THE INFLUENCE OF PRICE PERCEPTION AND PERCEIVED PRODUCT QUALITY ON CONSUMER SATISFACTION OF DETERGENT BRAND XYZ IN MEDAN

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Abstracts

This study investigates the influence of price perception and perceived product quality on customer satisfaction with detergent brand XYZ. Using a quantitative approach and Partial Least Squares Structural Equation Modeling (PLS-SEM), data were collected through a structured questionnaire administered to consumers who regularly use the brand. The measurement model demonstrated acceptable reliability and validity, while the structural model revealed substantial explanatory power, with an R² value of 0.431 for customer satisfaction. The findings indicate that both price perception and perceived product quality significantly and positively influence customer satisfaction. Perceived product quality exhibited the stronger effect, as reflected by higher f-square values and path coefficients. The combined influence of both variables also proved significant, confirming that customer satisfaction is shaped by the interplay of consumers' value perceptions and product performance assessments. These results highlight the importance for detergent manufacturers to maintain competitive pricing strategies while consistently delivering high product quality. The study concludes with managerial implications and suggests avenues for future research, including expanding the model with additional variables and using more diverse samples to enhance generalizability.

Keywords: **Price Perception, Perceived Product Quality, Customer Satisfaction, Marketing**

INTRODUCTION

Laundry detergent is one of the most essential fast-moving consumer goods (FMCG) in Indonesian households, and competition among detergent brands has intensified with the rise of both national and local producers. In a competitive FMCG market, consumer satisfaction plays a central role in shaping repurchase behavior, brand preference, and long-term loyalty. Recent studies on Indonesian consumers highlight that product quality, service quality and price perception can increase customer satisfaction (Pandiangan & Nisa, 2024). This underscores the importance of understanding how consumers interpret value when deciding among detergent brands.

Price perception is a consumer's subjective judgment of whether a product's price is fair, reasonable, and aligned with its benefits. It is not the absolute price that matters, but how consumers interpret that price relative to their expectations and the alternatives available to them. Research in Indonesian consumer-service contexts shows that price perception plays an important role in shaping customer satisfaction, where customers who consider prices fair and in line with the value they receive are likely to feel higher satisfaction. (Yulihapsasi, et al., 2025). When consumers

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feel that the detergent they purchase offers good value-for-money, they tend to form higher satisfaction levels, which can lead to repeat purchases and positive word-of-mouth.

Alongside price, perceived product quality is another major determinant of satisfaction, particularly for detergents, which are used frequently, repeatedly, and often evaluated across multiple attributes—cleaning effectiveness, fragrance, safety, and consistency. Empirical findings show that the better the quality perception, the higher the satisfaction that consumers of MS Glow cosmetic products will get (Putri & Djamaludin, 2024). Because detergent is a utilitarian product, consumers closely monitor its performance; poor cleaning power or inconsistent formulation can quickly diminish satisfaction.

Although various studies have independently examined price perception and product quality, the simultaneous influence of both variables provides a more comprehensive picture of consumer behavior. Prior research in Indonesian consumer markets shows that product quality and perceived price jointly exert a strong explanatory influence on customer satisfaction (Surya & Kurniawan, 2021). This is especially relevant for FMCG markets, where consumers must constantly balance affordability with performance expectations.

Despite this growing body of literature, there is still limited empirical investigation focused specifically on detergent products within localized markets such as Medan. Existing Indonesian studies tend to concentrate on categories such as cosmetics and food-and-beverage products. (Adrian & Keni, 2023; Poan & Wicaksono, 2023). However, detergent markets have distinct consumer expectations—such as stain-removal strength, suds levels, scent retention, and fabric safety—which may influence how price and quality shape satisfaction. Thus, examining detergent brand XYZ in Medan can fill this gap by offering contextual insights that may differ from findings in other product categories.

The theoretical foundation for this study is the Expectation–Disconfirmation Theory (EDT), which posits that consumer satisfaction results from the comparison between expectations and perceived performance. When the perceived quality exceeds expectations, or when the perceived price is evaluated as fair relative to expected value, positive disconfirmation occurs, leading to higher satisfaction. Recent Indonesian studies found that price and product quality are key drivers of satisfaction and subsequent behavioral intentions (Pandiangan & Nisa, 2024; Poan & Wicaksono, 2023).

