# How Do the UTAUT and IS Success Model Create Mobile Payment Loyalty?

[1]David Panta Palado, [2]Yolanda Masnita, [3]Kurniawati

[1, 2, 3,] *(Magister Management, Universities Trisakti, Indonesia)*

## ABSTRACT

Mobile payment has become a new trend in payment services, transforming cash transactions into a practical online option. In Indonesia, there is a great opportunity to develop mobile payment services. However, mobile payment products face high switching rates and fierce competition. One strategy to face competition is by building loyalty. This study used a quantitative approach to identify internal and external factors that contribute to loyalty towards mobile payments. By combining the UTAUT and IS Success Model frameworks, this study found that both internal and external factors affect satisfaction and loyalty. However, system quality (an internal factor) does not always have a positive effect on satisfaction and loyalty, while effort expectancy (an external factor) has a significant positive effect on satisfaction and can indirectly influence loyalty through satisfaction. These findings provide important insights into the factors that influence customer satisfaction and loyalty in the use of mobile payment services. From a managerial and industry perspective, to increase customer loyalty in the context of mobile payments in Indonesia, companies must have attention to both system quality and effort expectancy.

**KEYWORDS -** effort expectancy, mobile payment, loyalty, satisfaction, system quality

## 1. INTRODUCTION

Mobile payments have become a new trend in the world of payment services, turning cash in to seamless and online. By using mobile devices, such as smartphones can easily make payments for various goods and services. This innovative concept has gained widespread public attention and has become a favorite payment method for many people (Loh et al., 2021).

In 2019, 355.5 million people in Indonesia used mobile devices, exceeding the population (Tomato Digital Indonesia, 2020). With a large population and the rapid development of mobile and internet technology, Indonesia has a great opportunity to develop mobile payment services. In 2020, 43% of companies in Indonesia engaged in financial technology focused on facing competition by providing the best service (Marginingsih et al., 2019). Some examples of mobile payment services in Indonesia include GO-PAY, OVO, DANA, and LINKAJA (CNBC, 2019).

Among mobile payment products face high switching rates competition. Therefore, it is important to increase the use of the system, providers must retain customers and build long-term relationships (Peng et al., 2013). Among mobile payment products face high switching rates and fierce competition. Therefore, it is important to increase the use of the system, providers must retain customers and build long-term relationships (Dang et al., 2023).

There is currently mobile payments research looking for factors that influence loyalty: the first study, using UTAUT (acceptance system focusing on external factors) mediated by satisfaction supported 67.6% of loyalty (Sheila Elok & Hidayati, 2021). The second study, using the IS Success Model (acceptance system focuses on internal factors) mediated by satisfaction supports loyalty (Yuan et al., 2020).

In order to look for other factors that support customer loyalty with a more comprehensive approach, researchers follow the advice of previous studies that require further research. One such suggestion is to combine two frameworks, namely UTAUT (external system acceptance) and the IS Success Model (internal system acceptance), to find the factors that contribute to loyalty. The study wanted to examine what relationship between two factors of system quality (one of the UTAUT variables) and effort expectancy (one of the variables of the IS Success Model) were considered to have similarities to assess how easy or difficult it is to use a system. System quality evaluates system quality thoroughly, while effort expectancy reflects users' perception of how easy it is to use

(Albashrawi & Motiwalla, 2017).

To contribute to knowledge, research is expected to produce new knowledge and overcome gaps in the existing literature. The hope is that by identifying the internal and external factors that interact with each other, this research can provide new and deeper knowledge about loyalty to the use of mobile payments.

## 2. LITERATURE REVIEW

**Satisfaction**
Satisfaction means when customers feel happy with the product or service customer are using and all their expectations are met (Ranjbarian et al., 2012).

**IS Success Model: System quality**
System quality is the ability of a system to meet user expectations in terms of performance, reliability, security, and ease of use. This includes speed, efficiency, and troubleshooting or error handling (Yuan et al., 2020).

System quality is very important in e-Learning systems because it positively affects satisfaction. To ensure user satisfaction and intention to continue using the system, it is necessary to maintain and repair regularly. By paying attention to the quality system, users will feel more satisfied and motivated to use the e-Learning system (Dreheeb et al., 2016). Therefore, for now raised hypotheses:

Hypothesis 1: Mobile payment system quality has a positive impact on satisfaction.

