

The Effect of Total Quality Management Implementation on Quality Performance through Knowledge Management and Quality Culture as Mediating Variable at PT XYZ

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Abstract:- The intense level of construction business competition demands that Construction Company has to improve their performance to compete with other construction companies. One of the performances that need to be improved is Quality Performance. PT XYZ as a foundation specialist contractor operating in Indonesia seeks to improve Quality Performance in order to face competition in the foundation construction business in Indonesia. The purpose of the study is to analyze the effect of Total Quality Management (TQM) on Quality Performance mediated by Knowledge Management and Quality Culture in PT XYZ. The research method used quantitative research method. This study used primary data and analysis data using Structural Equation Modeling–Partial Least Square (SEM-PLS). The employee population is 259 employees and sample of this study is 53 employees at different positions level of PT XYZ. The results showed that Total Quality Management, Knowledge Management, and Quality Culture had positive and significant effect on Quality Performance at PT XYZ. Knowledge Management and Quality Culture can mediate the effect of TQM on Quality Performance.

Keywords:- TQM, Knowledge Management, Quality Culture, Quality Performance, Construction Industry.

I. INTRODUCTION

Currently, construction companies in Indonesia are still facing uncertainty in running their business. This is evidenced by the construction indicator data for the first quarter of 2020 to the first quarter of 2021 released by the Central Statistics Agency (BPS) of the Republic of Indonesia which states that construction companies are still facing problems in running their business. The level of intense competition is one of the main problems faced by construction companies beside the problem of decreasing demand for construction services and rising prices of building materials. Even in the first quarter of 2021, the level of intense competition is the first order of business problems with a very tight competition index value of 29.73. The level of intense business competition can block the growth opportunities of construction company so that efforts are needed to manage an efficient construction business while still consider to job specifications and construction product specifications that have been

determined. In conditions of intense business competition, the bankruptcy of construction business can be due to the services offered are not competitive compared to the services offered by competitors, both in terms of price and completion time of construction projects.

One source of inefficiency in construction costs is the occurrence of Cost of Poor Quality (COPQ) due to defects or failures in the construction process. According to Shrouy & Tiwari (2017), COPQ is the total cost of failure, both internal failure costs and external failure costs. With COPQ, construction costs will increase and company profits will decrease. In addition to incurring additional costs, defects or failures in the construction process can also have an impact on the reputation of Construction Company in the eyes of their project owner. Defects or failures in the construction process can also cause delays in the completion time of construction work due to rework/repair time so that it can affect the satisfaction level of construction project owners. In an effort to create quality products and services, the application of management system that focuses on quality is a must. The implementation of Total Quality Management (TQM) is the answer to this need. The purpose of TQM is to provide a quality product and/or service to customers, which will, in turn, increase productivity and lower cost. With a higher quality product and lower price, competitive position in the marketplace will be enhanced (Besterfield et al., 2019). The application of TQM can increase customer satisfaction, reduce defects and production failures (Shoshan & Celik, 2018).

PT XYZ as a specialist foundation contractor in Indonesia is experiencing inefficiency in construction costs due to the occurrence of COPQ due to defects and failures in the construction process in the construction of drilled pier foundations and retaining walls in several high rise building projects. Defects and failures experienced in the construction process also often occur repeatedly and occur in previous projects. And even a failure of the construction process can occur repeatedly in the same project. With efforts to reduce defects or failures in the construction process, companies can reduce or even eliminate COPQ and can maximize profits and increase competitiveness. The results of the survey at PT XYZ concluded that defects and failures in the construction process were predominantly caused by inappropriate work methods/procedures, not

working according to procedures, lack of knowledge and lack of work supervision and control in the project site. The survey results indicate there is effect of Total Quality Management implementation, Knowledge Management, and Quality Culture on Quality Performance at PT XYZ. According to this background, there are problems in the application of Total Quality Management (TQM), Knowledge Management and Quality Culture so that it has an impact on the achievement of Quality Performance, which is shown by the occurrence of defects and repeated failures in the construction process. These problems contribute to the occurrence of a cost of poor quality which leads to inefficiency.

Based on the description above, the focus of this research is to analyze the effect of Total Quality Management implementation on Quality Performance and analyze the role of Knowledge Management and Quality Culture in mediating the effect of Total Quality Management implementation on Quality Performance.

