

Essential Drivers of Payment Gateway Continuance Intention: The Moderating Role of Usage Rate

Yudi Sutarso

Universitas Hayam Wuruk Perbanas, Surabaya, East Java, Indonesia

ARTICLE INFO

Article history:

Received : 18 Juli 2021

Revised : 16 November 2021

Accepted : 20 November 2021

JEL Classification:

E42, G21, M31

Key words:

Usage rate, Subjective norm, Behavior control, Continuance intention, Payment gateway.

DOI:

10.14414/jebav.v24i2.2631

ABSTRACT

This study aims to analyze the effect of functional and economic benefit on the perceived value of payment gateway, elaborate the role of perceived value, subjective norm, and behavior control on continuance intention, and identify the moderating role of usage rate on the relationship. The study employed Partial Least Squares to test the proposed model and corresponding hypotheses. Using the purposive sampling technique, the data collection was from 460 survey samples of Fintech payment gateway users in Indonesia. Analysis data used Two-step SEM, inner model, and outer model analysis. The findings showed that functional and economic benefits influence the perceived value of payment gateway. Moreover, perceived value, subjective norm, and behavioral control effects continuance intention. This study shows the importance of the moderating role of usage level on the relationship of subjective norm and perceived behavior control with continuance intention on payment gateway. This study recommends payment gateway providers to manage customer value, promote sustainable intentions, and consider usage rates to encourage subjective norms and behavioral control. Therefore, this study enables a better understanding of the Theory of Plan Behavior (TPB) and Expectation Disconfirmation Theory (EDT) in the payment gateway context.

ABSTRAK

Penelitian ini bertujuan untuk menganalisis pengaruh manfaat fungsional dan ekonomi terhadap nilai yang dirasakan dari gateway pembayaran, untuk menguraikan peran nilai yang dirasakan, norma subjektif, dan kontrol perilaku pada niat berkelanjutan, dan untuk mengidentifikasi peran moderasi tingkat penggunaan pada hubungan tersebut. Studi ini menggunakan Partial Least Squares untuk menguji model yang diusulkan dan hipotesis yang sesuai. Data dikumpulkan dari 460 sampel survei pengguna gateway pembayaran Fintech di Indonesia dengan menggunakan teknik purposive sampling. SEM PLS dua langkah digunakan untuk menganalisis data, analisis model dalam dan model luar. Temuan menunjukkan bahwa manfaat fungsional dan ekonomi mempengaruhi nilai yang dirasakan dari gateway pembayaran. Selain itu, nilai yang dirasakan, norma subjektif, dan kontrol perilaku mempengaruhi niat berkelanjutan. Penelitian ini menunjukkan pentingnya peran moderasi tingkat penggunaan pada hubungan norma subjektif dan kontrol perilaku yang dirasakan dengan niat berkelanjutan pada gateway pembayaran. Studi ini merekomendasikan penyedia gateway pembayaran untuk mengelola nilai pelanggan, mendorong niat berkelanjutan, dan mempertimbangkan tingkat penggunaan untuk meningkatkan norma subjektif dan kontrol perilaku. Oleh karena itu, penelitian ini memungkinkan pemahaman yang lebih baik tentang Theory of Plan Behavior (TPB) dan Expectation Disconfirmation Theory (EDT) dalam konteks payment gateway.

1. INTRODUCTION

Financial technology (Fintech) results from innovation in the financial sector that takes advantage of information technology advances. Fintech is the up to date topic even though the relation between information technology and

financial services is not a new issue (Thakor, 2020). It enables financial transactions to be carried out more efficiently than previous financial services. The use of technology is applied to financial sector operational activities to improve financial services, including payment method, fund transfer, loan

* Corresponding author, email address: yudi@perbanas.ac.id

distribution, fund collection, insurance protection, and investment management. Some technology products include market provisioning, investment management, capital raising, deposit & lending, insurance, and payment.

Financial technology has proliferated globally, especially in payment gateways or mobile payment. The service has complex features, including a combined process for accessing merchants, authenticating, and making payments (Choi et al., 2020). The payment gateway providers range includes device manufacturers (Apple, Samsung), technology companies (Google, Alibaba, eBay, Facebook), Telecom (Vodafone, Airtel), and FinTech startups (TransferWise, Square). There have been many financial technologies in Indonesia in payment gateways, namely Go-Pay, Tcash, OVO, Doku, and Finpay. Even though payment gateway proliferates, user complaints about failed top-up, retained balances, blocked accounts, balance reductions, and unreliable issues.

From marketers' perspective, marketing payment gateways are interesting to study, especially concerning the customers' reasons to use the service. On one side of the convenience offered by this service, so many people, especially young people, are adopting the use of this payment gateway. On the other side, there are quite a lot of complaints from the community. Financial Services Authority noted that the first quarter of 2021 received 2,378 complaints services, even though the complaint was not only related to fintech types of payment gateways (OJK, 2021). This paradox requires studies from various perspectives to guide marketers and customers in using this financial technology.

The development of financial technology has also received considerable attention from researchers, especially related to how customers adopt this service. In terms of payment, cashless payments are a major development trend, with more and more companies developing related payment solutions for their customers (Leong & Sung, 2018). There are limited studies related to payment gateways (Barkhordari et al., 2017; Rouibah et al., 2016). Studies related to the adoption of payment gateways have not elaborated the role of usage rate in explaining customer intention to use, even though there are differences in attitudes and customer behavior with different usage statuses (Kelley et al., 2015). This research is in line with previous studies, which suggested that future studies related to electronic payment solutions should focus on improving convenience, efficiency, traceability, or

security (Leong & Sung, 2018).

Therefore, the main aim of this study is to propose a model to investigate the effect of the benefit factor of the use of payment gateway on its continuance intention. This study was in line with a study on mobile apps, in which the value of specific app features in encouraging the intention to adopt an app is a priority for future research (Stocchi et al., 2021). It also analyzes the mediating effect of perceived value on the relationship between payment gateway's specific benefit and its continuance intention. Moreover, this study investigates the moderating role of usage rate on the effect of subjective norms and behavior control on continuance intention. Novelty offered by this study introduces the role of usage rate in the confirmation of EDT and TPB in the context of payment gateway.

