

The Effect of Total Quality Management Implementation on Operational Performance of MSMEs in Malang City

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Abstract

This study aims to determine the partial and simultaneous influence of the dimensions of total quality management (TQM) implementation on the operational performance of MSMEs in Malang City and to find out what dimensions of TQM are considered to be dominant in influencing operational performance during the Covid-19 pandemic. This research was conducted on MSME Entrepreneurs in Lowokwaru District, Malang City with a total sample of 45 respondents. Collecting data using a questionnaire and Likert scale to measure the dimensions. The instrument test in this study uses validity and reliability tests, and the analysis method uses multiple linear regression analysis. The results showed that all dimensions of TQM had partial effect except the dimensions of Long-Term Commitment and Unity of Purpose. The simultaneous test proves that the dimensions of TQM have a simultaneous effect on operational performance. It is also known that education and training are dimensions of TQM implementation that have a dominant influence on operational performance.

Keywords: *Total Quality Management, Operational Performance, MSMEs.*

Abstrak

Penelitian ini bertujuan untuk mengetahui pengaruh secara parsial dan simultan dimensi penerapan TQM terhadap kinerja operasional UMKM Kota Malang dan mengetahui dimensi TQM apa yang dianggap dominan berpengaruh terhadap kinerja operasional di masa pandemi Covid-19. Penelitian ini dilakukan pada Pengusaha UMKM di Kecamatan Lowokwaru Kota Malang dengan jumlah sampel sebanyak 45 responden. Pengumpulan data menggunakan kuesioner dan skala likert untuk mengukur dimensi. Uji instrumen dalam penelitian menggunakan uji validitas dan reliabilitas, dan metode analisis menggunakan analisis regresi linier berganda. Hasil penelitian menunjukkan bahwa semua dimensi TQM berpengaruh secara parsial kecuali dimensi Komitmen Jangka Panjang dan Kesatuan Tujuan. Adapun uji simultan membuktikan bahwa dimensi TQM berpengaruh simultan terhadap kinerja operasional. Diketahui pula bahwa pendidikan dan pelatihan merupakan dimensi penerapan TQM yang berpengaruh dominan terhadap kinerja operasional.

Kata Kunci: Kinerja Operasional, *Total Quality Management*, UMKM.

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INTRODUCTION

The rapid advancement of technology at this time has caused the business world to develop rapidly, with many new businesses that continue to emerge to create high competitiveness in the era of free trade (Novianti, 2019). The rapid development of the business world also affects the changing conditions of the environment and global market, making it a challenge for all companies to survive. Companies need various strategies to maintain the company's business by creating optimal operational performance. According to research by Slack and Lewis (2017), operational performance is the ability to respond to customers in the best way, which aims to achieve effectiveness, efficiency, and corporate social responsibility to run company operations, prevent production losses and ensure employees work according to targets. Operational performance is improved by quality control, one of the ways is by implementing a Total Quality Management (TQM) system. Operational performance cannot occur without the concept of TQM, according to the research of Wibowo et al. (2017). This can happen because in implementing the TQM system, companies continuously improve performance at every level of operations or processes in every functional area of an organization by using all available human and capital resources. Total Quality Management (TQM) has an important role in increasing the company's competitive strength and is a form of 'best management practice' that puts forward the overall quality paradigm. Research conducted by Munizu (2010) revealed that TQM is an approach that today's organizations should take, to improve the quality of their products, reduce production costs and increase productivity.

