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The Relationship between Perceived Value and Peer Engagement in Sharing Economy: A Case Study of Ridesharing Services

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Abstract. The customers tend to become more committed to the brand through interactions with peers in the sharing economy context. This study explored the relationship between perceived value and peer engagement of customers in the sharing economy. A quantitative approach with 488 participants was conducted to test the scale and theoretical model. The results pointed out (1) the perceived benefits, i.e., utilitarian benefit, hedonic benefit, had a positive impact on the perceived value, (2) the perceived costs, i.e., learning cost, risk cost, negatively affected on the perceived value. Additionally, this study pointed out that perceived value positively influences customers' peer engagement in three dimensions: opinion giving, opinion seeking, and pass-along behaviour. Finally, some managerial implications were proposed to increase the customer's peer engagement with the brand.

Keywords: Sharing economy, perceived value, peer engagement.

1. Introduction

The sharing economy plays a vital role in changing resource allocation, business models, and consumer behaviour, e.g., tourism and hospitality (Nazifa & Ramachandran, 2019; Puschmann & Alt, 2016). The sharing economy platform acts as an opportunity for people who have extra tangible and intangible resources to get involved in a noticeably less risky business without quitting their jobs or changing their lifestyles (Dredge & Gyimóthy, 2015). The sharing economy was now growing dramatically and well-known in the world and particularly in developing economic context. Not outside the game, the transport industry also has many changes to take

advantage of the sharing economy. Ridesharing was more and more popular and attractive to consumers because of the lower price, yet good accessibility, great flexibility, and ease of use (Dredge & Gyimóthy, 2015; Wallsten, 2015). The ride-sharing industry's revenue increased from US$ 310 million in 2017 to US$ 501 million in 2018. The revenue will also gain about US$ 200 million each year from 2019 to 2021 and increase by about US$ 100 million from 2021 to 2023. The total ride-sharing application users reached 2,3 million in 2017 and 3,7 million in 2018 and are predicted to increase slightly for each year from 2019 to 2023 (Statista.com, 2018).

The enterprises should establish customer relationships by creating values for customers when engaging with them to dominate the ride-sharing industry (Eckhardt *et al.*, 2019). Customer engagement was beneficial for business through financial gains or emotional fulfilment (Van Doorn *et al.*, 2010). Customer engagement was building up as a system that may enhance loyalty and purchase decisions through a strong, long-time psychological relationship (Hollebeek & Brodie, 2009; Patterson *et al.*, 2006). It usually goes with lived brand experiences beyond the purchase. A brand with customer engagement can enhance brand loyalty and influence crucial dimensions of consumer brand perceptions, brand knowledge, and attitudes (Sprott *et al.*, 2009; Wang & Park, 2020).

However, the research contents directly related to the sharing economy were limited (Eckhardt et al., 2019), although the academic literature blossomed on the sharing economy (Perren & Kozinets, 2018). Most of the researchers evaluate the role of the sharing economy through the lens of the traditional economy, e.g., basing the classic marketing concepts such as the perceived risk, utility to study about the consumer behaviour (Lamberton & Rose, 2012); or studying the customer loyalty in the sharing economy based the theoretical model adopted from the traditional firms (Kumar *et al.*, 2018). Moreover, recent studies focused on explaining the sharing economy's characteristics based on specific businesses like Uber or Airbnb (Cramer & Krueger, 2016; Zervas et al., 2017). Therefore, it was necessary to apply a suitable concept to create a clear understanding when researching shared economics. The communication between businesses and customers and customers has changed in recent years (Yadav & Rahman, 2017). The development of mobile applications and social networks has created a quick connection between social members in shopping and service consumption, so customer engagement is more important (Kim et al., 2019; Knezevic et al., 2020). Unlike the bond between customers and businesses described through loyalty or between customers and customers through word of mouth, the peer engagement concept had received the attention of many researchers when they viewed in the context of the sharing economy (Khoa & Nguyen, 2020). In the sharing economy context, the digital environments in which engagement occurs also facilitate the detailed recording of customer engagement activities (Khoa, 2020b). Customer engagement, which was very important to create a competitive advantage

for business, includes e-WOM and co-creation (Wirtz et al., 2013). Hence, the study of the dimensions of peer engagement and their association with premises was important in providing a peer engagement theory in the current shared economy context. Therefore, this research will focus on these customer engagement activities, specifical interactions between customers and customers.