The fundamental practical contribution of this study is to guide in managing payment gateways, especially in maintaining customer intentions to use payment gateways. This contribution is more critical amid the lack of services that users are still concerned about and complaining about. The benefits of payment gateways can also guide determining what benefits are most important to users and what individual aspects of users have the most impact. At the same time, the expected theoretical contribution in the literature is to confirm EDT and TPB in the context of payment gateway in Indonesia, especially by looking at the role of the customer level of use.

2. THEORETICAL FRAMEWORK AND HYPOTHESES

Theory of Plan Behavior and Expectation Disconfirmation Theory

Theory Planned Behavior (TPB) was developed with the main principle that intentions directly affect customer behavior (Ajzen, 1991). In addition, in the TPB perspective, customer behavior is influenced not only directly by behavioral intentions but also determined by three kinds of specific beliefs about the behavior, namely perceived behavioral control (PBC), subjective norms, and attitudes (Yang et al., 2017). The TPB considers situations where a person may not have complete volitional control over their behavior, so the model adds the PBC variable. Likewise, subjective norms are perceived organizational or social pressures to perform or not perform the behavior, and attitude indicates the extent to which a person makes favorable or unfavorable judgments about the behavior in question (Ajzen, 1991).

Expectation Disconfirmation Theory (EDT)

explains how dissonance between an individual's cognition and reality influences subsequent customer cognition and behavior (Bhattacharjee & Premkumar, 2012). The central premise of EDT is that users build expectations before using an offering. These expectations will then be used as a basis for the perception of a given performance; therefore, the level of satisfaction emerges after a comparison between perceived performance and pre-use expectations (Mahmoud et al., 2018). Next, customers become satisfied, neutral, or dissatisfied with the product offering. The results of this evaluation will determine the subsequent behavior in the future.

Fintech perceived value

Studies linking the perceived value of fintech services and its antecedents primarily regarding economic and technical benefit can be traced from previous studies. The study on fintech services found that economic benefits, seamless transactions, and convenience positively influence perceived value for users. The role of convenience is the highest, followed by seamless transactions and economic benefits (Ryu, 2018). This is because fintech is seen more as a means of financial transactions that are mobile and flexible. In a study on mobile computing, convenience is the most apparent benefit driven by flexibility of time and location (Okazaki & Mendez, 2013). As the concept of saving money by customers, economic benefits are essential to improving customer attitude towards products (Achadinha et al., 2014). Seamless transactions for customers will enable financial transactions to be carried out more efficiently and quickly (Chishti, 2016). The usability aspect also increases the value or benefits customers feel because of the primary function of services (Yang et al., 2016).

H₁: a) economic benefit, b) seamless transaction, c) perceived convenience, and d) perceived usefulness positively influence the perceived value of payment gateway.
Continuance intention

The customer's intention to use continuously can be seen from customer benefits and usefulness. In service marketing, perceived values are a factor in determining customer intention to continue using services (Dolarslan, 2014; Ryu, 2018). Even in service studies, perceived value has a more significant effect on the intention to repurchase than to recommend (Olaru et al., 2008). Economic benefits also tend to

increase the intention to use several services. For example, economic benefits in peer-to-peer accommodation services are intrinsic motivations underlie future intentions (Tussyadiah, 2016). Usability in information technology encourages the intention of customers to reuse in the future (Kim et al., 2018).

H₂: a) economic benefit, b) seamless transaction, c) perceived convenience, d) perceived value, and e) perceived usefulness positively effect on continuance intention of payment gateway.

Perceived behavior control and subjective norm.

The study of the role of behavior control and subjective norms on intention to use can be traced from the Theory of Planned Behavior, where both are predictors of behavioral intention. Behavior control is the level of social pressure someone feels about a particular behavior, perceived opinion of someone important or close to someone who influences his decision-making, or social pressure from another person or group (Ajzen, 1991). This pressure will further encourage someone to intend to do certain activities. While the control behavior is an individual's opinion about the management of certain behaviors, and this opinion is related to the intention towards behavior performance (Raza et al., 2018). The roles of these can be confirmed through several studies, for example: in hotel service studies (Chen & Tung, 2014), as well as studies on local food products (Shin & Hancer, 2016), mobile banking (Koksal, 2016), medical travel app (Chang et al., 2016), m-learning (Raza et al., 2018), and social network sites (Hajli & Lin, 2016).

H₃: a) Perceived behavior control and b) subjective norm positively influence continuance intention of payment gateway.

Usage rate moderation role

A study on the role of usage rate associated with differences in customer behavior can be seen in studies on electronic shoppers showing the differences in customer attitudes and behavior based on the usage rate (Bickle & Shim, 1993). Heavy purchasers like shopping at home and using computers, while non-heavy purchasers tend to be price-conscious and careful and believe that shopping for electronics is expensive. In a study of wine customers, Kelley et al. (2015) found differences in behavior between customers based on usage rate (super core, core, and marginal user), namely, the type of consumption, price, and variety

purchased. In dentist services, it was found that differences in the level of use (heavy, medium, light) would distinguish customer attitudes and behavior. For example, heavier users tended to value comfort-oriented attributes, while light users valued core service (Teoh et al., 2013). The entire study above shows that differences in usage levels will affect customer attitudes and behavior.

The role of usage rate can also be identified on the effect of behavior control on payment gateway continuance intention. The effect is higher for a

higher usage rate than for a lower one. On the effect of subjective norm on continuance intention, the usage rate is identified as having a positive moderation role, in which on the higher subjective norm, the effect is higher than

Hypothesis 4: Usage rate moderates the effect of a) behavior control and b) subjective norm on continuance intention on payment gateway services.

Based on the literature review discussed above, the conceptual framework of this study is presented in Figure 1.

