# THE ROLE OF TQM AND ORGANIZATIONAL CULTURE ON OPERATIONAL PERFORMANCE

# JAM

19, 4

Received, December '20 Revised, March '21 June '21

November '21 Accepted, November '21

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**Abstract**: TQM is one of the essential factors in organizational activities. This research aims to determine how TQM elements and organizational culture can lead to operational performance in a mineral water manufacturer in Pasuruan, East Java, Indonesia. Aside from that, researchers also measure how TQM elements, organizational culture, and operational performance can affect corporate performance. The respondents are 50 people from staff, suppliers, and consumers of the manufacturer. The method used in this research is a quantitative method that uses path analysis. The results showed that there is a significant impact between soft TQM elements towards operational performance. The results also showed a significant effect between hard TQM elements, organizational culture, and operational performance towards corporate performance. This research differs from other studies because the model analysis correlates organizational culture with TQM elements in a mineral water company.

**Keywords:** TQM, Soft TQM, Hard TQM, Organizational Culture, Operational Performance, Corporate Performance

Cite this article as: Tanjoyo, C., E. Harianto, and T. F. C. W Sutrisno. 2021. The Role of TQM and Organizational Culture on Operational Performance. Jurnal Aplikasi Manajemen, Volume 19, Number 4, Pages 938–948. Malang: Universitas Brawijaya. http://dx.doi.org/



Journal of Applied Management (JAM) Volume 19 Number 4, December 2021 Indexed in DOAJ -Directory of Open Access Journals, ACI - ASEAN Citation Index, SINTA -Science and Technology Index, and Google Scholar

Operations are one of the most important in company activities. An excellent operating system can help answer consumer needs for company products. Companies also need product quality management. That is necessary to maintain product quality from companies to consumers. Therefore, companies need to use Total Quality Management (TQM)

for company operations.

10.21776/ub.jam.2021.019.04.20.

TQM is divided into two elements, namely soft TQM and hard TQM (Christian *et al.*, 2019).

The company's soft TQM is a matter that concerns the company's long-term problems. That also needs to be considered because it involves its internal relationships, such as relationships with suppliers. Companies need soft TQM to produce effective operations. Soft TQM can develop a company's strategy in the future (Christian *et al.*, 2019). The company's hard TQM concerns ways and techniques to improve product quality. It is essential to make a good quality of the product. One of the things that affect a good quality product is production management.

Corresponding Author: Eric Harianto, School of Business and Management, Universitas Ciputra Surabaya, Indonesia, DOI: http://dx.doi. org/10.21776/ub.jam.2021.019.04.20 Apart from TQM, organizational culture is needed to produce good operational performance and corporate performance. Organizational culture provides a picture of the same values, beliefs, and assumptions about an organization (Christian *et al.*, 2018). That is very necessary to maintain good cooperation between employees.

Operational performance is needed to produce good company performance. Good operational performance will increase productivity, product quality, and customer service. That will improve the company's performance in finance, sales, customer satisfaction, and good internal processes (Sutrisno, 2019).

This study aims to explain the relationship between elements of TQM and organizational culture on operations and corporate performance. Therefore, this study can provide an overview of the influence of TQM and organizational culture elements on the operational performance and corporate performance of manufacturing companies, especially mineral water manufacturing companies. This research can describe the company's operational conditions. The results of the study can also be used for one of the considerations of future decision-making.

# LITERATURE REVIEW

# **Total Quality Management**

Total Quality Management (TQM) is an integrated company philosophy. This philosophy aims to continuously improve goods or services and processes to meet consumer expectations (Baird et al., 2011). TQM refers to the emphasis on the company's quality as a whole, from suppliers to consumers (Render and Heizer, 2015). TQM is also a company's commitment to providing the best for its consumers (Tampubolon, 2014). TQM is divided into two elements, namely soft TQM and hard TQM (Christian et al. (2019) and Saleh et al. (2018)).