2. Literature review

2.1 Sharing economy and ride-sharing services

The sharing economy was described as a transformative and disruptive economic model in which the consumption of tangible products, assets, or services shall be done by rental, sharing, or exchanging resources using information technology through crowd-based services or intermediates without any permanent transfer of ownership (Eckhardt et al., 2019; Kumar et al., 2018). The sharing economy accelerates efficiency and effectiveness, e.g., reducing the transaction costs and information asymmetry for customers (Puschmann & Alt, 2016). For businesses, the sharing economy also increases the rate of goods consumption, goods recirculation, and the exchange of services and sharing of productive assets; stimulate competition in the market (Hira, 2017). The core features of the sharing economy are the transformative and disruptive nature, clearly shown by the effects of services (Guttentag, 2013; Ikkala & Lampinen, 2015); the consumption and use of goods, services, or assets shown through activities; the great reliance on information technology through online platforms and mobile devices (Goudin, 2016); the direct participation of the crowds and intermediaries (Hamari et al., 2016); the temporary nature of the engagement, evidenced by the temporary ownership's transfer (Belk, 2014).

Ridesharing application's characteristics from technology, business, and economics facets are a commuting software system based on physical locations, a third-party mobile commerce platform giving services for drivers and passengers along with online information, profiles, payments, and evaluation functions. An economic sharing model combines online information sharing and offline vehicles sharing (Hasan & Birgach, 2016).

2.2 Peer engagement of the customer

Customer engagement refers to a wider "transcending" relational perspective (Maslowska et al., 2016). Engagement contains a deeper relationally based level and, therefore, plays an important role in understanding customer's loyalty-related outcomes (Wirtz et al., 2013).

Peer engagement was defined as the active participation of people with lived experience to inform other people (who have the same interests, like-minded) through interactions in communities (Lin et al., 2019). Particularly, customers interact with other customers by sharing, seeking, and exchanging information, i.e., advice and opinions, to disseminate to all the community or peer groups. Van Doorn et al. (2010)

shared the same idea about "customer engagement behaviours," in which the term was the result deriving from motivational motors including word-of-mouth activity, customer-to-customer (C2C) models, and blogging activity. These peer interactions in communities (eWOM activities) consist of Opinion giving (Flynn et al., 1996; Turcotte et al., 2015), Opinion seeking (Gharib et al., 2019), and pass-along behaviour (Sun et al., 2006).

In WOM communications, opinion givers can be seen as the information generators/providers. Their role was to transmit information from mass media to their peers (people with the same interest) and influence these people's thinking, opinions, and choices on products or services (Agag and El-Masry, 2016). An individual's tendency acts as a decisive factor influencing his/her attitude and behaviour. It was typically known as opinion leaders and related to that person's motivation and ability to share information (Yang, 2017). Opinion givers belong to a group, have expertise and knowledge of a product, and are considered reliable sources for information and advice (Sun et al., 2006).

Opinion seeking occurs when a person asks for advice and information from friends, colleagues, or family members, or someone who was often considered reliable in the subject of interest (Ayar et al., 2019). Opinion seekers are those willing to ask for information, advice, or opinions from the opinion givers to help them decide on purchasing products and using services (Turcotte et al., 2015). Opinion seeking has been characterised as a smaller part of product/service information search. Customers seek opinions to briefly review the products, leading to their purchase decision (Singh and Srivastava, 2020). Thus, they will actively search for information, advice from opinion leaders if they consider the information useful (Goldsmith and Clark, 2008).

Pass-along behaviour is conceptualised as exchanging perceived information of a product among peer consumers on the cyber platform and can influence the flow of information (Sun et al., 2006). In the sharing economy, online platforms allow users to forward and pass-along personal information to their acquaintances easily and separately (Fang, 2014). Therefore, pass-along behaviour was seen as another prominent element of eWOM in the sharing economy context. Besides, the pass-along behaviour was more likely to occur in the Internet context, as it was the unique characteristics of the cyber platform that facilitate information spread (Norman and Russell, 2006). Furthermore, when it comes to giving or seeking an opinion from acquaintances, pass-along behaviour was a useful tool for social network users to exchange their assessment or information about a product or brand.