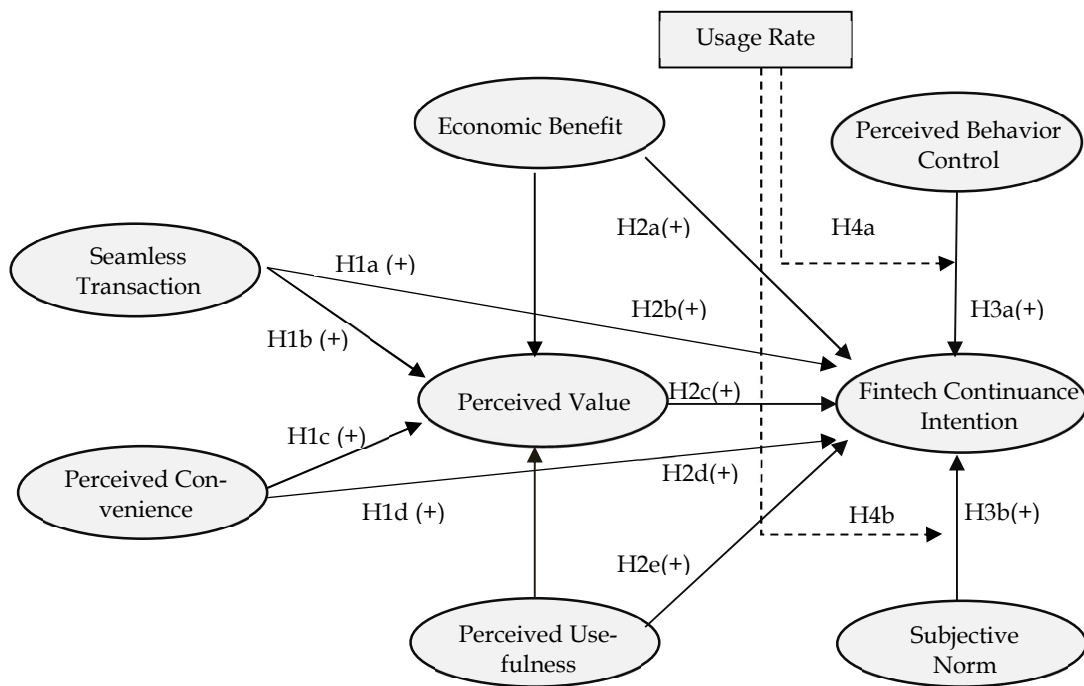


Figure 1. Research model

3. RESEARCH METHOD

Population and sample technique

This research uses financial technology context in Indonesia, specifically in payment gateway financial technology, namely: Go-Pay, Grabpay, TCash, and Cash Stores. It used the purposive sampling technique, a non-probabilistic sample method that is unrestricted (Cooper & Schindler, 2014). The criteria for the sample are aged more than 20 years, users for

more than three months, and used payment gateways at least once in the last month. The researcher used a mail survey technique combined with direct distribution to the respondents in collecting data. The location chosen is at the office, campus, mall, or residence. This study uses pre-trained students to become surveyors. Table 1 describes the research sample, in which there were 470 respondents involved in this study.

Table 1. Sample description

		Frequency	Valid Percent	Cumulative Percent
Sex	Male	249	53	53
	Female	221	47	100
Age	20-30	409	87	87
	31-40	47	10	97
	41-50	9	1.9	98.9
	>50	5	1.1	100
Occupation	Student	237	50.4	50.4
	Private employees	151	32.1	82.6
	Civil servant	7	1.5	84
	Entrepreneur	65	13.8	97.9
	Others	10	2.1	100
Number of payment gateway services ownership	>1 payment gateway	299	63.6	63.6
	1 payment gateway	171	36.4	100
Duration of use	3 s/d 5 month	231	49.1	49.1
	6 s/d 12 month	203	43.2	92.3
	> 12 month	36	7.7	100
Frequency of using payment gateway in the last month	< 3 times	186	39.6	39.6
	3-5 times	251	53.4	93
	6-10 times	30	6.4	99.4
	> 10 times	3	0.6	100
The use of a payment gateway (each is from the total sample)	Money transfer	69	14.7	n.a
	Online shopping	273	58.1	n.a
	Pay bill	130	27.7	n.a
	Send credit	81	17.2	n.a
	Business Transaction	199	42.3	n.a

Instrument Development and Measure

This research instrument was developed through three stages. These development stages are carried out to obtain the measurements that meet the instrument quality, such as construct validities, face validity, content validity, and reliability. *The first stage* is the literature study stage, which looks at previous research topics, namely intention to reuse, perceived value, subjective norms, and behavioral control in technology adoption studies. *The second stage* is the preliminary survey stage. Once the theoretical background has been obtained, the researchers conduct a preliminary survey on the research subject or payment gateway user. It is intended to ascertain that the theoretical background obtained in the previous stage can correspond with the research setting. Therefore, a research instrument or initial questionnaire could be made in this stage. Interviews with related parties were also carried out to acquire a deep understanding of payment gateway user intention and behavior. *The final stage* is the questionnaire trial. In order to make sure that research instruments can

meet the quality of adequate instruments, the validity and reliability tests were carried out. The study tested the questionnaire on 30 respondents and revised the instrument. The results of the revised instrument were then used as the final questionnaire, which was ready to be distributed to the respondents.

Construct measurement or operational definitions used in this study were adopted from previous research and adapted to the payment gateway context. Table 2 shows the construct and items used in the study. The seamless transaction was measured by three items (Chishti, 2016; Ryu, 2018), perceived convenience by four items (Okazaki & Mendez, 2013; Ryu, 2018), economic benefit by three items (Lee, 2009; Ryu, 2018), and perceived value by four items (Benlian & Hess, 2011; Ryu, 2018). Furthermore, perceived usefulness was measured by three items (Zhao et al., 2016), by four items (Xie et al., 2017), continuance intention by four items (Lee, 2009), and subjective norm by three items (Xie et al., 2017).

