

Price, Product Quality, and Service Quality on Customer Satisfaction at SME Food Stall

Reni Fitria Gustina Munthe^{1*}, Zahirrizky Yari Siregar², Mulkan Ritonga³

Universitas Labuhanbatu Rantauprapat, Sumatera Utara, Indonesia^{1,2,3}

renifitria410@gmail.com^{1*}, zahirrizkyarisiregar@gmail.com², r.mulkan17@gmail.com³

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Corresponding author:

Reni Fitria Gustina Munthe
Universitas Labuhanbatu Rantauprapat,
Sumatera Utara, Indonesia

E-mail: renifitria410@gmail.com

ABSTRACT

Purpose: This study examines the effects of price, product quality, and service quality on customer satisfaction at Warung Mie Par-Par Kampung, an SME noodle stall in Rantauprapat, North Sumatra, Indonesia.

Methodology: A quantitative survey of 75 purposively selected customers was conducted using a five-point Likert questionnaire. Data were analyzed through multiple linear regression in SPSS 20 following validity, reliability, and classical assumption tests.

Results: All instruments were valid and reliable. Price, product quality, and service quality significantly influenced customer satisfaction, with product quality as the strongest predictor. The model explained 49.9% of the variance in customer satisfaction ($R^2 = 0.499$).

Conclusions: Price, product quality, and service quality significantly enhance customer satisfaction, with product quality being the most influential factor.

Limitations: The study was limited to a single SME and a crosssectional design. Other potential determinants of customer satisfaction were not examined.

Contribution: The findings provide practical guidance for SME food businesses and contribute empirical evidence on customer satisfaction determinants in Indonesia's micro-enterprise food sector. They also offer a foundation for future research on additional factors affecting customer satisfaction.

Keywords: *Customer Satisfaction, Food Business, Multiple Linear Regression, Product Quality, Service Quality*

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1. Introduction

The food and beverage industry constitutes one of the fastest growing Small And Medium Enterprise 9(SME/UMKM) sectors in Indonesia, driven by rising consumer purchasing power, urbanization, and changing consumption patterns increasingly oriented toward convenience and out-of-home dining (UKM, 2023). Warung and food stalls the micro enterprise stratum of the food service sector serve tens of millions of Indonesians daily and represent the foundational layer of Indonesia's food economy, particularly in secondary cities and smaller urban centers such as Rantauprapat, North Sumatra. As

competition among food SMEs intensifies, customer satisfaction emerges as the primary strategic objective through which businesses achieve a sustainable competitive advantage. Customer satisfaction, a positive emotional response arising when a consumer's perceived product or service performance meets or exceeds their expectations, is the central mediating mechanism linking marketing mix quality to customer loyalty, repeat purchase behavior, and positive word-of-mouth referrals ([Febriana, Azzahra, & Wicaksana, 2025](#); [Rizal, 2025](#)). For food SMEs operating with limited advertising budgets and small footprints, organic satisfaction-driven loyalty is the most accessible and costeffective competitive strategy.

Three marketing mix variables have been consistently identified in the customer satisfaction literature as primary determinants of food consumer satisfaction: price, product quality, and service quality. Price shapes consumers' perceived value equation: when price is perceived as fair relative to the quantity and quality of food received, it reinforces satisfaction; when perceived as excessive, it generates dissatisfaction that overrides product and service quality perceptions ([Moniharapon, Lopian, & Lotulung, 2015](#); [Simanjorang & Chindi, 2021](#)). Product quality in food contexts encompasses sensory characteristics taste, aroma, appearance, texture, portion, and temperature that directly determine whether the core consumption experience meets expectations. Service quality encompasses the responsiveness, reliability, assurance, empathy, and tangible environmental dimensions through which a food stall creates a satisfying service encounter beyond the core food product ([Harfika, 2017](#); [Suarjana, 2015](#)).

Warung Mie Par-Par Kampung is located on Jl. Siringo-ringo near Simpang Urip, Rantauprapat, Labuhanbatu Regency, North Sumatra, is an SME noodle specialty food stall that serves local consumers. In a market where multiple competing noodle establishments operate in the same commercial corridor, owner-operators must understand which marketing mix elements most strongly drive customer satisfaction to prioritize operational improvements effectively. Despite the practical importance of this question for businesses and comparable local food SMEs, no published study has empirically examined customer satisfaction determinants at this specific establishment or in comparable SME food stall contexts in the Rantauprapat area. This study addresses this gap by examining the partial and joint effects of price, product quality, and service quality on customer satisfaction at Warung Mie Par-Par Kampung, guided by four hypotheses tested using multiple linear regression. The findings provide empirical evidence for the local SME food service context and practical guidance for the owner-operators of Warung Mie Par-Par Kampung and comparable food SMEs in Indonesia.

2. Literature Review and Hypothesis/es Development

2.1 Customer Satisfaction: Theory and Determinants

Customer satisfaction is defined as the level of positive feelings experienced by a consumer after comparing the perceived performance of a product or service with their prior expectations ([Febriana et al., 2025](#)). [Iskandar \(2018\)](#) emphasized the evaluative-emotional dimension of satisfaction: it is not merely a cognitive assessment but an effective response generated by the expectation disconfirmation process. When perceived performance exceeds expectations, satisfaction is generated; when performance falls short, dissatisfaction results. In the food service context, satisfaction is a multidimensional construct determined by the core food product (quality, portion, taste), service interaction (speed, courtesy, responsiveness), and contextual factors (price fairness, ambiance, cleanliness).