# Soft TQM

Soft TQM is matters related to the management of company concepts and principles (Sutrisno, 2019). Soft TQM also leads to corporate behavior

(Saleh et al., 2018). Abdallah (2013) argues that soft TQM relates to humans or employees. The top management has an essential role in introducing and facilitating the TQM strategy by creating a cooperative atmosphere (Abdallah, 2013). That also needs to be considered because it involves internal companies, such as relationships with suppliers. Companies need soft TQM to produce effective operations. Soft TQM can be used to formulate future corporate strategies (Christian *et al.*, 2019). Sutrisno (2019) explained that the soft TQM indicators consist of top management commitment, continuous improvement, training and education, customer focus, process management, workforce management, supplier relationship.

#### Hard TQM

According to Sutrisno (2019), hard TQM is related to the methods and techniques used to improve product quality. In other words, hard TOM leads more to technical factors such as measurement and analysis (Saleh et al., 2018). Analysis in hard TQM leads more to quality analysis (Kanapathy et al., 2017). Companies need hard TQM to improve and support the implementation of soft TQM (Abdallah, 2013). The company's hard TQM concerns the ways and techniques to enhance the quality of the product. That is very necessary to make a highquality product. One factor that contributes to a high-quality product is production management. Quality management indirectly helps the implementation of soft TQM as well (Psomas et al., 2013). Sutrisno (2019) shows that four indicators affect hard TQM: statistical process control, production management, quality tools and techniques, and product design.

#### **Organizational Culture**

Organizational Culture is the equation of assumptions, values, and beliefs in company organizations (Christian *et al.*, 2018). This equation makes the individuals involved in knowing right and wrong in the company. The shared organizational values can shape communication and sympathy. These two things will shape the behavior of the members of

the organization (Valencia et al., 2016). Organizational culture is also equality of assumptions that its members do not speak about the organization (Makhdoom et al., 2016). These assumptions determine the perceptions, thoughts, feelings, and behavior of organizational members.

Robbins and Judge (2016) also explain organizational learning is the same values in an organization that are different from the others. That is because organizational culture also reflects its members' shared values and beliefs that develop over time (Baird et al., 2011). Kwarteng and Aveh (2018) explain that organizational culture is one of the parameters for companies to survive and develop. That is because organizational culture affects company operations, influencing employee behavior and company performance (Gambi et al., 2015). According to Sutrisno (2018), 3 indicators affect Organizational Culture: management support, employee reward system, and organizational clarity.

# **Operational Performance**

According to Sutrisno (2019), Operational performance is performance related to the company's internal operational processes such as productivity, product quality, and customer satisfaction. Improved operational performance can be achieved by determining appropriate operational practices. Companies must also update these practices to continue to experience increased operational performance (Knol et al., 2019). Operational performance can also be improved by improving inventory management performance and product quality performance (Baird et al., 2011).

#### **Operational Performance**

Operational performance is needed to produce good company performance. Good operational performance will increase productivity, product quality, and customer service. Thus, leading to improvement of company performance in financial, sales, customer satisfaction, and good internal processes (Sutrisno, 2019). Sutrisno (2019) explained that four indicators show operational performance: improving product quality, service quality, increasing productivity, reducing disability costs, reducing waiting time, accuracy of product delivery, and inventory performance.

# **Corporate Performance**

Corporate performance compares the level of success and development of a company (Christian et al., 2018). Companies need to pay attention to the financial and non-financial developments of the company to determine the corporate performance. Sutrisno (2019) explained that four indicators show corporate performance: financial performances, sales performances, customer satisfaction, and internal processes.

#### HYPOTHESIS DEVELOPMENT

Soft TQM is one of the variables that affect operational performance. According to research by Sutrisno (2019), soft TQM has a positive effect on the company's operational performance. That is because good soft TQM can improve the company's operational performance. Soft TQM is matters relating to the company's internal such as the principles and concepts of the company. That makes soft TQM one of the essential aspects of the company because it is related to its long-term problems (Sutrisno, 2019). According to research by Knol et al. (2019), one aspect of soft TQM that affects operational performance is an improvement. Repairs made must be scheduled regularly and continuously. So the soft TQM aspect needs to be considered to improve the company's operational performance. Based on the explanation above, the researchers make the following hypothesis.

Hypothesis 1: Soft TQM affects Operational Performance

Hard TQM is one of the variables that affect operational performance. According to research by Sutrisno (2019), Hard TQM has a positive effect on the company's operational performance. In contrast to soft TQM, Hard TQM is related to the ways and techniques that companies use to improve the quality of their products. That makes hard TQM one of the essential aspects of the company in its operational performance. Based on the explanation above, the researchers make the following hypothesis.

