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Management performance analysis based on total quality management principles

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Abstract

Quality is the key to the competition's success. The best way to compete and excel is by applying the principle of total quality management to achieve the best quality. This study aims to analyze and assess the management performance of the company based on comprehensive quality management principles. In the principle of total quality management we use five independent variables, namely (focus on customers, commitment, teamwork, education and training, and employee involvement). In contrast, management performance is the dependent variable of this study. The results of the research were obtained by distributing questionnaires to 79 staff in PT. Bumi Karsa. The research hypothesis tests were performed using the SPSS tool in several phases of statistical testing. The results of this study show that indicate that the five variables of the TQM principle affect on management performance PT Bumi Karsa. The TQM variable which mainly affects management performance PT Bumi Karsa in Makassar is an employee participation and empowerment variable.



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1 Introduction

Free trade is marked by increased competition for companies to offer maximum service to consumers by offering quality products (Hidayat & Latief, 2018). This can be created if the company can improve continuously (Amran, 2020). Increasing competition intensity and the number of competitors requires management to always be mindful of consumer needs and wishes and to try to fulfill what they expect in a more satisfying manner than competitors (Latief, 2019; Sugiarto & Jumady, 2019; Nicca & Herman, 2020).

In a company, improving business performance and human resources is essential to ensure that quality

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products and services can produce end products with higher positive values and better services by continuously enhancing quality, innovation, creativity and productivity in a way that can respond to customer requirements (Maulana, 2019). This means that the company must create favorable situations and conditions from within in order to achieve a good performance to produce useful results for the company and the environment directly related to the activities of the company. According to Nasrun (2018), sound management can be used as a tool to enhance business performance, in particular through the application of the principles in total quality management (TQM).

Jumady (2020) explains that the total quality management is a business approach that seeks to maximize organizational competitiveness by continuously improving products, services, work, processes and the environment. TQM has ten main elements, namely customer focus, quality obsession, scientific approach, long-term commitment, teamwork, continuous system improvement, training and education, controlled freedom, unity of purpose and involvement and empowerment of employees.

The application of TQM has an empirical impact on management performance. This was studied by Setiawan (2011) and the results show that the application of high TQM in a customer-focused enterprise will improve quality constantly. Education and training are known to have unity and employees' involvement and empowerment. The study (Mulyani & Wijayani 2017) shows TQM's impact on management performance is significant. Customer emphasis, quality obsession, scientific focus, long-term commitment, teamwork, continuous system improvement, education and training, controlled freedom, unity and involvement and empowerment of employees can be explained through management performance.

This study was carried out in PT Bumi Karsa. The problem or phenomenon faced by the PT Bumi Karsa company shows that management activities have decreased. This is because of several factors such as lack of morals and incentives for certain managers who work for the company. The company's performance decrease, so efforts to increase the total quality of management have to be made to increase the TQM performed by PT Bumi Karsa. Measuring the implementation of TQM uses the indicators of TQM principles proposed by Nasution (2005). Nasution (2005) reports that there are ten key elements in the measurement of TQM. Nevertheless, the researchers are only using five aspects of the 10 main functions, including a focus on customers, long-term commitment, teamwork, training and staff participation/empowerment. The researchers chose the 5 main characteristics of TQM measurement at PT Bumi Karsa as PT Bumi Karsa used only the above five main components in TQM.

Sim & Killough (1998) explains that Total Quality Management is a philosophy that emphasizes sustainable manufacturing improvement through waste disposal, quality improvement and skill development, and cost reduction. Young et al. (2001) emphasized this aspect as a monitoring approach in which the quality of the product is determined by factory employees. Lam et al. (2011) explain Total Quality Management is a philosophy, a concept that contains a set of guiding principles that form the basis of an organization that continually wishes to improve.

Creech B (1994) argues that TQM has five main cornerstones to guide an organization, namely the product produced and the process. A leader causes the organisation, and the leaders in an organization have a commitment. The product is central to the objectives and achievements of the organization; quality in the product cannot be achieved without quality. Quality in processes without the right organization is impossible to achieve. The right organisation, without sufficient leadership, is nothing. A robust and groundbreaking commitment is a cornerstone for everyone else. The other four pillars depend on each post, and the other is also weak if one is weak.

Simply put, total quality management is defined sufficiently in three words, which describe a new type of quality control (Roghanian et al., 2012; Setiawan & Daromes, 2019). The point is why the overall quality management program implemented in different companies and organisations, can work well and produce better quality performance than before, increasing the competitive advantage, "why" the overall quality management program implemented in companies and other organizations cannot work properly, and only leads to very miles. The difference in quality performance from the implementation of the full quality management program is due to the differences in principles used for the implementation of the whole quality management programme. Therefore, in order to achieve the best and efficient way to implement a complete quality management program, principles must be integrated in any aspect of the organization (Arumugam et al., 2008).

