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The effect of price and product promotion on customer loyalty in a digital market context

Putri Sekarini Hendrawan*, Dea Yolandri, Vincent Julianto Sebastian, Hernando Nicholas, Ruben Imanuel Hutagalung, Theresia Sally Monica

Management Department, Business Binus School, Bina Nusantara University, Kampus Anggrek, Jl. Kebon Jeruk Raya No. 27, Kebon Jeruk, Jakarta Barat 11530 Indonesia
e-mail: putrisekarini@yahoo.com

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ABSTRACT

This study investigates the effect of price and product promotion on customer loyalty in a digitally mediated market context. While prior research generally reports positive effects of price fairness and promotional activities on loyalty, evidence from specific contexts remains mixed and often embedded within broader models that include service quality and brand image. This study adopts a quantitative, explanatory design with a positivist orientation, using survey data collected from 70 customers who have purchased the company's products at least twice in the last six months and are aware of its promotional activities. Perceived price, product promotion, and customer loyalty are measured using multi-item Likert scales, and the data are analysed using multiple linear regression. The results show that the overall regression model is not statistically significant at the 5% level, with an R^2 of 0.071 indicating that price and promotion jointly explain only 7.1% of the variance in customer loyalty. The coefficient for price is positive, while the coefficient for promotion is negative, but neither exerts a significant effect on loyalty. These findings suggest that price and promotion alone are not sufficient to generate strong customer loyalty and that other factors—such as service quality, product value, and brand image—likely play a more dominant role. The study highlights the need for firms to embed price and promotion decisions within a broader relationship-marketing strategy rather than relying on economic incentives alone to sustain customer loyalty

Keywords: Price, Product promotion, Customer loyalty, Digital marketing, Marketing mix

1. INTRODUCTION

Rapid advances in information and communication technologies have fundamentally reshaped the business landscape in Indonesia and globally. The diffusion of smartphones, mobile internet, and social media has altered how consumers search for information, evaluate alternatives, and interact with brands. In Indonesia, more than two-thirds of the population is now online, and digital platforms have become embedded in everyday consumption routines, including shopping, entertainment, and financial transactions. This pervasive connectivity significantly lowers search costs and enables consumers to compare prices, promotions, and product offerings in real time, thereby intensifying competition and forcing firms to rethink how they design and deliver value.

In parallel, the rapid growth of e-commerce and online-to-offline retail has made digital marketing a central strategic tool for firms seeking to attract, engage, and retain customers. Digital marketing is no longer limited to basic online advertising; it encompasses integrated activities such as content marketing, social media engagement, personalized offers, and data-driven customer relationship management (CRM). Recent evidence shows that well-designed digital marketing strategies can strengthen customer relationships and generate sustainable financial benefits by enhancing satisfaction and loyalty, especially when they are personalized and integrated across channels (Rahayu, 2024; Wikantari, 2023). However, the same digital environment also amplifies customers' ability to switch providers quickly when they perceive inferior value, particularly in terms of price attractiveness and promotional incentives.

Within this increasingly dynamic marketplace, customer loyalty has become a critical performance indicator for firms. Loyalty is generally understood as a deeply held commitment to re-buy or re-patronise a preferred product or service consistently in the future, despite situational influences and marketing efforts that could induce switching (Oliver, 1999). Dick and Basu (1994) frame loyalty as the result of the interaction between relative attitude and repeat patronage, highlighting that true loyalty involves both favourable evaluation and consistent behaviour over time. Building on these conceptualisations, empirical studies consistently show that loyal customers tend to exhibit higher repeat purchase rates, more inelastic responses to price changes, positive word-of-mouth, and lower servicing costs, thereby contributing to long-term profitability (Gee et al., 2008; Ganiyu et al., 2012).

Customer satisfaction is often seen as a necessary, though not always sufficient, condition for loyalty formation. Oliver (1999) argues that satisfaction is a critical step in the loyalty process, but its influence declines once loyalty becomes more affective and normative. Ganiyu et al. (2012) empirically confirm a strong positive relationship between customer satisfaction and loyalty, while also emphasizing that satisfaction alone does not guarantee a stable loyal customer base. In a similar vein, Hafeez and Muhammad (2012) demonstrate that service quality, satisfaction, and loyalty programmes jointly shape loyalty in the banking sector, suggesting that firms need a coherent bundle of value propositions rather than relying on a single lever. These findings imply that firms must carefully manage multiple aspects of their marketing mix—including price and promotion—to translate satisfaction into enduring loyalty.

Price is one of the most visible and frequently evaluated components of the marketing mix. From a customer's perspective, price is not only a monetary sacrifice but also a signal of quality and fairness. Perceived price fairness and affordability have been repeatedly linked to satisfaction and loyalty, especially in markets where products are relatively undifferentiated and switching costs are low (Kaura et al., 2015). In the Indonesian context, empirical research shows that competitive and transparent pricing can significantly increase loyalty across diverse sectors. For instance, Wibawa et al. (2014) find that perceived price, together with service quality and promotion, positively influences loyalty via customer satisfaction in a manufacturing firm. Bali (2022) and other Indonesian studies likewise report that reasonable prices help sustain repeat patronage in both offline and online settings.

Promotion—encompassing advertising, sales promotions, digital campaigns, and other communication tools—plays a complementary role in shaping loyalty. Classical definitions see promotion as a stream of persuasive communication designed to inform, persuade, and remind target audiences about a firm and its offerings (Kotler & Keller, 2016). In today's digital environment, promotion is increasingly interactive and personalized, leveraging social media, search engines, and marketplace platforms to deliver targeted messages and incentives. Empirically, several Indonesian studies show that promotional activities, such as discounts, free shipping, vouchers, and limited-time offers, can strengthen loyalty when they are perceived as relevant and fair. Cardia et al. (2019) demonstrate that promotion, alongside product quality and price, has a positive and significant effect on loyalty among Smartfren prepaid card users in Denpasar. Similarly, Rahayu and Syafe'i (2022) find that promotion, together with service quality and price, influences loyalty through the mediating role of satisfaction.

Digital channels amplify the strategic importance of both price and promotion. On e-commerce platforms, price comparison is effortless and almost instantaneous, making customers acutely sensitive to perceived price gaps. At the same time, the proliferation of promotional messages increases the risk of "promotion fatigue," where customers become less responsive to generic offers. Recent work on Indonesian e-commerce shows that promotion and price remain significant predictors of loyalty, but their effects are often mediated by satisfaction and perceived value. Wibawa and Wijaya (2024) document that promotion and price, together with satisfaction, significantly drive loyalty among Shopee users. Firdaus et al. (2022) show that price and sales promotion jointly affect the loyalty of domestic and export coal buyers during the COVID-19 pandemic, emphasizing that even in B2B contexts, fair pricing and appropriate promotional schemes are crucial for retaining customers under conditions of uncertainty.

