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Grabbike User Loyalty In Medan: Is Brand Engagement And Quality Perception Decisive?

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ABSTRACT

This study aims to examine the influence of brand engagement and perceived quality on customer loyalty in the context of GrabBike, a digital ride-hailing service in Medan, Indonesia. The research focuses on understanding the extent to which emotional and functional dimensions drive customer loyalty within digital service ecosystems. The study adopts an explanatory quantitative approach using a structured survey. Primary data were collected from 78 active GrabBike users in Medan. The data were analyzed using multiple linear regression via SPSS version 26, preceded by validity, reliability, and classical assumption tests. The results indicate that brand engagement significantly influences customer loyalty ($\beta = 1.015$; $p < 0.01$), whereas perceived quality does not show a significant partial effect ($\beta = 0.032$; $p = 0.881$). However, both variables jointly have a significant effect, as reflected by an F-value of 24.992 ($p < 0.001$) and an Adjusted R^2 of 0.384. The findings suggest that customer loyalty in digital services is shaped more by emotional engagement than by perceptions of service quality alone. Therefore, service providers like GrabBike should enhance brand engagement through personalized, participatory communication strategies and long-term user interaction. This study contributes to the literature on customer loyalty in digital services by highlighting the limited direct role of perceived quality and reinforcing brand engagement as a key determinant. It also adds value by exploring a geographically underrepresented urban setting—Medan—as a case study outside Java Island.

INTRODUCTION

The development of digital technology has brought significant changes in the way individuals access and carry out daily activities, including in the aspect of mobility. In densely populated urban areas, app-based transportation services such as GrabBike and Gojek are no

longer seen as alternatives, but have become part of people's daily needs. Ease of access, cost transparency, and efficient digital interfaces make these services integrated into the lifestyle of urban people (Google & Temasek, 2022). In line with global trends, the ride-hailing industry in Indonesia is experiencing rapid growth, with an estimated market value of around USD 9 billion and an ever-increasing annual travel volume (Market Report Analytics, 2023; Verified Market Research, 2024; Mordor Intelligence, 2024).

The phenomenon of digital transportation service adoption is not only concentrated in major metropolitan areas on the island of Java, but also reaches major cities outside Java that show high mobility dynamics. One of the areas that reflects this development is the city of Medan. As the capital of North Sumatra Province with a population of more than 2.5 million people, Medan shows a high level of economic activity and mobility. Although GrabBike usage ranking data nationwide is not publicly available, media reports and market trends show that online transportation services have become an important part of the city's urban community routine. Nevertheless, the intensity of use does not necessarily reflect strong loyalty. Consumers' opportunities to switch platforms, ease of access to alternatives, and rising service expectations raise important questions about how to build long-term relationships with customers in a competitive digital ecosystem.

In answering these challenges, it is important to examine the psychological factors that play a role in shaping user loyalty. Customer loyalty is not only influenced by the functional aspects of the service, but also thrives through consistent and relevant experiences. The marketing literature identifies two main constructs that contribute to the formation of loyalty, namely *brand engagement* and *perceived quality*. *Brand engagement* reflects the customer's active engagement—cognitively, emotionally, and behaviorally—with the brand (Hollebeek, 2011; Brodie et al., 2013). This engagement strengthens the psychological connections that drive repeated use preferences. Meanwhile, *perceived quality* describes a subjective evaluation of service excellence, including functional aspects such as reliability, convenience, and convenience, as well as symbolic dimensions that create trust in the brand (Zeithaml, 1988; Aaker, 1991; Stylidis et al., 2019).

Empirical findings support the importance of both constructs in strengthening customer relationships in digital services. The quality of the application system, the speed of the service, and the competence of the driver are the main factors that influence the perception of quality and the decision to continue using the service (Boar et al., 2023; Katili et al., 2024). In the Indonesian context, perceptions of safety, comfort, and driver friendliness have been shown to form a significant assessment of service quality (Ricardianto et al., 2024). Furthermore, the integration between service innovation, perceived value, and emotional engagement suggests that loyalty is generated not only by functional performance, but also by emotional relationships that are gradually formed through digital interactions (Tran et al., 2022).

Although the link between *brand engagement* and *perceived quality* has been widely researched in various sectors (Leckie et al., 2018), research that simultaneously tests the two constructs in the context of online transportation services is still rare (see e.g. Boar et al., 2023; Katili et al., 2024), especially in urban areas. The city of Medan, as a representation of a major city in Indonesia with high adoption of digital services and a distinctive complexity of consumer behavior, offers relevant empirical context to explore this relationship in more depth. Therefore, this study aims to empirically test the influence of *brand engagement* and *perceived quality* on GrabBike customer loyalty in the context of Medan. The results of this study are expected to make a theoretical contribution to the digital marketing literature, as well as produce practical implications for service providers in building an adaptive and sustainability-oriented relational approach to customer relationships.

LITERATURE REVIEW

Brand Engagement

In the competitive and all-digital modern marketing landscape, brand *engagement* is no longer considered a complementary element, but has become a strategic component in forming a sustainable relationship between consumers and brands (Hao et al., 2024; Susanti & Samudro, 2024). This engagement reflects the extent to which consumers are not only familiar with a brand, but also cognitively, emotionally, and behaviorally engaged in interactions with it (Castro-González et al., 2024). Thus, *brand engagement* makes a tangible contribution to building customer loyalty, not only through promotional exposure, but through repeated and valuable active engagement (Vo et al., 2025).

