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The Influence of Service Quality and Price Perception on Customer Loyalty: The Mediating Role of Customer Satisfaction in Ride-Hailing Service

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ABSTRACT

The rapid growth of ride-hailing services in Southeast Asia has intensified competition, making customer loyalty a critical concern for platforms such as GrabCar. This study examines the effects of service quality and price perception on customer loyalty and investigates the mediating role of customer satisfaction among GrabCar users. A quantitative approach was applied using survey data collected from 150 users in Malaysia, Indonesia, and India through an online questionnaire. The data were analyzed using multiple regression and regression-based mediation analysis. The results indicate that service quality ($\beta = 0.385$, $p < 0.001$) and price perception ($\beta = 0.447$, $p < 0.001$) significantly influence customer satisfaction, explaining 78.1% of its variance ($R^2 = 0.781$). Customer satisfaction has the strongest positive effect on customer loyalty ($\beta = 0.581$, $p < 0.001$), while price perception also directly affects loyalty ($\beta = 0.234$, $p < 0.001$). In contrast, service quality does not have a significant direct effect on customer loyalty. The findings confirm that customer satisfaction fully mediates the service quality–loyalty relationship and partially mediates the price perception–loyalty relationship, highlighting satisfaction as the key driver of loyalty in ride-hailing services.

Keywords: Customer Loyalty; Customer Satisfaction; Price Perception; Ride-Hailing Services; Service Quality

INTRODUCTION

In today's competitive and fast-paced digital economy, businesses are under substantial pressure to build and maintain long-term relationships with their customers (Purnama & Susilowati, 2024). One of the most valuable outcomes of this effort is customer loyalty, which directly contributes to a company's sustainability and growth (Kosasih et al., 2024). Two important factors that have a significant impact on customer loyalty are service quality and price perception. Additionally, customer satisfaction functions as a critical psychological bridge, mediating the relationship between these factors and loyalty outcomes.

In the Southeast Asian context, where digital platforms, particularly in transportation and logistics services like GrabCar, have seen exponential growth, retaining customers is no longer solely about providing services. Instead, it is about delivering consistent value that aligns with what customers expect in exchange for what they pay (Ramdhani et al., 2020). Therefore, understanding the role of service quality and price perception, and how customer satisfaction mediates their effects on loyalty, has become a strategic necessity for digital businesses in this region.

Service quality has long been considered one of the core determinants of customer satisfaction and loyalty. Parasuraman et al. (1988) introduced the SERVQUAL model, which identifies five primary dimensions including tangibility, reliability, responsiveness, assurance, and empathy. These dimensions still remain relevant. However, their implementation has evolved. In today's digital service landscape, responsiveness, assurance, and reliability are now delivered through constant service performance, precise information updates, and immediate in-app help. Recent research supports this evolution. For instance, Nguyen and Luu (2024) found that GrabCar users in Vietnam highlighted responsiveness and assurance as primary drivers of satisfaction and loyalty. This demonstrates that the SERVQUAL framework remains valid but must be contextualized in digital ecosystems.

Alongside service quality, price perception plays a crucial role in shaping customers' evaluations. Zeithaml (1988) originally argued that customers assess not just the actual cost but the perceived fairness and value of what they receive. In the digital economy, where dynamic pricing is common, this perception becomes even more critical. A recent study by Ali et al. (2022) confirmed that perceived price fairness significantly influences customer satisfaction, especially when consumers believe that the price aligns with the quality of the digital service offered.

Customer satisfaction acts as a key mediator in the relationship between service attributes and long-term behaviors. When customers feel their expectations are fulfilled or exceeded, they develop emotional and cognitive connections with the brand. According to Molinillo et al. (2022), emotional responses strengthen the probability of frequent usage and referrals, and satisfaction in app-based services directly affects loyalty.

While extensive research has been conducted on each variable independently, few studies have examined the combined and mediated effects of service quality and price perception on customer loyalty, especially within the context of digital transportation services in Southeast Asia. As this region represents a dynamic and competitive market, more context-specific insights are needed. Therefore, this study aims to fill that gap by exploring how service quality and price perception influence customer loyalty both directly and indirectly through customer satisfaction. By focusing on GrabCar users in Southeast Asia, especially Malaysia, Indonesia, and India, this research offers a

comprehensive model to help service providers strengthen customer retention through potent strategies.

Service quality may have a direct effect on customer loyalty (H1), but also an indirect effect mediated by customer satisfaction (H2). Similarly, price perception may directly influence loyalty (H3) and indirectly through the lens of satisfaction (H4). Additionally, satisfaction itself is hypothesized to directly impact loyalty (H5), making it both a dependent and a mediating variable in this research model. By validating this conceptual model, the study seeks to uncover the mechanisms that shape customer loyalty in digitally driven service environments. The goal is to assist service platforms like GrabCar in enhancing their value delivery and user retention strategies. The implications are substantial, especially in highly urbanized areas of Southeast Asia, where the switching cost between platforms is minimal, and competition is fierce. Companies must go beyond the basics and develop strategic service experiences that balance quality, price fairness, and user satisfaction.

