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Analysis of Factors in Efforts to Improve Operational Performance (Study on Clamp Ring Production at PT Pramesta Baja Utama)

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Abstract: This research aims to determine and analyze the simultaneous influence of supply chain management, innovation strategies, and total quality management on operational performance in clamp ring production at PT. Pramesta Baja Utama. The method used in this research is a quantitative descriptive method. Data processing was conducted using statistical analysis with a regression model aided by SPSS 26. The sampling method used was saturated sampling, where all members of the population were included as samples. In this study, the sample consisted of 100 employees as respondents. The tests conducted included instrument feasibility tests, classical assumption tests, partial T-tests, simultaneous F-tests, and determination coefficients. It was found that supply chain management had an influence on operational performance in clamp ring production at PT. Pramesta Baja Utama, but the effect was not significant. Based on various analyses and data processing conducted to explore the factors that contribute to improving operational performance, it can be concluded that supply chain management, innovation strategies, and total quality management have a positive and significant simultaneous impact on the operational performance of clamp ring production.

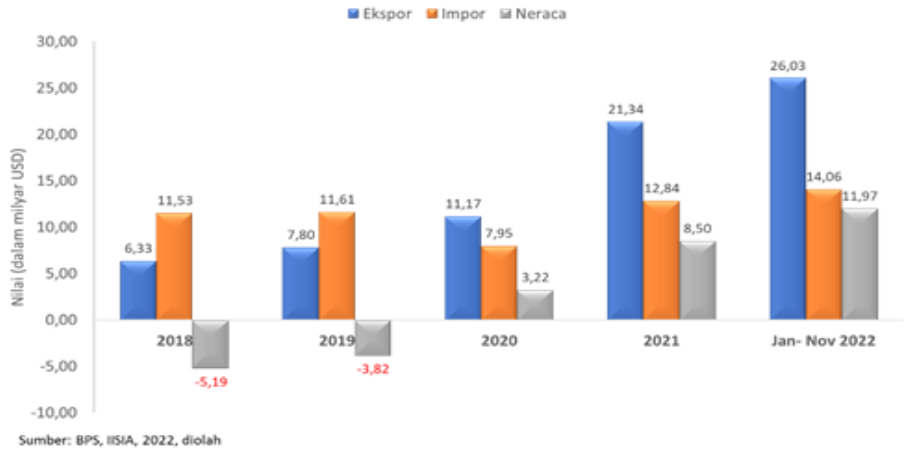
Keyword: Supply Chain Management, Innovation Strategy, Total Quality Management, Operational Performance

INTRODUCTION

Globalization has crossed geographic and economic boundaries, becoming a key element in industrial and economic development in the modern era. This phenomenon includes various integration processes in the economic, political and social fields, which strengthen interactions and relationships between countries throughout the world. Advances in information technology and transportation have accelerated global connectivity, making it easier to exchange goods, services and information across borders (Lugu, 2023).

The Indonesia iron & steel industry association (IISIA) stated: The iron and steel trade balance has experienced an extraordinary increase in the last few years. The trade balance has

been in a negative position for a long time, but since 2020 it has become positive. In 2020, there was a surplus of USD 3.22 billion, and this surplus is expected to increase further in 2021 and 2022, reaching USD 8.50 billion and USD 11.97 billion respectively. This positive trend is caused by a significant increase in steel exports over the last three years. In 2020, 2021 and January-November 2022, steel exports are projected to increase from USD 11.17 billion to USD 23.34 billion in 2021 and USD 26.03 billion in January-November 2022. This impressive export growth is mainly driven by the expansion of the stainless steel industry. steel production, supported by effective mineral policies and increased investment from global steel producers in carbon steel production (IISIA, 2023).

