

# THE INFLUENCE OF SERVICE INNOVATION AND PROMOTIONAL STRATEGIES ON GRAB USER RETENTION: THE MEDIATING ROLE OF PURCHASE DECISIONS

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**Abstract.** Grab, as one of the largest on-demand service providers in Southeast Asia, faces challenges in maintaining user loyalty amid intense competition with Gojek and similar platforms. Efforts to retain customers require both service innovation and effective promotional strategies, which play a role in shaping purchase decisions. This study aims to examine the relationship between service innovation and promotional strategies on Grab user retention, with purchase decisions serving as a mediating variable, using the Stimulus-Organism-Response (S-O-R) conceptual model. A quantitative approach was applied through a survey of 384 respondents who were active in the past six months, determined using Cochran's formula with proportional random sampling. Data were collected using a five-point Likert scale questionnaire and analyzed through Partial Least Squares-Structural Equation Modeling (PLS-SEM). The study's findings indicate that service innovation and promotional strategies have a positive and significant effect on purchase decisions, which in turn mediate their influence on user retention. These results contribute to the development of digital marketing literature while providing practical recommendations for Grab in designing more effective and sustainable service and promotional strategies.

**Keywords:** service innovation, promotion, decision, retention

## I. INTRODUCTION

Developments in the information and communication technology sector have triggered broad and substantial transformations across various fields, such as transportation, logistics, and food delivery services. Grab is one example of a company that has successfully adapted to these changes. In Southeast Asia, Grab is recognized as one of the largest on-demand service providers. Since its establishment in 2012 as a ride-hailing service, according to an article from Morningstar published in November 2024, Grab has held a dominant market share for on-demand services in the region (Wang, 2024b). Over time, Grab has evolved into a super app offering a variety of services, including food delivery (Grab Food), parcel delivery (Grab Express), digital payments (Grab Pay), and grocery shopping (Grab Mart). Grab has expanded its operational reach to more than 400 cities across eight Southeast Asian countries, providing a wide range of instant digital services to millions of users. Amid dynamic market changes and increasingly intense competition, particularly from competitors such as Gojek and similar platforms, Grab is required to continuously innovate and improve its service quality in order to remain competitive.

Grab Indonesia demonstrates a strong commitment to digital innovation, particularly in transportation, financial services, and MSME empowerment. Innovations such as Grab Maps have successfully mapped more than 22 million location points in 200 cities, while Grab Merchant has accelerated the merchant onboarding process from three weeks to only 1–3 days through automation (Kumbaran Tech, 2022). Grab also

promotes financial inclusion through OVO Invest, which allows investments starting from IDR 10,000 and has reached more than one million first-time investors (Kompas.com, 2022). In supporting the green economy, Grab operates more than 10,000 electric vehicles capable of reducing emissions by up to 4,600 tons (Santia, 2024), while also enhancing user safety through features such as Trip Monitoring and the Emergency Button (JagatBisnis.com, 2024). Grab's super app approach reflects an integrated service innovation strategy, aligned with the 10 Types of Innovation framework introduced by Keeley et al. (2013). This framework includes development in aspects such as revenue models, network collaboration, and internal process efficiency. Furthermore, Grab applies the principle of Value Innovation (Kim & Mauborgne, 2004) by creating high-value services that are accessible and efficient, supported by technologies such as artificial intelligence and big data (Ghazali, 2024; Park & Kim, 2022; Wang, 2024a). This strategy allows Grab to avoid direct competition with its rivals while simultaneously opening new untapped market segments, in line with the principles of the Blue Ocean Strategy, which forms the foundation of the Value Innovation concept.

Grab faces several significant challenges in maintaining its user base. First, intense competition with Gojek provides users with many alternative service options, making user loyalty fragile. This situation indicates slowing growth and increasing pressure from the market (Reuters, 2025). Second, the level of user loyalty toward Grab remains less than optimal, suggesting that there are still gaps in customer satisfaction. Third, concerns regarding data privacy also pose obstacles in retaining users.

Research published on ResearchGate reveals that positive perceptions regarding data security and privacy directly contribute to increased customer loyalty and retention in online transportation services in Indonesia (Lubis & Sitorus, 2023).

Table 1. Grab Market Share 2023 – 2025 Quarterly

Quarter/Year	Grab Market Share	Gojek Market Share	Grab GMV (USD Billion)	Gojek GMV (USD Billion)
Q1/2023	55%	30%	4.2	2.8
Q2/2023	56%	29%	4.4	2.7
Q3/2023	57%	28%	4.6	2.6
Q4/2023	58%	27%	4.9	2.5
Q1/2024	59%	26%	5.1	2.4
Q2/2024	60%	25%	5.3	2.3
Q3/2024	61%	24%	5.5	2.2
Q4/2024	62%	23%	5.7	2.1
Q1/2025	63%	22%	5.4	2.0
Q2/2025	64%	21%	5.6	1.9

Source: Momentum Works & Grab Holdings Inc. (2025), Grab vs Gojek GMV Report in ASEAN 2023–2025

The data in the table show that Grab consistently outperforms Gojek in influencing purchasing decisions. This is demonstrated through the completeness of services integrated into a single application (super app), the ease of use of a modern and fast application interface, and attractive and personalized loyalty programs.

Table 2. Grab User Retention Data

City	Number of Respondents	Price Score (1–5)	Speed Score (1–5)	App Ease Score (1–5)	Retention (%)	Retention Category
Jabodetabek	150	4.2	4.3	4.4	86%	High
Bandung	100	4.1	4.2	4.3	84%	High
Semarang	100	4.0	4.1	4.2	82%	Medium
Yogyakarta	100	4.0	4.1	4.2	82%	Medium
Surabaya	100	4.2	4.3	4.4	86%	High
Medan	100	4.2	4.3	4.3	85%	High
Makassar	94	4.0	4.1	4.2	82%	Medium
Denpasar	100	4.1	4.2	4.3	84%	Medium

Source: Tempo Data Science (2021), 844 respondents in 8 major cities (Oct–Dec 2021)

Based on the data above, cities such as Jabodetabek, Surabaya, and Medan recorded high scores across the three service indicators, each above 4.2, with retention rates between 85% and 86%, categorized as “High.” Meanwhile, cities such as Semarang, Yogyakarta, Makassar, and Denpasar show slightly lower scores in the three aspects and have retention rates between 82% and 84%, categorized as “Medium.” This indicates a relationship between positive perceptions of price, speed, and application convenience and higher levels of user retention.