Drawing upon EDT and prior empirical findings, this research proposes three hypotheses:
H1: Price perception positively influences consumer satisfaction with detergent brand XYZ.
H2: Perceived product quality positively influences consumer satisfaction with detergent brand XYZ.
H3: Price perception and perceived product quality simultaneously influence consumer satisfaction with detergent brand XYZ.

Given the importance of understanding satisfaction determinants in detergent purchasing behavior, especially within the regional market of Medan, this study aims to provide evidence on how price perception and perceived product quality jointly shape consumer satisfaction. The results are expected to offer actionable insights for detergent brand managers, particularly in designing pricing strategies and quality-improvement initiatives to strengthen consumer retention.

METHODS

Research Design

This study employed a quantitative explanatory research design to examine the influence of price perception and perceived product quality on consumer satisfaction of detergent brand XYZ in Medan. A cross-sectional survey method was used, enabling data collection from respondents at a single point in time. This design is appropriate for testing causal relationships among variables and for statistical hypothesis testing.

Population and Sample

The population of this study consists of household consumers in the city of Medan who have purchased and used detergent brand XYZ at least once in the past three months. Because the exact population size is unknown and dispersed across multiple districts, the sample was determined using the Hair et al. (2019) minimum requirement for multivariate analysis: at least 5–10 respondents per indicator. With 12 indicators across three variables, the required minimum is 60–120 respondents. To enhance statistical stability, this study targeted 120 respondents.

Sampling Technique

The sampling technique used was non-probability purposive sampling. Respondents were selected based on relevance to the study criteria:

1. Reside in Medan
2. Have purchased detergent brand XYZ
3. Are at least 18 years old
4. Are capable of completing the questionnaire independently

This technique is appropriate for consumer behavior research where respondents must meet specific experiential criteria.

Operational Definitions and Indicators

Each variable in this study was measured using multiple indicators adapted from prior validated studies.

1. Price Perception (X1)

Consumer judgment of price fairness and value relative to benefits received. Adapted from Yulihapsasi, et al. (2025). Indicators:

X1.1: The price of XYZ detergent is fair.
X1.2: XYZ detergent is affordable for me.
X1.3: XYZ detergent offers good value for the money.
X1.4: The price of XYZ detergent is reasonable compared to other brands.

2. Perceived Product Quality (X2)

Consumer evaluation of the performance and attributes of detergent XYZ. Indicators adapted from Dewi & Purnawati (2024) and Pohan, et al. (2025). Indicators:

X2.1: XYZ detergent cleans clothes effectively.
X2.2: The XYZ detergent shows a high-quality impression from its appearance.
X2.3: The quality of XYZ detergent is consistent.

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X2.4: XYZ detergent feels safe for fabrics and skin.

3. Consumer Satisfaction (Y)

The degree to which the consumer feels satisfied and fulfilled with detergent XYZ. Adapted from Herman (2022) and Pohan, et al. (2025). Indicators:

Y1: I am satisfied with the quality of XYZ detergent.

Y2: I am satisfied with the price of XYZ detergent.

Y3: XYZ detergent meets my expectations.

Y4: I intend to purchase XYZ detergent again.

All items were measured using a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree).

Instrument Development

The questionnaire consisted of two sections:
- Screening and demographic questions
- Variable measurement items

The instrument was reviewed by two experts in marketing research to ensure clarity and content validity prior to distribution.

Validity and Reliability Testing

Instrument testing was conducted on 30 respondents in Medan who matched the sampling criteria.
- Validity testing: Each item was evaluated using Pearson correlation. Items with $r > 0.30$ and $p < 0.05$ were considered valid.
- Reliability testing: Internal consistency was assessed with Cronbach's Alpha. Variables were considered reliable if $\alpha \geq 0.70$, following the threshold recommended by Hair et al. (2019).

Data Collection Procedures

Data were collected online and offline. Online distribution used Google Forms, shared through WhatsApp groups and community networks in Medan. Offline distribution was conducted in residential areas and local minimarkets where detergent XYZ is commonly purchased. Participation was voluntary, and respondents were informed about the study's purpose and confidentiality.