**UTAUT: Effort expectancy**
Effort expectancy measures how easy it is to use a system (Esawe, 2022). Effort expectancy means an experience that makes users feel like customer don't need much effort and time to use the system (Thompson et al., 1991). The system or innovation should provide good results and not make users feel difficult when using it (Odoom & Kosiba, 2020).

Research in e-Government technology explains that the easier it is to use and the less effort it takes, the higher the level of user satisfaction (Chan et al., 2010). However, in another study of e-wallet services, there was no strong relationship between ease of use and user satisfaction (Syifa, 2020). Therefore, for now raised hypotheses:

Hypothesis 2: Mobile payment system effort expectancy has a positive impact on satisfaction

**Loyalty**
In the mobile services industry, loyalty means that customers always support and reuse the services offered, even when there are competing companies trying to advertise the product. The goal is for customers to keep choosing services from companies that provide the best alternatives (Lubaba et al., 2022).

Research has found that satisfied users tend to use mobile payment services regularly and have high levels of loyalty. This is because high satisfaction discourages customers from switching to another provider and helps form long-term relationships with businesses that provide a satisfying customer experience (Bhattacherjee, 2001). Therefore, for now raised hypotheses:

Hypothesis 3: Mobile payment satisfaction has a direct positive influence on loyalty.

Improving the quality system in online customer service makes loyalty higher. A good system helps customers have a pleasant experience, such as easy transactions, fast processing orders, and clear and complete information ((Schwake et al., 2015).

Hypothesis 4: Mobile payment system quality has a direct positive influence on loyalty.
LinkAja's ease of use positively affects loyalty, because the easier it is to use, the higher the likelihood of loyalty and increased usage (Tamara et al., 2020).

Hypothesis 5: Effort expectancy of mobile payments has a direct positive influence on loyalty.

High-quality mobile payment systems provide users with a positive experience, such as fast, reliable, and easy-to-use transactions. This satisfaction makes users more loyal and satisfied, which ultimately improves the overall user experience (Yuan et al., 2020).

Hypothesis 6: Mobile payment systems quality have a positive influence on  satisfaction-mediated loyalty. Satisfaction acts as a liaison for effort expectancy, loyalty of  the digital wallet industry; Effort expectancy does not directly affect satisfaction  (Yuen et al., 2023).

Hypothesis 7: Mobile payment effort expectancy has a positive influence on loyalty mediation through satisfaction.
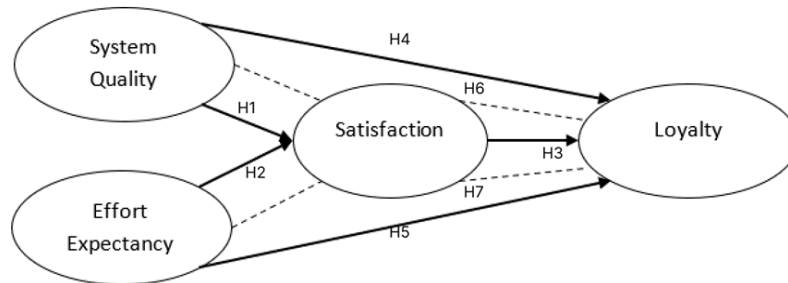


Figure 1. Research Framework

## 3.  METHOD

The study continued by explaining the cause-and-effect relationship between the research variables and testing the hypothesis. The goal is to find out the cause and effect relationship between the variables under study.

To collect demographic information about individuals who used at least one mobile payment transaction for more than 6 months. Purposive random sampling approach is used to conduct online surveys using a Likert scale from 1 to 5. The questions are adopted and modified from several existing sources such as system quality (Jun et al., 2008), effort expectancy (Venkatesh et al., 2003), satisfaction (Bhattacherjee, 2001) , dan loyalty (Chang & Yeh, 2017).

Data is processed using SEM methods  to test new ideas in research on business and marketing. This method allows loyalty to analyze data from a considerable number of respondents (Martínez-López et al., 2013). The determination of the number of respondents to be surveyed is to multiply the number of questions by five to ten (Hair et al., 2010). The number of respondents for this study is 160 people (number of questions multiplied by 10).

