



Analysis Implementation of Total Quality Management System on Operational Performance: Case Study on Fast Moving Consumer Goods Company

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A B S T R A C T

Implementation of the Total Quality Management System in food companies is essential to help company produce quality product for consumers and to gain competitive advantage. This research aims to analyze TQMS implementation in Fast Moving Consumer Goods companies that produce food and beverages regarding operational performance. The data collected from 136 respondents, who are employees in the FMCG sector, was analyzed using a quantitative method with PLS-SEM. The endogenous variable in this study is operational performance, while the exogenous variables are dimensions of TQM practices, which include leadership, employee involvement, customer focus, strategic planning, and continuous improvement. The results of the study indicate that the implementation of TQM in the factors of leadership, employee involvement, customer focus, and continuous improvement has a positive and significant impact on operational performance. In contrast, strategic planning does not have a significant positive impact on the operational performance of the company.

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1. INTRODUCTION

Based on the 2023 Indonesian economic report, Indonesia's economic growth in 2022 managed to maintain consistency amid the global economic slowdown post-pandemic, recording a rate of 5.31%. This growth rate is the highest since 2014. The three business sectors that recorded the highest positive growth were Transportation and Warehousing (19.87%), Accommodation, Food, and Beverage Provision (11.97%), and Manufacturing Industry (4.89%). Economic development in

Indonesia was supported partly by the Manufacturing Industry, which supplies household consumption, specifically the Fast Moving Consumer Goods (FMCG) industry. This industry has withstood the pandemic because it provides essential products that are always needed, even during a pandemic. The FMCG market value was 5.9% (year-on-year) in the third quarter of 2022. Increased economic activity was also reflected in the household consumption growth component, which was 4.93 percent (BPS, 2023). A large market and

high consumption drive optimism for the continued growth of the FMCG industry. The FMCG sector is also predicted to continue expanding in the following year. Competition in this industry is quite tight, with many new products offered to the public. Businesses in this industry must continually innovate in terms of products, promotional strategies, and other optimizations to ensure their products remain a consumer choice. FMCG product that has garnered significant attention is food and beverages (F&B).

Based on a report by Kantar in Q4 2023 there have been changes in FMCG consumer behavior in Indonesia. Buyers are used to price increases, but this opens up opportunities to switch to cheaper alternative products. In the food and beverage sector, sales volume growth is a challenge due to continued price increases, so producers must focus on operational strategies (Fajriyani, 2024). The production process is highly scrutinized for food and beverage products because it relates to the safety of the products produced. Quality Management Systems (QMS) in the food industry are common because consumers are quite discerning in choosing high-quality food products. Companies generally focus on the quality of the food products they produce to gain a competitive advantage over competitors. Quality Management System greatly helps achieve this competitive edge as a selling point to consumers. The QMS also includes food safety and halal standards. In Indonesia, safe and halal food become very crucial benchmark for consumers in selecting a product because the majority of the Indonesian population practices Islam, with over 80% adhering to this religion, making it the largest Muslim population in the world. Implementing a Quality Management System follows international standards, such as ISO 9001 for quality management. Other specific standards needed in the food industry include ISO 22000 for food safety, HACCP (Hazard Analysis Critical Control Point), and the Halal Assurance System.

Companies not only adhere to product-based standardization but also use Total Quality Management (TQM) to enhance performance across their entire business process. Implementing TQM is common in medium and

large companies but remains limited for SMEs due to the costs involved. Companies wishing to implement this system or those that have already implemented it surely want to see if there are positive implications from TQM implementation for their business. Is it merely an added expense without additional value to the products produced? For example, within one year, a company that has implemented TQM may incur various costs such as external audits, surveillance, testing in accredited laboratories, workforce training, and others to meet these standards. Are these efforts aligned with the company's goals? This study will evaluate the implementation of the Total Quality Management System in Indonesian FMCG companies that produce food and beverages to assess the extent to which this system's implementation correlates with improved operational performance of the companies.