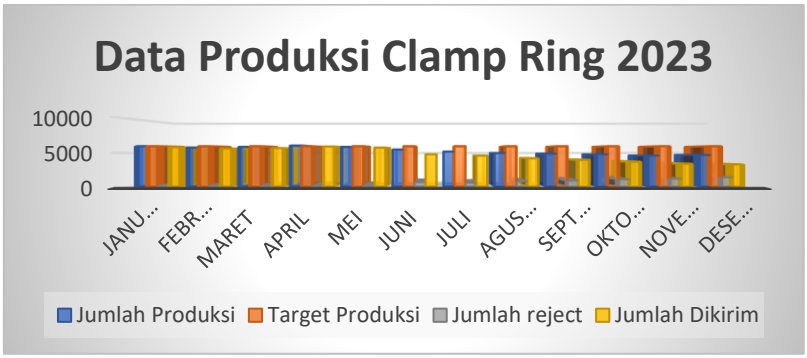


Source: IISIA

Figure 1. Steel Industry Performance 2018-2022

Big opportunities in the Indonesian market need to be occupied by competitive products from local industry. If not, it is very likely that this opportunity will be taken over by imported products which have lower prices. With the implementation of the Asian Economic Community (AEC) since 2015, exporting countries in Asia face significant challenges in carrying out trade activities due to increasingly tight global competition(Purwanto & Perkasa, 2022).

PT Pramesta Baja Utama is a steel company located in the Tangerang Banten industrial sector in the steel industry. The main products produced by PT Pramesta Baja Utama include steel plates, steel pipes, concrete iron, clam ring drums and light steel. Clam ring drums are PT. Pramesta Baja Utama's superior product because clam ring drum production has only been running for 1 year and is still encountering several problems, especially in the operational sector. This can be seen in the histogram of production sent and returned per month January – December 2023.



Source: PT.Pramesta Baja Utama

Figure 2. Production Data in Histogram Form

The results of the data obtained for clamp ring production over the last 1 year have fluctuated based on the results of interviews with the clamp ring production department, it is known that the company's performance experienced several obstacles which influenced the less than optimal production of clamp rings at PT Pramesta Baja Utama, clamp ring production activities at PT. Pramesta Baja Utama always has problems every month, however, delays in procuring raw materials/supplies, problems on the assembly line or increasing reject rates and so on result in instability in production.

Researchers refer to Schroeder's theory (1993) in(WIDODO, 2021)which states that effective performance measurement should come from the results of operational and business implementation, characterized by quality, cost, delivery, flexibility and innovation.

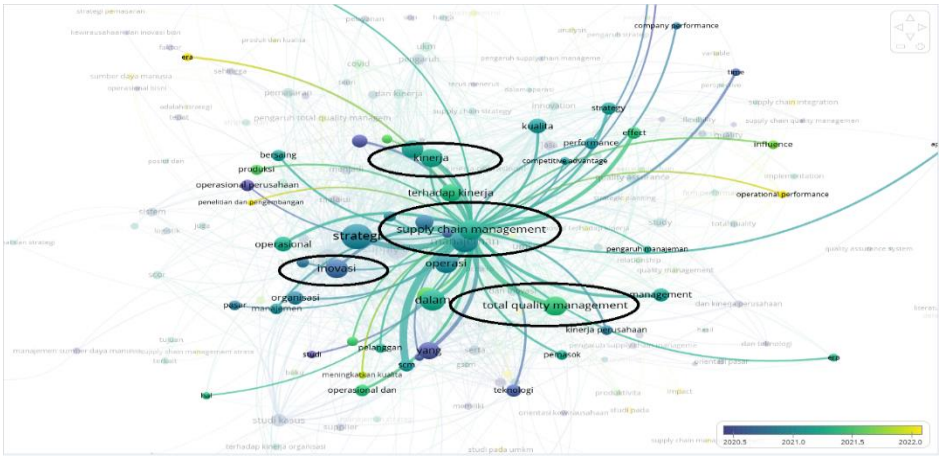
As for the obstacles that PT. Pramesta Baja Utama faces in the supply of raw materials which have an impact on operations, the application of supply chain management is the right choice to handle supply chain problems. In the era of globalization, the application of SCM is very important to maintain competitiveness and longevity of work. In this SCM process, producers, suppliers, distributors, warehouses, sellers, and consumers are involved in long relationships.

