



# The Impact of Implementing Total Quality Management (TQM) in Construction Companies: Focus on Employee Performance

Miranti Putry<sup>1</sup>, Ikmal Restian<sup>2</sup>

<sup>1,2</sup>Department of Industrial Engineering, Faculty of, Universitas Serang Raya, Indonesia

## ARTICLE INFO

### Article history:

Received Mar 23, 2024

Revised May 15, 2024

Accepted May 15, 2024

### Keywords:

Employee Management  
Quality Management  
Total Quality Management

## ABSTRACT

The importance of Total Quality Management (TQM) in construction companies is examined in this research. This research was conducted to determine the magnitude of the influence of TQM on improving employee performance. Theoretical frameworks, TQM practices, and employee performance improvement in construction companies are all examined. It was found that the better the implementation of TQM, it will encourage an increase in employee productive behavior, and through increasing employee productive behavior, overall company performance will also increase. Discipline in continuous quality improvement, encourages increased productive behavior of construction company employees.

This is an open access article under the [CC BY-NC](https://creativecommons.org/licenses/by-nc/4.0/) license.



## Corresponding Author:

Miranti Putry,  
Industrial Engineering,  
Serang Raya University,  
Jl. Raya Serang – Cilegon Km 5 Taman Drangong, Serang, Banten, Indonesia  
Email: [mirantiputri84@gmail.com](mailto:mirantiputri84@gmail.com)

## 1. INTRODUCTION

In the construction industry, the quality of the final result is determined not only by the techniques and materials used but also by the performance of the employees involved in each stage of the project. Applying Total Quality Management (TQM) in this context is not only about achieving high quality standards but also about empowering employees to improve their performance and contribute positively to the company's success. The approach will prove beneficial in improving productivity, efficiency, and employee satisfaction, which in turn leads to an overall improvement in the performance of the construction company.

The construction industry is one of the vital sectors in the global economy, covering a wide range of projects ranging from public infrastructure to commercial buildings. Within it are challenges, such as tight schedules, limited budgets, and the need for high quality. In this environment, employee performance becomes the key to achieving project goals effectively and efficiently.

In this case, as an effort to overcome the challenges of quality and meet the needs of today's customers, total quality management (TQM) has opened the door for the company to occupy a profitable place and become better (Krittanathip et al., 2013). Since many parties are involved in each project, the construction project becomes complicated. The main objective of Total Quality Management (TQM) is to improve the organizational and technical procedures of a company to meet the ever-evolving desires of clients and create competitive advantages (Singh et al., 2018). TQM focuses on process improvement, customer and provider engagement, cooperation, and training to achieve customer satisfaction, cost-effectiveness, and flawless job

performance (Bon & Mustafa, 2013). These advantages can influence the decision of stakeholders and construction practitioners to use Total Quality Management (TQM) (Ephantus & Wanderi, 2015). Therefore, the advantages of Quality Control Measures (TQM) can increase profitability, reduce waste, and improve the market in the long run. Therefore, the advantages of TQM should be considered before assessing the importance of the company (Lau et al., 2015). In addition, in the construction industry, total quality management (TQM) has been shown to improve a company's reputation, significant market share, and customer satisfaction (Likita et al., 2018). Quality Management (TQM) methods can include increased employee engagement and cooperation, long-term planning, process reshaping, customer loyalty, continuous improvement, infinite results, viable benchmarks, and closer supplier relationships. In addition, TQM can be considered a tool for businesses around the world to achieve excellence (Okuntade & Femi, 2015). They can also benefit consumer service, reaction time, effectiveness, and productivity quality (Othman et al., 2020).

Research conducted (Mohsen Alawag et al., 2023) shows that leadership is the most important grouped factor. Apart from the identified critical factors, all contributing factors exert a significant influence on the success of the performance. This study develops a conceptual framework based on key critical factors that will help stakeholders enter before implementing TQM in IBS construction projects.

Knowing how teamwork, education, and continuous improvement impact Wori Health Center's organizational performance in North Minahasa regency. The results showed that teamwork, education and training, customer focus, and quality obsession did not have a continuous effect on performance; instead, continuous improvement had a continuous effect on performance (Lenehang et al., 2019). There is the influence of corporate leadership on corporate performance, Human Resources on corporate performance, relations and customer satisfaction on corporate performance, planning and development of corporate performance, and Quality Management suppliers to the company's performance. In this study, the application of total quality management can improve company performance at the Manglung View & Resto (Anandy & Hasin, 2023) identify, rank and analyze the factors that affect the implementation of TQM in a construction company so that industry players avoid poor quality products (Othman et al., 2020).

