

Impact of Total Quality Management Practices on Sustainability And Company Performance: A Case Study of Miro Forestry Company Ltd in Mile 91, Sierra Leone

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Abstract

Organizations globally are increasingly adapting to dynamic business environments, where management must consistently identify strategies to maintain or enhance competitive advantage. Total Quality Management (TQM) has emerged as a critical approach for manufacturing firms seeking to improve operational efficiency and effectiveness. Although previous research has explored the relationship between TQM practices and organizational performance, the findings have been inconclusive, signaling the need for further investigation. Notably, in Sierra Leone, limited research exists on the effect of TQM on the performance of manufacturing firms, revealing a knowledge gap.

This study addresses this gap by examining the impact of TQM practices on the performance of manufacturing firms in Sierra Leone, with a specific focus on Miro Forestry Company Ltd. The main objectives of the study are to: (1) assess the impact of customer focus on organizational performance, (2) evaluate the role of top management commitment in enhancing performance, (3) examine the effect of continuous improvement on performance outcomes, and (4) determine the influence of employee involvement on organizational performance.

The study employed a descriptive quantitative research design. A sample of 121 employees was selected from a target population of 400 using stratified random sampling. Data were collected through self-administered questionnaires and analyzed using SPSS alongside correlation analyses to assess relationships between variables. The findings were presented using figures and tables.

Results show that TQM practices, which mainly involve customer focus, top management commitment, continuous improvement, and employee involvement were found to positively impact organizational performance. Customer focus significantly enhances customer satisfaction, while top management commitment and continuous improvement contribute to overall performance. Employee involvement also positively influences performance outcomes.

The study recommends that companies should foster a robust organizational culture characterized by trust, respect, and a shared sense of purpose. Additionally, continuous improvement should remain a central focus to sustain performance. Management is also advised to prioritize quality management by motivating employees and offering incentives to support TQM initiatives.

Keywords: Total Quality Management (TQM), Organizational Performance, Customer Focus, Continuous Improvement, Employee Involvement

1.0 Introduction

Total Quality Management (TQM) has evolved into a pivotal management approach in many manufacturing firms, integrating quality principles into all aspects of business operations. As global competition intensifies and customer demand for high-quality products grows, companies have come to realize that their survival hinges on consistently delivering superior products that meet consumer needs. As a result, considerable resources are devoted with the aim of improving both products and services.

In the manufacturing sector, businesses have adopted modern methodologies such as Concurrent Engineering, Lean Production, Just-In-Time (JIT), Total Quality Management (TQM), and Business Process

Re-engineering (BPR) to enhance operational efficiency and overall performance. These methodologies primarily aim to optimize organizational outcomes both internally and externally concerning their market objectives. This study focus on Total Quality Management (TQM) as an index for sustainability of company's performance.

The International Organization for Standardization (ISO 8402:1994) defines TQM as a management approach centered on quality, with the active participation of all members of the organization to achieve long-term success through customer satisfaction and societal benefits. Organizational performance is closely linked to the successful implementation of quality management practices, which has a direct impact on financial performance metrics such as sales growth, return on investment, and market share expansion (Hendricks & Singhal, 2007).

Despite some variability in how TQM influences different performance measures, research consistently demonstrates a strong positive relationship between TQM practices and quality performance (Prajogo & Sohal, 2003). Therefore, understanding the implementation of TQM and its impact on organizational performance remains a critical area for further research.

1.1 Problem Analysis

The relationship between Total Quality Management (TQM) initiatives and improved organizational performance remains a topic of ongoing debate within the field of management. While some researchers argue that TQM programs are ineffective in enhancing organizational outcomes, others suggest that these initiatives significantly improve company performance. For instance, Mosadeghrad (2012) posits that TQM may lack effectiveness in certain contexts, and studies by Shukla and Agrawal (2012) and Leonard and McAdam (2008) assert that it is often difficult to establish a clear and direct connection between TQM practices and enhanced organizational performance. On the contrary, other scholars, such as Ngambi and Nkemkiafu (2015), have presented evidence that investments in TQM contribute positively to organizational outcomes, including improved performance metrics.

