

The Influence of Service Quality, Product Quality, and Price on Customer Loyalty Through Customer Satisfaction in the Chemical Industry of PT Panca Nature International

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Abstract

This study aims to analyze the Influence of Service Quality, Product Quality, and Price on Customer Loyalty Through Customer Satisfaction in the Natural Materials Industry of PT. Panca Nature International. The research method used in this study is a quantitative approach with a survey technique involving consumers of PT. Panca Nature International. The population and sample of the study were 168 people using a purposive sampling technique. Data were collected using a questionnaire designed to measure the variables of service quality, Product, Price. Customer Loyalty and Satisfaction. The data analysis technique used partial least The results of the study show: Service Quality affects Customer Satisfaction, Product Quality affects Customer Satisfaction, Price affects Customer Satisfaction, Service Quality affects Customer Loyalty, Product Quality affects Customer Loyalty, Price affects Customer Loyalty, Customer Satisfaction affects Customer Loyalty, Customer satisfaction mediates the relationship between service quality and Customer Loyalty, Customer Satisfaction mediates the relationship between Product Quality and Customer Loyalty and Customer Satisfaction mediates the relationship between Price and Customer Loyalty.

Keywords: Service Quality, Product Quality, Price, Customer Satisfaction, Customer Loyalty.

Introduction

The chemical industry is one of the most important sectors to drive the growth of various downstream industries, such as pharmaceuticals, manufacturing, agriculture, and cosmetics. With export value reaching USD 10.4 billion in 2023, the industry in Indonesia recorded an annual growth of around 3.5%. Amidst increasingly tight competition, supply chain disruption, and fluctuations in global raw material prices, PT Panca Nature Indonesia faces a major challenge in maintaining customer loyalty.

Customer loyalty in such a situation is very important for business continuity. According to Albari and Kartikasari's study (2019), service quality, product quality, and price greatly influence customer loyalty. Samudro et al. (2018) show how important quality perception is in the chemical industry; this is usually assessed based on long-term value and product consistency, not just price.

The urgency of research considering that chemical industry customers prefer long-term relationships rather than momentary transactions, this research is increasingly important. However, research that specifically investigates the relationship between the three variables of product quality, service, and price with customer loyalty in the Indonesian chemical industry is still very limited. This is especially true for medium-sized companies such as PT Panca Nature Indonesia. Most previous studies have concentrated on the retail, food and beverage, and telecommunications industries. In contrast, the

chemical business-to-business industry has more rational and technical specification-based purchasing characteristics (Hartono & Khambali, 2018; Yulisetiari & Prahasta, 2019).

This lack of understanding is what makes this study important. Not only does it add to the literature that is not yet available, but it also provides practical suggestions for management when they create data-based marketing and operational strategies. In addition, the findings of this study help expand theoretical research on customer loyalty in the chemical industry, which has not been done thoroughly so far.

The problem that must be answered is how service quality, product quality and price affect customer loyalty through customer satisfaction at PT Panca Nature Indonesia.

The main objective of this article is to analyze and explain the influence of service quality, product quality, and price on customer loyalty of PT Panca Nature Indonesia. It is expected that this study will be useful for:

- a. Theoretically, extending the customer loyalty model in the Indonesian chemical business-to-business industry.
- b. In other words, helping companies increase customer retention and create sustainable customer value.

Theory Review

Relationship between Service Quality and Customer Loyalty

Service quality significantly affects customer loyalty, as supported by several previous studies. Brady and Cronin (2019) found that service quality has a positive effect on loyalty through customer satisfaction as a mediator. Homburg *et al.* (2021) revealed that service quality dimensions such as responsiveness and empathy have a strong relationship with customer loyalty, especially in the retail industry. In addition, Anderson and Fornell (2020) showed that satisfactory service can encourage customers to remain loyal even though there are alternative competitors. Based on these findings, it can be concluded that good service quality is a major factor in increasing customer loyalty, thus supporting the formulation of the hypothesis that service quality has a positive and significant effect on customer loyalty in the natural materials industry of PT Panca Nature International.

H1: Service quality has a positive and significant effect on customer loyalty in the natural materials industry PT Panca Nature Internasional.

Relationship between Product Quality and Customer Loyalty

Product quality is one of the main determinants in building customer loyalty. Previous studies have shown that product quality that meets or exceeds customer expectations can create a stronger relationship between customers and brands. Oliver and Rust (2021) revealed that good product quality increases customer satisfaction, which in turn strengthens their loyalty. Homburg *et al.* (2021) also found that customers tend to remain loyal to brands that offer high-quality products because they perceive value that is commensurate with the cost incurred. In addition, Brady and Cronin (2019) stated that product quality directly affects customer loyalty, without having to be mediated by other factors, especially in a competitive market. Based on these findings, superior product quality is a crucial factor in driving customer loyalty, supporting the assumption that product quality has a positive and significant effect on customer loyalty in the natural ingredients industry of PT Panca Nature International.

H2: Product quality has a positive and significant effect on customer loyalty in the natural materials industry PT Panca Nature International.

Relationship Between Price and Customer Loyalty

Price is one of the important elements in creating customer loyalty, because it is considered an indicator of the value of the product or service offered. Previous studies have shown that competitive prices that are considered fair by customers can increase their loyalty. Anderson and Fornell (2020) revealed that prices that are in accordance with customers' perceptions of value can encourage them to remain loyal to a particular product or service. Homburg *et al.* (2021) also found that customers tend to show higher levels of loyalty when they feel the price they pay is commensurate with the quality of the product or service received. In addition, Brady and Cronin (2019) highlighted that transparency and fairness in pricing play an important role in maintaining customer loyalty, especially in competitive markets. Based on these findings, it can be concluded that competitive and valuable prices are one of the main factors influencing customer loyalty, supporting the hypothesis that price has a positive and significant effect on customer loyalty in the natural ingredients industry of PT Panca Nature International.

H3: Price has a positive and significant effect on customer loyalty in the natural materials industry PT Panca Nature International.

Relationship between Service Quality and Customer Satisfaction

Service quality is a key factor in shaping customer satisfaction, because good service can meet or even exceed customer expectations. Previous studies have shown that superior service quality improves the overall customer experience and drives higher satisfaction. Cronin & Taylor (2019) found that service quality dimensions such as reliability, responsiveness, assurance, empathy, and tangibles have a strong relationship with customer satisfaction levels. Homburg *et al.* (2021) also revealed that companies that provide high-quality services can increase positive customer perceptions, which ultimately increase their satisfaction with the products or services used. In addition, research by Brady & Cronin (2019) emphasized that customer satisfaction is not only influenced by product quality but also by the service experience provided by the company. Based on these findings, it can be concluded that good service quality plays an important role in creating customer satisfaction, supporting the hypothesis that service quality has a positive and significant effect on customer satisfaction in the natural materials industry of PT Panca Nature International.

