

The effect of financial literacy and digital payment technology on financial vulnerability: A crucial investigation

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ABSTRACT

This study examines the effect of (1) financial literacy on student financial vulnerability and (2) digital payment technology on student financial vulnerability. This research approach uses a quantitative approach. The method used is the survey method. The population in this study were accounting students of Yogyakarta State University (UNY) batch 2017 - 2023, and the sampling method used convenience sampling. The research sample was obtained from 86 students from the 2017-2023 class and divided into proportions. Hypothesis testing using multiple linear regression analysis. The results of this study indicate that (1) financial literacy does not affect financial vulnerability; (2) digital payment technology has a significant positive effect on financial vulnerability.

Keywords: *Financial literacy, digital payment technology, financial vulnerability*

INTRODUCTION

Financial vulnerability is a situation experienced by someone with high debt relative to income, especially regarding unsecured debt and loans (Anderloni et al., 2012; Kim et al., 2016). An initial survey of financial vulnerability conducted on FEB UNY students showed that FEB UNY students have high financial vulnerability. Research by Lusardi and Tufano (2015) shows that financial vulnerability can occur due to many aspects, including unplanned financial behavior and low financial literacy. The vulnerabilities most often faced by young people are minimal financial literacy, little income, lack of self-control, and the encouragement of a glamorous lifestyle due to the influence of the surrounding environment (Waliyyudin, 2023).

Millennials are a group of people who tend to adopt technology quickly to change their financial management patterns. On the other hand, the level of financial literacy is an equally important aspect. Financial literacy refers to an individual's understanding and managing finances properly and wisely. This ability includes understanding financial planning, financial management, investment, and financial risk. It can be concluded that financial literacy (OECD, 2011) is a combination of awareness, knowledge, skills, attitudes, and actions required to make economic decisions to achieve individual financial well-being.

Some recent studies have raised concerns that using digital payment methods and a low understanding of financial literacy harms financial behavior (Seldal & Ellen, 2022). Lusardi et al., (2017), Yakoboski et.al., (2018), and Scheresberg et al., (2020) found that mobile payment users tend to have a low level of financial literacy. Reducing the negative impact of using digital payment technology requires good financial literacy.

In 2022, there were 311 students caught up in online loans, with 116 being students of Bogor Agricultural University (IPB) (Putra, 2022). In 2023, 58 students from Universitas Muhammadiyah Yogyakarta (UMY) were trapped in online loans used to fulfill their lifestyle (Pangaribowo, 2023). There are reasons for the younger generation's behavior in using online loans to meet life needs. The ease of digital access makes it easy for individuals to share personal things through social media. It has become one of the habitual tendencies to imitate other people's lifestyles as a benchmark, resulting in consumptive behavior. The trend of rampant use of online loan services among the younger generation has various impacts on various aspects of life, including the ease for young people to buy goods that young people need or want, such as electronics, furniture, fashion, and so on (Bodewyn et al., 2020).

Millennials and Generation Z are known to be more familiar with technology, and they tend to adopt digital payments more widely. Security, convenience, and the ability to transact instantly are some of the factors that support the popularity of digital payments among this generation (Yunitasari et al., 2022). The survey of the financial behavior of the Generation Z and millennials by the Katadata Insight Center (KCI) in 2021 recorded that 13.8% of Generation Z and millennials used pay later services, which was more significant than the use of credit cards, which was only 7.6% (Waliyyudin, 2023). Digital payment technology is significantly changing the order of financial services worldwide and increasingly influencing financial behavior (OECD, 2017). Digital payment technologies also have the potential to help consumers have greater control over personal finances.

While digital payment technologies are revolutionizing the financial services landscape and empowering consumers with greater control over their personal finances (Wewege & Thomsett, 2019), it's important to be aware of the potential risks. A study in the United States found that the use of certain digital payment methods can increase financial vulnerability. Heo et al. (2021) reported that respondents with financial vulnerability have a higher tendency to use digital payment technology. Digital payment methods that are less transparent and easier to use when compared to cash and credit cards can make a person more vulnerable to unnecessary purchases.

Amidst the adoption of digital payment technologies and varying levels of financial literacy among millennials, financial vulnerability needs to be a concern (Saraswati & Nugroho, 2021). Therefore, it is necessary to know whether users of digital payment technologies have sufficient financial knowledge to handle their financial transactions and whether digital technologies can contribute to making consumers more financially vulnerable (Lusardi et al., 2017).