Data Analysis Techniques

The analysis followed these steps:
- Descriptive Statistics, used to summarize demographic characteristics and responses.
- Classical Assumption Tests, including normality, multicollinearity, and heteroscedasticity.
- Multiple Linear Regression, to test the influence of X1 and X2 on Y.
- t-tests, to test H1 and H2 individually.
- F-test, to test H3 (simultaneous influence).

● Coefficient of Determination (R²), to evaluate the explanatory power of the model.
All analyses were performed using SPSS 25.

RESULTS AND DISCUSSION

Characteristics of Respondents

The demographic profile of respondents provides an overview of the sample distribution in this study. The characteristics analyzed include gender, age, educational background, and occupation.

1. Gender

Table 1
Characteristics of respondents by gender

Gender	Amount	Percentage
Female	111	92.50%
Male	9	7.50%
Total	**120**	**100.00%**

Source: Processed primary data, 2025

Table 1 presents the gender distribution of the respondents participating in this study. The data show that the sample is predominantly female, with 111 respondents (92.5%), while male respondents account for only 9 individuals (7.5%) out of the total 120 participants. This gender imbalance indicates that women constitute the majority of detergent brand XYZ users in Medan, which is consistent with common household purchasing patterns where women tend to be more involved in decisions related to daily household products such as detergents. The dominance of female respondents also suggests that their perceptions may have a stronger influence on the overall results of this study. These characteristics should be taken into consideration when interpreting the findings and generalizing them to the broader consumer population.

2. Age

Table 2
Characteristics of respondents by age

Age	Amount	Percentage
< 20	16	13.33%
20 - 30	36	30.00%
30 – 40	41	34.17%
> 40	27	22.50%
Total	**120**	**100.00%**

Source: Processed primary data, 2025

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Table 2 describes the age distribution of the respondents, showing that the sample is spread across four distinct age groups as presented in the table. The largest proportion of respondents falls into the third age group, comprising 41 individuals (34.17%), followed by the second group with 36 respondents (30.00%). The fourth group accounts for 27 respondents (22.50%), while the first group represents the smallest segment with 16 respondents (13.33%). With a total of 120 participants, these figures indicate that the majority of detergent brand XYZ users in this study are concentrated in the middle age categories, which typically represent active household decision-makers. This distribution suggests that the perceptions measured, particularly concerning price and product quality, are likely influenced by respondents who are more experienced in purchasing and evaluating household cleaning products

3. Education Level

Table 3

Characteristics of respondents based on education level

Education Level	Amount	Percentage
High School	53	44.17%
Diploma	20	16.67%
Bachelor (S1)	39	32.50%
Master (S2)	6	5.00%
Doctor (S3)	2	1.67%
Total	**120**	**100.00%**

Source: Processed primary data, 2025

Table 3 presents the distribution of respondents based on their education level. The data show that the largest portion of participants completed high school, totaling 53 respondents (44.17%), indicating that many users of detergent brand XYZ come from this educational background. The second largest group consists of respondents with a bachelor's degree (S1), comprising 39 individuals (32.50%), followed by those with a diploma, totaling 20 respondents (16.67%). A smaller portion of the sample holds postgraduate qualifications, including 6 respondents (5.00%) with a master's degree (S2) and 2 respondents (1.67%) with a doctoral degree (S3). With a total of 120 respondents, the data suggest that the majority of detergent consumers surveyed have mid-level educational backgrounds, which may influence their price sensitivity and evaluations of product quality. Such educational characteristics provide important context for interpreting the perceptions and satisfaction levels analyzed in this study.