Table 3. Grab User Retention & Satisfaction Score Data

City	User Retention	Grab User Satisfaction Score (1–5)
Jabodetabek	High	4.16
Bandung	High	4.15
Semarang	Medium	4.14
Yogyakarta	Medium	4.13
Surabaya	High	4.16
Medan	High	4.17
Makassar	Medium	4.12
Denpasar	Medium	4.14

Source: Tempo Data Science (2021), 844 Gen Z & Millennial respondents in 8 major cities

Based on the table above, the relationship between user retention categories and satisfaction scores toward Grab services is presented. The data reinforce the finding that cities with a “High” retention category such as Jabodetabek, Bandung, Surabaya, and Medan also have relatively higher satisfaction scores, ranging from 4.15 to 4.17. Conversely, cities with a “Medium” retention category such as Semarang, Yogyakarta, Makassar, and Denpasar have slightly lower satisfaction scores, ranging from 4.12 to 4.14. Although the difference in satisfaction scores is not very large, it is sufficiently consistent to indicate that user satisfaction plays a role in increasing retention.

Table 4. Summary of Estimated Retention per City & Segment

City	Service Segment	Estimated Monthly Retention	Notes
Jakarta	≥3 services	~87–90%	Highest retention among multi-offering users
Surabaya	Grab Bike / Grab Food	~83–85%	Price strongly influences local loyalty
Bekasi	Grab Bike	~80–84%	Service quality and brand image are dominant
Ciamis	Grab Bike based on physical quality	Not calculated	Only physical quality significantly affects satisfaction

Based on the table above, the data show that differences in retention influenced by service segments indicate that Grab’s strategy is city-specific and behavior-based. In Jakarta, the focus of implementation encourages the use of multiple services to increase user attachment and switching costs. In Surabaya, retention strategies are more effective when based on pricing and value packages due to relatively high tariff sensitivity. Bekasi requires consistent service quality and stronger brand image, while regions such as Ciamis need to ensure basic service quality before developing loyalty programs. With this segmented approach, retention can be optimized more precisely and sustainably.

Table 5. Summary of Retention Data and User Trends from Grab Official Report Q1 2025

Category	Data / Trend
Mobility partner retention driver	Stable at 90% (QoQ and YoY)
Growth of Monthly Active Drivers	Up 18% YoY and 4% QoQ
Monthly Transacting Users (MTUs)	Strong growth in line with GMV (~16%)
On-Demand GMV	Up 16% YoY (17% constant currency), reaching \$4.9B
Total On-Demand Transactions	Up 21% YoY

The interpretation of the data above is that driver retention remains high (90%), indicating stability in the supply of mobility partners. Growth in MTUs and transactions reflects increasing user loyalty and engagement. Although daily or monthly user retention is not explicitly stated, trends in MTUs and GMV reflect strong user engagement.

In addition to the data above, personalization based on data and customer behavior analytics is used to tailor services and

promotions according to each user's purchasing decisions (Bithour Production, 2023). Purchasing decisions function as an intermediary variable linking the impact of service quality and innovation to user retention levels. In the hierarchy of effects model, purchasing decisions appear in the affective stage as an emotional response to stimuli such as application quality and promotions before influencing the decision for repeated usage (Lavidge & Steiner, 1961). Thus, in this study, service innovation and promotional strategies act as the stimulus (S), which are external stimuli received by Grab users in the form of new features, ease of access, or attractive promotional pricing. These stimuli are then processed by users (organism/O), where purchasing decisions are formed as internal psychological reactions reflecting perceptions, evaluations, and impressions toward the application. Finally, the response that emerges (response/R) is user retention, represented by the decision to continue using Grab services repeatedly or demonstrating loyalty.

Based on findings from previous studies, the researcher will present an analysis of differences in service innovation, promotional strategies, and purchasing decisions between Grab and its competitor, Gojek, as shown in the following tables.

Table 6. Differences in Service Innovation between Grab and Gojek

Aspect	Grab	Gojek
Service Integration	Grab Car, Grab Bike, Grab Taxi, Grab Food, Grab Pay, Grab PayLater, Grab Mart, Grab Express, Grab Hitch, Grab Rent, Grab Jastip, Grab Superbank, Grab Game Topup, Grab Gifts	GoCar, GoRide, GoBluebird, GoFood, GoPay, GoPayLater, GoMart, GoSend, None, GoRent, GoJastip, None, GoGames, GoGive
Financial Services	Grab Pay, PayLater, Grab Invest	GoPay, GoPayLater
Tariff	Normal hours: IDR 1,500/km, IDR 10,000 minimum fare. Peak hours: IDR 5,000	Normal hours: <10 km IDR 12,000, 11–15 km IDR 15,000, >15 km +IDR 2,000. Peak hours: <10 km IDR 17,000, 11–15 km IDR 20,000, >15 km +IDR 5,000

Source: (Kurniawan et al., 2024)

Overall, the information in the table indicates that Grab demonstrates more significant advantages than Gojek in various aspects of service innovation. In terms of service integration, Grab offers a wider range of transportation services such as Grab Car, Grab Bike, GrabTaxi, as well as food delivery and digital payment services, reflecting a more integrated service ecosystem. Meanwhile, Gojek is limited to services such as GoCar, GoRide, and GoBluebird, with fewer services in this category. In terms of additional service innovations, Grab also excels by offering more service variations such as Grab Mart, Grab Express, Grab Hitch, Grab Rent, and Grab Gifts. In contrast, Gojek offers similar services but with more limited coverage, where some features such as GoRent and GoSupermarket are unavailable.

Table 7. Comparison of Promotional Strategies between Grab and Gojek

Aspect	Grab	Gojek
Types of Promotion	Dynamic discounts up to 50%, cashback up to IDR 25,000, bundled transport and food packages IDR 50,000, Grab Rewards discounts 10–40%, referral discount IDR 20,000	GoPay discounts 30–50%, GoFood vouchers IDR 10,000–25,000, local time-based campaigns
Loyalty Program	Grab Rewards with tiered levels and varied benefits	GoClub and GoPay Plus, but less widely recognized

Source: (Panji & Didi, 2024)

Referring to the table above, it can be interpreted that the promotional strategy implemented by Grab is more prominent than Gojek, particularly in terms of consistency, relevance, and personalization. The tiered and varied Grab Rewards loyalty program also contributes to increasing user loyalty toward the platform.

