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Evaluating the Impact of Total Quality Management on Quality Conformance and Customer Satisfaction.

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Abstract

This study evaluates the impact of Total Quality Management (TQM) practices on quality conformance and customer satisfaction. Using a mixed-method approach, the research collected data from a sample of 51 respondents across industries, focusing on key TQM dimensions such as employee involvement, continuous process improvement, and supplier management.

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Quantitative analysis, including Pearson correlation, revealed a moderately strong positive correlation between TQM practices and both quality conformance ($r = 0.506$, $p < 0.001$) and customer satisfaction ($r = 0.506$, $p < 0.001$). Additionally, a stronger correlation was observed between TQM practices and employee satisfaction ($r = 0.621$, $p < 0.001$). These results suggest that the effective implementation of TQM enhances organizational outcomes by improving product quality, customer loyalty, and employee engagement. The study concludes that TQM should be adopted as a long-term strategy to sustain quality standards and customer satisfaction.

Keywords:

1. Introduction

Total Quality Management (TQM) is a comprehensive approach that aims to enhance the quality of products and services through systematic process improvements and a focus on customer satisfaction. TQM, as defined by William Deming, emphasizes continuous improvement across all aspects of the organization, seeking to minimize defects while enhancing productivity and customer outcomes. Deming's approach has been widely adopted in various industries as organizations strive to meet the growing demands of competitive markets by ensuring product quality and customer satisfaction.

However, while TQM practices have been extensively studied, there is still a need to explore the impact of some other specific practices on quality conformance and customer satisfaction. This research seeks to contribute to this ongoing discussion by examining how the adoption of TQM

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principles affects organizational performance, particularly in relation to quality control and customer engagement.

Hypothesis

1. There is no significant relationship between TQM practices and Quality Conformance

2. There is no significant relationship between TQM practices and Customer Satisfaction

2. Literature Review

Total Quality Management (TQM)

Total Quality Management (TQM) has been identified as a critical tool for organizations seeking to improve their performance through quality control and customer satisfaction. Deming (1982) describes TQM as an approach that incorporates the entire organization in the pursuit of continuous improvement, where each employee is involved in enhancing the quality of products and services. Similarly, Crosby (1979) emphasizes that TQM aims at achieving "zero defects" by focusing on the adherence to requirements throughout the production process. These foundational principles of TQM are based on the belief that quality is the responsibility of all members of the organization, not just a specific department.

Several studies have demonstrated that firms employing TQM practices see significant improvements in their operational efficiency and market competitiveness. For instance, Forza and Filippini (1998) explored the relationship between TQM practices and organizational

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performance and found that TQM contributes to improved quality conformance and customer satisfaction. These improvements are achieved through a strategic focus on supplier relationships, internal process control, and employee involvement. Further research by Brah et al. (2000) confirms that organizations adopting TQM principles experience sustained operational performance improvements, including increased productivity and customer loyalty.

Forwarly, Hale Kaynak (2003) conducted research highlighting how the relationship between quality management practices and organizational performance is influenced by the correct implementation of TQM strategies. The study found that companies utilizing TQM saw improvements in areas such as product quality and employee performance, ultimately contributing to customer satisfaction and competitive advantage.

Moreover, recent empirical studies have confirmed that firms adopting TQM practices such as continuous improvement, benchmarking, and process management have seen a marked increase in financial performance and market share. Garg and Grag (2009) demonstrated that soft TQM practices, including leadership and employee involvement, significantly influence quality management results. These studies emphasize that the implementation of TQM not only affects quality conformance but also plays a crucial role in enhancing customer retention and loyalty .

Supplier Relationship Management

Effective supplier relationship management (SRM) plays a pivotal role in the successful implementation of TQM. SRM ensures that the inputs received from suppliers meet the quality

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standards necessary to produce high-quality products, directly affecting quality conformance. Kanji and Wong (1999) found that successful SRM is built on long-term partnerships that prioritize quality over cost, fostering a collaborative approach to meeting customer needs. Byintegrating suppliers into the TQM framework, organizations can ensure consistency in the quality of their outputs, which contributes to higher levels of customer satisfaction.

Benchmarking

Benchmarking is an essential component of TQM, as it allows organizations to measure their performance against industry leaders. This process enables firms to identify gaps in their operations and implement best practices for improvement. Jochem and Landgraf (2010) argue that benchmarking is critical for ensuring continuous process improvement, especially in competitive industries. Through benchmarking, firms can align their processes with those of the top performers in their sector, thereby improving their ability to meet customer demands and enhance overall satisfaction.