Through the implementation of well-integrated supply chain management, it can have a positive impact on performance(Kasus et al., n.d.).

PT. Pramesta Baja Utama also still lacks an innovation strategy, so product innovation in the manufacturing sector is needed to be the key to increasing productivity and gaining a competitive advantage in the global market. This includes the creation, selection, and development or improvement of products, processes, and technologies.

Apart from operational performance, supply chain management and innovation strategy of PT. Pramesta Baja Utama needs to implement a management system that can maintain product quality for a long life, especially for clamp rings. Total quality management can be a mainstay for maintaining product quality and supporting continuous improvement.

In total, the role of innovation and Total Quality Management (TQM) is very important in improving production management in a number of industrial sectors. These two concepts not only complement each other, but also work together to achieve common goals, namely improving quality and operational efficiency. In the midst of increasingly fierce global competition, organizations and companies from various industrial sectors must adopt innovative approaches and apply TQM principles in their production management (Idris & Nurnajamuddin, 2023).



Source: Vosviewer

Figure 1. Bibliometric Meta Analysis

To support the above phenomenon, researchers conducted meta data using blibliometrix analysis with the publish or perish and vosviewer applications using data from Google School taken from 2018–2023The basis for taking or selecting variables, the researcher

used the meta-analysis method from 500 articles published on Google Scholar, the researcher found the relationship between research topics as depicted in the bibliometric link above, this is in accordance with what Muhammad stated in(Dwi Pratiwi Siregar et al., 2023)that one method that can be used to analyze publications in certain fields is the bibliometric analysis method.

Some of the previous research conducted by Candra Dwi Hardiana and Nanda Setawan(Hardiana & Setiawan, 2021)Based on the analysis and assessment of the data that has been researched, Supply Chain Management, Quality Management and Innovation Strategy also partially or simultaneously influence Operational Performance in manufacturing companies in the Delta Silicon Cikarang Industrial Area.

This is different from the research conducted by Nisa (Afifah, 2022)The results of this research show that supply chain management is simultaneous but not partial for long-term relationships which has a significant value of 0.944 and this is proven to be greater than 0.05,

Meanwhile, for innovation strategies according to the conclusions of the research(Zhafran, 2023)This also shows that innovation strategy has a significant influence on operational performance.

And also research conducted by Nugraha concluded that there is a total quality management variable that does not have a partially significant effect on operational performance, namely customer focus with a significant value of 0.274 (NUGRAHA, 2023).
Based on the background of the problems that occurred at PT. Pramesta Baja Utama and the description above, the topic of this research is related to "FACTOR ANALYSIS IN EFFORTS TO IMPROVE OPERATIONAL PERFORMANCE" (STUDY ON CLAMP RING PRODUCTION AT PT. PRAMESTA BAJA UTAMA).

METHOD

The method used in this research is a quantitative descriptive method. The descriptive method is an approach used to describe or analyze research results without the aim of making broader conclusions(Hardiana & Setiawan, 2021).

Population, according to Arikunto in (Fahmila, 2018), refers to all research subjects. In other words, population is the total of all individuals or elements that are the focus of measurement or calculation in a qualitative or quantitative context.

In this research, the target population is all 100 employees at PT Pramesta Baja Utama. The method used in this sampling is saturated sampling, where all members of the population are used as samples(Hardiana & Setiawan, 2021). In this study, the sample size was 100 employees as respondents.

Data Analysis Methods

Descriptive analysis

Descriptive analysis is used to analyze data by describing or explaining the data that has been collected according to its conditions, without aiming to draw general conclusions or make generalizations, supono in (NUGRAHA, 2023).

Statistical Analysis

Data collection in this research produces quantitative data. Next, data processing was carried out using statistical analysis with a regression model using SPSS 26.

The data collected and used in this research is primary data, obtained through questionnaires. Data analysis was carried out by Validity and Reliability Tests, Classical Assumption Tests, including the t Test (Partial Linear Test) and F Test (Multiple Linear Test).

