M-Commerce Service and Application to Enhance Repurchase Intention

Anis R. Amna and Supangat
Department of Informatics Engineering, University of 17 Agustus 1945 Surabaya, Jln. Semolowaru No. 45, Surabaya, Indonesia

Keywords: Retail M-Commerce Service and Application, Consumer's Purchase Intention, Stimulus Theoretical Framework

Abstract: Rapid development of M-Commerce application (M-Commerce apps) and highly competitive market encourage business to create innovative applications. Development of E-Marketplace in Indonesia increase competition among business due to application benefits in enhancing bonding between existing customers and the new one. In order to ensure repurchasing intention from customers, M-Commerce apps should be able to satisfy particular needs and to enhance customers shopping experience. This study aims to evaluate the M-Commerce application to enhance repurchasing intention using the apps. The data will be collected from 100 users and analysed using Partial Least Square – Structural Equation Modeling (SEM-PLS). The result shows that application features drive customer to perceive ease of use, while perceived of ease of use (PEoU) and information security are important factors to motivate users to use the mobile apps for repurchasing products.

1 INTRODUCTION

Vast growth of internet and mobile device penetration in Indonesia make this country become the largest e-commerce market in South East Asia (Priansa, 2016). Whilst E-Commerce channels are continually growing, nearly 75% of those transactions come through mobile devices (Social and Hootsuite, 2018).

The large population of mobile users drives massive development of online shopping technology, business model, and ecosystems through mobile applications. Customer loyalty program such as rewards, gamifications, and advertisement through the applications considered very important features to create customers' online behaviours (Hsu and Chen, 2018). This result is in line with previous studies that revealed the importance of gamifications and rewards for enhancing customers' intention to install mobile apps (Hwang and Choi, 2019) and strengthen customers commitment to consume products continuously (Leclercq, Hammedi and Poncin, 2018).

In Indonesia, retail stores are one of the most affected business sector influenced with the situations. The growth of online shopping channel such as Lazada, Tokopedia, and Bukalapak truly inspire small-medium business to broaden their business digitally. In addition, enormous supports from government and potential benefits from M-Commerce apps motivate them for joining E-Commerce apps to develop their own program. Most of SMEs' retail believe that adopting M-Commerce apps is a key for business to retain their relationship with customers through providing rewards, sharing their shopping experiences, and yield particular services as users need anytime anywhere (Iyer, Davari and Mukherjee, 2018; Wang, Ou and Chen, 2019).

However, even though m-commerce apps is considerably beneficial for both retailer and customers, but highly investment and lack of customers responses make this application need to evaluated to make sure that customers are willing to use application continuously (Onn Lee and Soon Wong, 2016). Thus, this study will focus on investigating what factors influence people to use M-Commerce apps, if the apps can motivate users to repurchase products using the channel, and whether customer is willing to use M-Commerce apps continuously.

R. Amna, A. and Supangat, .
M-Commerce Service and Application to Enhance Repurchase Intention.
DOI: 10.5220/0008433105150519
In *Proceedings of the 2nd International Conference on Inclusive Business in the Changing World (ICIB 2019)*, pages 515-519
ISBN: 978-989-758-408-4

2 LITERATURE REVIEW

M-Commerce apps concepts and development of internet technology bring enormous impact to Retail Small Medium Enterprise (SME's). While in the past people have bigger trust to brick-and-mortar shop, recently they tend to shop online through their fingers (Hew *et al.*, 2016).

M-Commerce apps users are continuously increase and have significant impact to business performance since the apps offering people new experience on shopping and browsing information quickly. Digital service delivery channel, E-Payment, and gamification are some attractive services for customers. However, study from (McLean, Al-Nabhani and Wilson, 2018) showed that instead of utilitarian factors of technology, enjoyment and screen size of mobile apps are also influence users to continue using m-commerce apps in the future.

Another studies had performed to analyse customer behaviour during mobile applications usage. Some factors related to the use of technology framework, such as Technology Acceptance Model (TAM), Unified Theory of Acceptance and Use of Technology (UTAUT) have been developed to respond customer behaviour within online environment (Taherdoost, 2018).