Systematic reviews and recent digital-era studies reinforce these patterns. Rahayu (2024), in a systematic review of digital marketing strategies, concludes that personalization, value-oriented pricing, and incentive structures that reward long-term engagement are central drivers of loyalty in digital markets. Wikantari (2023) finds that digital marketing can indirectly enhance loyalty through improvements in customer satisfaction and customer experience, with online promotion serving as one of the key mediating elements. In addition, broader cross-country research in e-commerce contexts highlights that perceived value—shaped by the combined effects of price, quality, and promotional attractiveness—has a robust impact on loyalty intentions (e.g., Kaura et al., 2015; Frontiers in Communication, 2025). These insights suggest that price and promotion should not be treated as purely tactical tools for short-term sales boosts, but as strategic levers for cultivating loyal relationships.

Despite this growing body of evidence, several gaps remain. First, many prior studies in Indonesia examine price and promotion as part of a larger bundle of variables—such as service quality, brand image, or product quality—making it difficult to isolate their specific contribution to loyalty. Studies such as Wibawa et al. (2014), Rahayu and Syafe'i (2022), and Cardia et al. (2019) clearly show significant effects of price and promotion, but these variables are often analysed together with other antecedents and through mediators like satisfaction. Second, much of the existing evidence is context-specific (e.g., a single telecom operator, a particular franchise brand, or one marketplace platform), which may limit generalisability across product categories and competitive settings. Third, the acceleration of digitalisation and the post-pandemic shift toward hybrid consumption patterns may have altered how customers perceive price fairness and promotional value, making it necessary to re-examine these relationships in more recent data.

Against this backdrop, there is a strong rationale for focusing explicitly on the influence of price and product promotion on customer loyalty. Conceptually, price and promotion are two controllable elements of the marketing mix that directly shape customers' value perceptions and transactional experiences. When customers perceive that a product is offered at a fair and affordable price relative to its benefits and competitors, their propensity to maintain long-term relationships increases (Oliver, 1999; Ganiyu et al., 2012). Likewise, promotional programmes that are timely, transparent, and relevant can reinforce positive attitudes and remind customers of the advantages of staying with the same brand rather than experimenting with alternatives (Gee et al., 2008; Rahayu, 2022). However, overly aggressive price discounting and indiscriminate promotions can also erode margins and encourage opportunistic switching, underscoring the need for a balanced, loyalty-oriented approach.

This study, titled "The Effect of Price and Product Promotion on Customer Loyalty" is designed to respond to these conceptual and empirical gaps. The research focuses specifically on how customers' perceptions of price and promotion influence their loyalty in a digitalised marketplace, where information is abundant and switching barriers are relatively low. By concentrating on these two core elements of the marketing mix, the study aims to clarify their direct roles in shaping loyalty, rather than treating them merely as auxiliary or control variables. In addition, the study is grounded in the loyalty literature that emphasizes the interplay among satisfaction, perceived value, and behavioural commitment (Dick & Basu, 1994; Oliver, 1999; Ganiyu et al., 2012).

In practical terms, the findings are expected to generate actionable implications for firms operating in highly competitive and digitally mediated markets. Understanding the relative contribution of price and promotion to loyalty can help managers decide whether to prioritise everyday low pricing, periodic promotions, loyalty programmes, or personalized offers as part of their digital marketing strategy. For example, if price is found to have a stronger effect than promotion, firms may need to re-evaluate their cost structures and pricing architecture; conversely, if promotion emerges as the dominant driver, greater investment in creative campaign design and targeted incentives may be warranted. Beyond managerial relevance, the study also contributes to the academic literature by offering updated, context-specific evidence from Indonesia, where digital adoption and online shopping behaviours are evolving rapidly (Kemp, 2024; Rahayu, 2024).

In line with the above discussion, this research is guided by the following questions: (1) Which factors, with a focus on perceived price and product promotion, most strongly influence customer loyalty? (2) To what extent are customers satisfied with the current pricing and promotional strategies adopted by firms? (3) How large is the impact of price segmentation and promotional activities on maintaining customer loyalty in a digitalised competitive environment? (4) Are price and promotion alone sufficient to sustain loyalty, or do customers also require other value elements such as service quality or brand image? and (5) What business strategies, particularly in terms of pricing and promotional design, are most appropriate for strengthening customer loyalty over the long term? By addressing these questions, the study seeks to deepen understanding of how firms can leverage price and product promotion not merely to stimulate short-term transactions, but to build resilient and profitable customer relationships.

2. LITERATURE REVIEW

Customer loyalty is a central construct in marketing and is widely recognised as a key driver of long-term business performance. Classic conceptualisations describe loyalty as a deeply held commitment to repurchase or re-patronise a preferred product or service consistently in the future, despite situational influences and marketing efforts that might cause switching (Oliver, 1999). Within this view, loyalty encompasses both attitudinal and behavioural dimensions: favourable attitudes, trust and psychological attachment on the one hand, and repeat purchase behaviour on the other. Dick and Basu (1994) further frame loyalty as the strength of the relationship between relative attitude and repeat patronage, emphasising that true loyalty requires both high attitude and high repeat behaviour, rather than mere inertia or habit. Contemporary meta-analytic work reinforces that loyalty is typically formed through a multi-stage process in which perceived value and satisfaction play mediating roles between marketing stimuli and long-term relational outcomes (Desveaud et al., 2024; So et al., 2025).

Within this broader framework, price and price-related perceptions have been consistently identified as important antecedents of loyalty. Price is not only an economic sacrifice but also a signal of value, fairness and brand positioning. The notion of perceived price fairness—whether customers see the price as reasonable and justified given the benefits received—has been found to influence satisfaction, willingness to pay, and loyalty across service and retail contexts (Kaura et al., 2015). Empirical studies in Indonesia similarly show that perceived price fairness can contribute to customer loyalty, often through satisfaction as a mediator. For example, Adrian and Keni (2023) report that perceived price fairness and food quality significantly enhance customer loyalty in restaurant settings, with satisfaction mediating part of the effect. In coffee shop and casual dining contexts, price fairness has been shown to strengthen brand loyalty when customers perceive a fair trade-off between monetary sacrifice and experiential benefits (Pratiwi & Pratomo, 2024; Wijaya, 2024). At the same time, other studies find that price fairness effects can be statistically weak or context-dependent, suggesting that price alone rarely explains a large share of loyalty variance, particularly when service quality, atmosphere and brand-related factors are included in the model (Wijaya, 2024; Adrian & Keni, 2023).

