



The Relationship of Quality Control, Total Quality Management on MSMEs Performance

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Abstract

The study aims to discover the effect of quality control and total quality management (TQM) on MSMEs Performance. The unit of analysis is Micro, Small and Medium Enterprises (MSMEs) in Padang City. The study utilized primary data which is obtained through the questionnaire. Sampling technique by using quota sampling. 100 questionnaires from MSMEs were returned as a final sample. Data were analyzed using multiple regression analysis performed by SPSS software. The result shows that quality control positively and significantly affects organizational performance. Total quality management has a positive and significant effect on organizational performance. MSMEs can adopt simple yet effective quality control practices to reduce production defects and waste. Quality control processes integrated with TQM enable MSMEs to identify quality issues at every production stage, making operations more efficient.

Keywords: Quality Control; Total Quality Management; MSMEs Performance

1. Introduction

As organizations today face increasingly complex, dynamic, and threatening environments, attention has been focused on both the running of day-to-day business affairs and the adaptation of the organization to changing environmental conditions (Nudurupati et al., 2021). Organizations must be able to increase effectiveness and efficiency. This can be achieved if the organization makes the right decision. One of the right decisions is to improve the quality control of products and services produced by the company (Mizuno, 2020).

Quality Control (QC) is a systematic process of monitoring, evaluating, and ensuring that products or services meet specific quality standards and satisfy customer expectations (Westgard & Westgard, 2016). It involves activities and techniques designed to identify defects, prevent errors, and maintain consistency throughout the production or service delivery. Quality Control (QC) is the backbone of any successful organization, directly influencing its performance and long-term sustainability. In today's competitive market, maintaining consistent quality

is not just a goal but a necessity. QC helps organizations build trust, enhance customer satisfaction, and drive operational excellence by ensuring that products or services meet established standards.

The impact of QC on organizational performance extends beyond operational efficiency. It directly affects customer loyalty by ensuring that every product or service delivered aligns with customer expectations. When customers trust the quality of a product, they are more likely to return, recommend, and even advocate for the brand, which in turn boosts the organization's market reputation.

Quality has become one of the most important factors in today's global competition. The increasing demand by customers for better product quality in the market has driven many companies to provide quality products and services in order to compete successfully in the market. To meet the challenge of this global competition, many businessmen are adapting and implementing Total Quality Management (TQM) practices in their operations. TQM is an integrated management philosophy and set of practices that emphasize,

among other things, continuous improvement, meeting customer's requirements, reducing rework, long-range thinking, increased employee involvement and teamwork, process design, competitive benchmarking, team-based problem solving, constant measurement of results, and closer relationship (Moccia, 2016). Some literature has shown the relationship between organizational performance and TQM. The result show TQM practice increase organizational performance (Qasrawi et al., 2017); (Anil & Satish, 2016) The theoretical framework was determined by reviewing some literature. So model of (Kebede Adem & Viridi, 2021); (Almatrooshi et al., 2016) for quality control and MSMEs Performance. Model of (Aziz et al., 2019); (Qasrawi et al., 2017) for TQM and MSMEs performance. According to previous research and the definitions presented above, the following conceptual models are presented to test the effect of quality control and total quality management on organizational performance, as described in Figure 1 below:

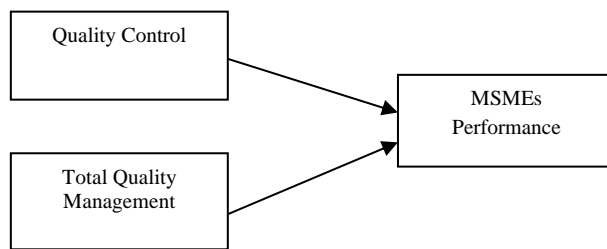


Figure 1: Conceptual Framework

The conceptual model above generates two hypotheses will be tested in the study. therefore, the hypotheses could be formulated as follows:

- H₁: Quality control has significant influence on MSMEs performance
- H₂: Total Quality Management has significant influence on MSMEs performance

2. Methods

This study uses quantitative approach. The quantitative approach is explaining phenomena by collecting numerical data that are analyzed using mathematically based methods (in particular statistics) (Bell et al., 2018). The quantitative approach is used when one begins with a theory (or hypothesis) and test for confirmation or disconfirmation of that hypothesis (Mohajan,

2020). The data used in this study were obtained using a questionnaire. Respondents of this study all owners of MSMEs in Padang City. The information about companies was obtained from the Statistical Bureau Center of West Sumatera Province, Indonesia. A total of 100 MSMEs were selected based on quota sampling.

