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Factors Influencing Customer Satisfaction and Loyalty towards Motorcycle Ride-hailing Services in Indonesia

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ABSTRACT

With the increasing number of internet users and cellular mobile connections in Indonesia, digital transformation is rapidly taking over and improving the quality of life by evolving the way people communicate, interact, and make transactions. An implication of technological advancements that has been brought to ease people's daily

activities is the innovation in public transport alternative, ride-hailing services. With the presence of several competing ride-hailing providers in Indonesia, the loyalty of customers towards a particular brand is interesting to be explored. This quantitative descriptive research is conducted to analyze the factors influencing customer satisfaction and loyalty in this context. A total of 398 respondents who are recent customers of motorcycle ride hailing services were collected using purposive sampling and the data was processed using Partial Least Squares – Structural Equation Modeling (PLS-SEM). The findings suggest that perceived benefits of ride-hailing apps, perceived sales promotion, perceived app-related and vehicle and driver-related risks play a significant role in predicting both customer satisfaction and customer loyalty directly. Meanwhile, perceived service quality has no significant direct effect on customer loyalty but has a mediating effect through customer satisfaction.

Keywords: Ride-hailing, Customer loyalty, Customer satisfaction, Perceived benefits of app, Perceived sales promotion, Perceived risks

1. INTRODUCTION

With the increasing number of internet users in Indonesia, reaching up to 204.7 million people which covers 73.7% of the country's population, digital transformation is rapidly taking over the daily lives and improving the quality of life by evolving the way we communicate, interact, and do any form of activities. In addition, the overflowing number of cellular mobile connections available within Indonesia has reached 370.1 million, further explicitly proving that the presence of mobile apps is undoubtedly exceeding the population itself (Hootsuite, 2022). With this overflowing accessibility to mobile phones, the usage of mobile applications has become an essence of all of our day-to-day lives. Mobile apps provide benefits to many aspects of our daily activities, one of which is making it possible to book a transportation service online at the palm of our hands (Almunawar et al., 2020). Clewlow and Mishra (2017) defined ride hailing as a platform where individuals can hail a ride from a professional or part-time driver through a mobile app and make transactions from the trip. A ride-hailing company provides a platform to match car and motorcycle drivers who own their own vehicles, to customers who need their service, through their smartphones.

The first mover in this industry and most well-known transportation Network Company globally is Uber, which emerged to disrupt the traditional taxi-hailing industry (Cramer and Krueger, 2016). Uber's business model introduced a fresh perspective for the transport commercial enterprises, built on asset sharing, where private cars are the assets to be used to provide transportation services to the public. To put it simply, registered drivers use their own cars for the taxi services and in exchange get paid for their car provision,

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as well as the driving fee (Kavadias et al., 2016; Földes and Csiszar, 2017). Uber debuted car ride-hailing in a limited region in Jakarta in August 2014, kicking off the rise of mobile-based ride-hailing in Indonesia (Panji, 2015). A few months later, in January 2015, Gojek followed to launch a mobile-based platform that provides two-wheeled ride-hailing service in Jakarta and its neighboring suburbs and towns (Erlangga, 2015). Grab, which launched a highly similar service in May 2015, was the next to follow with competing target markets in Indonesia (Grab, 2015). Within the past decade, there have been other players in the Indonesian ride-hailing market emerging and disappearing, including Anterin, SheJek, Asia Trans, OkeJek, Boncengin, NuJek, Draiv, and so many more (Carisinyal, 2022). Following Uber's exit from Southeast Asia's market in March 2018, the two largest competitors in this industry are currently Gojek and Grab (Yuniar, 2019). In addition, a rising ride-hailing startup from Russia called Maxim has joined in penetrating the competitive market in 2018 by starting out in smaller cities, and have now entered the metropolitan regions as well. Another company called InDriver entered the local ride-hailing industry with a unique innovation in their payment system, where the customer can pay using various methods as they wish as long as agreed upon with the driver, for example by paying the driver with a meal instead of using cash and other money measurements (Carisinyal, 2022).

Ride-hailing services have gained extremely high interest in Indonesia, and it has rapidly become the largest and fastest-growing industry in the country. It was found that Indonesians opt for these platforms due to the convenience and reliability gained in daily commuting. According to Clewlow and Mishra (2017), two main reasons why people in big cities and metropolitan areas prefer to use ride-hailing services as compared to driving their private vehicles are the challenges to find parking spots and the desire to avoid driving while intoxicated, which can lead to traffic accidents. It was also discovered that customers preferred ride-hailing services compared to public transportation due to the common issue of delayed arrival in public transportation, lack of available stops, going when no transit services are available, and the perceived unreliability of such transit services. Due to the fierce competition between Gojek, Grab, and several other emerging startups like Maxim and InDriver, it is interesting to understand the loyalty of ride-hailing passengers towards one particular brand. The research conducted by Nguyen-Phuoc et al. (2020; 2021) revealed that there are five factors that might have an influence on customer satisfaction and loyalty of ride-hailing services, namely perceived benefits of ride-hailing apps, perceived sales promotion, perceived service quality, perceived app-related risks, and perceived vehicle and driver-related risks.