Theoretically, *brand engagement* consists of three main dimensions: *cognitive processing* (mental activity in understanding and evaluating the brand), *affection* (emotional response to the shared experience of the brand), and *activation* (active participation in brand-related activities) (Ooi et al., 2022). Each of these dimensions can be measured through operational indicators, such as the intensity of attention to brand content, positive feelings or admiration for the brand, as well as digital activities such as liking, commenting, or sharing information on social media (Cheng et al., 2024). This indicator allows researchers to objectively evaluate the level of engagement, particularly in the context of online interactions.

In terms of classification, *brand engagement* differs from engagement that is passive or just a momentary interest. It is categorized as *active conscious engagement*—a form of engagement that originates from the internal intentions of consumers and develops over time through exposure and consistent interaction with the brand (Hollebeek, 2011). This involvement is deliberative and ongoing, independent of habits or external stimuli alone.

In the service sector such as hospitality and online transportation, the role of *brand engagement* is becoming increasingly important because of the intangible nature of services and is highly dependent on the perception of experience. Not all dimensions of engagement have a uniform effect on loyalty; therefore, the brand's approach must be comprehensive—not only conveying information, but also building relationships that touch on the emotional and functional aspects of consumers (Kumar, 2020).

Furthermore, *brand engagement* can be understood as psychological energy that is actively directed by consumers in interacting with brands (Hollebeek, 2011). The tripartite framework underlying this concept has been widely used in a variety of contemporary research in the field of marketing and consumer behavior. Unlike passive loyalty or temporary attachment, brand engagement reflects conscious, intense, and repeated participation—signaling a consumer's steady preference and willingness to maintain a long-term relationship with the brand. Therefore, *brand engagement* plays a central role as a determinant in the formation of sustainable consumer loyalty, especially in a digital environment that continues to evolve and demands rapid adaptation from business actors.

Perceived Quality

Perceived quality is one of the fundamental dimensions in the brand *equity* framework that has a significant contribution to the formation of consumer preferences and strengthening brand loyalty. This concept is defined as a consumer's thorough evaluation of the advantages of a product or service over alternatives available in the market (Zeithaml, 1988). More than just a technical assessment, *perceived quality* also includes emotional and symbolic aspects that affect the perception of value and trust in the brand (Aaker, 1991; Keller, 1993).

To understand the role *of perceived quality* operationally, it is important to decipher the elements that make up this dimension. In general, perceived quality includes aspects of performance, reliability, ease of use, design, and perceived emotional value. Commonly used measurement indicators include perceptions of service reliability, user comfort, visual appeal,

and service provider responsiveness. In addition, the influence of external signals such as brand reputation, past experience, and reviews from other users has been shown to affect the perception of quality, even when the objective characteristics of the service are similar (Vantamay, 2008).

The dimension *of perceived quality* does not stand alone. In the framework of Aaker (1991), he is positioned alongside *brand awareness*, *brand associations*, and *brand loyalty* as the main pillars in building brand equity. The role of this dimension lies between the real experience of the consumer and the formation of the brand image, which then influences the tendency of the consumer to make a repeat purchase and show a stable preference. Empirical studies support that reinforcement of the perception of quality not only increases the perception of brand value, but also deepens the emotional connection between consumers and brands (Stylidis et al., 2019).

The shift from a theoretical perspective to an application context becomes relevant when considering the dynamics of experience-based digital services. In a sector such as online transportation, the quality of service is not only seen from the technical aspect, but from the overall interaction felt by consumers. Elements such as application stability, driver professional attitude, and speed of service are major contributors to shaping the perception of quality from the first contact (Kim et al., 2021). Services that are able to consistently respond to emotional and functional expectations have a greater chance of retaining customer preferences (Akoglu & Özbek, 2021).

Furthermore, *perceived quality* also acts as a mediating variable between customer experience and loyalty. However, this relationship is not universal. Individual factors such as personal attitudes, previous experiences, and situational context have been shown to moderate the influence of quality on loyalty, resulting in different responses even though the services received are similar (Höfling et al., 2024). Therefore, building a perception of quality that is consistent, relevant, and aligned with customer expectations is a crucial element in maintaining long-term relationships in the competitive digital era.

Customer Loyalty

Customer loyalty is generally understood as a deep commitment from consumers to make repeat purchases or continue to use products and services from a brand consistently, despite situational influences and marketing efforts from competitors that can encourage brand change. This kind of loyalty reflects the long-term relationship between the customer and the company, which is often considered a high-value intangible asset in long-term marketing management (Oliver, 1999). In this context, loyalty to a brand is seen as the result of repeated positive experiences, which form an emotional attachment as well as a customer's preference for a particular brand in the midst of the various alternatives available (Chaudhuri and Holbrook, 2001).

The existing literature consistently differentiates customer loyalty into two main dimensions, namely behavioral loyalty and attitude loyalty. Behavioral loyalty is demonstrated through repeated and consistent repurchase habits, while attitual loyalty reflects emotional attachments such as trust, affection, and customer satisfaction. This separation of these two dimensions is important to emphasize that the act of buying alone does not necessarily indicate true loyalty if it is not supported by deep emotional involvement (Dick and Basu, 1994).