RESULTS AND DISCUSSION

Results

Researchers refer to Schroeder's theory (1993) in(WIDODO, 2021)which states that effective performance measurement should come from the results of operational and business implementation, characterized by quality, cost, delivery, flexibility and innovation.

Operational Performance

Theory Zhu, et al. in (Labdhagati, 2017)Operational performance is the ability of a manufacturing company to produce and deliver products to customers. In general, operational performance can be explained as achievements obtained through the process of transforming inputs (materials or resources used) into outputs (results or products) which are measured based on standards of success in achieving predetermined goals. In other words, operational performance reflects the extent to which a company is successful in producing and delivering products to customers efficiently and effectively.

Operational Performance Indicators

According to Rahadi 2012 in(Hardiana & Setiawan, 2021), the level of operational performance in a company can be measured using three main parameters, namely:

1) Flexibility can be measured through the level of a company's ability to adapt and respond to changes in their operational processes. This flexibility can be measured by observing the extent to which companies have the ability to change or adapt their processes according to market needs or changes.
2) Quality can be measured through the performance of products or services produced by the company. This includes the extent to which the product or service meets established quality standards and the extent to which the product meets or exceeds customer expectations.
3) Delivery can be measured by the company's success in delivering products or services to customers according to a predetermined schedule. This includes on-time delivery, namely the extent to which a company can deliver products or services on time according to agreements with customers.

Supply Chain Management

Supply chain is a broad process in which products are created and distributed to consumers from a structural point of view. It refers to the complex network of relationships that an organization establishes with its business partners to obtain production resources and deliver them to consumers. Kalakota, (2000), page 197 in (Siladjaja, n.d.).

Supply Chain Management Indicators

According to Suhong Li and his colleagues in(junita kian, 2023), there are three important aspects in implementing Supply Chain Management, namely:

1) Partnerships with Strategic Suppliers (Strategic Supplier Partnership): Building strategic relationships with suppliers is a key component in an effective supply chain. In this relationship, suppliers share responsibility for achieving specific product outcomes. Strong partnerships with suppliers can help ensure consistent supply and good quality of raw materials.
2) Relationship with Customers (Customer Relationship): Maintaining good long-term relationships with customers is an indicator of success in implementing Supply Chain Management. Close relationships with customers can help maintain customer loyalty, differentiate products from competitors, and increase the value of products offered to customers.
3) Information Sharing: Sharing information with work partners, including suppliers and customers, can be an effective strategy for understanding market conditions and customer needs. The information shared can be used as a source of competitive advantage in making better decisions and responding more quickly to market changes.

Innovation Strategy

According to Robetson's theory in(Fahmila, 2018)Innovation is the basis for changing culture, which can be described as something that is qualitatively different from current conditions, which includes thoughts, behavior, or other elements that are perceived as something new by individuals in a social environment. Innovation can also be an idea, action or product introduced through communication over a certain period of time.

Innovation Strategy Indicators

According to Zahra and Das in(Siti Fahmila, 2018)An innovation strategy is a multidimensional concept that includes four main aspects, namely company leadership orientation, product innovation, process innovation, and innovation implementation. The following is a brief explanation of each dimension of innovation strategy:

1) Leadership Orientation: This dimension underscores the importance of the role of leadership in creating and supporting successful innovation. Many innovative companies demonstrate that effective leadership is a key factor in driving the innovation process.
2) Product Innovation: Product innovation refers to the development and improvement of products offered by a company. The product must have advantages that differentiate it from similar products on the market, such as better quality, design, service or features.
3) Process Innovation: Process innovation relates to changes in the way a company produces or delivers products. This could include the use of new technology, improving operational efficiency, or developing new methods in the production process.
4) Innovation Implementation: Innovation implementation refers to the steps taken by an organization to ensure that the innovation is implemented effectively. This involves procuring appropriate human resources and assigning responsibility to the employees who will use the innovation.