## 4.  RESULT AND DISCUSSION

The results of the data processing analysis that has been carried out are presented in Table 1.
Table 1 Characteristics of Respondents

|  | Criterion | Frequency | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Gender | Man | 100 | 51.0 | 51.0 |
|  | Woman | 96 | 49.0 | 49.0 |
| Education | High school graduates / equivalent | 43 | 21.9 | 21.9 |
|  | Bachelor 's degree | 11 | 5.6 | 5.6 |
|  | Master's Degree | 35 | 17.9 | 17.9 |
|  | Doctorate | 107 | 54.6 | 54.6 |
| Age | 17 - 22 Years | 27 | 13.8 | 13.8 |
|  | 23 - 28 Years | 37 | 18.9 | 18.9 |
|  | 29 - 34 Years | 28 | 14.3 | 14.3 |
|  | 35 - 40 Years | 28 | 14.3 | 14.3 |
|  | 41 - 46 Years | 22 | 11.2 | 11.2 |
|  | 47 - 52 years | 17 | 8.7 | 8.7 |
|  | > 53 Years Old | 37 | 18.9 | 18.9 |

| Income / allowance per month | 1,000,000 - 2,000,000 | 58 | 29.6 | 29.6 |
|---|---|---|---|---|
| | 2,000,001 - 3,000,000 | 113 | 57.7 | 57.7 |
| | 3,000,001 - 4,000,000 | 25 | 12.8 | 12.8 |
| Long use of the product | 6-12 Months (1 Year) | 39 | 19.9 | 19.9 |
| | 1-2 Years | 29 | 14.8 | 34.7 |
| | >2 Years | 128 | 65.3 | 100.0 |
| Average frequency of use | 1 time a month | 50 | 25.5 | 25.5 |
| | 1 time in 2 weeks | 28 | 14.3 | 14.3 |
| | 1 or more times in 1 week | 72 | 36.7 | 36.7 |
| | 1 or more times in 1 day | 46 | 23.5 | 23.5 |

The data explains that the majority of the respondent population consists of both men and women, with a slightly higher percentage of men (51.0%) than women (49.0%). Most respondents have a Doctorate degree (54.6%), and 65.3% are long-term users. Most respondents have monthly income in the range of 2,000,001-3,000,000. Most respondents (65.3%) have been using this product for more than 2 years, indicating a loyal and potential customer base in terms of satisfaction. The most common frequency of use was once or more a week (36.7%), followed by once a month (25.5%), once or more a day (23.5%), and once every 2 weeks (14.3%).

The results of factor loading data that have been carried out are presented in Table 2.

Table 2 Factor Loadings based on Sample Size

| Factor Loading | Sample Size |
|---|---|
| 0.30 | 350 |
| 0.35 | 250 |
| 0.40 | 200 |
| 0.45 | 150 |
| 0.50 | 120 |
| 0.55 | 100 |

Validity testing is carried out to ensure that the indicators used in the study can measure variables accurately and correctly reflect what customer want to measure (Hair et al., 2010). The use of a statistical method called factor loading is done to test validity. When the questionnaire closed, 227 respondents had filled out the questionnaire. If everything is included in the data analysis, then loyalty will have a sample of 200 respondents with a loading factor of 0.40. However, only 196 respondents were included in the calculation, meaning that it entered the category of 150 people where the loading factor was 0.45. Although the number is different, it still corresponds to the sample size needed.

The results of validity testing and reliability testing that have been carried out are presented in Table 3.

Table 3 Validity Testing and Reliability Testing

| Indicator | Validity testing | | Reliability Testing | |
|---|---|---|---|---|
| | Factor loading | Conclusion | Cronbach Alpha | Result |
| System quality | | | | |
| SQ1 | 0.933 | Valid | 0.921 | Reliable |
| SQ2 | 0.879 | Valid | | |
| SQ3 | 0.865 | Valid | | |
| SQ4 | 0.921 | Valid | | |
| Effort expectancy | | | | |
| EE1 | 0.929 | Valid | 0.946 | Reliable |
| EE2 | 0.928 | Valid | | |

| EE3 | 0.940 | Valid | | |
|---|---|---|---|---|
| EE4 | 0.918 | Valid | | |
| Satisfaction | | | | |
| SAT1 | 0.941 | Valid | 0.960 | Reliable |
| SAT2 | 0.903 | Valid | | |
| SAT3 | 0.920 | Valid | | |
| SAT4 | 0.935 | Valid | | |
| SAT5 | 0.951 | Valid | | |
| Loyalty | | | | |
| LOY1 | 0.905 | Valid | 0,914 | Reliable |
| LOY2 | 0.928 | Valid | | |
| LOY3 | 0.937 | Valid | | |

Reality testing measures the consistency and accuracy of measurements of the indicators used. In this case, the indicators are considered reliable because their Cronbach's Alpha value is greater than 0.60, which indicates a consistent measurement.

