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Research Article

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Analyzing the Impact of ISO 9001:2015 Implementation and Human Resource Characteristics on Employee Performance: The Role of Organizational Characteristics as an Intervening Variable at PDAM Tirtanadi, North Sumatra

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Abstract: *Successful companies recognize that business improvement is fundamentally based on a system that is implemented consistently and efficiently, leading to better company performance. This system needs to be documented and written down so that employees understand the company's objectives and expectations. Consistent implementation of this system is a key principle in quality management. The implementation of the ISO 9001:2015 Quality Management System can increase employee productivity, which in turn improves the company's effectiveness and efficiency, ultimately enhancing the company's competitiveness. In the ISO 9001:2015 Quality Management System, Organizational Characteristics positively and significantly influence Performance, with an original sample value of 0.343 and a p-value of 0.001. Human Resource Characteristics have a significant impact on Organizational Characteristics, with an original sample value of 0.366 and a p-value of 0.001. Human Resource Characteristics positively and significantly affect Performance, with an original sample value of 0.265 and a p-value of 0.042. The ISO 9001:2015 Quality Management System positively and significantly influences Organizational Characteristics, with an original sample value of 0.535 and a p-value of 0.000. The ISO 9001:2015 Quality Management System positively and significantly influences Performance, with an original sample value of 0.321 and a p-value of 0.004. Human Resource Characteristics have a positive and significant effect on Performance through Organizational Characteristics, with an original sample value of 0.126 and a p-value of 0.015. The ISO 9001:2015 Quality Management System positively and significantly influences Performance through Organizational Characteristics, with an original sample value of 0.184 and a p-value of 0.005.*

Keywords: *ISO 9001:2015, Human Resource Characteristics, Organizational Characteristics.*

Introduction

The development of Public Water Supply Companies (PDAMs) is currently experiencing significant changes, largely driven by the pressures of globalization and the competitive landscape of the free trade era. Trade liberalization, in particular, has intensified competition, forcing companies to adapt quickly to survive. The need for companies to improve both the quality of their services and their competitiveness has never been more urgent. To meet these challenges, organizations must continuously improve their operations and meet the ever-evolving demands of their customers while securing a strong position in the market. This situation urges companies, particularly in sectors such as public utilities, to prioritize quality management as a critical factor for achieving organizational success.

In this context, PDAM Tirtanadi of North Sumatra Province, like many other companies, is focused on improving its services and operational efficiency. The company has implemented the ISO 9001:2015 Quality Management System (QMS), which serves as a strategic framework aimed at improving both internal processes and customer satisfaction. The ISO 9001:2015 certification emphasizes the importance of consistent quality management practices and is intended to enhance organizational performance by ensuring that the company's processes are well-defined, documented, and continuously improved. However,

despite the adoption of this system, there has been limited research on its direct impact on employee performance at PDAM Tirtanadi, particularly regarding the effectiveness of the system in addressing the issues related to the company's performance.

The implementation of the ISO 9001:2015 QMS at PDAM Tirtanadi was intended to create a culture of quality that not only enhances operational efficiency but also contributes to employee performance. However, despite efforts to implement the QMS, the company still faces persistent challenges. Administrative and financial processes often experience delays, and employees have not consistently received adequate training in their respective fields. These gaps indicate that the expected outcomes of the ISO 9001:2015 certification, such as improvements in service delivery and employee productivity, have not been fully realized. The lack of significant improvement in these areas raises important questions about how the QMS is impacting employee performance and whether the organizational and human resource characteristics are sufficiently aligned with the objectives of the quality management system.

The observed performance deficiencies suggest that while the quality management system may have been implemented, its impact has not been adequately followed up by management. Customer dissatisfaction continues to persist, especially with regard to administrative and financial services, and many employees have not participated in the necessary training programs that could improve their competencies. Furthermore, organizational support and facilities also remain suboptimal, indicating that the underlying infrastructure required for effective implementation of the QMS is still lacking. These issues point to the need for a deeper analysis of the effectiveness of the ISO 9001:2015 QMS at PDAM Tirtanadi, with particular focus on how it influences employee performance and organizational characteristics.

The research aims to examine the effects of the ISO 9001:2015 quality management system on employee performance, with a specific focus on how human resource characteristics and organizational characteristics serve as mediating factors. PDAM Tirtanadi hopes that by fully implementing the ISO 9001:2015 system, the company can achieve several key outcomes, including enhanced customer trust, improved public perception, and increased operational efficiency. The implementation of the QMS should ideally result in the establishment of systematic processes that improve both employee performance and overall organizational effectiveness.

