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# An Assessment on the Role of Top Management Support Practice on Performance of Steel Manufacturing Companies in Kenya

Wahome Rureri[*1] Prof. Gregory Simiyu Namusonge, PhD [2] Dr. Fred Mugambi Mwirigi, PhD [3]
1.Deputy Principal, Masai Technical Training Institute, P.O Box 125 - 01100, Kajiado
2.Professor, School of Entrepreneurship, Procurement And Management, JKUAT, P.O. Box 62,000 – 00200 Nairobi, Kenya
3.Deputy Commissioner, Academics and Student Affairs, KESRA, Kenya Revenue Authority, P.O. Box 48,240 – 00100 Nairobi, Kenya

**Abstract**
The purpose of this paper was to assess the role of top management support practice in selected steel manufacturing firms in Kenya and its effect on financial performance of the organizations. The study adopted a descriptive survey research design that collected both qualitative and quantitative data through structured questionnaires. The target population was the 46 listed Kenyan Steel Manufacturing Companies. Sample size was determined by the use of Krejcie and Morgan's Sample Size Table. The sample size of the targeted population was 42. Data was collected from Management Representatives or Quality Assurance Managers or their equivalents and had a response rate of 100%. Descriptive statistics was used to analyze quantitative data while qualitative data was used to supplement interpretation of quantitative data. Testing of hypotheses was done using Analysis of Variance. Variance Inflation Factor was used to illustrate the significance of the association between financial performance and top management support practice. The study concludes that top management support practice contributes significantly to the performance of Steel Manufacturing companies in Kenya. Using regression analysis, the study revealed that top management support practice statistically significantly predicted the performance of Steel Manufacturing Companies in Kenya, with F statistic of 74.801 with probability value $p$ of 0.000 ($p < 0.05$). The analysis further revealed that there is a fairly strong correlation between top management support practice and performance of Steel Manufacturing companies in Kenya ($R = 0.807$, $R^2 = 0.652$). The study recommends that top management should allocate more resources towards quality improvement and they should ensure that they set quality goals and distribute them throughout the organization.
**Keywords**: Quality Management Systems, Organizational Performance, Kenyan Steel Manufacturing Sector, Top Management Support.

## 1.0 Introduction

In such a competitive environment resulted from world globalization and liberalization, firms survive with much difficulty unless they create the competitive advantage over their competitors (Agus, 2004). Customers' needs become increasingly difficult to meet. They demand for faster response, better value for money, products or services, more product varieties, expect lower prices, reliable delivery, and product integrity. Many manufacturing industries have awakened due to this phenomenon to become aware of the need to prioritize quality as the competitive marketing strategy in the global market. The principles of Quality Management Systems (QMS) have been successfully adopted and applied in the manufacturing sector by most of the developed countries. Over the past periods of International Organization for Standardization (ISO) certification as a quality management system in the manufacturing sector, customers and major stakeholders of these organizations have raised dissatisfaction on the results as they sometimes do not relate to quality service delivery on the ground which is expected to improve on organizational performance as perceived and received by the public. Quality management system (QMS) is a systematic approach to proactively managing quality based on documented standards and operating procedures. With the increasing competitive, business survival pressure and the dynamic, changing customer-oriented environment, a certified quality management system has been proposed to improve organizational performance and has generated a substantial amount of interest among managers and researchers (Sousa & Voss, 2002). Certified quality systems are progressively being adopted by all types of industries worldwide due to the fact that many business organizations are actively seeking ways in which they can improve the products and services they offer (Alonso-Almeida and Rudriguez-Anton, 2011). For long term survival organizations must adopt a broad, strong strategy that gives a sustainable competitive advantage and superior services that distinguish the organization from its competitors.

## 1.1 Kenya's Steel Manufacturing Sector

Industry comprises of manufacturing, construction and mining activities. Manufacturing is the art of transformation of raw materials into either intermediate goods or final products through mechanized process. Kenya's steel manufacturing sector is among the key productive sectors identified for economic growth and development because of its immense potential for wealth, employment creation and poverty alleviation. In

 

addition, the sector will continue to provide impetus towards achievement of Millennium Development Goals (MDGs) both in the medium and long term particularly goal one on Eradication of extreme Poverty and hunger and goal eight on Global Partnerships for Development (Government of Kenya, 2002). According to the Manufacturing and Industry Sector Report (2011), the sector is expected to play a key role in the growth of the Kenyan economy. The overall goal of the sector is to increase its contribution to Gross Domestic Product (GDP) by at least 10 per cent per annum. In addition the sector is expected to register a growth of 10 per cent in the medium term period, (2008-2012) this is to be driven largely by local, regional and global markets. Industrial activity, concentrated around the two major urban centres, Nairobi and Mombasa, is dominated by food-processing industries such as grain milling, beer production, and sugarcane crushing, and the fabrication of consumer goods, e.g., vehicles from kits.

