

## EXAMINING THE EFFECTS OF DIGITAL WALLET USE ON CONSUMERS

Brett HOLLIS<sup>1\*</sup>, Nanda ANGELINA<sup>2</sup>, and Dewi TAMARA<sup>3</sup>

<sup>1-2</sup>Professional Business Management Students at Binus Business School Jl. Hang Lekir I No.6, Jakarta 10270

<sup>3</sup>Head of Professional Business Management Program at Binus Business School Jl. Hang Lekir I No.6, Jakarta 10270

\*brett.hollis@binus.ac.id

### ABSTRACT

In Indonesia, digital payment methods like wallets and electronic money are becoming increasingly popular. However, more research is needed to explore the link between users' impulsive and consumptive purchasing behaviors and their use of these payment options. This study examines the impact of perceived ease of use (PEOU) of digital wallets, perceived usefulness (PU), perceived enjoyment (PE), and financial literacy (FL) on the mediating role of consumer attitude (CA). It also explores CA's effect on consumptive (CB) and impulsive behavior (IB), and its moderating role between financial literacy and both behaviors. The study aims to determine whether financial literacy directly affects consumptive and impulsive behavior. The research surveyed 207 digital wallet users in DKI Jakarta, aged 18 to 41, and found that the model explains 72.4% of the variance in CA, 11.4% in CB, and 1.9% in IB. Overall, six out of 10 hypotheses were rejected, and the study's implications and future research recommendations will be discussed.

**Keywords:** consumer attitude, consumptive behaviour, digital wallet, financial literacy, impulsive behaviour

### INTRODUCTION

With the rise of financial technology's (fintech) influence in Indonesia, there has been a rapid increase in the use of digital wallets. A digital wallet (sometimes referred to as an E-wallet) has been defined as an online application or device that can make payments via a computer or smartphone (Kee, 2022). Services offered by digital wallet platforms vary and can include but are not limited to digital storage of funds; repayment schemes; digital customer to customer (C2C), peer to peer (P2P), customer to business (C2B) transactions; and integration with other digital services like e-commerce or ride hailing platforms. There are many options for digital wallets including banks, but also less traditional financial institutions also called non-bank financial institutions (NBFIs). The rise of digital payments is a worldwide phenomenon with volume having grown 51.3% between 2021 and 2024 but digital payments have shown the most growth in Asia with an increase in volume of 67.7% in the same period (CapGemini, World Payments Reports, 2023). However, current research has been disproportionately focused on the beneficial outcomes of digital wallet adoption, with a gap in the understanding of the undesirable outcomes, particularly in the cases of increased impulsive and consumptive spending behaviour among users. There are indications that digital payments and their platforms could become problematic for users in these regards. According to the Katadata Insights Center's 2023 Indonesian E-Commerce Consumer Behavior Report on "PayLater" (a credit tool within digital wallet and e-commerce platforms), consumers are spending more via PayLater than ever before. Not only are consumers spending more, but they are also opting for longer repayment periods. There was an increase of 22.3% in users who opt for a 6 month or greater repayment plan from 47.5% to 69.8% (Katadata, 2023 Indonesian E-Commerce Consumer Behavior Report, 2023). These findings could suggest impulsive and consumptive spending behaviour.

While some studies have addressed similar topics, such as two studies from the same group of researchers in Malaysia (Lee et al., 2022a) and one including a mediating model (Lee et al., 2022b), no studies have addressed a model that includes traditional technology adoption variables alongside financial literacy. This study aims to address the current gap in the exploration of the negative effects of digital wallet usage and explore if the use of digital wallets results in increased impulsive and consumptive behaviour. The benefit of this study is to shine light on some of the negative effects of digital wallet use. The researchers hope that readers will leave with a better understanding of use behaviours of digital wallets and the factors which affect their buying behaviour.