The five indicators of customer satisfaction identified by [Rizal \(2025\)](#) product quality, service quality, emotional response, price, and cost map directly onto the three predictors examined in this study, confirming the theoretical alignment between the independent variables and the satisfaction construct. Customer satisfaction, once generated, constitutes the foundation for customer loyalty, repeat purchase intention, and positive word of mouth, which are the downstream outcomes most critical for SME food business sustainability.

2.2 Price and Customer Satisfaction

Price is defined as the monetary sum that consumers exchange for a product or service, representing the quantifiable cost of the value received ([Moniharapon et al., 2015](#)). The four indicators through which price influences satisfaction are: (1) affordability whether the price is accessible given consumer purchasing capacity; (2) price-quality alignment whether the price is perceived as commensurate with product quality; (3) price competitiveness whether the price compares favorably with competing establishments; and (4) price-benefit alignment whether the price corresponds to the perceived benefits received.

In the SME food stall context, price is particularly salient because the primary customer base typically consists of price-conscious local consumers, for whom value-for-money is a primary satisfaction driver. [Moniharapon et al. \(2015\)](#) confirmed the significant effect of price on purchase decisions in a consumer product context. found price to be a significant loyalty driver for SME retail customers in Rantauprapat, directly contextualizing this study.

H₁: Price has a positive and significant partial effect on customer satisfaction at Warung Mie Par-Par Kampung Rantauprapa

2.3 Product Quality and Customer Satisfaction

Product quality in food contexts is operationally defined through nine dimensions identified by [Sutrisno \(2020\)](#): color (visual appeal of food presentation), appearance (overall food plating and presentation quality), portion (quantity relative to consumer expectations), shape (visual form of food items), temperature (appropriate serving temperature), texture (tactile eating experience), aroma (olfactory appeal), doneness (appropriate cooking level), and taste (the primary flavor experience). These nine dimensions collectively determine the quality of the core consumption experience that attracts customers to a food stall and motivates repeat visits.

Product quality is the most fundamental determinant of satisfaction in food service contexts because it addresses the primary consumer motivation for visiting a food stall: the consumption of food that tastes good, smells appealing, is presented attractively, and is served in appropriate portions. [Sutrisno \(2020\)](#) confirmed the significant effect of product quality on food-purchase decisions. [Simanjorang and Chindi \(2021\)](#) documented product quality as a significant customer loyalty predictor in the local SME food retail context.

H₂: Product quality has a positive and significant partial effect on customer satisfaction at Warung Mie Par-Par Kampung Rantauprapat

2.4 Service Quality and Customer Satisfaction

Service quality is defined as the totality of excellence in service delivery that meets consumer expectations ([Wahyuni, 2017](#)). The servqual framework [Parasuraman, Zeithaml, and Berry \(1988\)](#), as applied by [Harfika \(2017\)](#) identifies five dimensions: (1) tangibles: the physical appearance of staff, equipment, and facilities; (2) reliability: the ability to deliver promised services consistently and accurately; (3) responsiveness: the speed and willingness to help consumers; (4) assurance: staff knowledge, courtesy, and capacity to inspire consumer confidence; and (5) empathy: personalized attention and care shown to individual consumers.

In the food stall context, service quality encompasses the entire service encounter, from greeting to order-taking, food delivery speed, staff courtesy, and responsiveness to complaints. [Harfika \(2017\)](#) confirmed the significant effect of service quality on patient satisfaction in a healthcare context. similarly documented service quality as a significant satisfaction and loyalty driver. For food SMEs competing with comparable product offerings, service quality is frequently the primary differentiating factor.

H₃: Service quality has a positive and significant partial effect on customer satisfaction at Warung Mie Par-Par Kampung Rantauprapat

H_4 : Price, product quality, and service quality jointly and significantly influence customer satisfaction at Warung Mie Par-Par Kampung Rantauprapat.

2.5 Prior Empirical Studies

Table 1. Summary of prior studies on price, product quality, service quality, and customer satisfaction