2. LITERATURE REVIEW

The definition of Total Quality Management (TQM) starts with the definition of quality itself. Quality has two meanings: fitness for purpose and consistency. Quality is about consistently meeting customer needs. Total Quality is about achieving quality at a low cost. Total Quality Management is about achieving overall quality through the participation of everyone. TQM represents the fourth phase in the evolution of quality theory. TQM is a set of principles that form the foundation for continuous organizational development. It integrates fundamental management techniques, existing improvement efforts, and technical tools in a disciplined approach (Besterfield et al., 2012).

Elements of Total Quality Management

The international standard for quality management is outlined in ISO 9001:2015, which specifies requirements for a quality management system (SNI ISO, 2015). This standard is based on the principles of quality management found in ISO 9000. The principles of quality management are:

Customers, as product users, are essential elements in a company. In the food industry, safety and quality are critical for building customer trust and satisfaction, which are not easily achieved. A factor that helps is the

company's ability to provide transparency through investigation results (Tonkin et al., 2019). This can be achieved through TQM in the company, particularly the customer focus dimension, to offer the best products/services. In TQM implementation, customers are not only external customers but also internal customers. Internal customers refer to other parts of the company related to processes, including relationships with suppliers (Gould, 1992).

Leadership is a process where an individual influences a group of others to achieve common goals. This individual is the leader, and the group members are followers. Leaders play a key role in creating the vision and strategic plan for an organization (Kreitner & Kinicki, 2013). They are crucial in directing and building organizational culture. In TQM, leadership is management's commitment to actively implement TQM, establish guidelines, and disseminate the culture to involve employees actively. This includes responsible certification and auditing, providing education and training, managing change, setting management principles, and considering financial issues (van Heerden & Jooste, 2018). Employees are crucial resources in TQM implementation as they are the main actors performing the system. The overall definition of TQM describes it as a company culture characterized by enhancing customer satisfaction through continuous improvement involving active participation from all employees (Dahlgaard, 2007).

Strategic planning involves developing a written plan that includes components such as the organization's vision, mission, guiding principles, broad strategic goals, and specific tactics, projects, and activities to achieve those goals. These specific actions are often referred to as an "action plan" (Goetsch & Davis, 2014). In manufacturing companies, continuous improvement is essential and involves all employees. Competitions with rewards for employees who provide improvement ideas are common (Gould, 1992). Proper implementation of continuous improvement is an excellent investment for a company. The goal of improvement is to find solutions to problems and learn how to solve them. TQM implementation in this context can use problem-

solving tools like cause-and-effect diagrams, Ishikawa/fishbone diagrams, control charts in statistical process control, etc.

Operational Performance

Operational performance in the food industry can include financial performance, such as profitability ratios, and non-financial aspects like product variety, production volume, and customer satisfaction. Operational performance can also be reflected in inventory levels and product quality (Baird et al., 2011). Performance can also be measured using Key Performance Indicators within the company.

3. RESEARCH METHOD

This research design is causal, aiming to understand the relationships between variables. The research method used in this study is quantitative, with Structural Equation Modeling as the statistical analysis tool. TQM implementation can be observed through dimensions such as leadership, employee involvement, customer focus, strategic planning, and continuous improvement, which serve as exogenous variables. Operational performance will be the endogenous variable, assessed through KPI (Key Performance Indicator) results. The conceptual model for this research drawn below (Figure 1).

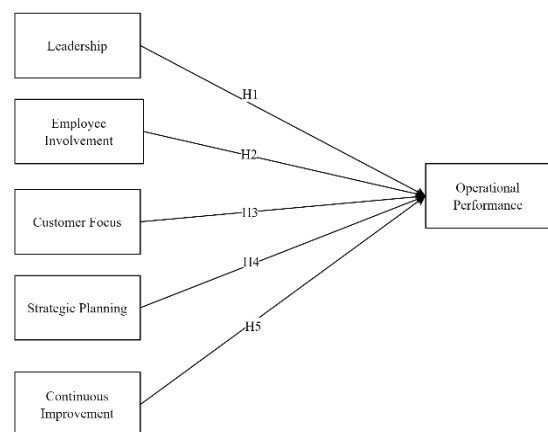


Figure 1. Conceptual research model
Source: Fotopoulos & Psoimas (2010)

H1: Implementation of TQMS-leadership has a positive and significant effect on operational performance.