### DATA AND METHODS

#### Research Design

This research conducts correlational research as the data collection seeks to investigate the relationships between PEOU, PU, PE, and FL mediated by CA towards digital wallets and how these attitudes subsequently influence IB and CB in digital wallet users. Additionally, this research studies the moderating effect of CA between FL and both

CB and IB. The reasoning behind this research design was that it allows examination of the strength and direction of relationships between the variable without manipulating them and observing them as they occur (Wang and Lim, 2021). To test the hypotheses in this research, this study collected quantitative data via a questionnaire survey, where the research sought to understand any naturally occurring pattern. The study gathered primary data by administering the test to 207 digital wallet users. The population targeted for this research consists of 207 respondents who are digital wallet users aged 18-41 in DKI Jakarta, Indonesia who actively use digital wallets as a form of payment. Purposefully selected, this age group was targeted due to their behaviour and high engagement with digital wallets and payment systems in comparison to other age groups (Marcomm, 2020).

Table 2  
Variable Operationalization Table

Variable	Operational Definition	Scale
PEOU	Subjective perception of the user of how easy digital wallet is to use. Items asks on clarity, complexity and ease of learning features.	Interval (Likert Scale (1-5))
PU	Subjective belief of the user that digital wallet will enhance their financial management or shopping experience.	Interval (Likert Scale (1-5))
PE	Subjective perception of enjoyment derived from the use of digital wallet.	Interval (Likert Scale (1-5))
FL	Subjective financial attitude and financial behaviour	Interval (Likert Scale (1-5))
CA	Subjective overall attitude towards digital wallets including feelings, preferences, and predispositions.	Interval (Likert Scale (1-5))
IB	Subjective experience of unplanned and spontaneous purchases towards digital wallets	Interval (Likert Scale (1-5))
CB	Spending habits and frequency of spending through digital wallet to assess consumption pattern.	Interval (Likert Scale (1-5))

### Questionnaire Design, Data Collection and Pilot Study

To support the hypothesis of this research, the primary data collection tool that was used was an online questionnaire developed on Google Forms. Circulation of the survey was done primarily through social media platforms such as Instagram, LinkedIn, Reddit, and WhatsApp, to reach target participants. Additionally, participants were gathered on college campuses and in public. Prior to the full-scale survey, a pilot study collecting responses from 31 participants was conducted to test the reliability and validity of the questionnaire. The pilot questionnaire was distributed through judgement and snowball sampling methods. It was given to acquaintances of the researchers and distributed to students at the BINUS University JWC International Campus in South Jakarta. The responses collected were used prior to the rollout of the full-scale survey to examine and correct issues with the clarity and functionality of the survey. The questionnaire initially experienced issues with Cronbach's alpha and variance, a phenomenon frequently encountered by researchers measuring financial literacy (Rieger, 2020). As a result, some of the questions in the FL section were removed since their loadings were below 0.5. Removed items include FL1, FL2, FL3, FL5, and FL11. As shown in table 3, the model improved to report an acceptable Cronbach's alpha (>0.7), composite reliability (>0.7), and average variance extracted (>0.5). The revised model was used for the full study.

Table 3  
Pilot Study Validity and Reliability

Variable	AVE	$\alpha$	CR
CA	0.812	0.942	0.956
CB	0.908	0.950	0.967
FL	0.512	0.872	0.891
IB	0.711	0.891	0.879
PE	0.839	0.951	0.963
PEOU	0.860	0.967	0.974
PU	0.603	0.835	0.880

### Data analysis

The data analysis was conducted using SmartPLS 4.0, a tool for Partial Least Squares Structural Equation Modeling (PLS-SEM) (Ringle et al., 2022). This approach through SmartPLS, a graphical interface software program allows for the analysis of complex models by closely observing the relationships between observed and latent variables (Sarstedt & Cheah, 2019). To ensure reliability and validity of the measurement model, firstly, composite reliability was calculated to measure the internal consistency of the variables, with values about 0.70 indicating adequate reliability (Hair et al., 2018). The average variance gathered (AVE) was then used to measure how much of the variation in a variable is captured versus the level due to measurement error. AVE values above 0.50 were considered acceptable, indicating good convergent validity (Fornell & Larcker, 1981). Additionally, individual item loadings were examined, with values above 0.70 indicating that the indicators are reliable measures of the respective variable (Hair et al, 2018).