Table 8. Comparison of Purchasing Decisions toward Grab and Gojek

Aspect	Grab	Gojek
Service completeness	Super app	Focus on local services, not fully integrated
Ease of application use	Modern interface, fast system, high personalization	Simple interface, slower innovation
Payment flexibility	Grab Pay, OVO, cards, QRIS	Focus on GoPay, limited methods
Impact on retention	Integration and convenience increase user loyalty	Loyalty may decline if promotions/integration are lacking

Source: (Panji & Didi, 2024)

The conclusion from the table above is that Grab is superior in terms of service completeness, ease of use, payment flexibility, and impact on user retention compared to Gojek.

Research on service innovation and promotion in ride-hailing user retention still leaves several gaps. There are still limited studies highlighting the mediating role of purchasing decisions, as well as direct comparisons between Grab and Gojek within the local context. In addition, theoretical approaches such as Stimulus–Organism–Response (S-O-R) have not been widely applied in analyzing user behavior in digital transportation services. Finally, there are limitations in empirical studies related to personalization and behavioral analytics, even though both play important roles in increasing user loyalty.

Therefore, the main focus of this study is to evaluate the impact of service innovation and promotional strategies on the level of user retention of the Grab application, with purchasing decisions acting as a mediating variable in the relationship between variables. The findings of this study are expected to contribute to the development of digital marketing theory and provide practical contributions for Grab in designing more effective and sustainable service and promotional strategies.

## II. RESEARCH METHODS

Several aspects can be described in the research methodology as follows:

### Type of Research

A quantitative approach is applied in this study, enabling the analysis of relationships between variables in a more measurable and objective manner.

### Types and Sources of Data

This study utilizes nominal data as one type of analyzed data, which functions to classify respondents based on characteristics such as age and gender, as well as ordinal data collected through a Likert scale. The sources of research data include primary data obtained from questionnaires distributed to respondents, as well as secondary data derived from journals, books, and research reports that support the analysis.

### Variables and Measurement

There are three types of variables in this study. The first is the independent variable, consisting of service innovation and promotional strategy. Service innovation is measured using a questionnaire that includes questions regarding user perceptions of the service innovations provided by Grab. Meanwhile, promotional strategy is measured using a questionnaire that includes questions about the effectiveness of promotional strategies implemented by Grab.

The second variable is the mediating variable, namely purchasing decisions, which is measured using a questionnaire containing questions about purchasing decisions toward Grab services.

The last variable is the dependent variable, namely user retention, which is measured using a questionnaire containing questions about the level of user retention toward Grab services. Data collection is conducted using a five-point Likert scale, where respondents indicate their level of agreement as follows:

- 1 = Strongly Disagree,
- 2 = Disagree,
- 3 = Neutral,
- 4 = Agree, and
- 5 = Strongly Agree.

### Population and Sample

The population object in this study is users of the Grab application in Indonesia, with a focus on ride-hailing service users, namely Grab Car and Grab Motor. Grab users in Indonesia have diverse demographic characteristics, including variations in age, gender, type of occupation, and geographic region of residence.

In determining respondents, this research uses the Proportional Random Sampling technique, which allows respondents to be distributed randomly but proportionally according to population characteristics in each major city in Indonesia, particularly for Grab users who have been active in the last six months. The selection of this technique is based on several strong and relevant reasons, especially in the context of sample distribution across eight major cities in Indonesia. These reasons include accurate representation, statistical efficiency, and theoretical support when the population is divided into groups of different sizes.

Since the exact number of samples cannot be determined with certainty, the sample size in this study is determined using the Cochran formula (1977), which is suitable for large

populations or populations with unknown sizes. This formula considers the confidence level, margin of error, and proportion of respondents, with the following formula:

$$n_0 = \frac{Z^2 \cdot p \cdot q}{e^2}$$

Description:

$n_0$  = minimum number of required respondents

Z = Z-score corresponding to the confidence level (usually 1.96 for 95%)

p = estimated proportion of respondents having certain characteristics (e.g., 0.5 if unknown)

q = 1 - p

e = margin of error (desired error limit, 0.05 for 5%)

$$n_0 = \frac{(1.96)^2 \times 0.5 \times 0.5}{(0.05)^2} = 384.15$$

Thus, the sample size obtained in this study is 384 respondents, covering eight major cities (Jabodetabek, Surabaya, Bandung, Semarang, Medan, Yogyakarta, Makassar, Denpasar) with the following distribution:

Table 9. Proportional Sampling Technique

City	Population	Estimated Active Grab Users	Proportion	Sample Size
Jabodetabek	11,038,216	6,244,000	47%	181
Surabaya	3,018,022	1,707,000	13%	49
Bandung	2,591,763	1,465,000	11%	42
Semarang	1,702,379	963,000	7%	28
Medan	2,546,452	1,438,000	11%	42
Yogyakarta	415,605	235,000	2%	7
Makassar	1,482,354	838,000	6%	24
Denpasar	673,270	381,000	3%	11
Total	23,468,061	13,271,000	100%	384

Source: (We Are Social & Hootsuite, 2022) and proportional data processing.

### Operational Definitions

The following explanation presents the operational description of each variable analyzed in this study.

Table 10. Operational Definitions

No	Variable	Operational Definition	Indicators	Measurement
1	Service Innovation	Service innovation is the process of designing and implementing new ideas to improve the quality, efficiency, and effectiveness of services provided to customers.	Introduction of new technology; Improvement of operational processes; Development of new products or services; Enhancement of customer interaction (Smith, 2020)	This study applies a five-point Likert scale (1-5)
2	Promotional Strategy	Promotional strategy refers to systematic planning designed to introduce products or services in order to increase consumer attention and interest.	Advertising; Sales promotion; Publicity; Direct marketing (Tasim, 2024)	This study applies a five-point Likert scale (1-5)
3	Purchasing Decision	Purchasing decision refers to the mental and behavioral process of individuals in selecting and purchasing a product or service influenced by various factors, including needs, perceived value, and previous experience.	Level of need; Perceived value; Previous experience; Information from media; Social influence (Issa et al., 2024)	This study applies a five-point Likert scale (1-5)
4	User Retention	User retention reflects the extent to which a business is able to maintain customer engagement and encourage them to continue using a product or service repeatedly.	Retaining existing customers; Sustainable growth; Product value (Kirubanidhi, 2024)	This study applies a five-point Likert scale (1-5)

### Data Collection Technique

Data collection was carried out using a questionnaire specifically designed to measure the variables of service innovation, promotional strategy, purchasing decisions, and user retention. The questionnaire was distributed online through the Google Forms survey platform and disseminated via social media channels, including Facebook, Instagram, and X, in order to expand respondent reach.