4. Occupation

Table 4

Characteristics of respondents by occupation

Occupation	Amount	Percentage

High School/University Student	6	5.00%
Entrepreneur/Trader	9	7.50%
Public Sector Employee	5	4.17%
Private Employee	36	30.00%
Housewife	41	34.17%
Professional/Executive	6	5.00%
Unemployed	9	7.50%
Other	8	6.67%
Total	**120**	**100.00%**

Source: Processed primary data, 2025

Table 4 shows the occupational characteristics of the respondents participating in this study. The largest group consists of housewives, totaling 41 respondents (34.17%), which aligns with the nature of detergent purchasing as a household-related activity. The next major group is private employees, comprising 36 respondents (30.00%), indicating that working individuals also represent a significant segment of detergent brand XYZ users. Smaller proportions include entrepreneurs or traders and unemployed respondents, each with 9 individuals (7.50%), followed by students and professionals or executives, each consisting of 6 respondents (5.00%). The smallest category is public sector employees, with 5 respondents (4.17%), while 8 respondents (6.67%) reported occupations classified as "other." With a total of 120 respondents, this distribution suggests that detergent brand XYZ is used across diverse occupational groups, but predominantly among housewives and private employees that typically manage or influence household purchasing decisions.

Data Analysis

The data were analyzed using Structural Equation Modeling–Partial Least Squares (SEM-PLS) to evaluate the relationships between price perception, perceived product quality, and consumer satisfaction of detergent brand XYZ. SEM-PLS was selected because it is suitable for predictive modeling and can effectively handle complex relationships among latent variables, even with relatively small sample sizes. The analysis included evaluating the measurement model to ensure indicator reliability, convergent validity, and discriminant validity, followed by assessing the structural model to determine the significance and strength of the hypothesized paths. The results confirmed that all constructs met the required reliability and validity thresholds, allowing for meaningful interpretation of the structural relationships. Overall, the SEM-PLS output provides evidence on how strongly price perception and perceived product quality influence consumer satisfaction, both individually and simultaneously.

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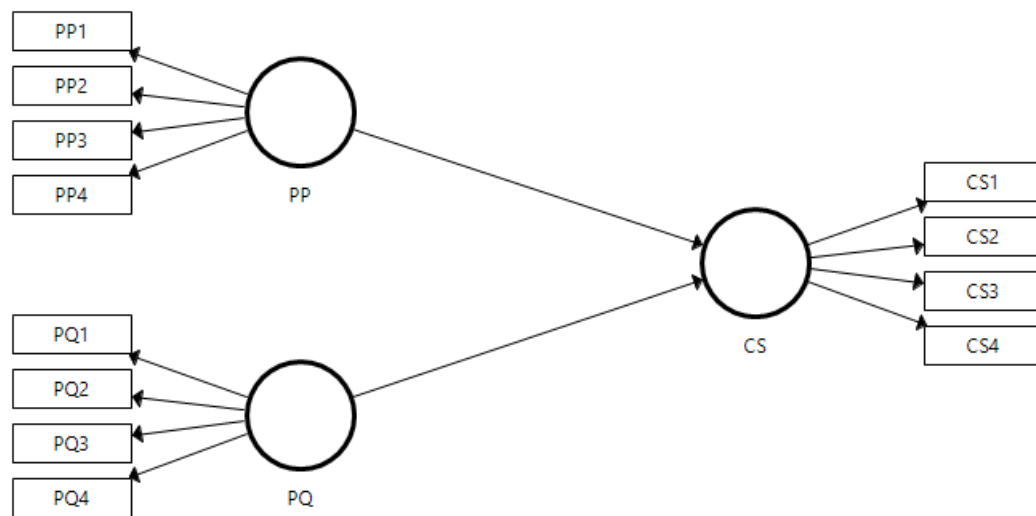
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Figure 1
Model