In particular, PDAM Tirtanadi expects that the implementation of ISO 9001:2015 will lead to the following benefits:

a) Increased customer trust and satisfaction, driven by well-organized and systematic quality assurance practices, which include well-planned policies, procedures, and instructions related to quality.
b) Improved public image, as the ISO 9001:2015 certification allows the company to advertise its international recognition and adherence to global quality standards.
c) Sustainable performance quality, as regular audits of the QMS ensure that the company's processes are consistently evaluated and improved, reducing the need for customers to perform their own quality system audits.
d) Access to new market opportunities, as being certified by an internationally recognized body opens the company to potential customers seeking ISO-certified suppliers.
e) Improved cooperation and communication within the organization, fostering a culture of quality through better management practices, consistent control systems, and reduced waste in internal operations.
f) Increased awareness of the importance of quality among both management and employees, which encourages the adoption of quality-focused behavior at all levels of the organization.

g) A systematic approach to training that ensures all employees receive appropriate training, thereby improving their skills and competencies in line with the company's quality objectives.
h) Positive cultural changes within the company, as management and employees are encouraged to maintain the ISO certification and contribute to the organization's quality culture.

The need for this study arises from the desire to evaluate the actual impact of the ISO 9001:2015 quality management system on employee performance and organizational dynamics. Given the ongoing challenges faced by PDAM Tirtanadi, understanding the relationship between the implementation of the QMS, human resource characteristics, and organizational characteristics is crucial to improving overall performance. This research will provide valuable insights into how the QMS can be leveraged to enhance employee productivity and contribute to achieving the company's long-term goals.

The formulation of the problem in this research addresses key questions regarding the impact of the ISO 9001:2015 QMS on various aspects of the organization. These include the influence of the QMS on employee performance, the role of human resource characteristics in shaping organizational dynamics, and the ways in which organizational characteristics affect employee performance. By testing these relationships, the research aims to provide a comprehensive understanding of how the ISO 9001:2015 system influences employee performance through its effects on human resource and organizational characteristics.

This research is expected to contribute significantly to the ongoing efforts at PDAM Tirtanadi and other similar organizations by providing a clearer understanding of how quality management systems can be more effectively implemented to achieve tangible improvements in employee performance and organizational success. The results of this study will serve as a valuable reference for management to make informed decisions about further refining their quality management strategies, ensuring that they can meet both customer expectations and internal performance goals more effectively.

In conclusion, while PDAM Tirtanadi has made efforts to implement the ISO 9001:2015 QMS, the full benefits of this system have not yet been realized due to gaps in performance, employee training, and organizational support. This study seeks to address these gaps by analyzing the relationships between the QMS, employee performance, and organizational characteristics, offering valuable insights that can guide future improvements in the company's quality management practices.

Literature Review

ISO 9001:2015 Quality Management System

Understanding the ISO 9001:2015 Quality Management System

Quality, as a concept, can be interpreted from two different perspectives, as outlined by Sallis (in Ali, 2019). The first perspective is the absolute concept of quality, which defines quality in terms of specific characteristics that describe the degree of excellence of a product or service produced or provided by an institution. In this view, the quality of goods or services is often measured by high prices, reflecting superior product standards and the institution's capability to produce or supply these goods or services at elevated standards. The second perspective is the relative concept of quality, where the degree of quality is contingent upon customer assessments. This means that quality is not only determined by producers or suppliers but is greatly influenced by customer perceptions, expectations, and needs, as emphasized by Rinehart (in Ali, 2019).

In this context, customer involvement is crucial for defining quality, as it is through their expectations that the quality of goods or services is determined. Petters (in Sallis, 2020) argues that

customer perceptions of quality are significant drivers of a product or service's success in the market. This insight underscores the critical role of customers in quality management, suggesting that organizations must not only focus on internal standards but also pay close attention to external feedback and market expectations.

Quality assurance is a vital component in quality management, aiming to ensure that an organization's products or services consistently meet established standards and customer expectations. The successful implementation of quality assurance requires organizations across sectors—be it educational, governmental, or private—to guarantee that their processes and outcomes adhere to consistent and accountable quality measures. A widely accepted approach to quality management is the ISO 9001:2015 Quality Management System, which focuses on controlling processes, engaging employees, and fostering continuous improvement to enhance organizational performance.