Based on these arguments, two main problems have been formulated and this research is conducted with two objectives: to gain insights on the factors that directly and indirectly have an influence on customer loyalty in motorcycle ride-hailing services, and to gain insights on whether or not building customer loyalty requires the creation of customer satisfaction in motorcycle ride-hailing services. This research has hopes of contributing to market knowledge and improving managerial strategies for ride-hailing companies, or further other businesses in the transport sector. The scope of this research covers ride-hailing customers aged 18 years old and above, across all of Indonesia.

2. THEORETICAL BACKGROUND

2.1. Perceived Benefits of App

The perceived benefit of mobile booking apps is an element of technology advancement that highlights the advantages brought by these applications to people's lives. From the viewpoint of Shih (2004), the perceived benefits could be perceived usefulness, perceived ease of use, and perceived relevance. Perceived usefulness is defined as "the degree to which a person believes that using a particular system would enhance their job performance", while perceived ease of use is defined as "the degree to which a person believes that using a particular system would be free of effort" (Davis, 1989). In addition, Saracevic (1970) explained perceived relevance as "an estimate of appropriateness existing between information provided and information used as judged by a person". In the transport services context, Liao et al. (2009) found that both perceived usefulness as well as perceived ease of use of using taxi booking apps lead to a positive perception and attitude for the customers and increased the intention for using the app along with its services plenty of times.

2.2. Perceived Sales Promotion

The American Marketing Association (2017) defined sales promotion as marketing efforts applied for a predetermined, limited period of time at the level of consumer, retailer, or wholesaler in order to stimulate trial for new products, increase consumer demand, or improve product availability, which can be done through media or non-media platforms. Sales promotion emphasizes on the short-term efforts with strong stimuli and motivational strategy conducted by sellers to increase purchasing behavior and encourage consumers to switch from the competing

brands (Jean and Yazdanifard, 2015). Promotion in the form of discount offers is regarded as a component of the four Ps of the marketing-mix that sellers use to attract and gain more customers as well as stimulate them to purchase their products and services, hence implying that one of the most suitable activities conducted to achieve promotion was reducing the price or final cost that customers have to pay (Kotler et al., 2018). In addition, Liao, Shen & Chu (2009) found that immediate price discount is a very effective sales promotion strategy in influencing the purchasing behavior for both rational and non-rational consumers.

2.3. Perceived Service Quality

Zeithaml et al. (2020) defined perceived service quality as the subjective assessment of customers about the overall perfection or superiority of a product or a service. In other words, perceived service quality can also be described as the difference between customers' expectations and their perceptions of the performance of the services while and after experiencing it. Out of the five dimensions of the SERVQUAL model proposed by Parasuraman et al. (1985), the researcher identified empathy, assurance, reliability, and tangibles as the primary indicators to define perceived service quality in the appropriate context for ride-hailing services. Service quality has been denoted as a determinant of passenger satisfaction and loyalty in public transport systems as well (Yarmen and Sumaedi, 2016).

2.4. Perceived App-related Risks

Acheampong (2021) identified several different factors which could influence passenger security, including the identification of driver and vehicle, traceability and trackability, exposure to malicious crimes and similar activities, privacy, app security, emergency use and driver behavior which could have implications on customers' purchasing behavior. The researcher considers the two most relevant dimensions of perceived risks in ride-hailing services, those related to the mobile app and those related to the vehicle and driver. The components of perceived app-related risks in this study are operationalized from Wang et al. (2019) with four sub-constructs, which are performance risk, privacy risk, conflict risk and cyber risk. Performance risk reflects the risk of not successfully achieving the expected performance of an app or digital platform. Privacy risk involves the concern of exposing personal information during a transaction, booking process, or any actions done on the app which might lead to identity and financial vulnerabilities. Conflict risk is related to worries of managing potential conflicts that happen during the ride or while interacting with the app, such as compensation systems in the case of accidents and financial or personal loss of wellbeing. Lastly, cyber risk refers to the risks commonly faced in an online environment, one of which is data security.

2.5. Perceived Vehicle & Driver-related Risks

The perceived risk in transportation context brings about the degree of caution people apply to their purchasing or usage decisions and may lead to changes in their behavior to ensure health and safety (Abad, 2019). Despite many service providers nowadays having better monitoring and tracking, security risks such as abductions, robbery, hijacking, and harassment are still common concerns among public transport users (Kamais, 2019). In addition, there is also a significant high level of traffic risks such as vehicle crashes and traffic accidents, especially in low- and middle-income countries (Phun et al., 2018). This research defined the formation of perceived vehicle and driver-related risks using three sub-constructs, those which are property related, person-related, and traffic-related. Property-related security risk refers to the risk of

personal property and belongings being lost during rides; person-related safety risk is regarding the risk of drivers' inappropriate behavior towards passengers; and finally, traffic-related safety risk involves how safe the vehicle runs when in traffic (Nguyen-Phuoc et al., 2021).

