

Effect of Total Quality Management on the Quality and Productivity of Human Resources

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Abstract. Human resources is the main factor in improving company performance not only in industrial products but also services. Therefore, all of the organization performers involved must work together to achieve product quality services expected by consumers. Educational institutions are the service industries which are educators and instructor involved in it. Quality of product and services produced depends on the education organization performers. This study did a survey of instructors in public and private universities in North Sumatra to obtain the factors that affect quality of human resources and productivity of human resources. Human resources quality is viewed by the elements of TQM. TQM elements that are discussed in this study are leadership, communication, training and education, support structure, measurement and reward and recognition. The results of this study showed a correlation numbers across the exogenous variables on endogenous variables relationships tend to be strong and be positive. In addition, elements of TQM are discussed except the support structure which has a direct influence on the quality of human resources. Variable leadership, reward and recognition and quality of human resources have a significant effect on productivity.

1. Introduction

Total Quality Management (TQM) is based on; all organization staff should collaborate with each other for purposes of producing high quality products and services in order to meet customers' demands. (1). Total Quality Management consists of several quality instruments and techniques, in addition to various values and beliefs that all staff within the same organization shares (2). TQM can be defined as a strategy that aims to generate and transfer more efficient and superior services, through achieving cooperation between organizational members. (3). Such studies indicated that there are positive relation between the effective implementation of TQM and the organizational performance, in which when one organization applies total quality management practices in effective way then it's organizational and employees' performance will largely enhanced.(4). Leaders in a TQM system view the firm as a system; support employee development; establish a multipoint communication among the employees, managers, and customers and use information efficiently and effectively. In addition, leaders encourage employee participation in decision-making and empower the employees. Previous studies have found that leadership improves operational performance. TQM firms should give necessary training to all their employees to improve their proficiencies in their tasks. Effective training in management and improvement in quality bring success for the firms. Employees' effective



knowledge and learning capability will provide sustainability of quality management in the firm. Some studies report that training is positively related to operational performance (3). Reward and recognition, employee reward systems refer to programs set up by a company to reward performance and motivate employees on individual and/or group levels. Communication is an important means of realizing quality. There is strong relationship between good communication and successful quality implementation. Communication is an important means of realizing quality. There is strong relationship between good communication and successful quality implementation.

2. Methods

This research is a correlation descriptive research, a study investigating the presence or absence of a relationship between exogenous variables influences the endogenous variables. The dependent variable in the analysis of pathways called endogenous variable. The independent variable called exogenous variables. Variables were investigated in relation to Human Resources Quality (Y1) are leadership (X1), communication (X2), training and education (X3), support structure (X4), measurement (X5) and reward and recognition (X6), and job satisfaction (Y1). Variable leadership (X1), Reward and recognition (X6), and Human Resources Quality (Y1) also investigated the relationship on labor productivity. This study will look at the influence of each factor on the productivity of human resources will be formulated in associative hypothesis partially or simultaneously.

The population is all instructors in the public education institutions and one private education institution in North Sumatra. The sample is based on probability sampling which is simple random sampling with the sample size of 43 peoples. This study used an enclosed questionnaire with the research scale using a Likert scale from 1-5 can be seen in Table 1.

Table 1. Research Scale

Value	Scale
1	Very disagree
2	Disagree
3	Neutral
4	Agree
5	Very Agree

The research instrument (questionnaire) tested the validity and reliability by distributing questionnaires to 30 respondents that were chosen based on the rule of thumb. The test results demonstrate the validity of the value of correlated items ratio is greater than the value of r -table = 0.362 so that all the questions fit for use as a research instrument. Coefficient of alpha cronbach (0.860) is greater than the value of r -table 0.362 so that the research instrument is reliable (consistent) to reveal the expected data.

Correlation analysis is used to analyze the strength of the relationship between exogenous and endogenous variables. Path analysis is used to see the influence of exogenous variables on endogenous variables. The equation for the track path analysis equation Y1 and Y2 as follows:

$$Y_1 = \gamma_{11}X_1 + \gamma_{12}X_2 + \gamma_{13}X_3 + \gamma_{14}X_4 + \gamma_{15}X_5 + \gamma_{16}X_6 + e_2 \dots \dots \dots (1)$$

$$Y_2 = \gamma_{21}X_1 + \gamma_{26}X_6 + \rho_{11}Y_1 + e_1 \dots \dots \dots (2)$$

According to Nawawi, the correlation value of 1 indicates perfect correlation, 0.900 to 0.999 show very high correlations, from 0.700 to 0.899 indicates a high correlation, 0.400 to 0.699 indicates moderate correlation, 0.200 to 0.399 indicates a low correlation, and less than 0,199 showed no correlation.

