Research Article

Linking Quality, Measurement, and Rewards to Superior Managerial Performance

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Abstract

The objective of this study was to investigate the impact of Total Quality Management (TQM), Performance Measurement Systems, and Reward Systems on Managerial Performance. The research employed a purposive sampling technique, targeting managers, assistant managers, and staff employees as participants. Primary data were collected through questionnaires distributed directly to 86 respondents. The analysis methods included testing the quality of the data (validity and reliability), as well as classical assumption tests (normality, autocorrelation, heteroscedasticity, and multicollinearity). Additionally, partial t-tests and simultaneous f-tests were used to evaluate the hypotheses. The study's findings reveal that TQM has a positive and significant influence on managerial performance, as does the performance measurement system. Additionally, the reward system also has a positive and significant effect on managerial performance. Collectively, TQM, the Performance Measurement System, and the Reward System exert a positive and significant impact on managerial performance. Managerial Implications: Companies need to implement TQM, performance measurement systems, and reward systems cohesively. This integrated approach will foster continuous improvement, motivate employees, and enhance both managerial performance and organizational competitiveness.

Keywords: Total Quality Management (TQM), Performance Measurement Systems, Reward Systems, Managerial Performance.

JEL Classification: M12, M40, M41

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1. Introduction

Global business competition in the digital era has driven companies to enhance their managerial performance to achieve sustainable competitiveness continuously (Porter, 2020). The swift advancement of technology and globalization has created a dynamic business landscape, compelling organizations to adopt modern management practices to ensure both survival and growth (Prahalad & Ramaswamy, 2004). Managerial performance is a critical determinant of organizational effectiveness, as managers play a pivotal role in planning, coordinating, and executing strategies that directly impact business outcomes (Mahoney et al., 1963; Kaplan & Norton, 2001).

One of the most recognized approaches to enhancing managerial performance is the implementation of Total Quality Management (TQM), which focuses on continuous improvement, teamwork, and customer satisfaction (Salsabila & Simon, 2025)(Demirbag et al., 2006). TQM has demonstrated its ability to improve organizational efficiency and effectiveness by cultivating a quality-centric culture at all levels of management (Sadikoglu & Olcay, 2014). However, empirical evidence suggests that the impact of TQM on performance may vary based on the organizational context and the presence of complementary management systems (Powell, 1995; Nair, 2006). Therefore, it is crucial to investigate whether TQM can significantly enhance managerial performance in specific business environments.

In addition to TQM, the role of performance measurement systems is critical in determining the effectiveness of managerial decisions (Ittner & Larcker, 1998). Performance measurement provides systematic feedback that enables managers to evaluate their performance against predetermined objectives (Neely et al., 1995). An effective performance measurement system helps managers align their actions with organizational goals and promotes accountability across departments (Franco-Santos et al., 2012). Moreover, the integration of non-financial and financial measures enhances managerial decision-making, which is essential for achieving competitive advantage (Kaplan & Norton, 1996).

Reward systems are also an integral factor that influences managerial performance (Gerhart & Fang, 2014). Well-designed reward systems provide incentives that encourage managers to achieve higher performance levels in line with company objectives (Lazear & Oyer, 2013). Financial rewards, such as bonuses and promotions, can improve motivation, while non-financial rewards, including recognition and career development opportunities, enhance long-term engagement (Deci et al., 1999). However, research findings on the effectiveness of reward systems remain inconclusive, as some studies show positive effects, while others indicate limited or even adverse outcomes (Jenkins et al., 1998; Kuvaas et al., 2017). This inconsistency highlights the need for further research to examine how reward systems interact with TQM and performance measurement in influencing managerial performance.

The combination of TQM, performance measurement systems, and reward systems is expected to create synergy that enhances managerial effectiveness (Ittner et al., 2003). Previous studies suggest that organizations implementing these three aspects simultaneously are more likely to achieve sustainable improvements in performance compared to those focusing on only one aspect (Kaynak, 2003). However, empirical studies in emerging markets have shown mixed results, where TQM implementation does not always lead to significant managerial improvements if not supported by effective measurement and reward mechanisms (Zhang et al., 2000; Samson & Terziovski, 1999). This indicates the existence of a research gap that needs to be addressed to provide more comprehensive insights into how these factors jointly affect managerial performance.