At the present model, quality control and TQM are endogenous variables. Organizational performance is endogenous variables. The major material to collect data is questionnaire based on which four dimensions for quality control: defect rate, time to resolve quality issues, customer satisfaction score and compliance rate (Alzoubi, 2021). TQM used twelve dimensions: executive commitment, adopting philosophy, closer to the customer, closer to supplier, benchmarking, training, open organization, employee empowerment, zero-defects mentality, flexible manufacturing, process improvement, and measurement (Kumar, 2016). Seven dimensions were used to measure MSMEs performance: effectiveness, efficiency and utilization of resources, productivity, quality, quality of work-life, innovation, profitability and budget compliance (Bagodi et al., 2021) .

In order to determine the degree with which participants agree with statements, a five answer Likert scale consisting of 5) Strongly agree 4) Agree 3) Neutral 2) Disagree 1) Strongly disagree were used in the answer section. The survey data was analyzed using SPSS software.

The validity instrument tested by Pearson Product Moment Correlation. The instrument has high validity if each indicator's correlation value to total correlation is more than 0.30 or $r\text{-value} > 0.30$ (Groenland & Dana, 2019). The instrument was tested for reliability with Cronbach's Alpha. The reliability criteria if Cronbach's Alpha > 0.6 (Pandey & Pandey, 2021)

The data analysis uses both descriptive statistics analysis and multiple regression analysis. The descriptive statistical analysis aims to describe respondent demographics i.e. age, sex, education, position, and salary. Multiple regression analysis used to predict the value of variables based on the value of two or more other variables.

3. Results and Discussion

Respondents of this research have quite different characteristics. Diversity can be seen from the personal data of respondents including sex, education and income. The majority of respondent who participated in this study as male gender

(60.00%), aged between 41 to 45 years (37.00%), having level education bachelor degree (68.00%), and having income IDR 8,000,000 - 10,000,000 (31.00%). Demographics of respondents in is presented in table 1 below:

Table 1. Demographics of Respondents

		Numbers of respondents (NR)	Percentage (%)
Sex	Male	60	60.00%
	Female	40	40.00%
Age	<25	2	2.00%
	26≤30	16	16.00%
	31≤35	14	14.00%
	36≤40	25	25.00%
	41≤45	37	37.00%
	46≤50	2	2.00%
	51≤55	2	2.00%
	<55	2	2.00%
Education	High School or below	-	
	Junior college	10	10.00%
	Bachelor	68	68.00%
	Master or above	22	22.00%
Income	<2,000,000	-	
	2,000,000- 4,000,000	-	
	4,000,001- 6,000,000	10	10.00%
	6,000,001- 8,000,000	12	12.00%
	8,000,001-10,000,000	31	31.00%
	10,000,001-12,000,000	15	15.00%
	>12,000,000	32	32.00%

Source: Primary data processed by the author, 2024

The research variables tested in this study consisted of three variables, quality control, total quality management, and MSMEs performance. Respondents answered each item on Quality variables/ indicators in table 2 below:

Table 2. Result of Mean Value of Research Variables/ Indicators

No	Variables/ Indicators	Mean	Description
1	Quality Control (X1)	4.09	High
	Defect rate	4.00	High
	Time to resolve quality issues	4.17	High
	Customer satisfaction score	4.11	High
	Compliance rate	4.07	High
	2	Total Quality Management (X2)	4.18
Executive Commitment		4.28	Very High
Adopting Philosophy		4.17	High
Closer to customer		4.03	High
Closer to supplier		3.99	High

	Benchmarking	4.12	High
	Training	4.14	High
	Open Organization	4.16	High
	Employee Empowerment	4.26	Very High
	Zero-defects mentality	4.24	High
	Flexible manufacturing	4.38	Very High
	Process improvement	4.23	High
	Measurement	4.11	High
3	MSMEs Performance (Y)	4.15	High
	Effectiveness	3.88	High
	Efficiency & utilization	4.12	High
	Productivity	4.26	Very High
	Quality	4.29	Very High
	Quality of work-life	4.26	Very High
	Innovation	4.19	High
	Profitability and budget compliance	4.04	High

Source: Primary data processed by the author, 2024

According to table 2, it can reveal that average (4.15), with quality as the highest indicator (4.29) value (mean) of the quality control variable was in high category (4.09), time to resolve issues (4.17) as the highest indicator, defect rate as the lowest indicator (4.00). TQM implementation variable was in high category (4.18), flexible manufacturing as the highest indicator (4.38), and closer to supplier as the lowest indicator (3.99). Variables in MSMEs' performances were in the high category

The conceptual model illustrated in figure 1 has two hypothesized relationship among the variables Information Technology, TQM, and organizational performances. Table 3 and Table 4 display resulting from the multiple regression analysis using SPSS for windows.