H4: Service quality has a positive and significant effect on customer satisfaction in the natural materials industry PT Panca Nature International.

Relationship between Product Quality and Customer Satisfaction

Product quality is one of the main factors that determine the level of customer satisfaction, because customers tend to feel satisfied when the products they buy are in accordance with their expectations and needs. Previous studies have shown that high product quality increases customer satisfaction and strengthens their relationship with the brand. Oliver & Rust (2021) found that superior product quality has a direct impact on customer satisfaction, because good products provide added value to consumers. Homburg *et al.* (2021) also revealed that product characteristics such as durability, reliability, and suitability to customer needs play an important role in increasing satisfaction. In addition, Brady & Cronin (2019) showed that customers who are satisfied with product quality are more likely to make repeat purchases and recommend products to others. Based on these findings, it can be concluded that good product quality plays an important role in increasing customer satisfaction, supporting the hypothesis that product quality has a positive and significant effect on customer satisfaction in the natural materials industry of PT Panca Nature International.

H5: Product quality has a positive and significant effect on customer satisfaction in the natural materials industry PT Panca Nature International.

The Relationship between Price and Customer Satisfaction

Price is one of the main factors that influence customer satisfaction, because customers will feel satisfied if the price they pay is in accordance with the value they receive. Previous studies have shown that competitive and fair prices can increase customer satisfaction by providing a better perception of value. Anderson & Fornell (2020) found that customers are more likely to be satisfied if they feel that the price of a product or service is commensurate with the quality received. Homburg *et al.* (2021) also revealed that transparent prices and prices in accordance with customer expectations have a positive impact on satisfaction, because customers feel they get decent value from their purchases. In addition, research by Brady & Cronin (2019) shows that customers who feel the price of a product is in accordance with its quality will be more satisfied and tend to be loyal to the brand. Based on these findings, it can be concluded that competitive prices and prices in accordance with customer value perceptions play an important role in increasing customer satisfaction, supporting the hypothesis that price has a positive and significant effect on customer satisfaction in the natural materials industry of PT Panca Nature International.

H6: Price has a positive and significant effect on customer satisfaction in the natural materials industry PT Panca Nature International.

Relationship between Customer Satisfaction and Customer Loyalty

Customer satisfaction is a key factor in building customer loyalty, because customers who are satisfied with a product or service tend to remain loyal and make repeat purchases. Previous studies have shown that high levels of satisfaction not only increase customer retention but also encourage customers to recommend products or services to others. Oliver & Rust (2021) found that customer satisfaction has a direct effect on loyalty, where satisfied customers are more likely to continue using products from the same brand. Homburg *et al.* (2021) also revealed that customers who have positive experiences in terms of product and service quality are more likely to show higher loyalty to a brand. In addition, research by Brady & Cronin (2019) confirmed that customer satisfaction strengthens emotional attachment to a brand, which ultimately increases customer loyalty. Based on these findings, it can be concluded that customer satisfaction plays an important role in creating customer loyalty, supporting the hypothesis that customer satisfaction has a positive and significant effect on customer loyalty in the natural materials industry of PT Panca Nature International.

H7: Customer satisfaction has a positive and significant effect on customer loyalty in the natural materials industry of PT Panca Nature International.

Relationship between Service Quality and Customer Loyalty Through Customer Satisfaction

Service quality is a major factor in shaping customer loyalty, and customer satisfaction acts as a mediating variable that strengthens the relationship. Customers who receive good service tend to feel satisfied, which ultimately encourages them to remain loyal to a brand or company. Previous studies have shown that customer satisfaction is a bridge between service quality and customer loyalty. Cronin & Taylor (2019) found that high service quality increases customer satisfaction, which then contributes to long-term customer loyalty. Homburg *et al.* (2021) also revealed that customers who are satisfied with the service provided are more likely to continue using the same product or service

and recommend it to others. In addition, Brady & Cronin (2019) emphasized that customer satisfaction plays a mediating role in strengthening the relationship between service quality and customer loyalty, where high satisfaction strengthens customer commitment to the brand. Based on these findings, it can be concluded that customer satisfaction is a significant mediating variable in the relationship between service quality and customer loyalty, supporting the hypothesis that service quality has a positive effect on customer loyalty through customer satisfaction in the natural materials industry of PT Panca Nature International.

H8: Service quality has a positive and significant effect on customer loyalty through customer satisfaction in the natural materials industry PT Panca Nature International.

Relationship between Product Quality and Customer Loyalty Through Customer Satisfaction

Product quality is an important factor in shaping customer loyalty, and customer satisfaction acts as a mediating variable that strengthens the relationship. Customers who are satisfied with the quality of the products they purchase are more likely to remain loyal to the brand and make repeat purchases. Previous studies have shown that customer satisfaction is a key mediator in the relationship between product quality and customer loyalty. Oliver & Rust (2021) found that superior product quality directly increases customer satisfaction, which ultimately strengthens customer loyalty to a brand. Homburg et al. (2021) also revealed that customer satisfaction acts as a significant mediator in the relationship between product quality and loyalty, because high-quality products create positive experiences that increase customer engagement. In addition, research by Brady & Cronin (2019) showed that customers who are satisfied with product quality are not only more loyal but also tend to recommend the product to others. Based on these findings, it can be concluded that customer satisfaction is a significant mediating variable in the relationship between product quality and customer loyalty, supporting the hypothesis that product quality has a positive effect on customer loyalty through customer satisfaction in the natural materials industry of PT Panca Nature International.

H9: Product quality has a positive and significant effect on customer loyalty through customer satisfaction in the natural materials industry PT Panca Nature International.

Relationship Between Price and Customer Loyalty Through Customer Satisfaction

Price is a factor that plays an important role in shaping customer loyalty, and customer satisfaction acts as a mediating variable that strengthens the relationship. Customers tend to be more loyal to a brand if they feel that the price they pay is in accordance with the quality of the product or service received. Previous studies have shown that customer satisfaction is a connecting factor between price and customer loyalty. Anderson & Fornell (2020) found that competitive prices that are balanced with the value received by customers increase their satisfaction, which ultimately contributes to long-term customer loyalty. Homburg et al. (2021) also revealed that customer satisfaction is a significant mediator in the relationship between price and customer loyalty, where customers who feel they get a fair price tend to be more satisfied and loyal to the brand. In addition, Brady & Cronin (2019) emphasized that customers who are satisfied with the price of a product are more likely to make repeat purchases and recommend the product to others. Based on these findings, it can be concluded that customer satisfaction is a significant mediating variable in the relationship between price and customer loyalty, supporting the hypothesis that price has a positive effect on customer loyalty through customer satisfaction in the natural materials industry of PT Panca Nature International.