In measuring loyalty, several key indicators have been widely known, including repurchase intention, customer willingness to provide positive word-of-mouth, and resistance to influence from competitors. These indicators are widely used in empirical research as a tool to measure customer relationships with brands, as well as to assess the success of customer retention approaches implemented by companies (Chaudhuri and Holbrook, 2001).

In terms of classification, customer loyalty can be categorized into four main types: hard-core loyals, split loyalists, shifting loyals, and switchers. This division has been widely used in the

marketing literature as a basis for designing a more focused and responsive approach to customer management (Kotler and Keller, 2016).

Brand Engagement Affects Grabbike Consumer Loyalty In Medan

In the midst of increasingly intense competition for digital services, brand engagement is a strategic element in building and maintaining customer loyalty (Vivek et al., 2012). Engagement in this context goes beyond functional relationships, and more reflects the psychological closeness between consumers and brands, where consumers' attentions, feelings, and behaviors are actively engaged in repetitive interactions (Brodie et al., 2011; Hollebeek, 2011).

Engagement formed through active participation and consumer self-expression has been shown to have a significant effect on loyalty, including in competitive service sectors such as telecommunications (Asghar et al., 2022). Despite coming from different industry contexts, these findings remain relevant for digital services such as GrabBike, which relies on user experience as a key driver of the brand–consumer relationship.

In a dynamic digital environment, brand engagement through social media remains effective in strengthening loyalty, especially when the digital interaction is accompanied by perceived value and builds trust (Abuljadail & Ha, 2019). Thus, engagement is no longer just about creating momentary attention, but building a sustainable relational foundation.

Furthermore, relationships strengthened by personal engagement have been found to be able to drive consumer intent to continue using and recommending brands (Adhikari & Panda, 2019). The loyalty built in this context rests not only on service satisfaction, but also on the quality of interactions that create a sense of comfort and relevance. Repetitive enjoyable experiences can strengthen consumers' perception of brand value and increase the tendency to stick around (Goyal & Verma, 2022).

Thus, brand engagement is not enough to be understood as a communication strategy alone, but rather as a relational process that develops from consistent and meaningful experiences in the consumer's life. In the context of GrabBike, engagement means delivering a journey experience that is not only efficient and reliable, but also feels relevant and blends in with the needs of users. Based on this description, the following hypothesis is proposed.
H1: Brand Engagement has a positive impact on GrabBike consumer loyalty

Quality Perception Affects Grabbike Consumer Loyalty In Medan

In the online transportation service ecosystem, consumer loyalty is not solely shaped by the speed of service or the sophistication of application features, but rather by how they interpret quality as a whole in every interaction. Perceived quality reflects consumers' subjective assessment of the excellence of a service, which is formed through a series of real-life experiences (Marcos & Coelho, 2022)—ranging from punctuality, driver friendliness, comfort while driving, to ease of conducting digital transactions (Solin & Curry, 2023). When those elements align with expectations, a positive perception of quality can drive a stronger relationship between consumers and services.

In the context of technology-based services, the quality perceived by consumers is not only determined by the functional aspects, but also by how the system provides a consistent, personalized, and efficiently integrated experience (Lee, 2023). This is especially relevant for services like GrabBike, where digital apps play a key role in shaping consumer perception and interaction directly.

Research in the passenger transportation sector shows that service quality dimensions such as empathy, responsiveness, and fair pricing structures contribute to increased customer satisfaction (Hananto, Kasali, & Hati, 2025). This satisfaction is an important starting point for creating relationships that last longer, especially when consumers feel the service they receive is relevant to their needs and expectations.

Furthermore, the perception of quality is also closely related to perceived value and brand image formed in the minds of consumers (Özkan et al., 2019). In services like GrabBike, the perception of driver professionalism and system stability is a tangible representation of quality that can strengthen trust in the brand.

The interaction between quality perception and customer satisfaction also strengthens consumers' tendency to continue to use services and recommend them to others (Marcos & Coelho, 2022). In an interconnected social context like the city of Medan, positive perceptions not only shape individual decisions, but also spread through recommendations, building collective trust in brands.

Thus, perceived quality is not only a benchmark of service performance, but also an emotional and rational foundation that supports consumer loyalty in the long run. Based on this presentation, the following hypothesis was proposed.

H2: Perceived quality has a positive impact on GrabBike consumer loyalty

Brand Engagement And Quality Perception Affect Grabbike Consumer Loyalty In Medan

Modern consumers no longer choose services solely because of their technical functions, but also because of the personal value and quality of experience they feel while interacting with brands (Brodie et al., 2011; Hollebeek, 2011). In an increasingly competitive digital era, consumer decisions are influenced by the need for emotional connectedness, trust, and convenience that arise from a meaningful service experience. In the context of services such as online transportation, the two main factors that have been consistently proven to drive the formation of consumer loyalty are brand engagement and quality perception (Vivek et al., 2012; Marcos & Coelho, 2022).

Brand engagement reflects the extent to which consumers are cognitively and emotionally connected to the brand and participate in active interactions. Studies show that this kind of engagement contributes to the formation of stronger loyalty (Asghar et al., 2022). In the context of GrabBike, an intuitive, responsive, and personalized app experience is one of the main drivers of such engagement.