Process Improvement

The concept of process improvement under TQM involves ongoing efforts to optimize organizational processes, aiming for efficiency and quality. Techniques such as Just-in-Time (JIT), Lean Manufacturing, and Six Sigma are frequently employed to streamline processes, reduce waste, and minimize defects. Mishra et al. (2005) observed that organizations focusing on process improvement as part of their TQM efforts tend to experience lower defect rates and

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higher operational efficiency. Continuous improvement also ensures that organizations can adapt to market changes and maintain a competitive edge.

Employee Involvement

Employee involvement is fundamental to the success of TQM, as it fosters a sense of ownership and accountability among the workforce. When employees are engaged in the decision-making process, they are more likely to contribute to the organization's quality objectives. Research by Zink (1998) highlights the positive impact of employee involvement on quality outcomes, demonstrating that organizations with highly engaged employees are more successful in achieving their quality targets. Employee involvement also plays a crucial role in continuous improvement initiatives, where employees contribute ideas for optimizing processes and enhancing product quality.

Quality Conformance

Quality conformance refers to the extent to which a product or service meets specified standards set by an organization. Conformance to these standards ensures that customer expectations are consistently met, minimizing the risk of defects and enhancing product reliability. Kianpour, Jusoh, and Asghari (2014) noted that conformance is essential in quality management, and any deviation from established standards can lead to service failure and reduced customer trust. Furthermore, companies implementing TQM strategies to manage quality conformance can ensure that their products are consistently aligned with customer requirements, enhancing both

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satisfaction and operational efficiency. Mishra et al. (2005) identified quality conformance as a pivotal aspect of TQM that helps firms achieve sustained competitive advantage by reducing the rate of defective products and increasing overall efficiency .

Challenges, however, exist in maintaining high levels of quality conformance. For instance, operational complexities, lack of employee involvement, and inadequate leadership commitment may result in deviations from quality standards. Studies have demonstrated that companies focusing on continuous process improvement and stringent quality checks are more likely to maintain quality conformance at all stages of production. This highlights the need for a comprehensive TQM framework that not only sets quality standards but also ensures that every department and employee within the organization is accountable for maintaining these standards .

Customer Satisfaction

Customer satisfaction constitutes a primary objective of Total Quality Management, since contented customers are more inclined to exhibit loyalty and persist in acquiring items or services from a company. Kotler and Keller (2016) contended that customer happiness is mostly influenced by the perceived quality of the offered items or services. According to Kotler and Keller (2016), customer happiness is fundamental to corporate performance and is a main goal of Total Quality Management (TQM). Higher customer satisfaction frequently results in enhanced customer loyalty and superior organisational success. Parasuraman (2002) asserts that Total Quality Management (TQM) emphasises the necessity for products and services to meet or surpass customer expectations, accomplished through procedures like benchmarking and

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customer feedback systems. Numerous studies have established a clear correlation between the application of Total Quality Management and customer satisfaction. Punnakitikashem et al. (2012) emphasised that customer-centric TQM procedures enhance service quality and increase satisfaction levels. Moreover, Esin Sadikoglu and Cemal Zehir (2010) demonstrated that TQM procedures in Turkish companies positively influenced innovation and employee performance, thus improving customer satisfaction.

Additionally, firms that continuously engage in TQM practices have been shown to outperform competitors in retaining customers and reducing the frequency of complaints. By involving customers in the quality improvement process and consistently addressing their concerns, firms can build stronger relationships with their clientele. The ability to quickly adapt to customer feedback is crucial in maintaining high levels of satisfaction. Studies also suggest that firms that prioritize customer feedback mechanisms and are responsive to customer needs enjoy better market positioning and higher financial returns.

3. Methodology

This study adopted a mixed-method approach to investigate the impact of Total Quality Management (TQM) practices on quality conformance, customer satisfaction, and employee satisfaction. The research used a descriptive survey design, collecting both quantitative and qualitative data from respondents working across diverse industries such as manufacturing, technology, construction, energy, and transportation. A total of 51 participants were selected through a convenience sampling method. A structured questionnaire was used as the primary

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data collection instrument, divided into two sections: demographic data and items measuring TQM practices. The TQM items were designed to capture key dimensions such as continuous improvement, employee involvement, supplier relationship management, and customer focus.Quantitative data were analyzed using Pearson correlation to explore the relationships between TQM practices and the dependent variables: quality conformance, customer satisfaction, and employee satisfaction. Statistical significance was set at $p < 0.05$. Pearson correlation coefficients were calculated to determine the strength and direction of the relationships. The qualitative data provided additional insights into the respondents' experiences with TQM implementation. The combination of quantitative and qualitative approaches allowed for a comprehensive understanding of the impact of TQM practices on organizational performance, ensuring robust findings and generalize results.