**Data Analysis Technique**

Data analysis in this study uses the PLS-SEM (Partial Least Squares Structural Equation Modeling) approach, which is a multivariate technique used to examine structural relationships among variables with both unidirectional and bidirectional relationships. PLS-SEM emphasizes explaining the variance of dependent variables and is highly suitable for causal-predictive models involving multiple constructs simultaneously (Ghozali, 2021; Hair et al., 2024).

Data analysis in this study is conducted through two main stages: outer model testing and inner model testing. The evaluation of the outer model aims to assess the validity and reliability of indicators in representing latent constructs. Convergent validity is tested by examining the outer loading values, where values  $\geq 0.7$  are considered ideal. However, values between 0.5–0.7 are still acceptable if the Average Variance Extracted (AVE) remains above 0.5. Indicators with loading values below 0.5 are recommended to be removed because they do not meet feasibility criteria.

Discriminant validity is tested using the AVE value of at least 0.5 as well as the Fornell–Larcker criterion, which requires that the square root of AVE for each construct be greater than its correlation with other constructs. Multicollinearity testing is conducted using the Variance Inflation Factor (VIF), where values  $< 5$  indicate no multicollinearity issues, while values  $\leq 3.3$  are considered more ideal. Construct reliability is evaluated through Composite Reliability (CR) and Cronbach’s Alpha (CA), with a minimum threshold of  $\geq 0.7$  indicating good internal consistency.

The next stage is inner model analysis, which focuses on testing structural relationships between constructs. The evaluation is conducted by observing the R-Square ( $R^2$ ) value of the dependent variable, where values  $\geq 0.70$  are categorized as strong,  $\geq 0.45$  as moderate, and  $\geq 0.25$  as weak. Hypothesis testing is conducted through a bootstrapping procedure by considering the t-statistic and P-value. A hypothesis is considered significant if t-statistic  $> 1.96$  and P-value  $\leq 0.05$ . In addition, the magnitude of influence between variables is analyzed using the F-Square ( $f^2$ ) value, with interpretations of 0.02 as small effect, 0.15 as medium effect, and 0.35 as large effect. To assess the overall model fit, the Standardized Root Mean Square Residual (SRMR) value is used, where values  $< 0.10$  or 0.08 indicate that the model has adequate goodness of fit and is appropriate for use in the study.

**III. RESULTS AND DISCUSSION**

**Research Data Description**

This study is categorized as a primary data-based study, in which information was collected directly through the distribution of questionnaires to respondents. The population targeted in this research consists of all Grab application users

in Indonesia, with a particular focus on users of online transportation services such as Grab Car and Grab Motor.

The research participants were drawn from eight major cities in Indonesia, namely Bandung, Denpasar, the Jabodetabek area, Makassar, Medan, Semarang, Surabaya, and Yogyakarta. The sampling technique used was Proportional Random Sampling, which is a sampling method that distributes respondents proportionally based on the number of users in each city. The sample specifically focused on users who had actively utilized Grab services within the last six months.

**Respondent Characteristics**

In general, the respondent criteria provide a clear and contextual representation of the research subject. Based on the findings of the study, respondent characteristics can be classified according to the following criteria.

Table 11. Respondent / Participant Criteria

No	Description	Number of Respondents	Percentage (%)
1	Gender		
	Male	238	62%
	Female	146	38%
	Total	384	100%
2	Age (Years)		
	<20 Years	25	7%
	21–35 Years	108	28%
	36–45 Years	157	41%
	46–55 Years	78	20%
	>55 Years	16	4%
	Total	384	100%
3	Occupation		
	Civil Servant	36	9%
	Police/Military	6	2%
	Entrepreneur	82	21%
	Private Employee	177	46%
	Student	44	11%
	Others	39	10%
	Total	384	100%
4	Residence Location /		
	Bandung	42	11%
	Jabodetabek	181	47%
	Surabaya	49	13%
	Semarang	28	7%
	Yogyakarta	7	2%
	Medan	42	11%
	Makassar	24	6%
	Denpasar	11	3%
	Total	384	100%
	5	Length of Using Grab	
< 6 months		0	0%
> 6 months – 1 year		38	10%
> 1 year		0	0%
1–5 years		247	64%
5–10 years		99	26%
Total		384	100%

Source: Processed primary data, 2025

The number of respondents is dominated by male participants. Therefore, if the product or service studied has gender relevance, communication strategies may initially focus on the male segment, or further exploration may be conducted to understand why female participation is relatively lower.

Table 11 presents the age distribution of the 384 respondents in this study. A total of 25 respondents (7%) are under 20 years old, 108 respondents (28%) are between 21–35 years, 157 respondents (41%) are within the 36–45 years age range, 78 respondents (20%) are between 46–55 years, and 16

respondents (4%) are above 55 years. From these data, it can be observed that the majority of respondents belong to the 36–45 year age group.

When associated with residence data, the relationship between location of residence and user age range can be described as follows.

Table 12. Respondent Age Characteristics vs Residence

Residence	<20 Years	21–35 Years	36–45 Years	46–55 Years	>55 Years	Total
Jabodetabek	0	91	90	0	0	181
Surabaya	0	0	49	0	0	49
Bandung	25	17	0	0	0	42
Semarang	0	0	18	10	0	28
Medan	0	0	0	42	0	42
Yogyakarta	0	0	0	7	0	7
Makassar	0	0	0	19	5	24
Denpasar	0	0	0	0	11	11
Total	25	108	157	78	16	384

Source: Processed primary data, 2025

Based on the table above, the age structure of users differs across regions, reflecting varying levels of market maturity. Jabodetabek shows the most diverse age distribution with a dominance of users aged 21–35 years, indicating a mature core market with high mobility needs across segments (from young professionals to established adults).