From a business perspective, understanding the relationship between TQM, performance measurement, and reward systems is crucial for companies operating in highly competitive industries (Oakland, 2014). The failure to integrate these systems can result in ineffective managerial practices, reduced productivity, and lower organizational competitiveness (Sousa & Voss, 2002). On the other hand, successful integration can lead to continuous improvement,

employee motivation, and superior business performance (Kaynak & Hartley, 2008). This shows that further research is not only theoretically relevant but also practically significant for business sustainability.

Based on the phenomenon above, this study is designed to analyze the influence of TQM, performance measurement systems, and reward systems on managerial performance. The research focuses on testing whether these three variables have partial and simultaneous effects on managerial performance. The main research problems can be formulated as follows: (1) Does TQM significantly influence managerial performance? (2) Does the performance measurement system significantly influence managerial performance? (3) Does the reward system significantly influence managerial performance? (4) Do TQM, performance measurement systems, and reward systems simultaneously influence managerial performance?

The objectives of this study are to empirically test and analyze the effect of TQM, performance measurement systems, and reward systems on managerial performance, both partially and simultaneously. The specific benefits of this research are twofold: (1) practically, it provides input for organizations to design effective management systems that integrate quality, measurement, and reward mechanisms to enhance managerial performance; and (2) theoretically, it contributes to the literature on management accounting and organizational behavior by clarifying the relationship among these three variables. The novelty of this research lies in its integrative approach, which combines TQM, performance measurement, and reward systems simultaneously in the context of managerial performance. In contrast, previous studies have often investigated these factors separately.

2. Literature Review and Hypothesis

Literature Review

Management Accounting

From a user perspective, accounting can be defined as a discipline that provides information in the form of financial reports needed by stakeholders regarding the economic activities and condition of a company. According to Simamora (2012) and (Santosa & Laksana, 2011), accounting is the process of measuring an entity's economic activities in monetary terms and communicating the results to stakeholders.

Research conducted by Kuarnianingsih (2015) provides empirical evidence regarding the importance of Management Accounting System design as a contingency factor in improving performance.

Managerial Performance

Increased productivity can be achieved through effective managerial performance within the management function. Managerial performance is crucial in organizations because optimal managerial performance is expected to lead to the company's success (Savira et al., 2024). A company's success is measured mainly by its managerial performance and achievements. Managers are required to utilize their capabilities to the maximum to achieve a competitive advantage over their peers (Pratamtomo et al., 2024).

Benefits of Total Quality Management (TQM)

Hessel, in Nasution (2015) and (Ramadhina & Muslikh, 2025), examined the relationship between TQM implementation and the performance and competitive advantage of several manufacturing companies in Indonesia. His research findings suggest that quality is a crucial prerequisite for a company's success. TQM is an approach to enhancing company survival and competitiveness, and its implementation requires the support of the company's infrastructure (Munawaroh & Simon, 2023).

Reward System

Every employee needs recognition when their work meets or even exceeds company-set standards. Rewards are a human resource management strategy for creating work harmony between staff and management in achieving established goals and objectives (Syahputra & Faruqi, 2024)(Halim &

Tjahjono, 2010). Rewards are used as a tool to encourage and motivate managers and employees to perform well in accordance with their responsibilities and, hopefully, even exceed company-set targets. Simamora (2014) defines a reward system as compensation that includes financial rewards, intangible services, and benefits received by employees as part of the employment relationship. According to Cascio (1990), compensation encompasses direct cash payments, indirect payments in the form of employee benefits, and incentives designed to motivate employees to work diligently and achieve higher productivity.

Hypothesis
Total Quality Management (TQM) and Managerial Performance
Total Quality Management (TQM) is a management philosophy emphasizing continuous improvement, customer satisfaction, and employee involvement (Oakland, 2014). Studies have shown that TQM significantly enhances managerial performance by promoting efficiency, quality, and innovation across organizations (Kaynak, 2003; Demirbag et al., 2006). Empirical research suggests that managers who implement TQM practices demonstrate better decision-making and problem-solving abilities (Samson & Terziovski, 1999; Sadikoglu & Olcay, 2014). However, some studies report mixed results, indicating that TQM's effectiveness depends on contextual factors such as organizational culture and leadership commitment (Powell, 1995; Nair, 2006). Based on these findings, it is reasonable to expect that TQM positively influences managerial performance.