Discriminant validity was evaluated using the Fornell-Larcker criterion. This method compares the square root of the AVE of each variable with its correlations to other variables. Discriminant validity is confirmed if the square root of the AVE for a variable is higher than its correlations with any other variable, showing that the variables are distinct from each other (Fornell & Larcker, 1981).

To assess the statistical significance of the path coefficients, two-tailed bootstrapping with 5000 subsamples was employed. Bootstrapping is a resampling technique that allows for estimating how accurate our sample statistics are by drawing smaller samples from our original data. Bootstrapping generates standard errors and t-values, allowing for hypothesis testing. Several studies like Wamba et al (2021) employed PLS-SEM to explore factors that influence financial inclusion in developing countries, demonstrating how this technique can be used to understand nuanced relationships between multiple variables.

**Results**

Initial results found that all item loadings were >0.7 as recommended by Hair et al. (2018) barring FL10 and FL12 for the latent variable FL. Due to issues with testing financial literacy mentioned by Reiger (2020), all FL reflective measures were kept since they are above the recommended loading for financial literacy of 0.5 (Potrich & Vieira, 2018). These results can be reviewed in table 4. The model was again tested for convergent validity and internal consistency and reliability. All average variances extracted, Cronbach’s alphas, and composite reliabilities are seen in table 4 to be greater than values recommended by Hair et al. (2018) of 0.5 for AVE, 0.7 for  $\alpha$ , and 0.7 for composite reliability respectively. These results show the research model is sufficiently valid and reliable (Hair et al., 2018). Finally, the researchers performed a Fornell-Larcker calculation to test discriminant validity further. The square root of each constructs’ average variance extracted are greater than the intercorrelations beneath seen in table 5. Therefore, discriminate validity of the model is confirmed (Hair et al., 2018).

Table 4  
 Constructs’ Convergent Validity and Internal Consistency Reliability

Constructs	Items	Convergent Validity		Internal Consistency Reliability	
		Loadings	AVE	$\alpha$	CR
Consumer attitude	CA1	0.895	0.765	0.923	0.942
	CA2	0.838			
	CA3	0.883			
	CA4	0.884			
	CA5	0.872			
Consumptive behaviour	CB1	0.860	0.808	0.882	0.926
	CB2	0.915			
	CB3	0.920			
Financial literacy	FL4	0.764	0.572	0.892	0.914
	FL6	0.800			
	FL7	0.859			
	FL8	0.737			
	FL9	0.826			
	FL10	0.595			
FL12	0.692				

	FL13	0.746			
Impulsive behaviour	IB1	0.948			
	IB2	0.748	0.759	0.863	0.904
	IB3	0.905			
Perceived enjoyment	PE1	0.897			
	PE2	0.900			
	PE3	0.929	0.819	0.945	0.958
	PE4	0.895			
	PE5	0.905			
Perceived ease of use	PEOU1	0.919			
	PEOU2	0.889			
	PEOU3	0.889	0.804	0.951	0.961
	PEOU4	0.869			
	PEOU5	0.893			
	PEOU6	0.919			
Perceived usefulness	PU1	0.900			
	PU2	0.929			
	PU3	0.906	0.794	0.935	0.951
	PU4	0.825			
	PU5	0.893			

Table 5  
 Fornell-Larcker Criterion

Variable	CA	CB	CA	FL	IB	PEOU	PU
CA	<b>0.875</b>						
CB	0.213	<b>0.899</b>					
CA	0.553	0.349	<b>0.757</b>				
FL	0.150	-0.405	0.314	<b>0.871</b>			
IB	0.809	0.215	0.520	0.103	<b>0.905</b>		
PEOU	0.725	0.225	0.699	0.039	0.748	<b>0.897</b>	
PU	0.824	0.221	0.572	0.159	0.846	0.839	<b>0.891</b>