H2: Implementation of TQMS-employee involvement has a positive and significant

effect on operational performance.

H3: Implementation of TQMS-customer focus has a positive and significant effect on operational performance.

H4: Implementation of TQMS-strategic planning has a positive and significant effect on operational performance.

H5: Implementation of TQMS-continuous improvement has a positive and significant effect on operational performance.

The sampling method in this study uses non-probability sampling with the purposive judgment sampling method (Cooper & Schindler, 2014). This method was chosen because not all samples in the population have the same probability of becoming respondents. The researcher will determine suitable respondents through screening questions before the main questions about the research topic. Respondents in this study are employees of FMCG food and beverage companies in Indonesia who have worked at the company for

4. RESULT AND DISCUSSION

Total Quality Management System in Fast Moving Consumer Goods Companies

FMCG companies produce everyday items that are relatively inexpensive and frequently purchased, hence the term "fast moving." On the Indonesia Stock Exchange, FMCG companies fall under the category of primary goods producers (non-cyclical), including personal care items, household needs, cosmetics, pharmaceuticals, and food and beverages. Some notable FMCG companies in Indonesia include PT Unilever Indonesia Tbk, PT Indofood CBP Sukses Makmur Tbk, PT Indofood Sukses Makmur Tbk, PT Japfa Comfeed Indonesia Tbk, PT Mayora Indah Tbk, and PT Cisarua Mountain Dairy Tbk (IDX, 2022). Implementing TQM in Indonesian FMCG companies has a positive relationship with product quality and the company's competitive advantage. The quality of the product itself is positively related to the company's competitive advantage. Companies implementing TQM can enhance their product quality, impacting their ability to achieve competitive advantage (Cahya Purnawidya & Raharjo, 2023).

at least one year, hold at least a supervisor level position, and understand the company's operational performance. The total number of respondents is 136. Primary data in this study is collected by surveying respondents through electronic media (online survey form at survey.ui.ac.id). Secondary data is obtained through literature studies from journals and scientific articles from previous research related to the topic. The study begins with a pilot test to prepare for data collection. The first step is to formulate questions in the questionnaire. The selection of question phrases in the questionnaire is done through back translation from questions in the reference journal. Word selection is done to frame the sentences according to the core of the questions without changing the meaning of the sentences. The collected data is analyzed using validity and reliability tests. The second test is a descriptive test of the respondents, and the core analysis uses the PLS-SEM method with the SmartPLS application.

Quality management in the food industry is vital and evolves continuously, necessitating research on the determining factors of quality management practices. This is why researchers have proposed various models and frameworks in the food industry over the years, emphasizing the importance of tools and techniques in quality management implementation (Zhu et al., 2022). Research on TQM systems in companies shows that leadership, human resource management, and customer focus are significant and robust variables for predicting operational performance, compared to strategic planning, process management, and company data analysis (Samson, 1999). Teamwork culture is the most critical factor in enhancing TQM implementation, while result-oriented and innovative business units are also found to use TQM practices more extensively. Although four TQM practices are interconnected, only three (supplier quality management, process management, and data & quality reporting) help achieve operational performance goals (Baird et al., 2011). The principles of TQM are present in every implementation of TQM. Companies that adopt TQM incorporate at least one of the core principles : leadership, employee involvement, process orientation, system management

approach, continuous improvement, data-driven decision making, mutually beneficial supplier relationship and a customer-centric organization (Susmita, 2021).

Result Analysis

The result of data analysis are shown in the Table 1.