2.3 Perceived value

The concept of value is the foundation of consumer behaviour's understanding (Gallarza et al., 2011; Karjaluoto et al., 2019). Consumers' perceived value is their overall evaluation of product or service usability based on the benefits they receive

and the costs they pay (Khoa, 2020a; Zeithaml, 1988). Sweeney and Soutar (2001) worked on four distinct facets of value: emotional value, social value, and functional value. Rintamäki et al. (2006) later explored value's meaning in practical, hedonic, and social sides. However, value has also been negatively described in many terms. For instance, Gallarza et al. (2011) showed that monetary price, perceived risk, time, and effort might affect students' commuting habits. The performance risk and financial risk are the primed limitations of using mobile devices (Yang et al., 2016). In this research, the perceived value framework was to exchange perceived benefits (hedonic and utilitarian benefit) and perceived costs (learning and risk cost).

Consumers have different reactions depending on their awareness of the product/service's value. Researchers considered perceived value as a predictor of the interaction between customers and customers, so-called the WOM (Gruen et al., 2006). It was shown in studies that consumers, who feel that they get high value from using the service, tend to place faith in the company and recommend it to others, discuss, comment, and share information to those loyal customers of that same brand (McKee et al., 2006). It was also suggested that customer perceived value and peer interaction activities are directly related (Gruen et al., 2006). The more customers appreciate a service, or they use or purchase, the more they will positively exchange their opinions and viewpoints, regardless of culture (McKee et al., 2006).

Hence, peer engagement of customers includes opinion giving, opinion seeking, and pass-along behaviour. The hypotheses were proposed:

H1a: The perceived value positively impacts on Opinion giving in ride-sharing services.

H1b: The perceived value positively impacts on Opinion seeking in ride-sharing services.

H1c: The perceived value positively impacts on Pass-along behaviour in ride-sharing services.

2.4 Perceived Benefits

Turner and Gellman (2013) argued that perceived benefit related to the perception of positive outcomes is due to a particular action. Perceived benefits in online transactions indicated what customers gain from online shopping (Forsythe et al., 2006). In other words, the perceived benefit was consumer confidence that they could shop at any time without any difficulty or even disruption in the procurement process (Ko et al., 2004). Total customer benefit is the perceived value that includes the components of the economic, functional, and psychological benefits a customer expects from a given seller based on the product or services provided (Kartajaya et al., 2019).

The perceived benefit was often divided into two aspects, i.e., hedonic and utilitarian (Koiso-Kanttila, 2005; van der, 2004). The hedonic benefit and utilitarian benefit was concerned in research related to consumer behaviour (Kronrod &

Danziger, 2013). The hedonic benefit was more about experiential consumption, while utilitarian benefit emphasises information and the consumption process (Henry et al., 2004). The customers' hedonic desire comes from the uniqueness of the emotional connection in the product/service when they use a service. Simultaneously, the utilitarian benefit was more about the efficiency, task-specification, and economic value of the products or services (Chitturi et al., 2008). The utilitarian benefit was usually described by many terms, such as valuable, beneficial, useful, wise (Sarkar, 2011)

The value-added modelling showed that utilitarian benefit was the major factor to affect perceived value (De Kerviler et al., 2016). Besides, the ride-sharing application is successfully showing its role in simplifying the user interface of many functions, from online booking and offline consuming to online payment and rating via an application on smartphones that also helps to advance the overall value for the users. Contrary tọ utilitarian benefit, hedonic benefit concentrates on intrinsic effective motivation, on which the extrinsic cognitive motivation was emphasised. The hedonic benefit was that factor stimulating the perceived utility from the states' feelings generated by a product (Sweeney & Soutar, 2001). Therefore, it can be seen as conceptually similar to the perceived enjoyment (Yang et al., 2016) or perceived playfulness (Turel et al., 2010). It was described as the primed and core reason explaining the continual engagement in smartphone users' mobile activities. In other consumer research, perceived hedonic benefit was also found to significantly affect the customer (Chang et al., 2016; Yang et al., 2016). Ridesharing services have provided many services to benefit consumers, such as transportation, goods delivery, and food delivery. These services create convenience, cost savings, and entertainment and exploration benefits (Cheah et al., 2020). From there, the study proposes hypothesis H2 and hypothesis H3 as follows:

H2. The utilitarian benefit positively impacts perceived value in ride-sharing services.

H3. The hedonic benefit positively impacts perceived value in ride-sharing services.