Indicators of ISO 9001:2015 Quality Management System Implementation

The implementation of the ISO 9001:2015 Quality Management System is structured around several key indicators:

1. Focus on customers: Ensuring that customer needs and satisfaction are the primary focus of the organization.
2. Leadership: Leaders should provide direction and create an environment that supports the achievement of quality objectives.
3. Personnel involvement: Encouraging active participation from all employees at every level.
4. Process approach: Emphasizing that consistent and predictable results are achieved more effectively when activities are understood and managed as processes.
5. Systems approach to management: Viewing interrelated processes as a system contributes to the organization's efficiency and effectiveness.
6. Continuous improvement: Making continuous efforts to improve processes, products, and services.
7. Evidence-based decision making: Decisions should be based on data analysis and information to ensure that they are well-grounded.
8. Mutually beneficial relationships with related parties: Engaging with suppliers and other stakeholders to foster relationships that benefit both parties and improve overall performance.

Characteristics of Human Resources

Understanding Human Resource Characteristics

Human resource (HR) characteristics refer to the unique attributes of individuals within an organization that influence their performance. These characteristics can be both physical and non-physical and significantly affect the outcomes within an organizational context. According to Mangkunegara (2018), HR characteristics encompass a range of abilities and personal traits that determine how individuals contribute to their roles in an organization.

Indicators of Human Resource Characteristics

According to Mangkunegara (2018), the key indicators of HR characteristics are:

1. Intellectual ability: The cognitive capacity to perform tasks that require knowledge and problem-solving.
2. Physical ability: The physical capabilities needed to carry out job-specific tasks.

3. Attitude and personality: The behavioral traits and attitudes that influence interpersonal relationships and workplace dynamics.
4. Work motivation: The drive and commitment employees bring to their roles, often influenced by personal and professional goals.
5. Skills and experience: The specific abilities and knowledge gained through education, training, and previous work experience.

Characteristics of Organization

Understanding Organizational Characteristics

Organizational characteristics refer to the fundamental features or essential elements that define an organization. These traits set one organization apart from another and reflect the structure, goals, work systems, and relationships within the organization. Robbins and Coulter (2018) define organizational characteristics as the attributes that shape the operational environment and help to distinguish one organization from another.

Indicators of Organizational Characteristics

Robbins and Coulter (2018) identify several key indicators that define the characteristics of an organization:

1. Distinct purpose: The organization should have a clear and defined purpose that guides its operations and strategic objectives.
2. Organizational structure: A deliberate and organized framework that defines the roles, responsibilities, and relationships among members within the organization.
3. People in organizations: The human capital that drives the organization, including both employees and leadership.
4. Structural contingency factors: Factors such as external environment, technology, and the scale of operations that impact how an organization structures itself to meet its objectives.

Performance

Defining Performance

Performance, as defined by Kasmir (2016), refers to the results achieved by individuals in the execution of their assigned tasks and responsibilities. It is a reflection of an individual's ability to meet the demands of their role and contribute to organizational goals based on their skills, experience, commitment, and time management. Performance encompasses both the quantity and quality of work produced and is evaluated according to established standards and expectations.

Performance Indicators

Kasmir (2016) outlines several key performance indicators that can be used to assess the effectiveness and efficiency of individuals within an organization:

1. Quality of work: The standard of output produced, ensuring it meets the required specifications.
2. Quantity of work: The volume of work completed within a specified time frame.
3. Punctuality: Timeliness in completing tasks and meeting deadlines.
4. Effectiveness: The ability to achieve intended outcomes with optimal use of resources.
5. Independence in working: The ability to perform tasks with minimal supervision.

6. Responsibility: The degree to which an individual takes ownership of their duties and actions.

Factors Influencing Performance

Performance is influenced by a variety of factors. According to Robbins & Judge (2018), these factors can be categorized as follows:

1. Individual factors: These include cognitive abilities, personality traits, perceptions, and attitudes that affect how an individual performs in their role.
2. Job factors: The nature of the job, role clarity, and the workload associated with the position can significantly influence performance.
3. Organizational factors: The organizational structure, culture, and reward systems can either facilitate or hinder employee performance.
4. Team factors: Effective communication, collaboration, and group dynamics are critical to team performance.
5. Leadership factors: The leadership style, trust in the leader, and clarity of direction provided by leadership are significant factors in driving performance.

Through understanding these various concepts—ISO 9001:2015, human resource characteristics, organizational characteristics, and performance—this literature review provides a foundation for exploring how these elements interact and influence employee performance within the context of PDAM Tirtanadi, North Sumatra Province.