Based on reality and validity, it can be concluded that these indicators are valid and reliable in the context of this study.

The results of the average value and standard deviation that have been carried out are presented in Table 4.
Table 4 Average and Standard Deviation

| | N | Minimum | Maksimum | Rata-rata | Standar Deviasi |
|---|---|---|---|---|---|
| System quality | | | | | |
| SQ1 | 196 | 1.00 | 5.00 | 4.4082 | 0.94827 |
| SQ2 | 196 | 1.00 | 5.00 | 4.2908 | 0.96722 |
| SQ3 | 196 | 1.00 | 5.00 | 4.2347 | 0.95328 |
| SQ4 | 196 | 1.00 | 5.00 | 4.2959 | 0.93599 |
| Effort expectancy | | | | | |
| EE1 | 196 | 1.00 | 5.00 | 4.3520 | 0.94111 |
| EE2 | 196 | 1.00 | 5.00 | 4.2959 | 0.91382 |
| EE3 | 196 | 1.00 | 5.00 | 4.4286 | 0.86528 |
| EE4 | 196 | 1.00 | 5.00 | 4.3316 | 0.93766 |
| Satisfaction | | | | | |
| SAT1 | 196 | 1.00 | 5.00 | 4.2959 | 0.89109 |
| SAT2 | 196 | 1.00 | 5.00 | 4.1582 | 1.00281 |
| SAT3 | 196 | 1.00 | 5.00 | 4.2755 | 0.88614 |
| SAT4 | 196 | 1.00 | 5.00 | 4.3265 | 0.88027 |
| SAT5 | 196 | 1.00 | 5.00 | 4.2806 | 0.85804 |
| Loyalty | | | | | |
| LOY1 | 196 | 1.00 | 5.00 | 4.3112 | 0.92269 |
| LOY2 | 196 | 1.00 | 5.00 | 4.1786 | 0.93576 |
| LOY3 | 196 | 1.00 | 5.00 | 4.1378 | 0.95885 |

In table 4, the average processes the middle value of the data that indicates the most common or central value of that data. The indicator closest to 5.00 is the one that best represents that variable. The SQ1 indicator has an average value of 4.4082, which indicates high system quality. The EE3 indicator shows a strong level of effort expectancy. The SAT4 indicator shows a good level of satisfaction, and the LOY1 indicator shows a high level of user loyalty.

Standard deviation processes the size of data variations, and the smaller the value, the more stable or consistent the data will be. The SQ indicator has a low standard deviation of 0.93599, which indicates a stable level of quality.

The EE3 indicator has a low standard deviation of 0.86528, and the SAT indicator has a narrow variation. The LOY indicator has a moderate standard deviation of 0.95885, which indicates moderate variation in user ratings.

The results of the fit assessment indicator value after being carried out are presented in Table 5.

Table 5 Fit Assessment Indicators

| Type Measurement | Measurement | Model Fit | Output | Decision |
|---|---|---|---|---|
| Absolute fit measures | Chi-square | low Chi Square | 254,146 | |
| | p-value Chi-Square | ≥ 0,05 | 0.000 | Tidak fit |
| | GFI | ≥ 0,90 | 0. 853 | Marginal fit |
| | RMSEA | ≤ 0,10 | 0.090 | Model fit |
| | NFI | ≥ 0,90 | 0. 937 | Model fit |
| | YOUTH | ≥ 0,90 | 0. 960 | Model fit |
| | TLI | ≥ 0,90 | 0. 951 | Model fit |
| | CFI | ≥ 0,90 | 0. 960 | Model fit |
| Parsimonius fit meassure | CMIN/DF | between 1 and 5 | 2,593 | Model fit |

Table 5 describes the evaluation of model suitability as essential for testing hypotheses in SEM. Of the 8 criteria used, 6 criteria meet predetermined requirements. These criteria include RMSEA, NFI, IFI, TLI, CFI, and CMIN/DF. A fairly good fit of the model is indicated by these criteria. There are also several other criteria such as GFI which indicates moderate conformity and chi-square p-value which indicates poor fit. Although not all criteria are met, it can still proceed with hypothesis testing.

