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Product Variety on Customer Satisfaction: The Mediating and Moderating Role of Price Perception and Service Quality

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ABSTRACT

This study examines the mediation and moderation effects of price perception and service quality on the relationship between product variety and customer satisfaction in the automotive spare parts retail area. In this study, a quantitative approach was used and data were collected from 80 customers of the BC Waru Sidoarjo store using a questionnaire distributed through Google Forms. Statistical analysis was performed by SEM SmartPLS3 software. The results indicate that the factors of pricing perception, service quality, and product variety are interrelated in a very intricate way and can have a huge effect on customer satisfaction. This finding pinpoints the need for an integrated and holistic approach towards improving customer satisfaction. It will help management come up with more efficient ways of improving customer loyalty for competitive advantage in the market by understanding the dynamics of these elements and their interlinkages. It also offers a glimpse into the important interrelations that exist among the variables of key concern, while duly underscoring the need for clarity in understanding those factors that may affect the level of satisfaction on the part of customers from the motor vehicle spare parts sector.

Customer Satisfaction, Price, Product, Quality Service

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INTRODUCTION

In the midst of increasing mobility, the aftermarket spare parts industry for motor vehicles has become a very important sector in supporting the sustainability of the transportation system. Spare parts stores, such as BC Waru store in Sidoarjo, have a significant role in providing replacement components needed for vehicle maintenance and repair. Competition is ever intensifying, consumer demands are changing; hence, deep insight into the drivers that affect customer satisfaction becomes all the more important.

Although several studies have conducted past research on various factors that affect customers in the retail industry, some represented by Smith *et al.*

(2020); Johnson and Rhodes (2021), there remains a deficiency in comprehending the dynamics relevant to motor vehicle spare parts stores. Specifically, the intricate relationships among product diversity, price perceptions, and service quality in influencing customer satisfaction have not been thoroughly explored. Moreover, the mediating and moderating effects that may exist between these variables remain unexplained, especially in specific contexts such as motor vehicle spare parts stores.

This research aims to fill the existing gap by exploring the relationship between product diversity, price awareness, service standards, and customer contentment at the BC Waru motor vehicle spare parts store. Although previous studies have investigated factors influencing customer satisfaction in general retail contexts (Singh et al., 2023; Tzeng et al., 2021; Brandtner et al., 2021), specific research in the context of motor vehicle parts stores is limited. Specifically, this research will: assess the direct influence of product variety, price perceptions, and service quality on customer satisfaction. A recent study by Sahai et al. (2020); Norawati et al. (2021) have demonstrated the importance of product variety in retail customer satisfaction. Analyze possible mediating effects between these variables. Examining the potential moderation effects that could affect the strength of the relationships among variables is important. In this sense, recent research conducted by Karatepe (2011), concentrated on the influence of customer traits in the link between service quality and customer satisfaction, underlined the necessity to take into account the contextual variables in the analyses focusing on customer satisfaction. However, its application in the context of motor vehicle spare parts still needs to be further considered.

By presenting those methods, this research tries to give more depth to the dynamic nature of customer satisfaction in auto parts stores, fill the gaps that exist within the current literature, and provide worthy practical implications for spare parts store managers, such as BC Waru store.

This research is expected, in this way, to make a relevant theoretical and practical contribution. Theoretically, the investigation will enrich the knowledge related to the customer satisfaction dynamics in an auto parts store context by underlining the role and complex interrelations between product variety, price perceptions, and service quality. The present research will complete the gap in the literature about retail management and consumer behavior, especially in the area of the automotive aftermarket.

The expectation is that the results obtained through this study will be very important for the owners or managers of spare parts stores, especially BC Waru store, in formulating more successful strategies that could increase customer

satisfaction. By properly understanding the product mix, perceptions of price, and service quality that drive customers to become satisfied with the offered services, it is hoped that it may give partial support for carrying out better decisions in respect to the management of inventories, pricing policies, and enhancing service quality.