Table 2. Constructs and items

Latent Variable	Items	Mean	SD	Loading
Perceived Value	Using payment gateways has many advantages	5.930	0.923	0.710
	Payment gateway can be used easily and quickly	5.880	0.793	0.758
	Using a payment gateway is useful for me	5.880	0.845	0.775
	Payment through payment gateways is better than cash payments	5.880	0.997	0.603
Seamless Transaction	I can control my money using payment gateway	5.720	0.984	0.759
	I can do various types of concurrent payments through a payment gateway	5.670	1.042	0.831
	I can make payments directly with payment gateway without using an intermediary	5.790	0.941	0.694
Perceived Convenience	Payment through payment gateways can be made quickly	5.940	0.927	0.736
	Payment through payment gateway can be made anywhere	5.960	0.912	0.801
	Payment through payment gateway can be made at any time	6.010	0.864	0.835
	Payment through payment gateways can be made easily	6.040	0.850	0.743
Perceived Behavior Control	I master the use of payment gateways	5.620	0.993	0.811
	I can use payment gateway	5.800	0.953	0.833
	I know using payment gateway	5.790	0.911	0.780
	I have the tools to make a payment through a payment gateway	5.740	0.955	0.672
Subjective Norm	Others play an important role in supporting me using the payment gateway	5.190	1.182	0.889
	Others think I have to use a payment gateway	5.210	1.250	0.911
	Other people with higher incomes encourage me to use a payment gateway	5.250	1.224	0.893
Perceived Usefulness	Using a payment gateway increases the smoothness of my payment	5.810	0.969	0.768
	Using a payment gateway increase the success of my payment	5.790	0.979	0.848
	Payment through payment gateway is useful	5.910	0.934	0.811
Economic Benefit	Using a payment gateway is cheaper than that of cash	5.880	0.985	0.786
	I can save money by using a payment gateway	5.870	0.971	0.876
	With payment gateways, I can transact at a lower cost	5.910	0.915	0.824
Continuance Intention	I will consider the payment gateway as my choice	5.800	1.064	0.668
	I would prefer the payment gateway	5.790	0.998	0.849
	I will continue to use the payment gateway	5.860	1.037	0.874
	I will use the payment gateway in the future	5.970	1.033	0.831

4. DATA ANALYSIS AND DISCUSSION

Measurement Model

This study's data were analyzed using the partial least square of the structural equation model. There are two parts of analysis, namely measurement (inner) and structural (outer) model. The analysis was intended to ascertain the instrument's quality by testing the instrument's validity and reliability on the measurement model. By this test, it can be confirmed that the data can be analyzed in structural model analysis. The measurement model is conducted using the validity requirements

measured using convergent validity (loading factor, significance, and AVE) and discriminant validity (AVE square root). Based on the data, the convergent validity test shows that the overall model meets the specified criteria because all factor loading has been above 0.60, with significance <0.05, and the overall AVE value of the construct > 0.50 (Table 2 & Table 3). The discriminant validity test is estimated using the AVE square root criteria. The value must be higher than the score correlation with other constructs or in the same column (Hair et al., 2021). Discriminant validity is also measured by

cross-loading criteria for each indicator, where loading criteria in certain constructs must be higher than other constructs. The description of data analysis with AVE square root can be seen in Table 3, showing the results that met the criteria. Reliability measurements in this study were carried out by estimating composite reliability and Cronbach's alpha, where the acceptable limits of these indicators were composite reliability > 0.7 and Cronbach's alpha > 0.6 (Hair et al., 2021). Based on

the estimates in Table 3, composite reliability values range from 0.805 (PB) to 0.926 (SN), and Cronbach Alpha which ranges from 0.640 (ST) to 0.879 (SN), or it can be said that the both have met the expected value. Because the overall validity and reliability of measurement met the cut-off value, the instrument was shown to have sufficient internal consistency. As a result, the data were appropriate for further analysis.

Table 3. The square root AVE and correlations between constructs

Constructs	Code	PB	ST	PC	BC	SN	PU	EB	CI
1. Perceived value	PB	(0.715)							
2. Seamless transaction	ST	0.320	(0.764)						
3. Perceived convenience	PC	0.374	0.290	(0.780)					
4. Perceived behavior control	BC	0.264	0.375	0.298	(0.732)				
5. Subjective norm	SN	0.009	0.168	0.038	0.185	(0.898)			
6. Perceived usefulness	PU	0.349	0.308	0.397	0.301	0.207	(0.810)		
7. Economic benefit	EB	0.304	0.251	0.374	0.224	0.023	0.439	(0.829)	
8. Continuance intention	CI	0.455	0.412	0.404	0.362	0.227	0.447	0.369	(0.810)
9. Usage rate	UR	0.130	0.053	0.107	0.173	-0.048	0.103	0.138	0.052
Composite Reliability	CR	0.805	0.807	0.861	0.849	0.926	0.851	0.868	0.883
Cronbach Alpha	α	0.677	0.640	0.784	0.776	0.879	0.736	0.772	0.821
Average Variances Extracted	AVE	0.511	0.583	0.608	0.536	0.806	0.656	0.688	0.655
Number of items	-	4	3	4	4	3	3	3	4

Note:

- The overall correlation between the constructs have $p < 0.0001$
- Scores show pairwise correlations between constructs, while the diagonal score (in parentheses) indicates the square root AVE.

Hypothesis Testing

In testing the hypothesis, this study included two control variables, both of which did not affect the model, namely gender ($\beta = 0.00$; $p < .47$) and age ($\beta = 0.02$; $p < .34$). In order to avoid common method bias (CMB) or collinearity among the predictor variables, the variance inflation factor (VIF) was also estimated and met the cut-off value ($VIF < 3.3$) (Kock, 2015). The hypothesis test results indicate that all the hypotheses in this study were confirmed, as described in Table 4 and Figure 2. The hypothesis related to the antecedent

of perceived value are confirmed not only on economic benefit (H1a; $\beta = 0.11$; $p < .001$), but also on seamless transaction (H1b; $\beta = 0.18$; $p < .001$), perceived convenience (H1c; $\beta = 0.26$; $p < .001$), and perceived usefulness (H1d; $\beta = 0.18$; $p < .001$). The findings support H1a, H1b, H1c, and H1d. It shows that the increase of perceived value is influenced respectively from the highest by increasing customer perception of perceived convenience, perceived usefulness, seamless transaction, and economic benefit.