While the literature predominantly supports the positive influence of TQM on organizational performance, much of the research has focused on developed countries, overlooking the unique challenges faced by organizations in developing nations like Sierra Leone. Additionally, many studies emphasize quality performance rather than overall organizational outcomes. There is a need for empirical research that specifically examines how TQM practices, particularly customer focus, top management commitment, continuous improvement, and employee involvement, influence organizational performance in Sierra Leone's manufacturing sector. This study aims to address this gap by providing a focused examination of TQM's impact on Miro Forestry Company.

1.2 Aim and Objectives

The primary aim of this study is to assess the impact of Total Quality Management (TQM) practices on organizational performance in the manufacturing sector in Sierra Leone, with a specific focus on Miro Forestry Company.

The following objectives are pertinent to this study: (a) To determine the influence of customer focus on the organizational performance of a company. (b) To assess the role of top management's commitment in enhancing organizational performance at Miro Forestry Company. (c) To investigate the impact of continuous improvement initiatives on the performance outcomes of Miro Forestry Company (d) To evaluate the effect of employee's satisfaction on the overall organizational performance at Miro Forestry Company.

2.0 Literature Review

Numerous studies affirm the positive impact of TQM on organizational performance. Ngambi and Nkemkiafu (2015) found that TQM practices significantly enhance organizational outcomes. Santos-Vijande and Alvarez-Gonzalez (2007) analyzed data from American firms, establishing a strong link between TQM implementation and improved organizational performance. However, these studies also suggest that other factors, such as industry-specific conditions and organizational resources, may influence the degree to which TQM contributes to performance gains.

Prajogo and Brown (2004) investigated Australian organizations and found a positive correlation between TQM practices and quality performance. Brah and Tee (2002) similarly identified a strong relationship

between TQM constructs and performance in Singaporean companies. However, these studies often concentrated on quality performance, neglecting broader organizational performance measures.

Subsequent studies explored the financial benefits of TQM implementation. Fotopoulos et al. (2009) reported that TQM enhances financial performance through sales growth, cost reductions, and increased return on investment. Nevertheless, these studies did not comprehensively examine how specific TQM components, such as customer focus and continuous improvement, affect overall organizational outcomes.

Shaohan (2009) analyzed the impact of customer focus on organizational performance, finding that customer orientation significantly influences production and financial performance. Similarly, Vera (2001) explored the relationship between employee involvement and turnover, suggesting that greater involvement leads to improved organizational outcomes.

Studies by Santos-Vijande and Alvarez-Gonzalez (2007) and Barros et al. (2014) highlighted the importance of behavioral factors, such as top management commitment and employee empowerment, in driving competitive advantage. Their findings emphasize that effective people management and alignment with TQM objectives are crucial for sustained organizational growth.

3.0 Methodology

3.1 The study Area

Miro, a prominent player in the forestry and timber industry, has established a strong operational presence in Royanka Village, situated near Mile 91 in Sierra Leone's Tonkolili District. Specializing in the production of high-quality plywood, the company serves both regional and international construction markets. In addition to plywood, Miro manufactures transmission poles essential for electrification projects, as well as a variety of timber panel products tailored to diverse construction needs.

The company's success is underpinned by its stewardship of over 16,000 hectares of sustainably managed plantations. This vast expanse of forest is not only a key resource for Miro's operations but also serves as a model for responsible forestry practices. The company has cultivated a workforce of nearly 2,000 employees, many of whom are local, contributing significantly to the socio-economic development of the region.

Miro's business has been marked by steady growth, with annual plantation expansions ranging from 1,500 to 3,000 hectares. These expansions are a reflection of the company's long-term vision to meet the growing global demand for sustainable timber products. In recent years, Miro has undertaken several innovative initiatives to diversify its product offerings and strengthen its industrial timber products division. Among these efforts are pilot projects in veneer production, sawmilling, and edge-glue board manufacturing. These ventures signify a strategic move to add value to its raw timber output and cater to specialized markets.

As wood production from Miro's plantations continues to increase, the company is well-positioned for further expansion. This growing supply of sustainably sourced timber will enable Miro to scale up its operations and explore new markets, solidifying its role as a leader in the timber industry both in Sierra Leone and internationally. Looking forward, the company's commitment to innovation, sustainability, and local development is likely to drive its continued success and expansion in the forestry and timber sector.



