

The Influence of Product Quality and Service Quality on Customer Loyalty with Customer Satisfaction as a Mediating Variable at PT Magnesium Gosari International

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ABSTRACT

This study examines the relationship between customer loyalty and the quality of the products and services provided by PT Magnesium Gosari International, using customer satisfaction as a mediating variable. Data were gathered from 100 client companies via questionnaires using a quantitative causal research design, and multiple linear regression and mediation testing were used for analysis. The results demonstrate that customer satisfaction and loyalty are highly impacted by the quality of both the product and the service. Additionally, loyalty is greatly influenced by customer satisfaction, which also mediates the link between loyalty and the caliber of goods and services. These results highlight the importance of improving product and service quality to strengthen long-term customer relationships and maintain market leadership.

INTRODUCTION

Indonesia holds a strategic position in agriculture and plantation development, where the demand for fertilizers continues to grow in line with the need to increase crop productivity. Dolomite fertilizer plays an essential role in improving soil conditions and supporting optimal harvests. However, the competitive nature of the dolomite industry requires companies to adapt quickly to customer demands, not only through the provision of quality products but also through reliable and responsive services. Farmers and agribusiness actors expect fertilizers that meet technical standards while being supported by professional consultation and after-sales service.

PT Magnesium Gosari Internasional (MGI), established in 2018, has become the largest dolomite producer and market leader in Indonesia. As a dominant player, the company's long-term success depends on maintaining customer trust and loyalty. In this context, product quality and service quality emerge as two critical determinants that influence customer experiences. Consumers are more likely to keep buying from and refer the brand to others if they are pleased with both the performance of the product and the promptness of the service. Therefore, understanding how these factors interact is vital for sustaining market leadership.

Previous research has largely focused on service industries such as banking, retail, or tourism, while studies in the fertilizer sector remain limited. Moreover, little attention has been given to exploring how product quality and service quality simultaneously influence customer loyalty through the mediating role of satisfaction. This research addresses this gap by analyzing these relationships in the context of the dolomite fertilizer industry, which possesses unique characteristics due to its technical usage requirements and the importance of field-level consultation for customers.

This study contributes to knowledge enrichment in marketing management by providing evidence from a niche manufacturing sector, thereby offering theoretical advancement on the role of satisfaction as a mediator between product and service quality and customer loyalty. Practically, the results provide insights for PT Magnesium Gosari Internasional to strengthen its strategies in maintaining loyal customers. Using information from PT Magnesium Gosari International customers, the study aims to assess how customer satisfaction functions as a mediating variable in the relationship between product and service quality and customer loyalty.

LITERATURE REVIEW

1. Product Quality

Product quality is defined as a product's capacity to satisfy functional requirements like dependability, durability, and standard compliance (Kotler & Keller, 2016). In the context of dolomite fertilizer, it includes consistency in nutrient content, soil improvement capacity, and effectiveness in enhancing crop yields. Garvin (1987) emphasized that performance, durability, and conformance to standards are key dimensions of quality, while customer perception also plays a significant role. High product quality fosters customer trust and satisfaction, which ultimately strengthens loyalty (Akoglu & Ozbek, 2022).

2. Service Quality

Customer satisfaction and loyalty are known to be influenced by service quality. The SERVQUAL model, which was first presented by Parasuraman, Zeithaml, and Berry in 1988, addresses tangibles, assurance, responsiveness, empathy, and dependability. In agribusiness, service quality extends to technical consultation, after-sales support, and responsiveness in addressing customer issues. Cook (2004) highlighted that quality service creates positive customer experiences, while Morgan and Hunt (1994) emphasized trust and commitment as crucial to long-term relationships. Strong service quality ensures that customers feel valued, directly influencing satisfaction and loyalty.