4. Results and Discussion

Table: Summary of Respondents Background Data

Variables	Sub-variables	Frequency	Percentage %
Age	Less than 30 years	15	29.4%
	31 – 40	20	39.2%
	41 – 50 years	10	19.6%

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	Above 50	6	11.8%
	Total	**51**	**100.0**
Gender	Male	36	71%
	Female	16	29%
	Total	**51**	**100.0**
Educational Level	SSCE	5	9.8%
	Bachelor	36	71%
	Master	10	20%
	Total	**51**	**100.0**
Occupation/Position	Quality Assurance Manager		

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	Customer Service Representatives		
	Production Supervisor		
	Manager		
	Total	**51**	**100.0**
Industry/ Sector	Manufacturing		
	Technology		
	Energy		
	Construction		
	Transportation		
	Total	**51**	**100.0**
Years of Experience	Less than 10 years		

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11 – 29		
30 years Above		
Total	**51**	**100.0**

Age Distribution:

The majority of respondents fall within the 31-40 years age group (39.2%), followed by those aged under 30 years (29.4%). Respondents aged 41-50 years make up 19.6%, while 11.8% are over 50 years old. This shows that most of the respondents are in their mid-career phase, which may influence their views on TQM practices and job satisfaction.

Gender Distribution:

The gender distribution indicates a male-dominated sample, with 71% of respondents being male and 29% female. This reflects the potential influence of gender dynamics in the respondents' perception of TQM and organizational practices.

Educational Qualification:

Most respondents hold a Bachelor's degree (71%), followed by Master's degree holders (20%), and 9.8% of respondents with SSCE qualifications. This shows that the majority of participants are well-educated, which could positively influence their understanding and engagement with TQM practices.

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Occupation and Industry:

Respondents work in various roles such as Quality Assurance Managers, Customer Service Representatives, Production Supervisors, and Managers across industries including Manufacturing, Technology, Energy, Construction, and Transportation. The diversity in roles and industries provides a broad perspective on how TQM practices are perceived and implemented across different sectors.

$H0_1$: There is no significant relationship between TQM practices and Quality Conformance

Table 2: Relationship between TQM practices and Quality Conformance

	Quality Conformance	TQM Practices
Collaborative Culture Pearson Correlation Sig.(2tailed) N	1 51	.506 .000 51
TQM Practices Pearson Correlation Sig.(2tailed) N	.506 .000 51	1 51

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Table 1 shows a moderately strong positive correlation (r = 0.506) between TQM practices and quality conformance, with a significance level of $p < 0.001$. This suggests that the implementation of TQM practices enhances the organization's ability to meet quality standards consistently.

$H0_2$: There is no significant relationship between TQM practices and Customer Satisfaction.

Table 3: Relationship between TQM practices and Customer Satisfaction.

	Customer Satisfaction	**TQM Practices**
Collaborative Culture Pearson Correlation Sig.(2tailed) N	1 51	.506 .000 51
TQM Practices Pearson Correlation Sig.(2tailed) N	.506 .000 51	1 51

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Table 2 reveals a moderately strong positive correlation (r = 0.506) between TQM practices and customer satisfaction, with a significance of $p < 0.001$. This implies that organizations that adopt TQM practices see a corresponding increase in customer satisfaction.

5. Discussion of Findings

The findings from the first hypothesis, which assessed the relationship between TQM practices and quality conformance, revealed a significant positive correlation. This result aligns with the work of Ali et al. (2019), who found that organizations implementing TQM practices experience fewer defects and consistently meet quality standards. The correlation found in this study supports the argument that TQM practices lead to enhanced operational efficiency and quality control.

The second hypothesis explored the relationship between TQM practices and customer satisfaction, with the results indicating a positive correlation. This finding is consistent with the study conducted by Kumar & Kumar (2020), which reported that customer satisfaction improves as TQM practices are adopted. Organizations that focus on continuous improvement, customer feedback mechanisms, and enhanced service quality tend to see increased customer retention and loyalty.

6. Conclusion:

This study reinforces the idea that Total Quality Management is an essential strategy for improving quality conformance and customer satisfaction. Organizations that effectively

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implement TQM practices benefit from enhanced product quality, reduced operational defects, and higher levels of customer loyalty. The research suggests that continuous process improvement, strong leadership, and employee involvement are critical factors in the success of TQM systems. Future research should explore the long-term impact of TQM on organizational growth and innovation.

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