Figure 1: Map showing the study area

3.2 Research Design

This study employed a descriptive quantitative research design, which involves gathering and analyzing data to describe the prevailing conditions, trends, events, and relationships among variables at a specific point in time. This research design allows for an in-depth examination of the existing situation, making it the most suitable methodology for achieving the research objectives.

3.3 Study Population

For this research, the target population consists of the employees of Mabati Rolling Mills, specifically those from the Athi River branch. According to the Human Resource Department, the total number of employees at this location is 400.

3.4 Sampling Design

Stratified random sampling technique was employed to select respondents, categorizing employees based on their organizational levels. Specifically, the study sampled 30% of the 400 employees from top, middle, and lower management levels as presented in Table 1.

Table1: Target Population

Target Population	Population	Percentage sampled (%)	Sample size
Top Level Management	42	30	13
Middle Level Management	128	30	39
Low Level Management	230	30	69
Total	400		121

3.5 Data Collection Procedures

This research incorporated both primary and secondary data sources. Primary data were collected using structured questionnaire, which includes both closed-ended and open-ended questions to facilitate comprehensive data analysis. When immediate completion was not possible, a drop-and-pick approach was utilized, allowing respondents to complete the questionnaire at their convenience over a two-week time frame.

Secondary data were also collected to assess organizational performance, particularly focusing on profitability and market share, by accessing the company’s website and published reports.

3.6 Data Analysis and Presentation

Upon concluding the data collection phase, the quantitative data were organized, coded, summarized, and entered into a computer program for analysis using the Statistical Package for Social Sciences (SPSS).

The study conducted correlation analysis with Pearson’s Correlation Coefficient to test the strength of association/relationship between the research variables. Correlation is the measure of the relationship or association between two continuous numeric variables. Correlation coefficient can range from -1.00 to +1.00. The value of -1.00 represents a perfect negative correlation while value +1.00 represents a perfect positive correlation. A positive correlation between two variables means that if one increases, the other one increases. On the other hand, a negative correlation means that if one increases the other one decrease. A value of 0.00 represents a lack of correlation. The findings are presented in Table 2.

4.0 Results And Discussion

4.1 Gender Distribution of Employees

The gender distribution of the respondents, revealed significant insights into the representation of males and females within the management positions at Mabati Rolling Mills.

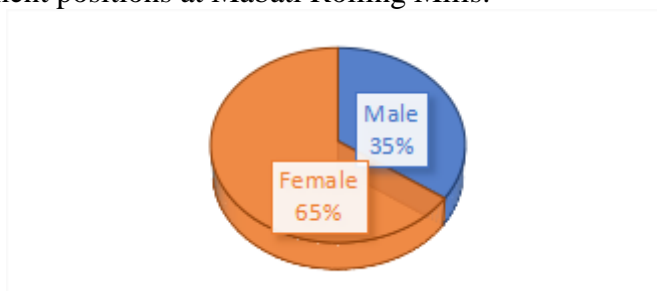


Figure 2: Gender distribution of employees

The findings presented in Figure 2 indicated that 65% of the management roles are held by males, establishing them as the majority group within the organizational hierarchy. This predominance of male leadership may reflect broader societal trends in the workforce, where male representation in management has historically been higher.

Conversely, females constituted 35% of the management positions. While this percentage represents a minority, it is noteworthy that the company complies with constitutional requirements, as women occupy more than one-third of the management roles. This compliance indicates a commitment to gender diversity and inclusivity in leadership, aligning with initiatives aimed at promoting equal opportunities for women in the workplace.

Furthermore, the presence of women in management positions can be interpreted as a positive step towards enhancing diversity within the organization. It may contribute to varied perspectives in decision-making processes and help foster an inclusive corporate culture. The company's efforts in promoting female representation in management may also enhance its reputation as an employer committed to gender equality, potentially attracting diverse talent in the future.

4.2 Age Distribution of Employees

The study reveals that the 53% of employees fell within the 41 to 50-year age range. While 30.9% were between 31 and 40 years as presented in Figure 3. These results suggest that as individuals grow older, their likelihood of attaining management positions increases, likely due to the accumulation of experience, which enhances their eligibility for leadership roles.