Total Quality Management (TQM) application in the Indian industry and to know how it impacts on company performance. The study involved five manufacturing and three service companies located in northern India. Confederation of Indian industry (CII) has several registered companies. The focus is to evaluate how effective the implementation of Total Quality Management (TQM) is in the Indian industry (Singh et al., 2018).

The study found that employee management and communication improve service quality and organizational performance and that organizational performance in a hygiene organization has a good and significant relationship with customer satisfaction. In addition, it was found that there is a positive correlation between customer satisfaction and Communication Management. (Kola Olayiwola et al., 2024)

Explicitly, (Zahari et al., 2023) found that TQM has a significant impact on improving employee performance. On the one hand, TQM encourages employees to pay more attention to quality in all aspects of their work. This can change the attitudes and behavior of employees, motivating them to work more thoroughly and be oriented towards quality results. Research by (Wolor et al., 2022) provides information that measures of TQM, such as training, empowerment, teamwork, and compensation, can have a strong influence in improving employee performance. Similarly, (Bharadwaj & Khan, 2021) research has explored the impact of TQM. Therefore, this study contributes both theoretically and practically to implementing strategies that can increase the support of TQM practices on employee performance, which in turn can benefit the company.

## 2. RESEARCH METHOD

Construction companies in Serang, Banten, is the subject of this study. The type of primary data used in this study is the data obtained from the questionnaire. Factors such as Supplier Quality Management, Corporate Performance, Labor Relations and satisfaction, human resources, strategic planning and development, and corporate leadership were the subjects of the

respondents' responses. In this study, saturated sampling technique was used. Saturated Sampling, also known as census, is used to sample as many as 28 people from a population. Likert scales are used to measure responses from individuals or groups of people about social phenomena. These attitudes, opinions and perceptions are measured through this scale. assigning a value to each option (Sugiono, 2021). the Likert scale is used to measure answers regarding social phenomena. These attitudes, opinions and perceptions are measured through this scale. calculates a value for each question answer option, with a value of 1 for a very negative answer and a value of 5 for a very positive answer. After the data is collected, the research will conduct a tabulation, which will then be processed using SPSS software tools. The tests carried out are validity tests, reliability tests, and partial and simultaneous relationship testing. in Table 1 below are the characteristics of respondents in the study described through age, education level, and length of work.

**Table 1.** Respondent Profile

Demographic Variabel	N	%
Age		
15-20	8	29
21-26	6	21
27->	14	50
Education		
Elementary School	3	10.7
Junior High School	8	28.6
Senior High School	17	60.7
length of Work		
1-6 months	2	7.1
6-12 months	5	17.9
> 12 months	21	75

**3. RESULTS AND DISCUSSIONS**

In this study, a validity test was conducted to evaluate the validity of the statement items used in the questionnaire. In this study, the basis of decision making is seen through two approaches: doing a comparison between the value of R count and the value of R table. Where, if the calculated r value > calculated r value, then the statement item is declared valid, and the significance value is compared with a probability of 0.05%. The R value of the table is calculated using the formula  $dF = n-2$ , and the result is that the DF value for 28-2 with a significance of 5% is 0.374. In this study, a reliability test was conducted to determine whether the statement items in the questionnaire had consistent responses over time. As for the results if the data obtained as follows :

**Table 2.** Validity of Employee Performance

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
YQ1	17.82	23.708	.950	.932
YQ2	18.21	27.360	.935	.945
YQ3	17.39	28.544	.853	.953
YQ4	17.32	26.226	.859	.945
YQ5	17.79	20.397	.893	.948
YQ6	18.25	19.972	.980	.932

**Table 3.** Validity of Productive Behavior

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
X1Q1	11.61	10.321	.860	.970
X1Q2	11.68	10.671	.922	.956
X1Q3	11.14	8.942	.957	.945
X1Q4	11.00	9.630	.944	.947

**Table 4.** Validity of Total Quality Management

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
X2Q1	20.14	18.646	.963	.939
X2Q2	20.11	18.321	.942	.944
X2Q3	18.93	25.180	.756	.966
X2Q4	19.29	21.693	.891	.948
X2Q5	19.89	19.877	.944	.941
X2Q6	19.86	22.720	.841	.954

Based on table 2 for employee performance, table 3 for productivity behavior, and table 4 for TQM, the data is valid, because the correlation value (R count) is greater than r table (0.374). Then do the next stage, namely the reliability test. The results of the reliability test are in table 5 below

**Table 5.** Reliability of Employee Performance

Variabel	Cronbach's Alpha	N of Items	description
Y	.952	6	Realible
X1	.966	4	Realible
X2	.958	6	Realible

The results of the reliability test shown in Table 5 show that each variable has a cronbach's alpha value above 0.60, which indicates that each item of the statement of each variable has a high level of reliability. Therefore, the collected questionnaires meet the requirements of validity and reliability of the test. Based on the test results of the instrument, the next step is to test the hypothesis either partially (using the T test) or simultaneously (using the F test), as shown in Table 6 below.