Author(s) & Year	Setting / Context	Method	Key Findings
Moniharapon et al. (2015)	Evercoss smartphone users, Manado	Multiple Linear Regression (MLR)	Product quality, price, and word-of-mouth (WOM) significantly and positively affect purchase decisions, with product quality showing the strongest effect.
Simanjourang and Chindi (2021)	SME aluminum furniture store, Rantauprapat	Survey, Regression	Price, product quality, and service quality significantly influence customer loyalty. Service completeness is an additional significant factor for SME customers.
Harfika (2017)	Regional hospital patients, West Aceh	MLR	Service quality and facilities significantly influence patient satisfaction. Reliability, tangibles, and responsiveness are the main satisfaction drivers.
Suarjana (2015)	Regional hospital patients, Gianyar	MLR	Service quality significantly affects customer satisfaction and indirectly influences loyalty through satisfaction.
Wijaya and Sujana (2020)	Purchase decision study	Survey Regression	Product quality, WOM, and price perception significantly affect purchase decisions. Food quality dimensions such as taste, presentation, and aroma are important determinants.
Iskandar (2018)	Cosmetics purchase decisions	MLR	Brand image and product quality significantly influence purchase decisions, with product quality mediating the relationship between brand image and satisfaction.
Wahyuni (2017)	Bank Muamalat customers, Jombang	MLR, Mediation Analysis	Service quality significantly affects customer loyalty through customer satisfaction. Responsiveness and assurance are the strongest dimensions.
Rizal (2025)	Skincare brand loyalty, Padang	Regression	Advertising, brand image, and customer satisfaction significantly influence loyalty, with satisfaction acting as the strongest direct predictor.

Table 1 presents a summary of previous studies examining the relationships between price, product quality, service quality, and customer-related outcomes, including purchase decisions, satisfaction, loyalty, and behavioral intentions. Overall, the findings consistently indicate that these variables play important roles in influencing consumer perceptions and behaviors across various sectors, including retail, food services, healthcare, banking, and consumer goods.

Studies by [Moniharapon et al. \(2015\)](#), [Wijaya and Sujana \(2020\)](#), and [Iskandar \(2018\)](#) demonstrate that product quality and price significantly affect purchase decisions, with product quality often emerging as the strongest predictor. Research conducted by [Simanjourang and Chindi \(2021\)](#) further confirms that price, product quality, and service quality significantly influence customer loyalty in the SME sector. In service-oriented contexts, [Harfika \(2017\)](#), [Suarjana \(2015\)](#) and [Wahyuni \(2017\)](#) found that service

quality is a major determinant of customer satisfaction and loyalty, particularly through dimensions such as reliability, responsiveness, and assurance.

The present study extends this body of literature by examining the combined effects of price, product quality, and service quality on customer satisfaction at Warung Mie Par-Par Kampung, Rantauprapat. The results show that all three variables have significant positive effects on customer satisfaction, with price exhibiting the strongest regression coefficient ($B = 0.239$), followed by product quality ($B = 0.186$) and service quality ($B = 0.162$). The model is statistically significant ($F = 23.582$, $p < .001$) and explains 49.9% of the variation in customer satisfaction ($R^2 = 0.499$). These findings reinforce previous evidence that price, product quality, and service quality are key determinants of customer satisfaction and demonstrate their relevance within the context of small food-service businesses.

2.6 Variable Operationalization

Table 2. Variable operationalization

Variables	Definition	Indicators	Measurement
Price (X_1)	The amount consumers pay in exchange for a product or service (Kotler & Armstrong, as cited in Moniharapon et al. (2015))	(1) Price affordability; (2) Price quality alignment; (3) Price competitiveness; (4) Price benefit alignment	5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree); adapted from Moniharapon et al. (2015)
Product Quality (X_2)	The degree to which a product fulfills consumer expectations through its characteristics and attributes (Simanjorang & Chindi, 2021)	(1) Colour; (2) Appearance; (3) Portion; (4) Shape; (5) Temperature; (6) Texture; (7) Aroma; (8) Doneness; (9) Taste	5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree); adapted from Sutrisno (2020) .
Service Quality (X_3)	The degree of excellence in service delivery that meets consumer expectations across the five SERVQUAL dimensions (Harfika, 2017)	(1) Tangibles; (2) Reliability; (3) Responsiveness; (4) Assurance; (5) Empathy	5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree); adapted from Harfika (2017)
Customer Satisfaction	The level of positive feeling experienced by a consumer after comparing perceived performance with expectations (Susanto, 2021)	(1) Product quality; (2) Service quality; (3) Emotional response; (4) Price suitability	5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree); adapted from Susanto (2021)

Table 2 presents the operational definitions, indicators, and measurement scales used for each research variable. The study examines four variables: price, product quality, service quality, and customer satisfaction. Each variable is defined based on established literature and measured using a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The price variable is defined as the amount consumers pay in exchange for a product or service. It is measured through four indicators: price affordability, price-quality alignment, price competitiveness, and price-benefit alignment. These indicators assess customers' perceptions of whether the prices offered are reasonable and provide value relative to the benefits received.

The product quality variable refers to the extent to which a product meets consumer expectations through its characteristics and attributes. It is evaluated using nine indicators, including colour, appearance, portion size, shape, temperature, texture, aroma, doneness, and taste. These indicators capture both the physical and sensory aspects of the food product that influence customer perceptions

of quality. The service quality variable is based on the SERVQUAL framework and reflects the ability of a business to deliver services that meet customer expectations. It is measured through five dimensions: tangibles, reliability, responsiveness, assurance, and empathy. These dimensions assess both the physical service environment and employee interactions with customers. Finally, customer satisfaction is defined as the positive feeling experienced after comparing perceived performance with expectations. It is measured using five indicators: product quality, service quality, emotional response, price, and cost. Together, these indicators capture customers' overall evaluations of their consumption experience and the extent to which their expectations are fulfilled.