2.5 Perceived Costs

Perceived costs included payments and non-monetary payments, such as time and effort spent (Bolton & Lemon, 2018). Customers assess costs by perceiving what they have been and will lose when transacting (Zeithaml, 1988). Total customer cost included monetary cost, time cost, energy cost, and mental cost (Ahola et al., 2000). As information technology evolved, the costs that customers had to pay for each transaction were monetary costs and costs such as anxiety, perceived risk, and time costs (Nguyen & Khoa, 2019c; Parasuraman & Grewal, 2000). The earlier researches suggested that Perceived Costs could be seen as a cost against benefits in value perceptions (Sweeney et al., 1999). Researchers have found that understanding

consumer motivations and the effects of perceived costs are inconclusive. It was shown in studies that perceived costs significantly negatively affects perceived value (Chang et al., 2016; Kleijnen et al., 2007; Yang et al., 2016).

The act of attempting to understand completely and expertise on how to use a ride-sharing application was preferred in the term "learning cost." It was formed by the perceived complexity of technology and the user's intention. Complexity is the degree to which innovation was perceived as relatively difficult to understand and use (Rodríguez et al., 2020). The complexity of technology or devices affected the mobile service process, a barrier (Kleijnen et al., 2007). Practical research has shown that complexity and effort can hurt social media experience during the user's information search. The complexity and effort cause social media's negative experience for users during their search for information (Chung & Koo, 2015). For example, customers using cyber financial services can have difficulty figuring out all the specific steps they must do to complete their transactions. When it comes to mobile services, information search costs also perform as a value barrier (Suoranta et al., 2005). Many customers have difficulty in the process of using mobile applications to book ride-sharing services. Customers will spend time learning how to use the service, as well as the mobile application. Here was the research hypothesis:

H4. Perceived learning cost negatively impacts on perceived value in ride-sharing services.

Perceived risk was defined as "the potential for loss in the pursuit of the desired outcome of using an e-service," which was widely used for cyber transactions (Yang et al., 2015). However, the passengers have got the risk from ride-sharing services related to online booking or transaction and offline consumption and experience, which involves physical, financial, legal, and privacy risks (Cheng, 2016; Nguyen & Khoa, 2019c). Consumers may feel particularly fragile to the unknown risks in the cyber platform because they do not know whom to blame for failure or loss in this technology-mediated environment (Bahli & Benslimane, 2004; Nguyen & Khoa, 2019b). The mobile transaction services' diffusion depends initially on how consumers react against risks (Steinbock, 2003). They are very careful when using services that require monetary transactions because they worry that their money and information may be lost (Hourahine & Howard, 2004).

Furthermore, one of the risk costs in the sharing economy context was "social risk." Schaefers et al. (2015) pointed out a practical proof of the negative impact on consumers' ownership reduction of social risk. In ride-sharing services, an individual's social position and participation may be underrated if the crowds have a negative perception of value toward ride-sharing (Bardhi et al., 2012). Based on previous research, the researchers hypothesised that:

H5. Perceived risk cost negatively impacts on perceived value in ride-sharing services.

3. Methods

The mixed study method was used in this study. First, qualitative research was used to validate the research structures as well as modify the research scale. The qualitative data collection method was the group discussion method. Through germination sampling, group discussions were conducted with eleven experts, including five university lecturers in information technology and marketing; 03 directors, deputy directors of the ride-sharing company; 02 customers who regularly use and have experience ride-sharing services. The discussion took place for 90 minutes in the research room. The group discussion resulted in a consensus on research factors and adjusted the scales based on the original scale to serve the next quantitative research stage.

Table 1: Descriptive statistics

		Frequency	**Percentage (%)**
Gender	Male	232	47.5
	Female	256	52.5
Monthly income (million VND)	< 9	397	81.4
	9 - 14	72	14.8
	> 14	19	3.9
Occupation	Student, College Student	279	57.2
	Officer	180	36.9
	Freelancer	29	5.9

The quantitative research scales used the 5-pointed Likert scale with 1: total disagree and 5: total agree and mainly inherited and developed from previous studies. The perceived utilitarian benefits were measured by four items (Davis, 1986; Sweeney & Soutar, 2001). The measurement scale of perceived hedonic benefit had five items, and learning cost had three items (Sweeney & Soutar, 2001). The risk cost was measured by four items based on Featherman and Pavlou's (2003) research. The perceived value was measured by three items (Sirdeshmukh et al., 2002). Finally, the peer engagement was the second-order concept with three dimensions: Opinion giving with three items, Opinion seeking with five items (Flynn et al., 1996), and pass-along behaviour with six items (Sun et al., 2006). was performed to test research hypotheses and models.