By applying a comprehensive and contextual approach, this study aims to offer a deeper and more nuanced understanding of the elements that influence customer satisfaction in motor vehicle spare parts stores, thereby contributing to the development of knowledge and practice in this sector.

RESEARCH METHOD

This research uses quantitative methods. Data collection respondents for this research were consumers of the BC Waru store. Data was obtained from questionnaires distributed via Google Form and related to the problem being studied. The total population in the study was 100 customers who came to make purchase transactions for spare parts products at the BC Waru store. In determining the sample, the Slovin formula is used as follows:

$$n = N / 1 + N e^2$$

The description of the sample size formula according to Slovin is as follows:

n = sample size

N = population size

e = percent allowance for inaccuracy due to sampling error that is still tolerable or desirable.

If the number of samples is known, the population is 100 with an error tolerance of 5%, then if used in the Slovin formula it becomes:

$$n = N / 1 + N e^2$$

$$n = 100 / 1 + 100(0.05)^2 = 100 / 1.25 = 80$$

So, from the Slovin formula the sampling size is 80 customers.

In this sampling technique the researcher used a probability sampling technique with a simple random sampling type (Acharya et al., 2013). Random sampling is determined after finding a list at the BC Waru Store.

Measurements in this survey or research use 5 Likert scales consisting of statements given to respondents, followed by answer choices in a row from "Strongly Agree" to "Strongly Disagree", often with the option "Neutral" arranged in a way that allows researchers to measure the level of approval or

rejection of the statement given. And then the data is processed using SEM SmartPLS3.

RESULT AND DISCUSSION

Outer Model Testing

The objective of the convergent validity assessment is to determine the validity of the associations between each indicator and its respective construct or latent variable. Convergent validity indicates that a collection of indicators collectively represents a single latent variable, serving as the foundation for that variable. The evaluation of convergent validity within a measurement model that employs reflexive indicators is performed by analyzing the correlation between the scores of the items or the scores of the components and the scores of the latent variable or construct, as estimated using the Smart PLS software. Below, an image illustrating the calculation results of the SEM PLS model is presented.