Private organizations, in particular companies, currently have quality standards in place to implement their operations (Latief & Nur, 2019). Quality standards are essential to the quality of companies; both service and goods manufacturing companies (Jumady et al., 2016). Personnel resources are a crucial element in quality management irrespective of the form of the organization's quality management. For example, managers need to balance the structural dimension and the human dimension in total quality management. The structural scope includes the hierarchy, strategy, budget, control plans and procedures of the organization. The human dimension is leadership, engagement, teamwork and full participation in a continuous program of quality enhancements. Leaders should not be silent, both product quality and staff, in order to achieve high quality. Quality achievement in public organizations is determined primarily by the leadership factor (Erniwati et al., 2020). Public organizations' leadership should take the initiative to implement progressive and innovative actions. Production or service policies, personnel, technology and others should always refer to quality formation (Asdi & Putra, 2020).

This research study is crucial because implementing TQM by using the principles in the TQM system as a whole is so that the company can provide added value, a positive impact on the company, employees, and customers. If TQM is implemented inappropriately, it becomes a waste source (Seetharaman et al., 2006). Based on the description of the phenomenon and the literature review that has been described, the hypothesis we propose in this research is Total Quality Management (focus on customers, long-term commitment, teamwork, education, and training, as well as employee involvement and empowerment) has a significant effect on improving managerial performance.

2 Research Method

This investigation is a kind of quantitative analysis. In this study, we collected data by distributing surveys to research respondents. The population of the study was all 384 employees at PT Bumi Karsa. A sample was drawn using the Slovin theory based on a large number of employees, as described in the Sarjono & Julianita (2011) formula:

$$n = \frac{N}{1 + N(e)^2}$$

$$n = \frac{384}{1 + 384(0,10)^2}$$

$$n = \frac{384}{4,84}$$

$n = 79,33$ or rounded to 79 samples / respondent

Following collection and processing of data, the next process is to test the hypothesis using descriptive analysis methods, validity and reliability testing, in order to test the validity and reliability of each research instrument. Used for the testing of the hypothesis, a multiple regression analyzes where the statistical equations used to determine the modesting variable in the performance relationship are as follows:

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + e$$

Dimana :

- Y = Managerial performance
- X1 = Focus on the customer
- X2 = Long term commitment
- X3 = Teamwork
- X4 = Education and training

X5 = Employee engagement and empowerment

b0 = Constant

b1, b2, b3, b4, b5 = Regression coefficient

e = Residual error

Regression and correlation testing used partial regression (t-test) to test the influence of each independent variable (total quality management and managerial performance). Simultaneous testing test whether or not managerial variables have a significant impact together on the independent variables (complete quality management and organizational performance).

3 Result and Discussion

Result

The validity test is used to determine whether or not a questionnaire is valid. A questionnaire is said to be helpful if questions can reveal something that is measured by the questionnaire. One way to test Ghazali's validity is to compare the count value with the table resulting from the correlation of the answer from the respondent in every variable analyzed via the SPSS program and the resulting value is called the correlated item. The analysis test of this study is said to be valid if it has a value of 0.30. Customers, long-term commitment, teamwork, education and training, employee participation and empowerment, and management performance testing for TQM with five variables. A total of 32 items show that the overall correlation value of each item is above 0.30. Thus, the five variables of overall quality management and management performance are valid.

Table 2. Reliability Testing Results

Variable	Cronbach's <i>alpha</i>	Standard Reliability	Info
Focus on the customer	0,872	0,60	Reliable
Long term commitment	0,823	0,60	Reliable
Teamwork	0,822	0,60	Reliable
Education and training	0,742	0,60	Reliable
Employee engagement and empowerment	0,910	0,60	Reliable
Managerial performance	0,874	0,60	Reliable

Table 3. Normality Test Results

<i>Unstandardized Residual</i>		
N		79
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	.19661353
Most Extreme Differences	Absolute	.097
	Positive	.078
	Negative	-.097
Kolmogorov-Smirnov Z		.866
Asymp. Sig. (2-tailed)		.441

a. Test distribution is Normal.

b. Calculated from data.

Table 2 shows that the alpha value of all variables in Cronbach is greater than 0.60. Therefore, the indicators or questionnaires of the TQM variable are all declared reliable or can be trusted as a variable measurement tool. Statistical analytical testing Regression can be performed considering that classical assumptions are not violated (Sugiyono, 2010). Two methods can be used to detect the normal distribution of the residues by graph analysis and statistical tests. A statistical analysis of the normality test was used in this study to test whether or not a

normal distribution was found in the regression model.