Structural Equation Modelling (SEM) through its Partial Least Square (PLS) is a good method for testing prediction-oriented goal as well as to provide evaluation procedure for complex model structures (Carlson *et al.*, 2017). PLS enable users to construct reflective and formative models, conduct concurrent analysis and develop hypothesis as well as investigate the relationship between variables in the same time (Hair Jr *et al.*, 2016). In marketing research, PLS-SEM considered as very supportive method for assessing the success of certain target constructs as well as for estimating, monitoring, and benchmarking particular key drivers of the model (Hair, Ringle and Sarstedt, 2011).

3 METHODOLOGY

First, a research model based on Stimulus Theoretical Framework (Lai, 2016) with context as an additional latent factor is constructed (figure 1). The additional dimension is included because it considered having correlation with customer loyalty and their intention for repurchasing products.

Afterwards, a set of close answer questionnaire was given to 150 of M-Commerce users and it succeed to collect 66.67% respond rate (100 data). To measure the repurchasing intention using M-Commerce apps, the five Likert-scale was used to represent degree of answers, start from 1 that represents strongly disagree to 5 that represents strongly agree.

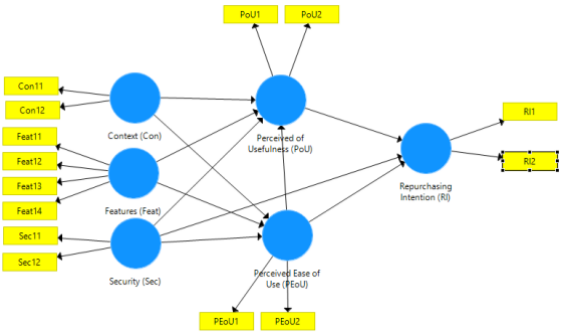

Figure 1: The Research Model

Dimensions and indicators that are used to construct the model are listed as follow:

Table 1: Dimensions, Indicators, and Instrument Items

Dimensions	Indicators	Instrument Items
Context (Con)	Advantages	Con11
	Good Idea	Con12
Features (Feat)	Information Quality	Feat11
	Service Benefits	Feat12
	Convenience	Feat13
	Easy to Use	Feat14
Security (Sec)	Information Security	Sec11
	Data Privacy Guarantee	Sec12
Perceived of Usefulness (PoU)	Fast Response	PoU1
	Real Time	PoU2
Perceived Ease of Use (PEoU)	Efficiency	PEoU1
	Customers' Satisfactions	PEoU2
Repurchasing Intention (RI)	Continuity	RI1
	Commitment	RI2

In order to obtain influential factors on repurchasing intention, following hypotheses were constructed:

H1: Context of information (Con) affects positively to perceived of usefulness (PoU)

H2: Context of information (Con) affects positively to perceived ease of use (PEoU)

H3: M-Commerce features (Feat) affects positively to perceived of usefulness (PoU)

H4: M-Commerce features (Feat) affects positively to perceived ease of use (PEoU)

H5: M-Commerce data and information security (Sec) affects positively to perceived of usefulness (PoU)
H6: M-Commerce data and information security (Sec) affects positively to perceived ease of use (PEoU)
H7: M-Commerce data and information security (Sec) affects positively to repurchasing intention (RI)
H8: Perceived ease of use (PEoU) affects positively to perceived of usefulness (PoU)
H9: Perceived ease of use (PEoU) affects positively to repurchasing intention (RI)
H10: Perceived of usefulness (PoU) effects positively to repurchasing intention (RI)

The data were analysed using Partial Least Square software after it passed reliability analysis to ensure model sufficiency. Composite reliability score in this research is more than or equal to 0.7 and Cronbach Alpha value should be more than 0.7 (Larasati, Widyawan and Santosa, 2017).