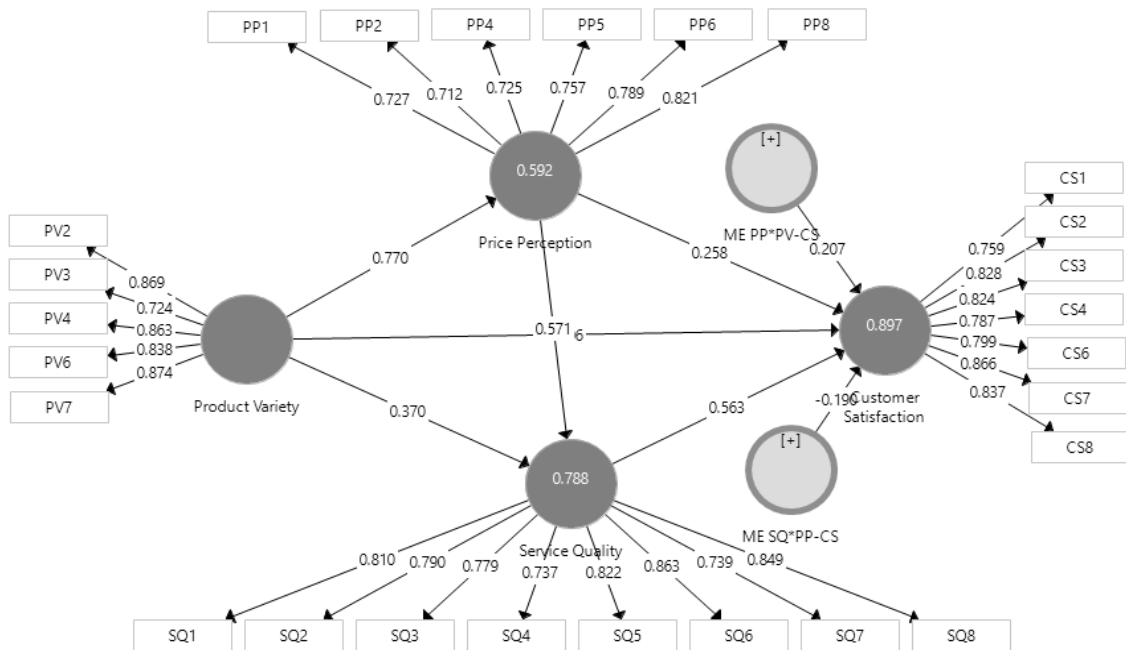


Figure 1.

PLS Analysis Diagram Outer loading value (Source: SmartPLS-3)

Source: SmartPLS-3 output

The analysis of the image presented indicates that the outer loading values for the product variation, price perception, service quality, and customer satisfaction variables exceed 0.7 for each indicator item. This conclusion follows the removal of indicators CS5, PP3, PP7, PV1, PV5, and PV8, which had outer

loading values below 0.7. Consequently, the statements associated with each variable are deemed valid and suitable for subsequent testing. The final assessment of the outer model includes a reliability test, which aims to evaluate the consistency of the measurements for the variables incorporated in the structural model. In Partial Least Squares (PLS) analysis, the reliability evaluation is performed using two techniques: determining the composite reliability coefficient and calculating Cronbach's alpha for each variable. A variable is considered to possess adequate composite reliability when the values of both composite reliability and Cronbach's alpha are above the acceptable threshold of 0.70.

Table 1.
Convergent Validity and Reliability Test Results

Description	Cronbach Alpha	Composite Reliability	AVE
Customer Satisfaction	0.915	0.933	0.664
ME PP*PV-CS	1.000	1.000	1.000
ME SQ*PP-CS	1.000	1.000	1.000
Price Perception	0.850	0.889	0.572
Product Variety	0.891	0.920	0.698
Service Quality	0.919	0.934	0.640

Source: SmartPLS-3 output

The information provided in the preceding table outlines the Composite Reliability and Cronbach Alpha values associated with each research variable utilized in the model. According to (Muijs, 2022), the acceptable Average Variance Extracted (AVE) value should be greater than 0.50. It is clear that all AVE values exceed this benchmark, thereby confirming their adherence to the validity criteria associated with AVE. Furthermore, the assessment of reliability is performed using the Composite Reliability (CR) value, as highlighted by Leavy (2022). The suggested CR value should be above 0.7, as indicated by Mahfud et al. (2020). Importantly, all CR values are above 0.7, indicating compliance with the reliability standards based on CR. The evaluation of reliability is further enhanced by analyzing the Cronbach's alpha (CA) value, which also has a recommended threshold of above 0.70, according to Sarstedt et al. (2021). All observed CA values exceed 0.7, thus confirming the internal consistency of the instrument. Taken together, these metrics validate the instrument for further analysis.

Inner Model Testing

After the expected model meets the requirements of the external model, the subsequent step is to assess the structural model. The R-Squared values for the variables are listed below:

Table 2. R-Square

Description	R-Square
Customer Satisfaction	0.897
Price Perception	0.592
Service Quality	0.788

Source: SmartPLS-3 output

The table above shows the value of the Customer Satisfaction variable 0.897. This means that product variety, price perception and service quality can explain the 89.7% of Customer Satisfaction. The value of R square is also in Price Perception and is affected by product variety, that is 0.592 (59.2%) and in Service Quality is affected by product variety and Price Perception, that is 0.788 (78.8%).