A study by Muturi and Ochieng (2015) on the impact of ISO 9001 implementation on Organizational Performance in Kenya found that ISO 9001 certification has had a positive influence on the organizations' return on assets thus improving its performance. They however did not specifically deal with the manufacturing sector. Ruinge & Kimani, (2015) studied on the relationship between selected total quality management practices employed by public secondary schools principals and students' performance in Kenya Certificate of Secondary Education in Kiambu County, Kenya (Ruinge & Kimani, 2015). The findings revealed that, school focus on meeting student's needs, establishment of performance objectives (goal setting) on curricular activities and embracement of high level of communication on curricular issues especially from the students, enhance students' performance in national examinations.

Although a number of studies have been done on the effects of certified quality management systems on organizational performance, there is limited information within the context of steel manufacturing industry in Kenya. These studies, Muturi and Ochieng (2015), Ruinge and Kimani (2015), Matata and Wafula (2015) did not explore the effects of certified quality management systems on performance of steel manufacturing companies in Kenya. This study empirically examined the extent to which top management support influences the relationship between certified Quality Management System practices and organizational performance in Kenyan steel manufacturing sector.

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**1.2 Top Management Support in the Steel Manufacturing Companies**

Top management can be referred to as the corner stone of a successful Quality Management System programme. Wahid and Corner's (2009) study on service firms in Malaysia established that ISO implementation is a critical factor on performance. The study ranked the support and involvement of the top managements a most critical factor. The conclusion made from the results of the 83.33% of the respondents interviewed stated that the success and sustainability of ISO 9001 is influenced by top management. Javed (2015), conducted a study whose objective was to empirically investigate the impact of top management commitment on the success of quality management. The Correlation analysis explained a positive moderate relationship between top management commitment and success of quality management. That is, top management commitment is positively related to the success of quality management in an organization. Kiprotich (2014), studied on the degree, to which top management sets up quality management objectives and strategies, provides and allocates necessary resources, contributes in quality improvement efforts, and assesses quality management implementation and performance. Quality Management System is a way of life for a company. It has to be introduced and led by top management. Kiprotich (2014), noted that attempts to implement QMS often fail because top management doesn't lead and get committed - instead it delegates and pays lip service. Commitment and personal involvement is required from top management in creating and deploying clear quality values and goals consistent with the objectives of the company, and in creating and deploying well defined systems, methods and performance measures for achieving those goals. These systems and methods guide all quality activities and encourage participation by all employees (Sturman, 2014).

Top Management in organizations maintains the leadership responsibility for the quality management systems, with involvement of all organizational staffs. This responsibility includes; ensuring the availability of resources to all staff to ensure improved service delivery is achieved for the realization of the organization's vision and mission. Establishing and reviewing the quality policy and quality objectives quarterly to ensure compliance to the quality standards (Matata, 2015). Leaders should provide a clear vision of the organization's future and set challenging goals and targets. It is only through unity of purpose and direction of employees that achieves organization's objectives. Leader should maintain internal environment where people can get fully involved by establishing trust and eliminating fear. Cole & Phil (2011) defines leadership as the process of influencing others to understand and agree about what needs to be done and how to do it, and the process of facilitating individual and collective efforts to accomplish shared objectives. Lee (2011), investigated top management commitment role in maintenance of ISO 9001:2008 and in outcomes of Quality Management System in Algeria, practices and implementation in two large service organizations. The investigation concerned with top management commitment and leadership from different approaches such as involvement in quality

 

improvement, providing necessary resources and showing steady commitment to quality perfection. Through applying different analysis techniques, the results showed a variation in extent of top management commitment role in ISO 9001:2008 maintenance and TQM system and practices between the two organizations. The respondents of the first company reflected higher positive statements on their top management. The final conclusion of the study emphasized on the positive role of top management in ISO 9001:2008 maintenance and TQM system outcomes (Lee, 2011).