Lastly, this research contributes to existing literature by grounding the model in an emerging economy context, something often overlooked in prior studies focused on Western or generalized service settings. It highlights how loyalty can be cultivated in mobile-first, price-sensitive digital environments.

To summarize, this study is motivated by the following key objectives: (1) to examine the effect of service quality on customer loyalty, (2) to evaluate the influence of price perception on customer loyalty, (3) to investigate the mediating role of customer satisfaction in these relationships, and (4) to validate these connections in the context of GrabCar users in Southeast Asia. In doing so, the study aspires to offer theoretical insights for researchers and practical guidance for industry practitioners seeking to enhance the loyalty of their customers through service improvements and fair pricing strategies.

LITERATURE REVIEW

Customer Loyalty Towards GrabCar Apps

Customer loyalty is a critical factor in achieving a competitive advantage, especially in today's dynamic and highly competitive markets (Arslan, 2020). When a product or service meets or exceeds customers' expectations, it leads to customer loyalty (Ahmed et al., 2023). As stated by Paulose and Shakeel (2021), customer loyalty is the consistent intention to repurchase or resubscribe to a preferred product or service in the future. Customer loyalty is built when customers feel positive about the experience, are satisfied with the value they receive, and consistently prefer a particular product or service (Torrão & Teixeira, 2023).

Customer loyalty towards the GrabCar app in Southeast Asia has been significantly influenced by factors such as service quality, price perception, and customer satisfaction. A study conducted by Ahmed et al. (2023) found that service quality, price perception, and customer satisfaction have a positive and significant effect on customer loyalty among Grab users. These findings highlight the importance of continuous improvements in service quality, price perception, and customer satisfaction to foster customer loyalty in the competitive ride-hailing market.

Service Quality

In the transportation sector, service quality is recognized as a key factor influencing customer satisfaction and loyalty (Nguyen & Luu, 2024). Naini et al. (2022) define service quality as a company’s effort to meet customer needs and wants while aligning with their

expectations. According to Sahid and Abadi (2024), service quality is a measure of how closely the level of service provided by a company meets customer expectations. Additionally, Dewi & Putri (2022) and Oh et al. (2023) highlight that service quality involves providing real and quick service that satisfies customers.

Rather than simply following a set of rules, it is more important for GrabCar to understand and meet what customers value most. Therefore, GrabCar can improve its service quality by arriving on time (Chung & Al-Khaled, 2020), keeping vehicles clean and comfortable (Bismo et al., 2018), and providing quick customer service responses when problems occur. Mullins (2021) also emphasizes that drivers should be friendly, polite, respectful toward passengers, maintain a neat appearance, and be well-dressed.

The level of service quality substantially impacts customer satisfaction, with higher service quality leading to greater satisfaction (Elizar et al., 2020). In turn, greater customer satisfaction significantly strengthens customer loyalty. When service quality exceeds customer expectations, it can further foster customer loyalty (Sahid & Abadi, 2024). Numerous studies (Elizar et al., 2020; Hassim & Shamsudin, 2023; Oh et al., 2023; Rafiansyah et al., 2025; Slack et al., 2020; Supriyanto et al., 2021) show that service quality has a positive effect on customer satisfaction. Based on the previous studies, the researchers proposed the following initial hypothesis for this study:

H1: Service quality has a positive effect on customer loyalty.

Service quality and customer satisfaction are key factors that lead to customer loyalty. Research on customer satisfaction as a mediator between service quality and customer loyalty has been conducted by Rafiansyah et al. (2025) and Sahid & Abadi (2024). Their findings show that customer satisfaction successfully mediates the relationship between service quality and customer loyalty. Hence, the following initial hypothesis was proposed by the researchers in this study:

H2: Customer satisfaction mediates the relationship between service quality and customer loyalty.

Price Perception

According to Benhardy et al. (2020), price perception refers to how customers view and judge the cost of a product or service compared to the value they get from it. It is a psychological factor that shapes their judgment of fairness, quality, and affordability. Price perception is influenced not only by the actual price but also by factors such as branding, advertising, past experiences, and comparisons with other products. Understanding customers' price perception is important for businesses because it significantly affects their purchasing decisions. Customers are more likely to choose a product or service when they believe it offers good value for money and aligns with their expectations and needs. Therefore, GrabCar should offer fair and transparent pricing to ensure that customers feel they are receiving good value for money when using the service (Bismo et al., 2018).