Meanwhile, the perception of quality refers to the consumer's overall assessment of service, not only from the technical aspect, but also from its ability to meet or exceed expectations. A study by Hananto et al. (2025) revealed that social interactions such as communication, driving behavior, and digital application features play an important role in shaping the customer experience, reflecting the importance of interpersonal aspects and ease of service in creating user satisfaction and engagement. For GrabBike users, location accuracy, driver friendliness, and comfort during the journey are indicators of quality that are directly felt.

This engagement and perception of quality do not work in isolation. When both are consistently present—through relevant interactions and satisfying service—they create an experience that builds trust and commitment to the brand (Lee, 2023). The loyalty formed from this process is generally more stable because it is based on repeated, meaningful experiences, rather than on a single interaction.

Thus, in a digital service landscape like GrabBike, brand engagement and perception of quality are two key foundations in creating a wholesome brand experience—one that is not only rationally satisfying, but also reinforces emotional closeness. Based on this presentation, the following hypothesis was proposed.

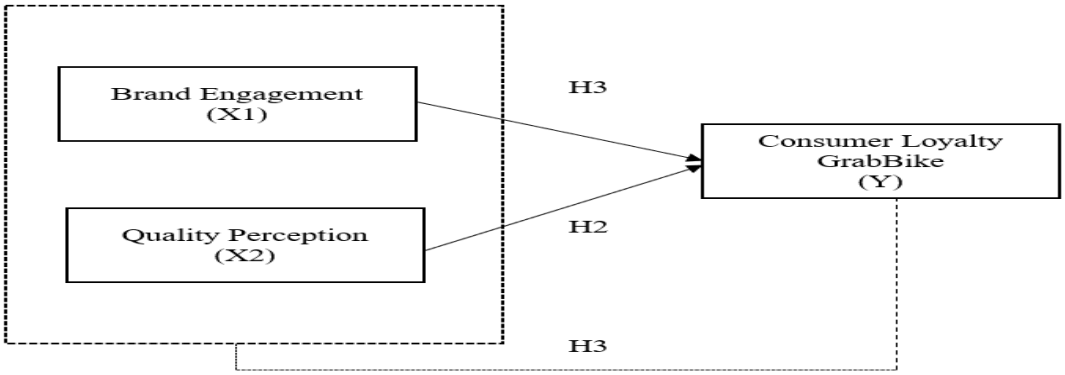
H3: Brand Engagement and Quality Perception simultaneously have a positive impact on GrabBike consumer loyalty

Conceptual Framework

Based on the theoretical foundations and empirical findings that have been described earlier, a conceptual framework is prepared to represent the relationships between variables in

this study. The framework is shown in Figure 1, which illustrates the relationship between brand engagement and quality perception and consumer loyalty in the context of GrabBike's services.

Figure 1. Research Conceptual Framework



RESEARCH METHODS

Research Design

This study uses an explanatory quantitative approach, with the aim of examining the influence of brand engagement and perceived quality perception on customer loyalty of GrabBike service users in Medan City. The explanatory approach was chosen because it allows researchers to identify causal relationships between variables objectively and systematically based on numerical data.

The survey method is used as the main technique in primary data collection, with an instrument in the form of a structured questionnaire. This technique is in accordance with the purpose of research which focuses on measuring consumer perception of digital transportation services in a standardized and quantitatively analyzed manner.

The data obtained were analyzed using multiple linear regression with the help of SPSS software version 25. Linear regression was chosen because the relationships between variables in the model are direct *effects*, without involving mediation or complex interactions. This model allows for the testing of hypotheses efficiently and in accordance with the data structure and research design used (Hair et al., 2010).

Data Collection Techniques

Primary data in this study was collected through a direct survey method using a *print-based questionnaire*, which was distributed face-to-face to respondents in several strategic locations in Medan City, such as office areas, campuses, shopping centers, and other public places that were considered relevant to the existence of GrabBike service users.

This survey is self-administered, where respondents fill out a questionnaire independently after the researcher provides an explanation of the research objectives, participants' rights, and eligibility criteria. This technique was chosen because it allows researchers to directly reach target groups that are in accordance with purposive sampling criteria, as well as minimize the potential for interpretation bias against the instrument.

To ensure that only respondents who met the criteria participated, the researcher conducted an initial screening process through a short questionnaire related to domicile (Medan), age (≥18 years), and frequency of use of GrabBike services (≥3 times in the past month). Only respondents who meet these three criteria are given access to fill out the questionnaire.

All participation is voluntary and anonymous. Respondents were first asked to read the informed consent statement before filling out the questionnaire, which included information about the purpose of the research, the guarantee of data confidentiality, as well as the right not

to proceed with the filling without any consequences. The data collected is used solely for academic purposes and is kept confidential in accordance with the principles of research ethics.

Instruments And Measurements

The instrument in this study is in the form of a structured questionnaire developed based on theoretical constructs and scales that have been used in previous studies. This study measures three main constructs, namely: brand engagement, perceived quality, and customer loyalty. All items were measured using a five-point Likert scale, from 1 = "Strongly Disagree" to 5 = "Strongly Agree".