H1: Total Quality Management (TQM) has a positive and significant effect on managerial performance.

Performance Measurement Systems and Managerial Performance
Performance measurement systems are mechanisms that provide managers with information to evaluate organizational activities and individual performance (Kaplan & Norton, 1996). An effective performance measurement system enhances managerial performance by providing timely feedback and aligning managerial actions with strategic objectives (Ittner & Larcker, 1998; Neely et al., 1995). Research indicates that managers supported by well-designed performance metrics are more effective in planning, coordination, and decision-making (Franco-Santos et al., 2012; Henri, 2006). Furthermore, performance measurement fosters accountability and motivates managers to achieve higher levels of efficiency (Micheli & Manzoni, 2010; DeBusk et al., 2003). These findings suggest that performance measurement systems have a significant role in improving managerial performance.

H2: Performance measurement systems have a positive and significant effect on managerial performance.

Reward Systems and Managerial Performance
Reward systems are designed to motivate employees and managers by linking compensation to performance outcomes (Lazear & Oyer, 2013). A well-structured reward system can increase managerial motivation, job satisfaction, and commitment to organizational goals (Gerhart & Fang, 2014; Jenkins et al., 1998). Studies demonstrate that both financial and non-financial rewards significantly contribute to improved managerial performance (Deci et al., 1999; Kuvaas et al., 2017). However, ineffective or unfair reward distribution may reduce motivation and negatively impact performance (Bloom, 1999; Pfeffer, 1998). Therefore, it is expected that reward systems play a vital role in enhancing managerial performance.

H3: Reward systems have a positive and significant effect on managerial performance.

Integrated Effect of TQM, Performance Measurement, and Reward Systems
The simultaneous application of TQM, performance measurement systems, and reward systems creates synergy in enhancing managerial performance (Ittner et al., 2003). Research suggests that organizations integrating these practices achieve better strategic alignment, continuous improvement, and sustainable competitiveness (Kaynak & Hartley, 2008; Sousa & Voss, 2002). Managers supported by quality-focused practices, accurate performance feedback, and appropriate rewards are more likely to achieve superior results (Zhang et al., 2000; Samson & Terziovski, 1999). Nevertheless, empirical studies in emerging markets reveal variations in outcomes, underscoring

the importance of examining these relationships within specific contexts (Nair, 2006; Sadikoglu & Olcay, 2014).

H4: Total Quality Management (TQM), performance measurement systems, and reward systems have a simultaneous and positive effect on managerial performance.

Conceptual Framework

Based on the theoretical explanation and the results of previous research, the variables in this study are Total Quality Management, Performance Measurement Systems, and Reward Systems as independent variables, and Managerial Performance as the dependent variable. Therefore, the conceptual framework is as follows:
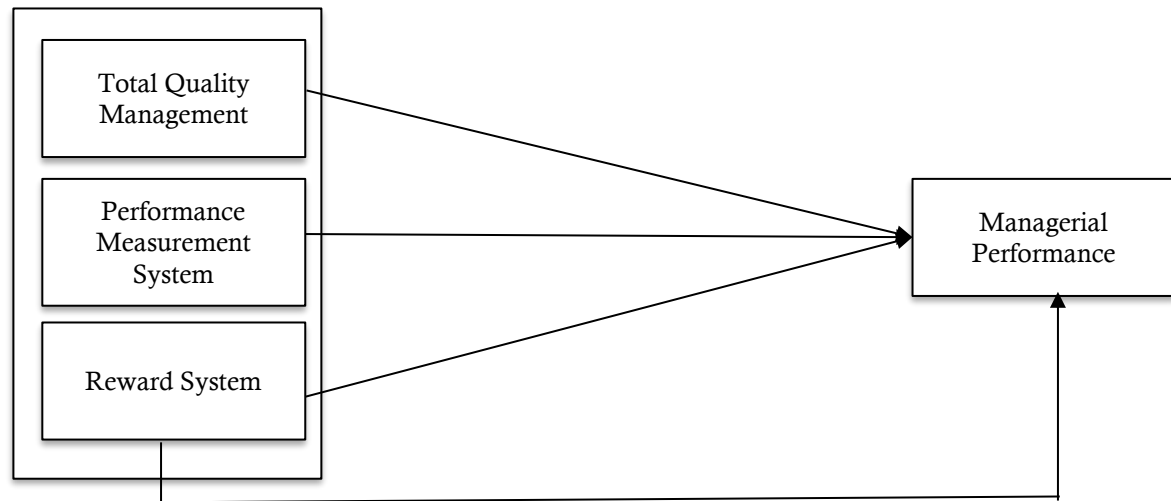