H10: Price has a positive and significant effect on customer loyalty through customer satisfaction in the natural materials industry PT Panca Nature International.

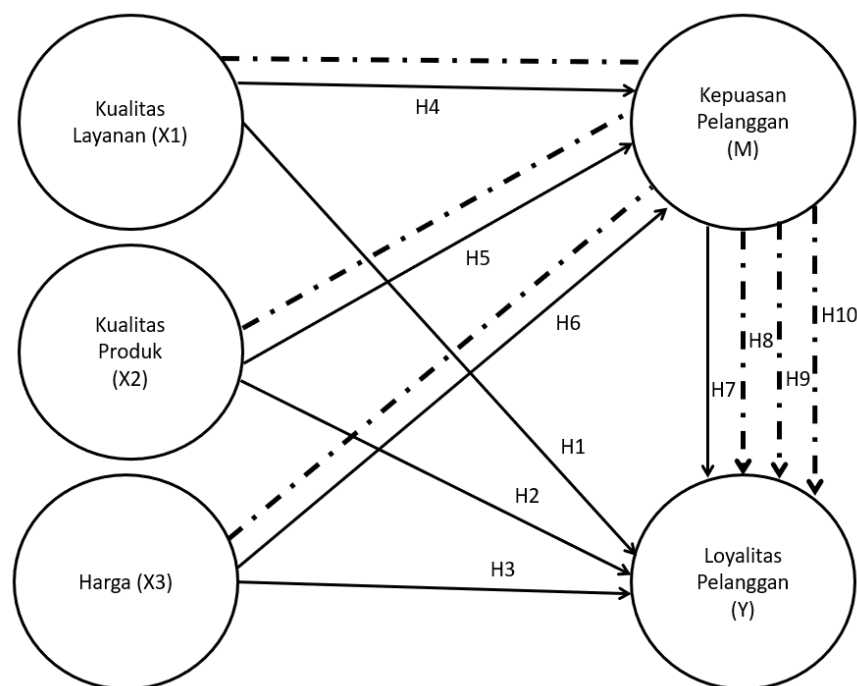


Figure 1. Research Hypothesis

Research methods

study uses a quantitative descriptive method with a purposive sampling technique. PT Panca Nature International consumers as many as 168 people were involved as research respondents. The data used is primary data obtained through the distribution of questionnaires made with *Google Form* . Data analysis technique using *Partial Least Square (PLS)* .

This study has a complex model and a limited number of samples, so in data analysis using SmartPLS software. SmartPLS uses the *bootstrapping method* or random duplication. Therefore, the assumption of normality will not be a problem. In addition, by doing bootstrapping, SmartPLS does not require a minimum number of samples, so it can be applied to research with a small number of samples. An ordinal scale with a range of 1-5 is used in this study.

Results and Discussion

Respondent Demographics

The data in this study were obtained by distributing questionnaires to 168 respondents who were consumers of PT Panca Nature International . The majority of respondents in this study based on gender were male as many as 101. Based on age, the majority of respondents were in the productive age group (18-25 years) as many as 50 respondents . Based on education level, the majority were in the last education of bachelor as many as 60 respondents. Based on income, the majority were in the middle income group (Rp 3,000,000 - 10,000,000) as many as 58 respondents.

Convergent Validity Test Results

Convergent validity aims to ensure that each indicator in the latent variable has a high correlation and is able to represent the latent variable accurately. Convergent validity is measured using the *loading factor value* , where a value greater than 0.7 is considered to meet the validity criteria.

Convergent Validity Test

Variables	Indicator	Outer Loadings	Information
Service Quality (X1)	X1.1	0.820	VALID
	X1.2	0.817	VALID
	X1.3	0.806	VALID
	X1.4	0.839	VALID
	X1.5	0.792	VALID
	X1.6	0.903	VALID
Product Quality (X2)	X2.1	0.878	VALID
	X2.2	0.844	VALID
	X2.3	0.912	VALID
	X2.4	0.881	VALID
	X2.5	0.917	VALID
	X2.6	0.912	VALID
	X2.7	0.893	VALID
Price (X3)	X3.1	0.903	VALID
	X3.2	0.893	VALID
	X3.3	0.927	VALID
	X3.4	0.906	VALID
	X3.5	0.915	VALID
Customer Satisfaction (M)	M.1	0.856	VALID
	M.2	0.901	VALID
	M.3	0.936	VALID
	M.4	0.931	VALID
	M.5	0.936	VALID
Customer Loyalty (Y)	Y.1	0.902	VALID
	Y.2	0.927	VALID
	Y.3	0.855	VALID
	Y.4	0.897	VALID
	Y.5	0.915	VALID

Source: Processed Data (2024)

The highest value on *the outer loading* of an element means that the related indicators have similarities (Sabilla & Yuliana ., 2025 ; Salsabila *et al.*, 2025) . The substantial part of each indicator variant can be explained by the latent variable with a minimum of 5% according to the established policy, where the reference value of *the outer*

loading is 0.5 or greater, with an optimal value of 0.7 or greater (Firdaus *et al.* , 2024 ; Alfian *et al.*, 2024) .

Average Variance Extracted (AVE)

Overall, the AVE test results show that all variables in the research model have good convergent validity. A high AVE value ensures that the latent variables can be significantly explained by their indicators, so that the measurement model used in this study is considered valid and reliable for further analysis.

Table 3. Reliability Test and AVE

	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Price (X3)	0.947	0.959	0.826
Customer Satisfaction (M)	0.949	0.961	0.832
Service Quality (X1)	0.910	0.930	0.689
Product Quality (X2)	0.957	0.964	0.794
Customer Loyalty (Y)	0.941	0.955	0.809

Source: Processed Data (2024)

Reliability Test Results

Composite reliability and Cronbach's alpha are used to measure the internal consistency of indicators in latent variables. Composite reliability measures overall reliability, while Cronbach's alpha tests the stability and consistency of indicators. Values above 0.7 indicate that the instrument has good reliability.

Hypothesis Test Results

Based on the results of the hypothesis testing presented in table 4, it is stated that H1 is rejected, while H2 and H3 are supported.