Table 6 Research Hypothesis Testing

| | Hypothesis | Estimate | C.R. | P | Conclusion |
|---|---|---|---|---|---|
| H1 | Mobile payment quality system has a positive impact on customer satisfaction | -0.269 | -1.113 | 0.133 | Not supported |
| H2 | Effort expectancy has a positive impact on customer satisfaction | 1.183 | 4.569 | 0.000 | Supported |
| H3 | Customer Satisfaction has a positive impact on loyalty | 0.570 | 3.914 | 0.000 | Supported |
| H4 | Mobile payment quality system has a positive impact on Loyalty | 0.289 | 1.090 | 0.138 | Not supported |
| H5 | Effort expectancy has a positive impact on Loyalty | 0.008 | 0.023 | 0.491 | Not supported |
| H6 | System quality has a positive impact on loyalty mediated by customer satisfaction | -0.153 | -1.069 | 0.142 | Not supported |
| H7 | Performance Expectations impact loyalty mediated by customer satisfaction | 0.674 | 2.967 | 0.001 | Supported |

**Hypothesis 1**

The first hypothesis states that the quality system of mobile payments has a positive impact on satisfaction. This means that if the mobile payment system works well, customer will feel happy. However, when the results of the study were analyzed, it was found that this was not true. Actually, when the mobile payment system works better, customer feels less happy by -0.269. This means that the hypothesis that mobile payment quality systems positively affect satisfaction is not proven.

**Hypothesis 2**

The second hypothesis examines the relationship between effort expectancy and satisfaction, with a coefficient of 1.183, supporting the view that effort expectancy positively impacts satisfaction. A statistical t-value of 4.569 and a p-value of 0.000 indicate that the results of the study are very strong and significant. Because the p-value is

less than 0.05, it can be concluded that the hypothesis stating that the effort expectancy of mobile payment systems has a positive effect on satisfaction is supported by data.

**Hypothesis 3**
The third hypothesis examines the relationship between satisfaction and loyalty, with a coefficient of 0.570 indicating a positive relationship, supporting the hypothesis that satisfaction positively affects loyalty. A statistical t value of 3.974 and a p-value of 0.000 indicate that the results of the study are very strong and significant. Because the p-value is less than 0.05, it can be concluded that the hypothesis that satisfaction has a direct positive influence on loyalty is supported by data.

**Hypothesis 4**
The fourth hypothesis explores the impact of system quality on loyalty. Results showed that improved quality of mobile payments increased loyalty by 0.289, while decreased quality decreased it. A statistical t-value of 1.090 and a p-value of 0.138 indicate that the results of the study are not significant. Since the p-value is greater than 0.05, it can be concluded that the hypothesis that the quality of mobile payment systems has a direct positive influence on loyalty is not supported by data.

**Hypothesis 5**
The fifth hypothesis explores the impact of effort expectancy on loyalty. The results showed that an increase in effort expectancy increased loyalty by 0.008, while a decrease decreased it. A statistical t value of 0.023 and a p-value of 0.491 indicate that the results of the study are not significant. Since the p-value is greater than 0.05, it can be concluded that the hypothesis that the effort expectancy of mobile payment systems has a direct positive influence on loyalty is not supported by data.

**Hypothesis 6**
The sixth hypothesis explores the impact of system quality on loyalty, mediated by satisfaction. Results showed that improved mobile payment quality decreased loyalty by -0.153 with satisfaction mediating, while a decrease increased it. Thus, the hypothesis that the quality system of mobile payments positively affects loyalty mediated by satisfaction is not proven.

**Hypothesis 7**
The seventh hypothesis explores the impact of effort expectancy on loyalty, mediated by satisfaction. Results showed that an increase in effort expectancy increased loyalty by 0.674 mediated by satisfaction, while a decrease decreased it. A statistical t value of 2.967 and a p-value of 0.001 indicate that the results of the study are very strong and significant. Since the p-value is less than 0.05, it can be concluded that the hypothesis that the effort expectancy of mobile payment systems positively affects loyalty mediated by satisfaction is supported by data.