2.6. Customer Satisfaction

Satisfaction can be defined as an evaluation of product quality after purchase, based on the expectations customers had before purchase (Kotler et al., 2018). Similarly, Oliver (1997) explained satisfaction as the overall psychological state when the emotion surrounding unfulfilled expectations is combined with a customer's earlier feelings about the experience in using a product or service. Customer satisfaction can also be defined as a consumer's judgment based on their sense of fulfillment as a result of their decisions regarding the purchase and use of the corresponding product or service. The concept of satisfaction which was developed from previous studies has three recurring elements: the fact of either a cognitive or emotional response to a process of evaluation; the fact that this response is dependent on a particular focus; and the fact that it is dependent on the specific range of time in which the said response occurs (Guido, 2015). Sumaedi et al. (2016) stated that customer satisfaction is the emotional state or feelings resulting from the customer's evaluation of the inconsistency between their expectations with the service provider's actual performance.

2.7. Customer Loyalty

Edvardsson et al. (2000) defined customer loyalty as the aspiration or tendency of customers to make a purchase from the same provider on a continual basis. Keropyan and Gil-Lafuente (2012) described customer loyalty as a strong commitment to repurchase products or services that a customer prefers despite environmental volatility. Likewise, Jones et al. (2002) additionally defined it as an attachment with the same specific enterprise for an extended period of time, with the main reason for repeated purchases. According to Tipton (2000), customer loyalty is a commitment towards one business entity that is based on a positive nature in long-term purchases. Lai et al. (2009) stated that the characteristics of loyal customers includes referring products to other people, repurchasing on a regular basis, and being unbothered by the attraction of competitors. According to Utami (2016), loyalty in customers does not form easily in a short time, yet it has to go through a long-term learning process and develop on the basis of their own experience from several different purchases. If the satisfaction and experience obtained throughout a span of time is in accordance with their expectations, then the purchase would keep recurring and henceforth evolve into loyalty.

3. RESEARCH METHODOLOGY

3.1. Research Model & Design

This research takes the form of a descriptive study with quantitative research design, and the method will be through a cross-sectional online survey. The objective of a descriptive study is to better define an opinion, attitude, or behavior held by a group of people on a given subject. Grouping the responses into predetermined choices will provide statistically inferable data, which allows for the researcher to measure the significance of the results on the overall population being studied (Sekaran & Bougie, 2016).

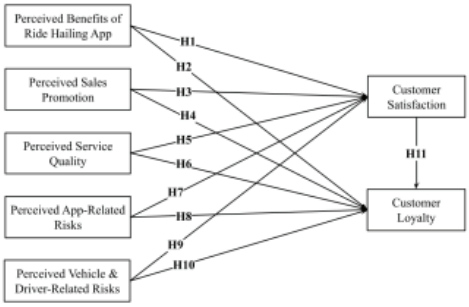

Figure 1. Research model

3.2. Research Hypotheses

The variable perceived benefits of ride-hailing apps in this research was developed from two dimensions, perceived usefulness and perceived ease of use. A previous study by Liao et al. (2009) found that the perceived usefulness and ease of use from using a mobile taxi booking app have a significant influence on the user's attitude towards the app. Likewise, Sajid et al. (2018) and Weng et al. (2017) have also explored the relationship between mobile taxi booking apps and passenger satisfaction and although this research focuses on motorcycle ride-hailing apps, the magnitude of this relationship is similarly relevant.

H1: Perceived benefits of ride-hailing apps have a direct positive influence on customer satisfaction on ride-hailing services.

Liao et al. (2009) also found that the benefits including usefulness and ease of use gained from using a mobile booking app increased users' intention to continue using the app. Moreover, according to Imaz et al. (2015), customer loyalty in transport contexts was measured and evaluated by the willingness to continue using the product or service and the intention to recommend it to others.

H2: Perceived benefits of ride-hailing apps have a direct positive influence on customer loyalty on ride-hailing services.

Plenty of previous studies have explored the relationship between sales promotion and consumer behavior. Nagar (2009) discovered that out of the promotion tools, perceived sales promotion has the most significant influences towards customer behavior. Specifically, Zhang and Tang (2010) investigated the effect of perceived sales promotion on customer satisfaction in the context of goods and services.

H3: Perceived sales promotion has a direct positive influence on customer satisfaction on ride-hailing services.

There have been several empirical studies that confirm the influence of perceived sales promotion on customer loyalty in different contexts (Zhang and Tang, 2010; Lau et al., 2006; Shi et al., 2005). Nagar (2009) also explored the effect of sales promotion on loyal and non loyal consumers and concluded that non-loyal customers tended to switch to other brands to receive more perceived sales promotion than loyal customers.

H4: Perceived sales promotion has a direct positive influence on customer loyalty on ride hailing services.