Based on table 3, the normality test results show the value of $\text{sig} = 0.441 > 0.05$. These results explain that the data to be used in regression testing has a normal distribution; the reason is that it has a sig value > 0.05 . A multicollinearity test is used to test whether there is a correlation between the independent variables. A good regression model should not correlate with the independent variables. The method used to detect multicollinearity is by using the VIF (Variance Inflation Floor) value, "if the VIF value is greater than 10, there will be multicollinearity among the independent variables. If the VIF value is below 10, it can be said that there are no symptoms of multicollinearity in the research model.

Table 4. Multicollinearity Test Results

No.	Variable	VIF
1	Focus on the customer	1,737
2	Long term commitment	1,855
3	Teamwork	1,647
4	Education and training	2,062
5	Employee engagement and empowerment	1,635

Based on Table 4, multicollinearity test results indicate that VIF value of each TQM variable is less than 10, so there is no multiple-coordination problem in this study.

In a study the inefficient estimation of the regression coefficients results in heteroscedasticity. Heteroscedasticity can be diagnosed by taking the predicted residues and variables into account. If the distribution points of the plot are dispersed around zero (0 on the Y axis) and do not form a specific pattern or trend line. In this case, it can be said that the model fails to meet heteroscedasticity assumptions or that the regression model can be predicted. Heteroskedasticity has been tested using a dispersion chart. Figure 1 shows the results of the heteroskedasticity test:

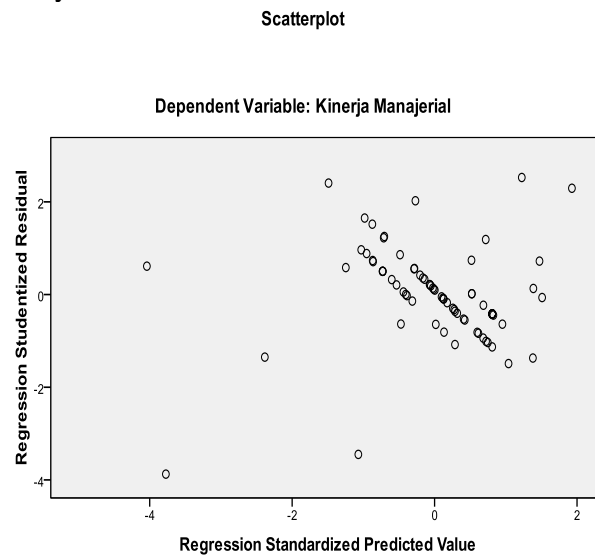


Figure 1. Scatterplot Heteroskedasticity

Figure 1 shows that heteroscedasticity is not present because there is no clear pattern and the points are spread. The basis of this decision is if a specific pattern forms a certain regular way, then heteroscedasticity and vice versa will be present. To analyze the impact of TQM at PT (customer focus, long-term engagement, teamwork, training and employee involvement and empowerment). Multiple regression analysis can be used for Bumi Karsa in Makassar. The analysis is performed based on the value of standardized regression coefficients between customer focus, long-term commitment, team work, training, employee involvement and management performance empowerment.

Table 5. Multiple Linear Regression Results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.699	.263		2.657	.010
Focus on the customer	.132	.058	.191	2.289	.025
Long term commitment	.174	.064	.236	2.731	.008
Teamwork	.136	.056	.198	2.428	.018
Education and training	.198	.093	.193	2.122	.037
Employee engagement and empowerment	.242	.063	.309	3.816	.000
R = 0,841	F _{count} = 35,152				
R ² = 0,707	Sign = 0,000				

The regression equation can be done as follows from the regression data obtained:

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + e$$

$$Y = 0,699 + 0,132X_1 + 0,174X_2 + 0,136X_3 + 0,198X_4 + 0,242X_5$$

From the regression equation results, it can be explained that $b_0 = 0.699$, which means a constant value, focusing on customers, long-term commitment, teamwork, education and training, and employee engagement and empowerment, managerial performance will increase by 0.669%. The regression coefficient for the customer focus variable (X_1) is positive at 0.132; this indicates that customer focus has a positive and significant effect on managerial performance. Focusing on customers will improve managerial performance. The regression coefficient for the long-term commitment variable (X_2) is positive at 0.174; this shows that long-term commitment has a positive and significant effect on managerial performance. An increase in long-term commitment will improve managerial performance. The regression coefficient for the variable teamwork (X_3) is positive at 0.136; this shows that collaboration has a positive and significant effect on managerial performance. The regression coefficient for the education and training variable (X_4) is positive at 0.198; this indicates that education and training positively and significantly affect managerial performance. The regression coefficient for the employee involvement and empowerment variable (X_5) is positive at 0.242; this indicates that employee involvement and empowerment positively and significantly affect managerial performance. Then, the correlation coefficient value $R = 0.841$ or 84.1%, because the value of r is positive and close to 1, there is a positive and robust relationship between a focus on customers, long-term commitment, teamwork, education and training, and involvement and empowerment—employees on managerial performance at PT. Bumi Karsa in Makassar, while the coefficient of determination $r^2 = 0.707$ which indicates that 70.7% of the variation in changes between a focus on customers, long-term commitment, teamwork, education and training, and employee involvement and empowerment on managerial performance, while the rest is as much 29.3% is influenced by other factors outside of this research model.