An investigation into ISO 9001:2008 certified public universities operating in Kenya and Uganda to identify the most important factor for the implementation of TQM revealed that management leadership and commitment are imperative factors in implementation of TQM (Gudo, 2016). From a service quality approach Mustafa (2011), found that leadership as TQM construct has a strong positive association with service quality in the commercial banks in Malaysia. The same degree of importance of management leadership is supported by findings of a study conducted by Charles Kombo Okioga, (2012). Outcomes of the study showed visionary leadership as one of most four critical human resource related factors that promise successful TQM implementation in high education institutes in Kenya. The authors discussed vitality and criticality function of visionary leadership in high education institutions. This importance occurs in involvement of top executives in creating sustains and customer orientation work dimension and presenting apparent quality values in their institutes. The positive impact of leadership in TQM in high education has been outlined in a study that assigned weights to the criteria of the Malcolm Baldrige National. It is therefore apparent that top management support is pertinent to the success of Quality Management System implementation in organizational settings. If leadership roles in TQM aren't taken up by Chief Executive Officers (CEO's) and their line senior managers, nothing much in ways of changes would be implemented and any such won't stand the test of time.

## 2.0 Literature Review

### 2.1 European Foundation for Quality Management (EFQM) Model

The European Foundation for Quality Management (EFQM) Model is based upon nine criteria for quality management. There are five enablers (criteria covering the basis of what a company does) and four results (criteria covering what a company achieves). The result is a model that refrains from prescribing any one methodology, but rather recognizes the diversity in quality management methodologies. The nine criteria as defined by the EFQM Model are: focus on results – pleasing company stakeholders with results achieved by stakeholders is a primary focus; focus on customers – it is vital that a company's quality management leads to customer satisfaction; Management Focus – constancy of purpose and consistent, visionary leadership, process and facts, in which the management breaks down everything into systems, processes and facts for easy monitoring ,training; and Involving Employees – Employees should receive professional development opportunities and be encouraged to remain involved in the company; Continuous Learning – everyone should be provided with opportunities for learning on the job, Developing Partnerships – It is important to encourage partnerships that add value to the company's improvement process; Social Responsibility of the Corporation – The company should always act in a way where it is responsible towards the environment and society at large (James & William, 2008, Goetsch & Davis, 2013). This model was helpful in relating quality management to employee involvement and performance measurement.

### 2.2 Six Sigma Theory

Six Sigma is one of the most effective problem solving methodologies for improving business and organizational performance. Other persons described Six Sigma as a disciplined and statistically based approach for improving product and process quality. Also, Six Sigma refers to a business process that allows organizations to improve drastically their bottom line by designing and monitoring everyday business activities in ways that minimize waste and resources while increasing customer satisfaction (Harry & Schroeder, 2000). Three of the Six Sigma practices have been found to have a very strong relationship with the seven traditional Quality Management practices and their effects on performance. To better illustrate the complex relationships of these practices, the model adopted the classification of infrastructure and core practices proposed by where the infrastructure practices are to create an organizational environment supporting Quality Management implementation, and the core practices focus on applying tools and techniques in continuous improvement ( (Flynn & Sakakibara, 1995, Sousa & Voss, 2002). The model starts with top management support on the left to highlight the ultimate importance of senior managers' leadership and support for Quality Management implementation. The upper half consists of traditional Quality Management infrastructure practices (i.e., customer relationship, supplier relationship, and workforce management) and traditional Quality Management core practices (i.e., quality information, product/service design, and process management). The lower half presents three Six Sigma practices. Six Sigma role structure is considered as an infrastructure practice in that it is part of human resource infrastructure to assist the deployment of Six Sigma (Antony & Banuelas, 2002). Six Sigma structured improvement procedure and Six Sigma focus on metrics are two core practices as they represent the

 

methodological elements of Six Sigma by emphasizing use of scientific methods, statistical tools, and quantitative metrics (Choo, Linderman, & Schroeder, 2004). This model suggests that the Six Sigma practices and traditional Quality Management practices work together to improve quality performance and business performance.

## 3.0 Research Methodology

### 3.1 Research Design

The study adopted a descriptive research design that enabled the researcher gather information exhaustively on the subject matter. The descriptive approach was appropriate for this study not only in validating finding but also in the formulation of knowledge and providing solutions to the problems. The researcher used this approach since it involves data collection, measurement, classification, analysis, comparison and interpretation to provide report summary such as measures of central tendency and correlation between variables. The research design also enabled the study to combine both quantitative and qualitative research approaches in assessing the role of top management support on performance of Steel Manufacturing Companies in Kenya. The mixed research design that consist both qualitative and quantitative approaches allows researcher to collect information from the people on their habits, opinions, attitudes and any other educational or social issues (Namusonge, 2010). Quantitative approach strives for precision by focusing on items that can be counted into predetermined categories and subjected to statistical analysis (Simiyu, 2012). An extensive literature and secondary data review were conducted to establish the current level of thinking within the field of top management support as a practice in quality management. Building on the secondary research data the study next focused on testing the hypotheses. Data collected was analyzed using Statistical Package for Social Sciences (SPSS). Variance inflation factor was used to illustrate the significance of the association between performance and top management support.