Surabaya and Bandung also demonstrate strong representation within productive age groups, but with a narrower concentration, suggesting stable markets that are less demographically differentiated. Meanwhile, Makassar and Denpasar appear relatively younger, indicating long-term growth potential from Gen Z and millennial segments who are digital natives.

On the other hand, cities such as Medan and parts of Semarang have a higher proportion of users aged 36–55 years, who tend to prioritize security, comfort, and reliability rather than price considerations alone.

The implication is that Grab needs to implement region-based demographic strategies. For cities dominated by users aged 21–35 years, effective approaches include digital promotions, gamification, cross-service bundling, and features that support active and flexible lifestyles. In regions with more mature age segments, the focus should be on increasing trust, service quality, ease of application use, and communication emphasizing safety and efficiency.

By integrating age and residence patterns, Grab can design more precise acquisition, retention, and monetization strategies tailored to local market characteristics, thereby strengthening competitive positioning and long-term value in each city.

Table 13. Length of Use Characteristics vs Residence

Residence	> 6 months – 1 year	1–5 years	5–10 years	Total
Jabodetabek	0	181	0	181
Surabaya	0	49	0	49
Bandung	38	4	0	42
Semarang	0	13	15	28
Medan	0	0	42	42
Yogyakarta	0	0	7	7
Makassar	0	0	24	24
Denpasar	0	0	11	11
Total	38	17	99	154

Source: Processed primary data, 2025

The table above indicates differences in the user lifecycle structure across regions, which provide strategic implications for Grab in managing retention and growth.

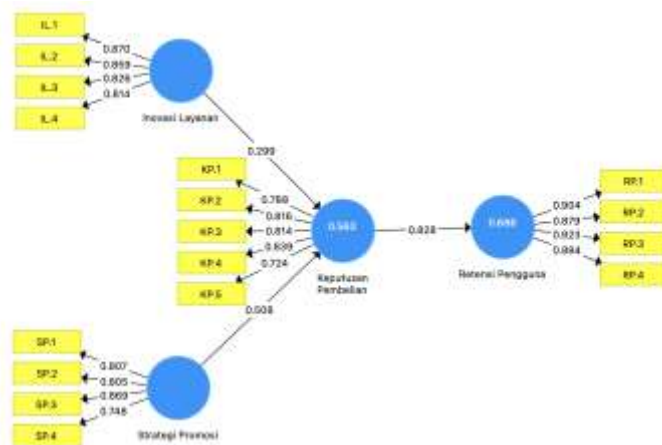
Jabodetabek and Surabaya, dominated by users with 1–5 years of usage, demonstrate a mature and stable user base. Therefore, strategies should focus on strengthening loyalty and increasing customer lifetime value.

Bandung, dominated by users with >6 months–1 year of usage, reflects an early growth phase with strong potential. Consequently, onboarding momentum and the formation of usage habits need to be optimized in order to prevent retention decline during the early stages of service adoption.

Meanwhile, Semarang and cities such as Medan, Yogyakarta, Makassar, and Denpasar, which have a large proportion of users with 5–10 years of service usage, indicate a highly mature market. In such markets, relevant approaches include reward programs, reactivation strategies, and continuous service innovation to maintain relevance and user engagement.

By understanding differences in the user lifecycle across regions, Grab can design more precise retention and growth strategies, not only maintaining active users but also maximizing long-term value in each market.

### Outer Model Testing Results



Sumber : Output PLS-SEM 2025

Figure 2. Hasil Uji Outer Model

### Outer Model Test Results

The evaluation of the measurement model (Outer Model) was conducted to assess the level of suitability and accuracy of the research model in meeting the criteria of validity and measurement consistency (reliability). Validity testing was carried out using two approaches, namely convergent validity testing and discriminant validity testing between constructs, which aim to evaluate the feasibility of indicators in representing latent constructs. Convergent validity is determined based on the assumption that each indicator representing a similar latent variable should demonstrate a high level of correlation, which is reflected in the values of Average Variance Extracted (AVE) and loading factors. Conversely, discriminant validity emphasizes that indicators derived from different constructs should ideally not exhibit strong correlations with each other. In addition, reliability

testing was conducted to ensure that the measurement instrument used in the research demonstrates good internal consistency, adequate accuracy, and reliability in representing the analyzed constructs.

**Validity Test**

**Average Variance Extracted (AVE)**

Table 14. Average Variance Extracted (AVE) Values

Variable	Average Variance Extracted (AVE)
Service Innovation	0.710
Promotional Strategy	0.653
Purchasing Decision	0.636
User Retention	0.810

Source: Processed primary data, 2025

Construct validity testing can be conducted by examining the Average Variance Extracted (AVE) value, which requires a minimum threshold of 0.5. Referring to the data in Table 14, the AVE values obtained are 0.710 for service innovation, 0.653 for promotional strategy, 0.636 for purchasing decision, and 0.810 for user retention. Since all AVE values exceed the required threshold, it can be concluded that each variable has met the criteria for convergent validity.

**Loading Factor / Outer Loading**

Table 15. Outer Loading Results

Indicator	Service Innovation	Promotional Strategy	Purchasing Decision	User Retention
IL.1	0.870			
IL.2	0.859			
IL.3	0.826			
IL.4	0.814			
SP.1		0.807		
SP.2		0.805		
SP.3		0.869		
SP.4		0.748		
KP.1			0.788	
KP.2			0.816	
KP.3			0.814	
KP.4			0.839	
KP.5			0.724	
RP.1				0.904
RP.2				0.879
RP.3				0.923
RP.4				0.894

Source: Processed primary data, 2025

Referring to Table 15, an indicator can be declared to meet convergent validity if the outer loading value exceeds 0.7. Based on the analysis results, all indicators show outer loading values above the required threshold. Therefore, it can be concluded that every indicator in this study has fulfilled the criteria for convergent validity.