An online self-administrated questionnaire was used to survey 488 respondents in the three biggest cities in Vietnam, i.e., Ho Chi Minh City, Hanoi City, and Danang City. The sampling method in quantitative research was the purposive sampling method. Respondents have used, are interested in, and need to use ride-sharing services in their life activities. Respondent information was presented in Table 1. Data

collected after being screened was processed by SPSS 26 and SmartPLS software 3.2.7 with the analytical procedures proposed by Hair et al. (2016).

4. Results

The study is based on the process of Hair et al. (2016) to test the proposed hypotheses and models according to two evaluation steps, (1) measurement model, then (2) Partial Least Squares Structural Equation Modeling (PLS-SEM).

4.1 Measurement Model Assessment

The study will test the reliability and validity of the scales. Cronbach's alpha (CA) coefficients of the proposed research scales are greater than 0.7 to achieve internal reliability (Nunnally and Bernstein, 1994). Besides, the evaluation of validity includes the evaluation of the discriminant validity and convergent validity. The discriminant validity was assessed by the Heterotrait-Monotrait Ratio of Correlations (HTMT) coefficient, with the HTMT threshold of the two constructs was less than 0.85. The convergent validity of a scale was assessed through the outer loading coefficient (outer loading value >= 0.708), composite reliability (CR >= 0.7), and the Average Variance Extracted (AVE >= 0.5) (F. Hair et al., 2014).

Table 2: The reliability and convergent validity Assessment

	CA	CR	AVE	Outer loading
HB	0.855	0.895	0.632	[0.711 - 0.862]
LC	0.808	0.884	0.719	[0.815 - 0.873]
OG	0.789	0.876	0.703	[0.808 - 0.859]
OS	0.856	0.897	0.636	[0.723 - 0.865]
PA	0.849	0.888	0.570	[0.715 - 0.804]
PV	0.801	0.883	0.716	[0.817 - 0.861]
RC	0.775	0.855	0.596	[0.732 - 0.804]
UB	0.828	0.886	0.659	[0.779 - 0.859]

CA: Cronbach's Alpha, CR: composite reliability, AVE: Average Variance Extracted

Table 2 showed that CA results were from 0.775 to 0.856, greater than 0.7; hence, all scales are reliable. Moreover, the lowest result of CR was 0.855 (> 0.7), the outer loadings of items in each construct were higher than 0.708, which meet the threshold. Finally, the AVE values of eight constructs were from 0.570 to 0.719 (> 0.5). Therefore, the measures of constructs had high levels of convergent validity. All HTMT values of two constructs in Table 3 were lower than 0.85, so all constructs achieved the discriminant validity.

Table 3: The HTMT value

	HB	LC	OG	OS	PA	PV	RC	UB
HB								

LC	0.547							
OG	0.567	0.453						
OS	0.480	0.317	0.765					
PA	0.544	0.411	0.711	0.722				
PV	0.622	0.589	0.640	0.534	0.548			
RC	0.380	0.579	0.370	0.431	0.454	0.537		
UB	0.669	0.521	0.587	0.517	0.520	0.825	0.490	

4.2 Partial Least Squares Structural Equation Modeling (PLS-SEM).

The study assessed collinearity, size, and significance of path coefficients, coefficients of determination (R^2 value), effect sizes (f^2), and predictive relevance (Q^2).

Multicollinearity was a phenomenon that usually occurs when there was a high correlation between two or more independent variables in the regression model. To realise the multicollinearity phenomenon, the researchers can apply a very simple test based on the VIF (Variance Inflation Factor) to determine the correlation between independent variables (Akinwande et al., 2015). The VIF value starts at one and has no upper limit. A VIF value in the range from 1 to 2 indicates no multicollinearity between independent constructs. Therefore, Table 4 had shown that there was no multicollinearity phenomenon among the independent constructs in this study when the entire VIF coefficient was less than 2.

Besides, the coefficient of determination was usually denoted by R^2, a statistic that sums up an equation's interpretability. R^2 denotes the variation of the dependent variable caused by the explanatory variables' total variation. In behavioural science, an R^2 greater than 20% was considered high (Hair et al., 2016). For the endogenous variable perceived value, Opinion giving, Opinion seeking, and pass-along behaviour, the R^2 value was 0.527, 0.262, 0.2, 0.209, respectively, moderate in perceived value ($R^2 > 50\%$), or weak in the others ($R^2 >= 20\%$).

