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## Application of Total Quality Management on Operational Performance

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### ABSTRACT

**Purpose** – The purpose of this study is to find out how customer satisfaction, employee empowerment, continuous quality improvement, and fact-based management are elements of TQM that can affect operational performance. **Methodology/approach** – This study is conducted in Quantitative Method by gathering primary data from employee of Bank Mandiri in the Special Region of Yogyakarta (DIY). The sampling technique is purposive sampling. The data that has been obtained is processed using the Smart PLS statistical tool. **Findings** – It was found that customer satisfaction, employee empowerment, and continuous quality improvement were proven to have a negative influence on operational performance. While fact-based management in this study is proven to have a positive influence on operational performance. **Novelty/value** – This study contributes to deliver knowledge about how the components of total quality management represented by customer satisfaction, employee empowerment, continuous quality improvement, and fact-based management affect operational performance of Banking Company, specifically Bank Mandiri in the Special Region of Yogyakarta (DIY) which has never been studied before.

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### INTRODUCTION

Companies that are able to survive and compete are companies that can utilize the resources owned so that performance can be achieved easily (Haris & Tanpubolon, 2022). In addition, operating performance can have a positive or negative impact on the sustainability of the company (Haris & Tanpubolon, 2022). High operating performance will help businesses achieve goals and become capital to survive in increasingly fierce competition (Haris & Tanpubolon, 2022).

According to (Lam, et al., 2012) Total Quality Management (TQM) is a globally recognized quality approach that enables the development of high-quality products and services as well as the improvement of organizational performance. Due to today's global competition, companies must consider the TQM approach in order to compete in the international market (Zakuan, et al., 2010). In addition, Feng, et al. (2006) explains that TQM can create a quality culture within the organization that results in continuous improvement in the quality of both products and services.

Companies that focus on customer satisfaction concentrate on consumer demands or expectations

primarily through measurement, such as fact-based management, employee empowerment, continuous quality improvement, and customer satisfaction. The TQM component is highly dependent on consumers' thoughts or impressions of certain services or products offered by the company, so it can have an impact on operational performance (Xu, et al., 2016). According to Singh (Singh, 2021), a company should always make a good relationship with its customers. Therefore, companies can determine what customers expect to increase customer satisfaction. Companies must improve customer satisfaction through the development of customer expectations, which will allow them to adjust their operational performance according to customer expectations (Berman & Evans, 2018).

Wibowo (2016) states that employee empowerment is a component that greatly influences operational performance because it encourages people to be more involved in decision-making, which can increase their abilities, sense of belonging, and responsibility. According to (Khan, 2014), employee empowerment means giving employees responsibility and authority to make decisions about product building and overall decision making.

For successful operational performance, employees must continuously improve the quality of managing daily tasks. According to (Anderson & Shattuck, 2012), quality improvement depends on a process management approach that results in a continuous innovation process and improvement of products and services. The value received by the business can increase gradually and significantly if the company makes continuous quality improvement (Bolatan, et al., 2016). All parties must be involved in continuous quality improvement because it results in improved consumer relations, employee creativity, operational performance, and company development (Jaakkola & Alexander, 2014).

Osman and Ilham (2013) states that fact-based management is the basic idea that companies should make high-quality decisions based on a combination of critical thinking and the best facts of the moment. Pratitha, et al. (2016) states that if the implementation of TQM can be done well, then the implementation of operational performance such as selection, design, renewal, operation, and supervision of systems will be successful.

Financial service institutions, such as banking companies, are one of the biggest industries and the backbone of the Indonesian economy. Thus, an adequate banking performance could develop the Indonesian economy. In other words, the effective operational performance of a banking company plays an important role not only for the company itself but also for the economic development of a country. Creating modern thoughts and looking into approaches by financial service institutions like bank companies permits them to preserve the competitiveness and innovativeness of the company. By adopting the implementation of TQM to the operations help Bank Company to convey high-quality value on its service in order to meet the customers' demand and at the same time pursue the sustainable competitive advantage (Rawashdeh, 2014). In this way, researchers should give contributions while examining the components that might possibly affect bank performance and its strategic competitiveness; one of them is the implementation of TQM (Nazar et al., 2018).