Therefore, it is crucial to conduct further research to understand how people perceive financial literacy and use digital payment technology and how it influences financial behavior. This research is essential to inform policies and interventions that can enhance financial literacy and mitigate the potential adverse effects of digital payment technologies.

LITERATURE REVIEW

Behavioral Finance

According to Litner (1998), Behavioral Finance is a science that studies how humans respond and react to existing information to make decisions that can optimize the rate of return concerning its inherent risks. The premise of behavioral finance is that conventional financial theory ignores how humans make decisions and that everyone makes different decisions (Barberis & Thaler, 2002). Heuristic theory explains how individuals make decisions under conditions of uncertainty. The uncertain conditions of trust include (Thaler, 1994) anchoring, representativeness, availability bias, and overconfidence.

Financial Literacy

The Program for International Student Assessment (PISA, 2012) states that financial literacy involves understanding and knowledge of financial concepts that support effective economic decision-making. Financial literacy is considered a means to improve individual and group well-being and facilitate participation in economic activities. Another definition also states that financial literacy helps avoid financial problems (Krishna et al., 2010). Financial literacy helps a person to be able to manage finances better.

Digital Payment Technology

According to Danuri (2019), digital payment technology is a payment system created to process payments for goods electronically via the Internet. Digital payment technology is an online payment activity that has become the community's leading choice in meeting various facility bill payment needs practically and efficiently (Danuri, 2019). Over time, individuals have preferred digital payment technology to cash payments because of its ease and convenience in making long-distance transactions without always carrying cash (Houston, 2020). Transactions using digital payment technology can be understood in simpler words; digital payments are an easy and practical way to pay using electronic devices, such as smartphones. In addition, digital transactions can provide additional benefits such as discounts and cashback through promotions.

Financial Vulnerability

Financial Vulnerability is the inability to meet basic needs, cope with unexpected expenses, and survive in the event of a shock (Anderloni et al., 2012). Vulnerability is a state in which the government becomes highly dependent, causing dependence on funding sources beyond its control, whether from domestic or international sources. Meanwhile, flexibility is a condition where the government can increase its financial resources to respond to increased commitments by increasing revenue (Putri, 2023).

Financial Vulnerability is broadly defined as the situation experienced by households or consumers who have high debt relative to income, especially when it comes to consumer debt and unsecured loans and or limited ability to repay. Financial vulnerability can arise in the context of consumer debt, which includes loans for consumption purposes, such as credit cards, education loans, or personal loans. In addition, the limited ability to repay debt is another characteristic of financial vulnerability.

Financial Literacy and Financial Vulnerability

The model that explains the relationship between financial literacy and financial vulnerability is presented in Figure 1.

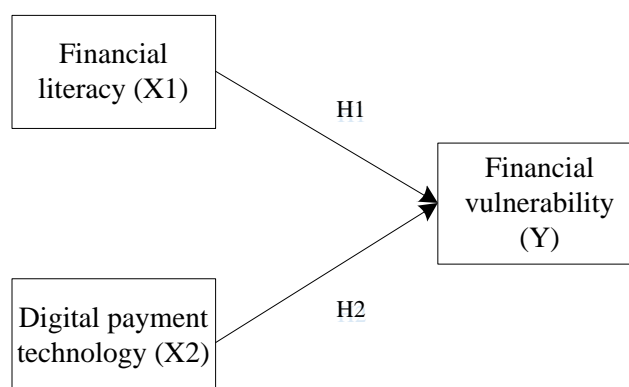


Figure 1. Research Model

Figure 1 depicts the model of this study. According to research by Hilgert et al. (2003), individuals with good financial literacy tend to pay bills on time. They are not in arrears every month because they have a good understanding of financial literacy and will carry out financial planning and accumulate savings, and individual wealth with sound financial literacy will reduce the risk of financial vulnerability (Lusardi & Mitchel, 2014).

To manage finances properly, financial literacy is essential for everyone, especially students. Financial literacy is all knowledge and information related to financial management and financial products and services. According to research by Hilgert et al. (2003), individuals with good financial literacy tend to pay bills on time and are not in arrears every month. Understanding financial literacy will help plan and accumulate savings and wealth. Individuals with good financial literacy will reduce the risk of financial vulnerability (Lusardi et al., 2017). so, we proposed hypothesis H₁.