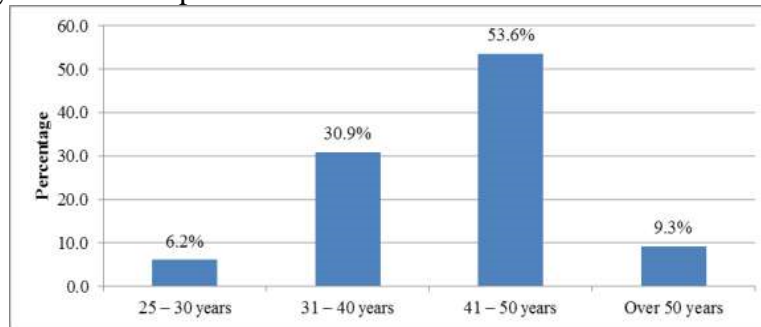


Figure 3: A bar chart showing age distribution of employees

4.3 Educational Status of Employees

The findings indicate that 56.7% are bachelor's degrees holders, while 39.2% possessed diplomas. Only 4.1% of employees have postgraduate degrees as shown in Figure 4. These results suggest that Miro Company mostly hire educated employees in its operations.

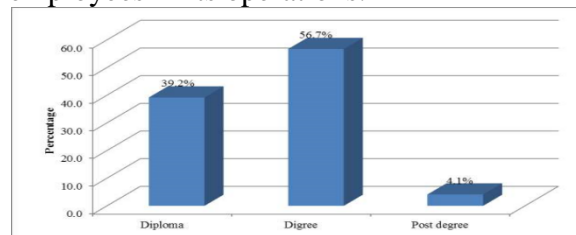


Figure 4: Educational status of employees

4.4 Length of Service of Employees in the Organization

Employees were asked to indicate how long they had been employed at Miro Company with the results illustrated in Figure 5.

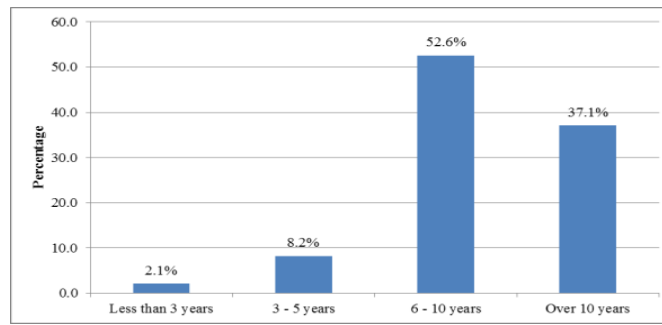


Figure 5: Length of service of employees at Miro Company

The findings reveal that 52.6% of employees had worked in the Miro Company for a period of six to ten years. Additionally, 37.1% had been with the company for more than ten years.

4.5 Organizational Performance

Result of the evaluation on the organization performance of Miro is presented in Figure 6.

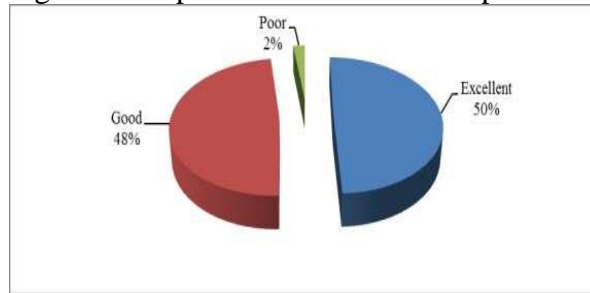


Figure 6: Evaluation of Organizational Performance

The findings indicate that 50% of respondents rated the organization's performance as excellent, while 48% considered it to be good. These results suggest that the majority of employees perceived the company as performing well both in meeting employees satisfaction and production as presented in Figure 7.

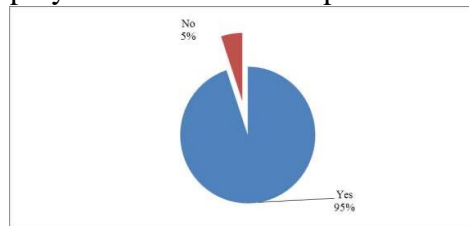


Figure 7: Company's performance on employees' satisfaction

The researchers investigated factors which influence organizational performance. The findings revealed that customer focus (33%), top management commitment (42%), continuous improvement (17%) and employees' involvement (8%) are the key factors influencing organizational performance. The findings of the study are in accordance with Mele and Colurcio (2006) who noted that customer satisfaction is a basic principle of TQM which emphasizes on creating value for customer and which results into organizational development and therefore becomes the key focus for everyone in the organization.