Conceptual Framework

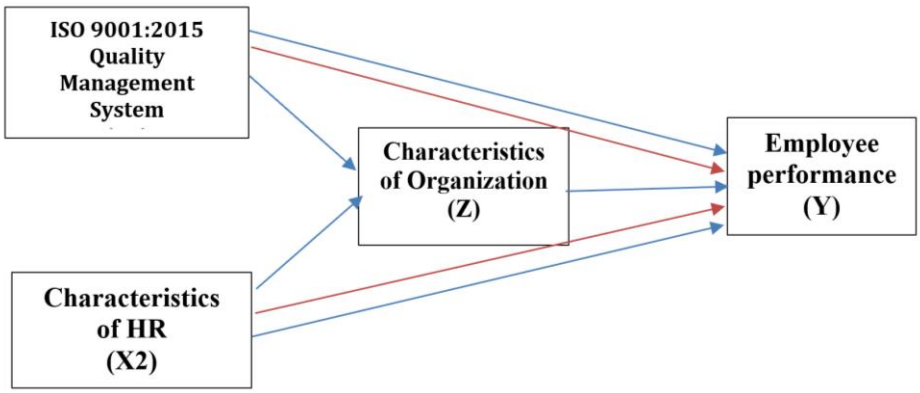

Figure 1. Conceptual Framework

Research Hypothesis

The research hypothesis is as follows:

1. The implementation of the ISO 9001:2015 quality management system has a positive and significant impact on employee performance at PDAM Tirtanadi, North Sumatra Province.
2. Human Resource Characteristics have a positive and significant influence on employee performance at PDAM Tirtanadi, North Sumatra Province.
3. The implementation of the ISO 9001:2015 quality management system has a positive and significant effect on organizational characteristics at PDAM Tirtanadi, North Sumatra Province.
4. Human Resource Characteristics have a positive and significant influence on Organizational Characteristics at PDAM Tirtanadi, North Sumatra Province

5. Organizational Characteristics have a positive and significant influence on employee performance at PDAM Tirtanadi, North Sumatra Province.
6. The implementation of the ISO 9001:2015 quality management system has a positive and significant effect on employee performance through organizational characteristics at PDAM Tirtanadi, North Sumatra Province.
7. Human Resource Characteristics have a positive and significant influence on Employee Performance through Organizational Characteristics at PDAM Tirtanadi, North Sumatra Province

Methods

Types of research

Researchers use quantitative research types. According to Sugiyono (2017), quantitative research methods are research methods based on the philosophy of positivism, used to examine certain populations or samples and collect data using research tools, analyzing quantitative or statistical data with the aim of testing predetermined hypotheses.

Time and Location of Research

This research was conducted for 3 months to maximize the research, this research was conducted starting in February 2025. This research was conducted at the Head Office of PDAM Tirtanadi, North Sumatra Province, which is located at Jalan Sisingamangaraja No. 01, Medan City, North Sumatra.

Population

Population is a general area consisting of objects or subjects that have certain quantities and characteristics determined by researchers to be studied and then conclusions drawn (Sugiyono, 2017). The population in this study was 218 employees of PDAM Tirtanadi, North Sumatra Province, namely employees who are not heads of work units within PDAM Tirtanadi, North Sumatra Province.

Sample

According to Sugiyono (2017), a sample is part of the number and characteristics of a population. The employees who will be sampled are employees who are not heads of work units within the Tirtanadi PDAM, North Sumatra Province, namely 218 employees. According to Slovin in Umar (2018), determining the sample size can be done using the formula:

$$n = \frac{\mathrm{N}}{1 + \mathrm{Ne}^2}$$

Where:

n = sample size
N = population size
e = percent of leeway

$$n = \frac{304}{1 + 304(10\%)^2}$$

$$n = \frac{304}{4{,}04}$$

$$n = 75{,}25$$

So the population size is or the employees who are used as samples are 75 people.

Research Data Sources

This research uses primary data sources as its data sources. According to Sugiyono (2017), primary data is data obtained from the first source or object location which is carried out directly by the researcher without going through an intermediary.

Data collection technique

The data collection technique used was a questionnaire. The researcher distributed questionnaires to respondents to fill out. This study used a survey method obtained from the actual scene by distributing questionnaires (Sugiyono, 2017). A questionnaire is a data collection technique carried out by providing written questions or statements to respondents (Sugiyono, 2017).

Data Research Techniques

Latent variables with multiple indicators are used in this study to measure other variables. Furthermore, the existence of relationships between variables requires mediation testing for the study to proceed. This is suitable for PLS-SEM analysis. Using Partial Least Squares Structural Equation Modeling (PLS-SEM) is a partial approach statistical analysis technique used to model relationships between variables in a model. It can also be used to analyze correlational or causal relationships between variables in a model (Hair et al., 2017). The measurement model and the structural model are two components of the PLS method.

Test Measurement Model (Outer Model)

To ensure that the variables, measuring instruments, and indicators used in this study have sufficient validity and reliability, and that the measurements are consistent across the entire sample, this study uses a measurement model test as an external model. In PLS-SEM data analysis, the measurement model test consists of validity and reliability tests.