Table 4. Summary of hypotheses testing results

Hypothesis	Proposed hypothesis/path relationships	Beta	VIF	Conclusion
H1a	Economic benefit → perceived value	0.11**	1.264	Significant positive, supported
H1b	Seamless transaction → perceived value	0.18**	1.132	Significant positive, supported
H1c	Perceived convenience → perceived value	0.26**	1.242	Significant positive, supported
H1d	Perceived usefulness → perceived value	0.18**	1.322	Significant positive, supported
H2a	Economic benefit → continuance intention	0.12**	1.380	Significant positive, supported

Hypothesis	Proposed hypothesis/path relationships	Beta	VIF	Conclusion
H2b	Seamless transaction → continuance intention	0.17**	1.366	Significant positive, supported
H2c	Perceived value → continuance intention	0.24**	1.296	Significant positive, supported
H2d	Perceived convenience → continuance intention	0.15**	1.339	Significant positive, supported
H2e	Perceived usefulness → continuance intention	0.17**	1.533	Significant positive, supported
H3a	Perceived behavior control → continuance intention	0.08*	1.652	Significant positive, supported
H3b	Subjective norm → continuance intention	0.10**	1.343	Significant positive, supported
H4a	Usage rate*perceived behavior control → continuance intention	0.08*	1.457	Significant positive, supported
H4b	Usage rate*subjective norm → continuance intention	-0.20**	1.376	Significant negative, supported

Note: H=Hypothesis, ** = $p < .01$, * = $p < .05$, ns = not supported

Hypothesis testing on continuance intention also confirms the role of economic benefit (H2a; $\beta = 0.12$; $p < .001$), but also on seamless transaction (H2b; $\beta = 0.17$; $p < .001$), perceived value (H2c; $\beta = 0.24$; $p < .001$), perceived convenience (H1c; $\beta = 0.15$; $p < .001$), and perceived usefulness (H1d; $\beta = 0.17$; $p < .001$). Moreover, continuance intention is driven by perceived behavior control (H3a; $\beta = 0.08$; $p < .01$) and

subjective norm (H3b; $\beta = 0.10$; $p < .01$). Therefore, this findings support H2a, H2b, H2c, H2d, H2e, H3a, and H3b. Therefore, the increase of economic benefit, perceived value, convenience, usefulness, behavior control and subjective norm will increase customer continuance intention to payment gateway. Perceived value is the highest background factor of continuance intention.

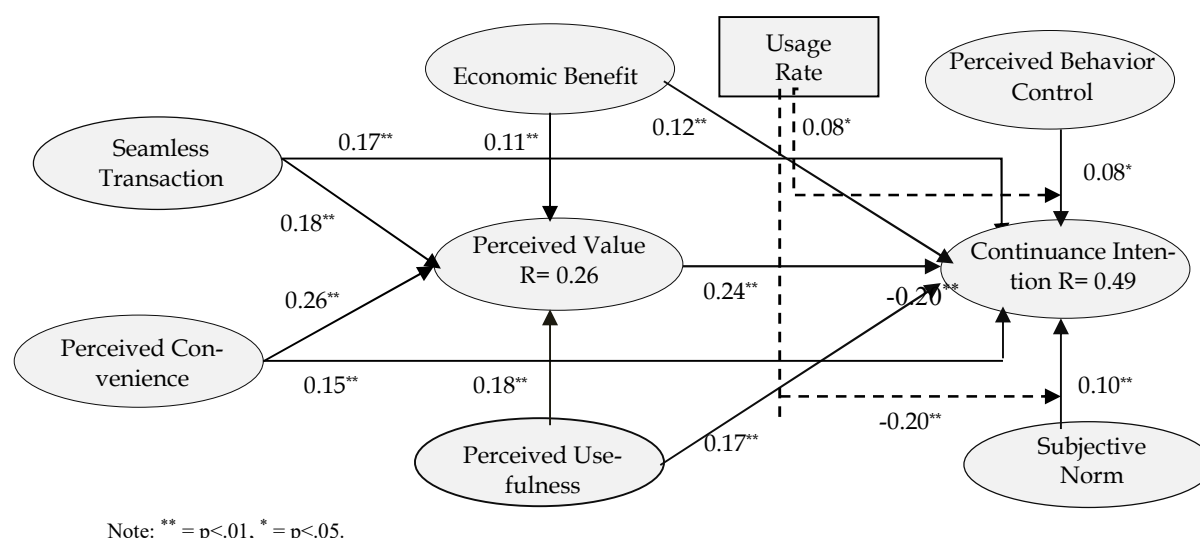


Figure 2. PLS results of the structural model

Moreover, there are important findings in the moderating role of *usage rate*. There were different effect of usage rate on the influence of perceived behavior control ($\beta = 0.08$; $p < .05$), and subjective norm ($\beta = -0.20$; $p > .01$) on continuance intention. Therefore, H4a and H4b are *supported*. On perceived behavior (Figure), a higher usage rate tends to be higher the

effect of the variable on continuance intention; the lower usage rate is vice versa. Otherwise, on the subjective norm (Figure), a higher usage rate (frequent user) tends to be lower the effect of the variable to continuance intention than a lower usage rate (occasional user).