Further investigation was done on whether the Miro Forest Company focused on the current and future customer needs. The findings are presented in Figure 7.

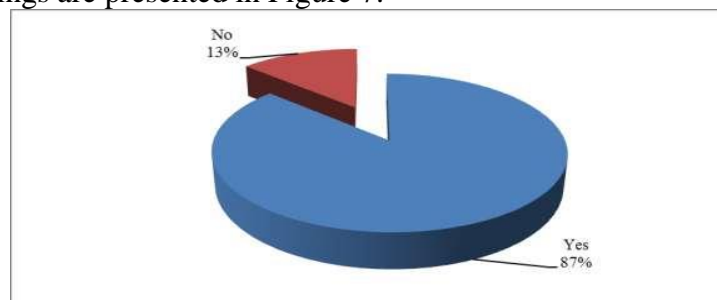


Figure 7: Organizational focus on understanding current and future customer needs

The findings clearly indicated that Miro Forest Company is keen on understanding the needs of the customers both now and in future. These findings concur with Hackman and Wageman (1995) who in their study noted that one of the most frequently used TQM practices is obtaining information about customers so as to continually understand customer needs.

4.7 Benefits of Customer Focus in the Organization

The benefits of customer focus in Miro Forest Company was assessed based on three parameters namely (a) Increased revenue and market share obtained through flexible and fast response to market opportunities. (b) Increased use of the organization’s resource to enhance customer’s satisfaction. (c) Improved customer loyalty leading to repeat business. Results are shown in Figure 8.



Figure 8: Benefits of customer focus in the Miro Forest Company

The results of the study show that majority of the respondents (93.95%) indicated that one of the benefits of the customer focus was that there was increased revenue and market share which was obtained through flexible and fast response to market opportunities. The results of the study further show that 85.7% of the respondents indicated that indeed there was increased use of the organization’s resources to enhance customer satisfaction. 92.9% of the respondents agreed that there was improved customer loyalty which led to repeat businesses. These findings are in agreement with Abu Saleh et al (2016) who noted that by focusing on the customer needs, the organization will achieve organizational performance in terms of customer satisfaction, efficiency and profitability.

4.8 Effect of Top Management Commitment on Organizational Performance

The respondents were asked to indicate the extent to which the management leadership ensured there was conducive atmosphere for people to become fully involved in achieving the organization’s objectives. The findings are presented in Figure 9.

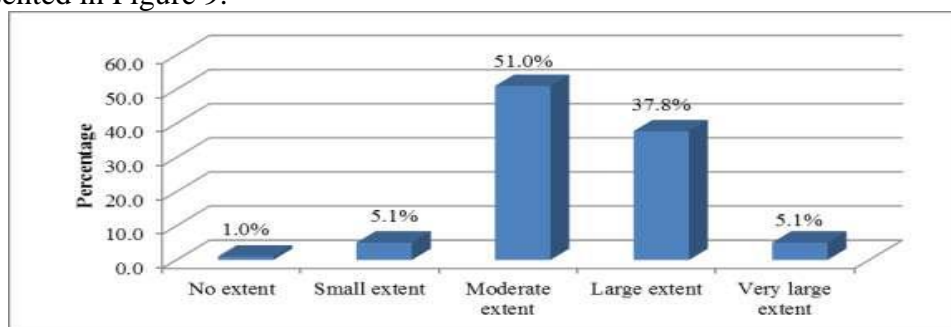


Figure 9: Conducive atmosphere for involvement and achievement of company’s objectives

4.10 Effect of Continuous Improvement on Organizational Performance

The extent to which management ensures continuous improvement of products and services in the firm was investigated. The findings are presented in Figure 10. The results of the study reveal that continuous improvement of products and services to a large extent contributes to organizational performance.