3. Customer Satisfaction

Customer satisfaction is the emotional and cognitive response of consumers when comparing their expectations with actual product or service performance (Oliver, 1987). It reflects whether experiences meet or exceed customer expectations, shaping their future purchase intentions. Kotler and Keller (2016) explained that satisfaction builds not only functional value but also emotional attachment, while Schiffman and Kanuk (2007) highlighted its mediating role between product and service attributes and customer loyalty. In this way, satisfaction becomes a critical link that transforms quality perceptions into loyalty outcomes.

4. Customer Loyalty

According to Griffin (2017), customer loyalty is the strong resolve to keep buying favored goods or services in spite of external influences or rivalry. It manifests in repeat purchase, retention, referrals, and resistance to switching. Oliver (1999) explained loyalty as a process built upon consistent satisfaction, forming both attitudinal and behavioral commitment. In the fertilizer industry, customer loyalty is particularly vital, as loyal customers not only guarantee stable demand but also promote the brand through word-of-mouth recommendations, thereby strengthening long-term market leadership.

Although many studies have analyzed the link between product quality, service quality, satisfaction, and loyalty, most are concentrated in service sectors such as banking, retail, and tourism. Research within the fertilizer manufacturing industry remains scarce, despite its unique reliance on technical product performance and field consultation. This study addresses the gap by examining how product and service quality influence customer loyalty through satisfaction in the dolomite fertilizer sector. The objective is to enrich marketing theory with evidence from a niche manufacturing context while offering practical recommendations for sustaining customer loyalty in agribusiness.

Table 1. Summary of Theoretical Relationships

No	Variables Relationship	Theoretical Basis	Key Findings / Arguments
1	Product Quality → Customer Satisfaction	Kotler & Keller (2016); Garvin (1987)	High-quality products that meet standards, reliability, and performance increase customer satisfaction.
2	Service Quality → Customer Satisfaction	Parasuraman, Zeithaml, & Berry (1988); Cook (2004)	Reliable, responsive, and empathetic services create positive experiences and enhance satisfaction.
3	Product Quality → Customer Loyalty	Garvin (1987); Akoglu & Ozbek (2022)	Consistent and durable products build trust and lead to repeat purchase and loyalty.
4	Service Quality → Customer Loyalty	Morgan & Hunt (1994); Parasuraman et al. (1988)	Service quality strengthens trust and commitment, encouraging customers to remain loyal.
5	Customer Satisfaction → Customer Loyalty	Oliver (1987, 1999); Kotler & Keller (2016)	Satisfaction mediates the relationship between quality and loyalty, driving repeat purchase and referrals.
6	Product Quality → Customer Satisfaction → Customer Loyalty	Schiffman & Kanuk (2007); Kotler & Keller (2016)	Satisfaction serves as a mediator where product quality enhances loyalty through improved satisfaction.
7	Service Quality → Customer Satisfaction → Customer Loyalty	Parasuraman et al. (1988); Cook (2004)	Strong service delivery increases satisfaction, which in turn reinforces loyalty and retention.

Hypotheses :

H1 : Product quality influences customer satisfaction at PT Magnesium Gosari Internasional.

H2 : Service quality influences customer satisfaction at PT Magnesium Gosari Internasional.

H3 : Product quality influences customer loyalty at PT Magnesium Gosari Internasional.

H4 : Service quality has a strong impact on customer loyalty at PT Magnesium Gosari Internasional.

H5 : Customer satisfaction affects customer loyalty at PT Magnesium Gosari Internasional.

H6 : Product quality significantly influences customer loyalty through the mediation of customer satisfaction at PT Magnesium Gosari Internasional.

H7 : Service quality influences customer loyalty through customer satisfaction at PT Magnesium Gosari Internasional.