Hypothesis testing is broken into 2 sections. Direct paths, seen in table 6, will be discussed first and then moderation results will be analysed. PEOU was shown not to be a predictor of CA ( $\beta=-0.0113, p=0.888$ ). FL was also shown not to be a predictor of CA ( $\beta=0.108, p=0.055$ ) and IB ( $\beta=-0.101, p=0.357$ ). CA was shown not to be a predictor of CB ( $\beta=0.029, p=0.724$ ). Therefore, **H1, H4, H6, and H7** are rejected. PU was the strongest predictor of CA ( $\beta=0.450, p=0.000$ ), thus **H2** is accepted. PE is also considered a significant predictor of CA ( $\beta=0.380, p=0.000$ ), thereby **H3** is accepted. FL is only considered a predictor of CB ( $\beta=0.355, p=0.000$ ), confirming **H5**. It is important to note that, for CB and only CB, all questions are posed in a negative manner, but the results were not recoded prior to analysis. This means that FL’s positive  $\beta$  infers that higher financial literacy correlates with less consumptive behaviour. There is further commentary on this matter in the discussion section. Anyhow, CA is shown to be a predictor of IB ( $\beta=0.201, p=0.049$ ), there by confirming **H8**. The model accounts for 72.4% of the variance in CA ( $R^2=0.724$ ) as an endogenous latent variable. CA and FL explain 11.4% of the variance in CB ( $R^2=0.114$ ) and 1.9% of the variance in IB ( $R^2=0.019$ ) (Table 7).

Table 6  
 Significance Testing Results

Path	$\beta$	Standard deviation (STDEV)	T-Statistics	P-Values	Hypotheses	Conclusion
<i>PEOU</i> → <i>CA</i>	<i>-0.013</i>	<i>0.093</i>	<i>0.141</i>	<i>0.888</i>	<i>H1</i>	<i>Rejected</i>
PU→CA	0.450	0.095	4.766	0.000	H2	Accepted
PE→CA	0.380	0.083	4.621	0.000	H3	Accepted
<i>FL</i> → <i>CA</i>	<i>0.108</i>	<i>0.055</i>	<i>1.920</i>	<i>0.055</i>	<i>H4</i>	<i>Rejected</i>
FL→CB	0.355	0.074	4.475	0.000	H5	Accepted
<i>FL</i> → <i>IB</i>	<i>-0.101</i>	<i>0.098</i>	<i>0.921</i>	<i>0.357</i>	<i>H6</i>	<i>Rejected</i>
<i>CA</i> → <i>CB</i>	<i>0.029</i>	<i>0.084</i>	<i>0.353</i>	<i>0.724</i>	<i>H7</i>	<i>Rejected</i>
CA→IB	0.201	0.101	1.968	0.049	H8	Accepted

Table 7  
 Adjusted R-Square Results

Variable	Adjusted R-Square
CA	72.4%
CB	11.4%
IB	1.9%

Mediation analysis was conducted with the goal of discovering if consumer attitude could sway buying behaviours when using a digital wallet. Percentile bootstrapping with 5000 subsamples was used. Though FL has a significant total and direct effect on CB, CA does not significantly mediate this relationship since the a path is not significant (table 8). Therefore, **H9** was rejected. The a, b, and c’ paths are insignificant in relation to CA moderating the relationship between FL and IB (table 9), thereby, **H10** is rejected.

Table 8  
 Mediation Analysis Results, Hypothesis 9

Type of effect	Effect	Path coefficient	T-statistic	Remark
Total effect	FL→CB	0.340	4.865*	Significant total effect
Indirect effect	FL→CA→CB	0.004	0.276	No significant indirect effect
Direct effect	FL→CB	0.335	4.475*	Significant direct effect
			VAF	1.117%
			<b>Conclusion</b>	<b>H9 rejected</b>

Table 9  
 Mediation Analysis Results, Hypothesis 10

Type of effect	Effect	Path coefficient	T-statistic	Remark
Total effect	FL→IB	-0.080	0.712	No significant total effect
Indirect effect	FL→CA→IB	0.022	1.283	No significant indirect effect
Direct effect	FL→IB	-0.101	0.921	No significant direct effect
			VAF	-27.5%
			<b>Conclusion</b>	<b>H10 rejected</b>