II. LITERATURE REVIEW AND HIPOTHESIS DEVELOPMENT

A. Total Quality Management (TQM)

According to Sutawijaya, Nawangsari, and Djamil (2019), TQM is a management system that plans and makes decisions, organizes, leads, directs, processes, and utilizes all capital, equipment, materials, technology, information systems and human resources to make quality products and services that can meet the needs and satisfaction of the consumer market in an efficient and effective manner so that customer loyalty is formed, and the company can grow sustainably with the quality of human resources that is always improving through a continuous learning process. In order to achieve success, quality-related activities must be supported by top management commitment and must be customer-oriented (Sutawijaya, Mochtar, and Nawangsari, 2018). According to Besterfield et al. (2019), TQM is defined TQM is defined as both a philosophy and a set of guiding principles that represent the foundation of a continuously improving organization. TQM integrates fundamental management techniques, existing improvement efforts, and technical tools under a disciplined approach.

B. Knowledge Management

According to Jashapara (2011), knowledge management is the effective learning processes associated with exploration, exploitation and sharing of human knowledge (tacit and explicit) that use appropriate technology and cultural environments to enhance an organisation’s intellectual capital and performance. Meanwhile, according to Gray cited by Dalkir (2011) knowledge management is a collaborative and integrated approach to creating, capturing, organizing, and using the company's intellectual assets.

C. Quality Culture

According to Goetsh and Davis (2016), a quality culture is an organizational value system that results in an environment that is conducive to the establishment and continual improvement of quality. It consists of values, traditions, procedures, and expectations that promote quality. Quality culture consists of philosophies, beliefs, attitudes, norms, traditions, procedures and expectations to improve quality. Meanwhile, according to Purnama in Rahmat and Kadir (2017), it is stated that quality culture is an organizational value system that produces a conducive environment for sustainability and quality improvement. Sinclair and Collins in Jamaluddin (2013) argue that quality culture is a form of cultural management that allows change through increased commitment and cooperation of workers in the organization.

D. Quality Performance

According to Ibrahim and Rusdiana (2021), quality performance can be defined as the achievement of quality or product quality and management that can be achieved by a company during a certain period of time. This achievement is the effectiveness and efficiency of the company's operations in terms of economy (financial reports), management, and the level of customer satisfaction.

The framework of this research is shown in Figure 1 below.

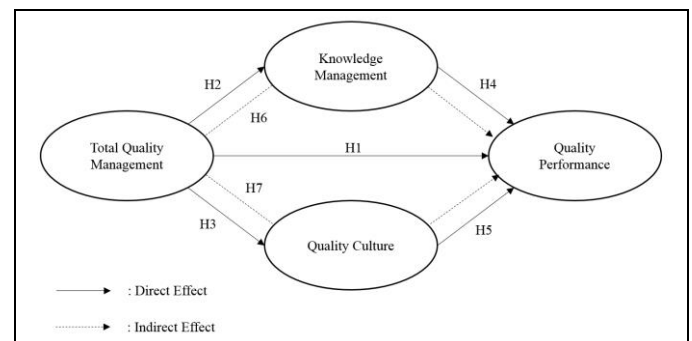


Fig. 1: Research Framework

Source : Authors (2022)

The research hypothesis development is as follows:

- H1: The implementation of Total Quality Management (TQM) has a positive and significant impact on Quality Performance
- H2: The implementation of Total Quality Management (TQM) has a positive and significant impact on Knowledge Management
- H3: The implementation of Total Quality Management (TQM) has a positive and significant impact on Quality Culture
- H4: Knowledge Management has a positive and significant effect on Quality Performance
- H5: Quality Culture has a positive and significant effect on Quality Performance
- H6: Total Quality Management has a positive and significant indirect effect on Quality Performance mediated by Knowledge Management

H7: Total Quality Management has a positive and significant indirect effect on Quality Performance mediated by Quality Culture.

Management, Quality Culture, and Quality Performance are endogenous variables.