In a study conducted by Labdhagati (2017), researchers used 7 indicators to measure operational performance, namely delivery accuracy, waste treatment, frequency of defective goods, inventory procurement, production cost-effectiveness, lead time, and quality in testing the Effect of Total Quality Management Implementation, Supply Chain Management and Entrepreneurship Orientation to the Operational Performance of Bag Craftsmen at the Ciampea Bag Industry Center. The results showed that Total Quality Management (TQM) had a positive effect on Operational Performance. At the beginning of 2020, the world was shocked by the drastically changed environmental conditions due to the emergence of the Covid-19 virus outbreak from Wuhan, China, which caused world economic activity to be temporarily restricted. As a result, around 20% of MSMEs cannot produce in Malang, due to a drastic decrease in income and the inability of MSMEs to survive during the pandemic (Anggraeni, 2020). According to the Central Statistics Agency (2014) revealed, there are 2 classifications of MSMEs based on the number of employees, where the type of small business has 5-19 employees, and the type of medium-sized business has 20 to 99 employees. Before the Covid-19 pandemic, Malang City MSMEs did not have much difficulty in improving operational performance, due to efforts to implement the dimensions of Total Quality Management. However, after the Covid-19 pandemic conditions, Malang City MSMEs faced several difficulties in their business continuity, such as declining profits, decreased quality due to replacement of raw material suppliers at lower prices, delays in payments to suppliers causing the supply of raw materials to be somewhat hampered, often production errors occur due to many new employees who do not have enough experience so that many competitors make it difficult for MSMEs to survive. The problems above show that Malang City MSMEs have difficulty in maintaining their operational performance during the Covid-19 pandemic. Therefore, it is necessary to re-examine the nature of the dimensions of the implementation of Total Quality Management, to find out its effect on operational performance during the Covid-19 pandemic.

LITERATURE REVIEW

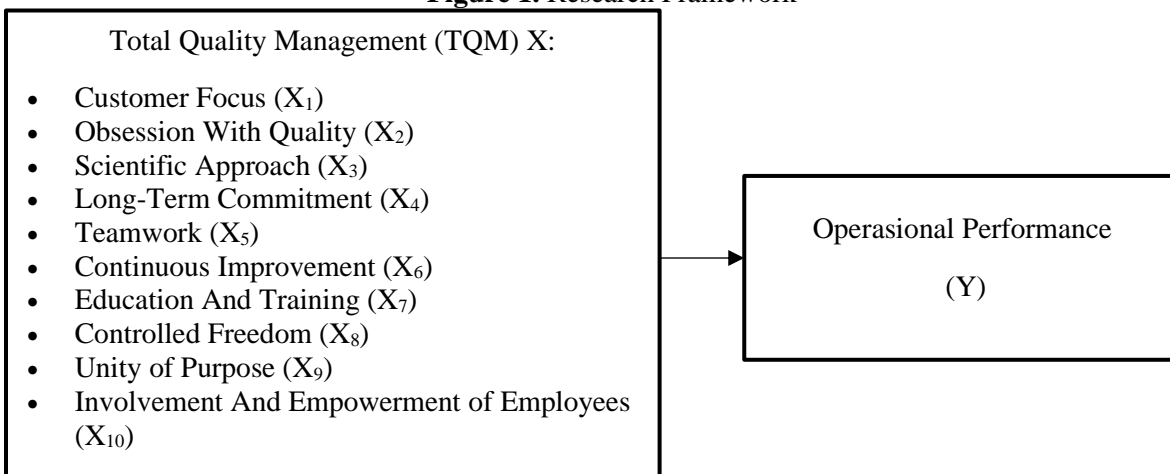
According to Zhu et al. (2008), Operational performance is the ability of a manufacturing company to produce and deliver products to customers. Elvin (2016) states that two factors can affect operational performance, namely internal and external factors. Internal factors consist of access to capital, entrepreneurial abilities, human resources, marketing, business plans, and financial knowledge, while external factors consist of government support, legality, social networks, access to information, social and culture, business competition, and coaching. In the research of Kurupparachchi & Perera (2016), operating performance is measured using four competitive priorities as the main components to be able to have good performance in operations, namely cost, quality, delivery, and flexibility as a measurement of operational performance. Meanwhile, according to Devaraj, et al (2007), there are several indicators of measuring operating performance, namely delivery accuracy, waste treatment, frequency of defective goods, inventory procurement, production cost-effectiveness, lead time, and quality.

According to Heizer et al. (2017), TQM is the management of the entire organization so that it excels in all aspects of goods and services that are important to customers. Meanwhile, according to E. Sadikoglu et al. (2014), TQM is an approach that is widely practiced by companies to continuously improve the quality between services, products, and practices by considering customer requirements to improve customer satisfaction and company performance. Nasution (2005) states that TQM has ten characteristics, namely customer focus, obsession with quality, scientific approach, long-term commitment, teamwork, continuous improvement, education and training, controlled freedom, unity of purpose, involvement, and empowerment of employees.