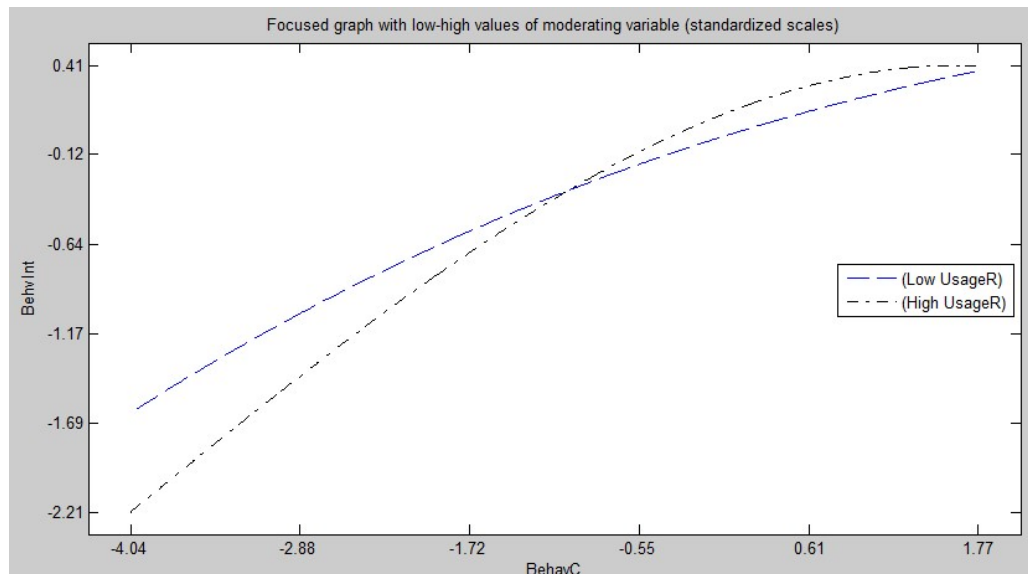


Figure 3. The moderating role of usage rate on perceived behavior control

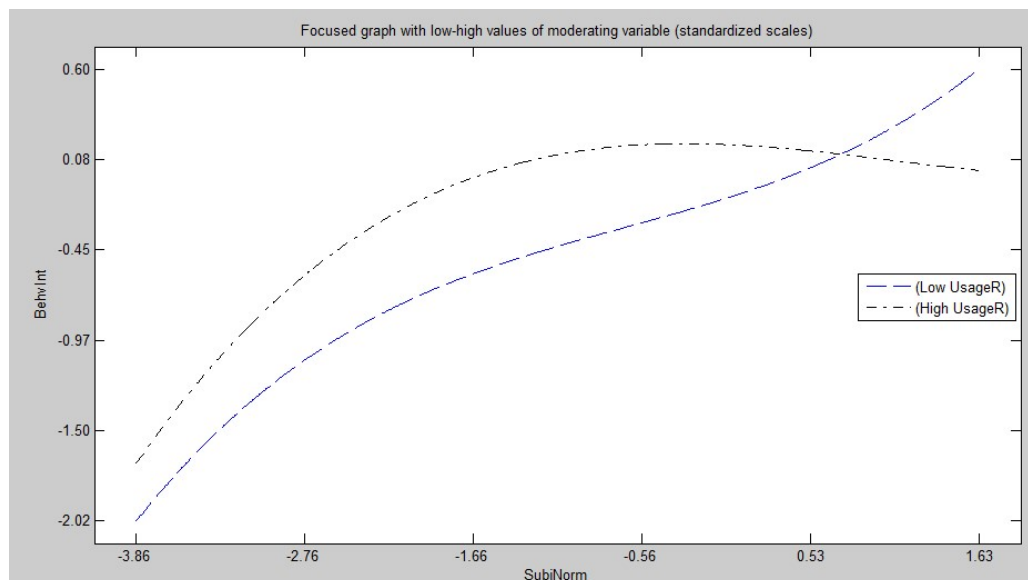


Figure 4. The moderating role of usage rate on subjective norm

Perceived Value Antecedent

The fundamental finding of this study related to perceived value is that convenience is the main factor of customer value, followed by convenience, comfort, and economic factors. In the context of payment gateways, several underlying factors influenced perceived value, such as convenience, usefulness, seamless transaction, and economic benefit. *Perceived convenience*, reflected by payment gateway capabilities in performing its functions quickly, timely, and everywhere, is a strong driver of user value. *Perceived usefulness*, identified by smoothness, level of success, and perceived values in conducting transactions, determine the extent of the perceived value of payment gateway users. Moreover, *Seamless*

transactions in the form of payment gateway capabilities for customers to control their money, make various types of payments, and do it themselves also positively impact the perceived value of users. The findings of this study also indicate that *economic benefits* positively affect perceived value. This means that cheaper services, saving money, and lower costs will encourage payment gateway users to consider that the value is higher, such as faster, easier, more useful, and better. This study also shows that economic motive is not the main factor influencing payment gateway users.

These findings confirm the previous study on mobile payment, mobile remittance, crowdfunding, and P2P lending (Ryu, 2018), mobile commerce

(Okazaki & Mendez, 2013), and wearable devices (Yang *et al.*, 2016). It affirms that perceived value has a greater effect on intention (Olaru *et al.*, 2008). This finding also strengthens the Expectation Disconfirmation Theory indicated by the positive effect of the seamless transaction, economic benefits, perceived convenience, and usefulness on intentions. This shows that the increased benefits perceived by payment gateway users reduce the dissonance between expectations and perceived performance, increasing the intention to use payment gateways. This finding also adds to the literature confirming the EDT by adding the perceived values in the context of payment gateways and adding to previous findings on online services (Lankton *et al.*, 2014; Liao *et al.*, 2016)

Fintech Continuance Intention

Factor affecting continuance intention in payment gateways is not only perceived value but also subjective norms and behavior control. This finding indicates that payment gateway benefits drive user intention to reuse payment gateway. It includes *economic benefits* such as cheaper, saves money and lower cost; *seamless transactions* such as the ability to control money, various types of concurrent payments, and direct payment; *convenience* such as payment can be done quickly, anywhere, and anytime; and usefulness such as smooth payment and increase payment success. This finding confirms previous studies (Lee, 2009; Dolarslan, 2014; Ryu, 2018). In addition, the finding shows that perceived value is mediating factor of the relationship between benefits and continuance intention.

Moreover, the subjective norm as social pressure, namely support, pressure, and encouragement from others, is also a driver for intention to reuse payment gateway and user behavior control, such as ability, knowledge, and tools availability for reusing payment gateway. This finding is consistent with the previous studies (Chen & Tung, 2014; Chang *et al.*, 2016; Hajli & Lin, 2016; Koksai, 2016; Shin & Hancer, 2016; Raza *et al.*, 2018). The effect of subjective norm and perceived behavior control on the intention to use in this study also strengthens the applicability of the Planned Behavior Theory. This indicates that the external factors of the user affect the user's intention. When the external pressure to use is high, the user's desire will be stronger. This strengthens the previous studies that examined the role of the Planned Behavior Theory, especially in online services (Alzahrani *et al.*, 2017; Yang *et al.*, 2018; Lung-Guang, 2019)

The role usage rate

The important findings of this study show that on the occasional users (low usage), the effect of subjective norm towards intention to reuse payment gateway is higher than on frequent users (high usage). This means that the influence of friends, relatives, and environment is more important for occasional users than for frequent users in influencing their intention to reuse payment gateway in the future. The effect of control behavior towards reuse intention is higher on frequent users compared to occasional users. This means that for frequent users, the role of their ability, knowledge, and tools for using payment gateways is more important than for occasional users in influencing their intention to reuse payment gateways in the future. This finding is in line with the role of usage rate in electronic shoppers (Bickle & Shim, 1993) and wine customers (Kelley *et al.*, 2015).