Total Quality Management

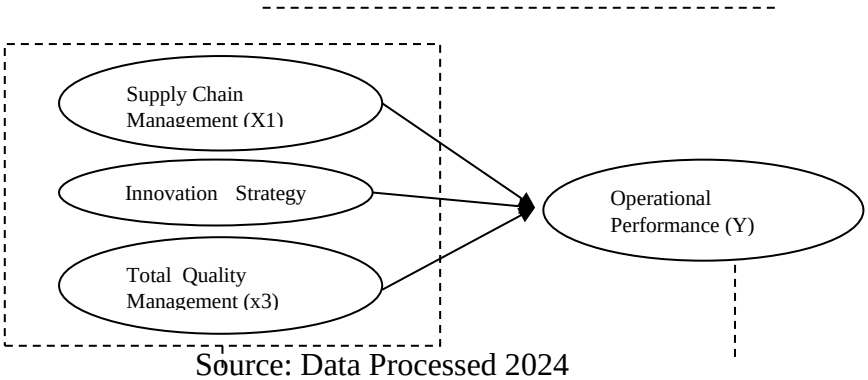
Integrated quality or also called Total Quality Management (TQM) can be defined from the 3 words it has, namely: Total (whole), Quality (quality or excellence of goods and services), Management (management, method or control) of the three words it has are System management that is oriented towards customer satisfaction with activities that are truly pursued through improving sustainability and motivating Kid Sadgrove employees in the book(Rita Ambarwati & Supardi, 2020).

Total Quality Management Indicators

The following is a brief explanation of Total Quality Management (TQM) indicators according to Talib Dalam(Ghazani & Wibowo, 2021):

1) Education and Training: This reflects the importance of providing training and education to employees to improve their knowledge and skills in the context of quality management. By understanding TQM principles, employees can better contribute to continuous improvement in the organization.
2) Continuous Improvement: TQM emphasizes the importance of continuous efforts to improve processes, products, and services. This indicator reflects the organization's commitment to always looking for ways to make better improvements.
3) Top Management Commitment: The success of TQM implementation often depends on the support and commitment of top management. This indicator shows that top management is actively involved in driving and directing TQM initiatives.
4) Teamwork: TQM emphasizes the importance of collaboration and cooperation between various parts or teams in the organization. This indicator reflects a work culture where teams work together to achieve common quality goals.

Framework



Source: Data Processed 2024

Figure 4. Framework

a) H1: Supply Chain Management Has a Positive Influence on Operational Performance.
b) H2: Innovation Strategy Has a Positive Influence on Operational Performance
c) H3: Total Quality Management Has a Positive Influence on Operational Performance.
d) H4: Supply Chain Management, Innovation Strategy, and Total Quality Management Simultaneously Have a Positive Influence on Operational Performance.

Validity Test Results

The calculation of instrument validity is based on a comparison between r-count and r-table where r-table = 0.1966 (df=N-2, 100-2=98 with a significance level of 0.05). If r-count is greater than r-table (r-count>r-table) then the statement is considered valid or valid. Vice versa, if the r-count is smaller than the r-table (r-count<r-table) then the statement is considered invalid or invalid. The following are the results of the validity test on this research instrument:

Table 1. Validity of Research Questionnaires

No	Variable Indicator	r-count	r-table	Information
	Supply Chain Management(X1)			
1	The company has strong partnerships with suppliers that can help ensure consistent supply and good quality.	0.844	0.1966	Valid
2	The company has a close relationship with customers, which helps maintain customer loyalty	0.851	0.1966	Valid
3	Companies share information with partners and suppliers so that it can be used as a source of competitive advantage in decision making	0.799	0.1966	Valid
4	Suppliers collaborate well across various entities in the company	0.785	0.1966	Valid
	Innovation strategy(x2)			
1	Company leaders are able to support good innovation	0.847	0.1966	Valid
2	The product has advantages that differentiate it from similar products on the market	0.802	0.1966	Valid
3	The company is able to adapt to changes in operational efficiency	0.876	0.1966	Valid
4	The company develops new methods in the production process	0.813	0.1966	Valid