Previous studies in various fields have confirmed the relationship between perceived service quality and customer satisfaction (Negi, 2009; Wang et al., 2017). Hart and Johnson (1999) explained that perceived service quality influences customer satisfaction because it is related to the results of customer evaluation. Certainly, it makes sense that when customers experience better service quality, they would obtain a higher sense of satisfaction with the brand.

H5: Perceived service quality has a direct positive influence on customer satisfaction on ride hailing services.

Furthermore, in relation to loyalty, Keller and Lehmann (2003) stated that perceived service quality ought to be considered a key factor that drives customer loyalty towards a product or

service. Wen et al. (2005) confirmed the significance of this relationship between perceived service quality and customer loyalty in their research regarding bus passengers, while Lai and Chen (2011) found this relationship to be true in their study of public transport users.

H6: Perceived service quality has a direct positive influence on customer loyalty on ride hailing services.

Ride-hailing as a service that heavily leans on online commerce and digital platforms results in crucial cyber-security risks (Groß, 2016). Featherman et al. (2010) found that with the increase of these forms of risks, consumers are becoming more hesitant on using ride-hailing services. This hesitation not only affects the attitude and perception towards the brand, yet also leads to a decrease in their customer behavior, which includes trust and satisfaction with the service.

H7: Perceived app-related risks have a direct negative influence on customer satisfaction on ride-hailing services.

In addition, Ma et al. (2019) found in their research that perceived risks negatively influence trust in ride-sourcing services, which sequentially affects the customers' intention to repurchase, much less become loyal

towards any specific brand. The negative effect from perceived risks related to apps and digital platforms that has been investigated pushes in the direction of not only satisfaction, but loyalty as well.

H8: Perceived app-related risks have a direct negative influence on customer loyalty on ride hailing services.

In the context of ride-sourcing services, users are at risk of traffic injuries which might be caused by drivers' risky driving behavior and incompetent vehicle safety features (Su et al., 2019). In addition, ride-hailing jeopardizes users through various potential safety risks including abductions, robbery, carjacking, sexual and physical harassment (Kamais, 2019). These risks tend to reduce satisfaction among customers by first affecting their willingness to use the service in the first place (Wang et al., 2019).

H9: Perceived vehicle and driver-related risks have a direct negative influence on customer satisfaction on ride-hailing services.

Phun et al. (2018) reported that an increase in perceived traffic risks will reduce customer satisfaction and further explained that all sorts of perceived risks will deteriorate customers'

loyalty towards ride-hailing services because they would have intentions to switch to other transport options.

H10: Perceived vehicle and driver-related risks have a direct negative influence on customer loyalty on ride-hailing services.

Numerous studies have concluded that customer satisfaction is a significant antecedent of customer loyalty (Cronin and Taylor, 1992, Fornell, 1992, Keaveney, 1995, Lai and Chen, 2011). When customers are satisfied with a certain brand or products and services, they would have positive reactions such as repeat purchase intention, consistent patronage of the brand, and positive word-of-mouth to others, which are considered to be driving factors of loyalty (Clemes et al., 2008). This relationship also applies in the context of the transport service industry, as proved by Zins (2001) and Chen (2008) who found that satisfaction played an important positive role in explaining customer loyalty towards airline services. Furthermore, Lai and Chen (2011) confirmed in their study that there was a direct relationship between satisfaction and loyalty of customers who use the Kaohsiung Mass Rapid Transit System.

H11: Customer satisfaction has a direct positive influence on customer loyalty in ride-hailing services.

3.3. Data Collection

Data for this study was retrieved through collection of primary data, which is obtained from respondents of both genders who are above 18 years old and have been residing in Indonesia for at least the past 1 month. The data was collected in a cross-sectional method through a self administered survey made using Google Forms, which was then distributed through social media platforms such as Instagram, Twitter, Line, etc, as well as direct approach by the researcher. To gather the target respondents, the researcher used a non-probability purposive sampling method. Furthermore, the questionnaire is designed as such: first filled with introduction and background of the study, the screening and main questions, and demographic information of the respondents' profile. The main questions were formulated from existing sources by Nguyen-Phuoc et al. (2020; 2021), and measured using a Likert scale of one (1) to seven (7); one being "strongly disagree" while seven being "strongly agree". After conducting a wording test and pre-test, a total of 398 valid and reliable responses were finally obtained.

3.4. Data Analysis

The pre-test analysis was conducted to test for reliability and validity using 30 respondents' data which was processed through IBM SPSS 25. Afterwards, data analysis during the main test was separated likewise: focusing on the respondents' demographic and statistical data (frequency distribution and descriptive analysis), and then focusing on the assessment of quantitative data, processed using

SmartPLS 3.0. The sequence in data model processing follows the variance-based Partial Least Squares – Structural Equation Modeling (PLS-SEM) where the outer model is first evaluated for its measurement model, followed by the inner model being analyzed for structural model evaluation.