3. Methodology

3.1 Research Design and Setting

A quantitative research approach employing a survey design was used in this study. The quantitative method was selected because it enables researchers to measure relationships between variables objectively through numerical data and statistical analysis. Survey-based quantitative research is widely used to examine customer perceptions and satisfaction because it facilitates the collection of standardized data that can be analyzed statistically to identify patterns and relationships among variables ([Rosidah & Oetarjo, 2022](#); [Setyaning & Nugroho, 2020](#)). This approach is particularly suitable for examining the effects of price, product quality, and service quality on customer satisfaction, as it allows for the collection of responses from a relatively large number of participants in a systematic manner.

The study was conducted at Warung Mie Par-Par Kampung, a small food-service business located on Jl. Siringo-ringo near Simpang Urip, Rantauprapat, Labuhanbatu Regency, North Sumatra, Indonesia. The research site was selected because the business operates in a competitive food-service environment where customer satisfaction is essential for business sustainability and customer retention. Previous studies have demonstrated that customer satisfaction is strongly influenced by factors such as product quality, service quality, and perceived value, making food-service SMEs an appropriate setting for investigating these relationships.

Data were collected through self-administered structured questionnaires distributed directly to customers who visited the establishment during the data collection period. The questionnaire consisted of closed-ended items measured using a five-point Likert scale ranging from strongly disagree to strongly agree. Likert scales are among the most widely accepted instruments for measuring attitudes, perceptions, and satisfaction because they provide reliable and easily quantifiable responses ([Jebb, Ng, & Tay, 2021](#)). Respondents completed the questionnaire independently after receiving an explanation of the study objectives and assurances regarding the confidentiality of their responses. The use of self-administered questionnaires is also recognized as an effective method for obtaining high-quality survey data while minimizing interviewer bias.

3.2 Population, Sample, and Sampling

The target population of this study consisted of all customers of Warung Mie Par-Par Kampung Rantauprapat. Since the exact number of customers visiting the establishment during the study period could not be identified with complete certainty, the population was estimated based on the average customer volume reported by the business. The population was considered appropriate for this study because all customers had direct experience with the products and services offered by the establishment and were therefore capable of providing relevant evaluations regarding price, product quality, service quality, and overall satisfaction ([Campbell et al., 2020](#)).

The sample size was determined using the Slovin formula, $n = N / (1 + N \cdot e^2)$, where n represents the required sample size, N represents the estimated population size, and e denotes the acceptable margin of error. A margin of error of 10% was selected to balance statistical reliability and practical constraints related to time and resource availability. Based on this calculation, the minimum sample size required

for the study was determined to be 75 respondents. This number was considered sufficient to represent the target population and to support the subsequent statistical analyses ([Taherdoost, 2017](#)).

The sampling technique employed in this study was purposive sampling, a non-probability sampling method in which respondents are selected based on specific criteria relevant to the research objectives. The primary criterion required that respondents had completed at least one purchase at Warung Mie Par-Par Kampung. This requirement ensured that participants possessed firsthand experience with the products and services offered by the business. By selecting individuals who had directly interacted with the establishment, the study was able to obtain more accurate and meaningful assessments of the factors influencing customer satisfaction. Furthermore, the use of purposive sampling helped ensure that all collected responses were relevant to the research variables under investigation ([Ames, Glenton, & Lewin, 2019](#)).

3.3 Measurement Instrument and Likert Scale

Each research variable was measured using a structured questionnaire developed from indicators identified in previous studies. The instrument employed a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), allowing respondents to express the degree of their agreement with each statement. The Likert scale was selected because it is widely used in behavioral and marketing research to measure perceptions, attitudes, and evaluations in a simple and reliable manner. Higher scores indicated more positive perceptions of the respective variable being assessed.

The questionnaire consisted of a total of 16 items distributed across four research constructs: price, product quality, service quality, and customer satisfaction. Each construct was represented by four measurement items designed to capture the essential dimensions of the variable. The use of an equal number of items for each construct ensured measurement consistency and facilitated comparative analysis among the variables. All questionnaire items were adapted from established instruments in previous studies and modified to fit the context of a small food-service business ([Boateng, Neilands, Frongillo, Melgar-Quinonez, & Young, 2018](#)).

Before the main data analysis, the instrument was subjected to validity and reliability testing to ensure that all items accurately measured their intended constructs and produced consistent results. Respondents were asked to evaluate each statement based on their actual experiences as customers of Warung Mie Par-Par Kampung. The collected responses were subsequently coded and analyzed using statistical software to examine the relationships between price, product quality, service quality, and customer satisfaction ([Taber, 2018](#)). This measurement approach enabled the study to obtain standardized and quantifiable data suitable for multiple regression analysis.

3.4 Validity and Reliability Testing

To ensure the quality of the measurement instrument, validity testing was conducted for all questionnaire items using the Pearson product-moment correlation method. This procedure was applied to determine whether each item was capable of accurately measuring the construct it was intended to represent. The calculated correlation coefficient (*r*-count) for each item was compared with the critical *r*-table value of 0.2272 at a significance level of $\alpha = 0.05$ and degrees of freedom equal to $N - 2 = 73$. Following the criteria proposed by [Ghozali \(2013\)](#), an item was considered valid if its *r*-count value exceeded the corresponding *r*-table value.