Our surveys get feedback from 100 M-Commerce apps users, where 50% of them are women and 35.3% are men. Regarding to the age, users who are willing to response dominantly ranging from 36 to 40 (35.3%) followed by age around 31 to 35 that represent 23.5% respondents. Among 100 users, 94.1% of them has experience to shop online using M-Commerce apps from Bukalapak (41.2%) and Shopee (35.3%).

4 RESULT AND DISCUSSION

Before deciding influential factors of repurchasing intention behaviour, sets of reliability and validity testing have been conducted. To obtain a valid model, loading factor of AVE for each latent variable should be above 0.5 (Ghozali, 2014). Table 2 show that the value of each latent variable is above 0.5, so each variable indicates qualified for the model.

Table 2: Latent Variable AVE Value

Dimension	AVE
Context (Con)	0.776
Features (Feat)	0.687
Security (Sec)	0.890
Perceived Ease of Use (PEoU)	0.609
Perceived of Usefulness (PoU)	0.770
Repurchasing Intention (RI)	0.788

In order to measure reliability, composite reliability and Cronbach's alpha value should be above 0.7 for explanatory research (Hair, Ringle and Sarstedt, 2011). Table 3 shows that composite reliability of each latent variable is above 0.7. That means that in terms of composite reliability test, all dimension in the model is reliable. However, the value of PEoU's Cronbach's alpha is below 0.7. Therefore, PEoU is not reliable to the model.

Table 3: Composite Reliability of Each Latent Variable

Dimension	Cronbach's Alpha	Composite Reliability
Context (Con)	0.712	0.874
Features (Feat)	0.846	0.897
Security (Sec)	0.877	0.942
Perceived Ease of Use (PEoU)	0.574	0.754
Perceived of Usefulness (PoU)	0.701	0.870
Repurchasing Intention (RI)	0.736	0.881

Structural model testing was conducted to investigate latent variables relationship in the model. It is started by calculating t-value of lanes coefficient and T-value by using two-tailed test. By comparing the value of lanes coefficient and T-Value, we can conclude whether the hypothesis among the lines were accepted or rejected. Minimum value of accepted T-Value according to t-table is 1.96. So, t-value below 1.96 will be rejected.

Table 4: Lanes's Coefficient, T-value, and Hypothesis Explanation of Each Latent Variable

Lanes	Lanes' Coef.	T-Val	Explanation
Con → PoU	0,102	0,610	Insignificant
Con → PEoU	0,251	1,623	Insignificant
PoU → Repurchasing Intention	0,117	1,135	Insignificant
PEoU→ Repurchasing Intention	0,333	3,394	Significant
PEoU → PoU	0,248	1,999	Significant
Feat → PoU	-0,051	0,331	Insignificant
Feat → PEoU	0,277	1,984	Significant
Security → PoU	0,369	2,898	Significant
Security → PEoU	0,207	1,390	Insignificant

Security → Repurchasing Intention	0,396	3,132	Significant

From the table 4 it is shown that repurchasing intention behaviour is influenced significantly by perceived of ease of use (PEoU), while in the same time perceived of ease of use (PEoU) and information security as well as data privacy guarantee also trigger user to believe that the apps is useful. Meanwhile, user perception about application simplicity is closely related to information quality, service, convenience, and easiness that should be represented in the features.

To evaluate the validity of structural model, variance of endogenous latent variables' should be high depends on particular research discipline. For customer behaviour study, high level of variance is represented by R-square >= 0.2. In this research, endogenous latent variables that should meet the R-square requirement are Perceived of Usefulness (PoU), Perceived of Ease of Use (PoU), and Repurchasing Intention. The result from table 5 shows that R-square value of each endogenous latent variable is above 0.2, therefore the model is sufficient to show customer behaviour.

Table 5: R^2 value of Endogenous Latent Variable

Endogenous Variable	R-Square
Perceived of Ease of Use (PEoU)	0,419
Perceived of Usefulness (PoU)	0,342
Intention to Repurchase	0,521

Finally, acceptance of the proposed hypothesis will be analysis since the structural model testing showed good result. For doing so, each lanes of dimension will be represented by hypothesis and T-value then the decision will be made by comparing T-value to t-table using two-tailed test at significance level of 0.05 (t-value >=1.96, p-value <=0.05).