## Discussion

This research was conducted to explore if there are any negative buying behaviours involving digital wallet users in DKI Jakarta. The research team formed a framework consisting of widely used technology acceptance models (TAM & UTAUT2) combined with financial literacy to inform the reader of factors which affect impulsive and consumptive behaviours when using a digital wallet. The model predicts 72.4% of the variance in the endogenous latent variable CA ( $R^2=0.724$ ) which is considered to be substantial (Chin, 1998). FL and CA explain 11.4% of the variance in CB ( $R^2=0.114$ ) and 1.9% of the variance in IB ( $R^2=0.019$ ) (Table 7). While both R-Square values are explainers of the variances (Chin, 1998), the explanation of the variance of CB is at least adequate but not for the variance in IB (Falk & Miller, 1992). Lee et al. (2020a) also had trouble explaining the variance in IB and again in separate research including a moderated model IB (Lee et al., 2020b).

Previous literature from Gunawan et al. (2019), a study on perceptions and attitudes of E-Commerce users in Indonesia, supports the rejection of PEOU's effect on CA. However, similar research conducted by Saksono and Untoro (2023) found PEOU to have a significant effect on CA. Ariffin et al. (2021) found a significant positive relationship between PEOU and CA in a Malaysian study on the adoption of digital wallets. Notably all three studies agree that PU does have a significant effect on CA (Gunawan, 2019; Saksono & Untoro, 2023; Ariffin et al., 2021). There is no research that could be found which researches the effect of PE on CA. However, Lee et al. (2020b) did explore PE as a mediator to IB and found a significant direct effect. Further research needs to be conducted to understand PE's effect on CA.

Despite this research finding no significant relationship between CA and FL, one study did find that FL does have a significant relationship with CA in relation to digital wallet use (Razali et al., 2022). While there is existing research exploring CA's effects on FL (Buhavan & Vansantha, 2019), there is less research on FL's effect on CA. Thus, we recommend further research on this relationship, especially since the significance in this research is approaching .05. One Indonesian study on digital wallets used a construct that includes consumer attitude among other perceptions of digital wallets and found a significant relationship with IB (Sari & Zairina, 2021) which is the result our study found as well. There is no direct research on CA's effect on CB that could be found. More research should be conducted to bring attention to the construct of consumptive behaviour and how it is affected by CA.

FL has been shown to have a significant effect on consumptive behaviour in other literature (Suparno et al., 2022; Azsahrah, 2021). It is important to note that these studies imply the same effects as this research in that the higher a respondent's financial literacy, the less consumptive behaviour they exhibit. Like this research, literature has found no effect from FL on IB (Moon, 2024). However, research has also indicated that FL has a significant negative impact on IB (Dwipa & Yuniningsih, 2023; Anisa et al., 2020).

## Conclusion

This research aimed to explore the factors influencing impulsive and consumptive behaviours among digital wallet users in DKI Jakarta. The research combined technology acceptance models (TAM and UTAUT2) with financial literacy to provide a comprehensive understanding of these behaviours. The model accounted for 72.4% of the variance in consumer attitude (CA), 11.4% of the variance in consumptive behaviour (CB) and 1.9% of the variance in impulsive behaviour (IB). These results suggest that the model is substantially effective in explaining consumer attitude but less so for consumptive and impulsive behaviours (Chin, 1998; Falk & Miller, 1992).

The hypothesis testing revealed that perceived usefulness (PU) and perceived enjoyment (PE) significantly affect consumer attitude, whereas perceived ease of use (PEOU) and financial literacy (FL) do not.

The findings of this research contribute to the existing literature on consumer behaviour by providing more comprehensive insights into factors that influence consumer purchase intention. The conceptual framework that was tested in this study could be foundational for future research exploring similar constructs. This study validates the Technology Acceptance Model (TAM) by demonstrating the roles of perceived usefulness and perceived enjoyment in shaping consumer attitudes towards digital wallets (Gunawan, 2019; Saksono & Untoro, 2023; Ariffin et al., 2021). However, the lack of significance for perceived ease of use (PEOU) contradicts some prior research, which suggests a need for further research into the conditions in which PEOU affects consumer attitudes.

