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## THE IMPACTS OF FACILITIES AND SERVICE QUALITY ON CUSTOMER SATISFACTION AT PUSKESMAS WONOSARI II

Parwidia Puput Nurita<sup>1</sup>, Rr. Chusnu Syarif Diah Kusuma<sup>2</sup>

<sup>1,2</sup>Department of Business and Finance, Faculty of Vocational Studies, Universitas Negeri Yogyakarta, 55281, Indonesia

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### ABSTRACT

*This study aimed to examine: (1) the effect of facilities on patient satisfaction at the PUSKESMAS (Health Center Technical Service Unit) Wonosari II; (2) the effect of service quality on patient satisfaction at the health unit; and (3) the combined effect of facilities and service quality on patient satisfaction at the unit. The present study employed a quantitative method with an ex post facto approach, utilizing questionnaires and documentation for data collection. The population consisted of all residents of Gunungkidul Regency who had accessed services at Puskesmas Wonosari II. Data were analyzed by means of descriptive analysis, prerequisite tests, and hypothesis testing. The findings of the study indicated that : (1) there was a positive and significant effect of X1 on Y, with a correlation value ( $r_{xy}$ ) of 0.787 and a coefficient of determination ( $R^2_{xy}$ ) of 0.619; (2) there was a positive and significant effect of X2 on Y, with a correlation value ( $r_{xy}$ ) of 0.457 and a coefficient of determination ( $R^2_{xy}$ ) of 0.209; and (3) there was a positive and significant combined effect of X1 and X2 on Y, with a correlation value ( $R_{y(1,2)}$ ) of 0.803 and a coefficient of determination ( $R^2_{y(1,2)}$ ) of 0.645.*

## 1. Introduction

Health is a basic human need that has a major impact on various aspects of life. According to Law of the Republic of Indonesia Number 23 of 1992, health refers to optimal physical, mental, and social conditions, allowing individuals to be more active socially and economically. Comprehensive understanding and attention to health can improve the quality of life. Therefore, maintaining health seems to be a long-term investment for individuals and society. The central and regional governments strive to provide health infrastructure in accordance with the policies stipulated in the Law of the Republic of Indonesia Number 36 of 2009 concerning Health.

Then, health facilities become an integral part of fulfilling basic health rights. Based on Republic of Indonesia Regulation Number 47 Article 11 of 2016 concerning Health Service Facilities, district/city governments are required to provide at least one health center in each sub-district. The establishment of a health unit should be based on some aspects such as service needs, population, area, and accessibility thus allowing all levels of society to visit it. Health centers are expected to become professional health service institutions focusing on

improving quality, being innovative, and meeting patient needs and satisfaction (Radito, 2014).

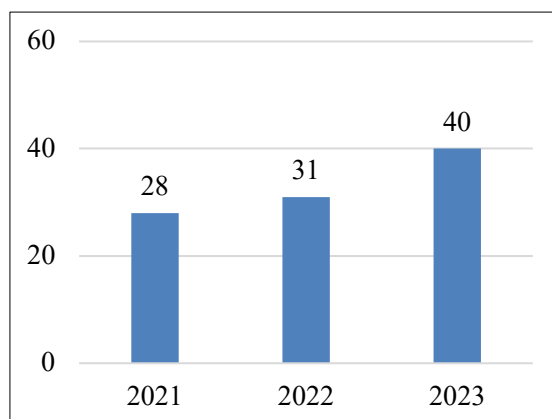
Gunungkidul Regency is the largest area in the Special Region of Yogyakarta Province, covering an area of 1,431.42 km<sup>2</sup> or around 45.69% of the province. This regency is inhabited by 747,161 people, with an average population density of 503.02 people/km<sup>2</sup>. From 2020 to 2022, the Life Expectancy Rate of Gunungkidul Regency has always been below the average of that of the Special Region of Yogyakarta. In 2022, the rate reached 74.23%, placing this regency in fourth place out of five regencies in DIY (BPS Indonesia, 2024). This condition somehow needs concerns from the government to improve community welfare and design better strategies to meet the expectations and needs of the society

According to Arianto (2018), service quality is the ability to meet needs, standards, and timeliness in meeting customer expectations. Quality service is able to provide satisfaction to service users. Meanwhile, satisfaction, according to Kotler (2016), is measured by customer opinion after comparing the performance or results received with their expectations. On the other hand, dissatisfaction will encourage patients to have complaints regarding the services received, which reflects the mismatch between expectations and the patient's actual experience of health services.

Based on the results of observations at the Gunungkidul Regency Health Center UPT, it was found that Puskesmas Wonosari II experienced a significant increase in patient complaints. Although this Health Center has achieved *Paripurna* (Excellent) accreditation, this does not guarantee the satisfaction of all patients with the services provided. It is known that the facilities at Puskesmas Wonosari II are considered inadequate to provide services to patients. Several problems are seen, such as, examination rooms that have not been able to maintain privacy properly so that personal information between patients and health workers has the potential to be heard by others. Then, limited waiting space causes patient discomfort because of minimal air circulation. In addition, there is a queue of patients because the registration and drug collection service areas have not been separated, even though ideally these two services are in different areas with sufficient number of bench for people to wait. At last, the limited parking space made visitors to park their vehicles on the side of the road and others had to share with guests of the Wonosari Village Hall.

Patients also complained about the quality of service at the dental care unit where those who had been queuing for a long time could not receive service due to equipment damage. The registration officers were unfriendly while interacting with patients, especially in the way they communicated. The queue was also too long, with a registration waiting time that could reach more than an hour because the online registration system was not in use, so patients had to physically queue. In addition, complaints were submitted regarding the lack of explanation of service procedures, especially for referral letter services that were not differentiated from general patients, which ultimately caused waiting times to become longer. The following is the number of patient complaints at UPT Puskesmas Wonosari II.

**Figure 1.** The number of Patients' Complaint at Puskemas Wonosari II



The histogram above shows an increase in the number of patient complaints from 2021 to 2023. According to Lesmana (2021), complaints submitted by patients are an indicator of dissatisfaction with health services. According to Oktaviani et al. (2024), in providing quality services, health centers must consistently maintain service quality standards with adequate facilities. Tjiptono (2016) explains that facilities include physical infrastructure that must be available before services are provided, and each facility plays an important role in facilitating service delivery and increasing patient satisfaction. The goal is to meet patient expectations and needs, which will ultimately increase their satisfaction.

Based on the explanation above, several problems that can be identified are an increase in the number of patient complaints over the past three years, limited facilities, and low quality of service that leads to patient dissatisfaction. Analysis of patient satisfaction is important because the results can be used as a basis for consideration for decision making, measurement, and continuous improvement for Puskesmas Wonosari II. Therefore, further research is needed on "The Impacts of Facilities and Service Quality on Customer Satisfaction at Puskesmas Wonosari II".

## 2. Method

In this study, the quantitative method with an ex post facto approach was employed. Data were collected through survey and documentation. Validity and reliability tests for the instruments were tried out at Puskesmas Karangmojo II with the consideration that they have the same characteristics. The results are considered valid when the correlation value ( $r_{\text{count}} > r_{\text{table}}$ ) and the value is positive with ( $\text{sig } \alpha = 0.05$ ), and  $r_{\text{table}}$  0.361 was obtained. It is shown that there are 8 valid items while 1 item is invalid. Meanwhile, the facility variable consists of 9 valid statement items and the service quality variable contains 14 valid statement items and 1 invalid item. Based on the reliability test, the Cronbach Alpha value of the facility variable is 0.808, the service quality variable is 0.803 and the patient satisfaction variable is 0.802 indicating that all variables are declared reliable. The data analysis technique used is data analysis through descriptive analysis, classical assumption testing and hypothesis testing.

The population in this study involved patients who used health services in January - July 2024. Non-probability with a purposive sampling method was used in this study. Based on the calculation, the number of samples taken is 100 respondents.

### 3. Results and Discussion

#### 3.1 Results

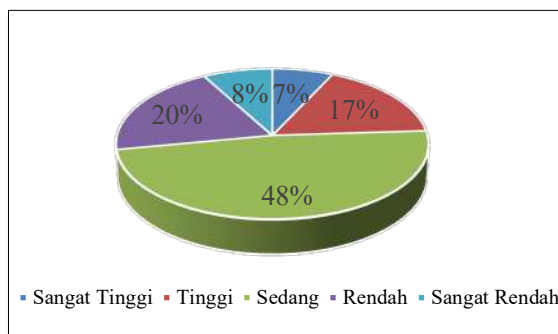
The results of the analysis show that the highest value is 35.00 and the lowest value is 24.00, with a mean value of 31.20, a median of 31.00, and a standard deviation of 2.20. These data are then presented in the form of a frequency table in Table 1 below.

**Table 1.** Frequency Distribution of Patients' Satisfaction

No	Interval	Frequency
1	20 -21	0
2	22 – 23	0
3	24 - 25	1
4	26 – 27	7
5	28 – 29	6
6	30 – 31	52
7	32 - 33	15
8	34 - 35	19
Total		100

Information on Table 1 is then shown in the pie chart below.

**Figure 2.** Pie Chart of Patient Satisfaction Level



The pie chart above shows that the aspect of patient satisfaction tends to be in the moderate category (48%).

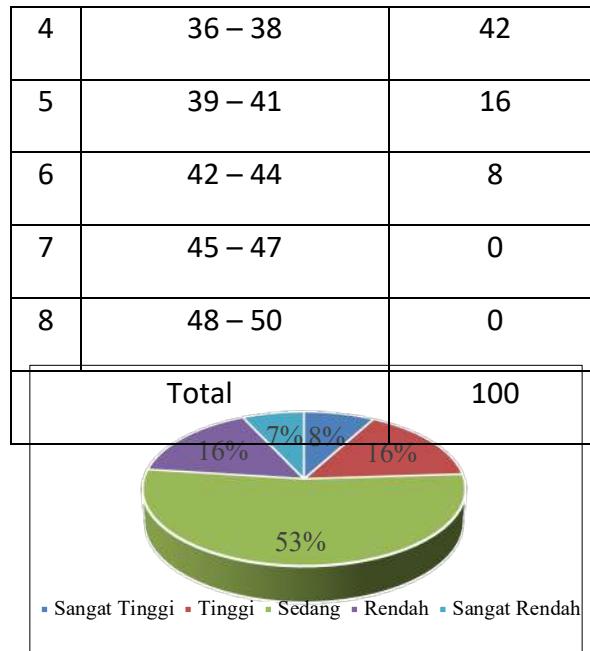
#### Facility

The results of the analysis show that the highest value is 43.00, and the lowest value is 27.00, with a mean value of 36.35, a median of 36.00, and a standard deviation of 3.32. The data are then presented in the form of a frequency table listed in Table 2.

**Table 2.** Frequency Distribution of the Aspect of Facility

No	Interval	Frequency
1	27 – 29	4
2	30 – 32	5
3	33 – 35	25

The  
then shown in  
**Figure 3** Pie  
Puskesmas Facility



information in Table 2 is  
the pie chart below.

Chart of Patient

The pie chart above shows that the tends to be in the Puskemas Facility moderate category (48%).

### Service Quality

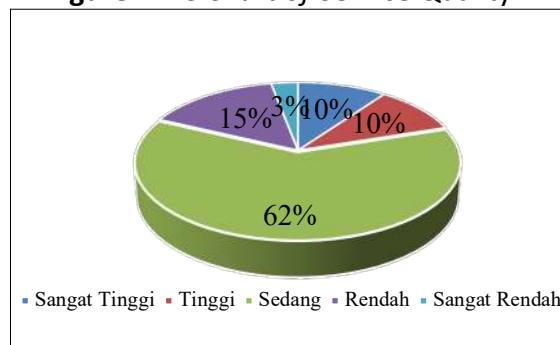
The results of the analysis show that the highest value is 66.00, and the lowest value is 47.00. Meanwhile, the mean is 56.73, the median is 56.00, and the standard deviation is 3.20. The data is presented in the form of the following frequency table:

**Table 3** Frequency Distribution of the Aspect of Service Quality

No	Interval	Frequency
1	47 - 49	2
2	50 – 52	3
3	53 - 55	13
4	56 – 58	62
5	59 – 61	10
6	62 – 64	7
7	65 - 67	3
8	68 – 70	0
Total		100

The information in Table 3 is then illustrated in the form of a pie chart presented in Figure 4 below.

**Figure 4** Pie Chart of Service Quality



Based on the pie chart above, it shows that the service quality variable tends to be in the moderate category, namely (62%).

### **The Effects of Facility on Patient Satisfaction**

Based on the results of simple regression analysis, X1 has a positive and significant effect on Y. The coefficient of determination ( $R^2_{x1y}$ ) of 0.619 represents that facilities have an influence on Patient Satisfaction of 61.9% while 38.1% is influenced by other factors. Research conducted by Netriadi et al. (2021) supports this finding, which shows that facilities have a positive and significant effect on patient satisfaction. If Puskesmas can provide facilities according to patient needs, this will have an impact on increasing the number of visits. Adequate facilities in health services play an important role in determining the level of patient satisfaction. In the context of health services, facilities include physical infrastructure, medical equipment, and environmental comfort, such as cleanliness and accessibility. When the facilities provided meet patient needs, they tend to feel more comfortable and satisfied with the services provided. Furthermore, good facilities not only contribute to patient satisfaction but also boost their trust to the health institutions. Satisfied patients tend to recommend services to others and return for treatment in the future. Therefore, it is important for health management to conduct periodic evaluations of existing facilities and make necessary improvements to meet patient expectations.

### **The Effects of Service Quality on Patient Satisfaction**

Based on the results of simple regression analysis, X2 has a positive and significant effect on Y. The coefficient of determination ( $R^2_{x1y}$ ) of 0.209 means that Service Quality has an effect on Patient Satisfaction by 20.9%, while 79.1% is influenced by other factors. Research by Sari (2020) supports this finding as it shows that there is a positive and significant effect of service quality on patient satisfaction. Good service quality is closely related to patient satisfaction, thus encouraging the Health Center to continue to provide the best service. This allows the Health Center to better understand the expectations and needs of visitors, so that it can increase their satisfaction. Service quality covers various aspects, such as the skills and attitudes of medical personnel, speed of service, and effective communication between patients and health workers. When patients receive quality service, they tend to feel satisfied and believe that their needs are being met well. Therefore, it is important for health management to continue to improve the quality of service by participating medical training and developing more efficient systems.



### **The Effects of Facilities and Service Quality on Patient Satisfaction**

Based on the results of multiple regression analysis, X1 and X2 simultaneously have a positive and significant effect on Y. The coefficient of determination ( $R^2_{xy}$ ) of 0.645 means that Facilities and Service Quality simultaneously have an effect on Patient Satisfaction of 64.5%, while 35.5% is influenced by other factors. Research by Monim (2022), Widia Sari & Siska (2023), and Oktaviani et al. (2024) supports this finding. It was found that that facilities and service quality have a positive and significant effect on patient satisfaction. In addition to increasing patient satisfaction, improving facilities and service quality at the Health Center also contributes to improving public health and welfare, strengthening the health system, and creating a sustainable positive impact. The combination of good facilities and excellent service quality can create an environment that supports a positive experience for patients. Therefore, it is important for health institutions to pay attention to both aspects simultaneously. Improving the quality of service and adequate facilities will create a better experience for patients, which in turn can increase loyalty and trust.

### **3.2 Discussion**

The results of the study show that the level of patient satisfaction was in the moderate category, with an average value of 31.20, a median of 31.00, and a standard deviation of 2.20. This phenomenon can be explained through several analytical factors. First, this result may be due to variations in patient perceptions of the quality of services and facilities received. Some patients may have realistic expectations according to the health center facilities, while others have higher expectations because they compare services with other health facilities. Demographic factors, such as age, education, and previous experience with health services, can indeed influence perceptions of satisfaction.

Besides, the concentration of data in the moderate category indicates partial success in meeting patient needs, but has not reached the optimal level. This can occur because there are still gaps in the implementation of services, such as a lack of skilled medical personnel or limitations of certain facilities. For example, if the health center experiences a shortage of medical equipment or inadequate waiting rooms, this can reduce patient comfort, even though basic services have been met. Thus, these results highlight the need for improvement in the management of facilities and human resources.