Hypothesis testing is as below table:

**Table 3.
 Path Coefficients**

Relationship	Original Sample	Standard Deviation	T Statistics	P Value
ME PP*PV-CS → Customer Satisfaction	0,207 -0,190	0,093 0,091	2,224 2,084	0,027 0,038
ME SQ*PP-CS → Customer Satisfaction	0,258 0,571	0,105 0,097	2,465 5,891	0,014 0,000
Price Perception → Customer Satisfaction	0,206 0,770	0,095 0,050	2,157 15,495	0,031 0,000
Price Perception → Service Quality	0,370	0,097	3,821	0,000
Product Variety → Customer Satisfaction	0,563 0,199	0,112 0,084	5,049 2,374	0,000 0,018
Product Variety → Price Perception	0,322	0,087	3,709	0,000
Product Variety → Service Quality	0,248	0,071	3,483	0,001
Service Quality → Customer Satisfaction	0,208 0,440	0,069 0,085	3,020 5,163	0,003 0,000
PV → PP → Customer Satisfaction				
PP → SQ → Customer Satisfaction				
PV → PP → SQ → Customer Satisfaction				
PV → SQ → Customer Satisfaction				
PV → PP → Service Quality				

Source: SmartPLS-3 output

From the table above, it can be stated that all relationships between variables obtained from the conceptual framework have a significant influence because they have a P-value lower than 0.05.

DISCUSSION

Moderating Effect of Price Perception on the Relationship between Product Variety and Customer Satisfaction (P = 0.027)

The findings of this study indicate that price perception acts as a moderating factor in the connection between product variety and customer satisfaction, evidenced by a P value of 0.027. This shows that the way customers perceive prices can strengthen or reduce the influence of product variety on their level of satisfaction. When customers consider the prices offered to be reasonable or comparable, then a variety of product variations will be better able to increase customer satisfaction. On the other hand, if consumers hold negative perceptions regarding price, the beneficial effects of product variations on customer satisfaction will be diminished. These results are in line with research conducted by Wang *et al.* (2018), which states that good price perceptions can increase the effectiveness of product diversification strategies in increasing customer satisfaction.

Moderating Effect of Service Quality on the Relationship between Price Perception and Customer Satisfaction (P = 0.038)

The quality of service acts as a significant moderating element in the relationship between price perception and customer satisfaction, shown by a P value of 0.038. These findings indicate that higher service quality can strengthen the effect of price perceptions on customer satisfaction. It means that customers who receive quality service will be more tolerant of high prices, and hence their levels of satisfaction can increase. Conclusively, Kaura, Durga Prasad and Sharma (2015) the components of service quality, perceived cost and fairness, along with service convenience, have a positive effect on customer satisfaction and loyalty. Additionally, customer satisfaction serves as a connecting factor that relates its prior components to customer loyalty.

Direct Relationship Between Research Variables

Price perception affecting customer satisfaction: $P = 0.014$. This implies that there is a meaningful positive relationship between price perception and customer satisfaction – the more customers view the price as fair or competitive, the higher will be the satisfaction level. In this line Bei & Chiao (2001), a positive price perception directly contributes to increasing customer satisfaction.

Price Perception to Service Quality: With $P=0.000$, there is a significant influence of positive price perception on the level of service quality. Reasonable prices paid by customers tend to give good assessments of service quality. Tecoalu *et al.* (2021) note that when the price perceptions are good, customer evaluations of the quality of the service they receive increases.

Product Variety and Its Impact on Customer Satisfaction ($P = 0.031$): A significant positive correlation is observed between product variety and customer satisfaction. The more the product variety, the better customers will have the chance to get the product that suits their needs, thus increasing the satisfaction level. Research by Winasis & Sabar (2024); Sahai et al. (2020); Norawati et al. (2021) support these results by showing that product diversification can contribute to increased customer satisfaction in competitive markets.

Product Variety and Its Impact on Price Perceptions ($P = 0.000$) and Service Quality ($P = 0.000$): The diversity of products offered has a significant influence on price perceptions and service quality. This shows that by providing a wide selection of products, a store can build a more competitive price perception and increase customer assessment of the quality of the service provided. Product diversification can assist in generating favorable perceptions of price and service quality, as observed by a study conducted by Desai & Talukdar (2003).