From a practical business perspective, companies can use the results of this research to focus on enhancing the perceived usefulness and enjoyment of their digital wallet services to build positive consumer attitudes and sentiments and potentially increase user engagement. Understanding the factors that drive positive consumer attitudes can help businesses tailor their strategies or customer journey flow to better meet consumer needs and preferences.

In addition, with the rise in general trends of digital wallet usage, especially in countries lacking comprehensive laws on digital finance, regulatory bodies can further the foundation of this research to better protect consumer rights. In this regard, businesses and financial institutions can collaborate to provide education that helps consumers make more informed spending decisions, especially through the use of digital wallets. This approach would benefit not only the consumer by promoting healthy and responsible usage of financial products but could diversify a company’s digital finance solutions portfolio.

Future research should investigate the application of the conceptual framework of this paper in different cultural and economic contexts to validate its generalizability. Additionally furthering this research through longitudinal studies could deepen the insights into long-term effects of digital wallet on consumer behaviours. Investigating additional potential moderating variables such as age, income and educational level could provide new depth to the understanding of digital wallet usage behaviours.

This research acknowledges several limitations that may have impacted the data findings, such as the limitations of self-reported data, which may bring forth biases and inclusion of reverse-scored questions in the questionnaire survey. Firstly, the use of non-probability sampling methods to an extent limits the generalizability of its findings (Asiamah, 2022). Further studies in this topic should target more diverse and larger samples to increase reliability of the results. Secondly, reverse questions could lead to confusion amongst respondents, which could result in inconsistent answers. This inconsistency could have an effect on the data, affecting the reliability of measures. Specifically, the use of reverse questions might explain some of the weakness observed in the R-square values for consumptive behaviour (CB) and impulsive behaviour (IB), the values being 11.4% and 1.9%, respectively. The potential misinterpretation of reverse questions by respondents could have contributed to this variance. Future research on this topic should refine the questionnaire to minimise misunderstandings caused by reverse questions, through measures such as clearer instructions on responding to reverse-scored questions. Improving consistency and clarity in survey items could enhance data reliability which could result in higher R-square values, indicating a stronger explanatory power of the model (Hair et al., 2018).

## REFERENCES

- Anisa, N. A., Arifin, S., Setyowati, L., Hidayah, N., & Megasari, A. D. (2020). Financial literacy on impulsive buying behavior in Y generation. *Quantitative Economics and Management Studies*, 1(1). <https://doi.org/10.35877/454ri.qems1180>
- Ariffin, Shaizatulaqma & Rahman, Mohamad & Muhammad, Ali & Zhang, Qi. (2021). Understanding the consumer’s intention to use the e-wallet services. *Spanish Journal of Marketing - ESIC*. Advance online publication. <https://doi.org/10.1108/SJME-07-2021-0138>
- Asiamah, N. (2022). Non-probabilistic sampling in quantitative clinical research. *International Journal of Applied Research on Public Health Management*. <https://doi.org/10.4018/ijarphm.290379>
- Azsahrah, S., Jasman, J., & Ardhana, M. A. (2023). The effect of financial literacy and online shopping on student consumptive behavior. *Jurnal Economic Resource*, 6(1), 76-82.
- Buhavana, M. & Vasantha, S. (2019). Ascertain the mediating effect of financial literacy for accessing mobile banking services to achieve financial inclusion. *Internation Journal of Recent Technology and Engineering*, 7(65)
- Chetioui, Y., Lebdaoui, H., & Chetioui, H. (2020). Factors influencing consumer attitudes toward online shopping: the mediating effect of trust. *EuroMed Journal of Business*, 16, (4). <https://doi.org/10.1108/EMJB-05-2020-0046>
- Dwipa, Y.S. & Yuniningsih, Y. (2023). The effect of “buy now, pay later” mode on impulsive buying behavior. *International Journal of Business Marketing and Management*, 8(3), 121-128.
- Effendy, F., Hurriyati, R., & Hendrayati, H. (2021). Perceived usefulness, perceived ease of use, and social influence: Intention to use e-wallet. *Proceedings of the 5th Global Conference on Business, Management and Entrepreneurship (GCBME 2020)*. <https://doi.org/10.2991/aebmr.k.210831.060> (Conference held on August 8-9, 2020, in Bandung, Indonesia)
- Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, 5(1), 1-4.
- Geetha, R., & Kundar, V. (2017). Financial literacy and usage pattern of mobile wallets across gender categories in india. *The International Journal Publications*6(12). <https://ssrn.com/abstract=3063108>
- Gunawan, F., Ali, M. M., & Nugroho, A. (2019). Analysis of the effects of perceived ease of use and perceived usefulness on consumer attitude and their impacts on purchase decision on PT Tokopedia in Jabodetabek. *European Journal of Business and Management Research*. 4(5) <https://doi.org/10.24018/ejbmr.2019.4.5.100>