4. RESULTS

4.1. Profile of Respondents

The table below shows the frequency distribution of 398 respondents which describes their demographic and behavioral information.

Table 1. Respondents' profile

Variables	Categories : n (%)
Gender	Female: 287 (72.1%), Male: 104 (26.1%), Prefer not to say: 7 (1.8%)
Age	18-22 years old: 275 (69.1%), 23-30 years old: 96 (24.1%), Above 30 years old : 27 (6.8%)
Domicile	Jabodetabek: 175 (44.0%), Outside Jabodetabek: 223 (56.0%)
Occupation	Student: 281 (70.6%), Civil servant: 9 (2.3%), Private employee: 60 (15.1%), Entrepreneur: 17 (4.3%), Others: 31 (7.8%)
Main Purpose of Using Ride-hailing Services	• Commute to school or university: 137(34.4%), • Commute to workplace: 67 (16.8%), • Transport to meet friends or relatives: 83 (20.9%), • Transport for shopping trip or recreational activities: 36 (9.0%), • Commute to bus stop or train station to continue to other destinations: 55 (13.8%), • Others: 20 (5.0%)
Ride-hailing Services Used	Gojek : 383 (96.2%), Grab: 337 (84.7%), Maxim: 92 (23.1%) InDriver : 32 (8.0%)
Ride-hailing Services Most Frequently Used	Gojek: 276(69.3%), Grab: 107 (26.9%), Maxim: (11 2.8%), InDriver : 4 (1.0%)

4.2. Descriptive Statistics

The table below shows the descriptive statistics which include the standard deviation, mean or average value of every indicator and eventually the total mean for each variable.

Table 2. Descriptive statistics

Variables	Item	S.D.	Mean	Total Mean	Variables	Item	S.D.	Mean	Total Mean
PBE	PBE1	0.74	6.46	6.37	PSQ	PSQ1	1.10	5.72	5.93
	PBE2	0.74	6.42			PSQ2	1.11	5.72	
	PBE3	1.03	6.20			PSQ3	0.95	5.98	
	PBE4	0.74	6.42			PSQ4	0.94	6.09	
	PBE5	1.11	5.99			PSQ5	0.92	6.01	
	PBE6	0.63	6.56			PSQ6	0.97	6.04	
	PBE7	0.86	6.43		PVR	PVR2	1.91	4.47	4.24
	PBE8	0.80	6.39			PVR3	1.80	4.06	
	PBE9	0.72	6.51			PVR4	1.81	4.74	
	PBE10	0.90	6.32			PVR5	1.87	4.35	
PSP	PSP1	1.12	5.75	5.58		PVR6	1.87	4.30	
	PSP2	1.06	5.97			PVR7	1.79	4.31	
	PSP3	1.48	5.25			PVR8	1.79	4.27	
	PSP4	1.32	5.38			PVR9	1.74	3.68	
	PSP5	1.25	5.56		SAT	SAT1	0.94	5.96	5.98
	PSP6	1.40	5.58			SAT2	0.93	5.98	
PAR	PAR1	1.65	3.00	4.03		SAT3	0.99	5.88	
	PAR2	1.67	3.17			SAT4	0.88	6.09	
	PAR3	1.92	3.92		LOY	LOY1	0.95	5.93	5.75
	PAR4	1.98	4.13			LOY2	1.09	5.82	
	PAR5	2.00	4.07			LOY3	1.33	5.72	
	PAR6	2.02	4.57			LOY4	1.18	5.87	
	PAR7	1.99	4.23			LOY5	1.18	5.74	
	PAR8	1.90	4.37			LOY6	1.50	5.44	
	PAR9	1.82	4.36			LOY7	1.24	5.75	
	PAR10	1.89	4.45						

4.3. Measurement Model Evaluation

4.3.1. Internal Consistency Reliability

To measure internal consistency, the value of both Composite Reliability and Cronbach's alpha has to be more than or equal to 0.7. The PLS Algorithm shows results that all of the variables' composite reliability values are higher than 0.7, ranging from 0.906 (PBE) to 0.952 (PAR and PVR). Likewise, the Cronbach's alpha of every variable is also above 0.7, the lowest being PSQ with a value of 0.881 and the highest being PAR and PVR with values of 0.943. Therefore, according to these results, all seven variables are reliable.

4.3.2. Convergent Validity

Another measure for measurement model evaluation is by checking the convergent validity, which can be tested from the values of average variance extracted (AVE) with a threshold value of higher than or equal to 0.5, and indicator values for outer loading must be higher than or equal to 0.7. Results of the first algorithm run show that several values do not satisfy the requirements. For variable PBE, the outer loadings PBE3, PBE5, PBE7, and PBE10 have values lower than 0.7. Due to this, the AVE value for PBE also does not fit the requirement, having a value of 0.492. The other indicators which do not fulfill the convergent validity criteria are PSP6, PSQ1, PAR1, PAR2, and LOY1. After removing the nine invalid indicators and running the algorithm a second time, all the outer loadings of the remaining indicators fulfill the criteria of higher than 0.7. In addition, the AVE of variable PBE which was previously 0.492, has changed into 0.587, which also meets the minimum value.