According to Han and Ryu (2009), price perception can be assessed through three indicators: (1) whether the price paid is reasonable and affordable, (2) whether the price reflects the quality of the product or service received, and (3) whether the price charged is appropriate. Research conducted by Ahmed et al. (2023), Oh et al. (2023), and Rafiansyah et al. (2025) shows that the reasonableness of a price has a positive influence on consumer loyalty, establishing a positive correlation between price perception and consumer loyalty. Based on these findings, the following hypothesis is proposed:

H3: Price perception has a positive effect on customer loyalty.

Price perception and customer satisfaction are key factors that lead to customer loyalty. Research on customer satisfaction as a mediator between price perception and customer loyalty has been conducted by Rafiansyah et al. (2025) and Sahid & Abadi (2024). Their findings show that customer satisfaction effectively mediates the relationship between price perception and loyalty. In this study, the researchers introduced the following initial hypothesis:

H4: Customer satisfaction mediates the relationship between price perception and customer loyalty.

Customer Satisfaction

According to Oh et al. (2023), customer satisfaction refers to the overall feeling a customer experiences after trying out a product or service. This feeling arises after they purchase and use the product or service. Based on this definition, customer satisfaction is about how customers feel, what customers think, and how customers react emotionally toward the product they have purchased and the service they have experienced. Customer satisfaction occurs when customers compare a product or service's performance against their expectations. If the product or service meets or exceeds their expectations, they feel satisfied. But if it falls short, they feel dissatisfied. Satisfaction and dissatisfaction are thus judgments customers make after using the product or service (Kee et al., 2023). Furthermore, customers are considered satisfied when they experience complete and high-quality services (Elizar et al., 2020).

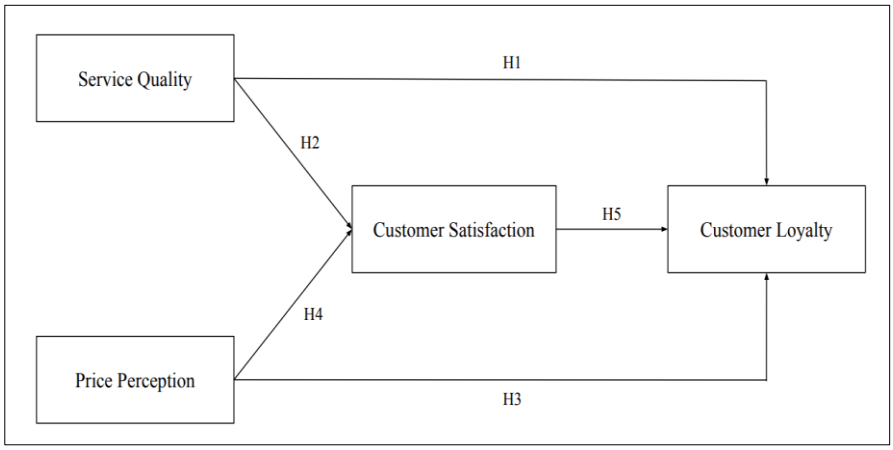
Hassim and Shamsudin (2023) state that customer satisfaction has consistently been recognized as a key factor in building customer loyalty across various industries, including transportation. Customers who are satisfied with high-quality products and services will feel happy. This happiness has a strong positive influence on their loyalty, significantly boosting their commitment to the brand or company (Sahid & Abadi, 2024). Therefore, GrabCar needs to meet customers' expectations to create customer satisfaction, which in turn helps build customer loyalty and increase the company's profitability (Adam et al., 2020). Many studies have found a positive and significant correlation between customer satisfaction and loyalty, as shown in the research conducted by Ahmed et al. (2023), Ansah (2021), Oh et al. (2023), Paulose & Shakeel (2021), Rafiansyah et al. (2025), Ramdhani et al. (2020), and Wu et al. (2011). Based on these previous studies, the researchers introduced the following initial hypothesis:

H5: Customer satisfaction has a positive effect on customer loyalty.

Conceptual Framework

The research framework is shown in Figure 1. All 5 hypotheses were proposed.

Figure 1. Research Framework



RESEARCH METHOD

Sampling

This study focuses on GrabCar users in Southeast Asia, specifically in Malaysia, Indonesia, and India. The target population includes individuals who have used GrabCar services in these countries. The study explores the influence of service quality and price perception on customer loyalty, with a particular focus on the mediating role of customer satisfaction. It aims to understand how these factors affect customer loyalty within the ride-hailing service industry, where customer experience plays a crucial role in retaining users in a highly competitive market (Artha et al., 2022).

The unit of analysis is the people or things whose qualities will be measured. The unit of analysis is an essential part of a research project, and it determines the main focus of analysis (Satter, 2024). In this research, the units of analysis are individual GrabCar users in Southeast Asia, who provide insights into their experiences and perceptions of service quality, price perception, and customer satisfaction.