This study aims to determine the effect of implementing TQM on operational performance in MSMEs in Malang City, using 10 TQM dimensions according to Nasution (2005) and Tjiptono and Diana (2003), namely customer focus, obsession with quality, scientific approach, long-term commitment, teamwork, continuous improvement, education and training, controlled freedom, unity of purpose, involvement and empowerment of employees.

Thus, the schema of the framework of this research are:

Figure 1. Research Framework



RESEARCH METHOD

The location of this quantitative descriptive study is MSMEs located in the Lowokwaru District, Malang City. The population of this study was 79 MSME entrepreneurs or managers, the number obtained was based on data from the Malang City Cooperatives and Micro Business Office in 2020. The number of samples in this study took the entire population, so the sample target was 79 MSMEs. This study uses primary data sources and data collection techniques using questionnaires. The data measurement scale in this study uses a Likert scale with an analytical tool, multiple linear regression. The stages in multiple linear regression analysis are performing four classical assumption tests, namely normality, multicollinearity, heteroscedasticity, and autocorrelation tests, hypothesis testing with t-test and f test, multiple linear regression equation tests, and coefficient of determination test.

RESULT AND DISCUSSION

Research has been successfully conducted on 45 MSME Entrepreneurs. The results of the data instrument test on the validity test show that each question item shows a calculated r-value that is greater than the r table so that all question items are declared valid. The reliability test also shows that each variable has a Cronbach's Alpha value of more than a significant value of 0.7, meaning that each variable is declared reliable and can be used in subsequent research. Furthermore, multiple linear regression analysis is carried out with the steps and discussion as follows:

Table 1. Normality Test

		Unstandardized Residual
	Mean	45
Normal Parameters	Std. Deviation	0,0000000
Most Extreme Differences	Absolute	1,67356247
Customer Satisfaction (Y)	Positive	0,059
	Negative	0,053
	Test Statistic	0.059
	Asymp. Sig. (2-tailed)	0.200

Source: Results of Primary Data Processing (2021)

Based on the table above, it can be seen that the value of Asymp. Sig is 0.200 which is greater than the significance value of 0.05 so it can be concluded that the regression model is normally distributed.

Table 2. Multicollinearity Test

Model	Tolerance	VIF
Customer Focus (X1)	0,754	1,327
Obsession With Quality (X2)	0,532	1,880
Scientific Approach (X3)	0,403	2,480
Long-Term Commitment (X4)	0,510	1,962
Teamwork (X5)	0,318	3,142
Continuous Improvement (X6)	0,459	2,180

Model	Tolerance	VIF
Education And Training (X7)	0,272	3,674
Controlled Freedom (X8)	0,340	2,942
Unity of Purpose (X9)	0,294	3,404
Involvement And Empowerment of Employees (X10)	0,374	2,673

Source: Results of Primary Data Processing (2021)

The table above shows the Tolerance value of each independent variable, none of which shows less than 0.10. As for the VIF value, it shows a number less than 10.00 so it can be concluded that no multicollinearity occurs in the observation data. Below is the result of the Heteroscedasticity test using Scatterplot Image.