5	The company is able to ensure that the innovations implemented are effective	0.789	0.1966	Valid
Total quality management(x3)				
1	The company provides education to employees to increase knowledge in the context of quality management	0.803	0.1966	Valid
2	Companies provide their skills training in the context of quality management	0.836	0.1966	Valid
3	Companies are always looking for ways to make better improvements	0.789	0.1966	Valid
4	The company is always actively involved in encouraging and directing commitment initiatives	0.745	0.1966	Valid
5	The company emphasizes the importance of collaboration between various parts of the organization	0.826	0.1966	Valid
Operational performance(y)				
1	The company is able to adapt to changes that occur in the market	0.884	0.1966	Valid
2	The company's products have met established quality standards	0.771	0.1966	Valid
3	The company's products have met customer expectations	0.851	0.1966	Valid
4	The company succeeded in sending products to customers according to schedule	0.840	0.1966	Valid
5	Companies always predict customer demand	0.793	0.1966	Valid
6	Companies can process more orders, increase efficiency, reduce production costs per unit.	0.843	0.1966	Valid

Source: Data Processed 2024

Based on the table above, it shows that the calculated r-value of all statement items in each variable (supply chain management, innovation strategy, total quality management and operational performance) is greater than the r-table (0.1966). Thus, it can be concluded that all statement items in this study are declared valid.

Reliability Test Results

Ghozali's theory in(Junaedi, 2019). Reliability testing is used to measure the level of stability or consistency of a measuring instrument in measuring a symptom or event. This test uses the Cronbach's Alpha coefficient with the help of statistical software such as SPSS. The test results are considered reliable if the Cronbach's Alpha value is ≥ 0.6 and the Cronbach's Alpha value continues to increase if certain items are deleted (Croanbach's Alpha if item deleted). The reliability test results are shown in the following table:

Table 1. Reliability Test Results

No.	Variable	Cronbach's alpha value	Sig.	Information
1	Supply Chain Management(X1)	0.910	>0.60	Reliable
2	Innovation Strategy(X2)	0.837	>0.60	Reliable
3	Total Quality Management(X3)	0.882	>0.60	Reliable
4	Operational Performance(Y)	0.859	>0.60	Reliable

Source: Data Processed 2024

Based on the summary of reliability test results as summarized in the table above, it is known that the Cronbach's Alpha value is greater than the significance level (0.60) for all variables. These results indicate that all indicators in this research questionnaire were declared reliable or reliable and acceptable in the questionnaire feasibility test.

Classic Assumption Test Results

Normality Test

Table 2. Normality Test Results

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residuals
N		100
Normal Parameters, b	Mean	,0000000
	Std. Deviation	,69028185
Most Extreme Differences	Absolute	,096
	Positive	,081
	Negative	-.096
Statistical Tests		,096
Asymp. Sig. (2-tailed)		**.058c**

Source: Data Processed 2024

The table above shows that the data that has been processed is normally distributed. It is considered to be normally distributed if the significance value is greater than 0.05. and it is known that the significant value of the data is above 0.058 > 0.05, which means the data is normally distributed so that the regression model is suitable for use.

Multicollinearity Test Results

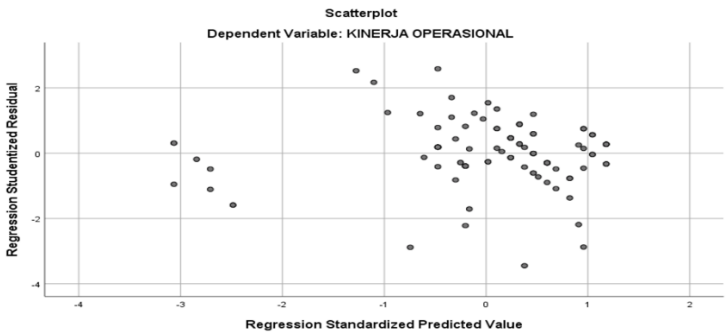
Table 3. Multikolinearity Test Result

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	supply chain management	,130	7,672
	innovation strategy	,146	6,839
	total quality management	,111	9,043

Source: Data Processed 2024

The multicollinearity test results in the table above show that the VIF value is less than 10 and the tolerance value is more than 0.010, so it can be concluded that multicollinearity does not occur.