4.3.3. Discriminant Validity

The measurement model could also be evaluated through assessment of discriminant validity, which can be analyzed using the Fornell-Larcker criterion and the Heterotrait-Monotrait Ratio (HTMT). The two tables below show results for both: for Fornell-Larcker criterion, the rule that the square root of AVE of each latent variable should be greater than its highest correlation with any other variable is fulfilled; and for HTMT evaluation, all of the value within each correlation on the model has a value of less than 1. Thus, all variables in the model along with its adjusted indicators have high internal reliability and adequate validity.

Table 3. Fornell-Larcker criterion

Variables	PBE	PSP	PSQ	PAR	PVR	SAT	LOY
PBE	**0.766**						
PSP	0.426	**0.833**					
PSQ	0.467	0.425	**0.825**				
PAR	-0.062	-0.193	-0.24	**0.87**			
PVR	-0.074	-0.216	-0.309	0.724	**0.828**		
SAT	0.57	0.437	0.536	-0.187	-0.193	**0.855**	
LOY	0.435	0.383	0.399	-0.235	-0.17	0.635	**0.825**

Table 4. Heterotrait-Monotrait (HTMT) evaluation

Variables	PBE	PSP	PSQ	PAR	PVR	SAT	LOY
PBE							
PSP	0.489						
PSQ	0.534	0.473					
PAR	0.08	0.208	0.262				
PVR	0.08	0.229	0.335	0.753			
SAT	0.651	0.494	0.604	0.2	0.204		
LOY	0.482	0.422	0.433	0.249	0.177	0.707	

4.4. Structural Model Evaluation

4.4.1. Collinearity Analysis

The evaluation of collinearity within the structural model is done towards the inner model by seeing the value of inner variance inflation factors (Inner VIF), which has to be less than 5. The result of this test is shown in the table below where all available Inner VIF values are below 5, mostly within the values of one and two. This indicates that all the relationships between variables have met the criteria and therefore has no collinearity issues.

Table 5. Inner VIF values for collinearity

Variables	PBE	PSP	PSQ	PAR	PVR	SAT	LOY
PBE						1.411	1.657
PSP						1.354	1.391
PSQ						1.499	1.645
PAR						2.106	2.115
PVR						2.205	2.205
SAT							1.786
LOY							

4.4.2. Coefficient of Determination (R^2) Evaluation

The structural model can also be assessed on its coefficient of determination or R^2 values which explains the predictive accuracy of a construct. The criterion for latent endogenous variables is to maximize the value of R^2 within the path model. The algorithm results show that the variable SAT has a predictive accuracy of 44%, whereas LOY has a predictive accuracy of 43.7%.

4.4.3. Predictive Relevance (Q^2) Evaluation

The researcher also performed an analysis of the Stone-Geisser Q^2 for cross-validated redundancy by applying the blindfolding procedure in SmartPLS. The expected value of Q^2 to consider the endogenous variables as predictively relevant is a value greater than 0. The algorithm shows Q^2 value for variables SAT and LOY to be 0.315 and 0.286 respectively, both more than 0, and thus implying that the model has achieved predictive capability.

4.4.4. Model Fit Analysis

The relevant metrics to indicate a well-fitting model are the SRMR and NFI value, where SRMR is expected to be lower than 0.08 and NFI is better the closer it is to 1, wherein its value ranges from 0 to 1. The result shows that the SRMR value for this model is 0.052 and the NFI value is 0.794, which is not quite high, but still closer to 1 than 0, hence the model fit is appropriate.

4.4.5. Evaluation of Path Relationships

4.4.5.1. Direct Effects

The direct path effects are shown in the table below. For the positive influences being explored, there is one direct effect that has a t-value of less than 1.645, that is the effect of PSQ towards LOY, with a value of

0.606, and therefore is considered insignificant. Looking at the t-values of the remaining relationships, all of them are concluded to have significant positive influences from the independent towards the dependent variable. Next, for the direct effects of negative relationships, both PAR and PVR towards SAT and LOY are proven to be significant as their t-values are all higher than -1.645. However, for the relationships PVR towards SAT and LOY, the path coefficients are 0.005 and 0.092 respectively. This positive value indicates that their relationship shows a significant positive influence, instead of negative as hypothesized. Furthermore, the highest value of path coefficient is the effect of SAT towards LOY (0.514), followed by PBE to SAT (0.370), and PSQ to SAT (0.286). These relationships show the strongest significance of positive influence among the others.