**Hypothesis 2:** Hard TQM affects Operational Performance

Organizational culture is one of the variables that affect operational performance. The research results by Makhdoom et al. (2016) showed the influence of organizational culture on the company's operational performance. One indicator of organizational culture is the company's mission or goals. That relates to operational performance indicators, namely improving product quality or improving product quality.

Companies need to set clear goals such as quality products. The results of these objectives can make the company improve the quality of its products. Research conducted by Gambi et al. (2015) also shows the influence of organizational culture on operational performance. That is because organizational culture affects the company's operations, affects employee behavior to the company's performance (Gambi et al., 2015). Based on the explanation above, the researchers make the following hypothesis.

**Hypothesis 3:** Organizational Culture affects Operational Performance

Corporate performance is influenced by many variables, one of which is soft TQM. According to Sutrisno (2019), corporate performance is influenced by soft TQM. That is influenced by several related soft TQM indicators, one of which is customer focus. One indicator that affects corporate performance is customer satisfaction. Research conducted by Salisu and Bakar (2019) also shows that one of the other soft TQM indicators, namely the ability to establish relationships, can improve the company's performance. That indicates that there is an essential relationship between soft TQM and corporate performance variables. Based on the explanation above, the researchers make the following hypothesis

**Hypothesis 4:** Soft TQM affects Corporate Performance

Hard TQM affects corporate performance. Sutrisno's research (2019) shows a positive relationship between hard TQM and corporate performance. Hard TQM is directly related to production. Good production will improve corporate performance in the company's internal processes.

According to research by Rahman and Bullock (2002), hard TQM indicators that affect corporate performance are productivity, employee morale, warranty cost, and cost of quality. The productivity, warranty cost and cost of quality indicators have similarities with the combined indicators of Sutrisno's (2019) research, namely production management. That shows that there is a close relationship between hard TQM and corporate performance. Based on the explanation above, the researchers make the following hypothesis.

**Hypothesis 5:** Hard TQM affects Corporate Performance

Corporate performance is influenced by several variables, one of which is organizational culture. According to research by Kwateng and Aveh (2018), organizational performance affects financial performance. Financial performance is one indicator that affects corporate performance. That shows the relationship between organizational culture and corporate performance.

Research conducted by Prajogo and Dermott (2011) shows a strong influence between organizational culture and corporate performance, especially in the quality of the processes carried out. That shows that there is a resemblance to one of the indicators used in corporate performance, namely the company's internal processes.

**Hypothesis 6:** Organizational Culture affects Corporate Performance

The results of the study show that operational performance has a significant effect on corporate performance. That is in line with research conducted by Sutrisno (2019). One of the most influential operational performance indicators is reducing waiting time. That relates to the waiting time for goods to arrive from the supplier to the company. This waiting time is also related to the delivery time of goods to consumers. The company has been able

to reduce the time for the delivery so that it affects the company's performance, namely customer satisfaction. Customer satisfaction is the satisfaction of goods received from suppliers to the company and the satisfaction of goods received by consumers from the company. Based on the explanation above, the researchers make the following hypoth-

**Hypothesis 7:** Operational Performance affects Corporate Performance

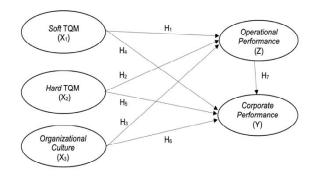


Figure 1. Research Framework

# be seen in Table 1 as follows:

RESULTS

**METHOD** 

Table 2 shows the percentage of gender, length of the relationship, and respondent type. The gender of the questionnaire fillers was 68% male and the remaining 32% female. Questionnaire fillers had

research was conducted in 2020 at a mineral water manufacturer in Pasuruan, East Java, Indonesia. The data were collected using a questionnaire. The Questionnaires are sent in the form of email or paper questions to all staff, suppliers, and customers