This grade of quality of service is associated with the higher grade of positive impact on customer satisfaction. It also goes with the research by Lee (2013), that evidences how service quality has been one of the key drivers in developing satisfaction and loyalty among customers.

Mediation Effects in the Relationship Between Research Variables

Price perception influences the connection between product variety and customer satisfaction, as indicated by $P = 0.018$, meaning there is a significant influence of price perception mediating between the variety of products and customer satisfaction. That means increasing product variety can improve positive perceptions about prices, thus helping to raise customer satisfaction. Research by Chmaitilly (2023) reveals that price perception has a role as a mediator in the relationship between service quality and customer satisfaction, where service quality is easier to offer when you have a wide product variety.

Service quality functions as a connection between price perception and customer satisfaction ($P = 0.000$): It mediates the interaction between price perception and customer satisfaction. This suggests that favorable price perceptions can enhance service quality, leading to greater customer satisfaction.

The interaction of Price Perception and Service Quality functions as a mediator between Product Variety and Customer Satisfaction: Generally, these two elements mediate the connection between product variety and satisfaction. This suggests that product variety influences satisfaction directly and also enhances perceptions of price and service quality ($P = 0.001$).

Service quality serves as a link between product variety and customer satisfaction ($P = 0.003$): It is essential in mediating the relationship between product variety and customer satisfaction. This suggests that offering a broader variety of products results in a more favorable assessment of service quality, which consequently enhances customer satisfaction.

Price perception functions as a mediator in the relationship between product variety and service quality ($P = 0.000$). This shows that the presence of diverse product variations can improve perceptions of prices that are considered reasonable, which in turn will increase the assessment of service quality by customers.

Practical implications for the management of motor vehicle spare parts stores

Product diversification: there is a need to vary the products that each store offers. Besides, product diversification expands choices for customers that could result in improving perceptions in respect of prices and service quality. **Price Perception Management:** A reasonable and competitive pricing strategy should be developed. The good price perception directly supports the enhancement of customer satisfaction and contributes to the level of raising service quality.

Improved Service Quality: Quality of service is of prime importance in all store operations. High-quality service may reinforce the impact of price perceptions and product variety on customer satisfaction. The integrated marketing strategy would, therefore, integrate product diversification with pricing strategies and improvement of the quality of service. Hence, synergy creation for improved customer satisfaction and loyalty is created.

CONCLUSION

The interaction of product variety, price perception, and service quality when it comes to influencing customer satisfaction in the motor vehicle spare part shops is quite complex, as established by this research. The findings about mediation and moderation effects obtain a holistic and integrated approach to increasing customer satisfaction. This understanding of dynamics will, on the other hand, provide the management with an avenue for formulating more effective strategies aimed at increasing customer loyalty and creating a competitive advantage in the marketplace.