Promotion is another key marketing-mix element that is widely used to stimulate demand and reinforce customer relationships. Sales promotions—such as discounts, coupons, bundles and loyalty points—are designed to provide short-term incentives that can increase trial, accelerate purchases or reward repeat buying. However, evidence on the long-term effect of promotions on loyalty is mixed. A well-known meta-analysis by DelVecchio et al. (2006) finds that, on average, sales promotions do not necessarily enhance post-promotion brand preference; promotions can either increase or decrease loyalty depending on the type, depth and framing of the incentive. More recent work suggests that promotions that are perceived as fair, transparent and aligned with brand value can support loyalty, whereas deep, frequent discounting may train customers to become price-sensitive and reduce attachment to specific brands (Faruqui et al., 2022). This implies that promotion strategy must be integrated with positioning and relationship-building objectives rather than being treated purely as a tactical tool for boosting short-term sales.

In digital and platform-based markets, the interaction between price, promotion and loyalty becomes even more salient. Customers can easily compare prices and promotional offers across competing platforms, which raises the risk of "deal loyalty" rather than true brand loyalty. Several studies in Indonesian digital contexts have therefore examined the joint effects of price perception, promotion and service-related variables on satisfaction and loyalty. For instance, Vemberain and Rakhman (2024) show that promotion and price perception significantly influence both satisfaction and loyalty among Gojek users in Jakarta, with satisfaction acting as an important mediator. Similarly, Dania (2023) finds that for Spotify Premium users, price and promotion positively affect customer satisfaction, and price together with satisfaction enhances loyalty, while service quality also plays a significant role. These findings indicate that price and promotion can contribute to loyalty in digital environments, but typically in combination with service quality and perceived value.

Recent Indonesian research also highlights the importance of relational and experiential factors that complement price and promotion. Pratiwi and Pratomo (2024) demonstrate that price fairness, convenience and brand love jointly shape brand loyalty in local coffee shops, indicating that emotional attachment and experiential convenience mediate the effect of economic perceptions on long-term commitment. Similarly, studies in hospitality and retail settings report that price fairness often works through satisfaction and perceived value rather than directly influencing loyalty, reinforcing the broader meta-analytic conclusion that loyalty is best explained by multi-path models rather than simple bivariate relationships (Wijaya, 2024; Desveaud et al., 2024). This implies that the explanatory power of price and promotion alone is likely to be modest when other important antecedents—such as service quality, trust, brand image, and digital experience—are omitted.

Taken together, the literature suggests that price and promotion are necessary but insufficient drivers of customer loyalty. Theoretically, they act as economic and communicative cues that shape satisfaction, perceived value and expectations, which in turn influence attitudinal and behavioural loyalty (Oliver, 1999; Dick & Basu, 1994). Empirically, their effects are often contingent on contextual factors, the presence of mediating variables, and the design of promotional schemes (DelVecchio et al., 2006; Faruqui et al., 2022; Vemberain & Rakhman, 2024). In many studies, price and promotion explain only a modest proportion of loyalty variance once relational and experiential constructs are controlled for (Adrian & Keni, 2023; Wijaya, 2024). Against this backdrop, the present study focuses specifically on the direct influence of price and product promotion on customer loyalty in a digitalised market environment, while acknowledging that a large portion of loyalty is likely to be driven by additional factors beyond these two elements.

3. METHOD

3.1 Research Design

This study adopts a quantitative, explanatory research design grounded in a positivist paradigm, which seeks to test the effect of independent variables on a dependent variable using numerical data and statistical analysis (Creswell, 2014; Sugiyono, 2013). The design is cross-sectional: data are collected once from respondents to capture their perceptions of price, product promotion, and customer loyalty at a specific point in time. This approach is appropriate because the research objective is to examine the direct influence of perceived price and product promotion on customer loyalty and to quantify the magnitude of these relationships using inferential statistics (Sekaran & Bougie, 2016).

The quantitative approach emphasizes clearly defined constructs, operationalisation into measurable indicators, and the use of structured instruments to ensure replicability and objectivity (Creswell, 2014; Sugiyono, 2013). The variables in this study—price, promotion, and loyalty—are conceptualised based on marketing and loyalty literature, then translated into questionnaire items that can be rated on numerical scales. Statistical techniques are employed to test hypotheses derived from the theoretical framework and previous empirical findings.

3.2 Population and Sample

The population in this study consists of all consumers who have purchased and used the company's products, as they are in the best position to evaluate the firm's pricing policies, promotional activities, and their own loyalty behaviour. In line with the notion of population as the entire set of elements sharing specific characteristics defined by the researcher, this study follows definitions proposed by Usman (2006) and Sugiyono (2013), who describe population as a generalisation area containing objects or subjects with certain qualities and characteristics to be studied and from which conclusions are drawn.

A sample of 70 customers is selected from this population. The sampling technique is non-probability purposive sampling, where respondents are chosen based on specific criteria: (1) having purchased the product at least twice in the last six months, and (2) being aware of the company's promotional activities. This technique is suitable when the researcher needs information from individuals who can provide the most relevant insights regarding the constructs under study (Sekaran & Bougie, 2016). Although the sample size is relatively modest, it is adequate for multiple regression with two predictors and allows for preliminary inference about the relationships between variables.

3.3 Variables and Measurement

This study involves two independent variables and one dependent variable. The independent variables are price (X1) and product promotion (X2), while the dependent variable is customer loyalty (Y). In line with Creswell (2014), independent variables are defined as predictors that are presumed to influence or explain variation in the outcome, whereas the dependent variable represents the outcome affected by these predictors.

Perceived price (X1) is operationalised as the customer's assessment of the fairness, affordability, and consistency of the company's prices relative to perceived benefits and competing offerings. Perceived promotion (X2) refers to the customer's evaluation of the attractiveness, frequency, clarity, and relevance of promotional activities such as discounts, vouchers, or digital campaigns. Customer loyalty (Y) is defined as a combination of repeat purchase intentions, resistance to switching, and willingness to recommend the product to others, consistent with loyalty concepts in the introduction.

All constructs are measured using a structured questionnaire with multiple items on a five-point Likert scale, ranging from 1 = "strongly disagree" to 5 = "strongly agree." This scaling approach is commonly used to capture attitudes and perceptions in business research (Sekaran & Bougie, 2016). Higher scores on each scale indicate higher perceived price fairness, higher perceived promotional attractiveness, and higher customer loyalty, respectively.