Validity Test

a. Convergent Validity Test

One method for assessing the correlation, or relationship between a measuring instrument and its research construct, is the convergent validity test (Cohen et al. 2018). This convergent validity test is intended to assess whether the measuring instrument in a questionnaire can measure a particular variable reliably and consistently (Morling, 2017). The average variance extracted (AVE) and factor loadings can be used to evaluate the convergent validity test. According to Latan's (2015) research, an indicator is strongly correlated with the construct being tested if its factor loading value is greater than 0.6 and its AVE value is greater than 0.5.

b. Discriminant Validity Test

To ensure that an instrument has validity that is able to measure a variable accurately and is not mixed with other variables, discriminant validity testing is a technique used to determine the extent to which a measuring instrument in a study can differentiate the measured variable from other variables that should be different (Sugiyono, 2020). The availability of cross-loading values for each indicator evaluated provides

an overview of the discriminant validity testing process. A variable is said to be valid according to Kock & Lynn (2015) if each indicator has a cross-loading value greater than other variables that are not measured.

Reliability Test

The process of determining how consistent and reliable a research measuring instrument is in assessing the same variable over time and among respondents is known as reliability testing. Reliability testing Its application in this study is by testing the composite reliability (CR) and Cronbach's alpha value. Henseler et al. (2016) stated that a variable can be If the composite reliability (CR) of a measuring instrument is greater than 0.7 and its Cronbach's alpha value is greater than 0.7 then it is considered reliable.

Structural Model Test (Inner Model)

The structural model in this study is used as an inner model in PLS-SEM analysis to examine the relationships between the constructs of the research model. This structural model will determine the relationships between the constructs in terms of the magnitude and significance of the path coefficients between the constructs used in the study through several stages.

PLS-SEM Inner Model Assumptions

According to Henseler et al., (2016), the assumption or requirement of the inner model in PLS-SEM is the absence of multicollinearity problems between constructs measured using measurement instruments in the research model. The assumption of the inner model of PLS-SEM can be seen by evaluating the VIF (Variance Inflation Factor) value. The VIF value will indicate how strongly the independent variable is influenced by other independent variables in the research model and a VIF value below 5 will indicate that multicollinearity between constructs does not occur in the research model (Hair et al., 2017).

Coefficient Of Determination Test (R2)

In structural models, the R-Square (R2) test in PLS-SEM is a metric for evaluating the variability of the dependent variable that can be explained by the independent variables (Henseler et al., 2016). Hair and colleagues (2017) clarified When assessing variability, the word "R-Square" can have a value between 0 and 1, with values of 0.75, 0.50, and 0.25, respectively, indicating the value categories that are considered strong, moderate, and weak in terms of explaining the variation of the dependent variable.

Hypothesis Testing

Hypothesis testing in the PLS-SEM inner model was conducted using the bootstrapping technique in the SmartPLS application. After performing the bootstrapping technique, hypothesis testing can be conducted by looking at the path coefficient, t-statistic, and p-value values where a positive path coefficient value indicates a positive relationship between two variables and conversely a negative value indicates a negative relationship between variables (Hair et al., 2017). Then, a t-statistic value greater than 1.96 and a p-value less than 0.05 indicate that the coefficient is statistically significant and reliable (Hair et al., 2017).

Results and Discussion

Outer Model Analysis

Measurement model testing (outer model) is used to determine the specifications of the relationship between latent variables and their manifest variables. This testing includes convergent validity, discriminant validity and reliability.

1. Convergent Validity

Convergent validity is used to determine the validity of each indicator against its latent variable. In SmartPLS software, to see the results of validity, it can be seen in the outer loading table. In the outer loading table, there are numbers or values that indicate the indicator shows similarity with its construct variable. The value for an indicator is said to be valid if the indicator explains the construct variable with a value > 0.7. The structural model in this study is shown in the following figure:

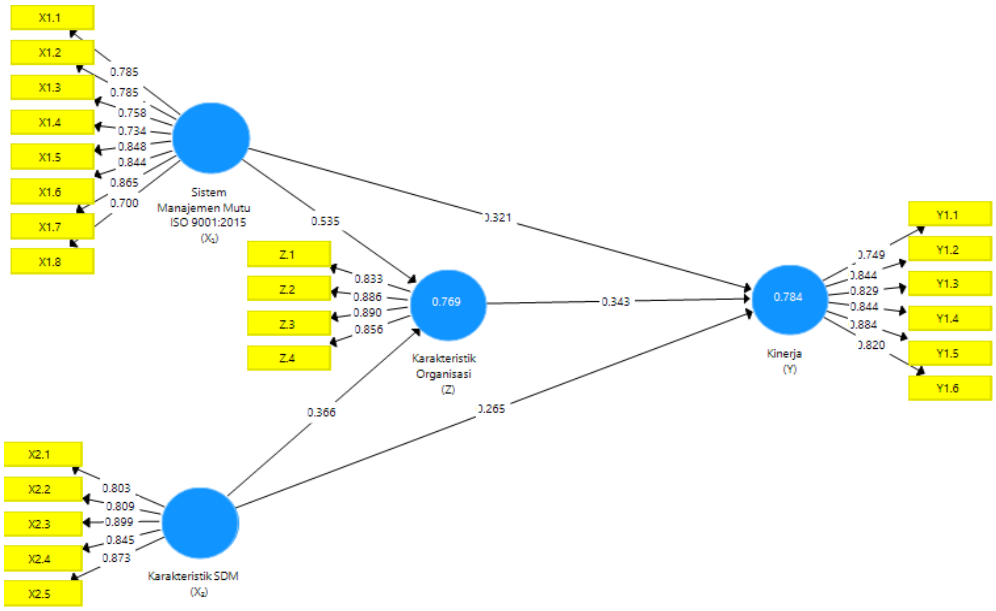

Figure 2. Outer Model
Source: Smart PLS 3.3.3

The Smart PLS output for loading factors gives the results in the following table: Outer Loadings
In this research there is an equation and the equation consists of two substructures for substructure 1
Z = b1X1 + b2X2 + e1
Z = 0.535 + 0.366 + e1
For substructure 2
Y = b3X1 + b4X2 + b5Z + e2
Y = 0.321 + 0.265 + 0.343 + e2

Table 1. Outer Loadings

	Organizational Characteristics_(Z)_	HR Characteristics_ (X_2)_	Performance _(Y)_	ISO 9001:2015 Quality Management System_(X_1)_
X1.1				0.785
X1.2				0.785
X1.3				0.758
X1.4				0.734
X1.5				0.848
X1.6				0.844

X1.7				**0.865**
X1.8				**0.700**
X2.1		**0.803**		
X2.2		**0.809**		
X2.3		**0.899**		
X2.4		**0.845**		
X2.5		**0.873**		
Y1.1			**0.749**	
Y1.2			**0.844**	
Y1.3			**0.829**	
Y1.4			**0.844**	
Y1.5			**0.884**	
Y1.6			**0.820**	
Z.1	**0.833**			
Z.2	**0.886**			
Z.3	**0.890**			
Z.4	**0.856**			

Source: Smart PLS 3.3.3

It can be seen in table 1 above that the outer loading value of each outer loading indicator is greater than 0.7, so it is determined that the indicator in each variable has a value greater than 0.7, so each indicator is declared valid and can continue the research to the next stage.

2. Discriminant Validity

Discriminant validity can be tested by looking at the cross-loading table. This output is used to test discriminant validity at the indicator level, provided that the correlation between the indicator and its latent variable is greater than the correlation between the indicator and other latent variables (outside its block). For more clarity, see the table below:

Table 2. Discriminant Validity

	Organizational Characteristics_(Z)_	**HR Characteristics_ (X_2)_**	**Performance _(Y)_**	**ISO 9001:2015 Quality Management System_(X_1)_**
X1.1	0.614	0.629	0.601	0.785
X1.2	0.654	0.630	0.653	0.785
X1.3	0.636	0.673	0.621	0.758
X1.4	0.634	0.693	0.626	0.734
X1.5	0.710	0.715	0.683	0.848
X1.6	0.686	0.757	0.680	0.844
X1.7	0.855	0.789	0.802	0.865
X1.8	0.620	0.728	0.697	0.700
X2.1	0.592	0.803	0.617	0.672

X2.2	0.627	0.809	0.746	0.754
X2.3	0.773	0.899	0.765	0.831
X2.4	0.780	0.845	0.648	0.725
X2.5	0.770	0.873	0.762	0.771
Y1.1	0.685	0.632	0.749	0.708
Y1.2	0.712	0.656	0.844	0.761
Y1.3	0.681	0.725	0.829	0.684
Y1.4	0.779	0.797	0.844	0.767
Y1.5	0.687	0.676	0.884	0.695
Y1.6	0.628	0.672	0.820	0.603
Z.1	0.833	0.763	0.711	0.759
Z.2	0.886	0.833	0.766	0.818
Z.3	0.890	0.648	0.748	0.695
Z.4	0.856	0.658	0.689	0.701

Source: Smart PLS 3.3.3

Based on the results of table 2 above, it shows that the loading factor of the ISO 9001:2015 Quality Management System variable (X_1) is greater than the loading factor of other latent variables, for the loading factor of the HR Characteristics variable (X_2) is greater than the other latent cross loading factors, for the loading factor of the Organizational Characteristics variable (Z) it appears to be greater than the loading factor of other latent variables, for the results of the loading factor of the Performance variable (Y) it appears that the loading value is greater than the loading factor value of other latent variables. This means that this research is valid in terms of discriminate validity and continues other research.