III. RESEARCH METHODOLOGY

This research is a quantitative research and data analysis using the Structural Equation Model – Partial Least Square (SEM-PLS) method. The object of this research is PT XYZ, a foundation specialist contractor operates in Indonesia. The sampling technique in this research is purposive sampling. The population of PT XYZ's employees is 259 people and the sample of respondents in this study is 53 people at different positions level of PT XYZ. The reasons for determining these positions as research samples are: they have a high level of involvement in the establishment, implementation, development, and maintenance of Total Quality Management, Knowledge Management, and Quality Culture in the company; have an important role in achieving Quality Performance; and get a good exposure of the company's Quality Performance information. The data collection technique was carried out using a questionnaire, while the research instrument used a Likert measurement scale (1-5). In this research model, Total Quality Management is an exogenous variable while Knowledge

There are 6 dimensions and 32 indicators used to measure TQM which refers to Besterfield et al. (2019), Sutawijaya et al. (2019), Abbas (2020), Eniola et al. (2019), Yusr (2017), Khalil & Muneenam (2021), Imran, Hamid, Aziz (2018). There are 3 dimensions and 16 indicators used to measure Knowledge Management which refers to Becerra-Fernandez & Sabherwal (2015), Dalkir (2011), Ode & Ayavoo (2020), and Kordab, Raudeliuniene, Kavaliauskien (2020). There are 4 dimensions and 20 indicators used to measure Quality Culture which refers to the Competing Value Framework (CVF) Model developed by Cameron & Quinn (2011). There are 4 dimensions and 11 indicators used to measure Quality Performance which refers to Besterfield et al. (2019), PMBOK Edition 6 (2016), Teo & Love (2017), and Syah (2004).

IV. RESEARCH RESULT

In this study, hypothesis testing uses the Partial Least Square (PLS) analysis technique with the SmartPLS 3.0 program. The research model framework for the SmartPLS program tested in this study is shown in Figure 2.

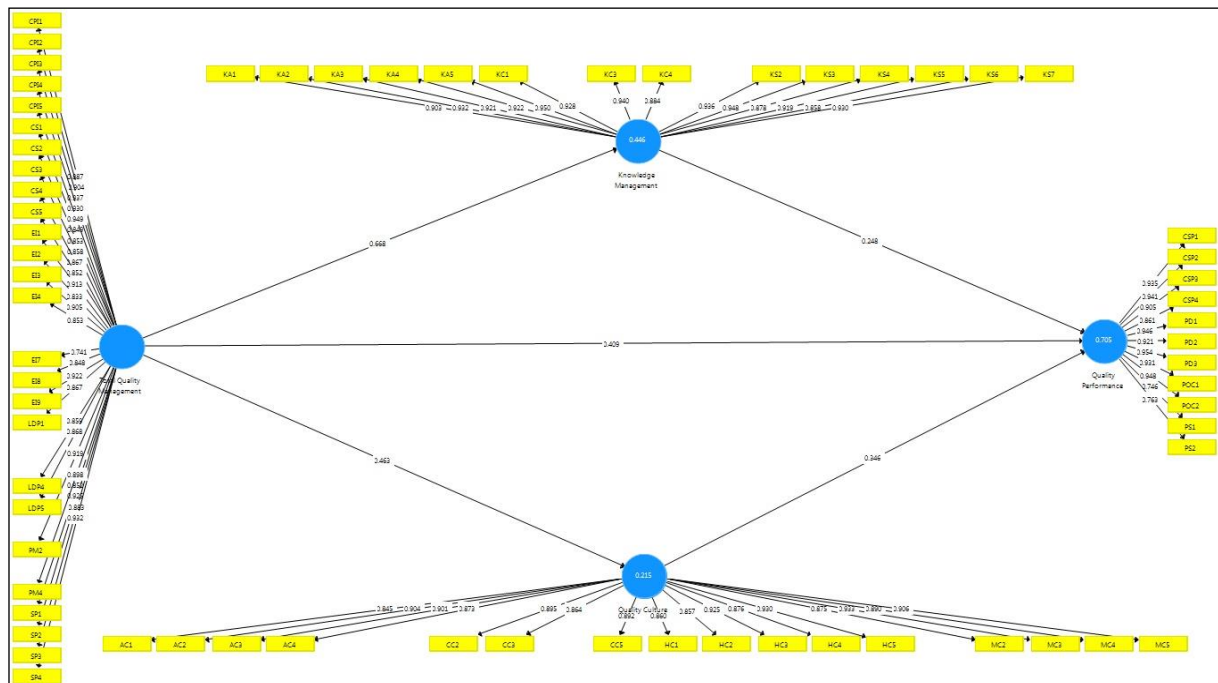


Fig. 2: Smart PLS Model Framework
Source : SmartPLS Program Output, 2022

A. Convergent Validity

The results of the convergent validity test are shown in Table I. The research model has met the convergent validity because the outer loading value is above 0.70.