Table 3. Coefficient of Determination Test Result

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.600 ^a	.360	.345	1.82128

a. Predictors: (Constant), TQM_X2, QC_X1

Source: Primary data processed by the author, 2024

The results of testing the coefficient of determination show that MSMEs' performance is influenced by quality control (QC) variables and total quality management (TQM) variables by 34.5%. Other variables outside the research framework influence the rest.

Table 4. Multiple Regression Test Result

Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
	B	Std. Error			
1	(Constant)	12.918	2.334	5.535	.000
	QC_X1	.418	.200	.288	.039
	TQM_X2	.185	.073	.347	.013

a. Dependent Variable: MSMEs_Y

The results of the multiple regression analysis are also presented in table 4 indicating support for all the hypotheses. Hypothesis 1 stated Quality Control (QC) has significant effect toward MSMEs performance, which is statically significant at prob. $0.039 < 0.05$ (t-statistic = 2.093). The statistical

significance of hypothesis 1 confirms the implementation of Quality Control improves MSMEs performance. So, hypothesis 1 is **confirmed**. Quality Control (QC) significantly impacts the performance of MSMEs (Micro, Small, and Medium Enterprises) by ensuring that the products or services delivered meet expected quality standards (Westgard & Westgard, 2016). QC helps MSMEs enhance the quality of their offerings, which builds customer trust and loyalty. By implementing QC processes, MSMEs can identify and prevent defects in production, reducing waste and operational costs. This efficiency not only improves profitability but also supports long-term business sustainability.

Furthermore, QC plays a vital role in improving customer satisfaction by ensuring that the products delivered align with their expectations (Alzoubi, 2021). High customer satisfaction leads to repeat sales and positive word-of-mouth, crucial for MSMEs to thrive in competitive markets. QC also helps MSMEs strengthen their reputation among consumers and business partners, especially when maintaining quality consistency.

In addition, QC supports MSMEs in complying with local and international standards and regulations, such as ISO or national certifications, which can open doors to market expansion, including export opportunities. With more efficient production processes and employees actively involved in maintaining quality, QC fosters a productive and innovative work environment. Overall, QC is critical in driving MSME growth, enhancing operational efficiency, and ensuring sustainable competitiveness in the marketplace.

Hypothesis 2 stated Total Quality Management (TQM) have significant effect toward MSMEs performance, which is statically significant at prob $0.039 < 0.05$ (t-statistic = 2.522). The statistical significance of hypothesis 2 confirms the implementation TQM improve MSMEs performance. So, hypothesis 2 is confirmed. The result of this study confirms previous studies conducted by (Anil & Satish, 2016; Lari Dashtbayaz et al., 2023; Sanjaya, 2018). This can be interpreted if TQM practices are implemented properly, it will produce various benefits for the MSMEs, such as understanding customer needs, increasing customer satisfaction, improving

internal communication, solving problems better, and fewer mistakes. If this is achieved, an organizational performance increase will be realized. Individuals who are committed to implementing TQM will adopt the principles of TQM in their daily activities and will always be responsible for successful performance.

4. Conclusion

The aim of this research to discover the effect of Quality Control and Total Quality Management on MSMEs performance in Padang City, West Sumatra Province, Indonesia. Effective implementation of QC can ensure the quality of products and services produced in accordance with established standards, thereby increasing customer satisfaction, reducing product defect rates, and minimizing operational costs due to waste. This supports MSMEs in creating higher process efficiency and competitiveness.

In addition, the implementation of TQM as a whole in MSME organizations contributes to the formation of a culture of continuous improvement, increased employee engagement, and greater focus on customer satisfaction. TQM elements, such as management commitment, employee participation, and systematic process management, strengthen the positive influence of QC on MSME performance.

The results of this study confirm that the combination of QC and TQM can have a significant impact on achieving optimal performance, both in terms of productivity, quality, and profitability. Thus, MSMEs that consistently implement QC and TQM are able to increase competitive advantage, maintain business sustainability, and expand their market share. This shows the importance of more MSME actors' attention to integrating QC and TQM in their business management strategies.

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