## 5. CONCLUSION

This research identified both internal & external factors that interact and contribute to loyalty in using mobile payment services. Internal factors are related to the mobile payment services system, such as system quality, while external factors are related to factors coming from outside the system, such as effort expectancy.

In terms of the novelty of knowledge, it is concluded that both internal and external factors affect satisfaction and loyalty. However, the results show that system quality (internal factors) does not always have a positive effect on satisfaction and loyalty. On the other hand, effort expectancy (external factors) has a significant positive influence on satisfaction and can affect loyalty indirectly through satisfaction. The relationship between internal and external factors was evident in this study. Both internal and external factors affect satisfaction and loyalty, but their effects can vary depending on specific factors.

From a managerial and industrial perspective, in an effort to increase customer loyalty in the context of mobile payments in Indonesia, companies must pay attention to both system quality and effort expectancy. Companies should also note that improving system quality does not always have a positive impact on satisfaction and loyalty. Companies should strive to facilitate the use of mobile payment systems for customers to improve system quality and ultimately increase customer satisfaction and loyalty.

These findings provide an important understanding of the factors that influence customer satisfaction and loyalty in the use of mobile payment services. For future research, it would be better to involve other countries to expand loyalty understanding of the adoption, use, and influence of mobile payment systems in various market contexts. Cross-border research can compare differences in regulatory policies, technology infrastructure, user preferences, and socio-cultural aspects that influence the success of mobile payment systems, thereby identifying key factors

that support successful implementation and hinder adoption in other countries.

# REFERENCES

1. Albashrawi, M., & Motiwalla, L. (2017). Association for Information Systems AIS Electronic Library (AISeL) When IS Success Model Meets UTAUT in a Mobile Banking Context: A Study of Subjective and Objective System Usage. http://aisel.aisnet.org/sais2017

2. Bhattacherjee, A. (2001). An empirical analysis of the antecedents of electronic commerce service continuance. In Decision Support Systems (Vol. 32). www.elsevier.comrlocaterdsw

3. Chan, F. K., Thong, J. Y., Venkatesh, V., Brown, S. A., Jen-Hwa Hu, P., & Yan Tam, K. (2010). Issue 10 ♣ Article 1. In Journal of the Association for Information (Vol. 11, Issue 10). http://ssrn.com/abstract=1976951Electroniccopyavailableat:https://ssrn.com/abstract=1976951

4. Chang, Y. H., & Yeh, C. H. (2017). Corporate social responsibility and customer loyalty in intercity bus services. Transport Policy, 59, 38–45. https://doi.org/10.1016/j.tranpol.2017.07.001

5. CNBC. (2019). Daftar 10 Dompet Digital Terpopuler di RI, Siapa Jawaranya? https://www.cnbcindonesia.com/tech/20190815104730-37-92151/daftar-10-dompet-digital-terpopuler-di-ri-siapa-jawaranya

6. Dang, T. Q., Tan, G. W. H., Aw, E. C. X., Ooi, K. B., Metri, B., & Dwivedi, Y. K. (2023). How to generate loyalty in mobile payment services? An integrative dual SEM-ANN analysis. International Journal of Bank Marketing. https://doi.org/10.1108/IJBM-05-2022-0202

7. Dreheeb, A. E., Basir, N., & Fabil, N. (2016). Impact of System Quality on Users' Satisfaction in Continuation of the Use of e-Learning System. International Journal of E-Education, e-Business, e-Management and e-Learning, 6(1), 13–20. https://doi.org/10.17706/ijeeee.2016.6.1.13-20

8. Esawe, A. T. (2022). Understanding mobile e-wallet consumers' intentions and user behavior. Spanish Journal of Marketing - ESIC, 26(3), 363–384. https://doi.org/10.1108/SJME-05-2022-0105

9. Hair, J. F., Black, W. C., & Babin, B. J. (2010). Multivariate Data Analysis: A Global Perspective. Pearson Education. https://books.google.co.id/books?id=SLRPLgAACAAJ

10. Jun, E., Liao, H., Savoy, A., Zeng, L., & Salvendy, G. (2008). The design of future things, by D. A. Norman, basic books, New York, NY, USA. In Human Factors and Ergonomics in Manufacturing (Vol. 18, Issue 4). https://doi.org/10.1002/hfm.20127

11. Loh, X. M., Lee, V. H., Tan, G. W. H., Ooi, K. B., & Dwivedi, Y. K. (2021). Switching from cash to mobile payment: what's the hold-up? Internet Research, 31(1), 376–399. https://doi.org/10.1108/INTR-04-2020-0175