Table 4. Hypothesis Testing

Variable Relationship	Original Sample (O)	Sample Mean (M)	T Statistics	P Values	Hypothesis
Price (X3) -> Customer Satisfaction (M)	0.853	0.846	6.953	0.000	Positive influence
Price (X3) -> Customer Loyalty (Y)	0.692	0.684	3.182	0.002	Positive influence
Customer Satisfaction (M) -> Customer Loyalty (Y)	0.412	0.405	4.120	0.000	Positive influence
Service Quality (X1) -> Customer Satisfaction (M)	0.314	0.309	3.305	0.001	Positive influence
Service Quality (X1) -> Customer Loyalty (Y)	0.274	0.269	3.044	0.002	Positive influence
Product Quality (X2) -> Customer Satisfaction (M)	0.327	0.322	3.716	0.000	Positive influence
Product Quality (X2) -> Customer Loyalty (Y)	0.321	0.316	3.452	0.001	Positive influence
Price (X3) -> Customer Satisfaction (M) -> Customer Loyalty (Y)	0.452	0.445	5.136	0.000	Positive influence
Service Quality (X1) -> Customer Satisfaction (M) -> Customer Loyalty (Y)	0.289	0.282	4.129	0.000	Positive influence

Product Quality (X2) -> Customer Satisfaction (M) -> Customer Loyalty (Y)	0.327	0.320	4.360	0.000	Positive influence
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Source: Processed Data (2025)

The following is a detailed discussion and explanation for each hypothesis based on table 4 above:

The results show that service quality has a positive and significant effect on customer loyalty, with an Original Sample (O) value of 0.274, T Statistics of 3.044, and P Values of 0.002. This value indicates that increasing service quality will significantly increase customer loyalty at PT Panca Nature International. Test results show that product quality has a positive and significant effect on customer loyalty, with an Original Sample (O) value of 0.321, T Statistics of 3.452, and P Values of 0.001. The test results show that price has a positive and significant effect on customer loyalty, with an Original Sample (O) value of 0.692, T Statistics of 3.182, and P Values of 0.002.

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test results show that service quality has a positive and significant effect on customer loyalty through customer satisfaction, with an Original Sample (O) value of 0.289, T Statistics of 4.129, and P Values of 0.000.

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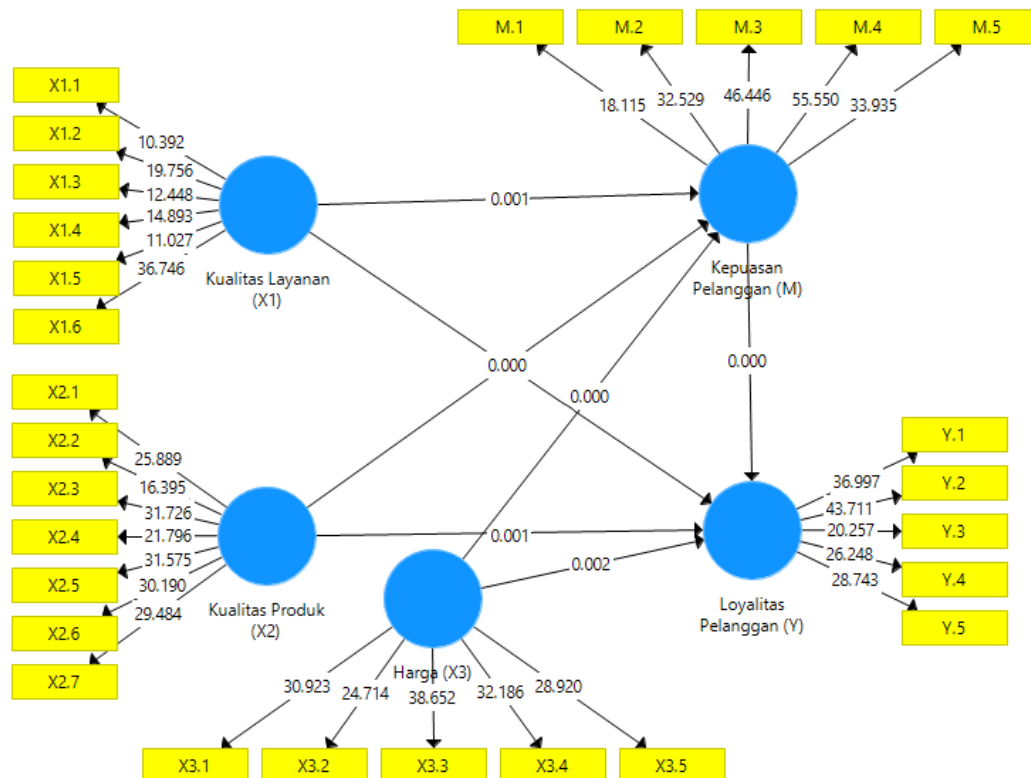


Figure 2. Data Processing Results with SmartPLS
Source: Processed data (2024)

DISCUSSION

The Influence of Service Quality on Customer Loyalty

The test results show that service quality has a positive and significant effect on customer loyalty. Customers who experience good service will tend to remain loyal and continue to use the products or services offered. This finding is in line with research conducted by Sun et al. (2022), Wang et al. (2021), Lee et al. (2023), which states that high service quality creates a positive experience for customers, thereby increasing their loyalty. Customers who are satisfied with the service tend to feel emotionally attached to the company, so they not only become loyal customers but are also willing to recommend the company to others.

When it comes to the chemical industry like PT Panca Nature International, which operates in the B2B (business-to-business) market, service quality is crucial to maintaining customer loyalty. The business relies heavily on after-sales technical support, speed of response, accuracy of delivery, and consistency of service. When a business can provide exceptional service, customers are more likely to stay loyal and even recommend others—a significant network effect in the industry.

Theoretically, these findings support the view of Customer Relationship Theory, which states that long-term relationships with customers can be formed through the provision of consistent and quality services. Practically, these results underline the importance of companies to continuously improve service quality as a strategy to retain customers and expand the loyal customer base.

The Influence of Product Quality on Customer Loyalty

The test results show that product quality has a positive and significant effect on customer loyalty. Customers who assess products as having high quality, such as durability, attractive design, and innovative features, tend to remain loyal to the product. This finding is supported by research by Wang et al. (2022), Zhang et al. (2021), Lee et al (2023) which states that product quality plays an important role in building customer loyalty, especially in highly competitive industries.

Research conducted by PT Panca Nature International shows that product quality has a large and positive impact on customer loyalty. This is in accordance with the Customer Loyalty Model theory, which states that product quality is one of the most important factors in determining customer loyalty, especially in a business-to-business context. Customers who are satisfied with the quality of a product are more likely to buy the product again, and they will continue to support the product.

Theoretically, these results support the theory of total quality (*Total Quality Management*), which emphasizes that product quality is one of the main factors in creating customer satisfaction and loyalty. Practically, these findings underline the importance of companies to maintain and improve the quality of their products as a primary strategy in retaining and expanding the customer base.