**Table 6.** Partial Hypothesis Test

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.917	1.338		-1.432	.165
	Total_PPK	.582	.258	.411	2.250	.033
	Total_TQM	.612	.196	.569	3.115	.005

a. Dependent Variable: Total\_KK

All independent variables have a significant influence on the dependent variable, as shown by the partial hypothesis test results presented in Table 6. Productive behavior variable (X1) has a positive effect on employee performance (Y), with a significance value of  $0.033 < \alpha (0.05)$  and beta coefficient of 0.411 and Total Quality Management variable (X2) obtained a significance value of  $0.005 < \alpha (0.05)$  and beta coefficient of 0,569. Thus, the first hypothesis showing that the variables of productive behavior have a significant effect on the performance of employees was accepted.

**Table 7.** Simultaneous Hypothesis Test

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	888.167	2	444.083	220.885	<.001 <sup>b</sup>
	Residual	50.262	25	2.010		
	Total	938.429	27			

a. Dependent Variable: Total\_KK

b. Predictors: (Constant), Total\_TQM, Total\_PPK

The results of the F test in Table 7 show that all variables are independent. Productive behavior variables (X1) and TQM variables (X2) significantly affect employee performance (Y).

Thus, the hypothesis says that the productive behavior variable and the TQM variable simultaneously have a significant effect on employee performance.

**Table 8.** Multiple Regression Coefficient Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.973 <sup>a</sup>	.946	.942	1.418

a. Predictors: (Constant), Total\_TQM, Total\_PPK

The results of the multiple regression coefficient test shown in Table 8 showed that the study examined the effect of productive behavior variables (X1) and TQM (X2) on employee performance (Y). This shows that each of the independent variables of productive behavior (X1) and TQM (X2) can contribute 94.6% to the dependent variable, namely employee performance (Y).

All independent variables, including TQM and productive behavior, partially affect employee performance. The results of multiple regression tests showed that the variables of productive behavior had a significant effect on employee performance, that is, employee performance increased if productive behavior was high, and vice versa, employee performance decreased if productive behavior was low.

For TQM variables, a positive effect on employee performance. That is, the better the implementation of TQM, the better the performance of employees in producing products. This finding supports research conducted by (Saptono et al., 2020) who found that TQM had a good and significant effect on employee performance. Thus, the second hypothesis stating that TQM has a great effect on employee performance is accepted.

The results of the F-test statistical data showed that employee performance was positively and significantly influenced by a combination of productive behavior variables and TQM. This finding is consistent with the hypothesis formulated in this study that employee performance is positively and significantly influenced by a combination of TQM and productive behavior variables. In addition, the results were corroborated by a multiple regression coefficient test with an R Square value of 0.946, which shows that the variables of productive behavior and TQM were simultaneously able to explain the dependent variable, namely employee performance by 94.6%. In addition, because the value of R square is above 0.50, it can be concluded that the feasibility test model (goodness of fit) of this research model is very good.

The coefficient of determination, statistical value of F test, and statistical value of t test are some of the measurements that can be used to identify the accuracy of the research model in regression analysis to estimate the actual value (independent variable to the dependent). The value of the coefficient of determination is used to measure the accuracy of the regression function in assessing the actual value (independent variable to the dependent).

#### 4. CONCLUSION

Adoption of Total Quality Management (TQM) becomes vital given the importance of employee performance in achieving the goals of a construction company. By emphasizing quality and employee engagement, companies can improve operational effectiveness, increase customer satisfaction, and gain a competitive advantage in this dynamic sector. Therefore, this study can make a positive contribution to improving the overall performance of employees. However, this study has limitations, where the limitations of this study are less intense respondents. Therefore, further research is expected to add respondents so that the assessment of the results provides adequate strength. In addition, it is expected that future research can add variables related to performance improvement strategies, such as the influence of organizational culture, leadership, and motivation on employee performance.

#### ACKNOWLEDGEMENTS

We would like to thank everyone who has expressed their interest in participating in this study. We thank the research team who have worked hard to collect data, analyze, and write this article. Without their contribution and cooperation, this research would not have been realized. We also

thank other institutions or organizations that have supported this research. Finally, we would like to thank everyone who has participated in this process. Thank you for your support and presence.