This study will focus on the implementation of TQM and its relationship with the operational performance of Bank Mandiri. As the biggest bank company in Indonesia, Bank Mandiri's best practices for implementing TQM can be a role model for other bank companies in Indonesia to improve their operational performance and boost their competitiveness. Bank Mandiri, based in Yogyakarta, was the subject of this study. With a clear vision and mission and full support from management, Bank Mandiri continues to strive and encourage the implementation of TQM, among others through employee empowerment and increasing customer satisfaction, so as to improve company performance. Bank Mandiri's operational performance continues to improve, as indicated by the value of its assets. This is indicated by the gross bank only non-performing loan position which decreased to a level of 1.88% in the fourth quarter of 2022. This position is much better than the position in September 2021, when the NPL had touched 2.81%. In 2022, Bank Mandiri was observed to have managed to raise total third party funds worth 15.46% to Rp. 1,492.6 trillion, while in 2021, these deposits recorded Rp. 1,292.73 trillion.



The increase in total low-cost funds by 21.63% to Rp. 1,094.55 trillion supports this achievement.

Thus, researchers want to know whether the implementation of TQM can really improve Bank Mandiri's operational performance, especially in Yogyakarta, which has never been studied by researchers before. The purpose of this study is to find out how customer satisfaction, employee empowerment, continuous quality improvement, and fact-based management are elements of TQM that can affect operational performance.

## LITERATURE REVIEW

### The Positive Effect of Customer Satisfaction on Operational Performance

Operational performance is positively correlated with customer satisfaction (Alkahtani, et al. 2015). Operational performance in terms of flexibility, delivery, quality, and cost is affected by customer satisfaction (Alkahtani, et al. 2015). Businesses have the ability to influence customer satisfaction by acting and meeting customer needs, thereby improving operational performance (Siguaw, et al. 1998). Companies can maintain and develop competitive advantage by conducting market orientation, which can increase market power, prioritize employee needs, provide better service, and improve customer satisfaction to achieve customer satisfaction.

**H1: Customer Satisfaction has a positive influence on Operational Performance.**

### The Positive Effect of Employee Empowerment on Operational Performance

Empowering employees will increase employees' confidence and loyalty to the company (Miranthi & Idris, 2017). With a more flexible work environment, employees are easier to spot problems (Harter & Wagner, 2006). Notifications to employees improve a company's operational performance because it allows them to share innovative ideas and helps save costs (Kotler & Keller, 2016). In addition, they help resolve customer complaints and provide excellent service, making customers more loyal to the company (Maister, 2014). Pujisari (2020) states that employee empowerment has an impact on operational performance because it can make employees want to complete tasks, which in turn improves operational performance. Putri dan Ardana (2016) It also states that ideal employee empowerment is a very important component of good operational performance.

**H2: Employee Empowerment has a positive influence on Operational Performance.**

### The Positive Effect of Continuous Quality Improvement on Operational Performance

Continuous quality improvement is part of quality management that affects operational performance. Blanco dan Lal (2008) Explains how this increase has evolved over the past thirty years and why it is important for modern companies to win the competition. Companies pursue continuous quality improvement as a way to improve themselves (Furterer & Elshennawy, 2005). This is done to help the organization achieve its goals, objectives, or strategies (Gilyazetdinov, et al., 2015). According to Boer, et al. (2001), continuous quality improvement is a continuous, planned, and systematic process of change that aims to improve operational performance with the aim of improving operational performance itself. In view of this, enforcement (George & Jones, 2012).

**H3: Continuous Quality Improvement has a positive influence on Operational Performance.**

### The Positive Effect of Fact-Based Management on Operational Performance

Good decisions are based on facts and objective statistical analysis, according to Edwards (2005). By properly collecting and analyzing data, businesses can find and eliminate factors that interfere with operational performance. Drucker (1985) states that effective managers must use accurate data and information to make informed decisions. The right data can help businesses understand current operational performance, enable improvements, and help address more difficult issues. Juran and

Godfrey (1999) states that data collection and analysis is an important component in improving operational quality and performance. The use of data to measure quality, find sources of nonconformities, and plan continuous improvement are all examples of fact-based management. The tool for performing quality analysis is the Ishikawa Diagram, also known as the Cause-and-Effect Diagram (Ishikawa, 2005). This method shows how important thorough data analysis is to find key operating problems. By understanding the causes of these problems, companies can take appropriate actions to improve operational performance. Umiarso (2022) explains how fact-based management affects operational performance, and Umiarso also says that this is the basis for making informed decisions about improvement opportunities that can improve the company's operational performance. According to Gunday, et al. (2011), companies can use authentic data, facts, and analytics to improve their operational performance.