Figure 1. Theoretical Framework

3. Data and Method

Type of Research

This research is quantitative. According to Sekaran (2012), quantitative research methods require information obtained from firsthand sources or existing data (such as companies, industries, archives, and so on). This research heavily relies on the use of numbers, from data collection and interpretation to the presentation of results. The data used in this study is primary data obtained directly from sources (without intermediaries). This data can include individual or group opinions of subjects (people), observations of physical objects, events, or activities, as well as test results (Indriantoro & Supomo, 2012). Primary data were collected through personal questionnaires distributed to 50 respondents, namely PT Pertamina Retail employees, comprising Middle Managers, Assistant Managers, and officers. This data was obtained through a literature review conducted on numerous books and published data, and the researchers also utilized data obtained from the internet.

Data Collection

According to Sugiyono (2013), data collection is the most strategic step in research, as the primary goal of research is to obtain data. When collecting data, consider the following factors: Data Type and Data Source. According to the General Indonesian Dictionary (1996), data is information or tangible material that can be used as the basis for a study (analysis or conclusion). Meanwhile, according to Bungin (2005), as cited in Lijan (2014, p. 110), data refers to information about a research object obtained at the research location. Data collection is the process of procuring primary data for research purposes.

The type of data used in this study is quantitative, consisting of numbers collected from questionnaires regarding managerial performance and data gathered at PT. Pertamina Retail. Quantitative data tends to be more structured, making it easier for researchers to process, read, and analyze (Lijan, 2014). Qualitative data, which the author presents theories or concepts related to

the issues discussed in this study, is based on existing literature, including books, scientific articles, and internet resources.

The data source used in this study is primary data. According to Sugiyono (2010), primary sources are data sources that directly provide data to data collectors. Meanwhile, according to Supangat (2010), the data obtained in this study are primary, meaning that they were obtained directly from field observations (Indriantoro & Supomo, 2012).

Based on the above definition, it can be concluded that primary data sources are obtained from respondents related to the research object, using questionnaires administered to parties directly involved in the object being studied. The data sources in this study were managers and employees at PT. Pertamina Retail regarding Total Quality Management (TQM), Performance Measurement Systems, Reward Systems, and Managerial Performance. Primary data in this study were obtained from respondents' answers to distributed questionnaires and then processed using SPSS version 21.

Data Collection Techniques
The data collection technique used in this study was a questionnaire. A questionnaire is a data collection technique in which respondents are provided with a set of written questions or statements to answer, without the researcher directly asking questions (Sutopo, 2006). The questionnaire contains a list of pre-formulated written questions for respondents to answer. This study aims to investigate the impact of Total Quality Management (TQM), Performance Measurement Systems, Reward Systems, and Managerial Performance variables. The questions asked include those related to Total Quality Management (TQM), Performance Measurement Systems, Reward Systems, and managerial performance.

Population and Sample
Research Population
According to Santosa and Hidayat (2014), a population refers to all available data included in a study that possess specific characteristics. The population in this study was all managers and staff at PT. Pertamina Retail.

Research Sample
According to Santosa and Hidayat (2014), a data sample is a portion of a research population determined by the researcher with the expectation that it will have characteristics identical to those of the population. Purposeful sampling involves selecting subjects not based on strata, randomness, or region, but based on a specific purpose. According to Guilford (2012), as cited by Supranto, a research sample includes several respondents greater than the minimum requirement of 30, as a larger sample size yields more accurate results. Experts have proposed various methods for determining the sample size from a population.