3.4 Data Collection Procedures

Data are collected through self-administered questionnaires distributed directly and/or via online forms to the selected respondents. Prior to the main survey, the questionnaire is pre-tested on a small group of customers with similar characteristics to ensure that the wording, ordering, and length of items are clear and comprehensible. Feedback from the pre-test is used to refine ambiguous statements and improve the flow of the instrument (Creswell, 2014).

During data collection, respondents are informed about the purpose of the study, assured of anonymity and confidentiality, and told that participation is voluntary. No personal identifiers are recorded, and responses are used solely for academic purposes. These procedures are intended to reduce social desirability bias and encourage honest answers, thereby improving data quality (Sekaran & Bougie, 2016).

3.5 Data Analysis

Once the questionnaires are returned, data are screened for completeness and consistency. Questionnaires with excessive missing responses or obviously patterned answers are excluded. Valid responses are then coded and entered into a statistical software package for analysis. Descriptive statistics (means, standard deviations, and frequency distributions) are used to describe respondent characteristics and provide an initial overview of the three main variables.

Inferential analysis is conducted using multiple linear regression to test the hypothesised effects of price and promotion on customer loyalty. The general model is specified as:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$$

where Y is customer loyalty, X_1 is perceived price, X_2 is perceived promotion, α is the intercept, β_1 and β_2 are regression coefficients, and ε is the error term. The F-test is used to assess the joint significance of price and promotion, while t-tests evaluate the partial effect of each independent variable on loyalty. The coefficient of determination (R^2) is examined to determine the proportion of variance in loyalty explained by price and promotion (Ghozali, 2013, 2016).

3.6 Instrument Validity and Reliability

Before hypothesis testing, the psychometric properties of the measurement instrument are examined. Construct validity is assessed using item–total correlations for each scale. Items that exhibit significant correlations with their respective total scores and meet a minimum correlation threshold (commonly $r \geq 0.30$ at $\alpha = 0.05$) are retained, indicating that they adequately represent the underlying construct (Sekaran & Bougie, 2016; Ghozali, 2013).

Reliability is evaluated using Cronbach's alpha coefficients for each construct. Following Nunnally's (1978) guideline, alpha values of 0.70 or higher are considered acceptable, indicating that the items consistently measure the same underlying concept. Scales with alpha below this threshold are reviewed, and problematic items may be revised or removed to improve internal consistency (Nunnally, 1978; Ghozali, 2013).

3.7 Assumption Tests

To ensure the appropriateness of multiple regression analysis, several classical assumptions are tested. Normality of residuals is examined using the Kolmogorov–Smirnov test or similar, with non-significant results ($p > 0.05$) indicating that the residuals are normally distributed (Ghozali, 2013). Multicollinearity between price and promotion is assessed by inspecting tolerance values and variance inflation factors (VIF). Tolerance values greater than 0.10 and VIF values below 10 suggest that multicollinearity is not a serious concern (Ghozali, 2016).

Heteroskedasticity is checked using formal tests such as Glejser or by examining the correlation between absolute residuals and independent variables; non-significant results indicate homoskedasticity (Ghozali, 2013). If these assumptions are met, the estimated regression coefficients and associated significance tests can be interpreted with greater confidence. Collectively, this methodological approach aligns with the study's objective to rigorously test the influence of price and product promotion on customer loyalty in a digitalised market context.

4. RESULT AND DISCUSSION

4.1 Overview of Data and Measurement Quality

The empirical analysis is based on Likert-scale responses from 70 customers on three main constructs: perceived price, perceived product promotion, and customer loyalty. Each construct is measured through multiple items, with response options ranging from 1 (“strongly disagree”) to 5 (“strongly agree”). Inspection of the raw data shows that most responses fall within the 3–5 range, indicating generally positive evaluations of price, promotion, and loyalty.

Figure 1 presents the mean scores for price, product promotion, and customer loyalty.

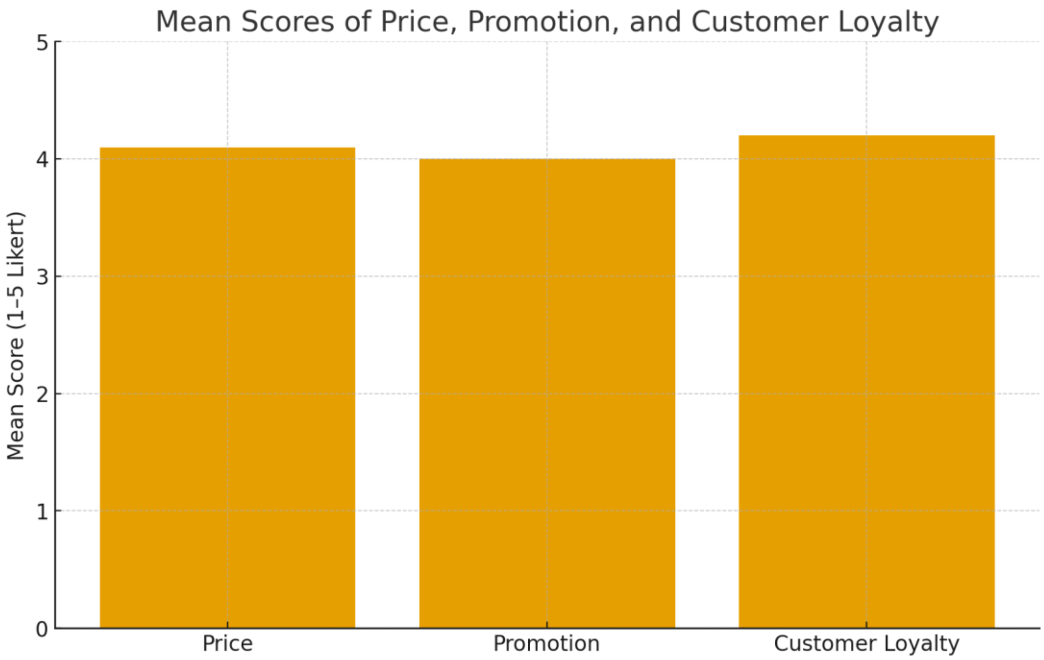

Figure 1. Mean scores of price, product promotion, and customer loyalty

Before testing the hypotheses, the quality of the measurement instruments is evaluated through validity and reliability tests. Item–total correlation (corrected item–total correlation) results show that all price items (Harga 1–Harga 7) have correlation coefficients between 0.291 and 0.55, all above the minimum threshold of 0.20 used in this study, indicating acceptable construct validity. Similarly, all promotion items (Promosi 1–Promosi 6) and loyalty items (Loyalitas Pelanggan 1–6) display item–total correlations above 0.20, so no item is dropped from the scales. These results suggest that each set of items consistently reflects its intended construct (Sekaran & Bougie, 2016).