**H4: Fact Based Management has a positive influence on Operational Performance.**

## **METHOD**

### **1. Population, Sample, Sampling Method**

This study analyzed Bank Mandiri employees in the Special Region of Yogyakarta (DIY). According to the rule of thumb by Roscoe (1975), the sample size limit of respondents is between 30 and 500. Based on Roscoe (1975) above, the samples in this study ranged between 30 and 500 samples. In this study, purposive sampling method was used. The sample criteria for this study are Bank Mandiri employees in DIY. Employees also understand well the concepts of operational performance and total quality management.

### **2. Data Retrieval Methods**

The data collection of this study used questionnaires given directly to employees from Bank Mandiri in DIY. The questionnaire contains questions related to or describes each variable used in this study and is assessed using a five-point Likert scale. The customer satisfaction variable consists of five questions developed from (Lovelock & Wright, 2012), the employee empowerment variable consists of five questions developed from Sharma, et al. (2014), the continuous quality improvement variable consists of five questions developed from Arifianto and Aryanda (2017), the fact-based management variable consists of five questions developed from Gunanta (2021), and the operational performance variable consists of eight questions developed from Jabbour, et al. (2013).

### **3. Data Analysis Methods**

According to Ghozali (2017), the validity of the study is tested to determine the appropriate range of measuring instruments to measure the object to be measured. The SmartPLS application is used as an analytical tool to assess the loading factor value of each indicator. A loading factor value below 0.4 removes the indicator from the research model, and a loading factor value above 0.7 indicates that the indicator is good (Musianto, 2002). Next is measuring reliability, which is to see the results of SmartPLS output by looking at composite reliability. Musianto (2002) states that composite reliability is used to calculate reliability values between indicators of the constructs that make it up. If the composite reliability value is more than 0.7 and Cronbach's alpha recommendation value is more than 0.6, the variable is considered good. Furthermore, to assess the design of hypothesis testing, direct influence testing is required. The bootstrap resampling method is used to test research hypotheses. If the hypothesis has a p value of less than 0.5, then the hypothesis is said to be accepted or supported (Musianto, 2002).



## RESULT AND DISCUSSION

### 1. Validity Test

**Table 1. Validity Test Results**

Indicators/ Variables	Value of Loading Factor				
	Customer Satisfaction (CS)	Employee Empowerment (EE)	Continuous Quality Improvement (CQI)	Management Based on Facts (MBF)	Operational Performance (OP)
KP1	0.899				
KP2	0.983				
KP3	0.946				
KP4	0.965				
KP5	0.989				
PK1		0.981			
PK2		0.873			
PK3		0.970			
PK4		0.968			
PK5		0.980			
PMB1			0.971		
PMB2			0.956		
PMB3			0.813		
PMB4			0.887		
PMB5			0.978		
MBF1				0.909	
MBF2				0.982	
MBF3				0.848	
MBF4				0.949	
MBF5				0.948	
KO1					0.893
KO2					0.854
KO3					0.790
KO4					0.857
KO5					0.810
KO6					0.903
KO7					0.808
KO8					0.705

Source: Primary Data Processed (2023)

The results of validity testing are shown in table 1 and figure 2, which show that the question indicator for each variable has a loading factor value above 0.7. This suggests that individual indicators of each variable could be used in the study, as they were eligible.

### 2. Reliability Test

**Table 2. Reliability Test Results**

Variable	Composite Reliability	Cronbach's Alpha
Customer Satisfaction	0.982	0.977
Employee Empowerment	0.981	0.976
Continuous Quality Improvement	0.966	0.956
Management Based on Facts	0.969	0.959
Operational Performance	0.946	0.935

In Table 2, the customer satisfaction variable produces a reliability composite value of 0.982, the employee empowerment variable produces a value of 0.981, the continuous quality improvement variable produces a value of 0.966, the fact-based management variable produces a value of 0.969, and the operational performance variable produces a value of 0.946. Since the value of the latent variable is more than 0.7, his decision shows that the five variables analyze have good composite reliability. The overall results of the study, which had a cronbach's alpha value of more than 0.6, also showed that the overall variables of the study were considered reliable.