## REFERENCES

- Anandy, K. A., & Hasin, A. (2023). *Analisis Pengaruh Penerapan Total Quality Management (TQM) terhadap Kinerja Operasional pada The Manglung View & Resto* (Vol. 02, Issue 01). <https://journal.uii.ac.id/selma/index>
- Bharadwaj, Y. P., & Khan, A. A. (2021). Unearthing the determinants of total quality management on employees' satisfaction of Delhi Metro Rail Corporation. *International Journal of Six Sigma and Competitive Advantage*, 13(1-3), 343-362. <https://doi.org/10.1504/IJSSCA.2021.120225>
- Bon, A. T., & Mustafa, E. M. A. (2013). Impact of total quality management on innovation in service organizations: Literature review and new conceptual framework. *Procedia Engineering*, 53, 516-529. <https://doi.org/10.1016/j.proeng.2013.02.067>
- Ephantus, E., & Wanderi, N. (2015). EVALUATI ON OF FACTORS INFLUENCI NG TOTAL QUALITY MANAGEMENT IMPLEMENTATI ON I N RWADAN CONSTRUCTI ON COMPANIES: CASE OF FAIR CONSTRUCTION COMPANY. In *European Jour nal of Business and Social Sciences* (Vol. 4, Issue 03).
- Kola Olayiwola, R., Tuomi, V., Strid, J., & Nahan-Suomela, R. (2024). Impact of Total quality management on cleaning companies in Finland: A Focus on organisational performance and customer satisfaction. *Cleaner Logistics and Supply Chain*, 10. <https://doi.org/10.1016/j.clscn.2024.100139>
- Krittanathip, V., Rakkarn, S., Cha-um, S., & Konkhum, P. (2013). Development of Weighting on Self-assessment Evaluation for Total Quality Management: A Case Study of Retail Sectors. *Procedia - Social and Behavioral Sciences*, 88, 37-48. <https://doi.org/10.1016/j.sbspro.2013.08.479>
- Lau, A. W. T., Tang, S. L., & Li, Y. S. (2015). The level of TQM application by construction contractors in Hong Kong. *International Journal of Quality and Reliability Management*, 32(8), 830-862. <https://doi.org/10.1108/IJQRM-07-2013-0123>
- Lenegang, V. R., Worang, F. G., & Arie....., F. V. (2019). ANALYSIS OF INFLUENCE TQM ON THE PERFORMANCE OF THE SERVICE ORGANIZATION ON PUSKESMAS WORI ANALISA PENGARUH TQM TERHADAP KINERJA ORGANISASI JASA PADA PUSKESMAS WORI. *5783 Jurnal EMBA*, 7(4), 57873-5792.
- Likita, A. J., Zainun, N. Y., Abdul Rahman, I., Abdul Awal, A. S. M., Alias, A. R., Abdul Rahman, M. Q., & Mohamed Ghazali, F. E. (2018). An Overview of Total Quality Management (TQM) practice in Construction Sector. *IOP Conference Series: Earth and Environmental Science*, 140(1). <https://doi.org/10.1088/1755-1315/140/1/012115>
- Mohsen Alawag, A., Salah Alaloul, W., Liew, M. S., Ali Musarat, M., Baarimah, A. O., Saad, S., & Ammad, S. (2023). Critical Success Factors Influencing Total Quality Management In Industrialised Building System: A Case Of Malaysian Construction Industry. *Ain Shams Engineering Journal*, 14(2). <https://doi.org/10.1016/j.asej.2022.101877>
- Okuntade, T. F., & Femi, O. T. (2015). Barriers and Benefits of Total Quality Management in the Nigerian Construction Industry: A review. *International Journal of Engineering Works Kambohwel Publisher Enterprises*, 2, 7-13. <https://doi.org/10.5281/zenodo.15755>
- Othman, I., Norfarahhanim Mohd Ghani, S., & Woon Choon, S. (2020). The Total Quality Management (TQM) journey of Malaysian building contractors. *Ain Shams Engineering Journal*, 11(3), 697-704. <https://doi.org/10.1016/j.asej.2019.11.002>
- Singh, V., Kumar, A., & Singh, T. (2018). Impact of TQM on organisational performance: The case of Indian manufacturing and service industry. *Operations Research Perspectives*, 5, 199-217. <https://doi.org/10.1016/j.orp.2018.07.004>
- Sugiono. (2021). *Metode penelitian kuantitatif, kualitatif, dan R&D* (3rd ed.). Alfabeta.
- Wolor, C. W., Musyaffi, A. M., Nurkhin, A., & Tarhan, H. (2022). Employee Perceptions of TQM-Oriented HRM Practices for Perceived Performance Improvement in the Case of Companies in Indonesia. *Asian Journal for Public Opinion Research*, 10(2), 123-146. <https://doi.org/10.15206/ajpor.2022.10.2.123>
- Zahari, M. K., Zakuan, N., & Saraih, U. N. (2023). *The mediating effect of work culture on the relationship between total quality management and employee performance in Malaysia manufacturing industry*. 050016. <https://doi.org/10.1063/5.0116384>