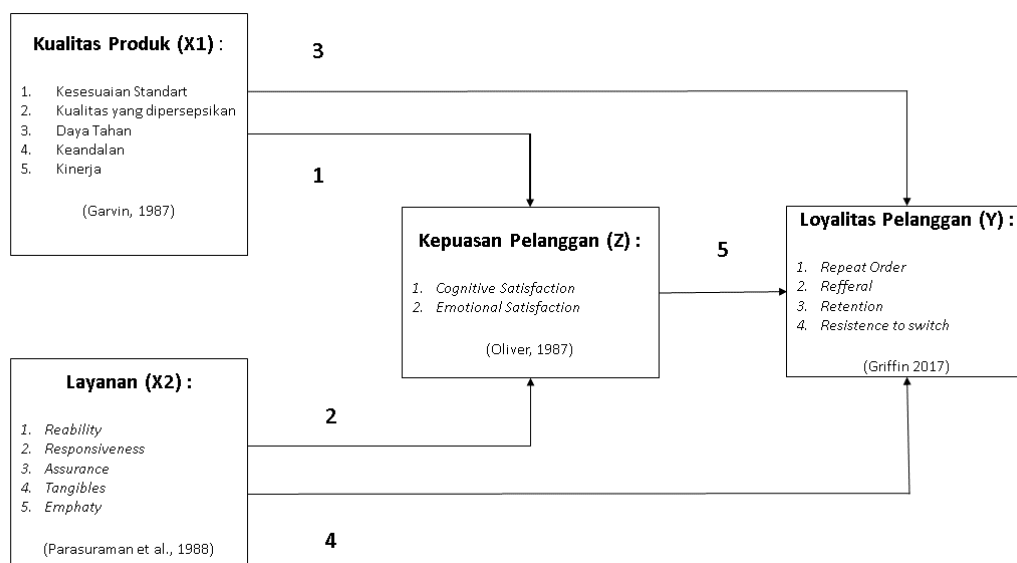


Figure 1. Conceptual Framework

METHODOLOGY

This study used a quantitative methodology and a causal research design to examine the effects of service and product quality on customer loyalty as mediated by customer satisfaction. The study was carried out at PT Magnesium Gosari Internasional, one of Indonesia's top manufacturers of dolomite fertilizer.

The population consisted of the company's customers, specifically firms engaged in agriculture and plantation sectors that regularly purchase dolomite fertilizer. From this population, a total of 100 companies were selected as the sample using purposive sampling, ensuring that respondents had sufficient experience in purchasing and using the product. A five-point Likert scale, ranging from strongly disagree to strongly agree, was used in structured questionnaires to collect data.

To ensure the reliability and validity of the measurement instruments, preliminary tests were conducted prior to full-scale data collection. Product quality, service quality, customer satisfaction, and customer loyalty were among the variables that were measured; each was operationalized using a number of indicators that were drawn from well-established theories.

Data were analyzed using the SPSS for reliability and validity testing, as well as regression analysis. These tools allowed for precise evaluation of both direct and indirect relationships among the variables, supporting the study's aim to provide theoretical and practical contributions to marketing management.

RESEARCH RESULT

1. Respondent Characteristics

This study analyzed data collected from 100 customer companies of PT Magnesium Gosari Internasional through structured questionnaires. The results of the data analysis are presented below.

Table 2. Respondent Characteristics

Category	Frequency	Percentage
Gender: Male	65	65%
Gender: Female	35	35%
Age: < 30 years	20	20%
Age: 30–40 years	40	40%
Age: > 40 years	40	40%
Type of Company: Agriculture	60	60%
Type of Company: Plantation	40	40%

This table shows the demographic and organizational profiles of the respondents. The majority were male (65%), with an almost equal distribution between middle-aged and older respondents. Most respondents came from agricultural firms (60%), while the rest represented plantation companies (40%). These characteristics reflect the diversity of PT Magnesium Gosari Internasional's customer base.

2. Validity Test

Table 3. Validity Test Results

Variable	Item Range of r-value	r-table (0.196)	Status
Product Quality (X1)	0.421 - 0.812	> 0.196	Valid
Service Quality (X2)	0.437 - 0.855	> 0.196	Valid
Customer Satisfaction (Z)	0.462 - 0.801	> 0.196	Valid
Customer Loyalty (Y)	0.488 - 0.836	> 0.196	Valid

The validity test indicates that the correlation coefficients for customer satisfaction, customer loyalty, service quality, and product quality are all greater than the r-table value (0.196). This shows that all of the questionnaire's items are reliable and suitable for gauging the desired construct.