The Influence of Price on Customer Loyalty

The test results show that price has a positive and significant effect on customer loyalty. This finding indicates that prices that are considered fair, competitive, and transparent by customers are able to encourage their loyalty to PT Panca Nature International's products or services. When customers feel that the price they pay is commensurate with the quality of the product they receive, they are more likely to continue using the product.

Research by Sun et al. (2022) supports this finding, where prices that match customers' perceived value have a significant positive relationship with customer loyalty. Fair prices not only increase customer satisfaction but also strengthen their decision to remain loyal to a particular brand. In addition, Wang et al. (2021) showed that price transparency plays an important role in creating loyalty. When customers feel that the prices offered are clear and free from hidden costs, they have more trust in the company, which contributes to long-term loyalty. This study also highlights the importance of competitive prices in retaining customers in a competitive market. According to Lee et al. (2023), price fairness is also one of the important dimensions that influence customer loyalty. When customers feel that the price of a product or service is not too expensive compared to competitors, they tend to be more loyal and even willing to recommend the product to others.

Theoretically, these findings support the Customer Value Theory , which emphasizes that price is one of the main elements that influence customer perceived value. Practically, these results emphasize the importance of companies in setting fair and transparent prices to build customer trust and loyalty.

The Influence of Service Quality on Customer Satisfaction

The test results show that service quality has a positive and significant effect on customer satisfaction. When customers feel that the company provides reliable, responsive, and attentive service, they are more likely to be satisfied with their experience.

Research by Zhang et al. (2023) supports this finding, showing that service quality is one of the main factors determining the level of customer satisfaction. Service dimensions such as reliability, empathy, and responsiveness were found to have a significant relationship with customer satisfaction levels. Customers who receive services

that meet or exceed their expectations tend to have positive perceptions of the company. Wang et al. (2022) highlighted that service quality not only directly increases customer satisfaction but also strengthens loyalty through satisfaction. When customers feel that the company provides services that focus on their needs, this creates a pleasant experience that leads to high satisfaction. Sun et al. (2021) emphasized that consistent service quality creates a sense of trust among customers. This trust is the basis for building long-term relationships, which ultimately increases overall customer satisfaction.

Theoretically, these results support the Customer Satisfaction Theory, which states that satisfaction is the result of a comparison between customer expectations and their perceptions of service performance. Practically, these findings emphasize the importance of companies to continuously improve and maintain service quality in order to create sustainable customer satisfaction.

The Influence of Product Quality on Customer Satisfaction

The test results show that product quality has a positive and significant effect on customer satisfaction. Customers who feel that the product has good durability, attractive design, innovative features, and benefits that meet their expectations tend to be satisfied with their experience using the product.

Research by Lee et al. (2022) supports this finding by stating that product quality is a major factor in shaping customer satisfaction. Product dimensions such as durability, design, and product benefits have been shown to have a significant relationship with customers' positive perceptions of the product. Zhang et al. (2021) showed that product quality not only meets customers' functional needs but also creates emotional value that impacts their satisfaction. When customers feel that the products they use have innovative features and relevant additional benefits, their satisfaction levels increase significantly. Sun et al. (2023) stated that high product quality creates fulfilled expectations, resulting in a positive experience for customers. When customers feel that the products they buy provide greater value compared to the costs they incur, this creates deep satisfaction.

Theoretically, these results support the Customer Satisfaction Theory, which emphasizes the importance of the match between customer expectations and experiences. Practically, these findings underline the importance of companies maintaining and improving product quality as a strategic effort to increase customer satisfaction.

The Effect of Price on Customer Satisfaction

The test results show that price has a positive and significant effect on customer satisfaction. This result confirms that customer perceptions of the suitability of the price paid with the benefits of the product or service received greatly affect their level of satisfaction. When customers feel that the price offered is fair, competitive, and transparent, it provides a positive experience, thereby increasing customer satisfaction at PT Panca Nature International.

Research by Wang et al. (2023) supports this finding, where prices that match the value perceived by customers are shown to have a significant relationship with their level of satisfaction. Fair prices not only provide economic benefits but also increase customer trust in the company. Zhang et al. (2021) found that price transparency plays an important role in creating customer satisfaction. When customers understand the pricing structure without hidden costs, they tend to feel valued by the company, which has an impact on their overall positive experience. Sun et al. (2022) showed that competitive prices compared to competitors, accompanied by higher benefits, provide added value that drives customer satisfaction. This is especially relevant in competitive industries such as natural materials, where customers are sensitive to price and quality comparisons.

Theoretically, these results support the Customer Value Theory, which states that customer perceptions of value, including price, are the primary determinants of satisfaction. Practically, these findings underscore the importance of companies setting competitive, transparent, and fair prices to maintain and enhance customer satisfaction.

The Influence of Customer Satisfaction on Customer Loyalty

The test results show that customer satisfaction has a positive and significant influence on customer loyalty. Satisfied customers tend to make repeat purchases, recommend products to others, and have an emotional attachment to the brand.

Kim et al. (2023) support this finding by stating that customer satisfaction is a key factor in creating customer loyalty. Satisfied customers tend to have more trust in the brand and have a higher intention to continue using the same product or service in the future. Zhang et al. (2022) found that customer satisfaction not only directly increases loyalty but also strengthens the emotional connection with the brand. When customers are satisfied with the product or service received, they are more likely to remain loyal even though there are alternatives from competitors. Sun & Wang (2021) showed that customer satisfaction acts as a mediator that strengthens the impact of service quality, product, and price on customer loyalty. This shows that customer satisfaction is a crucial factor that not only influences customers' decisions to repurchase but also forms long-term positive perceptions of the brand.

Theoretically, these findings support the theory of customer satisfaction and customer loyalty theory which states that satisfaction is the main determinant of customer loyalty. Practically, these results emphasize the importance of companies to ensure customer satisfaction as a primary strategy in increasing loyalty and maintaining competitiveness in the market.

The Influence of Service Quality on Customer Loyalty Through Customer Satisfaction

The test results show that service quality has a positive and significant effect on customer loyalty. This indicates that customer satisfaction plays a significant mediating role in the relationship between service quality and customer loyalty at PT Panca Nature International. In other words, high service quality increases customer satisfaction, which then strengthens their loyalty to the company.

This finding is supported by research by Zhang et al. (2023), who found that customer satisfaction acts as a mediator in the relationship between service quality and customer loyalty. This study shows that when customers receive reliable, responsive, and empathetic service, their satisfaction increases, which ultimately strengthens loyalty to the company. Wang et al. (2022) emphasized that the indirect effect of service quality on customer loyalty through satisfaction is stronger than its direct effect. This means that customers who are satisfied with the service they receive are more likely to remain loyal and recommend the company to others. Sun et al. (2021) stated that positive customer experiences due to quality service not only increase satisfaction but also strengthen emotional attachment to the company. Thus, improving service quality is an important strategy for companies in building a loyal customer base.