The validity test was performed separately for all items representing the variables of price, product quality, service quality, and customer satisfaction. Valid questionnaire items indicate that respondents' answers are consistently aligned with the underlying construct being measured. Therefore, only items that met the validity criterion were retained for further statistical analysis. The use of valid measurement items enhances the accuracy and credibility of the research findings by ensuring that the collected data truly reflect the concepts under investigation.

In addition to validity testing, reliability testing was conducted to evaluate the internal consistency of the measurement instrument. Reliability was assessed using Cronbach's Alpha coefficient, which

measures the extent to which items within the same construct produce consistent responses. According to [Ghozali \(2013\)](#), a construct is considered reliable when it achieves a Cronbach's Alpha value of 0.60 or higher. Constructs meeting this threshold indicate satisfactory reliability and demonstrate that the questionnaire items consistently measure the same underlying concept. Consequently, only instruments that satisfied both validity and reliability requirements were considered suitable for subsequent data analysis.

3.5 Classical Assumption Tests

Prior to hypothesis testing, several classical assumption tests were conducted to ensure that the multiple linear regression model met the required statistical assumptions. These tests are important because violations of regression assumptions may affect the accuracy, validity, and interpretability of the estimated coefficients ([Hair et al., 2021](#)). The classical assumption tests performed in this study included normality, multicollinearity, and heteroscedasticity tests.

The normality of the regression residuals was examined using the One-Sample Kolmogorov-Smirnov (K-S) test. This test was employed to determine whether the residuals were normally distributed, which is one of the fundamental assumptions of multiple linear regression analysis. The decision criterion was based on the Asymp. Sig. value, where a significance value greater than 0.05 indicated that the residuals followed a normal distribution, while a value below 0.05 suggested a deviation from normality. A normally distributed residual pattern indicates that the regression model is appropriate for inferential statistical analysis ([Kwak & Park, 2019](#)).

Multicollinearity was assessed by examining the Variance Inflation Factor (VIF) and Tolerance values for each independent variable. Multicollinearity occurs when independent variables are highly correlated with one another, potentially leading to unstable coefficient estimates. In this study, multicollinearity was considered absent when the VIF value was less than 10 and the Tolerance value exceeded 0.10. Furthermore, heteroscedasticity was tested using the Glejser method by regressing the absolute residual values against the independent variables. The model was considered free from heteroscedasticity when the significance value for each predictor exceeded 0.05, indicating that the variance of the residuals remained constant across all levels of the independent variables. Together, these tests helped confirm the suitability of the data for multiple linear regression analysis ([Daoud, 2017](#)).

3.6 Multiple Linear Regression and Hypothesis Testing

Multiple linear regression analysis was employed to examine the influence of price, product quality, and service quality on customer satisfaction. The analysis was performed using IBM SPSS Statistics version 20, which provides comprehensive procedures for estimating regression coefficients and evaluating the significance of relationships among variables. Multiple regression was considered appropriate for this study because it allows the simultaneous examination of the effects of several independent variables on a single dependent variable while controlling for the influence of the other predictors included in the model ([Du, Bahaddad, & Kharabsheh, 2022](#)).

To test the research hypotheses concerning the individual effects of the independent variables (H_1 – H_3), t-tests were conducted at a significance level of $\alpha=0.05$. The calculated t-values for each regression coefficient were compared with the critical t-table value of 1.667 at degrees of freedom = 71. A variable was considered to have a significant partial effect on customer satisfaction when its significance value was below 0.05 or when the calculated t-value exceeded the critical threshold. Through this procedure, the study was able to determine whether price, product quality, and service quality individually contributed to variations in customer satisfaction ([Frost, 2019](#)).

In addition to the partial tests, the overall significance of the regression model was evaluated using the F-test (H_4). The calculated F-value was compared with the critical F-table value of 2.73 at a significance

level of $\alpha = 0.05$, with degrees of freedom $df_1 = 3$ and $df_2 = 71$. A significant F-test result indicates that the independent variables jointly influence customer satisfaction. Furthermore, the coefficient of determination (R^2) was examined to assess the explanatory power of the model. The R^2 value represents the proportion of variance in customer satisfaction that can be explained collectively by price, product quality, and service quality, thereby indicating how well the regression model fits the observed data (Schober, Boer, & Schwarte, 2018).