Table 1. Summary of respondent’s demographics

Characteristics	Categories	Number	Percentage	Total
Gender	Male	81	60%	136 (100%)
	Female	55	40%	
Age	26-35	92	68%	
	36-45	36	26%	
	>45	8	6%	
Designation	Manager	43	32%	
	Supervisor	93	68%	
Company Location	Banten	27	20%	
	Jakarta	34	25%	
	West Java	66	49%	
	Central Java	3	2%	
	East Java	5	4%	
	South Sumatra	1	1%	

The demographics of the respondents, as shown in Table 1, indicate that 60% are male and 40% are female. Based on age groups, there are 8 respondents aged over 45 years, 92 respondents aged between 26-35 years, and 36 respondents aged between 36-45 years. The positions level of the respondents are 32% managers and 68% are supervisor. The

company locations by province show that 49% are located in West Java, 25% in Jakarta, and 20% in Banten. Other provinces, such as Central Java, East Java, and South Sumatra, each have less than 5%. This indicates that the area is still dominated by Java Island, with the majority located in West Java.

Table 2. Summary of descriptive, validity and realibility model

Variable	Indicator	Descriptive			Validity & Realiability			
		Mean	Standard Deviation	Factor Loading	Cronbach's alpha	Rho-A	CR	AVE
Leadership	K1	4.412	0.626	0.827	0.868	0.910	0.902	0.653
	K2	4.382	0.633	0.870				
	K3	4.243	0.830	0.590				
	K4	4.235	0.753	0.846				
	K5	4.346	0.648	0.871				
Customer Focus	F1	4.360	0.629	0.827	0.765	0.768	0.864	0.679
	F2	4.044	0.797	0.831				
	F3	4.360	0.727	0.814				
Employee Involvement	KK1	3.816	0.854	0.660	0.635	0.623	0.778	0.469
	KK2	3.809	0.794	0.662				
	KK3	4.132	0.665	0.784				
	KK4	4.081	0.895	0.624				
Strategic Planning	S1	4.110	0.832	0.632	0.632	0.682	0.801	0.577
	S2	4.110	0.747	0.874				
	S3	4.265	0.691	0.754				
Continuous Improvement	P1	4.449	0.528	0.791	0.726	0.733	0.845	0.646
	P2	4.147	0.705	0.840				
	P3	4.316	0.747	0.778				
Operational Performance	KO1	4.096	0.665	0.827	0.823	0.856	0.876	0.590
	KO2	4.191	0.661	0.883				
	KO3	4.081	0.667	0.586				
	KO4	3.963	0.693	0.836				
	KO5	3.809	0.865	0.667				

Based on the Table 2, it can be seen that the average obtained for each indicator variable is different and is at 3.8 - 4.8. The scale used in collecting this data is a Likert scale (1 = strongly disagree) to (5 = strongly agree), so that the average respondent's answer is agreeing to the indicator variable given. The indicators KK1, KK2, and KO4, KO5 have values below 4 but still above 3, so it can be said that they tend to agree with the statements in the indicators.

Convergent validity testing is carried out by looking at the outer loadings value for each indicator. Indicators with outer loading values above 0.6 indicate that the indicators are valid in describing research variables. An outer loadings value that is smaller than 0.6 but still above 0.5 is considered sufficient to indicate that the indicator remains valid even though it is not as strong as 0.6 (Musyafii et al., 2022). Based on the outer loading values in the table, several indicators can be seen that have values below 0.6 with outer loading values of 0.5-0.6,

namely K3 and KO3. The author still maintains the indicators in the research because the outer loadings value is still above 0.5 – 0.7 because it can still be said to be valid in measuring the variables. The composite reliability value for all variables meets the requirements above 0.7, which means that all variables can be said to be reliable. The Cronbach's alpha value for all variables has a value above 0.6 so it can be said to be a reliable and internally consistent measurement.

Discriminant validity testing is used to see that indicators of certain latent variables are different from indicators of other latent variables. The discriminant validity value can be seen in the Heterotrait-Monotrait Ratio (HTMT) value. The table 3. below shows the HTMT value in the interaction between variables. The HTMT value for each variable shows a number below 0.9, which means that each variable tested has a discriminantly valid value.