**Cross Loading**

Table 16. Cross Loading Results

Indicator	Service Innovation	Promotional Strategy	Purchasing Decision	User Retention
IL.1	0.870	0.611	0.567	0.613
IL.2	0.859	0.585	0.594	0.609
IL.3	0.826	0.607	0.536	0.560
IL.4	0.814	0.585	0.519	0.565
KP.1	0.575	0.574	0.788	0.688
KP.2	0.532	0.599	0.816	0.744
KP.3	0.498	0.548	0.814	0.650
KP.4	0.569	0.602	0.839	0.639
KP.5	0.444	0.545	0.724	0.567

Indicator	Service Innovation	Promotional Strategy	Purchasing Decision	User Retention
RP.1	0.582	0.681	0.748	0.904
RP.2	0.670	0.679	0.731	0.879
RP.3	0.687	0.736	0.774	0.923
RP.4	0.569	0.671	0.729	0.894
SP.1	0.560	0.807	0.560	0.583
SP.2	0.569	0.805	0.598	0.649
SP.3	0.664	0.869	0.667	0.718
SP.4	0.475	0.748	0.482	0.512

Source: Processed primary data, 2025

Discriminant validity testing for reflective indicators can be conducted by comparing the cross-loading values between each indicator and the construct it represents. Based on Table 16, each indicator shows a higher correlation with its own construct compared to its correlation with other constructs. These results indicate that each construct has adequate ability to distinguish itself from other constructs within the research model. Therefore, it can be concluded that the discriminant validity criteria have been fulfilled in this research data.

**2. Reliability Test**

Table 17. Cronbach's Alpha Results

Variable	Cronbach's Alpha	Composite Reliability
Service Innovation	0.864	0.907
Promotional Strategy	0.823	0.883
Purchasing Decision	0.856	0.897
User Retention	0.922	0.945

Source: Processed primary data, 2025

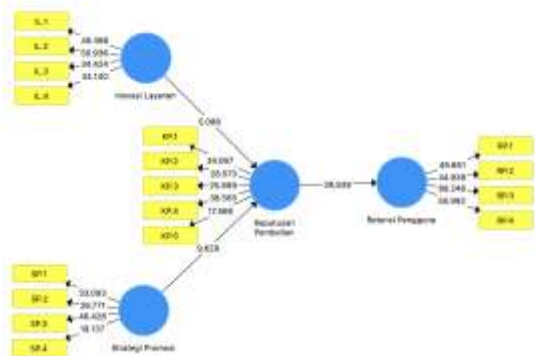
Based on Table 17, all variables show Cronbach's Alpha values exceeding the minimum threshold of 0.7. This indicates that each variable has met the criteria for internal reliability, meaning that the instrument used in this research can be considered consistent and reliable in representing the measured constructs.

Overall, the findings indicate that the outer model evaluation shows that all constructs, namely service innovation, promotional strategy, purchasing decision, and user retention, meet the required standards of validity and measurement consistency. This is reflected in AVE values exceeding 0.5, outer loading values above 0.7, and Cronbach's Alpha and Composite Reliability values also exceeding the minimum threshold of 0.7.

From a managerial perspective, these results provide important implications for Grab, indicating that the dimensions used in this research truly represent user perceptions and experiences consistently and accurately. This means that indicators such as feature quality, ease of use, promotional attractiveness, and intention to reuse are empirically solid factors in shaping purchasing decisions and user retention. With a strongly validated instrument, Grab can use these variables as a basis for strategic decision-making, such as prioritizing the development of service innovations that directly influence usage decisions, developing promotional strategies that are not only competitive in terms of price but also capable of increasing perceived value in the minds of consumers, and building retention strategies based on measurable user experiences. Furthermore, the strong discriminant validity indicates that each construct has a

distinct yet complementary role. Therefore, policy implementation should not be partial—for example, focusing only on promotions—but must involve the integration of service innovation, value communication, and user experience enhancement in order to encourage long-term loyalty and increase customer lifetime value.

**Inner Model Test Results**



Sumber : Output PLS-SEM 2025

Figure 3. Inner Model Test Results

The evaluation of the inner model was conducted using the bootstrapping technique to measure the model's ability to explain the dependent variables, which is indicated by the R-Square value. In addition, this analysis also aims to assess the magnitude of the influence of independent variables on dependent variables based on the results of the significance test. The results of the inner model analysis obtained through the bootstrapping technique are presented as follows.

**R-Square Test**

Table 18. R-Square Results

Variable	R-Square
Purchasing Decision	0.563
User Retention	0.686

Source: Processed primary data, 2025

Referring to Table 18, the R-Square value for the purchasing decision variable is 0.563, indicating that service innovation and promotional strategy simultaneously explain 56.3% of the variation in purchasing decisions. Based on the interpretation criteria, this value falls into the moderate category.

Meanwhile, the user retention variable has an R-Square value of 0.686, indicating that service innovation, promotional strategy, and purchasing decisions simultaneously explain 68.6% of the variation in user retention. Therefore, this model is also classified as moderate.

**F-Square Test**

Table 19. F-Square Results

Variable	Service Innovation	Promotional Strategy	Purchasing Decision	User Retention
Service Innovation			0.102	
Promotional Strategy			0.295	
Purchasing Decision				2.188
User Retention				

Source: Processed primary data, 2025

The F-Square analysis conducted to measure the substantive strength of the impact of each independent

variable on the dependent variable in the model shows variations in the strength of impact across different paths.

The relationship between purchasing decisions and user retention has a very strong effect size, with an F-Square value of 2.188. This value indicates that purchasing decisions have superior predictive ability in explaining user retention.

Furthermore, the contribution of the service innovation variable to purchasing decisions is categorized as low, as reflected by the F-Square value of 0.102. Meanwhile, the promotional strategy variable shows a moderate influence on purchasing decisions, with an F-Square value of 0.295.

Overall, although all variables in the model are proven to be significant, purchasing decisions emerge as the dominant factor in shaping user retention. In addition, promotional strategy also provides a fairly substantial contribution in influencing purchasing decisions.

**Model Fit Test**

Table 20. Model Fit Test Results

Model Fit	Saturated Model	Estimated Model
SRMR	0.059	0.059

Source: Processed primary data, 2025

Model fit evaluation was conducted using the Standardized Root Mean Square Residual (SRMR) indicator, which reflects the level of compatibility between the research model and the empirical data.

In general, an SRMR value less than 0.10 or 0.08 indicates that the model has an adequate and acceptable level of fit. Referring to the data processing results, the SRMR value obtained is 0.059. Since this value is lower than the threshold of 0.08, it can be concluded that the research model meets the model fit (goodness of fit) criteria and is suitable for use.