Data Analysis Method
According to Sekaran (2012), data analysis involves statistically analyzing collected data to determine whether a hypothesis is proven. This data analysis activity is necessary before testing the hypothesis, which is the primary objective of the research. The data analysis methods employed in this study include descriptive statistical analysis, classical assumption testing, and multiple regression analysis, all performed using the Statistical Package for the Social Sciences (SPSS) version 21. The purpose of data analysis is to determine whether the independent variables have a significant relationship with the dependent variable. The research concludes with a basic conclusion drawn by accepting or rejecting the hypothesis.

4. Results
Normality Test
The normality test aims to determine whether the confounding variables or residuals in a regression model have a normal distribution. To determine whether the residuals are normally distributed, graphical analysis is used. The normality test was conducted using graphical analysis, specifically the histogram and probability plot (P-plot) methods. The results of this normality test are shown in
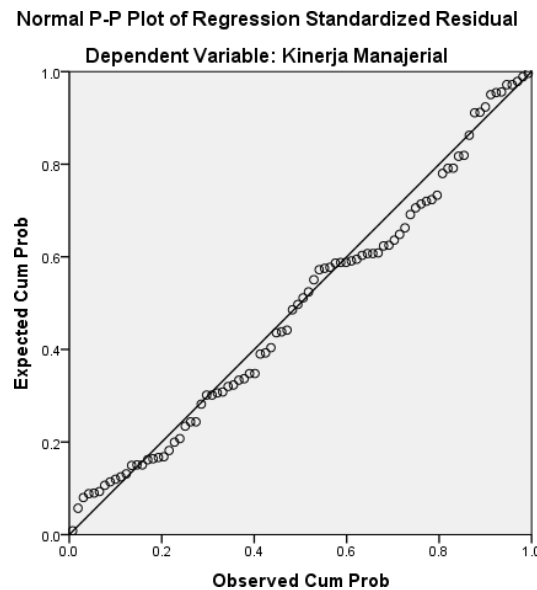
the following figure:

Figure 2. Normality Test

Based on Figure 2 above, the normal probability plot graph indicates that the points are distributed around the diagonal line, following its direction. This indicates that the regression model in this study meets the assumption of normality.

Autocorrelation Test

The autocorrelation test is used to determine whether there is a correlation between the error confounding factor in period t and the error in period t-1 in a linear regression model. In this study, the autocorrelation test was performed using the Durbin-Watson (D-W) test. This test aims to determine whether there is a correlation between the error confounding factor in a particular period and the error confounding factor in the previous period. The problem of autocorrelation limits the effectiveness of a good regression model. The results of the autocorrelation test are shown in Table 1 as follows:

Table 1. Autocorrelation Test Results

Model	Durbin-Watson
1	2.245

Source: Processed Data (2017)

Based on Figure 2 above, the normal probability plot graph indicates that the points are distributed around the diagonal line, following its direction. This indicates that the regression model in this study meets the assumption of normality.

Heteroscedasticity Test

The heteroscedasticity test is performed to determine whether a regression model exhibits unequal residual variances across different observations. A good regression model is free from heteroscedasticity.
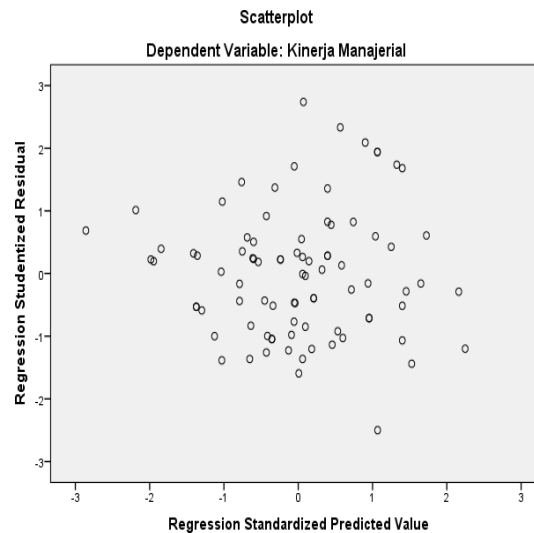
Figure 3. Heteroscedasticity Test

Based on the figure above, the points are scattered and do not form a specific pattern. Therefore, the data in this study are not affected by heteroscedasticity.