3. Composite reliability

The next test determines the reliable value with the composite reliability of each construct, the construct value that is considered reliable is where the composite reliability value is above 0.6 or greater than 0.6. If the Coranbasch alpha value is also greater than 0.7 then the value of each construct in the block is considered reliable in each variable construct and if the AVE value is also above 0.7 then each variable construct is considered valid. The following table shows the loading values for the research variable constructs generated from running the Smart PLS program in the following table:

Table 3. Construct Reliability and Validity

	Cronbach's Alpha	**Composite Reliability**	**Average Variance Extracted (AVE)**
Organizational Characteristics (Z)	**0.889**	**0.923**	**0.751**
Characteristics of HR (X_2)	**0.901**	**0.927**	**0.717**
Performance (Y)	**0.909**	**0.930**	**0.688**
ISO 9001:2015 Quality Management System ($X)_1$)	**0.914**	**0.930**	**0.627**

Source: Smart PLS 3.3.3

Based on table 3 above, there is a value from the Cronbach alpha column for each variable that has a value greater than 0.7, which means that this study is reliable in terms of Cronbach alpha and seen from the composite reliability column with the value of each variable there is a value greater than 0.6 so that the reliability of each variable is stated and in the AVE column it looks greater than 0.7 so that this study is considered valid by the SVE column, which can be interpreted as all variables having valid values in all sectors.

Inner Model Analysis

Structural model evaluation (inner model) is conducted to ensure the structural model is robust and accurate. The analysis stages involved in structural model evaluation are assessed using several indicators, including:

1. Coefficient of Determination (R2)

Based on the data processing that has been carried out using the SmartPLS 3.0 program, the R Square value is obtained as follows:

Table 4. R Square Results

	R Square
Organizational Characteristics (Z)	0.769
Performance (Y)	0.784

Source: Smart PLS 3.3.3

In table 4 above, there is an R square value for the Organizational Characteristics variable (Z) with a value of 0.769, the percentage is 76.9%, meaning the influence of the ISO 9001:2015 Quality Management System variable_(X_1), HR Characteristics_ (X_2) on Organizational Characteristics (Z) by 76.9% and the rest is on other variables. The R square value of the Performance variable (Y) is 0.784, the percentage is 78.4%, meaning the influence of the ISO 9001:2015 Quality Management System variable (X) is 0.784.$_1$), HR Characteristics (X_2), Organizational Characteristics (Z) on Performance (Y) is 78.4% and the remainder is in other variables.

3. Hypothesis Testing

After assessing the inner model, the next step is to evaluate the relationships between the latent constructs as hypothesized in this study. Hypothesis testing in this study was conducted by examining T-statistics and P-values. The hypothesis is accepted if the T-statistic is >1.96 and P-values are <0.05. The following are the results of the direct influence path coefficients:

Table 5. Path Coefficients (Direct Effect)

	Original Sample (O)	T Statistics (| O/STDEV |)	P Values	Results
Organizational Characteristics (Z) -> Performance (Y)	0.343	3,243	**0.001**	**Accepted**
Characteristics of HR (X_2) -> Organizational Characteristics (Z)	0.366	3,042	**0.001**	**Accepted**

	Original Sample (O)	T Statistics (| O/STDEV |)	P Values	Results
Characteristics of HR (X_2) -> Performance (Y)	0.265	1,730	**0.042**	**Accepted**
ISO 9001:2015 Quality Management System ($X)_1$) -> Organizational Characteristics (Z)	0.535	4,506	**0,000**	**Accepted**
ISO 9001:2015 Quality Management System ($X)_1$) -> Performance (Y)	0.321	2,645	**0.004**	**Accepted**

The results of the hypothesis are directly shown in the table above, so the explanation of the table above is as follows:

1. Organizational Characteristics have a positive and significant effect on Performance with an original sample value of 0.343 and a p-value of 0.001. These results indicate that organizational characteristics have a positive and significant effect on organizational performance. With a p-value below 0.05 and a T-Statistic > 1.96, the hypothesis is accepted. This means that the better the organizational characteristics such as structure, culture, and systems, the better the performance.
2. Human resource characteristics influence organizational characteristics, with a value of 0.366 for the original sample and a p-value of 0.001. Human resource characteristics, such as competence, experience, and work attitude, have been shown to have a positive and significant influence on organizational characteristics. This means that quality human resources encourage the creation of a good and adaptive organization.
3. Human resource characteristics have a positive and significant effect on performance with an original sample value of 0.265 and a p-value of 0.042. Although the T-statistic value is close to the minimum limit (1.96), the p-value is still below 0.05, indicating that human resource characteristics also have a direct effect on performance. This means that human resource quality still has a direct contribution to improving performance, although not as large as the indirect influence through organizational characteristics.
4. The ISO 9001:2015 Quality Management System has a positive and significant effect on Organizational Characteristics with an original sample value of 0.535 and p values of 0.000. These results indicate that the implementation of the ISO 9001:2015 Quality Management System has a very significant and strong influence on the formation of organizational characteristics. The implementation of a good quality system helps organizations become more structured, documented, and consistent in their operations.
5. The ISO 9001:2015 Quality Management System has a positive and significant effect on Performance with an original sample value of 0.321 and a p value of 0.004. ISO 9001:2015 has also been shown to have a direct and significant effect on organizational performance. This standard helps organizations maintain the quality of processes and outputs, which ultimately improves overall performance.

Table 6. Path Coefficients (Indirect Effect)

	Original Sample (O)	T Statistics (| O/STDEV |)	P Values	Results
Characteristics of HR (X_2) -> Organizational Characteristics (Z) -> Performance (Y)	0.126	2,166	**0.015**	**Accepted**
ISO 9001:2015 Quality Management System (X_1) -> Organizational Characteristics (Z) -> Performance (Y)	0.184	2,598	**0.005**	**Accepted**

6. Human Resources characteristics have a positive and significant effect on Performance through Organizational Characteristics with an original sample value of 0.126 and a p-value of 0.015. These results indicate that Human Resources characteristics indirectly influence performance through organizational characteristics. The T-Statistic value > 1.96 and P-Value < 0.05 indicate that this mediation path is significant. This means that Human Resources characteristics such as competence, expertise, and work attitudes will be more effective in improving performance if they first form strong organizational characteristics (e.g., work structure, organizational culture, and good coordination and communication systems). Thus, organizational characteristics play a significant role as a mediator in strengthening the influence of Human Resources on performance.
7. The ISO 9001:2015 Quality Management System has a positive and significant effect on Performance through Organizational Characteristics with an original sample value of 0.184 and p values of 0.005. This path indicates that the ISO 9001:2015 Quality Management System also has an indirect effect on performance through organizational characteristics. The fairly large coefficient value and highly significant P Value strengthen the conclusion that the implementation of a quality system will be more effective in improving organizational performance if it is able to form professional, standardized, and systematic organizational characteristics first. In other words, organizational characteristics function as an important bridge connecting the quality of the quality management system with organizational performance results.

Closing

Conclusion

1. Organizational Characteristics have a positive and significant effect on Performance with an original sample value of 0.343 and p values of 0.001.
2. Human resource characteristics influence organizational characteristics with an original sample value of 0.366 and p values of 0.001.
3. HR characteristics have a positive and significant effect on performance with an original sample value of 0.265 and p values of 0.042.
4. The ISO 9001:2015 Quality Management System has a positive and significant effect on Organizational Characteristics with an original sample value of 0.535 and p values of 0.000.
5. The ISO 9001:2015 Quality Management System has a positive and significant effect on Performance with an original sample value of 0.321 and p values of 0.004.

6. HR characteristics have a positive and significant effect on Performance through Organizational Characteristics with an original sample value of 0.126 and a p value of 0.015.
7. The ISO 9001:2015 Quality Management System has a positive and significant effect on Performance through Organizational Characteristics with an original sample value of 0.184 and p values of 0.005.

Suggestion

Based on the conclusions above, the suggestions that can be given for future organizational development are:

1. Strengthening organizational characteristics, especially in terms of efficient work structure, adaptive work culture, and integrated coordination system, in order to optimize the contribution of human resources and quality systems.
2. Improving the quality of human resources strategically, through training that not only focuses on technical competencies, but also builds work attitudes, team collaboration, and understanding of organizational values.
3. Optimizing the implementation of the ISO 9001:2015 Quality Management Systemcomprehensively across all work units. This can be achieved through ongoing coaching, periodic internal audits, and the involvement of all levels in a quality culture.
4. Implementing an integrated performance improvement strategy, namely by not separating human resource development, implementation of quality systems, and strengthening organizational characteristics, because the three influence and strengthen each other in producing optimal performance.

Conducting further research, either by adding other variables such as organizational culture, leadership, or by expanding the research object, so that the findings can be tested in various contexts and enrich the study of management science.

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