Theoretically, these results support the customer satisfaction theory and the SERVQUAL model, which emphasizes that customer satisfaction is a major factor in building loyalty. Practically, these findings emphasize the importance of companies in improving service quality in order to create a better customer experience, increase satisfaction, and ultimately strengthen customer loyalty.

The Influence of Product Quality on Customer Loyalty Through Customer Satisfaction

The test results show that product quality has a positive and significant effect on customer loyalty through customer satisfaction. In other words, customers who rate high-quality products tend to feel satisfied, and this satisfaction ultimately strengthens their loyalty to the company.

This finding is supported by research by Kim et al. (2023), which found that customer satisfaction is the main factor linking product quality to customer loyalty. This study highlights that products that have high durability, innovation, and attractive design will increase customer satisfaction, which then has an impact on their loyalty. Zhang et al. (2022) showed that customer satisfaction acts as a mediating variable in strengthening the impact of product quality on loyalty. Customers who are satisfied with product quality are more likely to make repeat purchases and recommend the product to others, thereby strengthening their loyalty to the brand. Sun & Wang (2021) emphasized that good product quality creates a positive experience that increases customer satisfaction, which ultimately strengthens their emotional attachment to the brand. This finding emphasizes that companies need to focus on improving product quality as a primary strategy in retaining loyal customers.

Theoretically, these results support the customer satisfaction theory and customer loyalty model which states that customer satisfaction is a key element in forming loyalty. Practically, these findings underline the importance for companies to continuously improve product quality in order to create higher customer satisfaction and build sustainable customer loyalty.

The Influence of Price on Customer Loyalty Through Customer Satisfaction

The test results show that price has a positive and significant effect on customer loyalty through customer satisfaction. In other words, customers who feel that the price they pay is commensurate with the benefits they receive tend to be more satisfied, and this satisfaction ultimately strengthens their loyalty to the company. Wang et al. (2023), Zhang et al (2022) support this finding by stating that prices that are considered fair and transparent by customers can increase their satisfaction, which then has an impact on long-term loyalty.

The results of the study indicate that price indirectly affects customer loyalty through the mediating variable of customer satisfaction. This means that fair and competitive prices can increase customer satisfaction, which ultimately increases loyalty. Some significant price components in this study are as follows: (1) price conformity with competitors, (2) Fixed prices, not experiencing extreme fluctuations, (3) Transparency of cost structure, (4) Benefits obtained are comparable to costs.

Theoretically, these results support the customer value theory and customer satisfaction theory which emphasize that customers' perceptions of price influence their satisfaction, which then forms loyalty. Practically, these findings underscore the importance for companies to set competitive and transparent prices in order to increase customer satisfaction and build sustainable customer loyalty.

Conclusion

Based on the research results and discussions presented above, the following conclusions can be drawn: (1) price influences customer satisfaction, (2) price influences customer loyalty, (3) customer satisfaction influences customer loyalty, (4) service quality influences customer satisfaction, (5) service quality influences customer loyalty, (6) product quality influences customer satisfaction, (7) product quality influences customer loyalty, (8) price influences customer loyalty through customer satisfaction, (9) service

quality influences customer loyalty through customer satisfaction and (10) product quality influences customer loyalty through customer satisfaction.

Reference

- Abdillah, & Hartono. (2017). *Partial Least Square (PLS)*. Penerbit Andi.
- Adil, M. S., & Hamid, K. B. A. (2020). Effect of Teamwork on Employee Performance in High-Tech Engineering SMEs of Pakistan: A Moderating Role of Supervisor Support. *South Asian Journal of Management Sciences*, 14(1), 122–141. <https://doi.org/10.21621/sajms.2020141.07>
- Ahmad, F., Hossain, M. B., Mustafa, K., Ejaz, F., Khawaja, K. F., & Dunay, A. (2023). Green HRM Practices and Knowledge Sharing Improve Environmental Performance by Raising Employee Commitment to the Environment. *Sustainability (Switzerland)*, 15(6). <https://doi.org/10.3390/su15065040>
- Ahmed, T., Khan, M. S., Thitivesa, D., Siraphattada, Y., & Phumdara, T. (2020). Impact of employees engagement and knowledge sharing on organizational performance: Study of HR challenges in COVID-19 pandemic. *Human Systems Management*, 39(4), 589–601. <https://doi.org/10.3233/HSM-201052>
- Al Kashari, Z., & Al Taheri, F. (n.d.). The Role of Knowledge Sharing in Organizational Performance. *American Scientific Research Journal for Engineering*. <http://asrjetsjournal.org/>
- Alfian, R., Yuliana, L., Perkasa, D. H., & Putra, M. F. R. (2025). Hyper-Personalization For Customer Innovativeness, Customer Involvement and Adoption Intention. *Widya Cipta: Jurnal Sekretari dan Manajemen*, 9(1), 69-77.
- Anshori, A. S., Mukhsin, M., Suhendra, I., Haryadi, D., Sultan, U., & Tirtayasa, A. (2022). Journal of Management is Licensed under a Creative Commons Attribution-NonCommercial 4.0 International License (CC BY-NC 4.0) Enrichment. In *Journal of Management* (Vol. 12, Issue 3).
- Ariyanto, D., Wardoyo, P., & Rusdianti, E. (2019). Pengaruh Teamwork Dan Disiplin Kerja Terhadap Kinerja Sdm Dengan Perceived Organizational Support Sebagai Variabel Moderating. *Jurnal Riset Ekonomi Dan Bisnis*, 12(3), 180. <https://doi.org/10.26623/jreb.v12i3.1801>
- Ayu, L., Lukmandono, Syahrani, B., Haffaf S., Fa'iza T. (2024). Pengaruh Kualitas Pelayanan, Harga, dan Kualitas Produk Terhadap Loyalitas Pelanggan Melalui Kepuasan Pelanggan. *Prosiding Seminar Nasional Teknologi Industri Berkelanjutan IV*.
- Bhatti, S. H., Zakariya, R., Vrontis, D., Santoro, G., & Christofi, M. (2021). High-performance work systems, innovation and knowledge sharing: An empirical analysis in the context of project-based organizations. *Employee Relations*, 43(2), 438–458. <https://doi.org/10.1108/ER-10-2019-0403>
- Budi, T. P., Hartiningtyas, Lativa. (2024). Pengaruh Kualitas Pelayanan dan Harga terhadap loalitas pelanggan pada graha air minum isi ulang Tirta Segah Trenggalek melalui kepuasan Pelanggan. *Jurnal Ekonomi Keuangan & Bisnis*, 6(1), 211-228. [Doi 10.47467/alkharaj.v6i1.218](https://doi.org/10.47467/alkharaj.v6i1.218)
- Chrisnaya, N., Alamsyah A. R., Pradiani T. (2023). Pengaruh Kualitas layanan, Kualitas Produk, dan Harga Terhadap Loyalitas Melalui Kepuasan Pelanggan pada AKA Coffee Malang. *JUBIS*. 4(2).
- Dyah Poespita Ernawati, N. L. (2020). The Effect of Knowledge Sharing and Innovation Behavior on The Performance of Batik Entrepreneurs. *Jurnal Manajemen*, 24(2), 194. <https://doi.org/10.24912/jm.v24i2.643>