A convenience sampling approach was used because it was easier to access respondents through online platforms (Golzar et al., 2022) and also enabled lowering costs and speeding up the data collection process (Lohr, 2021). Participants were selected based on their familiarity with the GrabCar service to ensure relevant and accurate responses. The sample included people of various ages, both below and above 18, from different backgrounds, and with different levels of GrabCar usage. The group was fairly balanced in terms of gender and included participants from different regions of Malaysia, Indonesia, and India.

Data collection

This study used primary data, which was collected directly from GrabCar users in Malaysia, Indonesia, and India. A quantitative research method was employed, and data were collected using an online survey distributed via Google Forms, focusing on the variables of service quality, price perception, customer satisfaction, and customer loyalty. This survey was shared through various social media platforms, including WhatsApp, WeChat, Instagram, Facebook, and Telegram, targeting a total of 150 respondents. Using a Google Forms survey provided greater flexibility compared to face-to-face interviews as the respondents could complete the questionnaire independently at their convenience, anywhere and anytime. Online surveys can be a very effective method for collecting data when used properly (Futri et al., 2022).

In this survey, respondents were asked to rate their level of agreement with relevant statements to assess whether service quality, price perception, and customer satisfaction influence customer loyalty with a specific focus on GrabCar services in Southeast Asia. Additionally, the study aimed to examine whether customer satisfaction plays a mediating role in the relationship between service quality, price perception, and customer loyalty among GrabCar users in Malaysia, Indonesia, and India.

The data collected through the survey were analyzed using IBM SPSS Statistics software. Multiple regression analysis was employed to test the influence of service quality and price perception on consumer satisfaction. Additionally, the mediating role of customer satisfaction in the relationships between these variables and customer loyalty was examined using a regression-based mediation approach. This analysis provides empirical insights into the factors influencing customer loyalty among GrabCar users in Southeast Asia.

Furthermore, secondary data was obtained from academic journals, books, and reputable online sources to support the literature review and develop the theoretical framework of the study. It also provided the opportunity to create new insights into the topic, highlighting aspects that were not addressed by the primary data and offering a wider understanding of the research subject.

Data Analysis

To evaluate the proposed hypotheses (H1–H5), multiple statistical analysis techniques were employed using IBM SPSS Statistics. First, reliability and validity tests were performed using Cronbach's Alpha and Pearson correlation coefficients to ensure the consistency and accuracy of the measurement instruments. Second, descriptive statistics and zero-order correlation analysis were conducted to examine the strength of the relationships among the research variables. Third, multiple regression analysis was used to test the direct effects of Service Quality and Price Perception on Customer Satisfaction and Customer Loyalty.

To assess the mediating role of Customer Satisfaction, mediation testing was conducted based on the (Baron & Kenny, 1986) mediation procedures, examining both direct and indirect effects. The mediating effect was further examined using a regression-based approach by assessing the significance of the relationships among the independent variables, the mediator, and the dependent variable. This analytical strategy provides empirical evidence for the mediating role of customer satisfaction in the proposed relationships and ensures that the hypothesized relationships are evaluated in a statistically consistent manner.

Measures

This research aims to examine the influence of service quality, price perception, and customer satisfaction on customer loyalty, as well as to investigate the mediating role of customer satisfaction in the relationship between service quality, price perception, and customer loyalty among GrabCar users in Southeast Asia, specifically in Malaysia, Indonesia, and India. To achieve this, a quantitative research method was adopted. There were 20 items included in the questionnaire. Customer loyalty was measured using five questions (Ansah, 2021; Katili et al., 2024; Wu et al., 2011), and customer satisfaction was measured with five questions (Adam et al., 2020; Ansah, 2021; Katili et al., 2024; Osman et al., 2024; Teoh et al., 2023). Price perception was assessed using five questions (Ansah, 2021; Assegaff & Pranoto, 2020; Sahadah & Maulana, 2024), and service quality was measured using five questions (Katil et al., 2024; Teoh et al., 2023). All questions were answered by respondents using a 5-point Likert scale, ranging from

"1" (Strongly Disagree) to "5" (Strongly Agree). The Appendix provides the questions used for each key variable.