Table 3. HTMT ratio

Variable	HTMT	Note
Leadership <-> Customer Focus	0,466	Valid
Employee Involvement <-> Customer Focus	0,451	Valid
Employee Involvement <-> Leadership	0,472	Valid
Operational Performance <-> Customer Focus	0,578	Valid
Operational Performance <-> Leadership	0,501	Valid
Operational Performance <-> Employee Involvement	0,520	Valid
Continuous Improvement <-> Customer Focus	0,740	Valid
Continuous Improvement <-> Leadership	0,571	Valid
Continuous Improvement <-> Employee Involvement	0,544	Valid
Continuous Improvement <-> Operational Performance	0,676	Valid
Strategic Planning <-> Customer Focus	0,695	Valid
Strategic Planning <-> Leadership	0,629	Valid
Strategic Planning <-> Employee Involvement	0,489	Valid
Strategic Planning <-> Operational Performance	0,537	Valid
Strategic Planning <-> Continuous Improvement	0,872	Valid

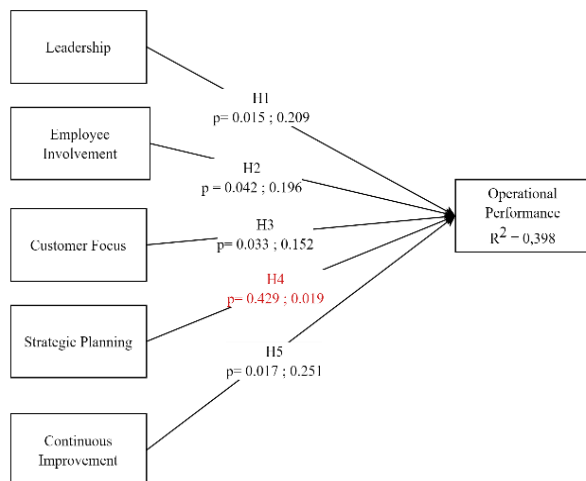


Figure 2. Hypothesis result
Source: Fotopoulos & Psomas (2010)

The model structure of the research can be assessed using the coefficient of determination (R^2). This value describes the prediction accuracy of the model which can see the combined effect of exogenous variables on endogenous variables. A good (R^2) value is in the range of 0.25 to 0.75 or less than 1, meaning it is getting better. The R^2 value obtained is 0.398 (above 0.33), which means that the prediction accuracy of the research model is quite good, it has a medium to high influence. The f^2 value describes the effect of sample size. A value in the range below 0.02 means weak, 0.02-0.15 means moderate and 0.15-0.35 means strong. Based on the results of the analysis, it is known that the variables customer focus, leadership, employee involvement and continuous improvement have a value of 0.02-0.15 so they have a moderate sample effect strength. The strategic planning variable has a weak sample effect in influencing other variables at the structural level because it has a value below 0.02.

The results of this study show that the **H1** is accepted because the t-statistic value (2.164) is greater than the t-table value (1.656), and the p-value (0.015) is less than 0.05. This indicates that the influence of leadership on operational performance is statistically significant. In other words, leadership has a positive and significant effect on operational performance, as indicated by top management communicating quality to employees, participating in the quality management

system, discussing quality issues with employees, incorporating quality policies into strategic planning, and conducting evaluations to achieve improvements in the company's quality management system. The study results show that leadership has a positive and significant effect on operational performance. Theoretically, this supports the concept that effective leaders play a crucial role in directing the organization's vision and mission and creating a conducive work environment to achieve operational goals. Leaders who can provide motivation, clear direction, and support to employees will enhance operational efficiency and effectiveness. Companies can continue to develop leadership programs that emphasize the quality vision and mission so that the benefits of the quality management system can be realized through operational performance.

H2 is accepted because the t-statistic value (1.834) is greater than the t-table value (1.656), and the p-value (0.042) is less than 0.05. This indicates that the influence of employee involvement on operational performance is statistically significant. Employee involvement has a positive and significant effect on operational performance, as indicated by employees' initiative actions, participation in decision-making and designing quality improvement activities, and the implementation of changes made by employees. Theoretically, this supports the Employee Engagement, which states that employees who are emotionally and cognitively engaged with their work will show higher performance. Employee involvement increases commitment to tasks and responsibilities, ultimately improving operational performance. Companies can involve employees in quality program plans to enhance employee engagement with the company and improve operational performance.