### 3.2 Target Population

The target population in this study was 46 steel manufacturing firms in Kenya listed in the Kenyan Business Directory 2015 (Directory, 2015). An accessible population was drawn from the target population according to (Mugenda & Mugenda, 2003) who pointed out that it is impractical to select a representative sample from the target population because it may be difficult to identify individual members.

### 3.3 Sampling Procedure and Sample Size

This study employed sampling whose purpose is to secure a representative group which enabled the study gain information about a population. The study used simple random sampling. This type of sampling is also known as chance sampling or probability sampling where each and every item in the population has an equal chance of inclusion in the sample and each one of the possible samples, in case of finite universe, has the same probability of being selected (Kothari, 2004). Sample size was determined using Krejcie & Morgan, (1970). According to Krejcie and Morgan (1970), when N is 46, at a confidence level of 95 percent (giving a margin error of 0.05), the sample size is 42. The specific participants will be those occupying position 1 to 42 in the sampling frame according to the Kenyan Business Directory, 2015.

### 3.4 Data Collection Method

The study used questionnaires to collect data from Management Representatives or Quality Assurance Managers or their equivalents in 42 Kenyan manufacturing firms in the metal and allied sector. The questionnaire comprised of both structured and unstructured questions. A structured questionnaire format can be used to collect quantitative data which can produce numerical or quantifiable data (Mugenda and Mugenda, 2003). The unstructured section of the questionnaire was used to collect the qualitative data which provides a complete detailed description of the perceptions, suggestions, experiences and opinions regarding the effects of certified quality management system on organizational performance. Secondary data was also collected from various sources.

### 3.5 Validity and Reliability

To check and improve reliability and validity, a pilot study was undertaken in five companies that did not form part of the main study, and which was approximately 10% of the total sample ( Mugenda & Mugenda, 2003). Five questionnaires were used to collect data in the five companies. The purpose of pilot testing was to establish the accuracy and appropriateness of the research design and data collection instruments and to provide proxy data for selection of a probability sample (Mark, Philip, & Adrian, 2009). To enhance validity, the pilot results led to improvements and additions in the questionnaire. Reliability analysis for testing reliability and the internal consistency of the data items was conducted using the Cronbach's alpha. The respondents were purposefully arrived at. As a rule of thumb, acceptable alpha had to be at least 0.70 or above. Findings attained a Cronbach alpha score of 0.736 that indicated an acceptable level of internal consistency in the questionnaire. After pilot

 

testing, the questionnaire was revised to incorporate the feedback that was provided.

### 3.6 Data Processing and Analysis

Data was entered into Statistical Package for Social Scientists (SPSS) after which descriptive and inferential statistics were obtained. Frequency distributions were obtained for all personal data or classification variables. Means and percentages were obtained for the interval-scaled independent and dependent variables. Inferential statistics were employed with variance inflation factor and multiple regression analysis done. Variance inflation factor (VIF) and descriptive statistics were conducted to test the multicollinearity problem and the usefulness of the data set. Variance inflation factor *(*VIF*)* quantifies how much the variance is inflated. It is a measure of how much the variance of the estimated regression coefficient $b_k$ is "inflated" by the existence of correlation among the predictor variables in the model. The standard errors and hence the variances of the estimated coefficients are inflated when multicollinearity exists. A VIF of 1 means that there is no correlation among the $k^{th}$ predictor and the remaining predictor variables, and hence the variance of $b_k$ is not inflated at all. The general rule of thumb is that VIFs exceeding 4 warrant further investigations, while VIFs exceeding 10 are signs of serious multicollinearity requiring correction. Test for significance of coefficient of multiple correlations was determined by use of F- test. This test checked the significance of the whole regression model with the prediction that top management support has no influence on performance of steel manufacturing companies. Multiple regression analysis was used to predict the amount of variance accounted for the criterion (dependent variable) from a set of predictors (independent variables). The research model for this study is as shown;

$Y = \beta 0 + \beta 1X1 + Ɛ$ (Ott & Longnecker, 2010)

Where;

Y = Represents the dependent variable; Performance of Steel Manufacturing Company

$\boldsymbol{\beta_0}$ = Constant of the Model

β1, is the regression coefficient

Ɛ = Random Error of the Model

X1 = Top Management Support

### 4.0 Results and Discussion

The regression analysis revealed the relationship between the dependent variable, performance of steel manufacturing companies in Kenya and independent variable which is top management support practice. From Table 4.1, R value is 0.807 which represents the simple correlation. It indicates a fairly strong degree of correlation between top management support and organizational performance of Steel manufacturing companies in Kenya. The $R^2$ value indicates how much of the dependent variable, "organizational performance", can be explained by the independent variable, "top management support". In this case, 0.652 can be explained, which is strong. This implies that the performance being experienced by the steel manufacturing companies in Kenya is driven by top management support to a moderate extent. In the context of QMS, this indicates that top management support practice in the steel manufacturing companies has significantly contributed to improved quality management and in the long run has led to improved organizational performance.