Table 4: VIF value

	OG	**OS**	**PA**	**PV**
HB				1.628
LC				1.506
PV	1.000	1.000	1.000	
RC				1.330
UB				1.654

Values of effect sizes f^2 correspond to 0.02, 0.15, and 0.35, respectively, are small, medium, and large impact values of the exogenous variable; if $f^2 < 0.02$, then there is no effect (Hair et al., 2016).

Table 5: The R^2, f^2, Q^2

	R^2	f^2				Q^2
		OG	OS	PA	PV	
HV					0.025	
LC					0.033	
OG	0.262					0.180
OS	0.200					0.123
PA	0.209					0.116
PV	0.527	0.356	0.25	0.265		0.370
RC					0.026	
UV					0.293	

In Table 5, $f^2_{\text{HV-> PV}} = 0.025$, $f^2_{\text{LC-> PV}} = 0.033$, $f^2_{\text{RC-> PV}} = 0.026$, hence, hedonic benefit, learning cost, and risk cost had small effect sizes on the perceived value. The utilitarian benefit had the medium effect sizes on the perceived value ($f^2_{\text{UV-> PV}} = 0.293$). In the remaining relationships, f^2 was from 0.25 to 0.356, in which perceived value has a large effect size for Opinion giving when using the ride-sharing service. Finally, the study examining the predictability of the model through the Q^2. Table 5 showed that all Q^2 values were higher than 0. This result confirmed the exogenous variables' high predictability for endogenous variables (Hair et al., 2016).

The PLS-SEM was more and more popular in the recent researches. This research used the PLS-SEM to determine the independent variables' effect level on dependent variables and test the proposed hypotheses. The threshold of t-value to reject or support a hypothesis was 1.96. If the t-value of the hypotheses were lower than 1.96, the hypotheses were rejected. The result of the hypotheses testing was shown in Table 6. As expected, the path coefficients between constructs in the research were significant at the 1% level (except the relationship between hedonic benefit and perceived value with the confidence level of 95%). Besides, the Bootstrap test results also show that these coefficients are all different from zero. Thus, it can be concluded that all hypotheses are supported.

Table 6: The result of PLS-SEM

	Beta	t-value	p-values	Hypotheses	Result
PV -> OG	0.512	9.31	0.000	H1a	Supported
PV -> OS	0.447	9.111	0.000	H1b	Supported
PV -> PA	0.458	8.292	0.000	H1c	Supported
UV -> PV	0.479	12.899	0.000	H2	Supported
HV -> PV	0.139	3.345	0.001	H3	Supported
LC -> PV	-0.153	4.196	0.000	H4	Supported
RC -> PV	-0.128	3.814	0.000	H5	Supported

5. Discussion and conclusion

5.1 Discussion

The development of the sharing economy has solved many social problems such as reducing unemployment, limiting business limitations, and improving people's quality of life. The sharing economy has been applied to many industries, especially tourism and transportation. For the transportation industry, ride-sharing was not only used for passengers but also food. Uber, Grab, and Gojek became the pioneers in ride-sharing. However, the fierce competition among the big players and the emergence of local service providers have created a huge challenge for all businesses. This study was done to understand consumer behaviour after using ride-sharing services in the relationship between perceived benefits (hedonic benefits, practical benefits), perceived costs (learning cost, risk costs), perceived value, and peer-engagement behaviour (Opinion giving, Opinion seeking, and pass-along behaviour). The research result was shown in Fig 1.

The perceived value positively influenced three components that belonged to the customers' peer engagement in ride-sharing, i.e., opinion giving, opinion seeking, and pass-along behaviour, respectively, with the beta of 0.512, 0.447, and 0.458. Therefore, H1a, H1b, H1c were supported with the 99% confidence level. Customer perceived value was the emotional relationship established between a customer and a supplier after using a product or service and finds that it creates value (Khoa & Nguyen, 2019; Nadarajah & Ramalu, 2018). In the age of digital transformation, the service-driven technology will bring higher value to customers, including ride-sharing services. The perceived value of the customer was a reliable predictor of buying intent and consumer behaviour. Therefore, when customers realise the value of ride-sharing services, they will become attached to the business (Aw et al., 2019; Nguyen & Khoa, 2019a). As the social network evolves, communication between customers becomes easier. The customers, who engage with the ride-sharing services, will positively search or find promotion programs from the online communities. Likewise, users will often give good reviews of the service on review pages or service rating apps after using a ride-sharing service. Besides, they are also active in sharing promotions or ride-sharing business information to other consumers through their social network accounts.