Table 6: Hypothesis testing and conclusions

Lanes	Hypo-tesis	T-Value	P-Value	Explanation
Con -> PoU	H1	0,61	0,542	Hypotesis was rejected
Con -> PEoU	H2	1,623	0,105	Hypotesis was rejected
PoU -> Intention to Repurchase	H3	1,135	0,257	Hypotesis was rejected
PEoU -> Intention to Repurchase	H4	3,394	0,001	Hypotesis was accepted
PEoU -> PoU	H5	1,999	0,046	Hypotesis was accepted
Feat -> PoU	H6	0,331	0,741	Hypotesis was rejected
Feat -> PEoU	H7	1,984	0,047	Hypotesis was accepted
Security -> PoU	H8	2,898	0,004	Hypotesis was accepted
Security ->PEoU	H9	1,39	0,165	Hypotesis was rejected
Security -> Intention to Repurchase	H10	3,132	0,002	Hypotesis was accepted

5 CONCLUSION

To conclude, this study aims to understand influential factors on M-Commerce use in customer's repurchasing intention. In order to achieve the objectives, a research model based on Stimulus Theoretical Framework and Technology Acceptance Model is developed. The result showed that perceived of ease of use (PEoU) and security factors were dominantly control user repurchasing behaviours, while perceived ease of use and security factors were also lead to usefulness perception on the M-Commerce apps.

While M-Commerce apps is closely related to E-Payment, this research find that security plays significant impact on user willingness to use the apps and repurchasing intention. Thus, this finding is important for further development of M-Commerce apps since improvement on data privacy guarantee and information security will increase customers' trust therefore will rise the number of M-Commerce users. The finding is similar to prior studies (Jahangir and Begum, 2013; Lai, 2016; Chong *et al.*, 2018) that mentioned M-Commerce security as an important factor for customer decision making and adaptation.

In terms of M-Commerce features, convenience and information quality are prominent for repurchasing intention. In this research, this situation occurs because particular knowledge is essential for purchasing certain products. This finding is similar with the finding from previous studies (Kassim *et al.*, 2012; Lai, 2016). However, the reliability test found that PEoU's value is unreliable, thus the hypothesis acceptance related to PEoU should be further analysed to find out whether this phenomenon only happened in specific M-Commerce retail applications or in general apps.

ACKNOWLEDGEMENTS

The authors would like to acknowledge the Research and Community Service of University of 17 Agustus 1945 Surabaya and Arrayana Honey for the financial and data support in conducting the research.

REFERENCES

Carlson, J. *et al.* (2017) 'Feel the VIBE: Examining value-in-the-brand-page-experience and its impact on satisfaction and customer engagement behaviours in mobile social media', *Journal of Retailing and Consumer Services*. Elsevier Ltd, 46(October 2017), pp. 149–162. doi: 10.1016/j.jretconser.2017.10.002.

Chong, I. *et al.* (2018) 'Influence of privacy priming and security framing on mobile app selection', *Computers and Security*. Elsevier Ltd, 78, pp. 143–154. doi: 10.1016/j.cose.2018.06.005.

Ghozali, I. (2014) *Structural equation modeling: metode alternatif dengan partial least square (PLS)*. Semarang: Badan Penerbit Universitas Diponegoro. Available at: https://books.google.co.id/books?id=x1ZAngAACAAJ.

Hair, J. F., Ringle, C. M. and Sarstedt, M. (2011) 'PLS-SEM: Indeed a Silver Bullet', *The Journal of Marketing Theory and Practice*, 19(2), pp. 139–152. doi: 10.2753/MTP1069-6679190202.

Hair Jr, J. F. *et al.* (2016) *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage Publications.

Hew, J. J. *et al.* (2016) 'Mobile social commerce: The booster for brand loyalty?', *Computers in Human Behavior*. Elsevier Ltd, 59, pp. 142–154. doi: 10.1016/j.chb.2016.01.027.