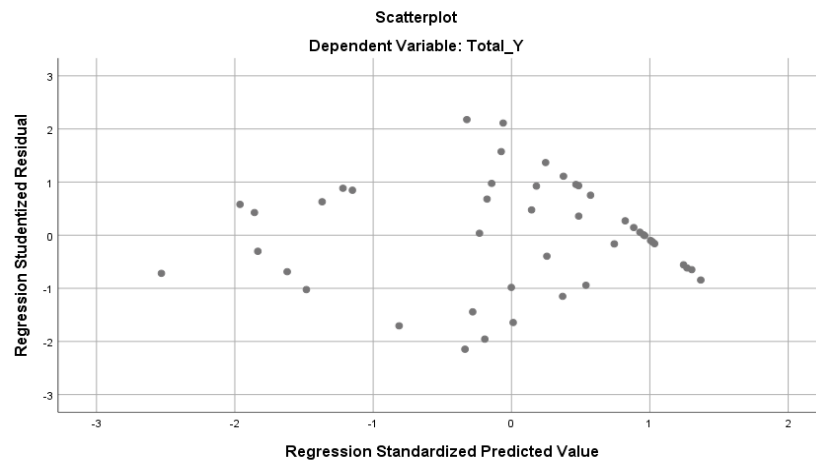


Figure 2. Scatterplot Graphics

The graphic image above shows points that spread randomly above and below the number 0 on the Y axis, this means that no heteroscedasticity problem occurs in the data, so the data can be said to be feasible to predict the dependent variable or in this study operational performance. The following are the results of the Auto-Correlation test to show the influence of the TQM and Operational Performance variables.

Table 3. Multicollinearity Test

Model	R	R Square	Adjusted R-Square	Std. Error of Estimate	Durbin-Watson
1	.898 ^a	.806	.749	1.904	2.081

Based on the results of the table above, it can be seen that the D-W value is 2.081, while the dU value obtained from the D-W table based on the provisions of k=10 and n = 45 is 2.0884, and the dL value is 1.0385. This proves that $dL < d < du$, so there is no certainty that there is autocorrelation or not in the regression model.

Table 4. Multiple Linear Regression Test

Variable	Unstandardized Coefficients		Standardized Coefficients	T statistic	Sig
	B	Std. Error	Beta		
(Constant)	20,289	5,072		4,001	0,000
Customer Focus (X1)	-0,580	0,195	-0,259	-2,973	0,005
Obsession With Quality (X2)	0,814	0,302	0,280	2,698	0,011
Scientific Approach (X3)	0,551	0,356	0,184	1,547	0,131
Long-Term Commitment (X4)	-0,026	0,460	-0,006	-0,056	0,956
Teamwork (X5)	0,554	0,237	0,313	2,335	0,026
Continuous Improvement (X6)	0,057	0,366	0,017	0,157	0,876
Education And Training (X7)	1,663	0,372	0,648	4,472	0,000
Controlled Freedom (X8)	0,945	0,340	0,360	2,776	0,009
Unity of Purpose (X9)	-1,204	0,603	-0,278	-1,996	0,054
Involvement and Empowerment of Employees (X10)	-1,028	0,362	-0,351	-2,839	0,008

From this multiple linear regression test it can be concluded that customer focus has a coefficient of (-0.580) so that if this dimension increases, it can reduce operational performance by 0.58. Obsession with Quality has a coefficient of 0.814 so that if this dimension is increased, it can increase operational performance as much as 0.814. The Scientific Approach has a coefficient of 0.551 so that if this dimension is increased, it can increase operational performance as much as 0.551. Long-Term Commitment has a coefficient of (-0.026) so that if this dimension increases, it can reduce operational performance by 0.026. Teamwork has a coefficient of 0.554 so that if this dimension increases, it can increase operational performance by 0.554. Continuous Improvement has a coefficient of 0.057 so that if this dimension is increased, it can increase operational performance by 0.057. Education and Training has a coefficient of 1.663 so that if this dimension is increased, it can increase operational performance as much as 1.663. Controlled Freedom has a coefficient of 0.945 so that if this dimension increases, it can increase operational performance as much as 0.945. Obsession with quality has a coefficient of (-1.204) so that if this dimension is increased it can reduce operational performance as much as 1.204. The involvement and empowerment of employees have a coefficient of (-1.028) so that if this dimension increases, it can reduce operational performance as much as 1.028.

Table 5. Coefficient Determination Result

Model	R	R Square	Adjusted R-Square	Std. Error of Estimate
1	.898 ^a	.806	.749	1.904

Based on the table above shows the correlation coefficient R of 0.898 or 89% in percentage. This explains that there is a strong and positive relationship between the independent variable and the dependent variable. That is, the increasing the variable X, the more variable Y also increases. The result

of the Coefficient of Determination test is 0.806, this explains that 80% of the Y variable is influenced by the X variable, while the remaining 20% of the Y variable can be influenced by other variables outside the research equation model. The following are the results of the t-test to be able to determine the relationship between the dimensions of TQM and operational performance partially.