The utilitarian benefit and hedonic benefit positively affected perceived value with the path coefficients of 0.479 and 0.139. The hypotheses H2 and H3 were accepted. The utilitarian benefit and hedonic benefit impacted users' post-consumption emotional responses (Chitturi et al., 2008), i.e., the perceived value established after using the ride-sharing services. The ride-sharing service bases on mobile technology, which will create the usefulness for customers, respectively, utilitarian benefit and hedonic benefit (Cheah et al., 2020). Besides, the convenience of using services such as Grab, Uber was undeniable; users may not spend much time searching for drivers for themselves when they want to move from this location to the

destination or order food at home or work. Interacting with many people and matching social consumption trends with shared services are ride-sharing features that mean customers will achieve the belongingness need in Maslow's hierarchy of needs (Maslow, 1943).

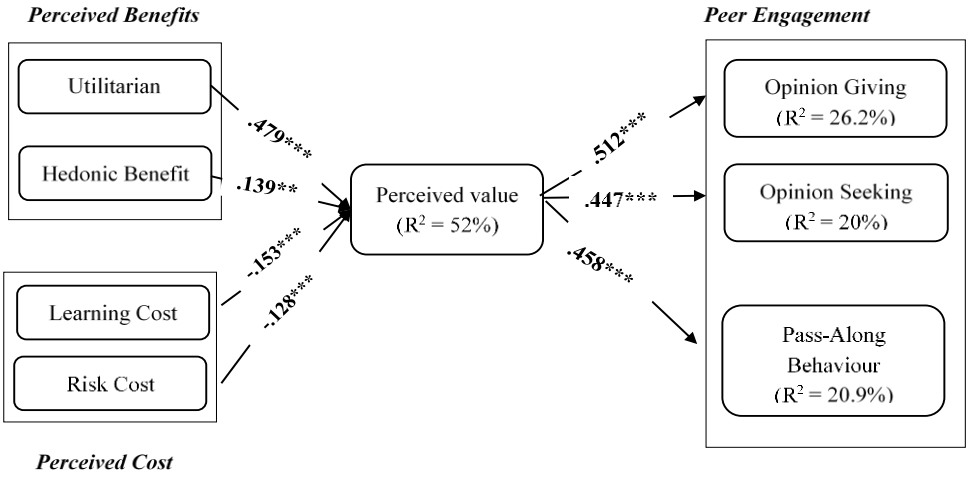

Fig. 1: The research result

In addition to the benefits of ride-sharing services, users' costs should also be considered. The learning cost and risk cost had a negative effect on perceived value, with the figures being -0.153 and -0.128. The learning cost and risk cost made the value decrease when the customers use the ride-sharing services (Wang et al., 2019). It was difficult to adopt new methods via mobile to book cars, and many customers have to spend much time learning to use mobile devices to use ride-sharing services the first time. Consumers have to find ways to use the application on their mobile phone or tablet. The risk was an unavoidable thing when trading, both directly or indirectly, through the application. However, customers are often afraid of time risk, financial risk, privacy risk in electronic services (Featherman & Hajli, 2016), in which mobile applications with ride-sharing drivers. Many customers have cancelled their trips, leading to time-consuming to book another ride, or being charged from their account even though no booking transaction was made, or information as phone numbers for messaging or advertising purposes.

5.2 Conclusion

This research defined the components of perceived value, including utilitarian benefit, hedonic benefit, learning cost, and risk cost. The results stated that most consumers agree that the sharing economy makes their life more convenient and efficient and provides more fun and builds a stronger community (Pricewaterhouse Coopers, 2015). Moreover, the relationship between perceived value and peer engagement was affirmed in this research. The research had both the literature contributions and practical contributions in the sharing economy.

Although research in the shared economy provided excellent knowledge, it was still narrow and conventional in its focus (Eckhardt et al., 2019). This research developed and contributed the relationship model in perceived value, benefits, costs, and peer engagement of customers in the sharing economy context in the ride-sharing services. Moreover, peer engagement has been a popular construct in the education field and was adopted due to behaviour science. This study facilitates follow-up studies with the multidimensional peer engagement concept, including opinion giving, opinion seeking, and pass-along behaviour.