H₁: Financial literacy negatively affects financial vulnerability

Digital Payment Technology and Financial Vulnerability

Figure 1 also explains the relationship between digital payment technology and financial vulnerability. Digital payment technology is a new payment method with a high level of use among students because it is considered adequate, efficient, easy to use, and has many attractive offers (promos) for students. Digital payment technology prevents students from planning their finances properly. It is reflected in spending more money than necessary, so they often need more money left at the end of the month and are financially vulnerable. The increasing use of digital payment technology has consequences for its users. Based on this, digital payment technology prevents students from planning their finances properly by reflecting on spending more money than they should, so they often need more money left at the end of the month and are financially vulnerable (Heo et al., 2021).

Seldal and Nyhus (2022) found that using digital payment technology in Norway does not affect financial vulnerability. Therefore, more research is needed to understand the consequences of digital payment technology. To manage finances properly, financial literacy is essential for everyone, especially students. Financial literacy is all knowledge and information related to financial management and financial products and services. According to research by Hilgert et al. (2003), individuals with good financial literacy tend to pay bills on time and are not in arrears every month. Understanding financial literacy will help plan and accumulate savings and wealth. Individuals with good financial literacy will reduce the risk of financial vulnerability (Lusardi et al., 2017). based on the previous research, we proposed hypothesis H₂.

H₂: Digital payment technology has a positive effect on financial vulnerability.

METHOD

Research Design

This research approach uses a quantitative approach to test the hypothesis that has been formulated. While the survey method is used, the survey research method is used to obtain data from a particular natural place. However, when collecting data, the researcher is accompanied by specific treatments. In relation to this study, the specific treatment was to distribute questionnaires.

The type of research used in this study is comparative causal research, which states a causal relationship. This study aims to determine whether financial literacy and digital payment technology affect the financial vulnerability of students in the class of 2017 - 2023 Strata I Accounting Study Program, Faculty of Economics and Business, Yogyakarta State University. This research was at the Faculty of Economics and Business, Yogyakarta State University. The data collection was completed between November 2023 and March 2024.

Population and Sample

The population in this study were active undergraduate students of the Accounting Study Program, Faculty of Economics and Business, Yogyakarta State University. Hence, the population results of this study were undergraduate students of the Accounting Study Program, Yogyakarta State University, Class of 2017 - 2023, with a total of 604 students. The sample used in this study used a convenience sampling technique with the sample criteria in this study.

They are active S1 Accounting Study Program students at the Faculty of Economics and Business, Yogyakarta State University. They made a transaction using digital payment technology. The age of the samples is limited to respondents aged 17 years to 28 years. Based on the Slovin formula, the number of samples obtained is 86 students.

Research Instruments

A research instrument is a tool used by researchers to collect research data by making a measurement. The variable under study is given an operational definition to determine and use indicators as benchmarks. Furthermore, these indicators are translated into question items or statements. The measurement of the questionnaire in this study used a Likert scale. The following table 1 represents instrumen indicators.

Table 1. Instrument Indicators

Variables	Indicators
Financial Vulnerability	<ul style="list-style-type: none"> • Difficulty managing money • Ability to deal with financial stock • Inability to meet needs, unexpected expenses, survive
Financial Literacy	<ul style="list-style-type: none"> • Understanding financial literacy (investment, inflation, managing finances) • Evaluate financial problems
Digital Payment Technology	<ul style="list-style-type: none"> • Perceived usefulness • Perception of Ease • Efficient

This study used the Likert scale to measure financial literacy, digital payment technology, and financial vulnerability variables. This Likert scale is modified with a value range of 1 to 4 because if there is a neutral or undecided answer as the middle value, most respondents will tend to choose to be neutral. The data analysis techniques used are multiple regress analysis.

RESULTS AND DISCUSSION

Validity and Reliability Test

Table 2 is the result of the validity test. Based on the validity test on table 2, it is known that all variables used have a value of $r_{count} > r_{table}$ (0.212), which means that all variables can be said to be valid.