The results of significant testing between a focus on customers and managerial performance obtained a beta value that has been standardized coefficient of 0.191 and has a value of $0.025 < 0.05$; it can be said that focus on customers has a significant effect on managerial performance. A considerable test of long-term commitment with managerial performance, the beta value = 0.236 and has a value = $0.008 < 0.05$, so it can be concluded that long-term commitment has a significant effect on managerial performance. A considerable test of teamwork with managerial performance obtained a beta value = 0.198 and has a value of $p\text{-value} = 0.018 < 0.05$. Thus it can be said that teamwork has a significant effect on managerial performance. The significant test of education and training with managerial performance obtained a beta value = 0.193 and has a value of $p\text{-value} = 0.037 < 0.05$, so it can be said that education and training have a significant effect on managerial performance. A significant test of employee involvement and empowerment with managerial performance obtained a beta value = 0.309 and has a value of $p\text{-value} = 0.000$, so it can be said that employee involvement and empowerment has a significant effect on managerial performance.

From the results of partial testing, it is found that the TQM variable has the most dominant influence on managerial performance at PT. Bumi Karsa in Makassar is employee involvement and empowerment, followed by the long-term commitment variable. It has the most considerable beta coefficient value than other variables and has a probability value that is smaller than the standard value.

The simultaneous test is used to determine the effect of total quality management variables on managerial performance, where the value of $F\text{-count} = 35.152 > F_{\text{table}} = 2.340$ and $p\text{value } 0.000 < 0.05$ is obtained. This proves that focus on customers, long-term commitment, teamwork, education and training, and employee involvement and empowerment together affect managerial performance at PT. Bumi Karsa in Makassar.

Discussion

The results of this study show that the five variables of the TQM principle affect PT Bumi Karsa's managerial performance in Makassar. Based on these results, management can be explained that the performance of the company can improve if the company always identifies customer requirements, satisfies customer fulfillment, plans future customer needs and expectations, measures customer satisfaction, fosters direct customer relationships and always timely solutions to customer problems. The company's management performance can increase if the company's vision and quality policy is achieved through the involvement of all its leaders in improving all aspects of quality. The company offers support facilities for programs to improve quality on a long-term basis. The company recognizes and appreciates all aspects of quality improvement, which directly affects the performance of company management. If teamwork can create harmonization, good contacts between fellow staff and customers to develop quality, the management performance of the company can be increased.

Education and training are fundamental factors for every company in improving managerial performance. This study indicates that the company's managerial performance can improve if the education and training process is carried out regularly. This is done so that employees become trained and skilled to solve problems; this is done so that every problem that occurs with customers, employees have the initiative to be able to solve them.

Results of regression coefficients and hypothesis tests show that employee involvement and empowerment are the most dominant factor of the overall quality management variable. The company forms a working group that manages all aspects of quality, dividing its members into several groups to help each other to improve quality. The company always develops employee participation in all aspects to manage all aspects of quality; this is done to complete any tasks or tasks assigned. All employees are entitled to decide proportionately; the company frequently declares this so that each employee is entitled to the same rights and position to take company decisions. All employees are engaged in a lot of brainstorming. To improve management performance, the company offers every employee the opportunity to make constructive proposals. The activities of the Working Group have solved many problems, as demonstrated by the company's success in improving the quality of good projects through better management performance. The company applies employee ideas to the work process, showing that it always gives employees ideas or thoughts to improve their management performance.

4 Conclusions

This study reveals that the variable focus on customers, long-term commitment, teamwork, training, and participation and empowerment of employees shows the regression coefficient is positive. This means that all total quality management variables in the study have a positive impact on the management performance at PT Bumi Karsa in Makassar. The TQM variable mainly affects management performance at PT Bumi Karsa in Makassar is a variable of involvement and empowerment of employees. The results of this study suggest that PT Bumi Karsa should always focus on total quality management by focusing on customers, long-term commitment, teamwork, training, employee involvement and empowerment in the conduct of project activities. In PT Bumi Karsa in Makassar, the most dominant variable affecting management performance is employee

engagement and empowerment. It is suggested that PT Bumi Karsa always invites every employee or staff involved in improving the performance of the management, namely the use of the authority of every staff member in all decision making, besides that the employees can offer ideas or ideas to enhance the organizational performance of the company.

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