**Table 4.1: Model Summary for Top Management Support practice**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | 0.807[a] | 0.652 | 0.643 | 0.508 |

a. Predictors: (Constant), Top Management Support

Table 4.2 shows results of analysis of variance (ANOVA) between top management support and organizational performance of the steel manufacturing companies in Kenya. The results indicate that the regression model predicts the outcome variable significantly. This indicates the statistical significance of the regression model that was applied. An attained F statistic of 74.809 supported by a probability ($p$) value of 0.000 ($p < 0.05$), indicated that the model was significant. This indicates that on overall, the model applied can statistically significantly predict the outcome variable.

**Table 4.2: Analysis of Variance ANOVA[a] (F-Test) for Top Management Support practice**

| Model 1 | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 19.308 | 1 | 19.308 | 74.899 | 0.000[b] |
| Residual | 10.311 | 40 | 0.258 | | |
| Total | 29.619 | 41 | | | |

a. Dependent Variable: Organizational Performance of steel manufacturing companies in Kenya.

b. Predictors: (Constant), Top Management Support practice, $X_1$

Results of statistical analysis shown in Table 4.3 provide the information needed to predict organizational performance from Top Management Support. Both the constant and Top Management Support contributes significantly to the model. The linear regression model is presented as follows; $Y = \beta_0 + \beta 1X1 + Ɛ$; where Y = Performance of Steel Manufacturing Companies in Kenya; $\beta_0$, β1, α = Coefficient of Performance of Steel

 

manufacturing companies; X1 = Top Management Support practice. Therefore $Y = 1.62 + 0.551X_1 + Ɛ$

The collinearity statistics returned a VIF value of 3. The interpretation was guided by the range where VIF = 1 showed no correlation, 1 < VIF < 5 showed moderately correlation of variables while VIF > 5 to 10 meant highly correlated. In this case, the results showed that employee's involvement and organizational performance are moderately correlated. The results are shown below;

**Table 4.3: Coefficient and the Variance Inflation Factor for Top Management Support practice**

| Coefficients[a] | | | | | | |
|---|---|---|---|---|---|---|
| Model 1 | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Collinearity Statistics |
| | B | Std. Error | Beta | | | VIF |
| (Constant) | 1.62 | 0.201 | | 0.805 | 0.0426 | |
| Top Management Support | 0.551 | 0.064 | 0.807 | 8.654 | 0.000 | 1.000 |

a. Dependent Variable: Performance of Steel Manufacturing companies in Kenya
b. Predictors: (Constant), Top Management Support practice $X_1$

The findings concur Chin (2003), who focused on the impact of ISO and the firm's performance and established that the most important factor in the standardization process and subsequent certification is the top management. In the same vein, Chin-Keng (2011), indicated that top management needed to be more helpful and effective towards TQM practices and implementation. The findings in this current study suggest that there are deficiencies from the top management's commitment to quality management in terms of involving and training employees, despite the fact that their role in achieving quality performance is very crucial. The study suggests that the top management in an organization is responsible for the active encouragement in the implementation of the QMS.

## 5.0 Conclusion

The study concludes that top management support practice contributes significantly to the performance of Steel Manufacturing companies in Kenya. Regression analysis results support the finding with F statistic of 74.809 with a probability ($p$) value of 0.000 ($p < 0.05$) indicating that the model was significant. Correlation analysis results shows that there is a fairly strong correlation between top management support practice and the performance of Steel Manufacturing companies in Kenya, (R=0.807 and $R^2$=0.652). The findings from descriptive analysis indicates that majority of the steel manufacturing companies, top management encourages employee involvement in the quality improvement process while in most of the companies, internal process improvement has led to externally observable improvements. However, some of the shortcomings established in the study affecting majority of the steel manufacturing companies in Kenya include failure by top management to allocate adequate resources towards efforts of improving quality. This is a failure in implementation of the quality management system but not the system itself.

## 6.0 Recommendations

The study recommends that top management in the steel manufacturing companies should take responsiblity for the active encouragement in the implementation of the QMS. They should allocate more resources towards quality improvement and they should ensure that they set quality goals and distribute them throughout the organization. The person in charge of quality management should report directly to the chief executive officer.

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