To measure the construct of brand engagement (X_1), three main dimensions were used, namely *cognitive processing*, *affection*, and *activation*. Each dimension is represented by a single statement item adapted from the scale developed by Hollebeek et al. (2014), Leckie et al. (2016), Ooi et al. (2020), and Nyadzayo et al. (2020). Examples of items include: *"I often receive information about GrabBike from sources other than official advertising"* (cognitive processing), *"I have had a positive experience using GrabBike services"* (affection), and *"GrabBike always develops services according to user needs"* (activation).

Perceived quality (X_2) is measured through five indicators that reflect consumer perceptions of GrabBike's service quality, both from functional and emotional aspects. This instrument is adapted from the research of Nguyen et al. (2021), Buhbe and Schlag (2004), and Ricardianto et al. (2024).

The dimensions measured include: *reliability*, *responsiveness*, *professionalism*, *care*, and *cleanliness*. Examples of statements include: *"GrabBike is reliable to meet my needs"* (reliability), *"GrabBike drivers are quick to respond to my requests"* (responsiveness), and *"The vehicle and appearance of the GrabBike driver look clean and tidy"* (cleanliness).

The construct of customer loyalty (Y) consists of two dimensions: *behavioral loyalty* and *attitudinal loyalty*. Each dimension is measured with multiple items that refer to research by Ricardianto et al. (2024), Goyal and Verma (2022), Lee and Wong (2021), Saini and Singh (2020), and Cheng (2011). The *behavioral loyalty dimension* includes statements such as *"I will continue to use GrabBike consistently in the future"* and *"I am used to using GrabBike in my daily activities".* Meanwhile, *the attitudinal loyalty* dimension includes beliefs, preferences, and recommendations, such as *"I believe that GrabBike is the best choice"* and *"I am willing to recommend GrabBike to friends and family".*

Before being used in the main data collection, the questionnaire was *piloted* on 30 respondents to ensure the clarity and consistency of the measurements (Creswell, 2014; Cooper & Schindler, 2014). The validity test results showed that all items had an item-total correlation above 0.60, meeting the construct validity criteria. Reliability tests using Cronbach's Alpha showed an alpha value above 0.70, which signifies a good level of internal consistency (Nunnally, 1978).

Variable Operational Definition

The operational definition in this study was compiled to explain in detail how each variable is conceptualized and measured empirically. The three main variables used in this study are: brand engagement (X_1), perceived quality (X_2), and customer loyalty (Y). Each variable consists of a number of dimensions and indicators that are measured through statements in a five-point Likert scale-based questionnaire, with a range of 1 = "Strongly Disagree" to 5 = "Strongly Agree". Information on constructs, dimensions, indicators, number of items, and theoretical sources is presented systematically in Table 1 below.

Table 1. Variable Operational Definition

Variable	Dimension	Indicators (Statement Items)	Number of Items	Source
Brand Engagement	Cognitive Processing	I often receive information about GrabBike from various sources other than official advertisements	1	(Hollebeek et al., 2014; Leckie et al., 2016)
	Affection	I had a positive experience when using the GrabBike service	1	(Ooi et., 2020; Hollebeek et al., 2014)
	Activation	GrabBike always develops services according to the needs of users	1	(Nyadzayo et al., 2020; Hollebeek et al., 2014)
Perceived Quality	Reliability	GrabBike was reliable to meet my needs	1	(Nguyen et al., 2021)
	Responsiveness	GrabBike driver was quick to respond to my request	1	(Buhbe & Schlag, 2004)
	Professionalism	I feel confident in the professionalism of GrabBike drivers	1	(Ricardianto et al., 2024)
	Care	GrabBike drivers show concern for user comfort	1	(Buhbe & Schlag, 2004; Nguyen et al., 2021)
	Cleanliness	The vehicle and the appearance of the GrabBike driver look clean and tidy	1	(Buhbe & Schlag, 2004; Nguyen et al., 2021)
Customer Loyalty	Behavioral Loyalty	I will continue to use GrabBike consistently in the future	1	(Ricardianto et al., 2024; Goyal & Verma, 2022)
		I am used to using GrabBike in my daily activities	1	(Lee & Wong, 2021)
	Attitudinal Loyalty	I love GrabBike's reputation and good name	1	(Ricardianto et al., 2024)
		I'm not interested in switching to another online transportation service	1	(Saini & Singh, 2020)
		I am convinced that GrabBike is the best choice	1	(Cheng, 2011)
		I am willing to recommend GrabBike to friends and family	1	(Ricardianto et al., 2024)

Data Analysis Techniques

The data obtained from the questionnaire deployment was analyzed quantitatively using SPSS software version 26. The analysis procedure is carried out in stages to ensure that the

instruments used are valid and reliable, as well as that the regression model applied meets the statistical requirements.

The initial stage includes a construct validity test, using the Pearson correlation between the score of each item and the total score of the construct. An item is declared valid if it has an item-total correlation value greater than 0.60 (Sekaran & Bougie, 2016). Next, a reliability test was carried out using Cronbach's Alpha method, where an alpha value above 0.70 indicates acceptable internal consistency (Hair et al., 2017).