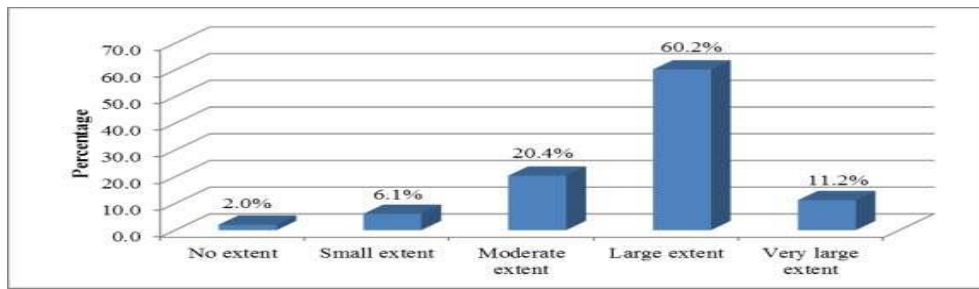


Figure 10: Management Ensured Continuous Improvement of Products and Services

4.11 Effect of Employees' participation on Organizational Performance

The study sought to determine whether employees at all levels fully participate in achieving the company's objectives. The findings are presented in Figure 10.

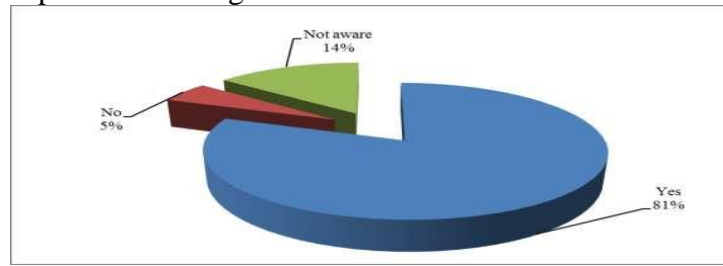


Figure 10: Employees' participation to achieve company's objectives

The study results show that 81% of the respondents indicated that employees at all levels fully participate in implementing the activities of the company to achieve the objectives and hence the targeted goal of improving both performance and profitability.

4.12 Correlation Analysis

Table 2: Correlation Analysis

		Customer focus	Top management commitment	Continuous improvement	Employee involvement	Organizational performance
Customer focus	Pearson Corr	1				
	Sig. (2-tailed)	.000				
Top management commitment	Pearson Corr	.512**	1			
	Sig. (2-tailed)	.000	.000			
Continuous improvement	Pearson Corr	.648**	.745**	1		
	Sig. (2-tailed)	.000	.000	.000		
Employee involvement	Pearson Corr	.570	.709**	.880**	1	
	Sig. (2-tailed)	.000	.000	.000	.000	
Organizational performance	Pearson Corr	.689**	.788**	.914**	.817**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000

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

The results of the correlation analysis revealed that customer focus is positively related to the top management commitment with a Pearson's Correlation Coefficient of $r = 0.512$ and at level of significance of 0.000, is statistically significant as the p-value is less than 0.05. This relationship could be described as moderate as it lies in the middle. This implies that considering top management commitment enhances customer focus (an increase in top management commitment increases results to increased customer focus). The study findings concur with Esin and Hilal (2014) who in his study found a positive and significant correlation between customer focus and top management leadership and attributed increase in customer satisfaction to top management commitment.

The results further show that there is a relatively strong positive relationship between customer focus and continuous improvement with a Pearson's Correlation Coefficient of $r = 0.648$ and at level of significance of 0.000, is statistically significant as the p-value is less than 0.05. This implies that an increase in customer focus will result into a change in the continuous improvement in the same direction. The results also show that the relationship between customer focus and employee involvement was also positive with a Pearson's Correlation Coefficient of $r = 0.570$ and a level of significance of 0.000 hence statistically significant. This implies that an increase in the employee involvement will result into a similar change in the customer focus. The results show that there is a relatively strong positive relationship between customer focus and organizational performance with a Pearson's Correlation Coefficient of $r = 0.689$ and at level of significance of 0.000, is statistically significant as the p-value is less than 0.05. This implies that an increase in customer focus will result into a change in the organizational performance in the same direction. These findings concur with Esin and Hilal (2014) who found a positive and significant association between customer focus and organizational performance in their study of the effect of TQM practices on organizational performance in Turkey. The findings of the study show that there is a strong positive association between top management commitment and continuous improvement with a Pearson's Correlation Coefficient of $r = 0.745$ and at level of significance of 0.000, is statistically significant as the p-value is less than 0.05. This implies that an increase in top management commitment will result into a change in the continuous improvement in the same direction.