The structural model used in this study consists of two exogenous latent variables, Price Perception (PP) and Perceived Product Quality (PQ), and one endogenous latent variable, Consumer Satisfaction (CS). Each construct is measured reflectively through four indicators: PP is represented by PP1-PP4, PQ by PQ1-PQ4, and CS by CS1-CS4. The model specifies two direct causal paths, namely from PP to CS and from PQ to CS, reflecting the study's hypotheses that price perception and perceived product quality each exert a positive influence on consumer satisfaction. This configuration aligns with the theoretical expectation that consumers' evaluations of price fairness and product performance collectively shape their satisfaction with detergent brand XYZ. The reflective measurement approach assumes that each set of indicators manifests the latent construct consistently, allowing SEM-PLS to assess both measurement quality and the strength of structural relationships within the model.
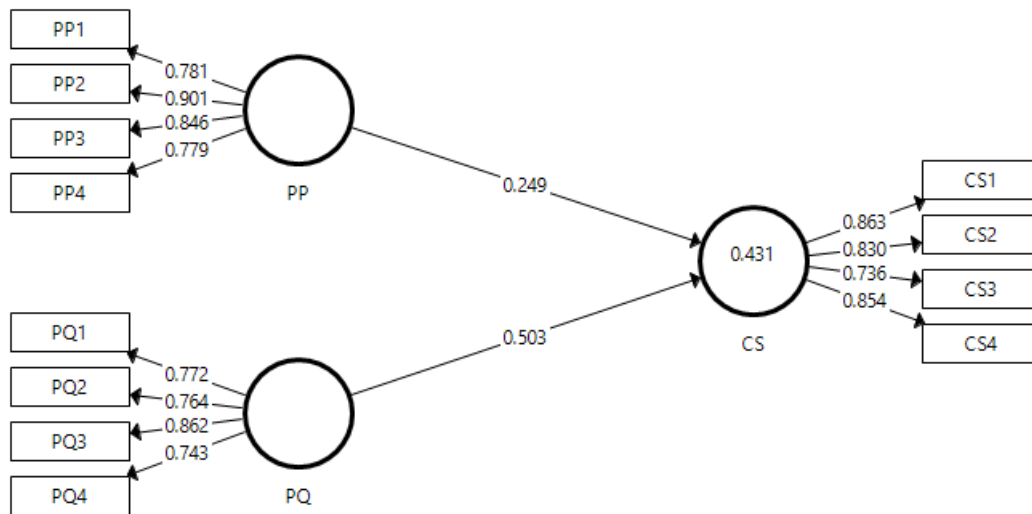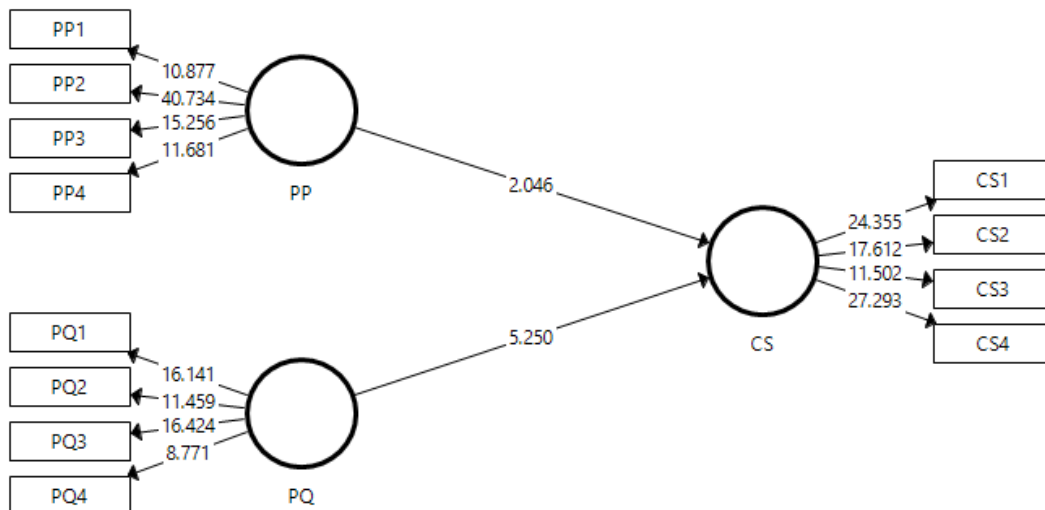
Figure 2
Path Coefficient

Figure 3
t Values

1. Research Findings

a. Measurement Model (Outer Model)

The evaluation of the measurement model, or outer model, was conducted to assess the reliability and validity of the indicators used to measure each latent construct. This stage is essential to ensure that the observed indicators accurately reflect the underlying variables, Price Perception, Perceived Product Quality, and Consumer Satisfaction, before proceeding to interpret the structural relationships in the model.