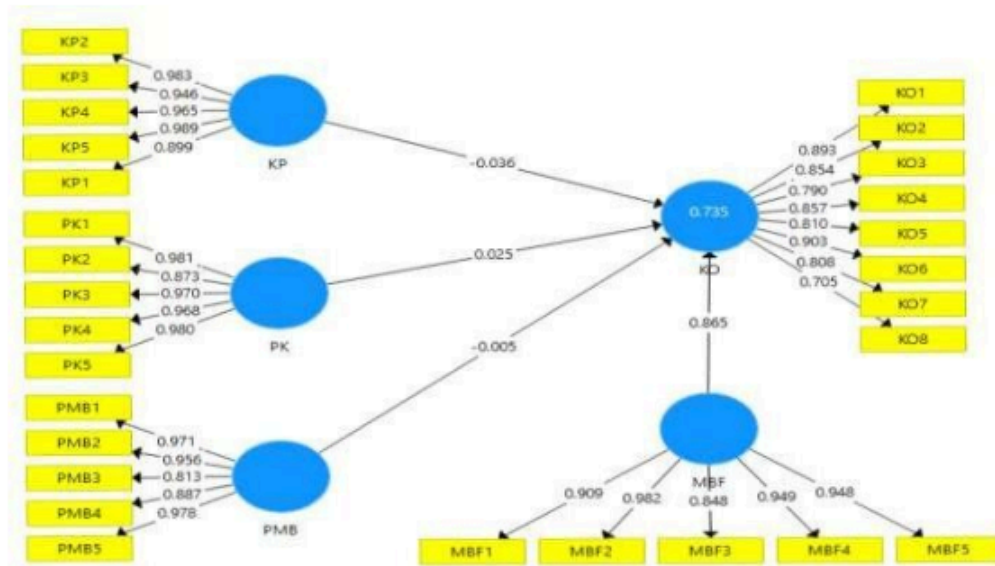


Figure 1. Measurement Model

### 3. Hypothesis Test

Table 3. Hypothesis Test Results

Model	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T-Statistic ( O/STDEV )	P Value
Customer Satisfaction → Operational Performance	-0.036	-0.026	0.062	0.576	0.576
Employee Empowerment → Operational Performance	0.025	0.026	0.069	0.358	0.721
Continuous Quality Improvement → Operational Performance	-0.005	0.008	0.065	0.078	0.938
Management Based on Facts → Operational Performance	0.865	0.868	0.067	12.945	0.000

Source: Primary Data Processed (2023)

Based on the results of hypothesis testing presented in Table 3, it shows that three out of four hypotheses proved rejected. This can happen because the first, second, and third hypotheses have a



p value of more than 0.5, so it is stated that all three hypotheses are rejected. While the fourth hypothesis that fact-based management has a positive effect on operational performance is accepted, as evidenced by a p value of less than 0.5.

#### **Customer Satisfaction Negatively Affects Operational Performance**

The hypothesis was rejected because the results of statistical testing showed that customer satisfaction variables negatively affected operational performance. This means that low customer satisfaction will have a negative impact on the company's operational performance as well. According to Krivobokova (2009), customer satisfaction does not always have a direct impact on a company's operational performance, although it is an important and essential component of a company's operations. Anand, et al. (2007) supports this research by emphasizing that customer satisfaction does not always correlate with improved operational performance; Other factors affect it. Sun and Kim (2013) It also states that customer satisfaction has an impact on operational performance. According to a cognitive psychology perspective, however, customer satisfaction is only a customer's subjective perception of post-service performance compared to previous performance, and can have an impact on operational performance.

#### **Employee Empowerment Negatively Affects Operational Performance**

The second hypothesis in this study was rejected because the results of statistical testing showed that employee empowerment variables negatively affected operational performance. These results show that effective employee empowerment will also not have a positive impact on operational performance. A company that provides effective empowerment to its employees will have a positive impact on its operational performance. However, effective empowerment does not always have an optimal impact on employee activities, which in turn can reduce the company's operational performance. This is based on research Taktaz, et al. (2012), which explains that effective but not optimal employee empowerment directly impacts employee activities.