RESULTS

Table 1. Summary of Respondents' Demography (N = 150)

Response	Frequency	Percentage (%)
Gender		
Female	81	54
Male	69	46
Age		
18 years old and below	14	9.3
18 - 20 years old	33	22
21 - 30 years old	48	32
31 - 40 years old	25	16.7
41 - 50 years old	18	12
51 years old and above	12	8
Country of Residence		
Malaysia	69	46
India	44	29.3
Indonesia	37	24.7
Occupation		
Student	66	44
Employed (Part-time)	11	7.3
Employed (Full-time)	31	20.7
Self-employed	22	14.7
Unemployed	11	7.3
Retired	9	6

According to the data in Table 1, most respondents were female (54%), while males accounted for 46.0%. In terms of age, the largest age group was between 21 – 30 years old (32%), followed by those 18 - 20 years old (22%) and 31 – 40 years old (16.7%). Smaller proportions were observed among the younger age group, which is 18 years old and below (9.3%), and the older age groups, which are 41 – 50 years old (12%) and 51 years old and above (8%). The majority of our respondents resided in Malaysia (46%), with others from India (29.3%) and Indonesia (24.7%). In terms of occupation, the highest percentage was students (44%), followed by full-time employees (20.7%) and self-employed individuals (14.7%). A smaller number of respondents were part-time employees and unemployed (both 7.3%), and the smallest group was retirees (6%).

Table 2. Summary of Transportation Preferences and Frequency of GrabCar Rides

Response	Frequency	Percentage (%)
Do you have your own car or motorcycle?		
Yes	68	45.3
No	82	54.7
Have you installed the Grab app on your phone?		
Yes	150	100.0
No	0	0.0
How often do you take a GrabCar ride?		
Daily	29	19.3
A few times a week (2 – 3 times)	32	21.3
A few times a month (2 – 3 times)	42	28.0
A few times a year (2 – 3 times)	47	31.3

According to the data in Table 2, the summary highlights the respondents' vehicle ownership status, Grab app installation, and frequency of GrabCar usage. A majority of the respondents (54.7%) do not own a car or motorcycle, which also suggests that many of the respondents may rely on public transport or ride-hailing services like Grab. Meanwhile, 45.3% of the respondents have their own vehicle. Interestingly, all respondents (100%) have installed the Grab app on their phones, indicating that the app is widely known and used among the sample group. When it comes to how often they take a GrabCar ride, the largest group (31.3%) reported using GrabCar only a few times a year, followed closely by 28.0% who use the service a few times a month. Another 21.3% take a GrabCar ride a few times a week, while 19.3% use it almost daily. The result indicates that all respondents are active Grab app users, which makes the data highly relevant for analyzing user experiences related to the platform. This supports the study's focus on variables such as price perception and service quality, as it ensures that every respondent has firsthand experience with the app.

Table 3. Descriptive Analysis, Cronbach's Coefficient Alpha, and Zero-order Correlations for All Study Variables

Variables		1	2	3	4
1	Service Quality	0.935			
2	Price Perception	0.578**	0.924		
3	Customer Satisfaction	0.789**	0.806**	0.957	
4	Customer Loyalty	0.720**	0.835**	0.898**	0.928
Number of Items		5	5	5	5
Mean		4.4613	4.0160	4.3147	4.3053
Standard Deviation		0.67989	1.03094	0.71732	0.73336

Note: N = 150, $p < 0.05$, $p < 0.01$, $p < 0.001$. Diagonal entries in bold indicate Cronbach's coefficient alpha.

Table 3 presents the descriptive statistics, internal consistency reliability, and zero-order correlations among service quality, price perception, customer satisfaction, and customer loyalty. All constructs demonstrate excellent internal consistency, as indicated by Cronbach's coefficient alpha values ranging from 0.924 to 0.957, exceeding the recommended threshold of 0.70. Each variable is measured using five items, confirming consistency in scale construction across constructs.

The descriptive results indicate that respondents report relatively high perceptions across all variables. Service quality shows the highest mean score (M = 4.4613, SD = 0.67989), followed by customer satisfaction (M = 4.3147, SD = 0.71732) and customer loyalty (M = 4.3053, SD = 0.73336), while price perception records a slightly lower but still favorable mean (M = 4.0160, SD = 1.03094). These findings suggest that respondents generally evaluate the service experience, pricing, satisfaction, and loyalty positively.

The correlation analysis reveals that all inter-construct relationships are positive and statistically significant. Service quality is moderately to strongly correlated with price perception ($r = 0.578$, $p < 0.01$), customer satisfaction ($r = 0.789$, $p < 0.01$), and customer loyalty ($r = 0.720$, $p < 0.01$). Price perception also exhibits strong positive associations with customer satisfaction ($r = 0.806$, $p < 0.01$) and customer loyalty ($r = 0.835$, $p < 0.01$). Furthermore, customer satisfaction demonstrates a very strong positive correlation with customer loyalty ($r = 0.898$, $p < 0.01$), indicating a close linkage between satisfaction levels and loyal behavioral intentions.

Overall, the results confirm that the measurement model possesses strong reliability and that the proposed relationships among service quality, price perception, customer satisfaction, and customer loyalty are supported at the bivariate level, providing a solid foundation for subsequent hypothesis testing.