Table 5
Reliability and Validity Test

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Construct	Cronbach's Alpha	CR	AVE	Outer Loadings (Range)
Price Perception	0.847	0.897	0.686	0.779-0.901
Perceived Product Quality	0.794	0.866	0.619	0.743-0.862
Customer Satisfaction	0.839	0.893	0.676	0.736-0.863

Source: Output of PLS-SEM, 2025

The results of the measurement model evaluation demonstrate that all constructs in the study meet the required thresholds for reliability and validity. As shown in the table, Cronbach's Alpha values range from 0.794 to 0.847, indicating strong internal consistency across all constructs. Similarly, the Composite Reliability (CR) values, which fall between 0.866 and 0.897, exceed the recommended minimum of 0.70, confirming that the indicators reliably measure their respective latent variables. In terms of convergent validity, the Average Variance Extracted (AVE) values for all constructs, ranging from 0.619 to 0.686, are above the 0.50 cutoff, indicating that each construct explains more than half of the variance in its indicators. Furthermore, the outer loadings, which range from 0.736 to 0.901, surpass the commonly accepted threshold of 0.70, demonstrating that all indicators load strongly on their respective constructs. Collectively, these results confirm that the measurement model exhibits good reliability and convergent validity, allowing for a robust assessment of the structural model in the next stage.

The R Square results indicate that the structural model has a moderate explanatory power. The R Square value of 0.431 shows that price perception and perceived product quality collectively explain 43.1% of the variance in consumer satisfaction. The adjusted R Square value of 0.421, which accounts for model complexity and sample size, remains close to the original value, suggesting that the model is stable and not overfitted. These results imply that while the two independent variables provide substantial explanatory contribution, additional factors beyond the scope of this study may also influence consumer satisfaction with detergent brand XYZ. Overall, the R Square values confirm that the model has acceptable predictive strength for behavioral research in the FMCG context.

The effect size (f Square) results provide additional insight into the relative contribution of each exogenous variable to the endogenous construct. As shown in the table, Price Perception (PP) has an f Square value of 0.085, which falls within the small effect category according to Cohen's (1988) guidelines. This indicates that price perception contributes modestly to explaining consumer satisfaction. In contrast, Perceived Product Quality (PQ) shows a substantially larger effect, with an f Square value of 0.348, classified as a medium-to-large effect. This suggests that perceived product quality plays a more dominant role in shaping consumer satisfaction with detergent brand XYZ compared to price perception. Taken together, these results highlight that while both variables significantly influence satisfaction, product quality exerts a considerably stronger impact within the structural model.

Table 6
Path Coefficients and Hypothesis Testing

Hypothesis	Coefficient	t-Statistic	p-Value	Result
H1: Price Perception → Customer Satisfaction	0.249	2.046	0.041	Supported
H2: Perceived Product Quality → Customer Satisfaction	0.503	5.250	0.000	Supported

Source: Output of PLS-SEM, 2025

Table 6 presents the results of the path analysis and hypothesis testing. The findings show that Price Perception has a positive and statistically significant effect on Customer Satisfaction, with a path coefficient of 0.249, a t-statistic of 2.046, and a p-value of 0.041, thereby supporting H1. This indicates that consumers who perceive the price of detergent brand XYZ as fair and reasonable tend to report higher levels of satisfaction. Meanwhile, Perceived Product Quality demonstrates an even stronger and highly significant effect on Customer Satisfaction, as reflected by its path coefficient of 0.503, a t-statistic of 5.250, and a p-value of 0.000, confirming H2. These results suggest that product quality, such as cleaning performance, fragrance, and consistency, plays a more substantial role than price in shaping overall consumer satisfaction. Overall, the path coefficients validate both hypotheses and highlight perceived product quality as the dominant predictor within the model.

The simultaneous influence of price perception and perceived product quality on consumer satisfaction is reflected in the overall performance of the structural model. The R Square value of 0.431 indicates that when considered together, both variables explain 43.1% of the variance in customer satisfaction, demonstrating a moderate and meaningful predictive power. This confirms that the combined contribution of price and product quality is substantial in shaping consumer evaluations of detergent brand XYZ. Further supporting this conclusion, the effect size (f Square) results show that while price perception exerts a small individual effect (0.085), perceived product quality provides a much stronger contribution (0.348), indicating that the two variables collectively enhance the model's explanatory ability. The significance of both paths in the hypothesis testing, with price perception (t = 2.046, p = 0.041) and product quality (t = 5.250, p = 0.000) each showing positive and statistically significant effects, reinforces that the simultaneous relationship proposed in H3 is empirically supported. Thus, the findings confirm that consumer satisfaction with detergent brand XYZ is shaped by an integrated evaluation of both fair pricing and perceived product performance, with product quality serving as the more influential driver when both variables operate together.