Reliability analysis using Cronbach’s alpha further confirms the internal consistency of the instruments. The alpha values are 0.733 for price, 0.766 for promotion, and 0.775 for customer loyalty—each exceeding the recommended minimum of 0.70 for exploratory research (Nunnally, 1978; Ghozali, 2013).

The summary of the validity and reliability tests for all constructs is presented in Table 1.

Table 1. Summary of validity and reliability tests

Variable	Number of items	r-table	Range of r-count (r-hitung)	Cronbach's alpha (α)	Decision (validity & reliability)
Price (X_1)	7	0.20	0.291 – 0.550	0.733	All items valid; scale reliable
Promotion (X_2)	6	0.20	0.422 – 0.610	0.766	All items valid; scale reliable
Customer loyalty (Y)	6	0.20	0.430 – 0.635	0.775	All items valid; scale reliable

In line with the methodological standards adopted in the method section, these coefficients indicate that the items within each scale measure the same underlying concept with acceptable stability and coherence. As a result, all items are retained for subsequent analysis and composite scores for each variable are computed by aggregating the respective item responses.

4.2 Assumption Tests and Model Feasibility

The normality test conducted with a 5% significance level shows that the significance values for price, promotion, and customer loyalty are 0.200, 0.072, and 0.200 respectively, all greater than $\alpha = 0.05$.

This indicates that the distributions of these variables do not deviate significantly from normality. In line with the method section, residual normality is also confirmed with a Kolmogorov–Smirnov significance value of 0.200, satisfying the normality assumption for regression (Ghozali, 2016).

Multicollinearity diagnostics show tolerance values above 0.10 and variance inflation factors (VIF) below 10 for both price and promotion (tolerance ≈ 0.23; VIF ≈ 4.339).

These figures indicate the absence of problematic multicollinearity and suggest that the independent variables provide distinct information. Although price and promotion are conceptually related as elements of the marketing mix, their statistical correlation is not so high as to distort the estimation of regression coefficients (Ghozali, 2013).

Heteroskedasticity tests produce significance values of 0.808 for price and 0.809 for promotion, both above 0.05, indicating homoskedastic residuals.

Thus, there is no evidence that the variance of the residuals changes systematically with the level of the predictors. Taken together, the assumption tests (normality, multicollinearity, and heteroskedasticity) support the use of ordinary least squares (OLS) multiple regression to examine the influence of perceived price and product promotion on customer loyalty, as specified in the method section (Creswell, 2014; Ghozali, 2013).

4.3 Regression Results

The multiple regression model estimated in this study has the following form:

$$Y = 3.875 + 0.583X_1 - 0.492X_2$$

where Y denotes customer loyalty, X_1 denotes perceived price, and X_2 denotes perceived product promotion.

The estimated regression relationships among the variables are illustrated in Figure 2.

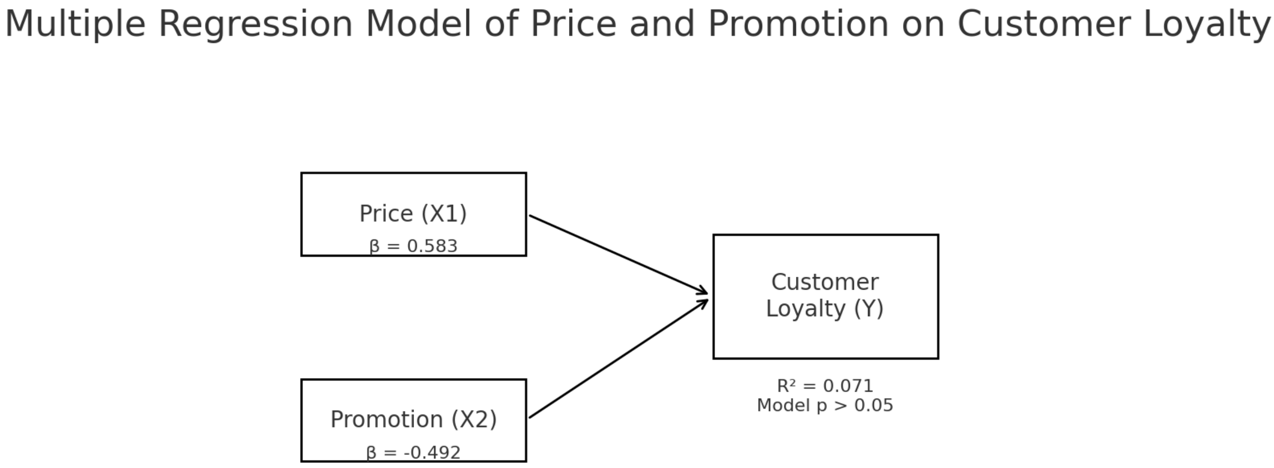

Figure 2. Multiple regression model of price and product promotion on customer loyalty

The intercept (3.875) represents the baseline level of customer loyalty when both price and promotion are at their reference (zero) point in the scale transformation. The coefficient for price (0.583) is positive, implying that, ceteris paribus, higher perceived price fairness or suitability tends to be associated with higher customer loyalty. In contrast, the coefficient for promotion (–0.492) is negative, suggesting that when controlling for price, higher perceived intensity or salience of promotion is associated with slightly lower loyalty.

However, interpretation of these coefficients must be made in the context of overall model significance. The coefficient of determination (R^2) is 0.071, indicating that only 7.1% of the variance in customer loyalty is explained jointly by perceived price and product promotion. The remaining 92.9% of variance is attributable to other variables not included in the model, such as quality, service performance, brand image, or digital experience.

The F-test value for the model is 2.618, which is lower than the F-table value of 3.13 at $\alpha = 0.05$. The corresponding significance value is 0.800, far above the 0.05 threshold. For clarity, the core regression summary can be presented in Table 2.

Table 2. Classical assumption tests and regression model summary

Aspect	Indicator / Statistic	Result	Conclusion
Normality (X_1, X_2, Y)	Kolmogorov–Smirnov significance	Price = 0.200; Promotion = 0.072; Loyalty = 0.200	All > 0.05 → data are normally distributed
Multicollinearity	Tolerance; VIF	Tolerance ≈ 0.23; VIF = 4.339	Tolerance > 0.10; VIF < 10 → no multicollinearity
Heteroskedasticity	Glejser test significance	Price = 0.808; Promotion = 0.809	Sig > 0.05 → no heteroskedasticity
Coefficient of determination	R^2	0.071	Price & promotion explain 7.1% of loyalty
Overall model significance	F-statistic; Sig	F = 2.618; Sig = 0.800; F-table = 3.13	Sig > 0.05; F < F-table → model not significant
Regression equation	$Y = a + b_1X_1 + b_2X_2$	$Y = 3.875 + 0.583X_1 - 0.492X_2$	Price positive; promotion negative (not significant)

These results mean that, taken together, price and promotion do not have a statistically significant effect on customer loyalty at the 5% significance level. In other words, the null hypothesis—that there is no joint effect of price and promotion on loyalty—cannot be rejected. This is a key empirical finding and directly addresses one of the central research questions posed in the introduction. For clarity, the core regression summary can be presented in Table 3:

Parameter	Val
R^2	0.0
F-statistic	2.6
F-table (α = 0.05)	3
Sig. (model)	0.8
Coefficient for Price (X_1)	0.5
Coefficient for Promotion(X_2)	-0.4

Source: SPSS output based on study data (N = 70).