In terms of facilities, the mean value is 36.35 with the highest frequency in the interval 36–38 indicates that most patients feel that the facilities are sufficient for their needs. However, the standard deviation of 3.32 indicates a disparity in perception among patients. This imbalance may be caused by differences in accessibility or conditions of facilities in various health center areas. For example, patients who get better facilities (such as a comfortable waiting room or more complete medical equipment) tend to give more positive assessments than patients who face limited facilities. This situation indicates that the distribution of resources was not fully equal, leading to inconsistent experiences for patients.

Service quality, with a mean value of 56.73 and a standard deviation of 3.20 show that the majority of patients are quite satisfied with the competence and attitude of medical personnel. However, human factors, such as communication skills and the empathy shown by medical personnel, are critical factors that influence satisfaction. When medical personnel are able to interact effectively and show empathy, patients tend to feel appreciated, which has a positive impact on satisfaction levels. Conversely, the merely

transactional communication can lead to negative perceptions, even though technically the service has met the standards.

Simultaneously, the influence of facilities and service quality of 64.5% on patient satisfaction indicates that these two aspects complement each other. When facilities are adequate, medical personnel can provide more optimal services, and patients feel more comfortable. Conversely, inadequate facilities can limit the effectiveness of services even though medical personnel have worked optimally. This shows that efforts to improve facilities must be carried out hand in hand with the development of service quality. If one aspect is neglected, the positive impact on patient satisfaction will be limited.

The results of this study indicate the importance of a systemic approach in health service management. Health centres must be able to identify patient needs specifically and sustainably. Ensuring that facilities and medical personnel training are well managed may lead to real improvements. It is also important to truly address patient needs and create a consistent experience, so patient satisfaction levels may increase.

#### 4. Conclusion

- a. The results of the study show a positive and significant influence between X1 on Y with a value of ( $r_{xy}$ ) of 0.787 and a value of ( $R^2_{xy}$ ) of 0.619. This means that the facility contributes to patient satisfaction by 61.9%, while 38.1% is influenced by other factors.
- b. The results of the study show a positive and significant influence between X2 on Y with a value of ( $r_{xy}$ ) of 0.457 and a value of ( $R^2_{xy}$ ) of 0.209. This means that service quality influences patient satisfaction by 20.9%, while 79.1% is influenced by other factors.
- c. The results of the study show a positive and significant influence between X1 and X2 simultaneously on Y with a value of ( $r_{xy}$ ) of 0.803 and a value of ( $R^2_{xy}$ ) of 0.645. This shows that the influence of both aspects is 64.5%, while 35.5% is influenced by other factors.

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# The Influence of Service Quality and Customer Value on Household Customer Satisfaction PDAM Tirta Handayani Gunungkidul

Lugman Hakim Indartiawan<sup>1</sup>

<sup>1</sup>Department of Business and Finance, Faculty of Vocational, Universitas Negeri Yogyakarta, 55281, Indonesia

ARTICLE INFO	ABSTRACT
<p><b>Article history:</b> Received Received in revised form Accepted Available online</p> <p><b>Keywords:</b> Service quality, customer value, customer satisfaction</p>	<p>This study aimed to 1) analyze the influence of service quality on household customer satisfaction at PDAM Tirta Handayani, 2) analyze the influence of customer value on household customer satisfaction at PDAM Tirta Handayani, and 3) analyze the joint influence of service quality and customer value on household customer satisfaction at PDAM Tirta Handayani. This study employed a causal associative approach using quantitative methods. The population consisted of household customers of PDAM Tirta Handayani. The sampling technique used was quota sampling, with a total sample of 140 respondents. Data collection was conducted using closed-ended questionnaires, and the research instruments were tested for validity and reliability. Classical assumption tests performed were normality, linearity, multicollinearity, and heteroscedasticity tests. Data analysis was conducted using simple and multiple linear regression models. The results showed that: 1) service quality had a positive and significant influence on household customer satisfaction at PDAM Tirta Handayani Gunungkidul (46.2%); 2) customer value had a positive and significant influence on household customer satisfaction at PDAM Tirta Handayani Gunungkidul (52.9%); and (3) service quality and customer value jointly had a positive and significant influence on household customer satisfaction at PDAM Tirta Handayani Gunungkidul (57%).</p>

## 1. Introduction

The availability of clean water for all society is key in efforts to improve public health and maintain environmental sustainability. The National Medium-Term Development Plan (RPJMN) 2020-2024 emphasizes the government's commitment to achieving equitable access to safe drinking water and proper sanitation. According to data from the Central Statistics Agency, the achievement rates for access to safe drinking water and proper sanitation do not meet the government's targets in the National Medium-Term Development Plan (RPJMN) for 2020-2024, which are 100% access to safe drinking water and 90% access to proper sanitation. There is a gap of 8.28% in access to safe drinking water and 7.64% in access to proper sanitation that has not yet been achieved. From 2020 until 2023, the increase in access to safe drinking water was only 1.51% and the increase in access to proper sanitation was only 2.83%. By looking at the average annual increase, the target of 100% access to safe drinking water and 90% access to proper sanitation as per the RPJMN 2020-2024 will not be achieved.

Efforts to improve access to drinking water and sanitation services can be carried out, among other ways, through the construction of piped water networks. The piped water network delivers clean water to the community through pipe connections directly integrated into homes. The piped

water network provides a source of quality water that is easily accessible and available when needed. One of the companies that manages the piped water network in every region of Indonesia is Perusahaan Daerah Air Minum (PDAM). PDAM is a regional-owned enterprise that manages clean water services covering district/city areas.

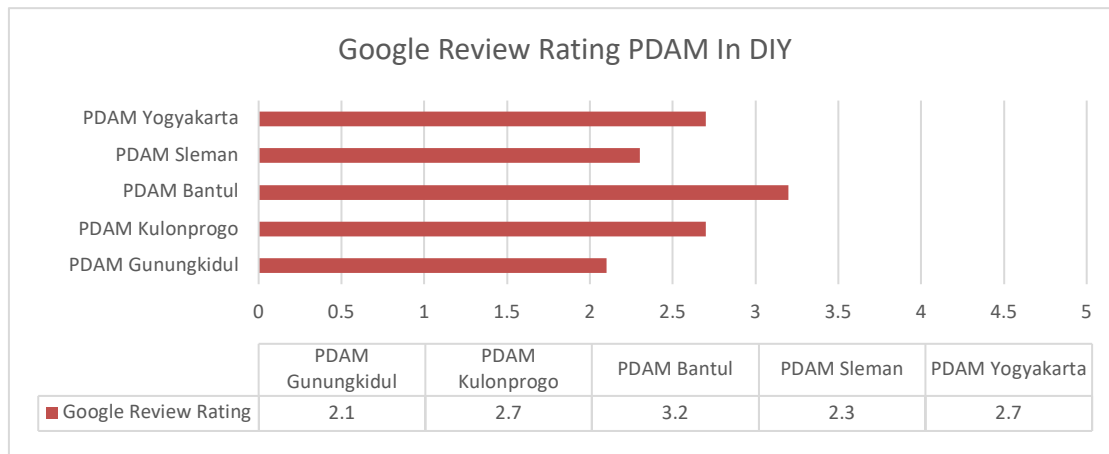
According to data from the Ministry of Public Works and Spatial Planning, the piping network in Indonesia is managed by PDAM, which is spread across almost every district with a total of 393 PDAM. PDAM manages water resources according to the potential and needs of each region. The low achievement of piped water networks in Indonesia is also due to the low coverage of PDAM services. The Special Region of Yogyakarta Province has the lowest percentage with a service coverage of 15%, with 675,069 residents served out of a total of 4,559,906 residents.

The low coverage of PDAM services in the Special Region of Yogyakarta province indicates that the piping network has not yet reached many communities. The issues with PDAM services include hill areas that are difficult to reach, the use of wells as water sources, and limited investment funds. In addition, there is pollution of raw water sources indicated by the presence of lime, garbage, and a yellowish murky color due to the iron content in the water. Pollution in open water sources can affect the quality of clean water supplied to the community.

PDAM manages water resources tailored to the needs and characteristics of the service area. Piped water is a source of clean water managed by PDAM or similar companies. Public also uses rainwater collected in open ponds. Protected well water is clean water obtained from underground with a protected well circumference. Based on data from the Central Statistics Agency, Gunungkidul Regency is the area with the highest use of piped water systems, with a percentage of 29.60%. The use of rainwater as a drinking water source at 29% is the highest among other regions. As many as 17.49% of households using protected wells indicate that groundwater availability in Gunungkidul Regency is lower compared to other regions.

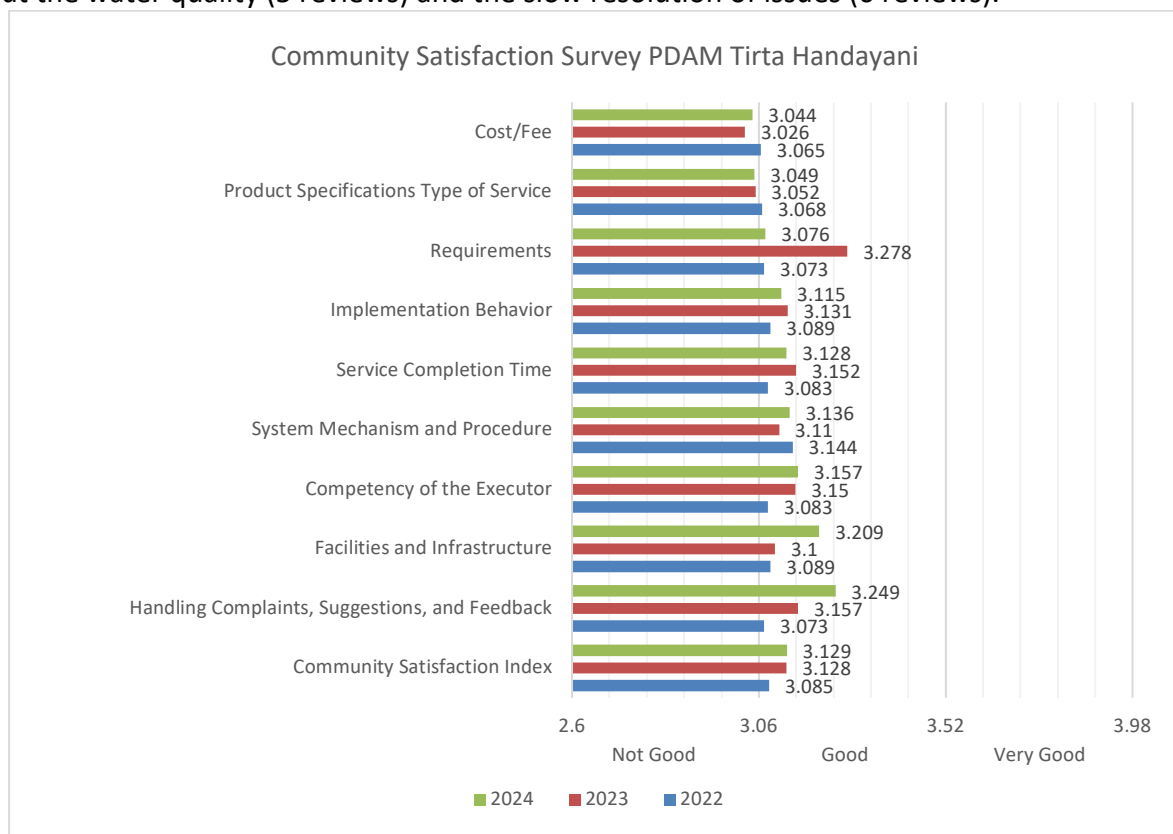
PDAM Tirta Handayani is a regional-owned enterprise under the supervision of the Gunungkidul Regency local government. PDAM Tirta Handayani has the task of managing drinking water in order to improve the welfare of the community, which involves social, health, and public service aspects. PDAM Tirta Handayani provides clean water services to 57,519 household customers. Indirectly, household customers become the main focus of service because they are the most numerous. Maximal service will make customers perceive the service as more than just a necessity. Customers will achieve satisfaction if their expectations regarding a service can be met.

Customer satisfaction is the comparison between the public's perception of the actual reality and an individual's expectations or the difference between customer expectations of the service and the service provided by the service provider [1]. Customers who feel dissatisfied with the PDAM Tirta Handayani service expressed complaints through the Instagram and left negative reviews on Google. Figure 1 shows the average google reviews received by each PDAM in the DIY Province. PDAM Gunungkidul received the lowest average review with a score of 2,1.



**Fig. 1.** Google Review Rating PDAM in DIY

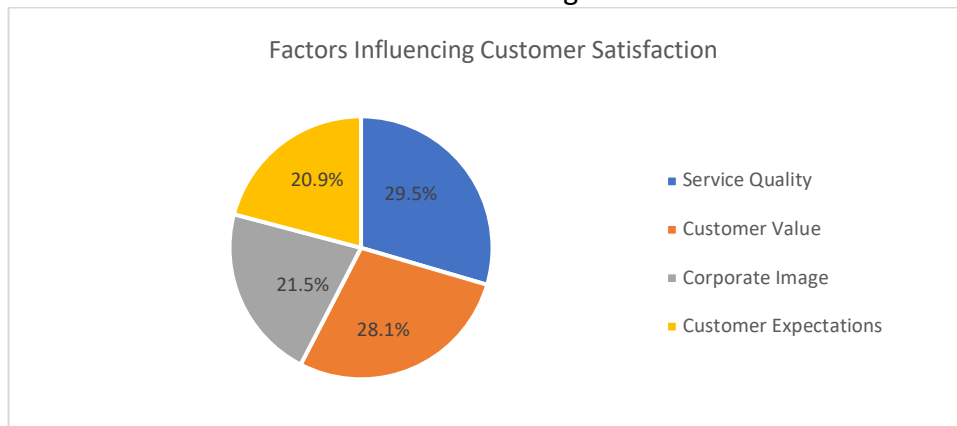
PDAM Tirta Handayani customers expressed complaints through Google reviews. PDAM Tirta Handayani received 131 reviews with an average rating of 2,1 stars, predominantly one-star reviews (88 reviews). Water distribution and billing have become the main issues that customers complain about. Customers complain about water distribution issues such as no water flow and low water pressure (54 reviews). Customers also complain about the discrepancy between the bills that need to be paid and the clean water service received (20 reviews). In addition, customers also complained about the water quality (5 reviews) and the slow resolution of issues (6 reviews).



**Fig. 2.** Community Satisfaction Survey PDAM Tirta Handayani

Figure 2 shows the community satisfaction survey conducted by PDAM Tirta Handayani from 2022 to 2024, with the results indicating an increase in the community satisfaction index in the category of good quality service. However, in the aspect of product specifications for the type of service, there was a decrease in value of 0.019. The cost/tariff element also experienced a decrease in value of 0.021. Both elements have the lowest values and fall into the poor category in 2023 and 2024. The cost/tariff element measures customer satisfaction regarding the alignment of the

expenses incurred with the services received. The element of product specifications and types of services measures customer satisfaction regarding the quality, quantity, and continuity of water from PDAM Tirta Handayani. Although the community satisfaction survey results are categorized as good, there are still elements of service that are lacking.



**Fig. 3.** Factors Influencing Customer Satisfaction

Pre-research surveys were conducted on 30 customers of PDAM Tirta Handayani to identify the factors influencing customer satisfaction. According to Ali et al., the factors that influence customer satisfaction are service quality, customer value, company image, and customer expectations [2]. Based on the pre-survey results, the factor that most influences customer satisfaction at PDAM Tirta Handayani is service quality, with a percentage of 29.5%. Quality service is considered more capable of providing satisfaction to customers. Customer value is also the most influential factor on customer satisfaction at PDAM Tirta Handayani, with a percentage of 28.1%. Customers feel more satisfied if the perceived benefits are greater than the service costs.

As a clean water service provider, it is important for PDAM Tirta Handayani to maintain service quality. According to Kotler & Keller, service quality is the overall features and characteristics of a product or service that affect performance in meeting needs both directly and indirectly [3]. The research conducted by Dewi & Mursyidah on the influence of service quality on customer satisfaction at the Regional Drinking Water Company (PDAM) Delta Tirta. The research shows that the service quality variables with dimensions of tangible evidence, responsiveness, reliability, assurance, and empathy simultaneously have an impact on customer satisfaction [4].

Customers of PDAM Tirta Handayani are complaining about the quality of service provided by the company. The clean water service from PDAM Tirta Handayani is unreliable due to frequent issues with water distribution. Customers also complain about damaged water meters and pipe leaks. PDAM Tirta Handayani is also slow in responding to complaints or issues raised by customers. The issue of water not flowing that occurs outside of PDAM Tirta Handayani's working hours cannot be resolved immediately.