B. Discriminant Validity

The results of the discriminant validity test are shown in Table II. The research model has met discriminant validity because the AVE root value of each construct is higher than the correlation between other constructs.

C. Construct Reliability

The results of the composite reliability test are shown in Table III. The output results of composite reliability and Cronbach's alpha for all constructs have values above 0.70. Thus, it can be concluded that all constructs have good reliability.

D. Model Fit

Model fit evaluation in this study is using the Standardized Root Mean Square Residual (SRMR) test model. According to Ghozali (2021) that the model will be considered to have a good fit if the value of the Standardized Root Mean Square Residual (SRMR) is below 0.08. However, the SRMR value below 0.1 is still acceptable. Based on Table IV, it is known that the standardized root mean square residual (SRMR) is 0.072 and below 0.08. This result shows that the model has a good fit.

Variable	Dimension	Indicator	Outer Loading	Remark
Total Quality Management	Leadership	LDP1	0.867	Valid
		LDP4	0.859	Valid
		LDP5	0.868	Valid
	Customer Satisfaction	CS1	0.849	Valid
		CS2	0.853	Valid
		CS3	0.858	Valid
		CS4	0.867	Valid
		CS5	0.852	Valid
	Employee Involvement	EI1	0.913	Valid
		EI2	0.833	Valid
		EI3	0.905	Valid
		EI4	0.853	Valid
		EI7	0.741	Valid
	Continuous Process Improvement	EI8	0.848	Valid
		EI9	0.922	Valid
		CPI1	0.887	Valid
		CPI2	0.904	Valid
		CPI3	0.937	Valid
	Supplier Partnership	CPI4	0.930	Valid
		CPI5	0.949	Valid
SP1		0.852	Valid	
SP2		0.925	Valid	
Performance Measurement	SP3	0.883	Valid	
	SP4	0.932	Valid	
Knowledge Management	Knowledge Creation	PM2	0.919	Valid
		PM4	0.898	Valid
	Knowledge Sharing	KC1	0.928	Valid
		KC3	0.940	Valid
		KC4	0.884	Valid
		KS2	0.936	Valid
		KS3	0.948	Valid
		KS4	0.878	Valid
		KS5	0.919	Valid
	KS6	0.858	Valid	
Knowledge Application	KS7	0.930	Valid	
	KA1	0.903	Valid	
	KA2	0.932	Valid	
	KA3	0.921	Valid	
	KA4	0.922	Valid	
Quality Culture	Adhocracy Culture	KA5	0.950	Valid
		AC1	0.845	Valid
		AC2	0.904	Valid
		AC3	0.901	Valid
	Market Culture	AC4	0.873	Valid
		MC2	0.875	Valid
		MC3	0.933	Valid
	Hierarchy Culture	MC4	0.890	Valid
		MC5	0.906	Valid
		HC1	0.860	Valid
HC2		0.857	Valid	
HC3		0.925	Valid	
Clan Culture	HC4	0.876	Valid	
	HC5	0.930	Valid	
	CC2	0.895	Valid	
Quality Performance	Product Performance	CC3	0.864	Valid
		CC5	0.892	Valid
		PD1	0.946	Valid
	Process Performance	PD2	0.921	Valid
		PD3	0.954	Valid
	Project On-time Completion	PS1	0.746	Valid
		PS2	0.763	Valid
	Customer Satisfaction Performance	POC1	0.931	Valid
		POC2	0.948	Valid
		CSP1	0.935	Valid
CSP2		0.941	Valid	
		CSP3	0.905	Valid
		CSP4	0.861	Valid