5. CONCLUSION, IMPLICATION, SUGGESTION, AND LIMITATIONS

This study examines the model linking perceived value antecedents associated with continuance intention of payment gateway. Functional and economic benefit effect on the perceived value of the customer. Perceived value, subjective norm, and perceived behavior control were continuance intention drivers. This study found the moderating role of usage level on the relationship of subjective norm and perceived behavior control with continuance intention on payment gateway. In addition to confirming the findings of previous studies, the findings of this study also confirm the Expectation Disconfirmation Theory and Theory of Planned Behavior.

This study has several contributions to the literature. Firstly, in the context of payment gateways, there was confirmation of the role of customer perceived value. There are antecedents of customer value in payment gateway, namely functional and economic benefit. Functional benefits consist of perceived usefulness, perceived convenience, and seamless transaction. Secondly, the finding confirms the background factors of continuance intention in the literature, specifically related to values, behavior control, and subjective norms. In payment gateway, customer value is the most factor affecting continuance intention, followed by behavior control and subjective norm. Thirdly, the most important contribution of this study in literature is an explanation of usage rates associated with the role of values, controls, and norms on continuance intention. More specifically, usage rate acts as a moderating variable on the

relationship between behavioral control and subjective norms with the intention to reuse. This finding has not been fully carried out; therefore, it adds perspective in understanding the intention to reuse. Finally, this study also explains the confirmation of the Expectation Disconfirmation Theory. The perceived value was the driver of intention and expanded the Planned Behavior Theory, where the role of behavioral controls and subjective norms on intention was intervened usage rate.

The study recommends three managerial implications: managing customer value, promoting continuance intention, and considering usage level to encourage subjective norm and behavior control. Firstly, payment gateway practitioners need to manage customer value. The findings suggest that perceived convenience, usefulness, seamless transaction, and economic benefit affect perceived value. Users are concerned with the convenience of payment gateway, so practitioners need to maintain service speed, place, timely, and easiness. Marketers need to assure payment gateway usefulness by increasing service smoothness, warranting payment success, and improving service features. Assuring user to control their money, providing various types of concurrent payment, and making direct payment through payment gateway is important to improve seamless transactions. Moreover, marketers need to upgrade economic benefits by ensuring the payment gateway is cheaper, being customer preference, and lower cost. Secondly, practitioners need to promote customer continuance intention by promoting the economic or functional aspect of payment gateway and managing user behavior control and their subjective norm. Mastering the use of payment gateway and increasing customer ability and knowledge in using a payment gateway is a means to develop user behavior control. Maintaining a good image to assure the public has a positive image and preference is the way to enhance users' subjective norm. Thirdly, managing payment gateway needs to consider the customer's usage level to stimulate norm and control. Usage level was found to be a moderating factor on the relation of customer norm and control with their intention to use payment gateway. Payment gateway providers should classify customers based on their usage level, lower and high, to increase customer continuance intention. For low usage rate users, the effect of the subjective norm is higher than high usage rate users. Therefore, practitioners should adapt their strategies based on the user usage rate by treating them differently. For low usage rate users, marketers need

to maintain promptly because their intention is more sensitive than those with a high usage rate. They use payment gateway more because of external motivation, from their friend, family, neighbor, or provider promotion. Therefore, promotion to a low user is better to attract users to use regularly.

This study is subject to several limitations. First, it is limited to discussing the antecedents of the value of payment gateways, namely functional and economic benefits. This provides limited coverage and limitations on other benefits that could be the cause. It suggests that for future research, in addition to functional and economic factors, it can also include emotional, relational, or even cultural factors. Second, this study uses cross-sectional data. Since mobile payment has grown fast, future studies need to use longitudinal data. Finally, the use of payment gateway context only in this study confines the generalization of the finding in Fintech services; therefore, future research needs to consider the use of other services types of Fintech.

REFERENCES

- Achadinha, N. M. J., Jama, L. & Nel, P. (2014). The drivers of consumers' intention to redeem a push mobile coupon. *Behaviour and Information Technology*, 33(12), 1306-1316.
- Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211.
- Alzahrani, A. I., Mahmud, I., Ramayah, T., Alfarraj, O., & Alalwan, N. (2017). Extending the theory of planned behavior (TPB) to explain online game playing among Malaysian undergraduate students. *Telematics and Informatics*, 34(4), 239-251.
- Barkhordari, M., Nourollah, Z., Mashayekhi, H., Mashayekhi, Y., & Ahangar, M. S. (2017). Factors influencing adoption of e-payment systems: an empirical study on Iranian customers. *Information systems and e-business management*, 15(1), 89-116.
- Benlian, A. & Hess, T. (2011). Opportunities and risks of software-as-a-service: Findings from a survey of IT executives. *Decision support systems*, 52(1), 232-246.
- Bhattacharjee, A. & Premkumar, G. (2012). Theoretical Model and Longitudinal Test Article in Belief and Changes Understanding Information Attitude Toward Technology A Theoretical Usage: Model and Longitudinal. *Management Information Systems*, 28(2), 29-254.
- Bickle, M. C. & Shim, S. (1993). Usage rate segmentation of the electronic shopper: Heavy