12. Lubaba, H., Rohman, F., & Surachman. (2022). Leveraging experience quality to increase loyalty of digital wallet user in Indonesia. International Journal of Research in Business and Social Science (2147- 4478), 11(5), 46–56. https://doi.org/10.20525/ijrbs.v11i5.1847

13. Marginingsih, R., Widiyanti, W., Susilowati, I. H., Retnowulan, J., & Soraya, I. (2019). Mobile Payment As Financial Transactions in the Digital Era: An Empirical Analysis. IOP Conference Series: Materials Science and Engineering, 662(2). https://doi.org/10.1088/1757-899X/662/2/022133

14. Martínez-López, F. J., Gázquez-Abad, J. C., & Sousa, C. M. P. (2013). Structural equation modelling in marketing and business research: Critical issues and practical recommendations. European Journal of Marketing, 47(1), 115–152. https://doi.org/10.1108/03090561311285484

15. Odoom, R., & Kosiba, J. P. (2020). Mobile money usage and continuance intention among micro enterprises in an emerging market – the mediating role of agent credibility. Journal of Systems and Information Technology, 22(4), 97–117. https://doi.org/10.1108/JSIT-03-2019-0062

16. Peng, J., Quan, J., & Zhang, S. (2013). Mobile phone customer retention strategies and Chinese e-commerce. Electronic Commerce Research and Applications, 12(5), 321–327. https://doi.org/10.1016/j.elerap.2013.05.002

17. Ranjbarian, B., Sanayei, A., Kaboli, M. R., & Hadadian, A. (2012). An Analysis of Brand Image, Perceived Quality, Customer Satisfaction and Re-Purchase Intention in Iranian Department Stores. International Journal of Business and Management, 7(6). https://doi.org/10.5539/ijbm.v7n6p40

18. Schwake, H. I., Ganis Sukoharsono, E., & Handayani, S. R. (2015). Effect of Quality Information, Quality System and Quality Service to Customer Satisfaction and Customer Loyalty (Empirical Study on Customer Service Online E-Ticket in Pt. BTRAV Connection Malang). 17, 42–48. https://doi.org/10.9790/487X-17464248

19. Sheila Elok, C., & Hidayati, A. (2021). Customer Loyalty in Digital Wallet Industry: The Role of Satisfaction, Effort Expectancy, Performance Expectancy, and Habit.

20. Syifa, N. (2020). ICIMTech 2020: proceedings of 2020 International Conference on Information Management and Technology (ICIMTech): 13s-14 August 2020, Indonesia (Syifa, Ed.).

21. Tamara, D., Roesmawi, F., Febria, H., & Ariesta, I. D. (2020). Customer Loyalty Indicator of Mobile

Payment Application in the Financial Service Industry: A Study of LinkAja. International Journal of Scientific Research and Management, 8(01), 1527–1539. https://doi.org/10.18535/ijsrm/v8i01.em05

22. Thompson, R. L., Higgins, C. A., & Howell, J. M. (1991). Personal Computing: Toward a Conceptual Model of Utilization Utilization of Personal Computers Personal Computing: Toward a Conceptual Model of Utilization1. In Source: MIS Quarterly (Vol. 15, Issue 1).

23. Tomato Digital Indonesia. (2020, March 13). Data digital Indonesia 2019. https://www.tomato.co.id/data-digital-indonesia-2019/

24. Venkatesh, V., Smith, R. H., Morris, M. G., Davis, G. B., Davis, F. D., & Walton, S. M. (2003). Quarterly USER ACCEPTANCE OF INFORMATION TECHNOLOGY: TOWARD A UNIFIED VIEW1.

25. Yuan, S., Liu, L., Su, B., & Zhang, H. (2020). Determining the antecedents of mobile payment loyalty: Cognitive and affective perspectives. Electronic Commerce Research and Applications, 41. https://doi.org/10.1016/j.elerap.2020.100971

26. Yuen, K. F., Koh, L. Y., Wong, Y. Q., & Wang, X. (2023). Sustainable crowdsourced delivery: A study of technological, health, value, and trust antecedents of consumer loyalty. Journal of Cleaner Production, 405. https://doi.org/10.1016/j.jclepro.2023.137010