Table 4. First Model Summary of Multiple Regression Analysis

Independent Variable		Coefficient Regression	p-value	Decision
1	Service Quality (X_1)	0.385	< 0.001	Accepted
2	Price Perception (X_2)	0.447	< 0.001	Accepted
R Square: 0.781				
F Value: 262.688 (p < 0.001)				
Dependent variable: Customer Satisfaction (M)				

Source: Output of Regression Report

Table 4 presents the results of the first regression model examining the effects of service quality and price perception on customer satisfaction. The overall model is statistically significant, as indicated by an F-value of 262.688 ($p < 0.001$), demonstrating a strong model fit. The coefficient of determination ($R^2 = 0.781$) indicates that 78.1% of the variance in customer satisfaction is jointly explained by service quality and price perception.

The regression coefficients indicate that both independent variables have significant positive effects on customer satisfaction. Service quality ($\beta = 0.385$, $p < 0.001$) significantly influences customer satisfaction, indicating that improvements in service performance are associated with higher satisfaction levels. Similarly, price perception ($\beta = 0.447$, $p < 0.001$) exhibits a strong positive effect on customer satisfaction, suggesting that customers' evaluations of price fairness and value play a critical role in shaping satisfaction. These findings provide empirical support for the proposed antecedent relationships required to test the mediating role of customer satisfaction, as hypothesized in H2 and H4.

Overall, the findings from the first regression model establish customer satisfaction as a well-explained construct and confirm its role as an intervening variable linking service quality and price perception to customer loyalty. Although H1 and H3 concern the direct effects of service quality and price perception on customer loyalty and are not tested in this model, the significant relationships identified here form the necessary foundation for the mediation analysis conducted in the subsequent regression model.

Based on the regression analysis, it can be concluded that both price perception ($\beta = 0.447$, $p < 0.001$) and service quality ($\beta = 0.385$, $p < 0.001$) contribute significantly to explaining customer satisfaction. These results indicate that favorable evaluations of service performance and price fairness enhance customer satisfaction, which is subsequently examined as a predictor of customer loyalty in testing H5 and the mediation hypotheses.

Table 5. Second Model Summary of Multiple Regression Analysis

Independent Variable		Coefficient Regression	p-value	Decision
1	Service Quality (X_1)	0.088	0.134	Unaccepted
2	Price Perception (X_2)	0.234	< 0.001	Accepted
3	Customer Satisfaction (M)	0.581	< 0.001	Accepted
R Square: 0.844				
F Value: 262.936 (p < 0.001)				
Dependent variable: Customer Loyalty (Y)				

Source: Output of Regression Report

Table 5 reports the results of the second regression model examining the effects of service quality, price perception, and customer satisfaction on customer loyalty. The model demonstrates strong explanatory power, with an R^2 value of 0.844, indicating that 84.4% of the variance in customer loyalty is explained by the combined effects of the independent and mediating variables. The overall model is statistically significant, as evidenced by an F-value of 262.936 ($p < 0.001$), confirming a good model fit.

An examination of the regression coefficients reveals that customer satisfaction has the strongest positive and statistically significant effect on customer loyalty ($\beta = 0.581$, $p < 0.001$), providing support for H5. Price perception also shows a significant positive influence on customer loyalty ($\beta = 0.234$, $p < 0.001$), supporting H3 and indicating that favorable price evaluations contribute directly to loyalty formation. In contrast, service quality does not exhibit a statistically significant direct effect on customer loyalty ($\beta = 0.088$, $p = 0.134$), leading to the rejection of H1 in terms of its direct relationship with customer loyalty.

Overall, these results indicate that customer satisfaction plays a central role in driving customer loyalty and mediating the effect of service quality on loyalty outcomes. At the same time, price perception influences customer loyalty both directly and indirectly through customer satisfaction. This pattern of findings is consistent with the results of the first regression model (Table 4) and reinforces the proposed mediation structure of the study.

Mediation Analysis

The mediating role of customer satisfaction in the relationships between service quality, price perception, and customer loyalty was examined using a regression-based approach. The results indicate that service quality and price perception significantly influence customer satisfaction (Table 4), while customer satisfaction has a significant positive effect on customer loyalty (Table 5). When customer satisfaction is included in the model, the direct effect of service quality on customer loyalty becomes non-significant, indicating full mediation and supporting H2. In contrast, the direct effect of price perception on customer loyalty remains significant, indicating partial mediation and supporting H4. These findings confirm the central role of customer satisfaction in transmitting the effects of service quality and price perception to customer loyalty.

DISCUSSION

Service Quality, Customer Satisfaction, and Customer Loyalty (H1 and H2)

The empirical findings of this study provide nuanced insights into the role of service quality in shaping customer loyalty within the GrabCar context. Contrary to the initial hypothesis (H1), service quality does not exert a statistically significant direct effect on customer loyalty once customer satisfaction is incorporated into the regression model. This result diverges from several prior studies that reported a direct positive relationship between service quality and loyalty (Ahmed et al., 2023; Sahid & Abadi, 2024). However, it aligns with more recent evidence suggesting that service quality influences loyalty primarily through post-consumption evaluations rather than through immediate behavioral commitment (Rafiansyah et al., 2025).