This research uses the quantitative method. The

of the company with a total of 50. Respondents answered the questionnaire using a Likert scale. Namely, 1 strongly disagrees, 2 disagrees, 3 is neutral, 4 is agreed, and 5 strongly agrees. The criteria for all respondents are to have at least one year of work experience related to the company. Researchers used SEM-PLS to analyze the results of this study. Explanation of variables and indicators can

Table 1. Variable and Indicators

Variable	Indicators	Sources	Factor Loading
Soft $TQM(X_1)$	Continuous Improvement (CI)	Sutrisno (2019)	0,643
- · · · · · ·	Process Management (PM)		0,832
	Supplier Relationship (SR)		0,744
$\operatorname{Hard} \operatorname{TQM}(X_2)$	Statistical Process Control (SPC)	Sutrisno (2019)	0,551
	Quality Tool and Technique (QTT)		0,975
Organizational Culture (X <sub>2</sub> )	Management Support (MS)	Sutrisno (2018)	0,960
3	Reward System (RS)		0,773
Operational Performance (Z)	Service Quality (SQ)	Sutrisno (2019)	0,681
•	Reducing Waiting Time (RWT)		0,813
	Accuracy of Product Delivery (APD)		0,700
Corporate Performance (Y)	Financial Performance (FP)	Sutrisno (2019)	0,631
• • • • • • • • • • • • • • • • • • • •	Customer Satisfaction (CS)		0,857
	Internal Processes (IP)		0,782

**Table 2. Respondents Profile** 

Gender	Length of Relationship		Respondent Type	
Male 68%	1 year	18%	Supplier	64%
Female 32%	2 years	52%	Staff	26%
	3 years	30%	Consumer	10%

# The Role of TQM and Organizational Culture on Operational Performance

Table 3. Model Validity and Reliability

	Cronbach's alpha	Composite Reliability	AVE	R Square
Soft TQM (X <sub>1</sub> )	0,588	0,786	0,553	
Hard TQM $(\dot{X}_{2})$	0,519	0,757	0,627	
Organizational Culture (X <sub>3</sub> )	0,679	0,841	0,730	
Operational Performance (Z)	0,567	0,777	0,538	0,415
Corporate Performance (Y)	0,628	0,804	0,582	0,594

an average relationship with the company for 2 years, namely 52%. Most types of respondents came from company suppliers.

Table 3 shows the validity and reliability of the research model. Abdilah and Jogiyanto (2015) state that a variable is valid if the AVE is greater than 0.5

Table 4. Hypothesis Testing

Hypothesis Description		Path Coefficient	T-Statistic	Information
H	Soft TQM $(X_1) \rightarrow$ Operational Performance $(Z)$	0,505	3,368	Supported
Н,	Hard TQM $(\dot{X}_2) \rightarrow$ Operational Performance (Z)	0,221	1,619 I	Not Supported
$\tilde{H_3}$	Organizational Culture $(X_3) \rightarrow$ Operational Performance $(Z_3)$	) 0,095	0,640 1	Not Supported
$H_{_{4}}$	Soft TQM $(X_1) \rightarrow \text{Corporate Performance}(Y)$	-0,140	1,030 1	Not Supported
$H_{5}$	Hard TQM $(\dot{X}_2) \rightarrow$ Corporate Performance $(Y)$	0,267	2,078	Supported
$H_6$	Organizational Culture $(X_3) \rightarrow \text{Corporate Performance}(Y)$	0,372	2,913	Supported
$H_7^{\circ}$	Operational Performance $(Z) \rightarrow Corporate Performance (Y)$	0,488	3,615	Supported