Before testing the hypothesis, tests were carried out on the classical assumptions of linear regression, namely: (1) normality test through the Normal P–P Plot method to see the residual distribution, (2) multicollinearity test using Variance Inflation Factor (VIF) and Tolerance values with VIF thresholds of < 10 and Tolerance > 0.10, and (3) heteroscedasticity test through residual scatterplot pattern examination. These three assumptions need to be met in order for the regression results to be interpreted validly (Gujarati & Porter, 2009).

After all assumptions were met, multiple linear regression analysis was performed to test the simultaneous and partial influence of two independent variables, namely *brand engagement* (X_1) and *perceived quality* (X_2) on dependent *customer loyalty* (*Y*) variables. This technique is suitable for causal relationship analysis in consumer behavior research with direct relationship models (Hair et al., 2010).The F test was used to assess the significance of the model simultaneously, with a $p<0.05$ value criterion. Meanwhile, the t-test was used to test the influence of each independent variable partially, with *the t-criteria calculated* > *t table* and *p-value* < 0.05 (Hair et al., 2017). To assess the predictive power of the model, the determination coefficients R^2 and Adjusted R^2 were used. Adjusted R^2 was chosen because it takes into account the number of variables in the model and results in more accurate estimates (Cohen et al., 2003).

RESULTS

Descriptive Statistics

This study involved 78 respondents who are active users of the GrabBike service in Medan City. Based on the tabulation results, the majority of respondents were between 21–30 years old (54%), followed by the age range of 31–40 years (30%), and the rest were over 40 years old. The gender composition showed that 56% of respondents were male and 44% were female. Most respondents have been using GrabBike's services for more than 6 months (67%), with a frequency of use of at least 3 times per week.

Furthermore, a descriptive analysis was carried out on the three main variables in the study. The mean value for the brand engagement variable was 4.12 with a standard deviation of 0.56, indicating a relatively high level of engagement. The perceived quality variable has an average value of 4.07 and a standard deviation of 0.61, which reflects a positive perception of GrabBike's service quality. Meanwhile, the customer loyalty variable has an average of 4.22 with a standard deviation of 0.59, which indicates a fairly strong level of customer loyalty.

The minimum and maximum values of each variable are in the range of 1 to 5, which indicates that there are no extreme values in the data distribution. Overall, the results of these descriptive statistics show that respondents have a positive perception of GrabBike's services, both in terms of brand engagement, quality perception, and loyalty. Details of the mean values, standard deviations, and minimums and maximums of each variable are presented in Table 2

Table 2. Descriptive Statistics of Research Variables

Variable	Mean	Standard Deviation	Minimum	Maximum
Brand Engagement	4,12	0,56	3,00	5,00
Perceived Quality	4,07	0,61	2,80	5,00
Customer Loyalty	4,22	0,59	3,10	5,00

Validity And Reliability Tests

Before the regression analysis is carried out, all items in the questionnaire are tested first to ensure their validity and reliability. The validity test was performed by looking at the Pearson correlation value (*r-calculus*) between each item and the total construct score, while reliability was tested using Cronbach's Alpha to measure the internal consistency between items in a single variable. A summary of the test results is presented in Table 3 below.

Table 3. Validity and Reliability Test Results

Variable	Number of Items	Pearson Correlation (r)	Cronbach's Alpha	Information
Brand Engagement	3	0.808 – 0.850	0.879	All items are valid, construct reliable
Perceived Quality	5	0.777 – 0.823	0.929	All items are valid, construct reliable
Customer Loyalty	6	0.619 – 0.808	0.879	All items are valid, construct reliable

Based on the results of the validity and reliability test presented in Table 3, all items from the three main constructs are declared valid and reliable. The Pearson(r) correlation value for the Brand Engagement construct ranges from 0.808 to 0.850, indicating a strong relationship between each item and the total construct score. Similarly, Perceived Quality has an r-value between 0.777 to 0.823, and Customer Loyalty is in the range of 0.619 to 0.808. The entire correlation value is above the minimum threshold of 0.60 (Sekaran & Bougie, 2016), which indicates that each item is able to represent the construct validly.

In terms of reliability, Cronbach's Alpha value for Brand Engagement and Customer Loyalty is 0.879, respectively, while for Perceived Quality it reaches 0.929. These three values exceeded the recommended threshold of 0.70 (Hair et al., 2017), which indicates that the instrument has excellent internal consistency. Thus, the entire item in all three constructs is worth using in the next analysis.

Classic Assumption Test

Before multiple linear regression analysis is carried out, a test of classical assumptions is first carried out to ensure that the regression model meets the statistical feasibility requirements. The test includes normality, multicollinearity, and heteroscedasticity tests. To clarify the statistical feasibility of the model, the test results are presented in Table 4.

Table 4. Statistical Model Eligibility

Types of Assumptions	Test Method	Result	Information
Normality	Normal P–P Plot	The point spreads along a diagonal line	Normal distributed residual data
Multicollinearity	VIF and Tolerance	VIF = 5,339; Tolerance = 0.187	Multicollinearity does not occur
Heteroscedasticity	Scatterplot	Random spread points, not forming patterns	Heteroscedasticity does not occur

The results of the test against classical assumptions show that the regression model is feasible to use for hypothesis testing. No violations of normality, multicollinearity, or heteroscedasticity were found, which means that the data structure meets the basic

requirements for linear regression (see Table 4). Thus, the model can be further analyzed to evaluate the influence of independent variables on consumer loyalty.