H3 is accepted because the t-statistic value (1.727) is greater than the t-table value (1.656), and the p-value (0.033) is less than 0.05. This indicates that the influence of customer focus on operational performance is statistically significant. Indicators include companies having mechanisms for collecting customer

complaints and suggestions, encouraging customers to provide feedback, and conducting customer satisfaction evaluations. Previous research explains that customer focus is a significant predictor of operational performance, as seen in companies in Ghana (Acquah et al., 2023) and India (Bhaskar, 2020). This study's results align with marketing principles emphasizing customer orientation, stating that organizations that consistently understand and meet customer needs will achieve sustainable competitive advantage. Customer focus drives innovation and service improvement, contributing to better operational performance. In TQM implementation, ISO 9000-certified companies have a positive and significant impact on process innovation performance metrics, such as applying the internal customer concept. ISO 9000-certified companies tend to implement the internal customer concept throughout their organizations to enhance cooperation and create flatter structures as part of their process innovation activities (Terziovski & Guerrero, 2014). This can serve as a reference for companies to implement customer principles within the organization to create better internal collaboration. When an organizational culture treats internal departments as customers, each department will strive to deliver the best for its customers, leading to comprehensive collaboration.

H4 is rejected because the t-statistic value (0.180) is much smaller than the t-table value (1.656), and the p-value (0.429) is much greater than 0.05. This indicates that the influence of strategic planning on operational performance is not statistically significant. There are differences in results from previous studies that stated strategic quality planning is a significant predictor of operational performance in healthcare facilities in Ghana (Acquah et al., 2023). This can occur due to various factors, including market conditions, ineffective strategy implementation, and lack of support from technological innovation. Although TQM theory and strategic planning are considered important factors in improving operational performance, in practice, the success of implementing company strategies depends heavily on the industry's context and dynamic market conditions. In the FMCG

industry, particularly in food and beverages, technological changes and market competition are highly impactful. Therefore, a more flexible and adaptive approach is needed. The effectiveness of strategies depends on the alignment between strategy and external environment. Strategic planning can be built with long-term plans supported by existing company resources. Efficient use of existing resources can be key to realizing plans and achieving tangible results for the company.

H5 is accepted because the t-statistic value (2.132) is greater than the t-table value (1.656), and the p-value (0.017) is less than 0.05. This indicates that the influence of continuous improvement on operational performance is statistically significant. Continuous improvement has a positive and significant effect on operational performance, as indicated by the company's efforts to meet customer needs/requirements, facilitating employee improvements, and implementing continuous improvement programs in every process. This supports the Total Quality Management (TQM) concept, which emphasizes continuous improvement as the key to operational success. TQM teaches that by continually identifying and eliminating the causes of defects, organizations can enhance the efficiency and effectiveness of operational processes. Companies that adopt continuous improvement as a hallmark and have embedded it into their culture are proven to be more advanced and competitive. One example of an implementation that can increase participation and the improvement culture is through competition programs with prizes for employees who generate improvement ideas.

5. CONCLUSION

The implementation of TQM factors; leadership, employee involvement, customer focus, and continuous improvement has significant positive impact on operational performance. The implementation of TQM's strategic planning factor does not have a significant impact on operational performance based on the results of this analysis. The FMCG companies need to do based on the research findings: Companies need to invest in leadership development to ensure leaders have the skills and abilities to inspire and motivate

employees. Leadership training programs should focus on developing change management skills, effective communication, and the ability to build strong teams. Management should create a work environment that supports employee engagement by providing autonomy, recognition, and opportunities for professional growth. Employee engagement programs, such as performance awards and ongoing training, can help increase employee commitment and performance. Organizations should continually develop a customer-centric approach by understanding customer needs and expectations. This can be done through customer satisfaction surveys, feedback loops, and improved customer service. Customer focus should be an integral part of the company's culture. Companies should adopt a continuous improvement philosophy in all operational processes. This can be achieved by forming quality teams tasked with identifying areas for improvement, implementing solutions, and monitoring results. Management must ensure that employees are empowered to contribute to improvement efforts.

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