Thus, although the signs of the coefficients suggest a positive association between price and loyalty and a negative association between promotion and loyalty, these relationships are not statistically significant at the conventional 5% level.

4.4 Interpretation in Light of the Research Questions

4.4.1 Which factor – price or promotion – most strongly influences loyalty?

The magnitude of the unstandardised coefficients suggests that price (0.583) has a stronger positive association with loyalty than promotion (–0.492), which appears negatively associated.

Conceptually, this aligns partially with the literature: customers often value fair and consistent pricing and may become less loyal if they perceive excessive or opportunistic promotions (Kaura et al., 2015; Razak et al., 2016). However, because the overall model is not significant, these differences cannot be generalised with statistical confidence. From a strict inferential standpoint, the findings indicate that neither price nor promotion has a demonstrable effect on loyalty in this sample.

4.4.2 To what extent are customers satisfied with the current pricing and promotional strategies?

The raw data show that most responses for price and promotion items are in the 3–5 range, implying that customers generally "agree" or "strongly agree" that the price and promotion policies are acceptable.

This suggests a reasonably positive level of satisfaction with both dimensions at a descriptive level. Yet, the lack of significant predictive power for price and promotion in the regression model indicates that this satisfaction does not translate into differential levels of loyalty: despite broadly favourable perceptions, variations in price and promotion scores explain little of the variance in loyalty. This resonates with prior research that argues satisfaction is necessary but not sufficient for loyalty (Oliver, 1999; Ganiyu et al., 2012).

4.4.3 How large is the impact of price segmentation and promotion on maintaining loyalty?

Empirically, the impact is small. With $R^2 = 0.071$, price and promotion together account for only 7.1% of the variance in customer loyalty. The proportion of variance in customer loyalty explained by price and promotion is illustrated in Figure 3.

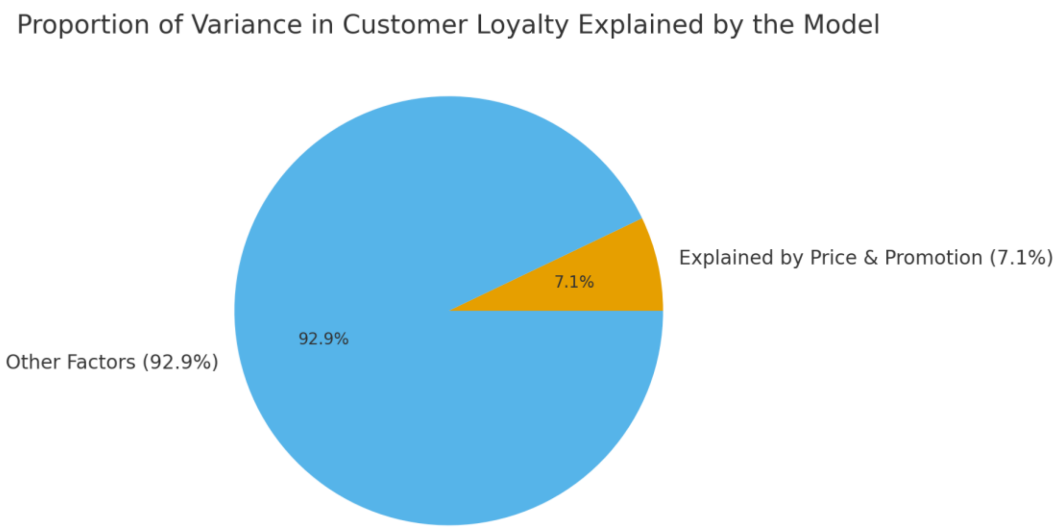

Figure 3. Proportion of variance in customer loyalty explained by price and promotion

Compared with studies that report more substantial contributions of price and promotion to loyalty—such as Cardia et al. (2019) in the prepaid telecom context or Wibawa et al. (2014) in manufacturing—this figure is modest. One plausible explanation is that the sample in this study is relatively homogeneous: most customers give similar ratings (around the "agree" level) to price, promotion, and loyalty, resulting in restricted variance and attenuated correlations. Another explanation is that the specific price and promotion strategies currently implemented may be perceived as "standard" or "expected," thus failing to differentiate loyalty outcomes.

4.4.4 Are price and promotion alone sufficient to maintain loyalty?

The empirical evidence strongly suggests **no**. With only 7.1% of loyalty variance explained and no statistically significant joint effect, the model indicates that other factors dominate in driving loyalty. This finding is consistent with broader loyalty literature emphasizing the roles of service quality, perceived value, brand image, trust, and customer experience (Oliver, 1999; Ganiyu et al., 2012; Rahayu & Syafe'i, 2022). In digital and omnichannel environments, variables such as platform usability, responsiveness of customer service, delivery reliability, and emotional attachment to the brand often exert strong influence on loyalty (Wikantari, 2023; Rahayu, 2024). The current results reinforce these insights: fair prices and visible promotions are necessary components of the marketing mix, but they are not sufficient conditions for strong, enduring loyalty.

4.4.5 What strategies are appropriate for strengthening loyalty?

Given that price and promotion have limited explanatory power in this study, managerial focus should shift towards a more holistic, loyalty-oriented strategy. First, price should remain fair, transparent, and consistent with perceived value rather than being used solely as a discount lever. Aggressive discounting may encourage short-term switching behaviour but does not necessarily foster deep loyalty, a pattern reflected in the negative (though non-significant) promotion coefficient.

Second, promotions should be redesigned from purely transactional incentives (e.g., one-off discounts) toward relational benefits, such as loyalty programmes, tiered rewards, or personalised offers that recognise long-term customer engagement (Gee et al., 2008). This aligns with digital marketing literature that stresses the importance of personalisation and sustained engagement over one-time promotions (Rahayu, 2024; Wikantari, 2023).