Multiple Linear Regression Analysis Model

After the regression model was declared to meet the basic statistical assumptions, multiple linear regression analysis was performed to test the influence of brand engagement and perceived quality on customer loyalty. The results of estimating the regression coefficient, significance value, and power of influence of each predictor are presented in Table 5 below.

Table 5. Regression Analysis: Predictors of Customer Loyalty

Predictor	B	ONE	β	t	p-value
(Constant)	10.564	1.843	–	5.731	0.000 ***
Brand Engagement	1.015	0.347	0.604	2.924	0.005 **
Perceived Quality	0.032	0.217	0.031	0.150	0.881
Note:DV=CustomerLoyalty *Significance: **p < 0.05, **p < 0.01, ***p < 0.001*					

Based on the results of multiple linear regression analysis in Table 5, it is known that only brand engagement has a significant influence on customer loyalty, with values of B = 1.015, β = 0.604, and p = 0.005 (p < 0.01). This shows that the higher the customer's engagement with the brand, the more likely they are to remain loyal to the service.

In contrast, perceived quality showed no significant effect on loyalty, with a p value = 0.881, well above the significance threshold of 0.05. This indicates that in the context of this study, the perception of service quality has not been a direct determinant of customer loyalty.

In addition, the highest standardized beta (β) value is also indicated by brand engagement (β = 0.604), which means that this variable makes the most dominant contribution in the regression model. Thus, brand engagement has proven to be a key predictor in shaping GrabBike customer loyalty.

Anova (Analysis Of Variance) Testing

To evaluate the overall significance of the model, an ANOVA (Analysis of Variance) test was performed. The results of the F-test show that the regression model is simultaneously significant in explaining the dependent variables, as shown in Table 6.

Table 6. ANOVA Results for the Regression Model of Customer Loyalty

Source	Sum of Squares	Df	Mean Square	F-value	p-value
Regression	873.228	2	436.614	24.992	0.000 ***
Residual	1310.259	75	17.470	–	–
Total	2183.487	77	–	–	–
Dependent variable: Customer Loyalty *Predictors:* Brand Engagement, Perceived Quality *Significance: **p < 0.05, **p < 0.01, ***p < 0.001*					

The ANOVA test was conducted to test whether the regression model can simultaneously explain variability in consumer loyalty. Based on Table 6, an F value of 24,992 with a p-value of 0.000 was obtained, which means significant at the level of p < 0.001. These results show that the combination of brand engagement and perception of quality as independent variables contributes significantly to the formation of consumer loyalty. Thus, the regression model as a whole is statistically feasible, and can be used for further analysis of individual predictors through the interpretation of regression coefficients.

Coefficient Of Determination

To measure the explanatory power of the regression model, R^2 and Adjusted R^2 values are used as statistical indicators. The full results are presented in Table 7.

Table 7. Coefficient of Determination

Type	R	R^2	Adjusted R^2
1	0.632	0.400	0.384
Predictors: Brand Engagement, Perceived Quality *Dependent variable:* Customer Loyalty			

Based on Table 7, an R^2 value of 0.400 is obtained, which indicates that the 40% variability in consumer loyalty can be explained simultaneously by two independent variables, namely brand engagement and quality perception. Meanwhile, the Adjusted R^2 value of 0.384 takes into account the number of predictors in the model, and still shows a fairly strong explainability.

With an R value of 0.632, there is a fairly high correlation between predictors and dependent variables. Overall, these results indicate that the regression model has moderate explanatory power, making it relevant to explain consumer loyalty behavior in the context of GrabBike services.

DISCUSSION

The results of this study show that brand engagement has a positive and significant influence on GrabBike consumer loyalty in Medan. The regression coefficient value of 1.015, t-count of 2.924, and p-value of 0.005 ($p < 0.01$) indicate that consumer engagement with the GrabBike brand is an important factor in shaping customer loyalty. These findings reinforce the understanding that the higher the cognitive, affective, and behavioral engagement of consumers, the more likely they are to continue using the service and recommend it to others.

In the context of application-based online transportation services, brand engagement reflects not only functional interactions, but also psychological attachments formed from consistent digital experiences. Previous research has shown similar results. In the context of digital banking, brand engagement significantly influences loyalty through immersive and positive digital experiences (Sadek et al., 2020). Findings from the air transportation sector also confirm that customer engagement is a stronger predictor than satisfaction or perceived value in forming loyalty (Hapsari et al., 2017). Another study in the relational services sector states that emotional and cognitive engagement are the main basis of long-term loyalty (Monferrer et al., 2019).However, the effectiveness of brand engagement in driving loyalty depends on the quality of the emotional experience and perception of the reliability of the digital platform. Loyalty will be more likely to emerge when engagement is accompanied by emotional resonance and a consistent positive perception of the brand over time (Levy, 2022). Thus, these findings not only confirm the results of previous studies, but also provide practical implications for digital service managers. Brand engagement should be seen as a strategic element in building long-term loyalty, which needs to be nurtured through authentic, personalized, and consistent interactions.