Preliminary research was conducted on 30 customers of PDAM Tirta Handayani. As many as 73% of customers feel that PDAM Tirta Handayani was slow in responding to complaints and issues that arise. 80% of customers felt there were issues in the water distribution process. The clean water service from PDAM Tirta Handayani was unreliable because it often did not flow without notice. Then, 70% of customers complained about the murky water quality, which contained lime and had a chlorine smell.

According to Sweeney & Soutar, good service can provide added value in the form of emotional value, social value, cost value, and performance value [5]. Emotional value is shown from the customers' positive feelings when using a service. Customers feel social value if the service used can provide a sense of pride. Cost value indicates that the service can provide benefits greater than the money spent by the customer. Service performance that exceeds the main function will provide

added value for customers. According to research conducted by Ristia & Marlien on the influence of customer experience, customer value, and service quality on customer satisfaction at Albania Coffee Boja, the influence of customer value on customer satisfaction is based on performance value, price value, and benefit value [6].

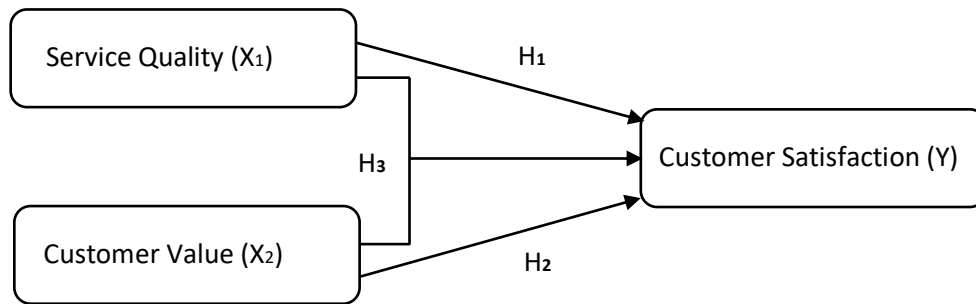
The poor cost/tariff element from PDAM Tirta Handayani indicates that the expenses incurred by customers do not match the services received. Unsatisfactory service can occur due to issues with water distribution, slow problem resolution, and water quality. These issues can diminish the added value of PDAM Tirta Handayani's clean water services. The value of the service that cannot be felt can affect customer satisfaction. Customers only receive the main function of a service without any additional benefits.

The results of the pre-survey research conducted on 30 customers of PDAM Tirta Handayani indicate that customer satisfaction has not been achieved. 80% of customers feel reluctant to pay the subscription fee for the services received. The clean water service, which often encounters problems, makes the service cost feel expensive. 67% of customers feel that the costs incurred to pay the water bill do not match the benefits received. The benefits of clean water are not maximized because the water quality does not meet drinking water standards, making it unsuitable for consumption. 70% of customers feel that the costs incurred do not match the performance of the clean water service from PDAM Tirta Handayani. The performance of the clean water service, which often faces issues such as low water flow, water outages, and pipe leaks, makes the service performance suboptimal. Based on the background and problem description above, it is important to conduct further research on the influence of service quality and customer value on customer satisfaction.

## **2. Method**

This research employed a quantitative method with a questionnaire to collect primary data. This type of research is causal associative, which allows for the testing of hypotheses regarding the cause-and-effect relationship between service quality, customer value, and customer satisfaction. Closed questionnaires were chosen as the data collection method because they allow for the objective measurement of research variables and more in-depth data analysis. This research was conducted at PDAM Tirta Handayani Gunungkidul. The population of this study was all household customers of PDAM Tirta Handayani in Gunungkidul Regency, totaling 57,519 individuals. The sample calculation considers the number of question items, and it was determined that the ideal sample size for this study is 140 respondents.

The research instruments were tested for validity and reliability. Classical assumption tests were performed, including normality, linearity, multicollinearity, and heteroscedasticity tests. Data analysis was conducted using simple and multiple linear regression models. The test was conducted to determine the significance and direction of the relationship between the independent variable and the dependent variable. Hypothesis testing was performed using t-tests and f-tests. The research framework and research hypothesis are explained as follows.



**Fig 4.** research framework

Based on the background of the study and conceptual framework presented, the hypotheses of this study are formulated as follows.

- H1 : Service Quality has a positive and significant effect on the Household Customer Satisfaction of PDAM Tirta Handayani
- H2 : Customer Value has a positive and significant impact on Household Customer Satisfaction at PDAM Tirta Handayani
- H3 : Service Quality and Customer Value together have a positive and significant impact on Household Customer Satisfaction at PDAM Tirta Handayani.

### 3. Results and Discussion

#### 3.1. Results

##### 3.1.1. Descriptive Statistical Analysis

**Table 1.** Descriptive Statistical Analysis

Variable	N	Min.	Max.	Mean	Std. Deviation
Service Quality	140	26	40	32,62	3,094
Customer Value	140	21	32	25,64	2,482
Customer Satisfaction	140	25	40	31,96	3,184

Source: Data Analysis Result, 2024

Service quality variable has a maximum value of 40 and a minimum value of 26. The service quality variable has homogeneous data, as evidenced by the mean value of 32,62 being greater than the standard deviation of 3,094.

Customer value variable has a maximum value of 32 and a minimum value of 21. The customer value variable has homogeneous data, as evidenced by the mean value of 25,64 being greater than the standard deviation of 2,482.

Customer satisfaction variable has a maximum value of 40 and a minimum value of 25. The customer satisfaction variable has homogeneous data as evidenced by the mean value of 31,96 being greater than the standard deviation of 3,184.

##### 3.1.2. Categorization of Variables

**Table 2.** Categorization of Service Quality Variable

Interval	Category	Frequency	Percentage
$37,3 < X$	Very High	10	7%
$34,2 < X \leq 37,3$	High	29	21%
$31,1 < X \leq 34,2$	Medium	46	33%
$27,9 < X \leq 31,1$	Low	53	38%
$X \leq 27,9$	Very Low	2	1%



<b>Total</b>	140	100%
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Source: Data Analysis Result, 2024

Table 2 shows that the service quality of PDAM Tirta Handayani falls into the very low category at 1% (2 customers), low at 38% (53 customers), moderate at 33% (46 customers), high at 21% (29 customers), and very high at 7% (10 customers).

**Table 3.** Categorization of Customer Value Variable

Interval	Category	Frequency	Percentage
$29,4 < X$	Very High	13	9%
$26,9 < X \leq 29,4$	High	32	23%
$24,4 < X \leq 26,9$	Medium	40	29%
$21,9 < X \leq 24,4$	Low	52	37%
$X \leq 21,9$	Very Low	3	2%
<b>Total</b>		140	100%

Source: Data Analysis Result, 2024

Table 3 shows that the customer satisfaction levels of PDAM Tirta Handayani are categorized as very low at 2% (3 customers), low at 37% (52 customers), moderate at 29% (40 customers), high at 23% (32 customers), and very high at 9% (13 customers).

**Table 4.** Categorization of Customer Satisfaction Variable

Interval	Category	Frequency	Percentage
$36,7 < X$	Very High	11	8%
$33,6 < X \leq 36,7$	High	37	26%
$30,4 < X \leq 33,6$	Medium	38	27%
$27,2 < X \leq 30,4$	Low	46	33%
$X \leq 27,2$	Very Low	8	6%
<b>Total</b>		140	100%

Source: Data Analysis Result, 2024

Table 4 shows that customer satisfaction at PDAM Tirta Handayani falls into the very low category at 6% (8 customers), low at 33% (46 customers), moderate at 27% (38 customers), high at 26% (37 customers), and very high at 8% (11 customers).

### 3.1.3. Instrument Testing

Validity testing is an instrument test conducted to determine the ability of a questionnaire as a research measurement tool. An instrument is said to be valid if it accurately measures the variables it is supposed to measure. Based on the results of the validation test, there are 2 invalid question instruments. Invalid questions will be removed and not used for the research.

Reliability testing is conducted to ensure that the instruments used in the research can provide data that corresponds to reality and can be trusted. The reliability of the instrument is assessed based on its consistency in producing the same answers even when measurements are repeated. The reliability test shows that the instruments for each research variable are above 0.8 with a good reliability level interpretation. Thus, it can be concluded that the instruments are reliable and can be used for research.

#### 3.1.4. Classic Assumption Test

##### 3.1.4.1. Normality Test

The normality test is conducted to determine whether the data from the variable is normally distributed or not. This study uses the Kolmogorov-Smirnov normality test technique using SPSS Statistics 27 for Windows software.

**Table 5.** Normality Test

Testing	Significance Value	Explanation
Unstandardized Residual	0,200	Normal

Source: Data Analysis Result, 2024

Based on the results of the Kolmogorov-Smirnov test, the Asymp. Sig. (2-tailed) value is 0.200. The significance value of  $0.200 > 0.05$  indicates that the data is normally distributed.

##### 3.1.4.2. Linearity Test

The linearity test is conducted to determine whether the relationship between the independent variable and the dependent variable is linear or non-linear. The linearity test can be conducted using the test for linearity with the SPSS Statistics 27 for Windows software.

**Table 6.** Linearity Test

Variable	Sig. Linearity	Explanation
Service quality	0,000	Linier
Customer Value	0,000	Linier

Source: Data Analysis Result, 2024

Based on the results of the linearity test, the sig. linearity value of the service quality variable and customer value is 0.000. The sig. linearity value is less than 0.05, so it can be concluded that the relationship between the service quality variable and customer value has a linear relationship with the dependent variable, which is customer satisfaction.

##### 3.1.4.3. Multicollinearity Test

The multicollinearity test is conducted to determine the significance of the relationship between independent variables. This study uses the Variance Inflation Factor (VIF) test to determine the existence of a relationship between the independent variables of service quality and customer value.

**Table 7.** Multicollinearity Test

Variable	Tolerance	VIF	Explanation
Service quality	0,433	2,308	Non Multicollinearity
Customer Value	0,433	2,308	Non Multicollinearity

Source: Data Analysis Result, 2024

Based on Table 7, the test results show a tolerance value of 0.433 greater than 0.1 and a VIF value of 2.308 less than 10, so it can be concluded that there is no multicollinearity problem in the regression model.

#### 3.1.4.4. Heteroscedasticity Test

The heteroscedasticity test is conducted to determine the occurrence of unequal residual variance from one observation to another in a linear regression model.

**Table 8.** Heteroscedasticity Test

Variable	Sig.	Explanation
Service quality	0,204	Non Heteroscedasticity
Customer Value	0,728	Non Heteroscedasticity

Source: Data Analysis Result, 2024

Table 8 shows the results of the glejser test for both variables, namely service quality 0.204 and customer value 0.728. The value obtained from the test is greater than 0.05. It can be concluded that there is no heteroscedasticity in the regression model.

#### 3.1.5. Hypothesis Test

##### 3.1.5.1 Simple Linear Regression Analysis

**Table 9.** Simple Linear Regression Analysis Service Quality

Variable	Unstandardized B	t	Sig.	Explanation
Contans	9,143	4,345	0,000	
Service Quality	0,700	10,894	0,000	Sig.

Source: Data Analysis Result, 2024

$$Y = 9,143 + 0,700X$$

Based on the results of the regression equation, it can be determined that if the quality of service is considered constant, the customer satisfaction value is 9.143. The positive value of the regression coefficient indicates that the relationship between the service quality variable and customer satisfaction is positive. A positive relationship means that if the quality of service increases by one unit, customer satisfaction will increase by 0.700.

**Table 10.** Simple Linear Regression Analysis Customer Value

Variable	Unstandardized B	t	Sig.	Explanation
Contans	8,042	4,169	0,000	
Customer Value	0,933	12,458	0,000	Sig.

Source: Data Analysis Result, 2024

$$Y = 8,042 + 0,933X$$

Based on the results of the regression equation, it can be determined that if the customer value is considered constant, then the customer satisfaction value is 8.042. The positive value of the regression coefficient indicates that the relationship between the customer value variable and

customer satisfaction is positive. A positive relationship direction means that if the customer value increases by one unit, customer satisfaction will increase by 0.933.

### 3.1.5.2 Multiple Linear Regression Analysis

**Table 11.** Multiple Linear Regression Analysis

Variable	Unstandardized B	t	Sig.	Explanation
Contans	5,352	2,680	0,008	
Service Quality	0,314	3,586	0,000	Sig.
Customer Value	0,638	5,847	0,000	Sig.

Source: Data Analysis Result, 2024

$$Y = 5,352 + 0,314X_1 + 0,638X_2$$

The constant value of 5.352 means that if the quality of service and customer value remain constant. It can be concluded that service quality and customer value affect customer satisfaction by 5.352. The positive direction of the relationship means that if the quality of service increases by one unit, customer satisfaction will increase by 0.314. The positive direction of the relationship means that if the customer value increases by one unit, customer satisfaction will increase by 0.638.

The service quality variable has a t-value of 3.586 and a significance value of 0.000. The t-statistic value of 3.586 is greater than the t-table value of 1.656 and the significance value of 0.000 is less than 0.05. The customer value variable has a t-statistic value of 5.847 and a significance value of 0.000. The calculated t-value of 5.847 is greater than the table t-value of 1.656 and the significance value of 0.000 is less than 0.05.

**Table 12.** Anova Table

ANOVA <sup>a</sup>					
Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	802.650	2	401.325	90.703	.000 <sup>b</sup>
Residual	606.171	137	4.425		
Total	1408.821	139			
a. Dependent Variable: Y					
b. Predictors: (Constant), X2, X1					

Source: Data Analysis Result, 2024

Based on the analysis results in Table 12, an f value of 90.703 and a significance value of 0.000 were obtained. The calculated f value of 90.703 is greater than the table f value of 3.06 and the significance value of 0.000 is less than 0.05.

### 3.1.5.3 Coefficient of Determination Result

The coefficient of determination is used to measure the extent of the influence of all independent variables on the dependent variable in the regression model. The coefficient of determination (R<sup>2</sup>) measures the ability of the regression model to explain the variation in the dependent variable.

**Table 13.** Determination Coefficient Result of X1 on Y

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,680 <sup>a</sup>	,462	,458	2,343

2	,728 <sup>a</sup>	,529	,526	2,192
3	0,755	0,570	0,563	2,103

Source: Data Analysis Result, 2024

The coefficient of determination value of X1 against Y is 0.462, which means that Service Quality (X1) contributes to Customer Satisfaction (Y) by 46.2%. The coefficient of determination value of X2 against Y is 0.529, so it can be concluded that Customer Value (X2) contributes to Customer Satisfaction (Y) by 52.9%. The coefficient of determination value of X1 and X2 against Y is 0.570, which means it can be concluded that Service Quality (X1) and Customer Value (X2) contribute to Customer Satisfaction (Y) by 57%, while the remaining 43% is influenced by other variables not explained in this study.

### 3.2. Discussion

#### 3.2.1. The Influence of Service Quality on Household Customer Satisfaction of PDAM Tirta Handayani

The results of the t-test show that the service quality variable has a t-value of 3.586 and a significance value of 0.000. The calculated t-value of 3.586 is greater than the table t-value of 1.656 and the significance value of 0.000 is less than 0.05. Therefore,  $H_0$  is rejected and  $H_a$  is accepted, thus meaning the service quality variable significantly affects the customer satisfaction variable. The simple linear regression test shows a coefficient of determination value of 0.462, which means that service quality contributes to customer satisfaction by 46.2%, while the remaining 53.8% is influenced by other variables not explained in this study. The value of the simple linear regression coefficient is positive, indicating that the relationship between the service quality variable and customer satisfaction is positive. Based on the results of the statistical test, it can be concluded that service quality has a positive and significant effect on the satisfaction of PDAM Tirta Handayani household customers, thus the first hypothesis in this study can be accepted.

Research by Putera et al. shows that service quality has a positive and significant impact on customer satisfaction [7]. Meanwhile, Manap et al. explain that service quality is the suitability or practicality of a product or service to meet customer needs and achieve service objectives. Service providers strive to meet customer needs and desires, as well as distribute goods accurately to fulfill customer expectations. Service providers strive to meet the needs and desires of customers and distribute goods accurately to fulfill customer expectations [8].