Table 1: Convergent Validity Test Result Source : Data Processed, 2022

Source : Data Processed, 2022

Variable	Knowledge Management	Quality Culture	Quality Performance	Total Quality Management
Knowledge Management	0.918			
Quality Culture	0.527	0.890		
Quality Performance	0.703	0.666	0.898	
Total Quality Management	0.668	0.463	0.734	0.882

Table 2: DISCRIMINANT VALIDITY

Source : Data Processed, 2022

Variable	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Total Quality Management	0.988	0.989	0.989	0.778
Knowledge Management	0.986	0.986	0.987	0.843
Quality Culture	0.982	0.984	0.984	0.791
Quality Performance	0.975	0.979	0.979	0.807

Table 3: CONSTRUCT RELIABILITY

Source : Data Processed, 2022

Model Fit	Saturated Model	Estimated Model
SRMR	0.072	0.091

Table 4: STANDARDIZED ROOT MEAN RESIDUAL (SRMR)

Source : Data Processed, 2022

E. Structural Model (Inner Model) Evaluation

In this study, the metrics used to evaluate the structural model are R² (coefficient of determination), Q² (predictive relevance), and statistical significance of the structural path coefficients.

The value of R² for each endogenous latent variable is the predictive power of the structural model (Ghozali, 2021). The output results of the coefficient of determination (R²) are shown in Table 5 below.

Variable	R-Square	R-Square Adjusted
Knowledge Management	0.446	0.435
Quality Culture	0.215	0.199
Quality Performance	0.705	0.687

Table 5: R-SQUARE

Source : Data Processed, 2022

The value of R² on the Quality Performance variable of 0.705, which means that the Total Quality Management, Knowledge Management, and Quality Culture variables can explain the Quality Performance variable of 70.5%. Meanwhile, the other 29.5% can be explained by other factors or variables not included in this study. It can be concluded that the variation of changes in the Quality Performance construct that can be explained by the variation of the Total Quality Management, Knowledge Management and Quality Culture constructs is 70.5%. Thus, the

predictive model of this study is categorized as strong because the R² value is above 0.67 (Chin in Ghozali (2021)).

F. Predictive Relevance (Q²)

Predictive Relevance (Q²) value greater than 0 indicates the model has Predictive Relevance. The output results of predictive relevance (Q²) are shown in Table VI. The result shows that all variables have a Q² value greater than 0. Thus, it can be concluded that the research model has predictive relevance.

Variable	SSO	SSE	Q ² (=1-SSE/SSO)
Knowledge Management	742.000	478.075	0.356
Quality Culture	848.000	716.652	0.155
Quality Performance	583.000	263.555	0.548
Total Quality Management	1378.000	1378.000	

Table 6: PREDICTIVE RELEVANCE

Source : Data Processed, 2022

G. Hypothesis Test

The research hypothesis test was conducted to determine whether the results of the hypothesis in the study were in accordance with the hypothetical model that was built at the beginning of the study. In this study, there are 7 hypotheses proposed. Measurement of the significance of the model

used t-statistics and P-Values with a significance level of 0.05 (one-tailed). The t-statistic value is greater than 1.66 and the P-Values is smaller than 0.05 indicating that there is a significant effect on the hypothetical model. The results of testing for the direct effect of each variable relationship can be seen in Table VII.

Hipotesis	Original Sample (O)	T Statistics (O/STDEV)	P-Values	Conclusion
H1 : Total Quality Management -> Quality Performance	0.409	3.519	0.000	Accepted
H2 :Total Quality Management -> Knowledge Management	0.668	6.294	0.000	Accepted
H3 :Total Quality Management -> Quality Culture	0.463	3.489	0.000	Accepted
H4: Knowledge Management -> Quality Performance	0.248	1.936	0.027	Accepted
H5 : Quality Culture -> Quality Performance	0.346	3.638	0.000	Accepted

Table 7: HIPOTHESIS TEST RESULT (DIRECT EFFECT)

Source : Data Processed, 2022

While the results of testing for the indirect effect (mediation effect) in this study are shown in Table VIII below.