The rejection of H1 indicates that, in digital ride-hailing services, service quality alone is insufficient to secure customer loyalty. Although attributes such as punctuality, driver professionalism, and responsiveness, highlighted by Chung & Al-Khaled (2020), Dewi & Putri (2022), and Mullins (2021), remain essential, their impact appears to be indirect.

Customers may acknowledge high service standards, yet loyalty only materializes when these standards translate into a satisfying overall experience.

In contrast, the findings provide strong empirical support for H2, confirming that customer satisfaction fully mediates the relationship between service quality and customer loyalty. This result is consistent with prior mediation-based studies by Rafiansyah et al. (2025) and Sahid & Abadi (2024), which emphasize satisfaction as the primary mechanism through which service quality fosters loyalty. The present study extends this literature by demonstrating that, in the GrabCar context, satisfaction is not merely a complementary factor but a necessary condition for loyalty formation. This supports the argument that service quality improvements must be perceived, internalized, and emotionally evaluated by users before they influence repeat usage behavior.

Price Perception, Customer Satisfaction, and Customer Loyalty (H3 and H4)
The results further confirm the strategic importance of price perception in shaping customer loyalty, thereby supporting H3. Consistent with previous studies (Ahmed et al., 2023; Oh et al., 2023; Rafiansyah et al., 2025), price perception exhibits a significant and positive direct effect on customer loyalty. This finding reinforces Benhardy et al.'s (2020) conceptualization of price perception as a psychological evaluation of fairness and value rather than a reflection of nominal price alone.

Unlike service quality, price perception retains its statistical significance even after customer satisfaction is introduced into the model. This indicates that users' loyalty decisions are influenced by rational economic considerations alongside experiential evaluations. In the ride-hailing industry, where users frequently compare prices across platforms and are sensitive to surge pricing, price perception functions as an independent loyalty driver, consistent with Han and Ryu's (2009) pricing framework.

Support is also found for H4, as customer satisfaction partially mediates the relationship between price perception and customer loyalty. This result corroborates earlier findings by Rafiansyah et al. (2025) and Sahid & Abadi (2024), which demonstrate that favorable price perceptions enhance satisfaction and, in turn, loyalty. However, the persistence of a direct price–loyalty link suggests that customers evaluate price both emotionally (through satisfaction) and cognitively (through affordability and fairness assessments). This dual pathway reflects the distinctive nature of platform-based services, where customers balance value-for-money considerations with accumulated service experiences.

The Central Role of Customer Satisfaction in Driving Loyalty (H5)
Consistent with H5, customer satisfaction emerges as the strongest predictor of customer loyalty in the model. This finding is fully aligned with a broad body of prior research identifying satisfaction as a critical determinant of loyalty across industries (Ahmed et al., 2023; Paulose & Shakeel, 2021; Wu et al., 2011). The magnitude and significance of the satisfaction–loyalty relationship in this study further reinforce the argument that satisfaction functions as a consolidating construct that integrates service quality and price perceptions into long-term behavioral commitment.

The findings also support the expectation–confirmation perspective articulated by Kee et al. (2023) and Oh et al. (2023), which posits that satisfaction arises from the comparison between expectations and actual performance. In the GrabCar context, repeated satisfactory experiences appear to strengthen users' emotional attachment and reduce their propensity to switch platforms, even when alternative services are readily available.

Contextualizing the Findings within Ride-Hailing Consumer Behavior

The demographic characteristics of the respondents provide important context for interpreting these results. The dominance of student users and the high proportion of respondents who own private transportation suggest that GrabCar usage is driven primarily by convenience, efficiency, and situational needs rather than necessity. This finding supports Torrão and Teixeira's (2023) argument that loyalty in digital services is increasingly experience-driven rather than constraint-driven.

Under such conditions, customer satisfaction becomes particularly salient. Users with multiple transportation alternatives are more likely to discontinue platform usage if expectations are not met. The strong mediating role of satisfaction observed in this study underscores its importance as a retention mechanism in competitive and low-switching-cost environments.

Theoretical Contributions and Practical Implications

From a theoretical perspective, this study contributes to the service marketing and platform economy literature by clarifying the conditional role of service quality in loyalty formation. While earlier studies often assumed a direct service quality–loyalty relationship, the present findings demonstrate that this relationship is fully mediated by satisfaction in ride-hailing services. This insight refines existing models by emphasizing satisfaction as the primary transmission mechanism.