2. Discussion

The findings of this study provide meaningful insights into how price perception and perceived product quality shape consumer satisfaction with detergent brand XYZ in Medan. The results of the SEM-PLS analysis confirm that both variables exert significant positive effects on satisfaction, although with differing levels of influence. These outcomes support the theoretical foundation derived from Expectation–Disconfirmation Theory (EDT), which posits that consumer satisfaction arises when perceived value, formed by price and product performance, meets or exceeds expectations.

First, the results show that price perception positively affects consumer satisfaction, as evidenced by a statistically significant path coefficient (β = 0.249, p = 0.041). This indicates that

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consumers who perceive the price of detergent brand XYZ as fair and justified are more likely to report satisfaction with their purchase. This finding aligns with existing literature that views price fairness as a central element in shaping positive value judgments for FMCG products. Although the effect size of price perception ($f^2 = 0.085$) is categorized as small, its significance demonstrates the continued importance of competitive pricing in markets where consumers are price-sensitive and frequently compare alternatives.

Second, the study finds that perceived product quality has a strong and highly significant influence on consumer satisfaction, reflected in the larger coefficient ($\beta = 0.503$, $p = 0.000$) and medium-to-large effect size ($f^2 = 0.348$). This result suggests that consumers place greater emphasis on product performance aspects, such as cleaning effectiveness, fragrance, and overall reliability, when evaluating detergents. Given that detergent is a utilitarian household product used frequently, consumers tend to assess quality based on consistent and observable results. This finding is consistent with prior research indicating that perceived product quality is often the dominant driver of satisfaction in FMCG categories, particularly for products involving repeated use and performance-based evaluations.

Moreover, the simultaneous influence of price perception and product quality, as proposed in H3, is supported by the R Square value of 0.431, indicating that both factors together explain 43.1% of the variance in consumer satisfaction. This moderate explanatory power demonstrates that while the two variables are crucial, other factors, such as brand trust, packaging, scent preference, availability, or promotional activities, may also play meaningful roles in shaping satisfaction but were not included in the current model. Nonetheless, the strong and significant structural paths confirm that satisfaction arises from a combination of value evaluations, where consumers balance the economic considerations of price with the functional benefits associated with product quality.

Another important observation is that product quality exerts a substantially stronger effect than price, indicating that quality improvements may yield greater returns in enhancing satisfaction compared to price adjustments. For detergent producers, this insight is particularly valuable because it underscores the importance of continuous improvement in product formulation, such as stain-removal capability, gentleness on fabric, fragrance longevity, and safe composition. While pricing strategies remain important, they should be positioned in a way that reinforces perceived value rather than serving as the primary competitive lever.

The findings also carry practical implications for marketing strategy. Considering the demographic profile of respondents, dominated by women and individuals in active household decision-making age groups, the brand should target communication strategies that emphasize product performance benefits while ensuring that price remains aligned with expectations of fairness. Given that many respondents have mid-level education backgrounds, marketers may benefit from clear, straightforward messaging that emphasizes functional superiority rather than overly technical claims.

Finally, the overall findings reinforce that consumer satisfaction with detergent brand XYZ is shaped by an integrated evaluation process, in which both price fairness and product performance play essential roles. While perceived product quality emerges as the stronger predictor, price perception remains an important complementary factor. Together, these insights provide a robust

basis for developing strategic recommendations aimed at improving customer satisfaction, strengthening brand loyalty, and enhancing competitive positioning within the detergent market in Medan.

CONCLUSION AND IMPLICATIONS

1. Conclusion

This study aimed to examine the influence of price perception and perceived product quality on consumer satisfaction with detergent brand XYZ in Medan. The findings derived from SEM-PLS analysis demonstrate that both variables significantly contribute to the formation of consumer satisfaction. Price perception was found to have a positive and significant effect, indicating that consumers who view the product's price as fair and acceptable are more likely to be satisfied. Meanwhile, perceived product quality emerged as the stronger determinant, showing a substantial and highly significant influence on satisfaction. Together, these two variables explain 43.1% of the variance in consumer satisfaction, confirming the simultaneous effect proposed in the third hypothesis.