Hipotesis	Original Sample (O)	T Statistics (O/STDEV)	P-Values	Conclusion
H6 : Total Quality Management -> Knowledge Management -> Quality Performance	0.165	1.867	0.031	Accepted
H7 : Total Quality Management -> Quality Culture -> Quality Performance	0.160	2.537	0.006	Accepted

Table 8: HIPOTHESIS TEST RESULT (INDIRECT EFFECT)

Source : Data Processed, 2022

V. DISCUSSION

A. Effect of Total Quality Management (TQM) on Quality Performance

This study proves that Total Quality Management has a positive and significant effect on Quality Performance. Therefore, good implementation of Total Quality Management will be able to improve the Quality Performance in the company. The results of this study are in line with previous research conducted by Kunz (2021), Khalil and Muneenam (2021), Abbas (2020), Arqawi and Zaid (2020), Hussain, Khan, and Khan (2020), Barua, Zaman, and Urme. (2020), Adhiambo (2020), Chienwattanasook and Jernsittiparsert (2019), Sutrisno

(2019), Pambreni et al (2019), Suartina, Swara, Astiti (2019), Eniola et al (2019) , Imran, Hamid, and Aziz (2018), Singh, Kumar, and Singh (2018), Sanjaya and Yamashita (2018), Alshatnawi & Ghani (2018), Mihaela, Sabin, and Raluca (2017), Al-Damen (2017), Panuwatwanich & Nguyen (2017), and Bolatan (2016).

Total Quality Management is a well-organized philosophy to achieve organizational performance (Arqawi and Zaid, 2020). According to Munizu in Eniola (2019), Total Quality Management is considered a management philosophy that seeks continuous improvement in every business operation. The implementation of Total Quality Management improves all performance measures in the

company, including Quality Performance. Leadership, top management commitment, and continuous improvement aimed at achieving customer satisfaction, empowering employees, and focusing on customers are the goals of implementing Total Quality Management (Alshatnawi and Ghani, 2018). In order to achieve success, quality-related activities must be supported by top management commitment and must be customer-oriented (Sutawijaya, Mochtar, and Nawangsari, 2018).

The top management of PT XYZ is very committed to improving quality in every business process and focuses on meeting customer requirements. The top management of PT XYZ also strongly emphasizes that quality is the responsibility of all employees. Organizations that focus on fulfilling customer satisfaction will encourage and involve employees to produce quality products/services (Joiner in Eniola (2019)). Top management prioritizes training programs to develop employee capabilities, especially employees who are directly related to product quality, including drilling operators, Quality Control Engineers and Site Engineers. Improving employee capabilities can reduce the incidence of defects and failures in the construction process. In determining the method of construction work, the leaders in the construction division involve key staff so that a work method can be applied effectively and efficiently. Thus, a sense of ownership can be created from the employees who involved in the preparation of construction work methods so that consistency in compliance with the established construction work methods can be well maintained. The continuous improvement program is running well at PT XYZ, namely by applying the Quality Control Circle (QCC) method which focuses on efforts to reduce defects and failures in the construction process in each project. QCC can reduce and even eliminate defects and failures in the construction process. Top management also appreciates employees who are involved in efforts to reduce defects and failures in the construction process. As PT XYZ has implemented a quality management system based on ISO 9001, work procedures and standardization have been set in every key business processes. The existence of these procedures and standardization makes work more focused so that it can reduce discrepancies in key business processes. Employee performance measurement has also been applied consistently every year including employee performance evaluations and also suggestions for capacity building that need to be carried out by employees. All implementation of Total Quality Management must be managed effectively in the company because it has been proven to significantly improve performance (Kunz, 2021).

B. Effect of Total Quality Management (TQM) on Knowledge Management

This study proves that Total Quality Management has a positive and significant effect on Knowledge Management. Therefore, good implementation of Total Quality Management will be able to improve implementation of Knowledge Management in the company. The results of this study are in line with previous research conducted by Thabrani and Ramadani (2021), Arqawi and Zaid (2020), Hussain, Khan, and Khan (2020), Barua, Zaman, and Urme

(2020), Theodora and Latief (2019), Yusr et al (2017), and Rajeshwaran & Aktharsha (2017). These studies conclude that Total Quality Management has a positive and significant effect on Knowledge Management.