3. Reliability Test

Table 4. Reliability Test Results

Variable	Cronbach's Alpha	Threshold (0.70)	Status
Product Quality (X1)	0.872	> 0.70	Reliable
Service Quality (X2)	0.884	> 0.70	Reliable
Customer Satisfaction (Z)	0.861	> 0.70	Reliable
Customer Loyalty (Y)	0.876	> 0.70	Reliable

Cronbach's Alpha values for all variables are greater than 0.70, demonstrating the reliability and consistency of the measurement instruments. As a result, there is adequate internal consistency in the measurement of the constructs of loyalty, satisfaction, service quality, and product quality.

4. Classical Assumption

Table 5. Classical Assumption Tests

Test	Result	Conclusion
Normality (Kolmogorov-Smirnov)	Sig. > 0.05	Data normally distributed
Multicollinearity	VIF < 10, TOL > 0.1	No multicollinearity
Heteroscedasticity	Sig. > 0.05	No heteroscedasticity
Autocorrelation (Durbin-Watson)	Value \approx 2	No autocorrelation

The results of normality, multicollinearity, heteroscedasticity, and autocorrelation tests indicate that the dataset meets classical regression assumptions. This means that the regression models used in this study are statistically sound and free from major bias.

5. Hypothesis Testing

Table 6. Hypothesis Testing (Direct and Indirect Effects)

Variable Relationship	Direct Effect	Sig.	Indirect Effect	Total Effect	Remark
Product Quality (X1) → Customer Satisfaction (Z)	0.202	0.001	-	-	Significant
Service Quality (X2) → Customer Satisfaction (Z)	0.216	0.001	-	-	Significant
Product Quality (X1) → Customer Loyalty (Y)	0.414	0.001	-	-	Significant
Service Quality (X2) → Customer Loyalty (Y)	0.290	0.001	-	-	Significant
Customer Satisfaction (Z) → Customer Loyalty (Y)	0.178	0.001	-	-	Significant
Product Quality (X1) → Customer Satisfaction (Z) → Customer Loyalty (Y)	-	-	0.202 × 0.178 = 0.036	0.414 + 0.036 = 0.450	Partial Mediation
Service Quality (X2) → Customer Satisfaction (Z) → Customer Loyalty (Y)	-	-	0.216 × 0.178 = 0.038	0.290 + 0.038 = 0.328	Partial Mediation

Table 6 above makes it clear that service quality (X2) and product quality (X1) are directly correlated. Customer loyalty (Y) and customer satisfaction (Z) are strongly influenced by service quality (X2). In the indirect effect analysis, the relationship between product quality (X1) and customer loyalty (Y) is partially mediated by customer satisfaction (Z), with an indirect effect value of 0.036. With an indirect effect value of 0.038, service quality (X2) also mediates the relationship with customer loyalty (Y). Due to its higher indirect effect value, the path Service Quality → Customer Satisfaction → Customer Loyalty exhibits the strongest partial mediation. This suggests that, in comparison to product quality, efforts to enhance service quality will have a greater effect on loyalty through higher customer satisfaction.

DISCUSSION

The findings of this study confirm that product quality significantly affects customer satisfaction at PT Magnesium Gosari Internasional. This implies that the company's ability to deliver fertilizers that consistently meet technical standards, improve soil conditions, and provide stable outcomes for agricultural and plantation productivity leads to higher levels of satisfaction. Customers who experience reliable performance from dolomite fertilizer are more likely to perceive value and express positive evaluations, which supports previous theoretical perspectives that high product quality builds satisfaction and trust.