**Significance Test**

This test is an analytical stage intended to measure the level of influence of independent variables on dependent variables in a research model. This procedure is often referred to as hypothesis testing, as the results describe the strength and significance of relationships between variables.

A relationship is considered significant if the p-value is less than 0.05 and the t-statistic is greater than 1.96. The direction of the relationship between independent and dependent variables can be identified through the original sample value for each testing path. A positive original sample value indicates a positive relationship, while a negative value indicates a negative relationship.

The significance testing was conducted using the bootstrapping method, and the results can be observed through the path coefficient output generated by the model.

Table 21. Path Coefficient Results

Relationship Between Variables	Original Sample (O)	T Statistics ((O/STDEV))	P Values
Service innovation -> Purchasing decision	0,299	5,086	0,000
Promotional strategy -> Purchasing decision	0,508	9,629	0,000
Purchasing decision -> User retention	0,828	39,938	0,000
Service innovation -> Promotional strategy -> Purchasing decision -> User retention	0,248	4,970	0,000

Source: Processed primary data, 2025

### Significance Test Results

Referring to the data processing results presented in the table, several findings are obtained as follows:

Hypothesis 1 (H1) shows a p-value of 0.000, t-statistic of 5.086, and a positive original sample value of 0.299. Since  $p\text{-value} < 0.05$ ,  $t\text{-statistic} > 1.96$ , and the direction of influence is positive, H1 is accepted.

Hypothesis 2 (H2) has a p-value of 0.000, t-statistic of 9.629, and a positive original sample value of 0.508. As it meets the significance criteria and has a positive direction of influence, H2 is accepted.

Hypothesis 3 (H3) produces a p-value of 0.000, t-statistic of 4.970, and a positive original sample value of 0.248. Based on these indicators, H3 is accepted.

Hypothesis 4 (H4) shows a p-value of 0.000, t-statistic of 39.938, and a positive original sample value of 0.828. Since all criteria are satisfied, H4 is also accepted.

### **Hypothesis 1 (H1): Service innovation is assumed to have a positive and significant influence on purchasing decisions.**

The results of the significance test indicate that service innovation has a positive effect on purchasing decisions. This finding provides empirical support that an increase in the level of innovation implemented by a company will encourage a greater tendency among customers to make purchasing decisions. This result is consistent with theories and previous findings which state that innovation, particularly in the digital context, is an important differentiating factor in influencing consumer behavior. Forms of service innovation may include the development of new features, process efficiency improvements, and enhancements in the quality of interactions that are unique in nature. When customers perceive that the services provided are not only capable of fulfilling their primary needs but also provide additional benefits or different experiences, such positive perceptions directly encourage purchase intention and purchasing decisions.

For service innovation to contribute to purchasing decisions, consumers must first become aware of, try, and internalize the benefits of the innovation. This process is gradual and not as immediate as consumer responses to direct incentives such as discounts or promotional offers from Grab. This statement is consistent with previous research conducted by Listyanti et al. (2023) and Nguyen & Ha (2022), which found that service innovation has a positive influence on purchasing decisions.

The finding regarding the positive and significant influence of service innovation on purchasing decisions carries strategic implications for Grab's management in formulating business policies. This means that innovation is not merely a complementary feature but a key driver that encourages consumers to make transaction decisions. Therefore, Grab needs to position innovation as part of its growth strategy rather than merely as a competitive response.

From an implementation perspective, first, Grab needs to adopt a customer-centric innovation approach, which involves developing features based on real user pain points, such as time efficiency, fare transparency, safety, and service personalization. Second, innovation must be accompanied by strong education and awareness strategies, as the value of innovation is not automatically understood by consumers.

Communication campaigns, in-app notifications, short tutorials, and trial experiences become crucial so that users become aware of and try new features. Third, innovation must be integrated into the user journey so that its benefits can be felt directly during the ordering process rather than merely as additional features that are rarely used.

Furthermore, because the impact of innovation tends to be gradual compared to price promotions, Grab should combine innovation with initial incentives (for example, special promotions for new features) to accelerate adoption and habit formation. This indicates that innovation plays a dual role, namely encouraging purchasing decisions in the short term while simultaneously building competitive advantage and increasing customer lifetime value.

### **Hypothesis 2 (H2): Promotional strategy is assumed to have a positive and significant influence on purchasing decisions.**

The results of the significance test show that promotional strategies have a positive effect on purchasing decisions. This finding provides empirical evidence that the effectiveness of promotional activities plays an important and significant role in encouraging consumers to determine their purchasing choices. Various forms of marketing communication implemented within promotional strategies have proven capable of increasing awareness of services, shaping value perceptions in consumers' minds, and encouraging purchasing actions through attractive offers.

Considering that Grab's services are on-demand in nature and often triggered by immediate needs, consumers tend to consider options that are practical and economical, one of which is facilitated through promotional programs offered by the platform. The implementation of promotions through advertising, sales promotions, publicity, and direct marketing becomes a strategic component that plays an important role in maintaining and increasing purchasing decisions.

These findings are also consistent with previous studies emphasizing the importance of promotional strategies in influencing consumer behavior, such as those by Patel & Kumar (2021) and Lee & Kim (2020), which state that promotional strategies have a positive influence on purchasing decisions.

The finding that promotional strategies have a positive and significant impact on purchasing decisions has important managerial implications for Grab, particularly because its services are often used in situations that require quick responses. This indicates that promotions do not merely serve as short-term transaction drivers but also function as strategic instruments in shaping consumer preferences and choices.

Therefore, Grab needs to develop more segmented and contextual promotional strategies, for example by considering factors such as time, location, and user behavior patterns so that the promotional messages delivered become more relevant and targeted. In addition, variations in promotional forms—from price discounts and cross-service bundling packages to loyalty-based programs—should be aligned with the intended objectives, whether to encourage first-time purchases, increase usage frequency, or retain active users. Consistency in promotional communication across various channels is also crucial so that the value perceived by consumers does not focus solely on price but also on convenience, efficiency, and

service reliability. Through this approach, promotional strategies can contribute sustainably to strengthening purchasing decisions while also building long-term preferences toward Grab.

**Hypothesis 3 (H3): Service innovation and promotional strategies are assumed to contribute positively and significantly to user retention, with purchasing decisions acting as a mediating variable.**

The analysis shows that service innovation and promotional strategies have a positive indirect influence on user retention through purchasing decisions. These results confirm that purchasing decisions function as an effective mediating variable in channeling the impact of service innovation and promotional strategies toward improving user retention. In other words, the influence of these two variables on retention does not occur directly but occurs through the role of purchasing decisions as a linking mechanism that strengthens the relationship.