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REFERENCES

- Acharya, A. S., Prakash, A., Saxena, P., & Nigam, A. (2013). Sampling: Why and how of it. *Indian Journal of Medical Specialties*, 4(2), 330–333.
- Bei, L.-T., & Chiao, Y.-C. (2001). An integrated model for the effects of perceived product, perceived service quality, and perceived price fairness on consumer satisfaction and loyalty. *The Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, 14, 125–140.
- Brandtner, P., Darbanian, F., Falatouri, T., & Udokwu, C. (2021). Impact of COVID-19 on the customer end of retail supply chains: A big data analysis of consumer satisfaction. *Sustainability*, 13(3), 1464. <https://doi.org/10.3390/su13031464>
- Chmaitilly, A. (2023). The Impact of Service Quality on Customer Satisfaction: The Mediating Effect of Perceived Price in Thailand Small Medium Enterprises. *Dutch Journal of Finance and Management*, 6(2). <https://doi.org/10.55267/djfm/14059>
- Desai, K. K., & Talukdar, D. (2003). Relationship between product groups' price perceptions, shopper's basket size, and grocery store's overall store price image. *Psychology & Marketing*, 20(10), 903–933. <https://doi.org/10.1002/mar.10102>
- Johnson, J. P., & Rhodes, A. (2021). Multiproduct mergers and quality competition. *The RAND Journal of Economics*, 52(3), 633–661. <https://doi.org/10.1111/1756-2171.12386>
- Karatepe, O. M. (2011). Service quality, customer satisfaction and loyalty: the moderating role of gender. *Journal of Business Economics and Management*, 12(2), 278–300.
- Kaura, V., Durga Prasad, C. S., & Sharma, S. (2015). Service quality, service convenience, price and fairness, customer loyalty, and the mediating role of customer satisfaction. *International Journal of Bank Marketing*, 33(4), 404–422. <https://doi.org/10.1108/IJBM-04-2014-0048>
- Leavy, P. (2022). *Research design: Quantitative, qualitative, mixed methods, arts-based, and community-based participatory research approaches*. Guilford Publications.
- Lee, H. S. (2013). Major moderators influencing the relationships of service quality, customer satisfaction and customer loyalty. *Asian Social Science*, 9(2), 1. <https://doi.org/10.5539/ass.v9n2p1>
- Mahfud, T., Triyono, M. B., Sudira, P., & Mulyani, Y. (2020). The influence of social capital and entrepreneurial attitude orientation on entrepreneurial intentions: the mediating role of psychological capital. *European Research on Management and Business Economics*, 26(1), 33–39.

<https://doi.org/10.1016/j.i.edeen.2019.12.005>

- Muijs, D. (2022). *Doing quantitative research in education with IBM SPSS statistics*.
- Norawati, S., Arman, A., Ali, A., Ihsan, A., & Putra, E. (2021). Analysis of Product Variation, Quality of Service and Their Effect on Customer Satisfaction. *IJEED (International Journal Of Entrepreneurship And Business Development)*, 4(6), 954–960.
- Sahai, P., Sharma, M., & Singh, V. K. (2020). Effect of perceived quality, convenience, and product variety on customer satisfaction in teleshopping. *Manag Econ Res J*, 6(3).
- Sarstedt, M., Ringle, C. M., & Hair, J. F. (2021). Partial least squares structural equation modeling. In *Handbook of market research* (pp. 587–632). Springer. https://doi.org/10.1007/978-3-319-57413-4_15
- Singh, S., Jasial, S. S., Misra, R., & Bansal, A. (2023). Online retail service quality: What matters most for customer satisfaction? *FIIB Business Review*, 23197145231151736. <https://doi.org/10.1177/23197145231151736>
- Smith, A. N., Li, Y., Hasegawa, S., Terui, N., & Allenby, G. M. (2020). *Integrated factor models of variety seeking dynamics*.
- Tecoalu, M., Tj, H. W., & Ferdian, F. (2021). The Effect of Price Perception and Brand Awareness on Service Quality Mediated by Purchasing Decisions:(Study Case on PT. Maybank Indonesia Finance Credit Products). *Journal of Humanities, Social Science, Public Administration and Management (HUSOCPUMENT)*, 1(4), 183–195. <https://doi.org/10.51715/husocpument.v1i4.127>
- Tzeng, S.-Y., Ertz, M., Jo, M.-S., & Sarigöllü, E. (2021). Factors affecting customer satisfaction on online shopping holiday. *Marketing Intelligence & Planning*, 39(4), 516–532. <https://doi.org/10.1108/MIP-08-2020-0346>
- Wang, J.-N., Du, J., Chiu, Y.-L., & Li, J. (2018). Dynamic effects of customer experience levels on durable product satisfaction: Price and popularity moderation. *Electronic Commerce Research and Applications*, 28, 16–29. <https://doi.org/10.1016/j.elerap.2018.01.002>
- Winasis, C. L. R., & Sabar, M. (2024). *The Influence of Product Quality, Price Perception and Product Variety on Consumer Repurchase Intentions with Consumer Satisfaction as a Mediating Variable (Study pn Solid Surface Performnite Products)*. <https://doi.org/10.47191/ijmra/v7-i01-41>