- Hair, J. F., Sarstedt, M., Ringle, C. M., & Gudergan, S. P. (2018). *Advanced Issues in Partial Least Squares Structural Equation Modeling*. (pp.10-11, 20-21). SAGE Publications (USA).
- Himel, M. T. A., Ashraf, S., Bappy, T. A., Abir, M. T., Morshed, M. K., Hossain, M. N. (2021). Users' attitude and intention to use mobile financial services in Bangladesh: an empirical study. *South Asian Journal of Marketing*, 2, (1). <https://doi.org/10.1108/SAJM-02-2021-0015>
- Heo, W., Lee, J.M. & Rabbani, A.G. (2020). Mediation effect of financial education between financial stress and use of financial technology. *Journal of Family and Economic Issues*, 42, 413-428. Retrieved from <https://doi.org/10.1007/s10834-020-09720-w>
- Hu, Z., Ding, S., Li, S., Chen, L., Yang, S. (2019) Adoption intention of fintech services for bank users: an empirical examination with an extended technology acceptance model. *Symmetry*. 11(3),340. <https://doi.org/10.3390/sym11030340>
- Kamal, I., Rizki, R. N., & Aulia, M. R. (2023). The enthusiasm of digital payment services and millennial consumer behaviour in Indonesia. *International Journal of Professional Business Review*, 8(2). <https://doi.org/10.26668/businessreview/2023.v8i2.923>
- Kee, D. M. (2022). Do you have a digital wallet? A study of e-wallet during the COVID-19 pandemic. *International Journal of Accounting Finance in Asia Pasific*, 5(1). <https://doi.org/10.32535/ijafap.v5i1.1413>
- Katadata Insights Center, Kredivo. (2023). (rep.). *2023 Indonesian e-commerce consumer behavior report: economic recovery and shopping trends in post-pandemic*. Retrieved February 19, 2024, from <https://kredivocorp.com/>.
- Kim, D. J., Ferrin, D. L., & Rao, H. R. (2017). Trust and satisfaction, two stepping stones for successful e-commerce relationships: A longitudinal exploration. *Information Systems Research*, 20(2), 237-257.
- Lee, Y. Y., Gan, C. L., & Liew, T. W. (2022). The impacts of mobile wallet app characteristics on online impulse buying: a moderated mediation model. *Human Behavior and Emerging Technologies*, 2022, 1–15. <https://doi.org/10.1155/2022/2767735>
- Li, Y. H. (2013). Evaluating the impacts of mobile wallet: A study on perceived enjoyment and usefulness. *Journal of Electronic Commerce Research*, 14(4), 331-348.
- Marcomm. (2020). *The evolution of the digital wallet: driving the next wave of growth*. IPSOS. Retrieved February 21, 2024, from [https://www.ipsos.com/sites/default/files/ct/news/documents/2020-02/ipsos\\_media\\_conference\\_-\\_e-wallet\\_-\\_en\\_0.pdf](https://www.ipsos.com/sites/default/files/ct/news/documents/2020-02/ipsos_media_conference_-_e-wallet_-_en_0.pdf).
- Najib, M., & Fahma, F. (2020). Investigating the adoption of digital payment system through an extended technology acceptance model: An insight from the Indonesian small and medium enterprises. *International Journal on Advanced Science, Engineering and Information Technology*, 10(4), 1702-1708.
- Nalurita, F., Leon, F.M., Nisfiannoor, M., (2022). Financial management behaviour for e-wallet users in Jabodetabek. *Business and Entrepreneurial Review*. 22(2). <https://doi.org/10.25105/ber.v22i2.13951>