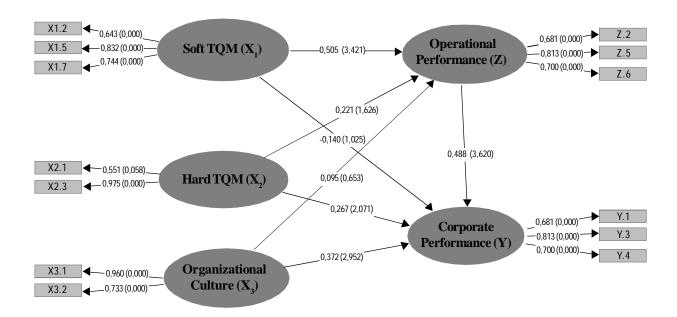


Figure 2. Partial Least Square Model

and reliable if Cronbach's alpha > 0.6 and composite reliability > 0.7. Apart from validity and reliability, the expected R square is greater than zero. From table 3 it can be seen that Cronbach's alpha soft TQM (X1), hard TQM (X2), and operational performance (Z) are below 0.6. However, according to Hair et al. (2017), Cronbach's alpha is sensitive to the number of indicators in the measurement. Also, generally, Cronbach's alpha tends to underestimate its internal consistency reliability. That makes the application of composite reliability more necessary for measuring its reliability. From table 3 it can also be seen that the R square of Operational Performance (Z) and Corporate Performance (Y) is greater than zero so that it meets the requirements.

Table 4 shows the results of the path coefficient and the T-statistic of the research model. The relationship between variables can be said to be significant if the T-statistic is greater than 1.96. Table 4 shows the relationship in H1, H2, H5, H6, and H7 has a significant effect. Meanwhile, the relationship in H2, H3, and H4 has no significant effect.

#### DISCUSSION

The results of this study indicate that soft TQM has a significant effect on the company's operational performance. That is in line with research conducted by Sutrisno (2019). The indicator that most influences soft TQM is process management. That can be seen in Table 1, showing the loading factor for the management process with the greatest value, which is equal to 0.832.

Apart from research by Sutrisno (2019) and Baird et al. (2011) also show that process management is one of the factors that influence TOM. Baird et al. (2011) explained that other indicators affect TQM, namely the relationship of supplier quality. Baird et al. (2011) also explain that process management and supplier relationships affect company operations.

The company always makes smooth sales transactions to consumers. Apart from sales, payment transactions to suppliers were running smoothly. That allows the company to receive requests for goods from suppliers smoothly. The goods received are

processed and sent to consumers according to the time determined by the company. The results of this study indicate that hard TQM has no significant effect on the company's operational performance. The results of this study are not following the research conducted by Sutrisno (2019). There is 1 Hard TQM indicator that has a loading factor below 0.7, namely Statistical Process Control. So far, the company has not yet established standards with KPIs for production and delivery. That causes production defects and damage when shipping goods to consumers. This damage ultimately affects the service quality of consumers of the company.

The results of this study indicate organizational culture has no significant effect on the company's operational performance. The results of this study are inconsistent with research conducted by Baird et al. (2011), Gambi et al. (2015), and Sutrisno (2018). After the researchers made observations, the things that caused the organization culture to have no significant effect on operational performance were because the company had not intensively internalized the organizational culture of its staff. Also, the company has not conducted training for operational management which can improve the soft skills and hard skills of its staff. Apart from training, companies also do not routinely educate product knowledge to their suppliers and consumers. That makes the quality of service from company management to its staff not optimal. In addition to staff, lack of education to suppliers and consumers also affects the service quality of company management. That can also be seen from the loading factor of the low service quality, namely 0.681.

The results of this study indicate that soft TQM has no significant effect on corporate performance. The results of this study are not in line with research conducted by Sutrisno (2019). Apart from Sutrisno (2019), the results of research conducted by Rahman and Bullock (2002), Christian et al. (2018), and Sutrisno et al. (2019) are also do not follow the research conducted.

The results showed that the soft TQM relationship path coefficient on corporate performance was -0.140 (Table 4). That shows that with the increasing soft TQM, the corporate performance of the company is decreasing. After the researcher made observations, it was found that the company was making continuous improvements in various aspects, such as purchasing new machines (bottle filling) and developing new bottle products, which caused a decline in the company's financial performance. Improvement made using high costs. The company is also renovating a new filling machine room and bottle production line. That disrupts cup production operations adjacent to filling bottles, storage locations for finished goods, and stocks of finished goods. The above problems disrupt synergies with other divisions in the company.

The results of this study indicate that hard TQM has a significant effect on corporate performance. That is in line with research conducted by Sutrisno (2019). Rahman and Bullock (2002) also explain a positive relationship between hard TQM and firm performance. One of the indicators discussed in Rahman and Bullock's (2002) research is technology in implementing TQM. This technology will affect the implementation of statistical process control and the company's quality tools and techniques.