4. Results and Discussion

4.1 Validity and Reliability Results

Table 3. Validity Test Results ($n = 75$; $r\text{-table} = 0.2272$; $df = 73$; $\alpha = .05$)

Variables / Item	r-count	r-table	df	α	Decision
Price (X_1)					
X1.1	0.880	0.227	73	0.05	Valid
X1.2	0.910	0.227	73	0.05	Valid
X1.3	0.704	0.227	73	0.05	Valid
X1.4	0.829	0.227	73	0.05	Valid
Product Quality (X_2)					
X2.1	0.759	0.227	73	0.05	Valid
X2.2	0.821	0.227	73	0.05	Valid
X2.3	0.852	0.227	73	0.05	Valid
X2.4	0.833	0.227	73	0.05	Valid
Service Quality (X_3)					
X3.1	0.656	0.227	73	0.05	Valid
X3.2	0.678	0.227	73	0.05	Valid
X3.3	0.682	0.227	73	0.05	Valid
X3.4	0.789	0.227	73	0.05	Valid
Customer Satisfaction					
Y1	0.750	0.227	73	0.05	Valid
Y2	0.745	0.227	73	0.05	Valid
Y3	0.833	0.227	73	0.05	Valid
Y4	0.716	0.227	73	0.05	Valid

Table 3 present the results of the validity and reliability tests conducted on the research instrument. The validity test results indicate that all 16 questionnaire items are valid, as their calculated correlation coefficients (r-count) exceed the critical r-table value of 0.2272 at a significance level of $\alpha = 0.05$ and degrees of freedom = 73. The r-count values range from 0.656 for item $X_{3.1}$ to 0.910 for item $X_{1.2}$, demonstrating satisfactory correlations between each item and its respective construct. The strongest item correlations were found within the Price variable, particularly for items $X_{1.2}$ ($r = 0.910$) and $X_{1.1}$ ($r = 0.880$), indicating that these items are highly representative of the price construct. Similarly, within the Customer Satisfaction variable, items Y_3 ($r = 0.833$) and Y_1 ($r = 0.750$) exhibited strong validity coefficients. Since all items exceeded the required threshold, the entire questionnaire was deemed suitable for further statistical analysis (Flake, Pek, & Hehman, 2017).

Table 4. Reliability test results

Variables	Cronbach's Alpha	Decision
Price (X_1)	0.845	Reliable
Product Quality (X_2)	0.887	Reliable
Service Quality (X_3)	0.752	Reliable
Customer Satisfaction	0.766	Reliable

Table 4 presents the reliability test results based on Cronbach's Alpha coefficients. All research variables achieved alpha values above the minimum acceptable threshold of 0.60, indicating satisfactory internal consistency and reliability. Product Quality (X_2) demonstrated the highest reliability coefficient

($\alpha = 0.887$), followed by Price (X_1) with an alpha value of 0.845. Customer Satisfaction and Service Quality (X_3) produced alpha values of 0.766 and 0.752, respectively. Although Service Quality recorded the lowest reliability coefficient among the four variables, its value remained well above the recommended threshold, confirming adequate reliability. Overall, the validity and reliability results demonstrate that the measurement instrument possesses strong psychometric properties and is appropriate for assessing the relationships among price, product quality, service quality, and customer satisfaction (McNeish, 2017).

4.2 Classical Assumption Tests

4.2.1 Normality

Table 5. One-Sample Kolmogorov-Smirnov Normality Test (n = 75)

Test	Value	Decision
N	75	—
K-S Statistic	0.124	—
Asymp. Sig. (2-tailed)	0.200	Normal

Note: The Asymp. Sig. (2-tailed) reported by the original authors is 0.200 (from Lilliefors-corrected significance), not the K-S statistic of 0.124. The normal residual distribution was confirmed at $p = 0.200 > 0.05$.

Table 5 presents the results of the One-Sample Kolmogorov-Smirnov normality test conducted on the regression residuals. The test produced a Kolmogorov-Smirnov statistic of 0.124 with an Asymp. Sig. (2-tailed) value of 0.200. Since the significance value exceeds the threshold of 0.05 ($p = 0.200 > 0.05$), the residuals are considered to be normally distributed. Therefore, the normality assumption of the multiple linear regression model is satisfied, indicating that the data are suitable for further regression analysis.

4.2.2 Multicollinearity

Table 6. Multicollinearity Test: VIF and Tolerance Statistics

Variables	Tolerance	VIF	Decision
Price (X_1)	0.687	1.456	No Multicollinearity
Product Quality (X_2)	0.692	1.445	No Multicollinearity
Service Quality (X_3)	0.966	1.036	No Multicollinearity

Table 6 shows all three independent variables yielded VIF values well below 10 (range: 1.036–1.456) and tolerance values above 0.10 (range: 0.687–0.966), confirming the absence of multicollinearity. Service quality (VIF = 1.036) is virtually orthogonal to the other predictors, while price and product quality are moderately correlated with each other (tolerance ≈ 0.69) but remain within acceptable limits.

4.2.3 Heteroscedasticity (Glejser Test)

Table 7. Heteroscedasticity Test: Glejser Method (Dependent Variable: |Residual|)

Variables	B	Std. Error	Beta (β)	t-count	Sig.
(Constant)	1.182	1.460	—	0.810	.901
Price (X_1)	0.239**	0.076	0.318	3.134	.003
Product Quality (X_2)	0.186**	0.046	0.412	4.080	.000
Service Quality (X_3)	0.162*	0.071	0.196	2.289	.025

*Note: * $p < .05$; ** $p < .01$. Dependent Variable: Customer Satisfaction. Source: SPSS version 20.*

Table 7 present the results of the Glejser heteroscedasticity test indicate that all independent variables have significance values exceeding the threshold of 0.05. Specifically, the significance values were 0.267 for Price, 0.619 for Product Quality, and 0.763 for Service Quality. Since all values are greater than 0.05, none of the independent variables significantly affect the absolute residual values. This

finding suggests that the variance of the residuals remains constant across different levels of the predictor variables (Hayes & Cai, 2007). Therefore, the regression model is free from heteroscedasticity problems and satisfies the homoscedasticity assumption required for multiple linear regression analysis. The absence of heteroscedasticity indicates that the estimated regression coefficients are reliable and unbiased, allowing further hypothesis testing and interpretation of the regression results to be conducted with confidence.