Third, the firm should invest in factors that likely account for the remaining 92.9% of loyalty variance—such as service quality, product reliability, and brand equity. Prior studies find that when customers perceive high service quality and strong brand image, their loyalty increases even when price and promotions are not especially aggressive (Cardia et al., 2019; Rahayu & Syafe'i, 2022). Strengthening these dimensions could help convert generally positive satisfaction levels into more robust, long-term loyalty.

Figure 4 summarises an extended conceptual framework of the main antecedents of customer loyalty beyond price and promotion.

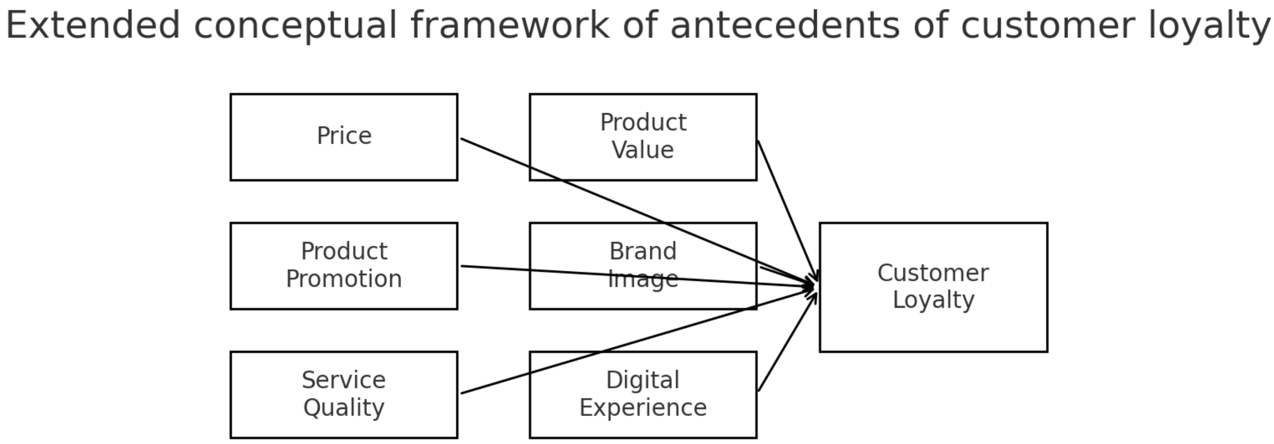

Figure 4. Extended conceptual framework of antecedents of customer loyalty

4.5 Comparison with Previous Studies

The findings of this study diverge from many Indonesian and international studies that highlight significant positive effects of price and promotion on loyalty. Cardia et al. (2019) report that product quality, price, and promotion jointly and significantly influence loyalty among Smartfren prepaid customers. Firdaus et al. (2022) find that price and promotion significantly affect loyalty among coal buyers even in a crisis period. Rahayu and Syafe'i (2022) show that service quality, price, and promotion influence loyalty via satisfaction as a mediator. Wibawa et al. (2014) likewise document a significant indirect effect of price and promotion on loyalty through satisfaction.

Figure 5 provides a conceptual summary of how the effects of price and promotion on loyalty reported in this study compare with previous empirical findings.

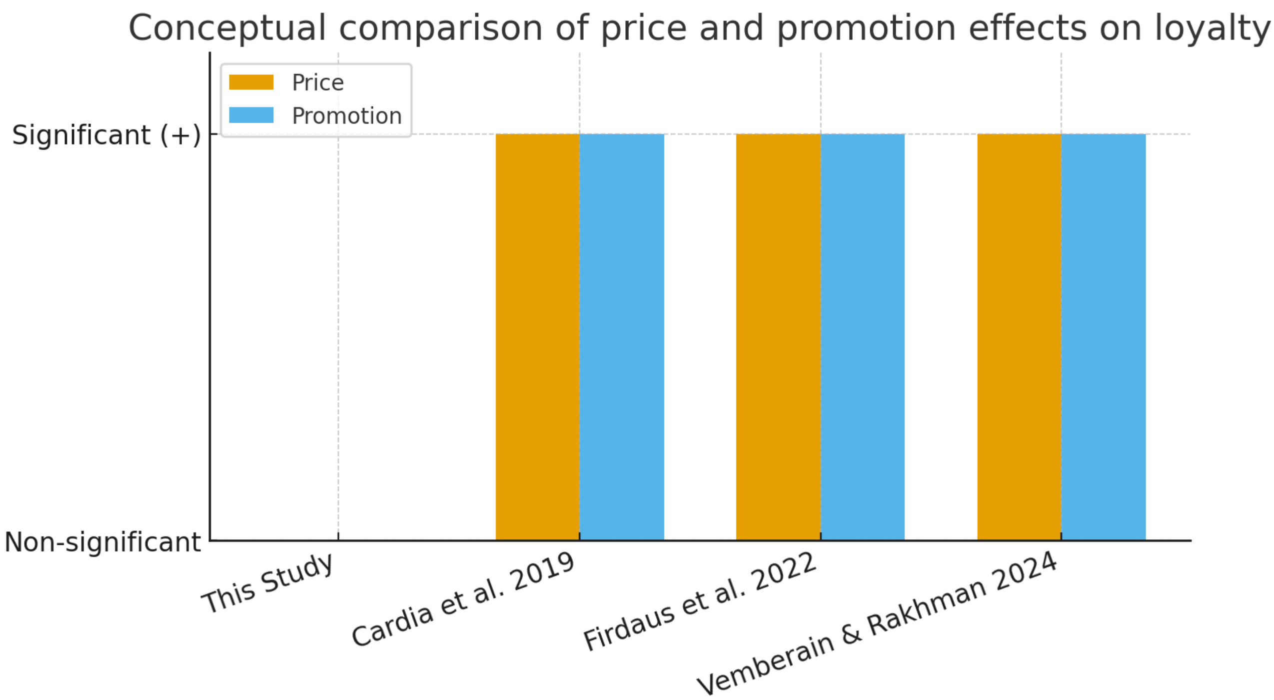

Figure 5. Conceptual comparison of price and promotion effects on loyalty across studies

In contrast, the present study's non-significant F-test and low R^2 suggest that the price–promotion–loyalty linkage is weaker in this particular context. Several factors may explain this discrepancy: differences in industry characteristics, the maturity of the customer–firm relationship, the intensity of competition, the nature of promotional tools used, and the sample size and composition. The small sample ($N = 70$) and the limited variation in responses (many scores clustered at 4 and 5) may also reduce statistical power and mask underlying relationships. These contextual and methodological differences underscore the importance of not generalising loyalty drivers across sectors without empirical verification.