- versus non-heavy dollar volume purchasers. *International Review of Retail, Distribution and Consumer Research*, 3(1), 1-18.
- Chang, I. C., Chou, P. C., Yeh, R. K. J., & Tseng, H. T. (2016). Factors influencing Chinese tourists' intentions to use the Taiwan Medical Travel App. *Telematics and Informatics*, 33(2), 401-409.
- Chen, M. F. & Tung, P. J. (2014). Developing an extended theory of planned behavior model to predict consumers' intention to visit green hotels. *International journal of hospitality management*, 36, 221-230.
- Chishti, S. (2016). *Banking beyond banks and money, banking beyond banks and money*. Springer.
- Choi, H., Park, J., Kim, J., & Jung, Y. (2020). Consumer preferences of attributes of mobile payment services in South Korea. *Telematics and Informatics*, 51, 101397.
- Cooper, D. R. & Schindler, P. S. (2014). *Business Research Methods*. McGraw-Hill Irwin.
- Dolarlan, E. S. (2014). Assessing the effects of satisfaction and value on customer loyalty behaviors in service environments. *Management Research Review*, 37(8), 706-727.
- Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2021). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage publications.
- Hajli, N. & Lin, X. (2016). Exploring the security of information sharing on social networking sites: The role of perceived control of information. *Journal of Business Ethics*, 133(1), 111-123.
- Kelley, K., Hyde, J., & Bruwer, J. (2015). Usage rate segmentation: enriching the US wine market profile. *International Journal of Wine Research*, 7(2015), 49-61.
- Kim, C., Mirusmonov, M., & Lee, I. (2018). An empirical examination of factors influencing the intention to use mobile payment. *Computers in human behavior*, 26(3), 310-322.
- Kock, N. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach. *International Journal of e-Collaboration*, 11(4), 1-10.
- Koksal, M. H. (2016). The intentions of Lebanese consumers to adopt mobile banking. *International Journal of Bank Marketing*. 34(3), 327-346.
- Lankton, N., McKnight, D. H., & Thatcher, J. B. (2014). Incorporating trust-in-technology into Expectation Disconfirmation Theory. *The Journal of Strategic Information Systems*, 23(2), 128-145.
- Lee, M. C. (2009). Factors influencing the adoption of internet banking: An integration of TAM and TPB with perceived risk and perceived benefit. *Electronic Commerce Research and Applications*, 8(3), 130-141.
- Leong, K. & Sung, A. (2018). FinTech (Financial Technology): what is it and how to use technologies to create business value in fintech way?. *International Journal of Innovation, Management and Technology*, 9(2), 74-78.
- Liao, G. Y., Huang, H. C., & Teng, C. I. (2016). When does frustration not reduce continuance intention of online gamers? The expectancy disconfirmation perspective. *Journal of Electronic Commerce Research*, 17(1), 65-79.
- Lung-Guang, N. (2019). Decision-making determinants of students participating in MOOCs: Merging the theory of planned behavior and self-regulated learning model. *Computers & Education*, 134, 50-62.
- Mahmoud, M. A., Hinson, R. E., & Anim, P. A. (2018). Service innovation and customer satisfaction: the role of customer value creation. *European Journal of Innovation Management*, 21(3), 402-422.
- OJK. (2021). *Laporan Triwulan I OJK: Momentum stabilitas pemulihan ekonomi nasional*. Jakarta, Indonesia.
- Okazaki, S. & Mendez, F. (2013). Exploring convenience in mobile commerce: Moderating effects of gender. *Computers in Human Behavior*, 29(3), 1234-1242.
- Olaru, D., Purchase, S., & Peterson, N. (2008). From customer value to repurchase intentions and recommendations. *Journal of Business and Industrial Marketing*, 23(8), 554-565.
- Raza, S. A., Umer, A., Qazi, W., & Makhdoom, M. (2018). The effects of attitudinal, normative, and control beliefs on m-learning adoption among the students of higher education in Pakistan. *Journal of Educational Computing Research*, 56(4), 563-588.
- Rouibah, K., Lowry, P. B., & Hwang, Y. (2016). The effects of perceived enjoyment and perceived risks on trust formation and intentions to use online payment systems: New perspectives from an Arab country. *Electronic Commerce Research and Applications*, 19, 33-43.
- Ryu, H. S. (2018). What makes users willing or hesitant to use Fintech?: the moderating effect of user type. *Industrial Management & Data Systems*. 118(3), 541-569.
- Shin, Y. H. & Hancer, M. (2016). The role of attitude, subjective norm, perceived behavioral control, and moral norm in the intention to purchase local food products. *Journal of Foodservice*

- Business Research*, 19(4), 338-351.
- Stocchi, L., Pourazad, N., Michaelidou, N., Tanusondjaja, A., & Harrigan, P. (2021). Marketing research on Mobile apps: past, present and future. *Journal of the Academy of Marketing Science*, 1-31.
- Teoh, W. M. Y., Chong, S. C., Lin, B., & Chua, J. W. (2013). Factors affecting consumers' perception of electronic payment: an empirical analysis. *Internet Research: Electronic Networking Applications and Policy*, 23(4), 465-485.
- Thakor, A. V. (2020). Fintech and banking: What do we know?. *Journal of Financial Intermediation*, 41, 100833.
- Tussyadiah, I. P. (2016). Factors of satisfaction and intention to use peer-to-peer accommodation. *International Journal of Hospitality Management*, 55, 70-80.
- Xie, Q., Song, W., Peng, X., & Shabbir, M. (2017). Predictors for e-government adoption: integrating TAM, TPB, trust and perceived risk. *The Electronic Library*, 35(1), 2-20.
- Yang, H., Yu, J., Zo, H., & Choi, M. (2016). User acceptance of wearable devices: An extended perspective of perceived value. *Telematics and Informatics*, 33(2), 256-269.
- Yang, H., Lee, H., & Zo, H. (2017). User acceptance of smart home services: an extension of the theory of planned behavior. *Industrial Management & Data Systems*. 117(1), 68-89.
- Yang, S., Li, L., & Zhang, J. (2018). Understanding consumers' sustainable consumption intention at china's double-11 online shopping festival: An extended theory of planned behavior model. *Sustainability*, 10(6), 1-19.
- Zhao, Q., Chen, C. D., & Wang, J. L. (2016). The effects of psychological ownership and TAM on social media loyalty: An integrated model. *Telematics and Informatics*, 33(4), 959-972.