Overall, the results underscore that consumer satisfaction with detergent brand XYZ is shaped by an integrated evaluation of economic value and functional performance. While both constructs are important, perceived product quality holds greater weight in driving satisfaction. These findings are consistent with consumer behavior theories suggesting that for frequently used household products, performance-based evaluations often dominate consumers' satisfaction judgments.

b. Theoretical Implications

This study contributes to the marketing and consumer behavior literature by reaffirming the relevance of price perception and perceived product quality as key antecedents of satisfaction in the FMCG sector. The findings align with Expectation–Disconfirmation Theory (EDT), which posits that satisfaction arises when perceived value meets or exceeds expectations. Moreover, the stronger effect of product quality supports prior research showing that quality-related attributes are critical drivers of satisfaction for utilitarian products like detergents. The validated measurement model also provides empirical support for using reflective indicators to capture consumer perceptions in academic studies.

c. Managerial Implications

The results offer several actionable insights for managers and marketers of detergent brand XYZ:

1. Prioritize Product Quality Enhancements
   Since perceived product quality exerts the largest influence on satisfaction, companies should continue to improve core attributes such as cleaning efficacy, fragrance durability, fabric friendliness, and formulation consistency. Efforts to strengthen quality will likely yield the highest impact on consumer satisfaction and repeat purchase behavior.

2. Maintain Fair and Transparent Pricing Strategies
   While price plays a smaller role than quality, its significant effect indicates that pricing must remain competitive and aligned with consumer expectations. Clear communication of value,

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such as cost savings per wash, long-lasting fragrance, or superior stain removal, can help reinforce fair price perceptions.

3. Tailor Marketing Communications to Key Consumer Segments

With a large portion of respondents being women and household decision-makers, marketing strategies should focus on practical benefits, ease of use, and reliability. Demonstrating real-life performance through testimonials, demonstrations, or before–after visuals may enhance perceived value.

4. Strengthen Brand Positioning Through Value Integration

Companies should adopt a "value-based positioning" approach that highlights both affordability and quality. Messaging that balances functional superiority with reasonable pricing may strengthen overall brand perception and satisfaction.

5. Explore Additional Satisfaction Drivers

With 56.9% of variance in satisfaction explained by factors outside the model, future managerial decisions may consider other determinants such as brand trust, packaging appeal, scent preferences, accessibility, and promotional tactics.

d. Limitations and Future Research

Despite providing meaningful insights into the determinants of customer satisfaction with detergent brand XYZ, this study is not without limitations. First, the research relied on a cross-sectional design, which captures consumer perceptions at a single point in time. As customer satisfaction can shift due to changes in product availability, promotional activities, or competitive dynamics, future studies should consider adopting a longitudinal approach to better understand how these relationships evolve.

Second, the data were collected using self-reported questionnaires, which may introduce potential response bias or common method variance. Subsequent research could incorporate mixed methods, such as observational data, experiments, or in-depth interviews, to validate and enrich the findings.

Third, the study examined only two antecedents of customer satisfaction: price perception and perceived product quality. While both variables significantly influenced satisfaction, they do not capture the full array of factors shaping consumer evaluations in the detergent industry. Future research should expand the model by incorporating additional variables such as brand trust, packaging appeal, environmental friendliness, or advertising effectiveness.

Fourth, the sample was limited to a specific consumer segment and geographic context, which may restrict the generalizability of the results. Researchers should replicate the study across different regions, demographic groups, or competing detergent brands to assess whether the observed relationships hold consistently.

Finally, the use of PLS-SEM offers valuable insights into the structural relationships within the model, but future studies could compare these results with alternative analytical approaches such as CB-SEM or machine learning–based predictive modeling to test the robustness of the findings.

By addressing these limitations, future research can build a more comprehensive and nuanced understanding of the drivers of customer satisfaction in the detergent market and further strengthen the practical implications for manufacturers and marketers.

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