Based on the categorization of the service quality variable, 38% of respondents fall into the low category, which means that some customers feel that the service quality of PDAM Tirta Handayani is not optimal. The quality of service is said to be suboptimal if there are service features that do not meet the standards. A deficiency in one service feature can make customers feel dissatisfied. Customers will easily feel dissatisfied if the service they receive does not meet their expectations.

The service of PDAM Tirta Handayani is not yet optimal, as indicated by research instrument number 9 regarding information on obstacles and improvements in clean water service, which received the lowest score of 422. The concern of PDAM Tirta Handayani towards customers in providing information about clean water distribution issues is still not optimum. The lack of communication from the company regarding the obstacles in the distribution of clean water makes customers feel disappointed. PDAM Tirta Handayani can improve communication and access to information regarding clean water supply issues to customers. PDAM Tirta Handayani can improve one service feature to enhance the overall quality of its services.

#### 3.2.2. The Influence of Customer Value on Household Customer Satisfaction of PDAM Tirta Handayani

The results of the t-test show that the customer value variable has a t-statistic value of 5.847 and a significance value of 0.000. The t-statistic value of 5.847 is greater than the t-table value of 1.656 and the significance value of 0.000 is less than 0.05. Therefore  $H_0$  is rejected and  $H_a$  is accepted, thus meaning the customer value variable significantly affects the customer satisfaction variable. The simple linear regression test shows a coefficient of determination value of 0.529, which means that customer value contributes to customer satisfaction by 52.9%, while the remaining 47.1% is influenced by other variables not explained in this study. The value of the simple linear regression coefficient is positive, indicating that the relationship between the customer value variable and customer satisfaction is positive. Based on the results of the statistical test, it can be concluded that customer value has a positive and significant effect on household customer satisfaction at PDAM Tirta Handayani, so the second hypothesis in this study can be accepted.

The results of this study are in line with previous research conducted by Ristia & Marlien which showed a positive and significant influence of customer value on customer satisfaction. Customer value includes good service, the price paid, and the quality of product information, which all influence customer satisfaction [6]. According to Manap et al., customer value is the evaluation made by customers of the overall benefits received in relation to the costs incurred and the sacrifices that need to be made to obtain those benefits. An emotional bond occurs between customers and service providers when the product used adds value [8].

Based on the categorization of customer value variables, 37% of respondents fall into the low category, which means that some customers feel that the customer value of PDAM Tirta Handayani has not been maximally perceived by the customers. Customer value has not been achieved if the service is only meant to meet basic needs. Customers expect the services they receive to have values beyond the primary utility of the service. Customer value is also influenced by the efforts made by customers to obtain the service. If the effort made is greater than the value obtained, then the customer will feel dissatisfied. Customers will feel satisfied if they receive more value with minimal effort.

Customers feel that the value of PDAM Tirta Handayani's service is not optimal, especially in terms of cost. Research instrument number 15 regarding the cost of clean water services not being proportional to the benefits of clean water received the lowest score, which is 411. PDAM Tirta Handayani customers have not yet perceived the value of the cost because the expenses incurred to obtain clean water do not match the benefits felt. The clean water service from PDAM Tirta Handayani can provide benefits to customers, but customers are still concerned about the costs that need to be incurred. Customer value can be maximized by PDAM by evaluating the price of clean water services without reducing quality and other added values. If it is not possible to change the price value, PDAM Tirta Handayani can focus on other added values so that customers are willing to subscribe at the set cost.

### *3.2.3. The Influence of Service Quality and Customer Value on Household Customer Satisfaction at PDAM Tirta Handayani*

The results of the F statistical test show a calculated f value of 90.703 and a significance value of 0.000. The calculated f value of 90.703 is greater than the table f value of 3.06 and the significance value of 0.000 is less than 0.05. Therefore  $H_0$  is rejected and  $H_a$  is accepted, thus meaning that the service quality variable and customer value variable significantly influence the customer satisfaction variable together. The value of the multiple linear regression coefficient is positive, indicating that the relationship between the service quality variable and customer value towards customer satisfaction is positive. The coefficient of determination is 0.570, which means that service quality and customer value contribute to customer satisfaction by 57%, and the remaining 43% is influenced

by other variables not explained in this study. Based on statistical tests, it can be concluded that the quality of service and customer value together have a positive and significant impact on the satisfaction of PDAM Tirta Handayani household customers, so the third hypothesis in this study can be accepted.

This research is in line with previous studies conducted by Yulita et al., which show that service quality and customer value have a positive and significant impact on customer satisfaction [9]. According to Manap et al., customer satisfaction is largely influenced by the factors of service quality and customer value. Companies that provide higher quality products or services tend to gain customer trust. Customer trust in the products or services provided by the company indicates that customer satisfaction has been achieved. Customer value can determine customer satisfaction because the benefits obtained from a product or service will bring satisfaction to the customer [8].

Based on the categorization of customer satisfaction variables, 33% of respondents fall into the low category. Low customer satisfaction indicates that some customers feel dissatisfied with the overall clean water services from PDAM Tirta Handayani. The level of customer satisfaction can be determined by the service's ability to meet customer expectations. Customer satisfaction is also influenced by the overall benefits that customers receive when using the service. Customers will feel satisfied when the service received provides higher value compared to the effort required to obtain the service.

The quality of service and customer value have been proven to have a positive and significant impact on customer satisfaction. Customers will feel satisfied if the products and services they receive are of good quality. Products or services that can provide value beyond merely meeting needs will make customers feel satisfied. Customer value can determine customer satisfaction because the benefits obtained from a service will provide satisfaction to customers. Then, quality service can meet the needs or even exceed customer expectations. Next, Value-added services can provide additional benefits beyond their primary functions and uses. At last, the combination of quality services and added value in a product or service aimed at customers will create customer satisfaction.

#### **4. Conclusions**

- 4.1. There is a positive and significant influence of service quality on the satisfaction of household customers of PDAM Tirta Handayani Gunungkidul. The quality of service has an influence on customer satisfaction (46.2%).
- 4.2. There is a positive and significant influence of customer value on the satisfaction of household customers of PDAM Tirta Handayani Gunungkidul. Customer value has an influence on customer satisfaction (52.9%).
- 4.3. There is a positive and significant joint effect of service quality and customer value on the satisfaction of household customers of PDAM Tirta Handayani Gunungkidul. The quality of service and customer value together have an impact on customer satisfaction (57%).

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## PosPay Application Services as an Alternative Digital Wallet (E-Wallet) (Case Study at PT Kantor Pos Wonosari Branch)

Salsha Alvia Parwati <sup>1</sup>, Fajar Wahyu Nugroho <sup>2,\*</sup>

<sup>11</sup> Student Department of Finance and Business, Faculty of Vocational, Yogyakarta State University, 55281, Indonesia

<sup>2</sup> Staff Department of Finance and Business, Faculty of Vocational, Universitas Negeri Yogyakarta, 55281, Indonesia

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### ABSTRACT

This study aims to examine the influences of (1) efficiency on the service quality of PosPay application, (2) increase in effectiveness on the service quality of PosPay application, and (3) efficiency and effectiveness on the service quality of PosPay application. PosPay application is an innovation from Indonesian Post Company/PT Pos Indonesia which provides digital financial transaction services. This study used a quantitative correlational method. Data were collected by distributing questionnaires to 357 respondents who used the PosPay application at the Wonosari branch Post Office. The results of the questionnaire were then processed to obtain data on the influence of efficiency and effectiveness on service quality. Then, multiple linear regression analysis techniques was used in hypothesis testing. The results of the study show that efficiency has a positive and significant influence on service quality with a t-value of 8.249 and a significance level of 0,000. Then, effectiveness has a positive and significant influence on service quality with a t-value of 4.563 and a significance of 0,000. At last, (3) efficiency and effectiveness simultaneously affect service quality by 41% with F count 123.118 > F table 3,02. Based on the result, it is concluded that the lack of system efficiency and effectiveness will affect the service quality of the PosPay application service.

## 1. Introduction

Technological advances have brought about major changes in various aspects of life, including in the field of financial technology. One significant innovation in this field is the digital wallet (E-Wallet), which offers convenience, speed, and security in transactions. According to Fadhilah et al. (2021), a digital wallet is a platform that allows users to make financial transactions online using cards or electronic money as a payment method. This technology continues to develop along with the increasing need for people to interact practically and safely.

E-Wallet is the main choice for many modern people because of its efficiency in facilitating the transaction process without time and place constraints. Services such as Mobile Banking has been designed to make it easier for users to access banking services, allowing them to make transactions

<sup>1\*</sup> Corresponding author.

E-mail address: [salshaalvia.2020@student.uny.ac.id](mailto:salshaalvia.2020@student.uny.ac.id)

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at any time without having to visit the bank in person (Prihatiningrum & Zuraidah, 2022). One of e-Wallet innovations, PosPay which is developed by PT Pos Indonesia (Persero), has an important role in supporting digital transformation in the financial sector.

PT Pos Indonesia (Persero) is a state-owned company that focuses on courier, logistics, and financial transaction services in Indonesia. As part of its strategic move, the company launched the PosPay application to provide access to digital financial services based on Giro Pos accounts. This application is designed to allow users to carry out various financial transactions, including bill payments, credit purchases, and fund transfers (Salsabilla, 2022). Sarmini (2023) in Kusdardjanto & Khoirotunnisa's (2023) explains PosPay's advantages is its ability to be accessed anytime and anywhere, offering features that are useful for users.

However, despite offering many benefits, the PosPay application faces significant challenges. Based on the researchers' observation on Google Play Store, this application has the lowest rating compared to other E-Wallet applications with an average rating of 3.5. The table below shows the rate of some e-wallet apps commonly used in Indonesia.

**Table 1. The Number of Downloads and Rate of E-Wallet Applications in 2024**

No	App Name	Number of Downloads	Rate
1	DANA	100 M+	4,6
2	OVO	50 M+	3,9
3	ShopeePay	10 M+	4,8
4	GoPay	10 M+	4,6
5	PosPay	5 M+	3,5

Source: <https://play.google.com>

This shows that although PosPay has the potential to develop as a prominent e-wallet, various technical and non-technical issues make it difficult to compete with other more popular applications. This challenge is not only reflected in the low ratings and number of downloads nationally but is also seen in performance at the branch level.

Wonosari Post Office Branch is one of the branches under Regional 4 of PT Pos Indonesia. It is currently facing problems in terms of PosPay users. The table below shows the rank of the number of PosPay users in Regional 4.

**Table 2 . PosPay Users in Regional 4**

No	Branch	Office Name	Total
1.	55000	Kp . Yogyakarta	10,556
2.	55700	Bantul Village	9,057
3.	55600	Kp. Wates	4.256
4.	55800	Kp. Wonosari	3.354

(Source: The Web of Dashboard Fintech SBU Digital Platform POS, 2024)

Problems faced by the Wonosari Branch Post Office are related to the low number of users and the high number of complaints about PosPay. These are reflected in in management the system that should support the need users optimally. Therefore, the efficiency and effectiveness aspects of the system are key factors in determining the success of this application in the digital financial services market. Application efficiency can be measured from how well the system utilizes hardware and software resources to provide optimal performance (Syam, 2020) . Meanwhile, effectiveness is the ability of a system to achieve desired goals by minimizing obstacles (Dua & Rumerung, 2022).

Digital transformation does not only focus on operations, but also includes strategies and continuous innovation to improve the company's competitiveness (Nugroho & Kusuma, 2023) . Digital infrastructure, including data management, hardware, software, and security, are the main foundation that allows applications such as PosPay to function optimally. Without an efficient and effective system, financial applications will not be able to compete in an increasingly competitive market.

Based on the various challenges faced, this study aims to determine the effect of system efficiency and effectiveness on the quality of PosPay application services. By focusing on the problems that occur at the Wonosari Branch Post Office, this study is expected to provide relevant recommendatio for PT Pos Indonesia to improve user experience, application performance, and competitiveness in the digital wallet market.

## **2. Method**

This study uses a quantitative correlational approach. According to Sahir (2022) quantitative research uses statistics in processing its data. While correlation analysis is a statistical technique used to identify the relationship between two quantitative variables in a population or sample (Pratama et al., 2023) . Quantitative research focuses on objective results obtained through questionnaires, which are then tested for validity and reliability.

### **2.1. Research Setting**

This research was conducted at the Wonosari Branch Post Office 55800 which is located in Jl. Brigjen Katamso No.12, Wonosari, Gunungkidul, DI Yogyakarta. It was conducted from August 2024 to September 2024.

### **2.2. Population and Sample**

The population in this study includedall PosPay application users at the Wonosari Branch Post Office, amounting of 3,354 users during the period 2021 to 2024, with a sample of 357 respondents. The sampling technique used was purposive sampling. The criterion of the respondents was, PosPay application users who used it at least once a year.

### **2.3. Data Analysis Techniques**

This study employed descriptive analysis to describe the characteristics of the data, and classical assumption tests including normality tests, multicollinearity tests, heteroscedasticity tests, and linearity tests to ensure the feasibility of multiple linear regression. This regression technique was used in analyzing the effect of efficiency and effectiveness on service quality, supported by hypothesis tests in the form of partial tests (t-tests), simultaneous tests (F-tests), and coefficients of determination ( $R^2$ ). This approach provides a comprehensive understanding of the relationship between variables in the study.

## **3. Results and Discussion**

### **3.1. Results**

Of the total 357 respondents, the PosPay application users in the branch were 51% females and 49% males. Based on age, most users 52% were over 25 years old, 35% of them were 23-25 years

old, and 13% were 17-22 years old. It indicates that PosPay application users tend to come from the adult group. Then in terms of work, the majority of respondents were private company employees with a total of 50%, self-employed 22%, students 15%, and civil servants 13%. It can be inferred that PosPay application is more widely used by private employees. Regarding the frequency of visiting the PosPay application, 59% of respondents accessed PosPay less than 3 times, 25% visit 3-5 times, 10% visit 6-10 times, and 6% visit 10 times in the past year. This shows that most respondents rarely access the PosPay application, with a few using it intensively. Overall, PosPay application users are dominated by women, aged over 25 years, and private employees. Most of them have rarely used the PosPay application in the past year.

### **3.1.1. Classical Assumption Test**

#### **a. Normality Test**

The results obtained in the normality test shows that the Kolmogorov-Smirnov value is 0.596 with an Asymp. Sig value of 0.870. The Asymp. Sig value obtained is greater than 0.05. Based on these results, the data is considered normally distributed. These results are in line with the criteria that indicate that if the significant value exceeds 0.05, the data is considered normally distributed.

#### **b. Multicollinearity Test**

From the results of multicollinearity testing, it can be concluded that both variables, namely efficiency and effectiveness, have a tolerance value of 0.534, and a VIF value of 1.874. The tolerance value is close to 1 and the VIF is below 10 indicating that there is no multicollinearity between the two variables. Thus, these two variables can be used in regression analysis without causing multicollinearity problems.

#### **c. Heteroscedasticity Test**

The test results show that the efficiency and effectiveness variables do not reveal any heteroscedasticity problems. This shows that there is a significance value (Sig.) greater than 0.05 since the value obtained is 0.482. Then, because the effectiveness variable obtained is 0.495, it can be concluded that the data for these variables have met the classical assumptions of regression, so that the regression model can be considered valid without any heteroscedasticity interference.

#### **d. Linearity Test**

Based on the linearity test, there is a relationship between the efficiency and effectiveness variables on the service quality variable which is linear. The Sig. Deviation from Linearity value for efficiency is 0.645 and effectiveness is 0.571. Both of these values have values exceeding the significance level of 0.05. Through this, it can be interpreted that there is no significant error from linearity, so that the conclusion obtained from the relationship between these variables is linear, without any significant interfering factors that affect the relationship.

### **3.1.2 Multiple Linear Regression Analysis**

Based on the results of multiple linear regression tests, the regression equation obtained is  $Y = 23.146 + 0.571 X_1 + 0.440 X_2 + e$ , where Y is service quality,  $X_1$  is efficiency, and  $X_2$  is effectiveness. The constant coefficient (a) is 23.146 with a positive constant value indicating a positive influence from the efficiency and effectiveness variables. It can be interpreted that if efficiency and effectiveness are 0, then the service quality of the PosPay application is 23.1%. The efficiency coefficient is 0.571, showing that the efficiency variable positively affects service quality. This also means that every 1 unit increase in the efficiency variable will increase the service quality variable by 0.57% in this study, thus indicating that other variables are not considered. The effectiveness coefficient is 0.440. This value shows that the effectiveness variable has a positive effect on service quality. The resulting value also indicates that every 1 unit increase in the

effectiveness variable can increase the service quality variable by 0.44% in this study, so other variables are not considered. It also shows that effectiveness has a greater influence than the efficiency variable on service quality.