- Elan, P., Thatok, A., & Hermanto. (2020). PENGARUH KNOWLEDGE SHARING TERHADAP KOMPETENSI DAN KINERJA PUSTAKAWAN PADA DINAS PERPUSTAKAAN DAN KEARSIPAN PROVINSI NUSA TENGGARA BARAT Oleh. *Jurnal Binawakya*, 14(11), 3465–3474.
- Firdaus, A. Y. A., & Yuliana, L. (2024). Pengaruh Reputasi Merek dan Kesadaran Merek Terhadap Keputusan Pembelian Produk Air Minum NU Berkah. *Mutiara: Jurnal Penelitian dan Karya Ilmiah*, 2(6), 84-98.
- Ghani Al-Saffar, N. A., & Obeidat, A. M. (2020). The effect of total quality management practices on employee performance: The moderating role of knowledge sharing. *Management Science Letters*, 10(1), 77–90. <https://doi.org/10.5267/j.msl.2019.8.014>
- Hatta, M., Musnadi, S., & Mahdani. (2017). Pengaruh Gaya Kepemimpinan, Kerjasama Tim dan Kompensasi Terhadap Kepuasan Kerja Serta Dampaknya Pada Kinerja Karyawan PT. PLN (Persero) Wilayah Aceh. *Bisnis Unsyiah*, 1(1), 70–80. <http://www.jurnal.unsyiah.ac.id/JMM/article/view/9268>
- Kadariusman, K., & Bunyamin, B. (2021). The role of knowledge sharing, trust as mediation on servant leadership and job performance. *Management Science Letters*, 1509–1520. <https://doi.org/10.5267/j.msl.2020.12.022>
- Kelemen, T. K., Matthews, S. H., & Breevaart, K. (2020). Leading day-to-day: A review of the daily causes and consequences of leadership behaviors. *Leadership Quarterly*, 31(1). <https://doi.org/10.1016/j.leaqua.2019.101344>
- Khanh Pham TRAN, T. (2021). The Effect of Knowledge Sharing and Innovativeness on Organizational Performance: An Empirical Study in Vietnam. *Journal of Asian Finance*, 8(8), 503–511. <https://doi.org/10.13106/jafeb.2021.vol8.no8.0503>
- Khattak, P., Shah, M., & Hammad, M. (2020). Impact of Knowledge Sharing and Teamwork on Team Performance with the Moderating Role of Supervisor Support. *British Journal of Research*, 7(2), 1–8. <https://doi.org/10.36648/2394-3718.7.2.57>
- Kotler, Philip and Gary Amstrong. (2016). Prinsip-prinsip Pemasaran. Edii13.Jilid 1. Jakarta:Erlangga.
- Kotler, Philip and Kevin Lane Keller, (2016). Marketing Managemen, 15th Edition, Pearson Education,Inc.
- Kurniasih, D., Israwan Setyoko, P., & Setya Saputra, A. (n.d.). Public Health Center Performance during Covid-19 Pandemic: What are The Contribution of Knowledge Sharing, Work Motivation, Transformational Leadership and Organizational Citizenship Behavior? *Journal of Industrial Engineering & Management Research*, 3(6). <https://doi.org/10.7777/jiemar>
- Layaman, L., Harahap, P., Djastuti, I., Jaelani, A., & Djuwita, D. (2021). The mediating effect of proactive knowledge sharing among transformational leadership, cohesion, and learning goal orientation on employee performance. *Business: Theory and Practice*, 22(2), 470–481. <https://doi.org/10.3846/btp.2021.13365>
- Lee, Y. L. A., Malik, A., Rosenberger, P. J., & Sharma, P. (2020). Demystifying the differences in the impact of training and incentives on employee performance: mediating roles of trust and knowledge sharing. *Journal of Knowledge Management*, 24(8), 1987–2006. <https://doi.org/10.1108/JKM-04-2020-0309>
- Ling Anglie Lee, Y., Malik, A., Rosenberger III, P. J., & Sharma, P. (n.d.). *Demystifying the differences in the impact of training and incentives on employee performance: Mediating roles of trust and knowledge sharing*.
- Maini, Y.-, & Tanno, A. (2021). Pengaruh Beban Kerja, Teamwork Dan Kepemimpinan Terhadap Kepuasan Kerja Dan Kinerja Pegawai (Studi Kasus Pada Bappeda Kota