The results of this study show that perceived quality does not have a significant influence on GrabBike consumer loyalty in Medan, with a regression coefficient value of 0.032, t-calculation of 0.150, and significance of 0.881. A significance value that is very far from the threshold of 0.05 indicates that statistically, consumers' perception of service quality is not strong enough to form their loyalty. This means that even if GrabBike's services are deemed adequate or as expected, those perceptions do not automatically encourage consumers to continue to use the service repeatedly or recommend it to others. These findings imply that loyalty is not simply born from technically good service, but from something deeper and more emotional.It is possible that the perception of quality works indirectly through other pathways

such as satisfaction, trust, or emotional engagement before it can lead to loyalty. In an era of increasingly competitive digital services, a touching user experience and a personal connection with brands are more decisive in building loyalty. Today's consumers tend to consider quality as something basic, even mandatory. Therefore, quality is no longer the main selling point, but rather the starting point that must be surpassed. Not only are they looking for fast and reliable service, but they also want to feel valued, understood, and emotionally connected.

These findings are reinforced by previous studies that highlight that service quality does not always shape loyalty directly, but rather often through customer satisfaction or a sense of security during service usage (Ricardianto et al., 2024). In the context of public transportation, for example, the relationship between quality perception and loyalty only becomes significant after user satisfaction is established (Lierop & El-Geneidy, 2016). Research in the ride-hailing sector also found that although the quality of applications and service systems is able to increase satisfaction, it is not enough to foster loyalty, especially among the younger generation who tend to be opportunistic and easily switch to other platforms (Katili et al., 2024).

Thus, it can be concluded that the perception of quality alone is not enough to create strong loyalty in a digital service like GrabBike. What is needed is a service experience that is not only efficient, but also evocative—presenting a feeling of being understood, cared for, and emotionally engaged. This is where the strategic challenges and opportunities lie for companies: to not just be a good service, but to be a meaningful brand.

These results open up new theoretical opportunities that indicate that the influence of quality perception on loyalty is likely indirect. The literature shows that these relationships are often mediated by variables such as customer satisfaction, trust in the brand, or perceived value. Several studies explicitly suggest that service quality will impact loyalty only if it is preceded by the formation of trust and emotional satisfaction (Özkan et al., 2019; Lee, 2023). Therefore, further research is recommended to expand the model with a mediation or serial mediation approach to capture the more complex psychological processes in forming loyalty in an increasingly competitive digital services ecosystem.

The results of this study revealed that brand engagement and perceived quality together have a significant influence on GrabBike consumer loyalty in Medan. This is evidenced by an F-count value of 24.992 with a significance of 0.000, which confirms that these two variables have a real contribution in explaining loyalty variations. Furthermore, an Adjusted R^2 value of 0.384 indicates that approximately 38.4% of changes in consumer loyalty can be explained by the combined brand engagement and perception of quality. These numbers are not just statistics, but rather a reflection of the psychological and functional dynamics that drive a person to stay loyal to a service.These findings carry an important message: loyalty is not born from one direction alone. It's the result of a blend of logic and taste—between a rational assessment of service quality and an emotional attachment to the brand. When consumers feel that the quality of service meets their expectations, and at the same time feel emotionally engaged with the brand identity, loyalty grows stronger and lasts longer. This combination makes loyalty not just a habit of using, but a form of deeper psychological attachment.

These findings are also reinforced by a number of previous studies that show the importance of simultaneous influences between quality perception and brand engagement. In one of the studies, it was explained that sustainability practices carried out by companies will only have an impact on customer loyalty if they are first translated through strong quality perceptions, which act as a bridge between sustainability values and customer trust (Boar et al., 2023). Meanwhile, in the context of digital engagement, consumer loyalty is proven to increase when the relationship between customers and brands is built through meaningful and quality interactions (Nagaraj & Singh, 2018). Other research in the context of ride-hailing services has found that value perception and service innovation will only lead to loyalty if customers feel actively involved and have a sense of ownership of the brand (Leckie et al., 2018).Thus, the results of this study provide a more comprehensive understanding that consumer loyalty in the

digital era cannot be formed only through service quality or evocative brand campaigns separately, but through a complete synergy between the two. For GrabBike and similar service providers, this is a strategic foundation to create a brand ecosystem that not only excels functionally, but also creates meaningful emotional connections with consumers. Only in this way can loyalty be maintained and strengthened on an ongoing basis.

CONCLUSION

This study aims to analyze the influence of brand engagement and perceived quality perception on consumer loyalty of GrabBike services in Medan. Based on the results of the regression analysis, it was found that brand engagement had a positive and significant influence on loyalty, while quality perception did not show a significant influence directly.

Simultaneously, these two variables have been shown to contribute significantly to loyalty formation, with the determination coefficient value suggesting that more than one-third of the variation in consumer loyalty can be explained by a combination of brand engagement and quality perception. These findings reinforce the view that loyalty is not only shaped by rational judgments of services, but also influenced by the emotional attachment that emerges through relevant and meaningful digital experiences.

Thus, this study confirms that building customer loyalty in the era of digital services requires a comprehensive approach. Companies like GrabBike need to integrate consistent quality of service with an effort to create authentic and valuable emotional engagement for consumers. This approach is expected to strengthen long-term relationships with customers and increase competitiveness in the increasingly competitive online transportation industry landscape.

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