#### **Continuous Quality Improvement Negatively Affects Operational Performance**

The third hypothesis in this study was rejected because the results of statistical testing showed that the variable of continuous quality improvement had a negative impact on operational performance. This means that operational performance will decline if there is a good continuous quality improvement. Companies' efforts to improve sustainable quality can have an indirect impact on improving the quality of the products, services, or services they currently offer. As a result, this caused the company's operational performance to decline (Fotopoulos & Psomas, 2010).

#### **Fact-Based Management Positively Affects Operational Performance**

The results of statistical testing show that fact-based management variables improve operational performance. Along with the improvement of management that focuses on the needs of Bank Mandiri employees in the Special Region of Yogyakarta, better operational performance will be generated. Fact-based management is critical to operational performance, especially for job design, decision-making and problem-solving (Tjiptono, 2014). Fact-based management helps companies make better decisions to run operational performance more efficiently and effectively. This finding is in line with previous research which found that fact-based management allows employees to make informed decisions about what they do at work and about what they do outside their workplace (Abrunhosa & Sá, 2008).

#### **Discussion**

This study finds the relevance of implementation of TQM in Bank Mandiri Yogyakarta in order to achieve its objective and operations performance. Bank Mandiri Yogyakarta that is succeeded in actuating TQM practices in the organization would be able maintain customers satisfaction, handling customers complaints, and conducting effective operational system and ultimately



improving performance. Several studies related to the quality management field have reported the positive and significant effect implementation of TQM practices to the operations performance. The successful of implementing TQM can improve operational performance in form of reducing the repetitive work, enhancing service excellent and satisfaction for both employees and customers (Nazar, 2018). In addition, implementing TQM in a bank company can enhance the service level and prevent defects product while delivering value to the customers.

In spite of the claim of significant benefits of adopting TQM system, the operational performance of a few companies may still remain unacceptable. One of the challenges is that the implementation level of TQM should be in a high level thus it can significantly affect the overall operations performance. Only one or two practice of implementing TQM may not bring the required level of operational performance in organizations. An integration of all the TQM practices is fundamental to tear off the advantages of TQM (Senarath, 2020).

Another big challenge to actualizing TQM may come from the top management commitment as it needs big effort to truly implementing the TQM. To improve the understanding of operational performance in bank company through implementing TQM, each person in organizations must be included and capable (Zaidi & Ahmad, 2020). The empirical TQM study appears that the company's top leaders should be a key figure in TQM (Xiong et al, 2017). Top management also should involve the implementation of TQM to the development of strategic goals.

## CONCLUSION

Based on the results of the study, it can be concluded that the purpose of the study is to determine whether the TQM component consisting of customer satisfaction, employee empowerment, continuous quality improvement, and fact-based management affects operational performance at Bank Mandiri in Yogyakarta. This study is a proof that TQM practices is a factor for improving operational performance in Bank Company. Therefore, the impact of TQM on the operational performance of the larger scale of banking sector is essential for face future challenge and eventually will contributes to the Indonesia economy. The findings of the study provide a valuable insight related to TQM and its role for improving operations performance; which benefits practitioners, academics, policy makers and managers. Findings of this study is a beneficial contribution to the literature in quality management and operations management field of study. Similar with other banks in Indonesia, Bank Mandiri is constantly in search of strategies and systems that will help them achieve the best result; thus, they are made aware that it is essential to implement TQM to overcome of any issues that might threat their strategic goals.

Although this study has achieved the research objectives and offering contributions to the field of quality and operations management, it still has several limitations. The first limitation is that this study adopts cross-sectional research design for examining the research hypotheses. It focuses only in a single period of time while the psychological of human behaviours are constantly changing. Conducting longitudinal study may result in different and broader discussions. The second limitation is the quantitative method used for the study, where respondents were asked to explain their perceptions by answering a standardize survey questionnaire. These respondent's answer may have bias perceptions. Thus, the development of mixed research method for the study may create a better findings. The last limitation is this study only investigated employees at Bank Mandiri in Yogyakarta and used TQM component research variables such as customer satisfaction, employee empowerment, continuous quality improvement, and fact-based management. Future research may use subjects and other variables that are different from this study. Research Haris and Tanpubolon (2022) and Abrunhosa and Moura (2008) used furniture craftsmen and shoe entrepreneurs as research subjects. Then the study Tjijtono (2014) used psychological empowerment variables in its research to determine the factors that affect operational performance.

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