Customer satisfaction is positively impacted by service quality as well. Service in the fertilizer sector includes not only delivery but also technical advice,

complaint handling, and the ability of the business to quickly satisfy client demands. When customers feel supported through professional guidance and responsive services, their satisfaction is enhanced. This aligns with the SERVQUAL model, which emphasizes reliability, responsiveness, and empathy as key dimensions of service performance, suggesting that good service is as crucial as product excellence in maintaining satisfied customers.

Beyond satisfaction, the results demonstrate that both product quality and service quality directly influence customer loyalty. Customers who perceive dolomite fertilizer to be reliable and effective tend to show repeat purchase behavior, while those who receive strong service support are less likely to switch to competitors. This reinforces the notion that loyalty is not only built on satisfaction but also on consistent performance and strong relational bonds with the supplier. In highly competitive industries such as fertilizer production, loyalty becomes a strategic asset that ensures stable demand and market leadership.

Customer satisfaction itself significantly drives loyalty, highlighting its mediating role in the relationship between quality and loyalty. Satisfied customers are more likely to remain committed, recommend products to others, and resist competitive offers. The mediation analysis strengthens this argument by showing that product and service quality exert stronger influence on loyalty when customers are satisfied. This finding supports the theoretical model in which satisfaction serves as the bridge linking quality perceptions to loyalty behaviors.

Taken together, these results provide both theoretical and practical contributions. Theoretically, this research enriches marketing management literature by providing evidence from a niche manufacturing sector, dolomite fertilizer where product performance and service consultation are equally critical. Practically, the findings suggest that PT Magnesium Gosari Internasional should continuously improve product consistency while enhancing service responsiveness and consultation support, as these elements jointly determine satisfaction and loyalty. By sustaining this balance, the company can secure long-term relationships with customers and strengthen its competitive advantage in the fertilizer industry.

CONCLUSIONS AND RECOMMENDATIONS

1. Conclusion

This study concludes that product quality and service quality are fundamental drivers of customer satisfaction and loyalty at PT Magnesium Gosari Internasional. High product quality, reflected in consistent performance and reliability of dolomite fertilizer, significantly enhances satisfaction and directly strengthens loyalty. Similarly, service quality, including responsiveness, assurance, and technical consultation, also contributes positively to both satisfaction and loyalty. Customer satisfaction itself plays a critical mediating role, bridging the influence of product and service quality on loyalty. These findings emphasize that customer loyalty is shaped not only by direct evaluations of quality but also by the emotional and cognitive satisfaction customers experience.

2. Recommendation

Based on these findings, PT Magnesium Gosari Internasional should prioritize continuous improvement in both product and service dimensions. On the product side, ensuring consistent quality standards, innovation, and alignment with customer needs will sustain satisfaction. On the service side, investing in training, customer support systems, and responsive after-sales services will further enhance customer experiences. Moreover, the company should strengthen strategies that actively monitor customer satisfaction as a key performance indicator, since satisfaction is a proven mediator of loyalty. Future research could expand by incorporating variables such as trust, commitment, or brand image to provide a more comprehensive understanding of customer behavior in the fertilizer industry.

ADVANCED RESEARCH

Every study has its limitations, and this research is no exception. The first limitation lies in the scope of the sample, which was restricted to 100 customer companies of PT Magnesium Gosari Internasional. Although sufficient for statistical analysis, this sample may not fully capture the diversity of customer behavior across different regions or industries beyond the company's direct market. The second limitation is methodological, as this study relied solely on survey questionnaires using self-reported data, which may be subject to response bias and does not capture longitudinal changes in customer behavior.

Future studies are encouraged to expand the scope by including larger and more varied samples, such as farmers, distributors, and retailers, to enrich the generalizability of findings. Researchers may also employ longitudinal designs to observe changes in satisfaction and loyalty over time, particularly in response to product innovation or shifts in service strategy. Additionally, incorporating other constructs such as trust, brand image, or switching cost could provide a more comprehensive understanding of customer loyalty formation. By addressing these limitations, future research can build upon the present study and offer deeper theoretical and managerial insights into customer relationship management in the fertilizer industry.

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