From a managerial standpoint, the findings suggest that GrabCar and similar platforms should prioritize strategies that directly enhance customer satisfaction rather than focusing solely on operational performance indicators. Improvements in punctuality, driver behavior, and responsiveness should be explicitly designed to elevate user satisfaction. At the same time, transparent and fair pricing strategies are essential, as price perception influences loyalty both directly and indirectly. Implementing clear fare structures, minimizing unexpected price surges, and offering targeted discounts, particularly for price-sensitive groups such as students, can strengthen both satisfaction and loyalty.

CONCLUSION

This study offers empirical evidence on the mechanisms shaping customer loyalty in the ride-hailing industry in Southeast Asia, with specific reference to GrabCar users. Drawing on regression-based mediation analysis, the findings demonstrate that customer loyalty is not driven directly by service quality alone, but is primarily formed through customer satisfaction. While both service quality and price perception significantly enhance customer satisfaction, only price perception maintains a direct effect on customer loyalty. These results confirm that customer satisfaction functions as a full mediator between service quality and loyalty, and as a partial mediator between price perception and loyalty.

The rejection of the direct effect of service quality on customer loyalty underscores an important insight for platform-based services. High service performance, such as punctuality, driver professionalism, and responsiveness, does not automatically translate into loyal behavior unless it is internalized by users as a satisfying experience. In contrast, price perception exerts a dual influence, affecting loyalty both emotionally through satisfaction and rationally through evaluations of fairness and affordability. This distinction highlights the combined emotional–cognitive nature of decision-making in ride-hailing services, where users continuously balance experiential satisfaction with cost considerations.

From a strategic perspective, these findings emphasize that customer satisfaction should be positioned as the central lever for sustaining long-term loyalty. Ride-hailing platforms such as GrabCar should therefore prioritize systematic monitoring of customer satisfaction and implement rapid response mechanisms for dissatisfaction, including personalized compensation, service recovery initiatives, and proactive communication. Enhancing punctuality and driver behavior remains essential, not as isolated performance metrics, but as components that directly shape overall satisfaction. In parallel, transparent pricing communication, particularly during peak hours or dynamic pricing conditions, can mitigate negative price perceptions and reinforce trust. The integration of real-time feedback systems, data-driven personalization, and loyalty reward programs can further strengthen user engagement, encourage repeat usage, and stimulate positive word-of-mouth within competitive digital mobility markets.

Overall, this study reinforces the strategic importance of customer satisfaction as a psychological and behavioral bridge connecting service and price perceptions to customer loyalty. By demonstrating distinct mediation patterns, the findings contribute to a more nuanced understanding of loyalty formation in ride-hailing platforms and offer actionable insights for practitioners operating in highly competitive and price-sensitive environments.

LIMITATION

Despite its contributions, this study is subject to several limitations that should be considered when interpreting the findings. First, the sample composition was uneven, with university students accounting for a substantial proportion of respondents. Students are generally more price-sensitive and technologically adaptive than working professionals, who may place greater emphasis on reliability, punctuality, and time efficiency. Consequently, the dominance of this demographic group may have amplified the role of price perception and customer satisfaction, potentially limiting the generalizability of the findings to other user segments.

Second, the geographical distribution of respondents was imbalanced. Malaysian users constituted the largest share of the sample, while respondents from Indonesia and India were comparatively underrepresented. Given the cultural, economic, and regulatory diversity across Southeast Asia, customer expectations and usage patterns may vary significantly between countries. This imbalance may therefore constrain the applicability of the results across the broader regional market.

Third, the study relied on cross-sectional data collected through a one-time online survey. While this approach is suitable for identifying associations among variables, it does not capture changes in customer satisfaction or loyalty over time. Customer perceptions may fluctuate in response to service failures, pricing changes, or external factors such as traffic conditions and weather. As a result, the findings may not fully reflect long-term loyalty behavior.

Additionally, the study did not incorporate comparisons with competing ride-hailing platforms. In practice, users frequently switch between platforms based on price promotions, availability, or situational convenience. The absence of competitive benchmarking may lead to an overestimation of platform-specific loyalty. External influences such as temporary discounts, promotional campaigns, or local events were also not explicitly controlled, which may have affected respondents' evaluations at the time of data collection.

Future research should address these limitations by employing more balanced and diverse samples across age groups, occupations, and countries. Longitudinal designs

would allow researchers to observe how satisfaction and loyalty evolve over time and in response to service or pricing changes. Comparative studies involving multiple ride-hailing platforms could further clarify the competitive dynamics of loyalty formation. Incorporating behavioral data, such as usage frequency or transaction history, alongside survey responses would also enhance the robustness and explanatory power of future investigations.

In conclusion, while this study provides meaningful insights into customer loyalty formation in the Southeast Asian ride-hailing context, addressing these limitations will enable future research to develop a more comprehensive and generalizable understanding of loyalty in increasingly competitive digital mobility ecosystems.

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