Multicollinearity Test
The multicollinearity test aims to determine whether there is a correlation between the independent variables in the regression model. A good regression model should not correlate with the independent variables. One way to detect multicollinearity in a regression model is by examining the tolerance and variance inflation factor (VIF) values. The basis for deciding is if the commonly used cut-off value to indicate multicollinearity is a tolerance value <0.10 or a VIF value >10. Conversely, if the tolerance value is >0.10 and the VIF <10, multicollinearity is not present.

Table 2. Multicollinearity Test Results

Model	Collinearity Statistics	
	Tolerance	VIF
(Constant)		
Total Quality Management	.592	1.689
Performance Measurement System	.751	1.331
Reward System	.652	1.534

Source: Data Processing Results (2017)

Table 2 above shows that there is no multicollinearity in the regression model used to test the hypotheses. The independent variable, Total Quality Management, has a tolerance value greater than 0.1, namely 0.592, and a VIF value less than 10, namely 1.689. Meanwhile, the Performance Measurement System variable has a tolerance value greater than 0.1, namely 0.751, and a VIF value less than 10, namely 1.331. The Reward System variable has a tolerance value greater than 0.1, namely 0.652, and a VIF value less than 10, namely 1.534. Therefore, the regression model does not have multicollinearity problems, and this research is considered ideal.

Multiple Linear Regression Analysis
Based on the research data collected for both the dependent variable (Y) and independent variables (X1, X2, and X3), processed using IBM SPSS version 21, the results of the linear regression calculations are as follows:

Table 3. Results of Multiple Linear Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	12.690	.2.219		5.718	.000
Total Quality Management	.411	.067	.526	6.101	.000
Performance Measurement System	.369	.086	.371	4.304	.000
Reward System	.331	.098	.381	3.380	.001

Source: Data Processing Results (2017)

Coefficient of Determination (R2)

The coefficient of determination (R2) measures the extent to which a regression model can explain the influence of independent variables on the dependent variable. This study employs Total Quality Management, Performance Measurement Systems, and Reward Systems as independent variables, with managerial performance serving as the dependent variable. The results of the Adjusted R2 coefficient test are presented in Table 4 below:

Table 4. Results of the Coefficient of Determination Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.505[a]	.255	.227	.52200

Source: Data Processing Results (2017)

Based on Table 5, the adjusted R2 value is 0.227. This means that 22.7% of the variance in the dependent variable, managerial performance, can be explained by the independent variables: Total Quality Management, Performance Measurement System, and Reward System. The remaining 77.3% (100% - 22.7%) is explained by other factors not included in the regression analysis used in this study.

T-Test (Partial)

According to Ghozali (2011), the t-test statistics indicate the extent to which an independent variable, individually or partially, influences variations in the dependent variable. The partial t-test aims to examine the influence of each independent variable (X) on the dependent variable (Y). Therefore, this t-test is used to examine the influence of the variables Total Quality Management, Performance Measurement System, and Reward System on Managerial Performance. The significance of this research's regression model was tested by examining the significance values in Table 5. The results of this partial test, or t-test, are as follows:

Table 5. Partial Test Results (t-Test)

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	12.690	.2.219		5.718	.000
Total Quality Management	.411	.067	.526	6.101	.000
Performance Measurement System	.369	.086	.371	4.304	.000
Reward System	.331	.098	.381	3.380	.001

Source: Data Processing Results (2017)

Based on the partial test results shown in the Table above using IBM SPSS version 21, it was found that the Total Quality Management variable has a calculated t value of 6.101, which is greater than the t-table of 1.988 with a significance value of 0.000, which is less than 0.05 so that the hypothesis stating that Total Quality Management affects Managerial Performance can be accepted. Furthermore, the Performance Measurement System variable has a calculated t-value of 4.304, which is greater than the t-table value of 1.998 with a significance value of 0.000, which is less than

0.05. Therefore, the hypothesis stating that the Performance Measurement System influences Managerial Performance can be accepted. Likewise, the Reward System variable has a calculated t-value of 3.380, which is greater than the t-table value of 1.998 with a significance value of 0.000, which is less than 0.05. Therefore, the hypothesis stating that the Reward System influences Managerial Performance can be accepted.