### 3.1.3 Hypothesis Testing

#### a. Persian Statistical Test (T)

Based on the results of the t-test, there are two variables tested, namely efficiency and effectiveness. The probability value used is 0.05 or 5% while the t table obtained for the t-test is 1.967. The significant value (Sig.) of efficiency is 0.000 <probability 0.05 and the calculated t value is 8.249> t table 1.967, so it can be interpreted that there is an effect of efficiency on service quality. Effectiveness has a significant value (Sig.) of 0.000 <probability 0.05 and a calculated t of 4.563> t table 1.967. It can be concluded that effectiveness affects service quality. In other words, there should be efficiency and effectiveness on service quality or the hypothesis H1 is accepted.

#### b. Simultaneous Statistical Test (F)

The F test in the regression analysis in Table 25 is processed to show the relationship between the three variables studied. There are decision-making criteria using a significance level of 0.05 (5%). From the table above, it can be seen that the calculated F is 123.118, which is greater than F table of 3.02 and the significance level is 0.000 <0.05, so the H0 is rejected. Based on the results obtained, the conclusion is that efficiency and effectiveness have a significant influence on the quality of PosPay application service.

#### c. Coefficient of Determination (R<sup>2</sup>)

The results of the coefficient of determination, (R<sup>2</sup>) value shows that there is a relationship between efficiency and effectiveness and service quality in this study. The Adjusted R Square value is 0.407 which indicates that there is a fairly strong relationship between the dependent and independent variables. The R<sup>2</sup> value is 0.410 which means that 41% of changes in the service quality variable can be explained by the efficiency and effectiveness variables while the remaining 59% may be influenced by other independent variables not included in this study.

### 3.2. Research Limitations

One of the limitations of this study is that it only focuses on Wonosari Branch Post Office. Therefore, the results of this study may not be generally conclusive for all PosPay application users in Indonesia, because geographic and demographic factors can affect user perceptions of the application. The time period of the study is also limited to certain years, so it may not be able to capture changes in user experience in the long term. This can affect the external validity of the research results, if user conditions or needs change over time. Then, this study only considers efficiency and effectiveness as independent variables that affect the quality of PosPay application services. It is possible that other variables, such as security and ease of use also affect service quality but are not included in this study. At last, in this study, data were collected using a questionnaire, which may not fully reflect the actual user experience due to subjective bias in filling out the questionnaire.

### 4. Conclusions

- 1) Efficiency has positive and significant effects on PosPay service quality. This is shown from the t count (8.249) which is greater than t table 1.967 and Sig. 0.000 <0.05. Based on the results of multiple linear regression, it indicates that every 1 unit increase in the efficiency variable will increase the service quality variable by 0.57% in this study, assuming other variables are not considered.

- 2) Effectiveness has positive and significant effects on PosPay service quality. It is shown by the results of t count 4.563 which is greater than t table 1.967 and Sig. 0.000 < 0.05. Based on the multiple linear regression test, the value obtained by each increase of 1 unit in the effectiveness variable can increase the service quality variable by 0.44% in this study, thus showing that other variables are not considered.
- 3) This study also proves that there is a relationship among efficiency, effectiveness, and the quality of PosPay application services, which is shown by the coefficient of determination ( $R^2$ ) value of 0.410, meaning that 41% of changes in service quality can be explained by the variables of efficiency and effectiveness. While the other 59% of changes may be influenced by other independent variables in this study. This conclusion is also supported by the results of the F test which concluded that efficiency and effectiveness simultaneously have a significant effect on the quality of PosPay application services, as evidenced by the calculated F value of 123.118 > F table 3.02 with a significance level of 0.000 < 0.05. Thus, the null hypothesis ( $H_0$ ) is rejected. This clearly shows that efficiency and effectiveness affect the quality services of PosPay app.

### Conflict of Interest

The authors) declare that there is no conflict of interest over the company being researchers regarding the publication of this article. No financial, professional, or personal relationships have influenced the research, analysis, or conclusions presented.

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## *The Influence of E-Wom and Perceived Usefulness on Repurchase Intention through the Mediation of E-Trust in Users of Valbury Apps E-Commerce (A Case Study at PT Valbury Asia Futures Semarang)*

Friska Saskilia<sup>1</sup>, Fajar Wahyu Nugroho<sup>2</sup>,

<sup>1</sup>Student at Department of Finance and Business, Faculty of Vocational Studies, Universitas Negeri Yogyakarta, 55281, Indonesia

<sup>2</sup>Staff at Department of Finance and Business, Faculty of Vocational Studies, Universitas Negeri Yogyakarta, 55281, Indonesia

ARTICLE INFO	ABSTRACT
<p><b>Article history:</b></p> <p>Received</p> <p>Received in revised form</p> <p>Accepted</p> <p>Available online</p> <p>Keywords:</p> <p>E-trust, E-WOM, perceived usefulness, repurchase intention</p>	<p>This study aimed to examine the influences of: (1) e-WOM on repurchase intention, (2) perceived usefulness on repurchase intention, (3) e-WOM on e-trust, (4) perceived usefulness on of e-trust, (5) e-WOM on repurchase intention through the mediation of e-trust, and (6) perceived usefulness on repurchase intention through the mediation of e-trust. This quantitative study employed an explanatory research design. The population was PT Valbury Asia Futures Semarang customers, with a sample size of 90 respondent. Data were collected using questionnaires, and the analysis methods used was multiple linear regression, hypothesis testing, and mediation testing.</p> <p>The finding shows that first E-WOM had a positive and significant influence on repurchase intention. Second, perceived usefulness had a positive and significant influence on repurchases intention. Third, E-WOM had a positive and significant influence on e-trust. Fourth, perceived usefulness had a positive and significant e influence on e-trust. Fifth, E-WOM positively and a significantly influence intention through partial mediation by e-trust. At last, perceived usefulness positively and a significant influence repurchase intention through partial mediation by e-trust.</p>

### 1. Introduction

E-commerce is one of the sectors that has grown rapidly in this digital era for the sake of sustainability of companies. Opportunities to use digital technology make it easier to make transactions through e-commerce platforms, and it provides accessible technologies that allow users to share information and experiences online. However, the ease of using e-commerce does not depend on the technology use but on the experience, trust and value of making repeat purchases (Nugroho et al., 2022).

Repurchase intention is one of the main indicators that reflect the success of a company in

maintaining the loyalty and commitment of its users. According to Kotler & Keller (2016, p.183) repurchase intent reflects the customer's willingness to continue using the e-commerce platform for services provided by the company (Rachmawansyah et al., 2023). According Mulyani et al., (2022) the elements that influence a user's decision to continue a transaction are influenced by e-WOM and perceived usefulness. E-trust or user trust in e-commerce becomes a mediator to maintain the loyalty of its users (Ariyanti, 2021). When users feel that e-commerce is useful for customer needs and can be trusted, repurchase intention becomes a success factor because customers continue to use their services (Safira et al., 2023).

One e-commerce mobile application that has not been widely known to a wide audience, especially in the field of investment is Valbury Apps. Reported by [www.valbury.co.id](http://www.valbury.co.id), Valbury Apps is an application launched in 2022. Based on data from PT Kliring Berjangka Indonesia, Valbury Apps have been downloaded through the playstore and Appstore by 1,272,137 users. The following is the latest data by Kliring Berjangka Indonesia for the 2022 period.

**Tabel 1 . The Most Active data from Kliring Berjangka Indonesia for 2022 Period**

Member Name	Total	Mean	Period	Month Period Year
PT Valbury Asia Futures Semarang	1.272.137	60.578	8	2023
PT Inter Pan Pasitif Futures	556.176	26.485	8	2023
PT Monex Investindo Futures	550.358	26.207	8	2023
PT Bestprofit Futures	51.713	24.626	8	2023
PT Rifan Financindo Berjangka	49.195	23.426	8	2023
PT Trijaya Pratama Futures	477.802	22.752	8	2023
PT Internasional Business Futures	31.159	14.837	8	2023
PT Equityworld Futures	27.940	13.304	8	2023

Source : <https://www.ptkbi.com/our-partner/perdagangan-berjangka-komoditi>



PT. Valbury Asia Futures Semarang, one of the branches of the Valbury Group, developed Valbury Apps e-commerce application. The company seeks to improve its user experience to encourage repurchase intention (Ranata Tape & Kristiyani, 2022). E-WOM has several reviews and recommendations for other users to build user trust. Perceived usefulness is related to the extent to which users feel that Valbury Apps e-commerce provides significant benefits that can facilitate user activities (Maduretno & Junaedi, 2021).

Valbury Apps have been used by thousands of customers for digital investment transactions. However, the high level of competition in the e-commerce industry makes companies face great challenges in maintaining customer loyalty (Hendriyani et al., 2023). Based on PT. Valbury Asia Futures Semarang internal data, the number of active e-commerce users shows a fluctuate trend over the last 3 years, in 2022, 2023, and 2024. The table below shows the customer data for Valbury Apps e-commerce users in 2022 – 2024.

**Tabel 2 Number of E-commerce Customers of PT. Valbury Asia Futures Semarang from 2022 to 2024**

<u>Year</u>	<u>Number</u>	<u>Percentage</u>
2022	423	4,23%
2023	120	1,20%
2024	358	3,58%

**(Source: PT. Valbury Asia Futures Semarang Internal Data)**

The decrease in the number of customers in 2023 is one of the causes or indications of problems in maintaining loyalty. This encourages PT. Valbury Asia Futures to improve the factors that can affect the repurchase intentions of Valbury Apps e-commerce users. E-WOM or electronic word of mouth as an important variable in influencing consumer decisions to do repurchase intention. It also serves as a medium that allows customers to provide reviews or opinions related to products and services online. According Thureau et al. (2004), e-WOM shows both positive and negative statements of consumer experience through the internet that can be accessed by a wide audience. In addition, the effectiveness of e-WOM affects consumer confidence (Verawati, 2023).

Perceived usefulness is another independent variable that will affect consumer decisions on repurchase intention. Perceived usefulness refers to consumers' belief that the mobile application will improve the efficiency and quality of life of its users (Yanti, 2020). Based on research by Adams, Nelson and Todd (1992), perceived usefulness can affect repurchase intention if consumers feel e-commerce provides significant benefits. E-commerce users can easily share their experiences and benefit information as a reference for other users to make purchase decisions (Apsari, 2020).

E-trust in the context of e-commerce refers to consumer trust which includes the security, reliability, and credibility of e-commerce. According to Wongso (2020) e-trust is the basic requirement for conducting online transactions, because of the high risk of conducting online transactions that are prone to hackers. A strong E-trust is able to encourage consumers to recommend goods or services to other consumers, so it will increase repurchase intention (Barkah & Nabila, 2021).

In this study, researchers focused more on the effect of e-WOM and perceived usefulness on repurchase intention through e-trust mediation at PT Valbury Asia Futures Semarang. This study focuses on understanding the factors that can affect consumer loyalty and strategies implemented to improve the performance of e-commerce Valbury Apps through consumer trust in the benefits that

have been obtained.

## **2. Methods**

This study employed the quantitative approach in which the base is on the philosophy of positivism and is used to research on a particular population or sample. The sampling techniques are generally carried out randomly. Meanwhile, the data are collected using research instruments. The data analysis is quantitative or statistical in nature with an aim to test hypotheses (Sugiyono, 2007). The present study employed explanatory design (explanatory research) that examines the relationship between the variables that have been hypothesized (Syahrurum & Salim, 2012).

### **a. Research Setting**

This research was conducted at PT. Valbury Asia Futures Semarang in July- September 2024.

### **b. Population and sample**

Population in this study included customers of PT. Valbury Asia Futures Semarang in 2022, 2023 and 2024 as many as 901 people. Judgmental sampling was used in this study. Subjective samples were done by selecting individuals encountered in the field and according to research criteria to fill out questionnaires. If the individual is willing, they directly became respondents. The number of respondents in this study was 90.

### **c. Data Analysis Techniques**

In this study, researchers used data quality test, namely validity and reliability test. Then, the data analysis technique used was prerequisite test, multiple linear regression analysis and hypothesis test. The prerequisite test consists of a normality test, multicollinearity test, heteroscedasticity test, and linearity test. Meanwhile, the hypothesis test includes F statistical test, T statistical test, and coefficient of determination test and mediation test.

## **3. Results and Discussion**

### **3.1. Results**

As many as 90 customers of PT. Valbury Asia Futures Semarang in 2022, 2023, and 2024 were the respondents of this study. Of the total respondents, it shows that as many as 65.5% were male respondents and the remaining were female (34.5%). In other words, most of the respondents were men. Moreover, there were 15 people (16.7%) in the age group 21 to 25 years, 66 people (73.3%) in the age group of 26 to 50 years, and 9 people (10%) in the age group over 50 years. Then, based on the education level, 30 people (33.3%) were high school education graduates, 16 people were (17.8%) Diploma (D3) graduates, 33 people (36.6%) had Bachelor's (S1/D4) degree, and 11 people (12.3%) had Master (S2) degree. Thus, most customers with the most recent education are Bachelor (S1/D4). Then, based on their professions, 11 people (12.2%) were students, 27 people (30%) worked as employees in private industries, 21 people (23.4%) worked as civil servants, 30 people (33.3%) were entrepreneurs, and 1 person was (1.1%) a nurse.

#### **3.1.1. Prerequisites Analysis**

##### **a. Normality Test**

Based on Kolmogorov-Smirnov test with Monte Carlo significant value, it can be seen that all variables have a significant value  $> 0.05$ . The value of each variable is e-WOM (0.550), perceived usefulness (0.628), repurchase intention (0.492), and e-trust (0.209). Thus, the variable data can be said to be normally distributed.

### **b. Multicollinearity Test**

Based on the results of multicollinearity test, e-WOM with VIF value of  $6.562 < 10$  and tolerance value of  $0.152 > 0.10$ . Perceived usefulness with VIF value of  $5.605 < 10$  and tolerance value of  $0.178 > 0.10$ . And e-trust with VIF value of  $5.740 < 10$  and tolerance value of  $0.174 > 0.10$ . This proves that multicollinearity between variables does not occur.

### **c. Heteroscedasticity Test**

Based on the results of heteroscedasticity Test significant value for variable e-WOM (X1) is 0.578, variable perceived usefulness (X2) is 0.204 and variable E-trust (Z) is 0.191. All three values significantly exceed 0.05. Therefore, the regression model formulated in this study is not heteroscedasticity.

### **d. Linearity Test**

Based on linearity test with Ramsey method where the value of deviation from linearity  $0.000 < 0.05$  and the value of linearity  $0.00 < 0.05$ . Thus, this result gives an indication that there is a linear relationship that has been fulfilled and in line with each variable.

### **3.1.2. Multiple Linear Regression Analysis**

Based on multiple linear regression analysis obtained, the regression equation is  $Y = 1.929 + 0,103x_1 + 0,477x_2 + 0,350x_3 + e$ . The results of the equation indicates that the variable e-WOM positive value is 0.103 with a value of t count (1.558) and a significant value of 0.116. Thus, these results show that e-WOM has an effect that is close to statistically significant on repurchase intention. Perceived usefulness results in a positive value of 0.477 which means that the higher value of perceived usefulness will affect the repurchase intention significantly. Then, e-trust variable results in a positive value of 0.350 with the value of t (6.003) and significant value (0.00), which means the smaller the e-trust will affect the repurchase intention. It can be concluded from the multiple linear regression analysis of the three independent variables that perceived usefulness and e-trust have positive and significant effects on repurchase intention. While e-WOM is close to significant which means it has not shown a strong influence on repurchase intention.

### **3.1.3. Hypothesis Test**

#### **a. Simultaneous Statistical Test (F)**

The results of statistical tests simultaneously show that the F value of the table is 3.95 with a significant value of 0.05. Simultaneous test results obtained F value count of 306.887 with a significant value of 0.00. So that f count (306,887) > F table (3,95). It can be concluded that the variables e-WOM, perceived usefulness, and e-trust are simultaneously positive and significant to repurchase intention in Valbury Apps e-commerce users.