Total Quality Management has a role that supports the Knowledge Management process in the company environment. This is because with the existence of Total Quality Management, processes related to Knowledge Management, such as: knowledge creation, knowledge sharing and knowledge application become more structured, especially on explicit knowledge. Total Quality Management elements that are the key to success in implementing Knowledge Management at PT XYZ are leadership, employee involvement, and continuous improvement programs. Top management places great emphasis on the leaders of each division to always share knowledge with their direct and cross-sectional subordinates, especially in terms of construction technicalities. In addition, all employees are also encouraged to create knowledge that the company has never had and share knowledge with other employees. New knowledge can also be created from the results of the Quality Control Circle continuous improvement program that has been implemented within PT XYZ.

C. Effect of Total Quality Management (TQM) on Quality Culture

This study proves that Total Quality Management has a positive and significant effect on Quality Culture. Therefore, good implementation of Total Quality Management will be able to improve the Quality Culture in the company. The results of this study are in line with previous research conducted by Adhiambo (2020), Eniola et al (2019), Fransiska (2017), and Amarti (2016).

Organizational culture can be shaped by management models and practices such as ISO 9001 and the underlying cultural pre-requisites, such as: the seven ISO Quality Management Principles and the PDCA cycle (Wahid & Grigg, 2020). Total Quality Management factors that greatly influence the formation of Quality Culture within PT XYZ are leadership, employee involvement, continuous improvement programs and performance measurement. The shapers of Quality Culture in the company are the company's internal stakeholders, namely top management, company leaders, and employees themselves. High stakeholder commitment will form a good Quality Culture. The top management of PT XYZ strongly emphasizes that quality is the responsibility of all employees. There is a reward program for employees who well-contribute to quality improvement. The continuous improvement program with the Quality Control Circle (QCC) approach is also believed to be able to strengthen the Quality Culture within PT XYZ. With this program, employees are required to always be creative and innovative in solving quality problems in the company environment. With the performance measurement, PT XYZ employees are also required to always contribute in maintaining the quality of their work by implementing an error detection culture and an error prevention culture.

D. Effect of Knowledge Management on Quality Performance

This study proves that Knowledge Management has a positive and significant effect on Quality Performance. Therefore, good application of Knowledge Management will be able to improve the Quality Performance in the company. The results of this study are in line with previous research conducted by Nawangsari, Sutawijaya, Maharini, Winata (2021), Thabrani and Ramadini (2021), Arqawi and Zaid (2020), Husain, Khan, and Khan (2020), Barua, Zaman, and Urme (2020), Abbas (2019), Pratama & Sulistyowati (2019), Kolotova (2018), Alshatnawi & Ghani (2018), Yusr et al (2017), Rajeshwaran & Aktharsha (2017), Falah and Prasetya (2017), and Puryantini, Arfati, and Tjahjadi (2017). These studies conclude that Knowledge Management has a positive and significant effect on Organizational Performance.

North and Kumta (2018) state that the application of Knowledge Management related to the process and customer dimensions is as follows: in the process dimension, benefits have been realized mainly in the area of process acceleration, the reduction of double-work and the re-use of internal knowledge. In relation to customers, Knowledge Management activities have led to an increase in quality of products and services.

Before starting a construction project within PT XYZ, project managers are asked to share knowledge related to potential construction defects or failures that occur in projects under their control along with technical and non-technical causal factors as well as corrective and preventive actions to overcome these problems. These precautions can refer to similar actions taken from previous projects (learning from experience). The output of the knowledge sharing can be in the form of updating the construction implementation method. Thus, the employees involved in the construction process will be more understand the construction implementation method so as to avoid construction defects or failures. Optimizing the application of Knowledge Management can reduce the Cost of Poor Quality (COPQ) so as to improve project performance, increase customer satisfaction, and improve industry reputation (Suresh et al, 2017).

E. Effect of Quality Culture on Quality Performance

The results of this study prove that Quality Culture has a positive and significant effect on Quality Performance. Therefore, strong Quality Culture will improve Quality Performance in the company. The results of this study are in line with previous research conducted by Khalil and Muneenam (2021), Astuti, Adawiyah, and Iriantoko (2019), Sahervian, Adi, and Sunarto (2019), Hambali and Idris (2019), Indiya, Obura, and Mise (2018), Hilman, Abubakar, and Kaliappen (2017), and Amarti (2016). These studies conclude that Organizational Culture and Quality Culture have a positive and significant effect on Organizational Performance.