5. Discussion

The Effect of Total Quality Management (TQM) on Managerial Performance

The findings of this study indicate that Total Quality Management (TQM) has a significant positive influence on managerial performance. This result suggests that the implementation of TQM principles, including continuous improvement, customer orientation, and employee involvement, enhances the effectiveness of managerial roles. The results align with previous studies, which have found that TQM enhances managerial efficiency and organizational competitiveness (Kaynak, 2003; Demirbag et al., 2006). Similar findings by Samson and Terziovski (1999) confirmed that organizations adopting TQM practices experience better decision-making processes at the managerial level. These findings reinforce the argument that TQM serves as a practical managerial framework, enhancing coordination, innovation, and quality-focused performance.

The Effect of Performance Measurement Systems on Managerial Performance

The analysis reveals that performance measurement systems have a positive impact on managerial performance. This suggests that managers with access to structured performance indicators can evaluate activities more effectively, align their actions with organizational goals, and make more informed strategic decisions. This result is consistent with the findings of Ittner and Larcker (1998), who emphasize the importance of measurement systems in providing relevant feedback for management. Similarly, Franco-Santos et al. (2012) argued that comprehensive measurement systems enhance accountability and performance alignment within organizations. Thus, the study confirms that performance measurement systems play a central role in improving managerial capacity and ensuring goal achievement.

The Effect of Reward Systems on Managerial Performance

The results of this research demonstrate that reward systems have a positive effect on managerial performance. This finding emphasizes that fair and well-designed reward systems can motivate managers to achieve better outcomes in line with organizational objectives. Previous studies also provide strong support for this result. For example, Jenkins et al. (1998) found that performance-based rewards have a positive impact on individual outcomes, while Deci et al. (1999) highlighted the importance of combining financial and non-financial rewards to sustain motivation. Kuvaas et al. (2017) also confirmed that transparent reward systems increase commitment and managerial effectiveness. These findings reinforce the notion that reward systems are not merely compensation tools but strategic mechanisms to drive higher performance levels.

The Simultaneous Effect of TQM, Performance Measurement Systems, and Reward Systems on Managerial Performance

The overall findings suggest that TQM, performance measurement systems, and reward systems together exert a more substantial impact on managerial performance when implemented simultaneously. This indicates that the integration of these three factors creates synergy, where the benefits of each are amplified when combined. The results align with the research of Kaynak and Hartley (2008), who argue that integrating TQM with effective measurement and reward mechanisms strengthens organizational performance. Similarly, Samson and Terziovski (1999) demonstrated that the combined application of management practices produces superior outcomes compared to partial implementation. This study, therefore, highlights the importance of adopting a holistic approach that combines quality management, performance evaluation, and reward distribution to maximize managerial effectiveness.

6. Conclusion

Based on research findings at PT Pertamina Retail, it has been determined that Total Quality Management (TQM), the Performance Measurement System, and the Reward System have a positive and significant influence on managerial performance. This suggests that enhancing the implementation of TQM, effectively utilizing the performance measurement system, and appropriately designing the reward system lead to improved managerial performance. Moreover, these three variables have been shown to contribute to the overall effectiveness of company management collectively.

Managerial Implications: The results of this study indicate that PT Pertamina Retail's management should prioritize the consistent integration of TQM, the performance measurement system, and the reward system as a strategy for performance enhancement. Managers can leverage TQM as a foundation for cultivating a sustainable quality culture, use the performance measurement system as an objective tool for evaluation and control, and develop a fair and transparent reward system to inspire and motivate employees. The synergy of these three components will foster greater managerial effectiveness, enhance the company's competitiveness, and support the achievement of strategic organizational goals.

Recommendation

It is recommended that the management of PT Pertamina Retail reinforce the structured and consistent integration of TQM, performance measurement systems, and reward systems. Regular training should be provided for managers to bolster their quality-oriented leadership skills. Performance indicators must be aligned with strategic objectives to ensure accurate evaluation and accountability. Furthermore, the company should create a transparent and fair reward system that incorporates both financial and non-financial incentives to maintain employee motivation and engagement. These initiatives are anticipated to enhance managerial effectiveness and support the organization's long-term competitiveness.

Limitations and avenues for future research

This study is limited to PT Pertamina Retail with restricted data and a quantitative design, so the findings may not fully represent other industries. Future research could expand the sample, employ longitudinal or mixed-methods approaches, and investigate additional variables, such as leadership style or organizational culture, to provide deeper insights into managerial performance.

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