#### **b. Partial Statistical Test (T)**

Partial test results of independent variables have different probability values between 0.05 and the value of t count is smaller than T table, known e-WOM variable with a significant value of  $0.00 < 0.05$  and the value of t count (18.448) < t table (5.561), thus that the variable e-WOM positive

and significant effect on repurchase intention. Perceived usefulness variable with a significant value of  $0.00 < 0.05$  and the value of t count (22.524) < t table (2.468), thus that the perceived usefulness variable has a positive effect partially and significantly on repurchase intention.

**c. Coefficient of Determination ( $R^2$ )**

The value of the coefficient of determination from Adjusted R Square for the independent variable. The coefficient of determination is 0.876 or 87.6% positive. It can be concluded that e-WOM, perceived usefulness, and e-trust variables has positive and significant influences on repurchase intention in Valbury Apps e-commerce users. Then, the remaining 12.4% were influenced by other variables that were not included in this research model.

### 3.1.4. Mediation Test

Intervening variables with causal step method according to Baron and Kenny (1986) in (Africano et al., 2020) has 3 (three) regression equations including full mediation, partial mediation, and unmediated. The e-WOM and e-trust mediation variables has positive effects on repurchase intention. This result is shown by the value of the coefficient of 0.229 and t count of 4.501 and a significant value of  $0.00 < 0.05$ . Meanwhile, e-trust also has a positive and significant effect on repurchase intention with a correlation value of 0.538 and t count of 5.993 and a significant value of  $0.00 < 0.05$ . The value of e-WOM variable coefficient is 0.229 and the value of e-trust mediation coefficient is 0.538. Both show that there is a significant influence on repurchase intention which forms partial mediation.

The perceived usefulness variable positively affects the repurchase intention through e-trust mediation. This result is shown by the coefficient value of 0.540 and t count of 7.802 and a significant value of  $0.00 < 0.05$ . Meanwhile, e-trust also has a positive and significant effect on repurchase intention with a correlation value of 0.418 and t count of 5.908 and a significant value of  $0.000 < 0.05$ . The coefficient of perceived usefulness variable value of 0.540 and the coefficient of e-trust mediator of 0.418 indicate the existence of some perceived usefulness influence on repurchase intention described through e-trust mediation. Thus, perceived usefulness on repurchase intention through e-trust mediation has a significant effect, thus forming partial mediation.

### 3.2. Research Limitations

As this research collected data by means of closed questionnaires, the researchers cannot guarantee the answers given to respondents can represent the respondents' real conditions. The sample of this study was also limited only to customers living in Semarang in 2022 -2024 with a total of 90 respondents. The sample should be taken in the last 5 years and not limited to customers domiciled in Semarang only. The results of the study show that e-WOM and perceived usefulness significantly affect repurchase intention through e-trust mediation by 87,6%. Thus, that the remaining 12.4% is influenced by other factors from variables that are not listed in this study. In addition, this study only covers the effect of e-WOM, perceived usefulness to repurchase intention through e-trust mediation, while there are many other factors that can affect repurchase intention through mediation such as price, quality of service, promotion, and other factors.

### 4. Conclusion

Based on the analysis conducted in this study, it can be concluded that:

- 1) E-WOM has a positive and significant effect on repurchase intention on Valbury Apps e-commerce users. It is shown that the significant value of  $0.00 < 0.05$  with Tcount value of 18.448 and T table of 5.561. This hypothesis indicates that e-WOM has a positive and significant effect on repurchase intention. This also means that e-WOM influences consumer decisions to repurchase intentions on Valbury Apps e-commerce by about 18.4%.
- 2) Perceived usefulness has a positive and significant effect on repurchase intention on Valbury Apps e-commerce users. It is shown that the significant value of  $0.00 < 0.05$  with a value of t count of 22.524 and T table of 2.468. This hypothesis explains that perceived usefulness has a

positive and significant effect on repurchase intention received. This means that perceived usefulness affects the decision to run repurchase intention by about 22.5%.

- 3) E-WOM has a positive and significant effect on E-trust mediation on Valbury Apps e-commerce users. It is shown from the mediation test that the significant value of  $0.00 < 0.05$  with coefficient value  $(0.659) < t \text{ count } (18.529)$ . This hypothesis shows that e-WOM has a significant effect

on accepted E-trust mediation. This means that e-trust as a mediator influences the decision to repurchase intentions on Valbury Apps e-commerce users through e-WOM.

- 4) Perceived usefulness has a positive and significant effect on E-trust mediation directly with a coefficient value of 0.854 < t count of 16.746. E-trust acts as a mediator by showing that the influence of perceived usefulness to repurchase intention is fully increased through the mediation role of e-trust.
- 5) E-WOM through e-trust mediation has a positive and significant effect on repurchase intention as the significant value is smaller than 0.05 with a coefficient value of 0.229 which is smaller than t count of 4.501. This means that the influence of e-WOM on repurchase intention through e-trust mediation has a positive and significant effect so that it forms partial mediation reaching 45%.
- 6) Perceived usefulness through e-trust mediation has a positive and significant effect on repurchase intention that the significant value is smaller than 0.05 with a coefficient value of 0.540 < calculated t value of 0.556. While e-trust also affects the coefficient value of 0.418 and t value of 0.421. This means that e-trust as a mediator fully explains the effect of perceived usefulness on repurchase intention significantly and forms partial mediation.

### Conflict of Interest

The researchers state there is no conflict of interest for personal gain. The researchers only identify and state any circumstances or interests that may be considered to affect the representation or interpretation of the appropriately reported research results.

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## Analysis of the Implementation of Customer Relationship Management (CRM) in Enhancing Customer Loyalty at Sinaran Coffee Klaten

Erizka Khairunnisa Oky Febriana<sup>1</sup>

<sup>1</sup>Department of Business and Finance, Faculty of Vocational, Universitas Negeri Yogyakarta, 55281, Indonesia

ARTICLE INFO	ABSTRACT
<p><b>Article history:</b> Received Received in revised form Accepted Available online</p> <hr/> <p><b>Keywords:</b> Customer Loyalty, Customer Relationship Management (CRM), coffee shop</p>	<p>This research aims to investigate the implementation of Customer Relationship Management (CRM) carried out by Sinaran Coffee in order to increase customer loyalty. This descriptive research employed the qualitative approach. The approach in this study is used because it explains and describes how CRM used by Sinaran Coffee in increasing customer loyalty. This research was conducted in Sinaran Coffee Klaten with two groups of research subjects. Sinaran Coffee's internal management is intended for the Directorate of Business and Marketing and Human Resources and Finance, while Sinaran Coffee's external management is intended for customers. The data collection techniques used were observation, interviews and documentation. The results show that Sinaran Coffee's customer loyalty is reflected in the high frequency of repurchases, resistance to competitors, and the tendency to recommend Sinaran Coffee, which shows that the combination of product quality, positive experience, and good relationships with customers succeeded in building customer loyalty. The implementation of Customer Relationship Management (CRM) at Sinaran Coffee successfully integrates people, processes, and technology to improve the customer experience, although it needs improvements in employee hospitality, service facilities, and information on social media. The implementation of the IDIC Customer Relationship Management (CRM) Model at Sinaran Coffee significantly increases customer loyalty through four main elements, namely Identify, Differentiate, Interact, and Customize, although there are still aspects that need to be improved, such as data collection and interaction quality.</p>

### 1. Introduction

In the era of globalization and increasingly fierce business competition, companies are required to be more innovative and customer-oriented. To meet the ever-evolving expectations of customers, many companies adopt Customer Relationship Management (CRM) strategies. CRM is not just a tool for collecting customer data, but also a holistic approach to building valuable long-term relationships [1]. CRM strategies are divided into two categories, namely Traditional CRM and Modern CRM. The traditional one focuses on the collection of customer data without much attention to analysis or the use of advanced technology [2]. Modern CRM integrates people, processes, and technology, thereby creating good relationships with customers and fostering customer loyalty [3]. The implementation of CRM involves various aspects, starting from a deep understanding of customer needs. Implementing CRM, companies can personalize customer experiences, increase engagement, and manage loyalty more effectively. Then as a result, the company can build stronger relationships with customers and improve customer retention.

Customer satisfaction is an important part of building loyalty. Customers will be more loyal to a product if they feel satisfied or content with it [4]. However, customer dissatisfaction can influence other customers or suppliers to switch to competing products. Therefore, customer satisfaction will go along with customer loyalty. Customer loyalty is the commitment or desire of to consistently return and use the products or services provided by the manufacturer [5]. In a competitive business environment nowadays, with so many choices of products and services, customer loyalty becomes a very valuable asset. Companies that successfully build customer loyalty will have a significant competitive advantage.

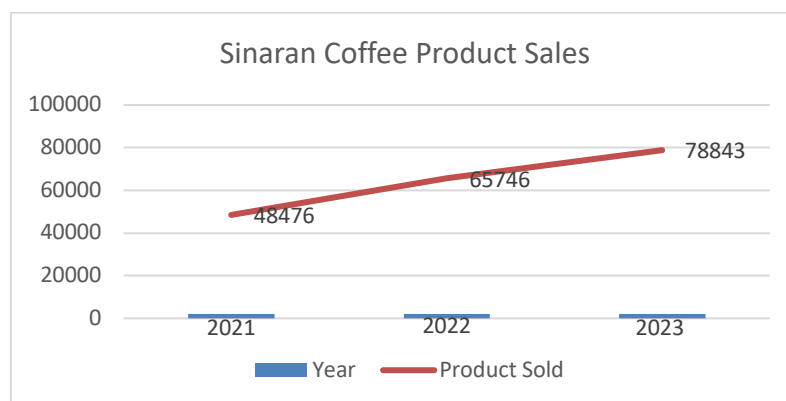
**Table 1.** Semedulur Coffee Sales Data from October 2022 to February 2023

Month	Number of Customers
October 2022	507
November 2022	487
December 2022	469
January 2023	394
February2023	366

**Tabel 2.** Sinaran Coffee Sales Data from October 2022 to February 2023

Month	Number of Customers
October 2022	2.376
November 2022	2.389
December 2022	2.661
January 2023	2.722
February2023	2.886

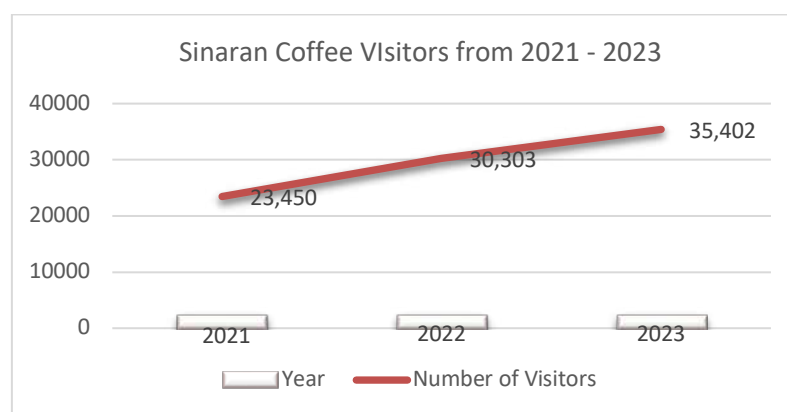
The competitor of Sinaran Coffee, which was established in the same year, is Semedulur Coffee. It is one of the original coffee shops in Klaten. The main target market of Semedulur Coffee is the youth, especially students. Although both are original coffee shops from Klaten and were established in the same year, sales at Semedulur Coffee have been declining lately. Based on the research data conducted [6] , the sales data at Semedulur Coffee from October 2022 to February 2023 continued to decline. The decrease in the number of customers can be seen in Table 2. The decrease in the number of customers at Semedulur Coffee is significantly contrasted by the increase in the number of customers at Sinaran Coffee. Table 2 shows the number of Sinaran Coffee customers in the same month and year at Semedulur Coffee.



**Fig. 1.** Graph of Sinaran Product Sales from 2021–2023

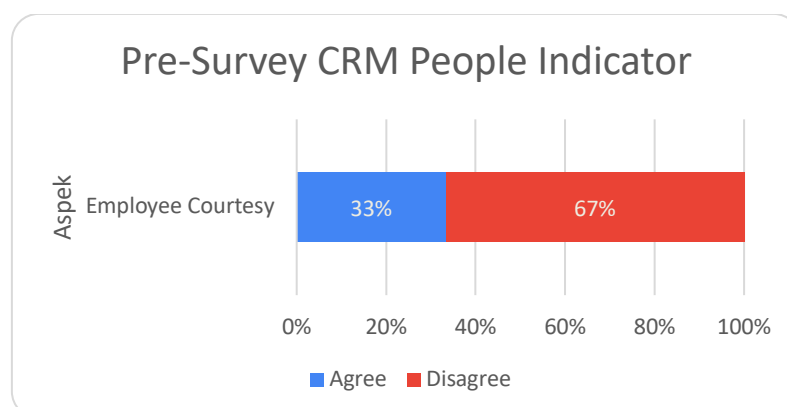
The graph in figure 1 shows an increase in the number of Sinaran Coffee products sold in 2021–2023. This condition indicates that the business is experiencing growth because the number of products sold is increasing. The increase in the number of products sold will certainly affect the increase in sales and profits obtained. Sinaran Coffee uses various work procedures that serve as guidelines for employees in serving customers, and these procedures are evaluated annually.

Since its establishment, Sinaran Coffee has implemented a Customer Relationship Management (CRM) strategy that not only builds good relationships with customers but also increases profits, both measurable and immeasurable. Measurable benefits are seen from the increase in revenue due to high product sales, while immeasurable benefits include the improvement in reputation, awareness, and customer satisfaction. This is reflected in the increase in visitor data for Sinaran Coffee from 2021 to 2023.



**Fig. 2.** Graph of Sinaran Visitor Numbers for the Years 2021–2023

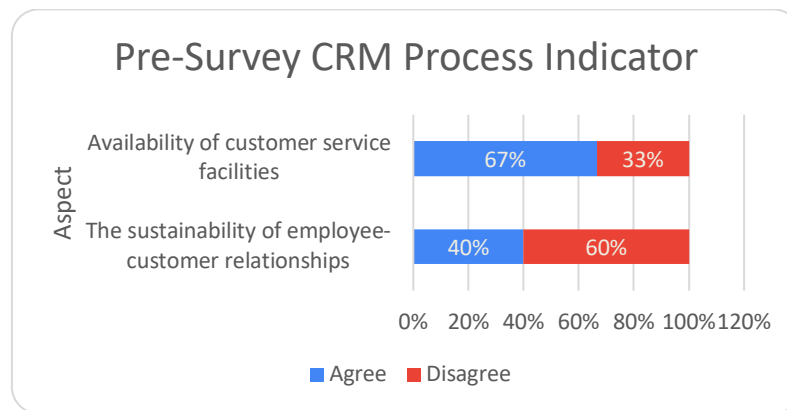
Figure 2 shows that Sinaran Coffee from 2021–2023 has continued to see an increase in the number of visitors. In 2021, there were a total of 23,450 customers, in 2022 there were 30,303 customers, and in 2023 there were 35,402 customers. The increase in the number of customers has made Sinaran Coffee even more famous. However, the increase in the number of customers does not yet mean that all customers fall into the category of loyal customers.



**Fig. 3.** Pre-Survey CRM People Indicator

Figure 3 shows the results of a pre-survey conducted on 30 Sinaran Coffee customers regarding the people indicator. As many as 67% of customers feel that the Sinaran Coffee

employees do not show proper hospitality. According to Kumar & Reinartz [3], the people indicator plays an important role in creating a positive experience for customers. The aspect of the people includes the friendliness and skills of employees. Hospitality must be consistently demonstrated in every interaction to build trust. If not maintained, the unfriendliness can create a negative impression, reduce satisfaction, and harm the business. The problem with the people indicator at Sinaran Coffee is evident from the level of employee friendliness that does not satisfy customers.



**Fig 4.** Pre-Survey CRM Process Indicator

Figure 4 shows the pre-survey results on the process indicator. As many as 33% of customers stated that the availability of customer facilities is somehow unsatisfactory, and 60% of customers stated that they do not yet have a sustainable relationship with employees. According to Kumar & Reinartz [3], good process indicators include transaction ease, availability of service facilities, quick response to complaints, sustainable relationships between employees and customers, and discounts. The inadequate availability of facilities can reduce customer loyalty, while weak relationships between employees and customers hinder feedback. This issue is evident from the availability of service facilities and the relationship between employees and customers.