3. Research Result

3.1. Correlation Analysis

Correlation analysis is used to determine the relationship between endogenous variables with each of the exogenous variables. The correlation coefficient indicates a strong or weak relationship between the endogenous and exogenous variables as well as the direction of the relationship. The whole correlation coefficient is positive; it means there is a direct relationship between endogenous and exogenous variables.

Table 2. Correlation Coefficient Value (r)

Exogenous Variable	Endogenous Variable	
	Quality of human resources (Y ₁)	Productivity of human resource (Y ₂)
Leadership (X ₁)	0,677	0,668
Communication (X ₂)	0,652	
Training and education (X ₃)	0,811	
Support structure (X ₄)	0,456	
Measurement (X ₅)	0,701	
Reward and recognition (X ₆)	0,678	0,730
Quality of human resources (Y ₁)		0,813

Table 2. Shows the variables of leadership, communication, support structure, and reward and recognition has a moderate correlation to the quality of human resources. Training and education variable has the strong correlation measurement of the quality of human resources. Leadership variable has a moderate correlation to the productivity of human resources. Reward and recognition variable as well as the quality of human resources have a strong correlation to the productivity of human resources. Throughout the exogenous variables have a direct relationship to the endogenous variables means that each increment on exogenous variables will increase the value of endogenous variables.

3.2. Path Analysis

This paper shows the TQM variables (leadership, communication, training and education, support structure, measurement, and reward and recognition) on the quality of human resources and productivity of human resources. Path analysis shows the results that can be seen in Figure 1. The results obtained the variables of leadership and reward and recognition has direct and indirect influence on the productivity of human resources. While the variable of communication, training and education, and measurement have indirect influence on the productivity of human resources. Support structure variable does not have a significant effect on the quality of human resources).

Y1 path shows the relationship between TQM to the quality of human resources and the equation as follows:

$$Y_1 = 0,213 X_1 + 0,177 X_2 + 0,271 X_3 + 0,202 X_5 + 0,231 X_6 + 0,567$$

In educational institutions there are no significant influences between the support structures on the quality of human resources. Y2 path shows the relationship between the variables of leadership, quality of human resources, and reward and recognition on the productivity of human resources, the equation as follows:

$$Y_2 = 0,237 X_1 + 0,345 X_6 + 0,420 Y_1 + 0,240$$

The coefficient has a positive value, which means that each variable have a direct relationship with the human resources productivity.

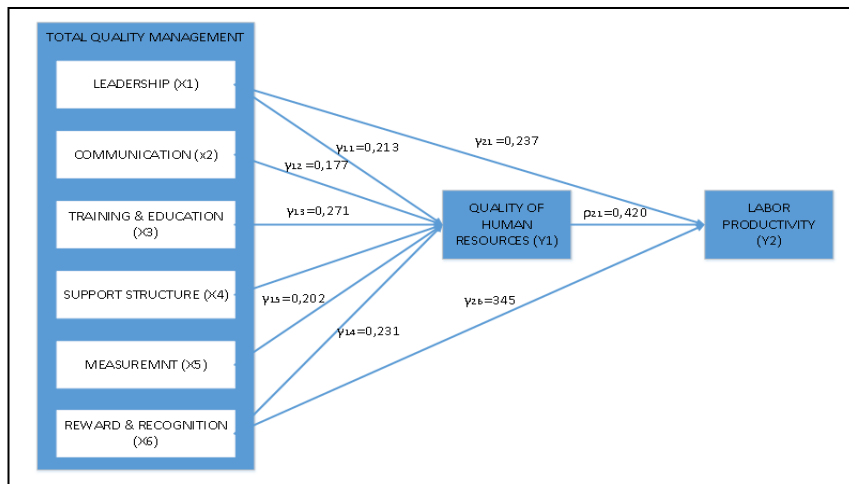


Figure 1. Path Analysis

3.3. Discussion

In educational institutions there are no significant influences between the support structures on the quality of human resources.

William Glasser (1990) said that: “if you want quality schools, we have to revise the way we manage students. He suggests that we use the quality management concepts pioneered by W. Edwards Deming, the man who taught the Japanese how to manage workers so that they did the quality work that all people want and, in going so, have made Japan the most powerful economic force in the world. To do this, however, it is necessary that both students and staff learn the control theory that underlies this change and Glasser is the world’s leading exponents of this new theory”. In Indonesia, education not only depends on that criteria mention above, there is another variable that called human resources who helped institution to run the administration of bureaucracy. This variable be affected depends on leadership, communication, training & education, support structure, measurement, and reward & recognition.

4. Conclusion

All that organization staff should work together to produce high quality products and services in order to meet customers’ demands. Leadership and reward and recognition have a direct and indirect influence on the productivity of human resources. Communication, training and education, and measurement have an indirect influence on human resources productivity. In the education institutions there are no significant influence between the support structures on the quality of human resources.

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