4.3 Multiple Linear Regression Results

Table 8. Multiple Linear Regression Results: Partial Effects on Customer Satisfaction

Variables	B	Std. Error	Beta (β)	t-count	Sig.
Constant	1.182	1.460	—	0.810	0.901
Price (X_1)	0.239**	0.076	0.318	3.134	0.003
Product Quality (X_2)	0.186**	0.046	0.412	4.080	0.000
Service Quality (X_3)	0.162*	0.071	0.196	2.289	0.025

Note: * $p < .05$; ** $p < .01$. Dependent Variable: Customer Satisfaction. Source: SPSS version 20.

From the Table 8, the regression equation is $Y = 1.182 + 0.239X_1 + 0.186X_2 + 0.162X_3$. The constant (1.182) represents the predicted baseline customer satisfaction when all three predictors are zero. The positive coefficients for all three predictors confirm that increased price satisfaction perception, product quality, and service quality are each associated with higher customer satisfaction. Among the three standardized coefficients, product quality ($\beta = 0.412$) had the largest relative effect on satisfaction, followed by price ($\beta = 0.318$) and service quality ($\beta = 0.196$).

Table 9. Coefficient of Determination (R^2)

R	R^2	Adjusted R^2	Std. Error of the Estimate (SEE)
0.707	0.499	0.479	1.418

From the Table 9, $R^2 = 0.499$ indicates that price, product quality, and service quality together explain 49.9% of the variance in customer satisfaction at Warung Mie Par-Par Kampung. The adjusted $R^2 = 0.479$ provides a bias-corrected estimate. The remaining 50.1% of the satisfaction variance reflects unmeasured determinants, including location convenience, brand familiarity, food freshness consistency, seating ambiance, and social dining experience dimensions.

4.4 Hypothesis Testing and Discussion

Table 10. F-Test for Simultaneous Effect (H_4)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	142.305	3	47.435	23.582	0.000
Residual	142.815	71	2.011	—	—
Total	285.120	74	—	—	—

Table 10 presents the results of the F-test used to examine the simultaneous effect of price, product quality, and service quality on customer satisfaction. The analysis produced an F-value of 23.582 with a significance value of 0.000, which is lower than the 0.05 significance threshold. These results indicate that the regression model is statistically significant, meaning that the three independent variables collectively have a significant effect on customer satisfaction. Therefore, the model is suitable for explaining variations in customer satisfaction among customers of Warung Mie Par-Par Kampung.

H_1 is supported: price exerts a positive and significant partial effect on customer satisfaction ($B = 0.239$, $t = 3.134$, $p = .003 < .05$). This finding confirms that Warung Mie Par-Par Kampung customers respond positively to price perceptions specifically, that the price charged is affordable, consistent with the food quality received, competitive with nearby establishments, and fair relative to benefits obtained. Price fairness and value-for-money are particularly important satisfaction drivers for local food stall consumers, who typically have limited disposable income and frequently compare prices across competing food stalls in the same area. [Simanjourang and Chindi \(2021\)](#) similarly found price to be a

significant customer satisfaction and loyalty driver in the Rantauprapat SME retail context, confirming the local cultural and economic relevance of this study's findings.

H_2 is supported: product quality exerts the strongest effect on customer satisfaction among the three predictors ($B = 0.186$, $\beta = 0.412$, $t = 4.080$, $p = .000$). The highest standardized coefficient confirms that food quality encompassing the sensory characteristics of the noodle dishes (taste, aroma, appearance, portion, texture, and temperature) is the primary driver of customer satisfaction at this establishment. This finding is theoretically consistent with the primacy of core product quality in food service satisfaction frameworks: consumers visit food stalls primarily for the eating experience, and no level of price fairness or service courtesy can fully compensate for inadequate food quality. Wijaya and Sujana (2020) confirmed product quality as a significant food purchase decision driver; the present study extends this evidence to satisfaction outcomes in an SME street food context.

H_3 is supported: service quality exerts a positive and significant partial effect on customer satisfaction ($B = 0.162$, $t = 2.289$, $p = .025 < .05$). Although service quality has the smallest standardized coefficient ($\beta = 0.196$) among the three predictors, its statistical significance confirms that it constitutes a meaningful independent satisfaction driver beyond the food product itself. In the food stall context, service quality encompasses the speed of order delivery, staff courtesy and responsiveness to customer requests, physical cleanliness and presentation of the eating area, and warmth of customer engagement. For warung customers who visit repeatedly as part of their daily meal routines, service quality builds the relational dimension of satisfaction the sense of being welcomed, valued, and reliably served that fosters loyalty beyond transactional satisfaction with food and price.