The top management commitment has a strong positive association with organizational performance with a Pearson's Correlation Coefficient of $r = 0.788$ and at level of significance of 0.000, is statistically significant as the p-value is less than 0.05. This implies that an increase in top management commitment will result into a change in the organizational performance in the same direction. The results are in agreement with Esin and Hilal (2014) where in his study established that positive and significant correlation between top management commitment and the organizational performance.

The results show that the continuous improvement had a strong positive association with organizational performance with a Pearson's Correlation Coefficient of $r = 0.914$ and at level of significance of 0.000, is statistically significant as the p-value is less than 0.05. This implies that an increase in continuous improvement will result into a change in the organizational performance in the same direction. These study findings mean that generally there was a strong positive and significant association between the variables. These findings concur with Santos-Vijande, and Alvarez-Gonzalez (2007) who in his study of 166 American firms found that overall performance of TQM correlated positively and significantly with both implementing TQM and its degree of advancement or organizational performance. These studies further agree with Brah and Tee (2002) who found that TQM indicators and organizational performance were positively correlated. The study finding is in consistence with Samson and Terziovski (1999) who noted in his study that Total Quality Management practices which are customer-oriented affect organizational performance

5.0 Conclusions

The study was designed to analyze the impact of Total Quality Management (TQM) practices on organizational performance at Mabati Rolling Mills. It focused on several key areas, including customer focus, top management commitment, continuous improvement, and employee involvement.

- *Customer Focus:* The findings revealed that customer focus plays a pivotal role within the organization, with 65% of management positions held by males, establishing them as the majority. The analysis indicated a strong positive correlation between customer focus and organizational performance ($r = 0.689$, $p\text{-value} < 0.05$).
- *Top Management Commitment:* The research highlighted the importance of leadership in fostering an environment conducive to quality management efforts. A strong positive correlation was established between top management commitment and organizational performance ($r = 0.788$, $p\text{-value} < 0.05$).
- *Continuous Improvement:* Continuous improvement emerged as a critical area within the organization. The implementation of quality manuals and systems demonstrated a strong positive association with organizational performance ($r = 0.914$, $p\text{-value} < 0.05$).
- *Employee Involvement:* Employee involvement was shown to positively influence the organization, particularly in problem-solving and decision-making. A positive association was observed between employee involvement and organizational performance ($r = 0.817$, $p\text{-value} < 0.05$).

- *General Conclusion:* The study concludes that TQM practices significantly enhance organizational performance at Mabati Rolling Mills. A strong emphasis on customer focus, top management commitment, and continuous improvement are vital components that drive success. While employee involvement presents positive outcomes, its statistical significance warrants further exploration. The findings suggest that organizations committed to TQM practices can achieve superior performance through effective leadership, continuous quality enhancement, and active employee participation in quality processes. Future initiatives aimed at increasing employee involvement could further bolster these efforts and enhance overall organizational effectiveness.

6.0 Recommendations

Based on the findings of this study, several strategic recommendations are proposed to enhance organizational performance through Total Quality Management (TQM) practices:

1. *Prioritize Customer Focus:* Manufacturing firms should adopt a customer-centric approach as a foundational element of TQM. By placing customer satisfaction at the forefront of their operational strategies, organizations can significantly enhance their performance and foster lasting customer loyalty.
2. *Strengthen Top Management Commitment:* It is imperative for manufacturing firms to bolster top management's commitment to quality management practices. Proactive leadership engagement in quality initiatives not only promotes a culture of excellence but also plays a crucial role in driving improved organizational outcomes.
3. *Implement Continuous Improvement:* Organizations are encouraged to embed continuous improvement into their core operational strategies. By fostering an environment that values ongoing enhancement and adaptability, firms can drive sustained performance improvements and respond effectively to evolving market demands.
4. *Promote Employee Involvement:* Actively engaging employees in quality management processes is essential. By encouraging participation and input from all staff members, organizations can strengthen their quality management frameworks and contribute to enhanced overall performance. Empowered employees are more likely to take ownership of quality initiatives, leading to innovative solutions and a more robust organizational culture.

Acknowledgement

The researchers wish to acknowledge MIRO Forestry Company and students of Njala University for their contributions in conducting this research.

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Contributions

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Ibrahim Dumbuya (PhD): Data analysis and initial write up of the manuscript