Through the service innovation pathway, the findings indicate that service innovation successfully attracts consumers to make purchasing decisions, which in turn increases user retention. Meanwhile, through the promotional strategy pathway, promotional activities effectively increase awareness and lead to purchasing decisions, which subsequently become the main driver for continued use of the service. These results empirically demonstrate that the overall findings strongly support the conceptual model in which user retention is not only influenced directly by service innovation and promotional strategies but is also mediated by purchasing decisions. In other words, this reinforces the theory that marketing stimuli through service innovation and promotional strategies must be transformed into cognitive and behavioral consumer actions in the form of purchasing decisions in order for user retention to be achieved.

The finding that service innovation and promotional strategies contribute positively to user retention through purchasing decisions as a mediating variable provides very strategic managerial implications for Grab. These results emphasize that retention cannot be built instantly through innovation or promotions alone but must first be converted into repeated and meaningful purchasing decisions.

From an implementation perspective, Grab needs to ensure that every service innovation does not stop at the stage of feature launch but is designed to encourage positive first-use experiences that trigger purchasing decisions. On the other hand, promotional strategies must function as activation triggers that encourage consumers to try and use services in real terms, rather than merely increasing awareness. Integration between service innovation and promotions becomes key, for example by combining the launch of new features with initial incentives so that consumers are encouraged to try, understand the benefits, and form usage habits.

Once purchasing decisions have been consistently formed, user retention can then be created sustainably. Therefore, the main implication for Grab is the need to manage innovation and promotion as a unified strategy throughout the customer journey, where the ultimate goal is not merely momentary transactions but the formation of loyalty and the increase of customer lifetime value in the long term.

**Hypothesis 4 (H4): Purchasing decisions are assumed to have a positive and significant influence on user retention.**

The results of the significance test show that the purchasing decision variable has a positive influence on user retention; therefore, the fourth hypothesis (H4) can be considered proven. Empirically, these results indicate that the higher the frequency or intensity of purchasing decisions made by customers, the greater the likelihood that customers will continue to use Grab's products or services.

These findings are consistent with previous studies that confirm that strong and positive purchasing decisions when using Grab services significantly contribute to increasing customer loyalty and the continuity of service usage. Purchasing decisions can also function as a determining initial experience, particularly if the process takes place easily, provides satisfaction, and meets customer expectations. Such positive purchasing experiences become an important foundation in building customer loyalty.

Therefore, ensuring that the purchasing process runs optimally is a key requirement for companies to convert new customers into loyal users. This statement is consistent with findings from previous studies conducted by Issa et al. (2024) and Iwandha & Salya (2024), which state that purchasing decisions have a positive impact on user retention.

The finding that purchasing decisions positively and significantly influence user retention confirms that for Grab, every transaction is not merely a revenue event but a strategic momentum for building long-term loyalty. From a managerial perspective, the implication is that Grab must manage the purchasing decision process as a seamless, fast, secure, and satisfying experience, as the quality of experience during the first and subsequent transactions will determine the probability of repeated usage.

This can be implemented through three main approaches. First, optimizing the end-to-end customer journey, starting from ease of application navigation, price transparency, confirmation speed, to the quality of partner services, so that each purchasing decision produces a consistently positive experience. Second, post-transaction reinforcement, such as appreciation notifications, loyalty points, or relevant service recommendations, to strengthen positive associations after purchases occur. Third, data-driven personalization, which involves utilizing purchase history to offer promotions, features, or services that align with user needs patterns so that future purchasing decisions become easier and more natural.

Since purchasing decisions have proven to be the foundation of retention, Grab's focus should not only be on increasing the number of new users but also on increasing the frequency and quality of purchasing decisions among existing users. In this way, retention is not built solely through short-term incentives but through consistent, valuable, and relevant transaction experiences that ultimately increase customer lifetime value and strengthen Grab's competitive position in the market.

#### IV. CONCLUSIONS

This study produced several important findings regarding the influence of service innovation and promotional strategies on Grab user retention, with purchasing decisions acting as a

mediating variable. Based on the results of the analysis and discussion, it can be concluded that service innovation has a positive and significant influence on the purchasing decisions of Grab users. This indicates that the development of new features, simplification of service processes, and improvements in the quality of interactions are able to create added value that encourages consumers to make purchasing decisions. In addition, promotional strategies also have a positive and significant influence on purchasing decisions, particularly in the context of on-demand services that are highly influenced by situational needs and users' economic value considerations. The findings also show that purchasing decisions play an effective mediating role in linking service innovation and promotional strategies with user retention. Thus, the formation of user retention does not occur directly but rather through the purchasing decision process first. Furthermore, purchasing decisions were found to have a positive and significant influence on user retention, confirming that a positive, practical purchasing experience that meets customer expectations serves as the main foundation for creating loyalty. Overall, this study strengthens the conceptual framework that marketing stimuli through service innovation and promotional strategies must first be internalized in the form of purchasing decisions before they can generate sustainable user retention. Nevertheless, this study still has several limitations. The data used were obtained from respondents' perceptions through questionnaires, which means that the possibility of bias and subjectivity in responses remains, even though the research instruments have undergone validity and reliability testing. In addition, this study employed a cross-sectional design, meaning that the data collected only represent conditions at a single point in time and are not able to fully explain the dynamics of behavioral changes and user retention over time. Moreover, the non-experimental nature of the research model implies that the relationships identified between variables primarily indicate statistical associations rather than absolute causal relationships. Based on these limitations, future research is recommended to employ a longitudinal design in order to capture the dynamics of changes in purchasing decisions and user retention more comprehensively over time. In addition, the use of a mixed methods approach could also be considered to provide deeper insights into the motivations and cognitive processes that influence user behavior. The inclusion of additional variables such as satisfaction, trust, and price perception is also recommended to enrich the conceptual model used. From a managerial perspective, Grab is advised to consistently integrate service innovation and promotional strategies throughout the entire customer journey, ensuring that each marketing stimulus can be converted into positive and repeated purchasing decisions. In doing so, the company can strengthen user retention and loyalty in a sustainable manner.

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