The company already has good laboratory equipment for conducting new product trials and production results. The company has also carried out quality control for each raw material shipped. Good laboratory facilities and quality control ensure the safety of the product contents. That can affect the satisfaction of consumers who buy company products.

The results of the study showed organizational culture had a significant effect on corporate performance. That is in line with research conducted by Christian et al. (2018). Research conducted by Valencia et al. (2016) also obtained the same result. Kwarteng and Aveh (2018) also show a positive relationship between organizational culture and corporate performance.

One of the indicators of organizational culture described by Kwarteng and Aveh (2018) is a mission. The mission discussed in this study is related to the direction and goals set by the company. The direction and goals set cannot be separated from the support of company management. That is im-

portant because it greatly affects the company's performance. Apart from management support, the reward system also plays a role in company performance.

Company management always motivates staff and suppliers to give the best for the company. Also, company management motivates consumers to be more enthusiastic in marketing the company's products. That affects the company's internal processes, namely the synergy between all divisions within the company. Apart from being internal, supplier and consumer satisfaction have an increasingly positive effect.

The results of this study indicate that operational performance has a significant effect on corporate performance. That is in line with research conducted by Sutrisno (2019). One of the most influential operational performance indicators is reducing waiting time. That is related to the waiting time for the goods to arrive from the supplier to the company. This waiting time is also related to the delivery time of goods to consumers. The company has been able to reduce the time for the delivery so that it affects the company's performance, namely customer satisfaction. Customer satisfaction is meant here as the satisfaction of goods received from suppliers to the company and goods received by consumers from the company.

# **CONCLUSIONS**

Soft TQM affects the operational performance of the company. That is because the company has maintained good relations with suppliers by paying bills on time. As for consumers, companies can provide bonuses. However, Soft TQM does not affect corporate performance. That is because the company often makes improvements but ignores company finances.

Hard TQM does not affect the company's operational performance. That is because the company has not set SOPs with KPIs so that the percentage of defective is still high. However, Hard TQM affects corporate performance. That is because the company has good laboratory equipment and has QC in the company.

Organizational Culture does not affect the operational performance of the company. That is because the company has not yet internalized its organizational culture, such as conducting weekly meetings. Organizational Culture affects corporate performance. That is because the company always motivates suppliers to provide the best products. Meanwhile, for consumers, companies market their products well.

Operational performance affects corporate performance. The company makes calculations, thereby reducing the waiting time for products from both suppliers and consumers.

#### **LIMITATIONS**

Researchers can only use one company to research with the analytical model used in this study. In addition, the research was carried out in a pandemic Covid-19 condition, so it could not be as accurate as when it was not during a pandemic.

#### **IMPLICATIONS**

Good soft TQM will improve the company's operational performance. However, good soft TQM can reduce corporate performance. Therefore, companies need to consider carefully every decision taken. One thing that needs to be considered in making decisions is an investment in new machines and products.

A good hard TQM will affect corporate performance. However, hard TQM does not significantly affect the company's operational performance. In the company, it is necessary to pay attention to the SOP used in every activity within the company. In addition to SOPs, companies also need to pay attention to the equipment used in quality control to maintain quality and customer satisfaction.

A good organizational culture will affect corporate performance. However, organizational culture does not affect the company's operational performance. Companies need to pay attention to how to deliver support to staff, suppliers, and consumers to maintain relationships. That is due to the importance of the quality of these relationships affecting

corporate performance, such as customer satisfaction and internal company relationships. Companies also need to internalize organizational culture, educate and train their staff, and product knowledge education to suppliers and consumers.

The good operational performance will affect corporate performance. Companies need to pay attention to operational performance such as delivery speed, service quality, and delivery accuracy. That needs to be considered because it relates to customer satisfaction. In addition to customer satisfaction, good operational performance can also affect the company's financial performance.

#### RECOMMENDATIONS

Suggestions for further research can use the same analytical model for different populations. Researchers suggest a more specific population, such as mineral water manufacturers in East Java. The researcher also suggests giving questionnaires to staff in sample companies of equal positions. The researcher's suggestion for the company is that it also needs to pay attention to every decision taken and its consequences. That is because there can be positive and negative impacts simultaneously in the company.

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