Table 6. Results of direct path coefficients

Path Coefficients		Sample Mean	Standard Deviation	T-values	P-values
PBE → SAT	0.370	0.372	0.045	8.184	0.000
PBE → LOY	0.082	0.083	0.047	1.745	0.041
PSP → SAT	0.145	0.146	0.048	3.001	0.001
PSP → LOY	0.096	0.095	0.044	2.208	0.014
PSQ → SAT	0.286	0.286	0.049	5.784	0.000
PSQ → LOY	0.031	0.029	0.051	0.606	0.279
PAR → SAT	-0.071	-0.068	0.048	1.483	0.073
PAR → LOY	-0.175	-0.174	0.052	3.362	0.000
PVR → SAT	0.005	-0.003	0.048	0.105	0.461
PVR → LOY	0.092	0.092	0.056	1.640	0.042
SAT → LOY	0.514	0.521	0.052	9.807	0.000

4.4.5.2. Indirect Effects

The researcher also examined the indirect effects among constructs in the model, and applying the same criteria for t-value significance levels, the results shown in the table below displays that there is a mediating effect of SAT (Customer Satisfaction) between most of the independent variables (PBE, PSP, PSQ, and PAR) and the final endogenous variable, LOY as they all have t-values higher than 1.645 for the positive effects, and higher than -1.645 for the negative effects. The only exception is PVR which shows no significant negative mediating effect of SAT towards LOY since the path coefficient for this indirect path has a value of 0.003.

Table 7. Results of indirect path coefficients

Path Coefficients		Sample Mean	Standard Deviation	T-values
PBE → SAT → LOY	0.191	0.194	0.032	5.971
PSP → SAT → LOY	0.075	0.076	0.026	2.859
PSQ → SAT → LOY	0.147	0.149	0.03	4.867
PAR → SAT → LOY	-0.036	-0.035	0.025	1.449
PVR → SAT → LOY	0.003	-0.002	0.025	0.103

5. DISCUSSION

5.1. Theoretical Implications

Out of all eleven hypotheses formulated by the researcher, H6, H9, and H10 are not supported by the data. The remaining hypotheses are supported by the data and are therefore accepted as true. The t-values from the data statistics supporting H1 is 8.184, highly exceeding the threshold value of 1.645. In contrast, though H2 is also true, its t-value is 1.745, which is much lower and very close to the requirement. This implies that the significance of the H1 relationship is much stronger than H2, and that perceived benefits of ride-hailing apps has a much larger direct effect on satisfaction compared to loyalty in ride-hailing customers. The output analysis gave results for H3 and H4 to be significant, indicated by the direct path of Perceived Sales Promotion towards Customer Satisfaction to have a t-value of 3.001, while the direct effect from Perceived Sales Promotion towards Customer Loyalty to have a t-value of 2.208. The relationship between Perceived Service Quality and Customer Satisfaction has a strong significant effect, shown by a high t-value of 5.784. Surprisingly, the hypothesis analysis for the relationship between Perceived Service Quality and Customer Loyalty in this research gained a t-statistics value of 0.606, which does not fulfill the required 1.645 threshold value, hence H6 is rejected. Next, the relationship between perceived app-related risks and customer satisfaction that is hypothesized in H7 has acquired a t-value of 1.483 in which the critical value is above -1.645. In parallel, H8 which hypothesized the relationship between perceived app-related risks and customer loyalty has a t-value of 3.362, also fulfilling the significance requirement. The path coefficients for H7 and H8 are -0.071 and -0.175 respectively, therefore confirming that the significant effect is negative for these two relationships. Although the direct path of perceived vehicle and driver related risks towards customer satisfaction and customer loyalty has a t-value of 0.105 and 1.640 respectively, which are higher than the significance level -1.645, the path coefficient of these two relationships showed a positive value of 0.005 and 0.092 accordingly, which implies that the relationship is overall insignificant and thus rejecting both H9 and H10. Finally, the relationship between customer satisfaction and customer loyalty acquired a very high t-value of 9.807, thus deeming the effect to be significant and therefore accepting the hypothesis H11.

5.2. Managerial Implications

The researcher found that the strongest predictor of customer satisfaction in ride-hailing services is the perceived benefits of the ride-hailing apps itself, which reflects how much the availability of such services helps in people's daily lives. Ride-sourcing providers can further increase their perceived benefits by improving the UX (user experience) of their apps so that it is more accessible and convenient for all groups of people. Descriptive statistics from the research shows that some people think that interacting with ride-hailing apps still requires a lot of mental effort (PBE3) and that it is quite difficult to cancel or rebook through the app (PBE5). This implies that the display of the app interface is not easy to navigate and there are often issues with the booking system. Product owners could attempt to enhance these two aspects for hopefully gaining a higher level of satisfaction from their customers, especially if they want to target customers from the older age group or lower economic and social backgrounds who are not too accustomed with online platforms. In addition, ride-hailing companies could also provide education to the public on the app features and how to utilize them.