- Nguyen, T.T.H., Nguyen, N., Nguyen, T.B.L., Phan, T.T.H., Bui, L.P., and Moon, H.C. (2019). Investigating consumer attitude and intention towards online food purchasing in an emerging economy: an extended TAM approach. *Foods*, 8(11). <https://doi.org/10.3390/foods8110576>
- Nuratika, O., Mukhtar, S., & Wiralaga, H. K. (2022). The effect of using digital wallets and financial literacy on consumptive behaviour of students in DKI Jakarta. *Jurnal Pendidikan Ekonomi, Perkantoran*, 3(3), 257-268. <https://journal.unj.ac.id/unj/index.php/jpepa/article/view/31155>
- Putrevu, J., & Mertzanis, C. (2023). The adoption of digital payments in emerging economies: challenges and policy responses. *Digital Policy, Regulation and Governance*. <https://doi.org/10.1108/DPRG-06-2023-0077>
- Razali N., Muslim A., & W. N. W. (2022). Promoting the ease of use of Zakat e-payment system for undergraduates in Malaysia. *SADI Journal of Economics and Social Sciences*, 9(4).
- Rieger, M. O. (2020). How to measure financial literacy? *Journal of Risk and Financial Management*, 13(12), 324. <https://doi.org/10.3390/jrfm13120324>
- Ringle, C.M., S. Wende, and J.-M. Becker. (2022). *SmartPLS 4*. Retrieved from <https://www.smartpls.com/>.
- Saksono, A. S., & Untoro, W. (2023). Consumer perceived ease of use and consumer perceived usefulness in using the Shopee application in Surakarta with discount as a moderation variable. *European Journal of Business and Management Research*, 8(4), 13–19. <https://doi.org/10.24018/ejbmr.2023.8.4.2022>
- San, Brang Moon. (2024). Money in the digital palm: the role of mobile wallet usage and financial literacy on impulse purchase behavior of youths in Myanmar. *In Proceedings of the 3rd Spring Flowers International Conference* (Conference held on February 7-10, 2024 in Indianapolis, IN, USA)
- Sarstedt, M., & Cheah, J. (2019). Partial least squares structural equation modeling using SmartPLS: a software review. *Journal of Marketing Analytics*, 7, 196 - 202. <https://doi.org/10.1057/s41270-019-00058-3>
- Suparno, Saptono A., Wibowo A., Putri D. N. (2022) effect of financial literacy and learning achievement on student consumptive behavior. *Al-Ishlah: Jurnal Pendidikan*, 14(4), 4929-4938. <https://doi.org/10.35445/alishlah.v14i4.1688>

Thakur, R., & Srivastava, M. (2013). Customer usage intention of mobile commerce in India: An empirical study. *Journal of Indian Business Research*, 5(1), 52-72.

Vasantha Raju, N., & Harinarayana, N. S. (2016). Online survey tools: A case study of Google Forms. *National conference on scientific, computational & information research trends in engineering, GSSS-IETW*(Conference held on January 8-9, 2016 in Mysore, India)

Yan, L.-Y., Tan, G. W.-H., Loh, X.-M., Hew, J.-J., & Ooi, K.-B. (2021). Qr code and mobile payment: The disruptive forces in retail. *Journal of Retailing and Consumer Services*, 58, 102300. <https://doi.org/10.1016/j.jretconser.2020.102300>

Zahra, D. R., & Anoraga, P. (2021). The influence of lifestyle, financial literacy, and social demographics on consumptive behavior. *The Journal of Asian Finance, Economics and Business*, 8(2), 1033–1041. <https://doi.org/10.13106/JAFEB.2021.VOL8.NO2.1033>