- Payakumbuh). *Jurnal BONANZA: Manajemen Dan Bisnis*, 2(1), 31–50.
<https://doi.org/10.47896/mb.v2i1.360>
- Mazidah, A., & Laily, N. (2020). Pengaruh knowledge sharing terhadap perilaku inovatif, kinerja karyawan. *Jurnal Ilmu Dan Riset Manajemen*.
- Mcewan, D., Ruissen, G. R., Eys, M. A., Zumbo, B. D., & Beauchamp, M. R. (2017). The effectiveness of teamwork training on teamwork behaviors and team performance: A systematic review and meta-Analysis of controlled interventions. *PLoS ONE*, 12(1). <https://doi.org/10.1371/journal.pone.0169604>
- Meher, J. R., & Mishra, R. K. (2022). Examining the role of knowledge sharing on employee performance with a mediating effect of organizational learning. *VINE Journal of Information and Knowledge Management Systems*, 52(2), 205–223.
<https://doi.org/10.1108/VJIKMS-04-2020-0056>
- Na-Nan, K., Saribut, S., & Sanamthong, E. (2019). Mediating effects of perceived environment support and knowledge sharing between self-efficacy and job performance of SME employees. *Industrial and Commercial Training*, 51(6), 342–359. <https://doi.org/10.1108/ICT-01-2019-0009>
- Olan, F., Ogiemwonyi Arakpogun, E., Suklan, J., Nakpodia, F., Damij, N., & Jayawickrama, U. (2022). Artificial intelligence and knowledge sharing: Contributing factors to organizational performance. *Journal of Business Research*, 145, 605–615. <https://doi.org/10.1016/j.jbusres.2022.03.008>
- Pakpahan, D. H., & Sambung, R. (2022). The impact of knowledge sharing on employee performance at Palangka Raya's health college. *International Journal of Research in Business and Social Science* (2147- 4478), 11(5), 273–281.
<https://doi.org/10.20525/ijrbs.v11i5.1858>
- Purwanto, A., Purba, J. T., Bernarto, I., & Sijabat, R. (2021). Effect Of Management Innovation, Transformational Leadership, And Knowledge Sharing On Market Performance Of Indonesian Consumer Goods Company. *Jurnal Aplikasi Manajemen*, 19(2), 424–434. <https://doi.org/10.21776/ub.jam.2021.019.02.18>
- Riana, I. G., Aristana, I. N., Rihayana, I. G., Wiagustini, N. L. P., & Abbas, E. W. (2020). High-performance work system in moderating entrepreneurial leadership, employee creativity and knowledge sharing. *Polish Journal of Management Studies*, 21(1), 328–341. <https://doi.org/10.17512/pjms.2020.21.1.24>
- Rinayanti Pelealu, D. (2022). The Effect Of Knowledge Management System And Knowledge Sharing On Employee Performance And Loyalty. In *Indonesian Interdisciplinary Journal of Sharia Economics (IIJSE)* (Vol. 5, Issue 1).
- Rohim, A., & Budhiasa, I. G. S. (2019). Organizational culture as moderator in the relationship between organizational reward on knowledge sharing and employee performance. *Journal of Management Development*, 38(7), 538–560.
<https://doi.org/10.1108/JMD-07-2018-0190>
- Sàadah, N., & Rijanti, T. (n.d.). *International Journal Of Social And Management Studies (IJOSMAS) The Role of Knowledge Sharing , Leader-Member Exchange (LMX) on Organizational Citizenship Behavior and Employee Performance : An Empirical Study on Public Health Center of Pati 1, Pati 2 and Trangkil in Central Java*.
- Sabilla, E. F. N., & Yuliana, L. (2025). Pengaruh Brand Awareness dan Brand Reputation terhadap Keputusan Pembelian Produk Merek Wardah. *Jurnal Manajemen dan Bisnis Madani*, 7(1), 29–43.
- Salsabila, R. Z., Yuliana, L., & Diandra, D. (2025). Pengaruh Brand Familiarity Dan Perceived Quality Terhadap Brand Credibility (Studi Kasus Merek Skintific). *Jurnal Manajemen dan Bisnis Madani*, 7(1), 44–57.

- Sani Abdullahi, M., Raman, K., Adebola Solarin, S., Ahmed, U., Rahma Shehu, U., & Nashehu, H. (2023). Knowledge sharing behaviour on employee performance: a mediating role of employee engagement among teaching staff of Malaysian private universities. In *Int. J. Business Information Systems* (Vol. 44, Issue 4).
- Sanosra, A., Hakim, A. R., Cahyono, D., Qomariah, N., & Thamrin, M. (2022). Role Of Knoledge Sharing and Leadership Style In Improving Employee Performance with Work Culture As An Intervening Variable. *Universitas Brawijaya. Journal of Applied Management (JAM)*, 20(1), 920–937. <https://doi.org/10.21776/ub.jam.2022.020>
- Setiaputri, A. R., & Ferdian, A. (2020). Pengaruh Motivasi dan Knowledge Sharing terhadap Kinerja Karyawan pada PT Telkom Prima Citra Certifia. *Jurnal Manajemen Pendidikan Dan Pelatihan*, 4(2).
- Singh, S. K., Mazzucchelli, A., Vessal, S. R., & Solidoro, A. (2021). Knowledge-based HRM practices and innovation performance: Role of social capital and knowledge sharing. *Journal of International Management*, 27(1). <https://doi.org/10.1016/j.intman.2021.100830>
- Son, T. T., Phong, L. B., & Loan, B. T. T. (2020). Transformational Leadership and Knowledge Sharing: Determinants of Firm's Operational and Financial Performance. *SAGE Open*, 10(2). <https://doi.org/10.1177/2158244020927426>
- Sugiyono. (2019). *Metode Penelitian Kuantitatif, Kualitatif R & D*. Alfabeta.
- Tamsah, H., Ansar, Gunawan, Yusriadi, Y., & Farida, U. (2020). Training, knowledge sharing, and quality of work-life on civil servants performance in Indonesia. *Journal of Ethnic and Cultural Studies*, 7(3), 163–176. <https://doi.org/10.29333/ejecs/514>
- Tripathi, D., Priyadarshi, P., Kumar, P., & Kumar, S. (2021). Does servant leadership affect work role performance via knowledge sharing and psychological empowerment? *VINE Journal of Information and Knowledge Management Systems*, 51(5), 792–812. <https://doi.org/10.1108/VJIKMS-10-2019-0159>
- Yandini, N. I., Rangkuti, F. (2023). Pengaruh Kualitas Pelayanan, Kualitas Produk, dan Harga Terhadap Loyalitas Pelanggan Dengan Kepuasan Pelanggan Sebagai Variabel Intervening. *Jurnal Ilmiah Hospitality* 807, 12(2).
- Yas, H., Alkaabi, A., Albaloushi, N. A., Al Adeedi, A., & Streimikiene, D. (2023). THE IMPACT OF STRATEGIC LEADERSHIP PRACTICES AND KNOWLEDGE SHARING ON EMPLOYEE'S PERFORMANCE. *Polish Journal of Management Studies*, 27(1), 343–362. <https://doi.org/10.17512/pjms.2023.27.1.20>
- Yuniawan, A., & Udin, U. (2020). The Influence of Knowledge Sharing, Affective Commitment, and Meaningful Work on Employee's Performance. In *International Journal of Economics and Business Administration: Vol. VIII* (Issue 3).
- Zada, S., Khan, J., Zada, M., Saeed, I., & Jun, Z. Y. (2023). Does Servant Leadership Enhance Employee Creativity and Performance? Mediating Role of Knowledge Sharing and Moderating the Role of Self-Efficacy. *Journal of Organizational and End User Computing*, 35(1). <https://doi.org/10.4018/JOEUC.321656>
- Zulkifli, Z., Purwati, A. A., Renaldo, N., Hamzah, Z., & Hamzah, M. L. (2023). Employee performance of Sharia Bank in Indonesia : The mediation of organizational innovation and knowledge sharing. *Cogent Business and Management*, 10(3). <https://doi.org/10.1080/23311975.2023.2273609>