From the Google Map Rating, Sinaran Coffee received 4.6 from 474 customer reviews. It cannot be considered perfect because there are several negative reviews provided by customers. In terms of CRM indicators, the negative reviews were about the people and process. Some negative reviews are about employee friendliness. Meanwhile, the process indicator received negative reviews regarding the quick response to customer complaints and the availability of customer service facilities.

There have been numerous studies conducted in the field of CRM, one of which is the study written by Nugroho [7] entitled "Customer Relationship Management Communication Strategy to Enhance Customer Loyalty at Starbucks Coffee Ambarukmo Plaza Yogyakarta." The results of the research show that Starbucks Ambarukmo Plaza Yogyakarta has implemented a system to establish and maintain good relationships with consumers, referred to as the CRM system. In the process of communicating the CRM strategy, the communicators or the parties conveying the message are the workers at Starbucks Ambarukmo Plaza Yogyakarta, commonly known as partners. Customer loyalty at Starbucks Ambarukmo Plaza Yogyakarta increased after experiencing the impact of communicating the CRM system. Nevertheless, the researcher advises future researchers to use in-depth interview techniques. Based on the descriptions and recommendations from previous studies, the researcher decided to conduct a study titled

## "Analysis of the Implementation of Customer Relationship Management (CRM) in Enhancing Customer Loyalty at Sinaran Coffee Klaten."

### 2. Method

#### 2.1. Type of Research

This descriptive analysis study employed a qualitative approach. Qualitative research focuses more on description and analysis, with an emphasis on the research process and meaning. The purpose of this research is to explain the implementation of Customer Relationship Management (CRM) by Sinaran Coffee in enhancing customer loyalty.

#### 2.2. Research Setting

Sinaran Coffee Klaten is located at Jl. K.A Gringsing 3, Pondok, Gergunung, Klaten Utara District, Klaten Regency, Central Java 57434. The research was conducted from February 2024 to August 2024.

#### 2.3. Research Participants

The participants of the research were divided into two groups, namely the internal management of Sinaran Coffee which consisted of Director of Business and Marketing and Human Resources, and the external management Sinaran Coffee aimed at customers. The research participants were selected using the purposive sampling method. This sampling method was implemented with certain consideration and purposes.

#### 2.4. Data Collection Techniques

**2.4.1. Observation:** This research was conducted through structured participant observation, where the researcher was directly involved in the daily activities at Sinaran Coffee to observe the implementation of the CRM system.

**2.4.2. Interview:** The researcher conducted interviews with the internal parties of Sinaran Coffee, namely the Business and Marketing Director and HR, and with customers as external parties.

**2.4.3. Documentation:** The documentation method includes photos during observations and interviews, as well as document studies and other materials related to the research from Sinaran Coffee.

#### 2.5. Data Analysis Techniques

The data analysis technique in this research was the Interactive model of Miles, Huberman, and Saldana. The technique was implemented through data collection, data condensation, data presentation, and conclusion (describing or verifying).

### 3. Results and Discussion

#### 3.1. Customer Loyalty of Sinaran Coffee

##### 3.1.1. Repeat Purchase

Research shows that Sinaran Coffee successfully attracts customers with a high frequency of visits, averaging 2-4 times a week. This is in line with theories and research that state that repeat purchases are an indicator of customer loyalty [8][9]. Sinaran Coffee has implemented CRM to enhance loyalty, as evidenced by the results of questionnaires and interactions on social media. Customers are interested in the best service, a comfortable environment, adequate facilities, and consistent product quality. To maintain loyalty, Sinaran Coffee regularly collects customer data through various methods, such as questionnaires and direct observation. However, the response to

negative reviews on Google Maps still needs to be eliminated to continuously enhance service quality.

### 3.1.2. Resilience Against Negative Influences on the Company

Based on the research findings, Sinaran Coffee has successfully achieved a high level of customer satisfaction, as evidenced by positive responses in the questionnaire and the low number of complaints. According to customers, the advantage of Sinaran Coffee compared to its competitors is that Sinaran Coffee offers a calm and comfortable atmosphere, away from the noise of the highway. This is in line with the theory that loyal customers will withstand various external negative influences, including competition [8]. These results support previous research that shows customer loyalty is characterized by a reluctance to switch to other service providers, even amidst service disruptions or promotions from competitors [10]. High customer satisfaction at Sinaran Coffee is driven by various factors, such as menu variety, strategic location, and active communication with customers. To strengthen customer loyalty, Sinaran Coffee needs to enhance its loyalty program, for example, by integrating the loyalty card with a mobile app.

### 3.1.3. Referencing

Sinaran Coffee customers show high loyalty by recommending this coffee shop to others. The main driving factors are the comfortable atmosphere, interesting menu variations, and reputation as a popular local coffee shop. Customers actively spread recommendations through direct communication and social media such as Instagram. In line with the theory used, loyalty is built through satisfactory service, positive experiences, and good relationships with customers [8]. Previous research supports this finding, showing that customers tend to recommend products or services they like. To enhance recommendation behavior, Sinaran Coffee could consider a referral program that offers incentives to customers. This program is expected to strengthen the emotional bond between customers and the brand and increase the number of loyalty card members.

## 3.2. The implementation of Customer Relationship Management (CRM) at Sinaran Coffee

### 3.2.1. People

People indicators include employee friendliness and employee skills. Here are the findings obtained by the researchers:

#### 3.2.1.1. Employee Courtesy

The research results indicate a gap between the service at Sinaran Coffee and the ideal service theory. Although the employees strive to assist customers, the consistency in applying the 5S (Smiles, Greetings, Accost, Polite, Courteous) principles is still suboptimal. In line with the theory used, it states that service quality is greatly influenced by the attitudes and behaviors of employees [3]. The lack of friendliness and consistency in service can negatively impact the customer experience and potentially reduce their loyalty. In addition, physical conditions such as the location of the prayer room and kitchen being adjacent to each other also need to be fixed to maintain customer comfort. To improve service quality, Sinaran Coffee needs to conduct regular training for employees, periodic performance evaluations, and customer satisfaction monitoring. Thus, it is expected that Sinaran Coffee can improve the quality of its service and provide a better experience for customers, in accordance with the principles of good service. The principles of good service are a friendly attitude, politeness, empathy, readiness to help, and good communication [11].

#### 3.2.1.2. Employee Skills

Based on the research results, Sinaran Coffee employees are generally rated quite well in serving customers, shown by speed, skill in explaining the menu, and maintaining cleanliness. The skills possessed by the employees align with the theory used. Good employee skills are the main support of friendliness. Employee skills include product knowledge, communication abilities,

problem-solving skills, and a positive attitude. Good employee skills may bring positive experience for customers [3]. However, there are challenges faced during peak hours, especially related to service speed, particularly for new employees. To improve service quality, management is advised to increase the number of employees during peak hours and holidays, and ensure the availability of stock. Thus, customer waiting times can be shortened and overall service quality can be improved.

### 3.2.2. Process

This indicator includes easy transactions, availability of customer service facilities, the speed of complaint handling processes, ongoing relationships between businesses and customers, and discounts. The findings obtained by the researchers are presented below.

#### 3.2.2.1. Easy Transactions

Sinaran Coffee shows sensitivity to the non-cash trend by adopting various payment methods, including QRIS. Research findings indicate that customers appreciate the convenience of transactions offered by cashless payment methods, although technical issues occasionally occur. This is in line with the theory used and relevant research that highlights the importance of transaction convenience in enhancing customer satisfaction [3][12]. The use of QRIS not only increases transaction efficiency but also shows that Sinaran Coffee is adapting to technological changes. However, to improve the stability of the cash register system, it is recommended to separate the internet network used for the cash register and customers. This step can prevent transaction disruptions caused by high bandwidth usage by customers.

#### 3.2.2.2. Customer Service Facilities Available

Based on the research results, Sinaran Coffee has provided quite complete facilities to meet customer needs, such as diverse seating areas, clean restrooms, a prayer room, ample parking, and security staff. However, there are several issues that need to be addressed immediately, such as the poor condition of the electrical outlets, slow internet connection, and the uncomfortable prayer room. These findings align with the theory that good facilities can enhance customer comfort [3]. To improve service quality, Sinaran Coffee is advised to conduct regular evaluations of the facilities, repair damaged infrastructure, increase internet speed, and provide more suitable facilities for the prayer room. Additionally, it is also necessary to consider providing facilities that support comfort and accessibility for customers with disabilities.

#### 3.2.2.3. The Speed of Complaint Handling Process

The research results show that employee responsiveness in handling customer complaints is a key factor in building trust and customer loyalty at Sinaran Coffee. The speed in responding to complaints, as emphasized in the theory used, is very important to prevent more serious problems and maintain the business's reputation [3]. Additionally, strong interpersonal skills are also a determining factor in successfully handling complaints. Although Sinaran Coffee employees have shown good responsiveness, there is a need for improvement through a more structured communication training program. This program is expected to equip employees with adequate knowledge and skills to handle customer complaints effectively and professionally. Additionally, the implementation of a reward and punishment system can serve as motivation for employees to improve their performance.

#### 3.2.2.4. Sustainable Relationship between Business and Customers

The relationship between employees and customers at Sinaran Coffee is positive, marked by friendliness and familiarity. However, the challenge of maintaining professionalism remains. Good interaction and adaptability are key in creating a satisfying customer experience. This aligns with the theory of sustainable relationships between businesses and customers regarding the importance of maintaining post-transaction relationships. Things that can be done include



implementing loyalty programs, personalizing communication, and following up after purchase [3]. Sinaran Coffee has implemented a loyalty program and personalized communication, but has not yet conducted follow-up activity after purchase. To enhance customer loyalty, it is recommended that Sinaran Coffee conduct follow-ups via email or WhatsApp, such as by sending thank-you notes, discount offers, or information about new products, especially for loyal customers and frequent visitors. Thus, Sinaran Coffee can further strengthen relationships with customers and enhance their satisfaction.

#### 3.2.2.5. Discount

Sinaran Coffee has implemented various diverse discount strategies, such as loyalty programs, seasonal promotions, and special discounts for new products. This is in line with the theory on discounts in process indicators, which emphasizes the importance of adjusting discount tactics to customer needs [3]. These programs aim to increase purchase frequency and strengthen long-term relationships with customers. Nevertheless, the absence of birthday discounts presents an opportunity to attract new customers and enhance the loyalty of existing ones. By adding birthday discounts, Sinaran Coffee can build a stronger emotional connection with its customers.

#### 3.2.3. Technology

This indicator includes the ease of obtaining information through social media and the use of online booking technology. The findings of the research are presented as follows.

##### 3.2.3.1. The Ease of Obtaining Information through Social Media

Sinaran Coffee has successfully utilized social media, particularly Instagram and TikTok, as effective marketing tools. In accordance with the findings of the CRM theory indicating the ease of obtaining information through social media, social media has become the primary source for customers to access information about products, services, and promotions [3]. Engaging content on TikTok, such as reviews and menu explanations, has made it easier for customers to make choices. This is in line with previous research highlighting the importance of easy access to information [12]. Sinaran Coffee has utilized various social media features to provide comprehensive information, ranging from operating hours to special menus. However, to improve services, Sinaran Coffee is advised to provide more detailed information, such as food ordering hours, and to develop an official website as a more comprehensive information hub.

##### 3.2.3.2. The Use of Online Booking Technology

Sinaran Coffee has successfully improved the accessibility of its services through online ordering service options available on various platforms such as GoFood, GrabFood, and ShopeeFood. This is in line with the theory on the use of online ordering technology in CRM technology indicators. The use of online ordering technology allows customers to place orders for products or services online through the company's application or website. The online ordering process also makes it easier for customers because it is faster and more convenient; in addition, customers do not need to come to the store [3]. Thus, Sinaran Coffee not only meets the needs of consumers who desire convenience and efficiency but also demonstrates its ability to adapt to digitalization trends. Nevertheless, to continue improving customer satisfaction, it is important for Sinaran Coffee to ensure the speed of service and order accuracy.

### 3.3. The Role of Implementing the IDIC Model of Customer Relationship Management (CRM) at Sinaran Coffee in Enhancing Customer Loyalty

#### 3.3.1. Identifying

Sinaran Coffee successfully built personal relationships with its customers through various means, such as the use of loyalty cards and direct interactions with employees. This approach aligns

with the identification theory, which emphasizes the importance of understanding the individual needs of each customer [13]. By recognizing customers personally, Sinaran Coffee not only increases customer satisfaction and loyalty but also obtains valuable data that can be used to develop more effective marketing strategies. The data that need to be collected are related to customer identity, demographics, preferences, behaviors, and customer attitudes.

#### 3.3.1.1. Customer identity data

Customer name, email address, phone number, and social media links are needed by the company to identify and contact consumers effectively.

#### 3.3.1.2. Demographic and preference

Information on customer age, gender, and occupation helps the company in conducting precise market segmentation and determining a comprehensive target market.

#### 3.3.1.3. Behavioral and attitudinal data

This data includes information on purchase history, participation in subscription programs, cancellation records, and customer opinions, which are important for understanding satisfaction and improving marketing performance. Sinaran Coffee realizes the importance of customer data for strategic decision-making, but the current data collection is still limited to names and phone numbers. To know customer profiles comprehensively, Sinaran Coffee needs to collect more data, including demographics, preferences, and behaviors which can later be used to design more effective and personalized marketing strategies.

### 3.3.2. Differentiation

Based on the interview results, Sinaran Coffee has not yet implemented a clear customer differentiation strategy. The identification of high-value customers currently relies solely on the possession of loyalty cards. Whereas customer differentiation is based on needs and values, which is crucial for designing more specific strategies [13]. Thus, Sinaran Coffee needs to consider developing a more comprehensive system for identifying and classifying customers based on the value they provide, so that the marketing strategies implemented can be more personal and effective.

#### 3.3.2.1. Value Differentiation

Differentiation is carried out to measure transaction frequency and customer interaction levels. At Sinaran Coffee, transaction frequency can be monitored through loyalty cards, which record customer interactions. Customers with loyalty cards are considered to have good value for the company.

#### 3.3.2.2. Differentiation of needs

Differentiation of needs is grouping existing customers based on their specific preferences and needs. However, Sinaran Coffee's loyalty card only provides stamps for discounts without storing data on frequently purchased menu items. Therefore, Sinaran Coffee needs to integrate the loyalty card with a system to identify customer needs based on purchase history.

### 3.3.3. Interaction

Through cordial exchanges, engaging events, and standard-compliant service, Sinaran Coffee has demonstrated an effort to cultivate relationships with its clientele. This is consistent with the IDIC CRM theory on the Interact indicator, which highlights how crucial successful interactions are to raising customer loyalty and satisfaction [13]. To improve the relationship between customers and the business, quality interactions need to fulfill specific requirements. Despite fulfilling some of these requirements, Sinaran Coffee can still do better to improve its customer relations. Therefore, Sinaran Coffee has made a positive start in putting the idea of customer connection into practice, but in order to have the best outcomes, it must be consistently developed.

#### 3.3.3.1. Interaction between Company and Customers

The first criterion is that both parties interact with each other to get to know one another. Therefore, Sinaran Coffee employees should wear ID cards or name tags so that customers can easily recognize the employees and facilitate interactions.

#### 3.3.3.2. Participation

The second criterion is that all parties participate in the interaction process. Similarly, Sinaran Coffee ensures that communication is two-way. Sinaran Coffee implements this by asking for the customer's name to know the name on the order, offering product upgrades, and so on.

#### 3.3.3.3. Exchange of Ideas and Information

Active participation in dialogue requires intrinsic motivation from all parties. Sinaran Coffee employees' motivation to interact with customers is driven by various goals, such as achieving business targets, improving service quality, and collecting data for business development.

#### 3.3.3.4. Starting a Dialogue

Dialogue is a process of mutually beneficial information exchange, where both parties are actively involved and must be ready to provide relevant responses. Therefore, Sinaran Coffee trains its employees to direct interactions with customers to obtain information, such as customer behavior responses to the products.

#### 3.3.3.5. The Changes of Individual's Behavior towards the Company

Sinaran Coffee has implemented an interactive dialogue strategy with consumers combined with marketing elements. This approach allows for a deeper exploration of customer behavior towards the product, enabling the identification of the most relevant needs and values.

#### 3.3.3.6. Continuous Dialogue

The essence of dialogue in CRM involves building and maintaining sustainable relationships between the company and consumers. The success of Sinaran Coffee with its many loyal customers proves that good interactions can strengthen the foundation of CRM and create customer loyalty.