The research findings also showed that perceived sales promotion has a significant positive influence on both customer satisfaction and loyalty. Based on this, the business practitioners could strengthen their sales promotion by implementing different aspects of the promotion mix. The indicators of this construct in this current research focuses mainly on consumer-centric promotion related to price. Hence, out of the many promotion tools, price reduction might be the most effective one for ride-hailing services in Indonesia. The statistics from responses indicated that there were less people who agreed that the sales promotions offered by service providers are sufficient and fair for all users (PSP3 and PSP4). This indicates that the scope of respondents in this study were very price-sensitive in their decision to use a specific brand of ride-hailing service. Companies could try giving more discounts or price cuts, not necessarily in lowering the final price, but through more attractive campaigns, such as varying the terms and conditions for different voucher codes.

Although the hypotheses for the effect of perceived service quality towards customer loyalty was rejected in this research, there is still a mediating effect of satisfaction between the two variables. Ride-hailing service providers should focus on maximizing customer satisfaction by improving the quality of their service, and making it as perfect as possible. This can be done by providing training for employees; drivers can be trained to radiate polite attitude and perform standards of procedure for every onboarding customer, customer service staff can be trained to be responsive and attentive to users' criticism. Furthermore, there could be routine procedures to check the complete equipment in a vehicle, making sure it is always comfortable and convenient. By minimizing complaints from customers, the satisfaction will likely increase, and this has a tendency to influence loyalty as well.

This research also found that perceived app-related risks have a significant negative effect on both satisfaction and loyalty, mainly regarding safety and security. The recommendation is to increase cyber protection, and then to communicate this to the customers. Users need to be informed that their identity, financial records, and data history are kept confidential. Especially for consumer groups who have trust issues with technology advancements, any digitally-run business including ride-hailing platforms should be able to prove that they keep the privacy of users' digital data.

Finally, the influence brought by customer satisfaction towards customer loyalty is also found to be the most significant relationship amongst all the proposed hypotheses. Moreover, from the evaluation of indirect effects in this research, satisfaction carries a mediating effect between every independent variable discussed and loyalty. Ride-hailing service providers are recommended to make customer satisfaction a priority in their company goals and OKR (objectives and key results) measures. Afterwards, companies have to also figure out strategies in enhancing customer loyalty and not just stop at satisfaction. A possible action plan to induce loyalty based on satisfaction is by encouraging a positive word-of-mouth by satisfied customers, and making the trip not only satisfactory but memorable as well, therefore customers are likely to stay loyal with the particular ride-hailing service.

6. CONCLUSION

The findings from this research provides answers to the two primary research problems and objectives. First, it is found that the perceived benefits of ride-hailing apps and perceived sales promotion has a direct positive influence on customer loyalty in ride-hailing services. In addition, perceived app-related risks have a direct negative influence on customer loyalty, while perceived vehicle and driver-related risks have a significant but positive influence on customer loyalty. On the other hand, perceived service quality was found to not have any significant influence on customer loyalty in ride-hailing services. Second, despite the hypothesis results showing that customer satisfaction has a strong direct positive influence on customer loyalty, the researcher concluded that building customer loyalty does not always have to go through the creation of customer satisfaction. For the factor perceived service quality, it is found to not have any significant direct impact on loyalty, but has a direct positive impact on customer satisfaction.

However, there is a mediating effect between perceived service quality towards customer satisfaction and towards customer loyalty. In this case, building customer loyalty from the factor perceived service quality requires the creation of customer satisfaction in the first place. On the other hand, for perceived vehicle and driver-related risks, there is no significant mediating effect of customer satisfaction, therefore both direct and indirect effects from this factor are not significant enough to predict customer loyalty. However, the other three factors were found to have a direct effect on customer loyalty, and thus the creation of customer satisfaction as a mediator is not necessary.

7. RECOMMENDATIONS

Upon the planning and execution of this research, there are a number of limitations that the researcher came across. First, the respondents are mostly centralized towards a certain group of population, such as age, where most of the respondents are between 18 to 22 years old, and gender, where there were more females than male respondents. Due to this, the results might not be accurately representative

of all ride-hailing customers in Indonesia. Another limitation is that only 19.6% of the total respondents were regular users, who have a better and more accurate understanding of the attributes and factors which were discussed in the questionnaire, while the remaining are just incidental passengers who could be less objective in their experiences using ride-hailing services. Finally, there was no indication in the beginning of the survey as to which ride-hailing app the respondents are referring to. The variable item in the profile section at the end of the questionnaire where respondents identify their "Most Frequently Used Ride-hiding App" should have been placed at the beginning instead to avoid bias.

In addition, the researcher can give recommendations for future research in customer behavior of ride-hailing services in Indonesia, first that they could focus on a smaller target of respondents geographically and demographically, such as narrowing down the scope to Gen Z customers in Jabodetabek region; this way, there is more uniformity in culture, knowledge on digital platforms, and usage trends. Aside from that, future researchers could also explore other variables that might have an influence on satisfaction and loyalty in this context, such as perceived environmental benefits and brand awareness. Independent variables could be defined more accurately by determining first-order constructs as antecedents and adding those to the research model as well.

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