Heteroscedasticity Test Results



Source: Data Processed 2024

Figure 2. Heteroscedasticity Test Results

From the picture above, it is known that there is an imbalance in residual variability between one observation and another in a regression model. When the residual variability remains the same from one observation to another. Thus it can be concluded that heteroscedasticity does not occur in the regression model so that the heteroscedasticity test can be said to be fulfilled.

Hypothesis Test Results

T Test Results (Partial)

Table 4. T Result (Partial)

Coefficientsa						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	,318	,748		,425	,672
	Supply Chain Management	,084	,125	,054	**,667**	**,506**
	Innovation Strategy	,334	,110	,264	**3,023**	**,003**
	Total Quality Management	,763	,103	,648	**7,413**	**,000**

a. Dependent Variable: operational performance

Source: Data Processed 2024

Based on the table above, the t test results can be concluded as follows:

1. The influence of supply chain management on operational performance. It is known that the significant value is 0.506 > 0.05 and the calculated t value is 0.667 < 1.98498 so it can be concluded that H1 is rejected which means there is no influence between the variables.supply chain management (X1) on operational performance (Y).
2. The Influence of Innovation Strategy on Operational Performance. It is known that the significant value is 0.003 < 0.05 and the calculated t value is 3.023 > 1.98489 so it can be concluded that H2 is accepted which means there is an influence between the strategy variablesinnovation (X2) on operational performance (Y).
3. The Effect of Total Quality Management on Operational Performance. Known valuesign 0.000 > 0.05 and the calculated t value is 7.413 < 1.98498 so it can be concluded that H3 is accepted, which means there is an influence between the total quality management variable (X3) on operational performance (Y).

F Test Results (Simultaneous)

Table 5. F Test Resluts (Simultaneous)

ANOVAa						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1341,819	3	447,273	**247,496**	,000b
	Residual	173,491	96	1,807		
	Total	1515,310	96			

Source: Data Processed 2024

Based on table, it is known that the sign value is 0.000 < 0.05 and the calculated f value is 247.496 > 2.70, so it can be concluded that Ha is accepted, which means there is an influence between the supply chain management variables (X1), innovation strategy (X2) and total quality management. (X3) simultaneously on operational performance (Y).

Coefficient of Determination Results

Table 6. Coefficient of Determination Results

Model Summary b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,941a	**,886**	,882	1,344	2,208

Source: Data Procesed 2024

Based on the calculation results in table, it is known that the Adjusted R square is 0.886/88.6%, which shows that there is a simultaneous influence between the supply chain management variables, innovation strategy and total quality management on the operational performance variable of 88.6% and the remaining 11, 4% is influenced by other variables not included in this research.

Discussion

The Influence of Supply Chain Management on Operational Performance

Based on the t test results presented in table 1.5 regarding the influencesupply chain management on operational performance in clamp ring production shows that supply chain management obtained is 0.506 < 0.05 and the t value is 0.667 < 2.00856 so it can be concluded that H1 is rejected. which means there is an influence but not significant on the supply chain management variable on the operational performance of clamp ring production at PT Pramesta Baja Utama.

Supplychain management in the form of information sharing and longterm relationships has a negative and insignificant effect, the reason is that excessive information sharing with partners actually causes operational performance to decline and also the cause of longterm relationships having a negative effect is because too much dependence on partners or suppliers actually results in causing operational performance to decline. Meanwhile, cooperation and integration processes have a positive and significant influence on the company's operational performance(Anggitasari, 2021).

The results of this study are inversely proportional to the results of research from(Labdhagati, 2017)The research results show that Supply Chain Management (SCM) also has a positive impact on operational performance.

The Influence of Innovation Strategy on Operational Performance

Based on the t test results presented in table 1.5 regarding the influence of innovation strategy on operational performance in productionclamp ring shows that supply chain management obtained 0.003 < 0.05 and the calculated t value is 3.023 > 1.98489 so it can be concluded that H2 is accepted, which means there is an influence between the innovation strategy variable (X2) on operational performance (Y).