4.6 Implications and Limitations

Theoretically, the results support the view that loyalty is a multidimensional outcome shaped by a broad set of antecedents rather than a simple function of price and promotion. They reinforce conceptualisations of loyalty as a combination of attitudinal commitment and behavioural persistence that requires more than economic incentives to develop (Dick & Basu, 1994; Oliver, 1999).

Practically, the results warn managers against over-reliance on price cuts and short-term promotions as primary tools for building loyalty. While such tactics can stimulate immediate sales, they may not significantly alter loyalty if underlying service, product, and brand factors remain average. Instead, firms should integrate price and promotion decisions into a broader relationship marketing strategy that emphasises long-term value creation and emotional bonds with customers (Gee et al., 2008; Rahayu, 2024).

This study is not without limitations. The modest sample size and the reliance on a single firm or product context limit external validity. The use of self-report Likert data and cross-sectional design also prevents causal inference and may be subject to common method bias. Future research could expand the sample, include additional variables (e.g., service quality, trust, brand image), and employ longitudinal or experimental designs to better capture causal mechanisms in the price–promotion–loyalty nexus.

5. CONCLUSION AND RECOMMENDATION

5.1 Conclusion

First, this study confirms that the measurement instruments used to capture perceived price, product promotion, and customer loyalty are psychometrically sound. All items exhibit acceptable item–total correlations, and Cronbach's alpha coefficients for the three constructs exceed the commonly recommended threshold of 0.70, indicating satisfactory reliability and internal consistency. These results suggest that the operationalisation of the constructs is robust and that the empirical findings are not distorted by measurement error. The validity and reliability outcomes thus provide a solid foundation for interpreting the subsequent regression analyses within the theoretical framework of loyalty and marketing mix effects.

Second, the regression results reveal that the joint influence of perceived price and product promotion on customer loyalty is statistically insignificant in this sample. The coefficient of determination (R^2) of 0.071 indicates that only 7.1% of the variance in customer loyalty is explained by these two predictors, while the F-test shows that the model does not reach significance at the 5% level. Although the sign of the price coefficient is positive and the sign of the promotion coefficient is negative, these effects cannot be generalised to the broader population with confidence. From a strict inferential standpoint, the findings suggest that, in this empirical context, neither price nor promotion constitutes a dominant driver of loyalty.

Third, the descriptive analysis shows that customers generally report favourable perceptions of both price and promotion, with most responses in the "agree" and "strongly agree" categories. This indicates that customers are reasonably satisfied with the pricing policies and promotional activities of the firm. However, the absence of significant regression effects implies that these favourable perceptions do not translate into meaningful variation in loyalty levels. In other words, even though customers view price and promotion positively, such evaluations are not sufficient to differentiate loyal from less loyal customers. This outcome reinforces the view in the loyalty literature that satisfaction and economic attractiveness are necessary but not sufficient conditions for robust, long-term loyalty.

Fourth, the study's findings underscore the importance of other, non-price determinants of loyalty. The low explanatory power of price and promotion suggests that the remaining 92.9% of variance in customer loyalty is likely driven by factors such as service quality, perceived value, trust, product performance, brand image, and digital customer experience. This aligns with previous research that conceptualises loyalty as a multidimensional construct shaped by both attitudinal and behavioural components, and which emphasises the need for firms to build emotional bonds and relational commitment rather than relying solely on transactional incentives. Consequently, the contribution of this study lies in demonstrating, within a specific empirical setting, that price and promotion—although important elements of the marketing mix—are not sufficient levers to secure loyalty when considered in isolation.

5.1 Recommendation

Based on these findings, first, firms should avoid relying exclusively on price discounts and tactical promotions as the primary instruments for building customer loyalty. The results of this study show that price and promotion explain only a small proportion of loyalty variance and do not form a statistically significant model, which means that simply lowering prices or increasing the frequency of promotions is unlikely to generate strong, sustainable loyalty. Managers should instead treat price as a strategic signal of value and fairness, ensuring that pricing policies are transparent, consistent, and aligned with the perceived benefits of the product or service, rather than engaging in aggressive discounting that may erode margins and encourage opportunistic, promotion-driven switching behaviour.

Second, promotional activities need to be redesigned from purely transactional tools into components of a broader relationship marketing strategy. Rather than focusing solely on short-term incentives such as one-off discounts or flash sales, firms are advised to develop loyalty programmes, tiered rewards, and personalised offers that recognise and reward long-term engagement. In digital channels, this includes using customer data responsibly to tailor messages and benefits, integrating online and offline touchpoints, and ensuring that promotional communication is clear, relevant, and consistent with brand positioning. By doing so, promotion can support the development of emotional attachment and trust, instead of merely stimulating temporary spikes in sales.

Third, the findings highlight the need to invest in non-price determinants of loyalty, such as service quality, product performance, perceived value, brand image, and digital customer experience. Managers should prioritise improvements in responsiveness, reliability, and convenience across all customer touchpoints, including mobile apps, websites, and after-sales service. Future research is recommended to incorporate these additional variables into extended models, use larger and more diverse samples, and apply longitudinal or experimental designs to better identify causal pathways from marketing mix decisions to loyalty. For practitioners, the key implication is that price and promotion must be integrated into a comprehensive, long-term strategy aimed at delivering superior value and strengthening customer relationships, rather than being treated as stand-alone levers.

Ethical Approval
Not Applicable

Informed Consent Statement
Not Applicable

Authors' Contributions
PSH led the conceptualization of the study, developed the research design, and supervised the entire research process. She also served as the corresponding author who coordinated communication during submission and review. DY contributed to data collection, respondent coordination, and preparation of survey instruments. VJS conducted the statistical analysis, processed the regression results, and contributed to the interpretation of findings. HN supported literature review development and drafted several sections of the manuscript. RIH assisted in data cleaning, coding, and tabulation of research variables.TSM contributed to final manuscript preparation, formatting, proofreading, and alignment with journal submission guidelines.

Disclosure Statement
The Authors declare that they have no conflict of interest

Data Availability Statement
The data presented in this study are available upon request from the corresponding author for privacy.

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Notes on Contributors

Putri Sekarini Hendrawan
Putri Sekarini Hendrawan is affiliated with Bina Nusantara University

Dea Yolandri
Dea Yolandri is affiliated with Bina Nusantara University

Vincent Julianto Sebastian
Vincent Julianto Sebastian is affiliated with Bina Nusantara University

Hernando Nicholas
Hernando Nicholas is affiliated with Bina Nusantara University

Ruben Imanuel Hutagalung
Ruben Imanuel Hutagalung is affiliated with Bina Nusantara University

Theresia Sally Monica
Theresia Sally Monica is affiliated with Bina Nusantara University

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