In particular, the researchers realised that perceived value dimensions were extremely significant and influenced peer engagement in line with theory. However, in the Viet Nam context, utilitarian benefit, learning cost, and risk cost have been taken care of by businesses, whereas hedonic benefit was considered to be significant but not yet fully invested. The firm should maintain current strengths and promote interesting programs and events to increase hedonic benefits among customers and drivers in the ride-sharing community. Not only improve utilitarian value, but Grab also minimises risks as much as possible for creating trust with customers. Thanks to that, the customers will gain high value after using ride-sharing services. As a result, these customers tend to spread information or idea with the other ones to choose and become loyal to these services. These peer-to-peer interactions can come from opinion giving, opinion seeking, and pass-along behaviour activities in communities.

Despite efforts to refine this study, its limitations were inevitable; this was also an opportunity for further research to complement the ride-sharing field. First of all, this research was only conducted in Viet Nam; consequently, there was no comprehensive viewpoint about a bigger concept. This research's surveying and evaluation process highly focused on the ride-sharing application; hence, it was difficult to understand the sharing economy. Further research should consider selecting a sample method; the survey's target needs a more reasonable base on the report each year about the ride-sharing applications users in some other countries. Secondly, further researches could examine in some other sharing economy platforms such as tourism and hospitality. Finally, the later research might add more variables to perceived value and customers' peer engagement and continue to advocate and explain more about two main concepts in the model.

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Appendix. The measurement scale

Code	Item	Source
Utilitarian Benefits		
UV1	The price I spend on ride-sharing services was at the right level, given the quality.	Davis (1989); Sweeney and Soutar (2001)
UV2	When I use ride-sharing services, I save time.	
UV3	All ride-sharing services give me good experience.	
UV4	Ride-sharing services offer good economic value.	
Hedonic Benefits		
HV1	Using ride-sharing services would help me feel accepted.	Sweeney and Soutar (2001)
HV2	Using ride-sharing services would help me make a good impression on other people.	
HV3	Using ride-sharing services would give me social approval.	
HV4	Using ride-sharing services make me enjoyable.	
HV5	Using ride-sharing services makes me feel pleasure.	
Learning Costs		
LC1	Likely, I will take much effort to understand how to use the ride-sharing application.	Sweeney and Soutar (2001)
LC2	I believe it will not be easy to learn how to ride-sharing application works.	
LC3	I feel confused when I study how to use the ride-sharing application.	
Risk Costs		

Code	Item	Source
RC1	I was using an Internet-bill-payment service subject, my account for potential fraud.	Featherman and Pavlou (2003)
RC2	ride-sharing applications may not perform well and process payments incorrectly.	
RC3	The usage of ride-sharing would lead to a psychological loss for me because it would not fit in well with my self-image or self-concept.	
RC4	My friends and relatives would not appreciate me when I use ride-sharing services.	
Perceived Value		
PV1	Overall, the value of the ride-sharing services experience was good.	Sirdeshmukh et al. (2002)
PV2	Comparing what I gave up and what I received as using the ride-sharing services was worth it.	
PV3	The experience with ride-sharing services has satisfied my needs and wants.	
Opinion Giving		
OL1	I often persuade other people to use ride-sharing services.	Flynn et al. (1996)
OL2	The other people decide to choose ride-sharing services based on what I have told them.	
OL3	I often influence people's opinions about ride-sharing services.	
Opinion Seeking		
OS1	When I consider ride-sharing services, I ask the other people for advice.	Flynn et al. (1996)
OS2	I like to get other people's opinions before I use a ride-sharing service.	
OS3	I tend to consult other people to help me choose ride-sharing services.	
OS4	I like to seek out negative reviews about ride-sharing services before I make a decision.	
OS5	I like to seek out positive reviews about ride-sharing services before I make a decision.	
Pass-Along Behavior		
PA1	I tend to pass on information or Opinion about ride-sharing services to other people in the online community when I find it useful.	Sun et al. (2006)

Code	Item	Source
PA2	In the online community, I like to pass along the other people's comments containing information or opinions about ride-sharing services.	
PA3	When I receive information or Opinion on the online community related to ride-sharing services that my friend cares about, I will pass it along to him/her.	
PA4	I like to pass along interesting information about ride-sharing services from one group of my friends to another in the online community.	
PA5	I tend to pass along the other people's positive reviews about ride-sharing services.	
PA6	I tend to pass along the other people's negative reviews about ride-sharing services.	