H_4 is supported: the simultaneous F-test confirms that price, product quality, and service quality jointly and significantly predict customer satisfaction ($F = 23.582$, $p = .000$; $R^2 = 0.499$). The F-statistic substantially exceeds the critical F-table value of 2.73, and the joint explanatory power of 49.9% is substantial for a three-predictor model applied in a real-world SME context. This finding confirms that the three-variable marketing mix model provides a meaningful and comprehensive framework for understanding the determinants of customer satisfaction at this food stall.

4.5 Discussions

The findings demonstrate that price, product quality, and service quality significantly influence customer satisfaction at Warung Mie Par-Par Kampung. Product quality emerged as the most influential factor, as indicated by the highest standardized coefficient ($\beta = 0.412$), followed by price ($\beta = 0.318$) and service quality ($\beta = 0.196$). This result suggests that customers primarily evaluate their dining experience based on the quality of the food served, including its taste, aroma, appearance, texture, and portion size. The positive effect of price further indicates that customers perceive the menu prices as affordable and commensurate with the benefits received, while the significant contribution of service quality highlights the importance of responsiveness, reliability, cleanliness, and customer care in enhancing satisfaction. These findings support previous studies that identified product quality, price, and service quality as important determinants of customer satisfaction in foodservice and SME contexts.

The simultaneous effect of the three independent variables was also confirmed by the significant F-test result ($F = 23.582$, $p < .001$), indicating that price, product quality, and service quality collectively provide a meaningful explanation of customer satisfaction. The coefficient of determination ($R^2 = 0.499$) shows that 49.9% of customer satisfaction can be explained by the model, while the remaining 50.1% may be influenced by other factors not examined in this study, such as brand image, location convenience, promotional activities, dining atmosphere, and customer experience. These results suggest that SME food businesses should prioritize maintaining product quality while simultaneously implementing competitive pricing and consistent service standards to improve customer satisfaction and strengthen long-term business performance.

5. Conclusion

5.1 Conclusion

This study examined the effects of price (X_1), product quality (X_2), and service quality (X_3) on customer satisfaction at Warung Mie Par-Par Kampung Rantauprapat, using multiple linear regression on data from 75 respondents. All four hypotheses were thus supported. Price ($p = .003$), product quality ($p = .000$), and service quality ($p = .025$) each exerted positive and significant partial effects on customer satisfaction, and all three predictors jointly explained 49.9% of the satisfaction variance ($F = 23.582$, $p = .000$). Product quality was the dominant predictor ($\beta = 0.412$), reflecting the primacy of food quality in core consumption experience. Price ranked second ($\beta = 0.318$), reflecting the value-for-money sensitivity of local food consumers. Service quality ranked third ($\beta = 0.196$) but was a significant independent contributor.

Three practical recommendations are provided for the management of Warung Mie Par-Par Kampung. First, food quality consistency should be the highest operational priority, ensuring that taste, aroma, portion size, texture, and presentation meet or exceed customer expectations on every visit. Investing in ingredient quality, cooking standardization, and quality consistency monitoring will generate the greatest satisfaction returns. Second, competitive and value-aligned pricing should be actively managed through regular competitor price benchmarking to ensure that the price-quality ratio perceived by customers remains favorable relative to nearby alternatives. Third, service quality improvement particularly staff responsiveness, order delivery speed, and dining area cleanliness should be continuously developed as a differentiating factor that builds relational loyalty among regular customers.

5.2 Research Limitations

This study has three limitations. First, the study is limited to a single SME establishment with a crosssectional design, which restricts both generalizability and causal inference. Future research should apply this model across multiple competing food stalls to enable a comparative analysis. Second, the 50.1% unexplained variance in customer satisfaction indicates that additional determinants, including restaurant ambiance, location accessibility, cleanliness standards, digital presence, and brand familiarity, warrant investigation as additional predictors. Third, the four-item measurement instruments for each construct, while validated, provide limited construct bandwidth; future research should use more comprehensive indicator sets to capture the full dimensionality of product quality, service quality, and price perceptions.

5.3 Suggestions and Directions for Future Research

Future research on SME food business customer satisfaction in comparable Indonesian contexts should extend the current model in three ways. First, additional marketing mix variables should be incorporated, particularly location convenience (the accessibility and visibility of the food stall), digital promotion effectiveness (Instagram and social media), and brand familiarity, to reduce unexplained satisfaction variance and provide a more comprehensive determinant mapping. Second, mediation analysis should examine whether customer satisfaction mediates the relationship between price, product quality, and service quality on customer loyalty and repeat purchase intention, enabling a complete satisfaction-loyalty chain model. Third, comparative studies across multiple food SMEs in Rantauprapat and other North Sumatran cities would establish whether the current findings generalize across local market contexts or are specific to the competitive environment and customer demographic profile of Warung Mie Par-Par Kampung.

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Author Contributions

RFGM conceived and designed the study, collected and analyzed the data, and prepared the original manuscript. ZYS supervised the research process, validated the results, and reviewed the manuscript. MR assisted in data analysis, interpretation of findings, and manuscript revision. All authors contributed to the article and approved the final version of the manuscript.

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