Table 6. T-Test Result

Variable	T statistic	Sig
(Constant)	4,001	0,000
Customer Focus (X1)	-2,973	0,005
Obsession With Quality (X2)	2,698	0,011
Scientific Approach (X3)	2,547	0,131
Long-Term Commitment (X4)	-0,056	0,956
Teamwork (X5)	2,335	0,026
Continuous Improvement (X6)	2,157	0,276
Education And Training (X7)	4,472	0,000
Controlled Freedom (X8)	2,776	0,009
Unity of Purpose (X9)	-1,996	0,054
Involvement and Empowerment of Employees (X10)	-2,839	0,008

Source: Results of Primary Data Processing (2021)

Based on the table above, it can be concluded that the dimensions of obsession with quality (X2), scientific approach (X3), teamwork (X5), continuous improvement (X6), education and training (X7), and controlled freedom (X8) affect positive on operational performance, this can be concluded from the positive t-value results. The dimensions of customer focus (X1) and employee involvement and empowerment (X10) have a negative effect on operational performance, this can be shown from the negative t result so that the independent variable has the opposite or negative effect on the dependent variable. The dimensions of long-term commitment (X4) and unity of purpose (X9) do not affect operational performance, because the t value is smaller than the t-table value. The following are the results of the F test to determine the effect of the TQM variable on Operational Performance simultaneously.

Table 7. F-Test Result

ANOVA					
Model	Sum of Squares	df	Mean Square	F	Sig
Regression	511.564	10	51.156	14.114	.000 ^b
Residual	123.236	34	3.625		
Total	634.800	44			

Source: Results of Primary Data Processing (2021)

Based on the ANOVA table above, shows the calculated F value of 14.114 which is greater than the F table value of 2.11 with a significance value smaller than the 0.05 significance level. This proves that the TQM variable affects operational performance simultaneously. The data analysis that has been carried out above has answered the formulation of the problem raised in this study, that total quality management implementation partially affects operational performance. In its application, several dimensions of TQM, namely obsession with quality (X2), scientific approach (X3), teamwork (X5), continuous improvement (X6), education and training (X7), and freedom of control (X8) have a positive effect on operational performance, so that if it is always improved, it will improve operational performance as well. The customer focus dimension (X1) has a negative effect on operational performance, this happens because micro and small MSMEs tend to only focus on production. If MSMEs focus on customers without paying attention to the availability of resources and company capabilities, it can reduce operational performance.

The dimension of employee involvement (X10) also has a negative effect on operational performance, because micro and small MSME workers tend to have employees who do not have sufficient education and experience, and prefer to be ordered. If MSMEs increase employee involvement and empowerment, it can reduce operational performance. Increasing the dimension of long-term commitment (X4) has proven to not affect operational performance, this is because micro and small MSMEs tend to only focus on production, and do not yet have a vision and mission to form a commitment to all MSME employees so that Long-Term Commitments do not affect operational performance. The dimension of unity of purpose (X9) does not affect operational performance. Every micro and small MSME worker tends to be unified, more concerned with different goals and tends to be unmanageable so that the unity of goals does not affect operational performance.

Simultaneous implementation of TQM affects operational performance. This means that if the 10 Dimensions of TQM are implemented properly, it can improve optimal operational performance. Dimensions of Education and Training (X7) dominantly affect operational performance. This is indicated by the highest regression coefficient owned by the dimensions of education and training, which is 1.564 or 156% in percent. Thus, the increasing education and training provided by the company to employees will further increase operational performance.

CONCLUSION

Based on the results of data analysis, it is stated that the 8 dimensions of TQM include customer focus, obsession with quality, scientific approach, teamwork, continuous improvement, education and training, controllable freedom and employee involvement and empowerment partially affect the operational performance of MSMEs in Malang City. While other TQM dimensions, namely long-term commitment and unity of purpose, have no partial effect on the operational performance of MSMEs in Malang City. The application of TQM has a simultaneous effect on Operational Performance so that if it is applied as a whole it will be able to optimize the operational performance of MSMEs in Malang City. As for one of the dimensions of TQM, namely Education and Training, the dominant influence on the Operational Performance of MSMEs in Malang City, so that the dimensions of education and training deserve to be considered by MSMEs in Malang City to continue to be improved.

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