#### 3.3.4. Customize

Sinaran Coffee has implemented good customization practices in accordance with the Peppers & Rogers theory [13] through strict product quality supervision and proactive handling of customer complaints. The monitoring system involving various departments ensures the consistency of raw material and final product quality. It also has clear SOPs to maintain the quality of service and products, as well as an effective complaint-handling mechanism. Nevertheless, to further improve data management, it is recommended to create a centralized database that records all information related to quality, complaints, and corrective actions. Thus, the data can be analyzed more deeply to support efforts to improve service quality in the future.

### 4. Conclusions

- 4.1. The high percentage of repeat business at Sinaran Coffee, where most customers visit the café two to four times each week, shows how loyal the customers are to the business and how interested they are in its goods and services. Because of the friendly environment and excellent service, customers are also resistant to the detrimental impact of rivals and are hesitant to switch. Their propensity to endorse Sinaran Coffee both in person and on social media enhances this café's standing. Thus, by combining high-quality products, satisfying experiences, and pleasant customer connections, Sinaran Coffee has been able to successfully build strong customer loyalty.
- 4.2. The implementation of Customer Relationship Management (CRM) at Sinaran Coffee successfully integrated people, processes, and technology to enhance customer experiences.

This was achieved by enhancing the friendliness and skills of employees, streamlining transaction processes, and improving service facilities. The use of social media and online ordering applications increases accessibility, but the information provided needs to be more comprehensive. Therefore, CRM at Sinaran Coffee may strengthen relationships and enhance customer satisfaction and loyalty.

- 4.3. The implementation of the Customer Relationship Management (CRM) Model IDIC at Sinaran Coffee plays an important role in increasing customer loyalty through four main elements: Identify, Differentiate, Interact, and Customize. With this model, Sinaran Coffee has successfully built good relationships with customers, although there are still some aspects that need improvement, such as customer data collection, differentiation of customer needs, and interaction quality.

### Conflict of interest

The authors declare no conflict of interest.

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## THE EFFECTS OF SERVICE QUALITY AND PRODUCT PRICE ON CUSTOMER SATISFACTION AT LOTTE GROSIR YOGYAKARTA

Ari Fatunimah<sup>1</sup>, Rr Chusnu Syarifa Diah Kusuma<sup>2</sup>

<sup>1</sup>Department of Business and Finance, Faculty of Vocational Studies, Universitas Negeri Yogyakarta, 55281, Indonesia

ARTICLE INFO	ABSTRACT
<b>Article history:</b> Received Received in revised form Accepted Available online  Keywords Service quality, price, customer satisfaction	<i>This research aimed to examine the effects on (1) service quality on customer satisfaction, (2) product price on customer satisfaction, and (3) service quality and product price customer satisfaction. This research was conducted at Lotte Grosir Yogyakarta. The participants were 100 customers who were randomly selected. Data were collected by distributing questionnaires that had been tested for validity and reliability. The analytical method used is multiple regression analysis. This analysis was used to determine the simultaneous and partial influence between the dependent variable and the independent variable. The research results show that (1) service quality has a negative effect on a customer satisfaction, (2) product price has a negative effect on customer satisfaction, and (3) service quality and product price simultaneously have a negative effect on customer satisfaction.</i>

### 1. Introduction

In this day and age, Indonesia is experiencing a period of significant lifestyle changes and technological developments followed by the development of the internet and social media. This condition provides great opportunities for businesses, especially retail, to be able to develop. Recently, modern retail businesses continue to grow and develop to meet the needs of the community who want an easy product purchasing process, affordable prices, adequate services and facilities. Retail business competition is getting intense so that retail owners must be able to create innovations and present different experiences to be able to meet the needs of the community. Some types of modern retail that are currently growing very rapidly in Indonesia are hypermarkets such as Transmart Carrefour, Hypermart, Lotte Mart, and others.

**Table 1. Brand Comparison in Retail Category**

Brand	2018	2019	2020	2021	2022
Hypermart	24.60	19.60	21.40	26.20	26.70
Lotte Mart	4.40	2.30	1.40	5.3	5.90
Transmart Carrefour	32.30	33.40	33.60	39.80	39.30

(Source: <https://www.topbrand-award.com/top-brand-index> accessed in 2023)

Based on the results of the top brand index survey from 2018 to 2021, in the retail category, hypermarkets compete every year to get a good Top Brand Index in order to get Top Brand Award.

This award is awarded by referring to the Top Brand Index which is an official Top Brand survey with an independently operated methodology. The results of the Top Brand Award survey are always awaited by many brands in Indonesia because this predicate is proof of customer trust. Based on the data in the table above, a hypermarket with the lowest top brand index is Lotte Grosir.

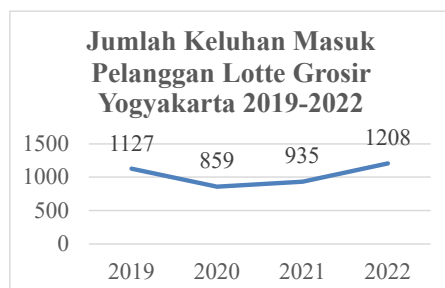
**Table 2.** The number of customer complaints to Hypermarket in Yogyakarta

Hypermarket	The number of complaints received				
	2018	2019	2020	2021	2022
Transmart Carrefour Plaza Ambarukmo	279	287	187	195	351
Lotte Mart Wholesale / Lotte Grosir	1037	1127	859	938	1208
Hypermart Pakuwon Mall	368	319	225	274	306

(Source: Primary Data, 2023)

Based on the data obtained from each hypermarket customer care section in Table 2, it can be seen that the hypermarket with the highest and increasing number of customer complaints is Lotte Grosir.

**Figure 1.** The Number of Complaints Received by Lotte Grosir Yogyakarta in 2018-2022



(Source: Primary Data, 2023)

Based on the data in Table 3, over the past 4 years, the number of complaints received by Lotte Grosir fluctuated. In 2019, the number of customer complaints at Lotte Grosir was 8.6%. In 2020, the number of customer complaints at Lotte Grosir decreased by (-23.7%) because in that year the Covid 19 pandemic occurred which caused several outdoor activities to be restricted and Lotte Grosir experienced a decrease in the number of visitors. In 2021, the level of customer complaints increased by 9% compared to the previous year. However, after the conditions was back to normal in 2022, the level of customer complaints at Lotte Grosir tended to increase (28.7%).

Customer satisfaction is the key for companies to retain customers. According to Lovelock and Wirtz (2011), satisfaction refers to an attitude that is determined based on the experience gained. Satisfaction is an assessment of the characteristics or specialties of a product or service or the product itself that provides a level of consumer satisfaction related to the fulfillment of consumer consumption needs. Consumer satisfaction can be developed through quality, service, and value received. Based on the explanation above, research on customer satisfaction at Lotte Grosir Yogyakarta is essential to be conducted to find out how much influence service quality and product prices have on customer satisfaction.

**Deleted:** Therefore, the author is interested in conducting research entitled "The Influence of Product Prices and Service Quality on Customer Satisfaction at Lotte Grosir Yogyakarta"

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## 2. Method

This study employed a quantitative method. The type of approach used is a quantitative descriptive analysis approach with explanatory research. This method is aimed at explaining the position of the variables studied and the influence between one variable and another. Sugiyono (2017:6). Meanwhile, according to Sani, Ahmad. Maharani (2013:180) explanatory research is research to test hypotheses that will be tested for their truth.

### Research Setting

This research was conducted at Lotte Grosir Yogyakarta located at Jl. Ring Road Utara, Meguwo, Maguwoharjo, Depok District, Sleman Regency, Special Region of Yogyakarta 55282. The time of this research was conducted from October 2023 - May 2024,

### Population and Sample

The population in this study was Lotte Grosir Yogyakarta customers whose number is unknown. The technique used was non-random sampling, so the sample was not selected randomly because the sample was customers who shopped at Lotte Grosir Yogyakarta. In this study, the number of research samples was determined using the Lemeshow formula, because the population size is unknown. The formula and explanation are shown below.

$$n = \frac{Z^2 \cdot \frac{1-\alpha}{2} \cdot P \cdot (1-P)}{d^2}$$

The number sample taken in this study

$$\begin{aligned} n &= \frac{(1.96)^2 \cdot 0.5 \cdot (1 - 0.5)}{(0.1)^2} \\ &= \frac{3.8416 \cdot 0.25}{0.01} \\ &= 96.04 \\ &= 97 \end{aligned}$$

### Data Collection Technique

Data in this study were collected by means of questionnaires in series or lists of questions that were systematically arranged and then sent to be filled out by respondents (Bungin, 2005:133). The questionnaires were distributed to those who have shopped at Lotte Grosir Yogyakarta.

### Data Analysis Technique

In this study, the data analysis techniques used were descriptive analysis, classical assumption test, simple linear regression analysis, simple regression analysis, hypothesis testing. These procedures were carried out to determine the influence between independent variables on dependent variables.

## 3. Results and Discussion

### 3.1. Results

#### Classical Assumption Test

##### a. Normality Test

Variable	Sig	Limit	Description
Unstandardized Residual	0,063	>0,05	Normal

(Source: Data processed by author, 2024)

b. Linearity Test

Variable	Sig	Limit	Description
Service Quality	0,000	<0,05	There is a linear relationship
Product Price	0,000	<0,05	There is a linear relationship

(Source: Data processed by author, 2024)

c. Heterchodasticity Test

Variable	Sig	Conclusion
Service Quality	0,547	Non- heteroskedastic
Product Price	0,063	Non- heteroskedastic

(Source: Data processed by author, 2024)

d. Multicollinearity Test

Variable	Tolerance	VIF	Conclusion
Service Quality	0,698	1,443	Non-Multicollinear
Product Price	0,698	1,443	Non-Multicollinear

(Source: Data processed by author, 2024)

Simple Linear Regression Analysis

a. Service Quality

Coefficients<sup>a</sup>

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1	(Constant)	64,344	3,808	16,896	,000
	Kualitas_Pelayanan	-,565	,071	-,625	,000

a. Dependent Variable: Kepuasan\_Pelanggan

(Source: Primary data processed by author, 2024)

b. Product Price



**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	81.677	3.198		25.539	.000
	Harga_Produk	-2,288	,154	-,832	-14,868	,000

a. Dependent Variable: Kepuasan\_Pelanggan

(Source: Primary data processed by author, 2024)

## Multiple Linear Regression Analysis

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	85.636	3.166		27.049	.000
	Kualitas Pelayanan	-,218	,057	-,241	-3.848	.000
	Harga Produk	-1.923	,172	-,700	-11.153	.000

a. Dependent Variable: Kepuasan Pelanggan

(Sumber : Hasil Olah Data Primer, 2024)

Based on table 22, the multiple linear equation is as follows.

$$Y = 85.636 - 0.241X_1 - 0.700X_2$$

## Hypothesis Testing

### a. T-Test

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	85.636	3.166		27.049	.000
	Kualitas Pelayanan	-,218	,057	-,241	-3.848	.000
	Harga Produk	-1.923	,172	-,700	-11.153	.000

a. Dependent Variable: Kepuasan Pelanggan

Sumber: Data primer yang diolah 2023

#### 1. Hypothesis test 1 (The effects of service quality on customer satisfaction)

The results of the first hypothesis test regarding the impact of service quality on customer satisfaction obtained a t-count of -3.848; with a significance value of 0.000 < 0.05, this indicates that service quality has a negative and significant effect on Lotte Grosir customer satisfaction. **Thus, the first hypothesis is rejected.**

#### 2. Hypothesis test 2 (The effects of product price on customer satisfaction)

The results of the second hypothesis test regarding the impact of product price on customer satisfaction obtained a t-count of -11.153; with a significance value of 0.000 < 0.05, this indicates that product price has an effect.  $H_0$  is rejected and  $H_a$  is accepted. The hypothesis of this study states that product price has a negative and significant effect on Lotte Grosir customer satisfaction. **Thus, the second hypothesis is accepted.**

b. F-Test

ANOVA <sup>a</sup>						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	5738.924	2	2868.462	133.508	.000 <sup>b</sup>
	Residual	2084.076	97	21.485		
	Total	7821.000	99			
a. Dependent Variable: Kepuasan Pelanggan						
b. Predictors: (Constant), Harga Produk, Kualitas Pelayanan						
(Sumber : Data diolah. 2024)						

Based on the results of the F statistical test in the table above, it can be seen that the F count value is 133.508, the significance value is 0.000 <0.05, and the F table value in the F distribution table is 133.508. It can be concluded that the F count value > F table is 133.508 > 3.09 and the sig value is 0.000 <0.05 which means that there is a simultaneous influence of service quality and product price on Lotte Grosir customer satisfaction. This indicates that Ho is rejected while Ha is accepted. The hypothesis of this study states that service quality and product price have a negative and significant effect on Lotte Grosir Yogyakarta customer satisfaction. **This means that the third hypothesis is also rejected.**

Coefficient of Determination

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.658 <sup>a</sup>	.734	.728	4.63523
a. Predictors: (Constant), Harga Produk, Kualitas Pelayanan				

Source: Primary data processed by author, 2024

It can be seen that the correlation coefficient value (R2) is 0.728. It means that 72.8% of the customer satisfaction can be represented by variables other than service quality and product price. Meanwhile, 27.2% of customer satisfaction can be explained by other factors.

3.2. Discussion

- 1) The effects of service quality on customer satisfaction at Lotte Grosir Yogyakarta

The results of the study showed that the value of the correlation coefficient ( $\beta$ ) is -0.241 and  $p = 0.000$ . This indicates that the quality of the service has a negative impact on customer satisfaction, so the first hypothesis is accepted. The influence of the quality of the service on the satisfaction of customer satisfaction is 0.386 (38.6%). Thus, when the service quality increases but it is out of customer expectation, the customer satisfaction may still decrease. This result is in line with a study by Hermawati (2018) that showed that the quality of customer service has a negative and significant effect on customer satisfaction. Then, it can be concluded that every change in service quality will affect customer satisfaction.

2) The effects of product price on customer satisfaction at Lolttell Grolsir Yolgyakarta

The results of the present study show that the value of the correlation coefficient ( $\beta$ ) is -0.700 and  $p = 0.000$ . This shows that the price of product has negative impacts on customer satisfaction, so the third hypothesis is accepted. The correlation of the price of the product on the satisfaction of the customer is 0.690 (69.0%). This negative regression value means that if the price raises, customer satisfaction will decrease. This result is in line with Pramana's (2018) study which shows that price has a negative and significant effect. This indicates that the higher the price offered, the lower the customer satisfaction. If the price offered is lower and meets customer expectations, the higher the satisfaction.

3) The effects of service quality and product price on customer satisfaction at Lolttell Grolsir Yolgyakarta

The results of the study show that the correlation coefficient ( $\beta$ ) value of service quality is -0.241 and  $p = 0.000$ . The correlation coefficient ( $\beta$ ) value on the variable of the price is -0.700 and  $p = 0.000$ . This shows that service quality and price simultaneously has negative effects on customer satisfaction. Therefore, the third hypothesis is rejected. The percentage of the effects is 0.728 (72.8%). Lovelock in Rambat Lolpiyoladi (2006:183) defines service quality as the gap between customer expectations and reality for the services they receive. If the increase in service quality does not meet customer expectations, customer satisfaction will decrease. In addition, if the service quality is increased to exceed customer expectations, it will cause additional costs, so this will reduce customer satisfaction. Therefore, companies must be able to ensure that customer expectations are met through the quality of service or the price of the product offered. If customers are satisfied, trust between the customer and the company will develop. This trust may continue and lead to a good long-term impact for the company.

#### 4. Conclusions

- a. The quality of service has a negative and significant effect on customer satisfaction as shown by the ( $\beta$ ) value of -0.241 and  $p = 0.000$ . This shows that the quality of service has a negative effect on customer satisfaction at Lolttell Grolsir Yolgyakarta.
- b. The product price has a negative and significant effect on customer satisfaction as shown by ( $\beta$ ) value of -0.700 and  $p = 0.000$ . This indicates that the price of product affects customer satisfaction at Lotte Grosir Yogyakarta.
- c. The quality of service and the price of product simultaneously affect customer satisfaction as shown by ( $\beta$ ) value of -0.241 and  $p = 0.000$  for the service quality; ( $\beta$ ) value s -0.700 and  $p = 0.000$  for the product price. This shows that service quality and product price simultaneously have negative effects on customer satisfaction at Lotte Grosir Yogyakarta.

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