Research conducted(WIDODO, 2021)concluded that the innovation strategy had a positive and significant effect on operational performance at Kasongan Pottery MSMEs, Bantul Regency. Innovations carried out in terms of products, services and technology applied to the Kasongan pottery industry have proven capable of boosting the operational performance of MSMEs themselves.

This strengthens the results of research from(Fahmila, 2018)And (Melati et al., n.d.) shows that there is a significant influence between the overall innovation strategy on operational performance.

The Effect of Total Quality Management on Operational Performance

Based on the t test results presented in table 1.5 regarding the total effect quality management on operational performance in clamp ring production shows that supply chain management is obtained. It is known that the sign value is 0.000 < 0.05 and the calculated t

value is 7.413 < 1.98498, which means there is an influence between the total quality management variable (X3) so it can be concluded that H3 is accepted.

TotalQuality management makes employees better responsible for controlling quality and stopping production when problems arise and encourages them to find ways to improve product and process quality. Nasution inside(Wibowo, 2020)

This strengthens the research results from (Huda et al., 2022) The results obtained from the statement explain that Total Quality Management (TQM) has a positive influence on the operational performance of a company.

The Influence of Supply Chain Management, Innovation Strategy, Total Quality Management on Operational Performance

Based on the results of the f test presented in table 1.6 regarding influence supply chain management, innovation strategy and total quality management on operational performance in clamp ring production shows that the sign value obtained is 0.000 < 0.05 and the calculated f value is 247.496 > 2.70 so it can be concluded that H4 is accepted which means there is an influence between the variable scm (X1), innovation strategy (X2) and tqm (TQM) simultaneously on operational performance (Y).

Based on the calculation results in table 1.7, it is knownAdjusted R square is 0.886/88.6% which shows that there is a simultaneous influence between supply chain management variables, innovation strategy and total quality management on operational performance variables of 88.6% and the remaining 11.4% is influenced by other variables that are not included in this research.

Operational performance is measured based on performance objectives used to determine market and company needs, namely quality, speed,reliability, and flexibility. Operational performance must produce consistent, reliable quality performance and appropriate service. Winata inside (Zhafran, 2023).

This strengthens the results of research from(Hardiana & Setiawan, 2021)Supply Chain Management, Quality Management and Innovation Strategy simultaneously influence operational performance in manufacturing companies in the Delta Silicon Cikarang Industrial Area.

CONCLUSION

Based on the various analyzes and data processing that have been submitted which discuss the factors in efforts to improve operational performance, it can be concluded as follows:

1. Supply chain management has an effect but is not significant on the operational performance of clamp ring production with a value of 0.506 < α(0.05).
2. The innovation strategy has a positive and significant influence on the operational performance of clamp ring production with a value of 0.000 < α (0.05).
3. Total quality management has a positive and significant effect on operational performance for clamp ring production with a value of 0.000 < α (0.05).
4. Supply chain management, innovation strategy and total quality management simultaneously have a positive and significant effect on the operational performance of clamp ring production with a value of 0.000 < α (0.05).

Based on the conclusions that have been presented, because the supply chain, innovation strategy and total quality management simultaneously have a positive effect on the operational performance of clamp ring production. So there are suggestions that might be useful for PT Pramesta Baja Utama, especially for clamp ring production, including:

1. It is recommended that PT Pramesta Baja Utama evaluate again and pay close attention to the factors in implementing supply chain management. This is done to help ensure consistent supply and good quality.

2. It is recommended to PT. Pramesta Baja Utama to maintain product excellence and adaptability. This is done so that the company is not left behind by competition in the market.
3. It is recommended that PT Pramesta Baja Utama always provide training and education for employees. This is done in order to get quality employees.
4. It is recommended that PT. Pramesta Baja Utama always be actively involved in encouraging and directing initiatives to continue to be committed. This is done so that the company can maintain quality both in terms of employees and products.

For researchers who will conduct research on similar topics in the future, it is hoped that they will use different industries/respondents, so that the results of this research can begeneralized more broadly.

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