the following form.

$$Y_i = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_{10} X_{10} \dots \dots \dots \text{equation (1)}$$

Academic qualification and experience were treated as the intervening variables in this study. Linear regression was conducted using SPSS version 19 to come up with the correlations, and regression coefficient leading to the regression equation 1 below.

VI. FINDINGS OF THE STUDY

TABLE 1.Descriptive Statistics

	Mean	Std. Deviation	N
TQM	3.7739	0.59659	389
INTEGRATED APPROACH	4.0242	0.59245	389
STRATEGIC PLANNING	4.0015	0.7396	389
PROCESS CENTRED	3.8867	0.57426	389
COMMUNICATION	3.8144	0.96134	389
OPERATION EFFICIENCY	3.8097	0.74676	389
TOP MANAGEMENT COMMITMENT	3.7487	0.85466	389
CUSTOMER FOCUS	3.7451	0.59355	389
CONTINUOUS IMPROVEMENT	3.5963	0.75183	389
EMPLOYEE INVOLVEMENT	3.5753	0.90903	389
FACT BASED DECISION	3.5358	0.82877	389

The analysis done with aid of SPSS gave the regression coefficients as shown in the table 4 above. This gives rise to the equation putting all the pillars in consideration. In the equation below, the following abbreviations are explained as CF-Customer Focus, EI-Employee Involvement, PC-Process Centered, IA-Integrated Approach, CI-continuous improvement, FBDM-Fact Based Decision Making, TMC-Top Management Commitment, SPTQM-Strategic Planning for TQM, OE-Operation Efficiency, AQ-academic qualification, EX-Experience

TABLE 2 Regression coefficients

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
	B	Std. Error			
1 (Constant)	.071	.030		2.339	.020
CUSTOMER FOCUS	.081	.007	.080	11.893	.000
EMPLOYEE INVOLVEMENT	.101	.005	.154	21.433	.000
PROCESS CENTRED	.099	.008	.095	12.519	.000

INTEGRATED APPROACH	.068	.009	.067	7.633	.000
CONTINUOUS IMPROVEMENT	.107	.007	.135	15.255	.000
FACT BASED DECISION	.096	.007	.134	14.042	.000
COMMUNICATION	.126	.005	.204	27.220	.000
TOP MANAGEMENT COMMITMENT	.085	.009	.122	9.666	.000
STRATEGIC PLANNING	.155	.009	.192	16.552	.000
OPERATION EFFICIENCY	.059	.007	.074	7.912	.000
ACADEMIC QUALIFICATION	.003	.004	.004	.806	.421
EXPERIENCE	.000	.003	-.001	-.104	.918

a. Dependent Variable: TQM

$$TQM = 0.08 + 0.08CF + 0.153EI + 0.096PC + 0.067IA + 0.134CI + 0.135FBDM + 0.204COM + 0.122TMC + 0.1915SPTQM + 0.074OE + 0.04AQ - 0.01EX \dots \dots \dots \text{equation (1)}$$

All the ten pillars in the study increases as TQM increases, however, the Academic qualification diminishes as TQM is enhanced i.e. has a negative coefficient

VII. CONCLUSION

The ten pillars under test showed both strong and weak relationships in Nzoia Sugar Company Limited. Top management commitment, fact based decision making, and strategic planning for TQM showed the strongest relationship with TQM of 0.896, 0.842, and 0.827 respectively. This means that top management of the company have a pivotal role in the long term sustainability of TQM in the company. Communication is however the weakest pillar of TQM with a correlation of 0.702. Strategic Planning for TQM, Process Centered, and Customer Focus exhibited weak relationships with TQM of 0.339, 0.391 and 0.422 respectively. This brings to the surface that communication is the weakest pillar in the TQM of Nzoia Sugar Company Limited. This poses a threat to the sustainability of quality management of Nzoia Sugar Company limited. Culture of the company affects the implementation of TQM. This is due to fear among the employees in regard to fear of unknown. Top and low carder employees showed more inclination in support program with the staff between 18 to 24 years having highest enthusiasm for TQM. Staffs within 31 to 50 years have lower inclination to TQM program compared to the first category. The company should therefore sensitize the staff more on the importance of TQM putting the weaker pillars in consideration. More research focusing on relationship of TQM and communication ought to be carried out. As the ten pillar are enhanced, it was found that TQM as well improves but at different magnitudes as shown in the regression equation 1. Experience among staff reduces the effectiveness of TQM. This is attributed to most staff relying on earned approaches to problem solutions than the documented procedures and work instructions. The company should therefore more often than not consider the advice of the old and experienced when drawing work instructions and procedures within Nzoia Sugar Company Limited and other sugar firms in the country.

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