A quality-oriented company will always ensure the fulfillment of quality in all organizational functions so as to achieve better organizational performance (Ina in Eniola

(2019)). The aspect of supervising of construction process at PT XYZ plays a very important role in avoiding construction defects and failures. The aspect of good supervision reflects the formation of a good Quality Culture in the construction project environment. In addition, the culture of error prevention and creative continuous improvement as part of the Quality Culture can also play a role in avoiding quality problems that arise both in the construction process and in construction products.

F. Effect of Total Quality Management (TQM) on Quality Performance is mediated by Knowledge Management

The results of the study prove that Total Quality Management has a positive and significant effect on Quality Performance mediated by Knowledge Management. Therefore, good implementation of Total Quality Management will be able to improve implementation of Knowledge Management so that it will also increase the achievement of Quality Performance. The results of this study are in line with previous research conducted by Thabrani and Ramadini (2021), Arqawi and Zaid (2020), Husain, Khan, and Khan (2020), Abbas (2020), and Barua, Zaman, and Urme (2020). The implementation of good Knowledge Management created by the implementation of Total Quality Management is able to improve Quality Performance as part of Organizational Performance.

Total Quality Management factors at PT XYZ such as leadership, employee involvement, and continuous improvement programs can also improve the implementation of Knowledge Management within PT XYZ including the creation of new knowledge related to the construction process, knowledge sharing and the use of knowledge when needed to solve a construction problem and at the end it can improve the company's Quality Performance.

G. Effect of Total Quality Management (TQM) on Quality Performance is mediated by Quality Culture

The results of the study prove that Total Quality Management has a positive and significant effect on Quality Performance mediated by Quality Culture. Therefore, good implementation of Total Quality Management will strengthen the Quality Culture so that it will increase the achievement of Quality Performance. The results of this study are in line with previous research conducted by Khalil and Muneenam (2021), Eniola et al (2019), and Amarti (2016). These studies conclude that Total Quality Management has a positive and significant effect on Organizational Performance mediated by Organizational Culture and Quality Culture.

The strong Quality Culture created by the implementation of Total Quality Management is able to improve Quality Performance in the company. Thus, increasing organizational performance must go through the Quality Culture that has been formed in the company. To achieve benefits and obtain a sustainable competitive advantage for the company, a quality-oriented organizational culture is needed in the company environment (Sutrisno, 2019). Total Quality Management factors at PT XYZ such as leadership, employee

involvement and continuous improvement programs can form a culture of error detection, error prevention, and creative continuous improvement so that in the end it can improve Quality Performance at PT XYZ

VI. CONCLUSION AND RECOMMENDATION

The conclusion of this study is the implementation of Total Quality Management, Knowledge Management, and Quality Culture has a positive and significant effect directly on Quality Performance at PT XYZ. Good implementation of Total Quality Management, Knowledge Management and Quality Culture will be able to improve Quality Performance in the company.

The application of Knowledge Management can mediate the effect of Total Quality Management on Quality Performance at PT XYZ. Good implementation of Total Quality Management will improve the implementation of Knowledge Management so that it will also increase the achievement of Quality Performance. Quality Culture can mediate the influence of Total Quality Management on Quality Performance at PT XYZ. Good implementation of Total Quality Management will strengthen the Quality Culture so that it will increase the achievement of Quality Performance.

PT XYZ needs to implement Total Quality Management consistently on the dimensions of leadership, customer satisfaction, employee involvement, partnerships with suppliers, continuous improvement and performance measurement with the aim of improving Knowledge Management and improving Quality Culture in the company environment and at the end it can improve the achievement of the company's Quality Performance. PT XYZ needs to focus on more efforts to improve the implementation of Total Quality Management in order to support the formation of a strong Quality Culture in a sustainable manner so as to improve Quality Performance within the company.

For further research, it can involve other mediating variables and other relevant moderating variables in the construction sector such as innovation and lean construction in relation to the effect of Total Quality Management on Quality Performance. It is hoped that further research can be applied in general, namely with the object of research on the main contractors and other specialist contractors with a larger sample size.

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