Hsu, C. L. and Chen, M. C. (2018) 'How gamification marketing activities motivate desirable consumer behaviors: Focusing on the role of brand love', *Computers in Human Behavior*. Elsevier, 88(June), pp. 121–133. doi: 10.1016/j.chb.2018.06.037.

Hwang, J. and Choi, L. (2019) 'Having fun while receiving rewards?: Exploration of gamification in loyalty programs for consumer loyalty', *Journal of Business Research*. Elsevier, (November 2017), pp. 1–12. doi: 10.1016/j.jbusres.2019.01.031.

Iyer, P., Davari, A. and Mukherjee, A. (2018) 'Investigating the effectiveness of retailers' mobile applications in determining customer satisfaction and repatronage intentions? A congruency perspective', *Journal of Retailing and Consumer Services*. Elsevier Ltd, 44(January), pp. 235–243. doi: 10.1016/j.jretconser.2018.07.017.

Jahangir, N. and Begum, N. (2013) 'The role of perceived usefulness, perceived ease of use, security and privacy, and customer attitude to engender customer adaptation in the context of electronic banking', *African Journal of Business Management*, 2(1), pp. 32–40. Available at: http://www.academicjournals.org/AJBM.

Kassim, E. S. *et al.* (2012) 'Information System Acceptance and User Satisfaction: The Mediating Role of Trust', *Procedia - Social and Behavioral Sciences*. Elsevier B.V., 57, pp. 412–418. doi: 10.1016/j.sbspro.2012.09.1205.

Lai, P. C. (2016) 'Design and Security impact on consumers' intention to use single platform E-payment', *Interdisciplinary Information Sciences*, 22(1), pp. 111–122. doi: 10.4036/iis.2016.R.05.

Larasati, N., Widyawan and Santosa, P. I. (2017) 'Technology Readiness and Technology Acceptance Model in New Technology Implementat ion Process in Low Technology SME s', *International Journal of Innovation, Management and Technology*, 8(2), pp. 113–117. doi: 10.18178/ijimt.2017.8.2.713.

Leclercq, T., Hammedi, W. and Poncin, I. (2018) 'The Boundaries of Gamification for Engaging Customers: Effects of Losing a Contest in Online Co-creation Communities', *Journal of Interactive Marketing*. Elsevier Inc., 44, pp. 82–101. doi: 10.1016/j.intmar.2018.04.004.

McLean, G., Al-Nabhani, K. and Wilson, A. (2018) 'Developing a Mobile Applications Customer Experience Model (MACE)- Implications for Retailers', *Journal of Business Research*. Elsevier, 85(February 2017), pp. 325–336. doi: 10.1016/j.jbusres.2018.01.018.

Onn Lee, W. and Soon Wong, L. (2016) 'Determinants of Mobile Commerce Customer Loyalty in Malaysia', *Procedia - Social and Behavioral Sciences*. Elsevier B.V., 224(August 2015), pp. 60–67. doi: 10.1016/j.sbspro.2016.05.400.

Priansa, D. J. (2016) 'Pengaruh E-Wom dan Persepsi Nilai Terhadap Keputusan Konsumen untuk Berbelanja Online di Lazada', *Ecodemia*, IV(1), pp. 117–124.

Social, W. A. and Hootsuite (2018) *Digital in 2018 Essential Insight into Internet, Social Media, Mobile, and E-Commerce Use Around the World*.

Taherdoost, H. (2018) 'A review of technology acceptance and adoption models and theories', *Procedia Manufacturing*. Elsevier B.V., 22, pp. 960–967. doi: 10.1016/j.promfg.2018.03.137.

Wang, W. T., Ou, W. M. and Chen, W. Y. (2019) 'The impact of inertia and user satisfaction on the continuance intentions to use mobile communication applications: A mobile service quality perspective', *International Journal of Information Management*. Elsevier, 44(October 2018), pp. 178–193. doi: 10.1016/j.ijinfomgt.2018.10.011.