Table 2. Validity Test

No.	Variables	Indicators	r count
1		Y.1	0.770
2		Y.2	0.779
3		Y.3	0.287
4		Y.4	0.763
5		Y.5	0.385
6		Y.6	0.438
7		Y.7	0.432
8		Y.8	0.528
9	Financial Vulnerability (Y)	Y.9	0.411
10		Y.10	0.406
11		Y.11	0.724
12		Y.12	0.341
13		Y.13	0.626
14		Y.14	0.456
15		Y.15	0.408
16		Y.16	0.272
17		Y.17	0.441
18		X1.1	0.301
19		X1.2	0.537
20		X1.3	0.507
21		X1.4	0.541
22	Financial Literacy (X1)	X1.5	0.484
23		X1.6	0.522
24		X1.7	0.579
25		X1.8	0.599
26		X1.9	0.551
27		X1.10	0.443
28		X2.1	0.450
29		X2.2	0.491
30		X2.3	0.638
31		X2.4	0.638
32	Digital Payment Technology (X2)	X2.5	0.425
33		X2.6	0.444
34		X2.7	0.489
35		X2.8	0.547
36		X2.9	0.289

Source: processed primary data (2024)

The reliability test in this study used Cronbach's statistical test. The results are presented in Table 3.

Table 3. Reliability Test

No.	Variables	Alpha Cronbach
1	Financial Vulnerability (Y)	0.732
2	Financial Literacy (X1)	0.717
3	Digital Payment Technology (X2)	0.706

Source: processed primary data (2024)

Based on the Table 3. reliability test, cronbach's alpha value on the financial vulnerability variable (Y) is 0.732. The financial literacy variable (X1) is 0.717, and the digital payment

technology variable (X2) is 0.706, which means that all variables have a value > 0.60, so it can be said that all data collected is reliable.

Statistics Descriptive

Respondent profiles and descriptive statistics of the research data are presented in Tables 4 – 5.

Table 4. Respondent Profiles

Gender	n	%
Male	17	19.77
Female	69	80.23

Age	Range	%
18-21 years	2	2.32
21-24 years	26	30.23
24-27 years	58	67.45

Income for a Month	Range	%
Below 1,500,000	31	36.04
1,500,000-2,500,000	19	22.09
2,501,000-3,500,000	12	13.95
Above 3,501,000	24	27.90

Expenditure for a Month	Range	%
Below 1,500,000	26	30.23
1,500,000-2,500,000	17	19.77
2,501,000-3,500,000	22	25.60

Source: processed primary data (2024)

Table 5. Statistics Descriptive

	N	Min	Max	Mean	Std. Dev.
Financial Vulnerability (Y)	86	30.00	40.00	36.0116	2.81381
Financial Literacy (X1)	86	27.00	36.00	33.3605	2.10273
Digital Payment Technology (X2)	86	40.00	68.00	55.4884	5.67294

Source: processed primary data (2024)

Multiple Linear Regression Test

In this study, the independent variables used are financial literacy and digital payment technology, while the dependent variable used is financial vulnerability. The results of multiple linear regression test testing are presented Table 6.

Table 6 Multiple Linier Regression Test

Model	Unstand. Coef.		Stand Coef.	t	Sig.
	B	Std. Error			
(Constant)	42.443	12.431		3.414	0.001
Financial Literacy (X1)	-0.279	0.212	-0.138	-1.318	0.191
Digital Payment Technology (X2)	0.692	0.283	0.256	2.445	0.017

Source: processed primary data (2024)

Based on table 6., it is known that the multiple regression analysis model used in this study can be formulated as follows:

$$Y = 42.443 - 0.279X1 + 0.692X2 + e \dots\dots\dots (1)$$

The regression coefficient of the financial literacy variable (X1) is negative 0.279. It shows that when financial literacy increases, financial vulnerability decreases. The digital payment technology is positive 0.692. it means that when the financial literacy variable (X1) increases while other variables are considered constant, financial vulnerability (Y) will also increase.

It is known that the sig. value of the financial literacy variable (X1) is 0.191 > 0.05, which means that the financial literacy variable (X1) does not affect the financial vulnerability variable (Y). sig. value of the digital payment technology (X2) variable is 0.017 < 0.05 with a positive beta coefficient value of 0.692, which means that the digital payment technology (X2) variable has a positive effect on the financial vulnerability (Y) variable.

Hypothesis Test

The following is a table 7 of calculation of the coefficient of determination test (R²):

Table 7. the Coefficient of Determination Test

R	R Square	Adj. R Square	Std. Error
0.297	0.088	0.066	5.48142

Source: processed primary data (2024)

Based on Table 7. It is known that the magnitude of the effect of financial literacy (X1) and digital payment technology (X2) on financial vulnerability (Y) as measured using adjusted R square is 0.066, which means that the independent variables in this study can explain the dependent variable by 6.6%. The remaining 93.4% is explained by other variables not explained in this study.

The results of the simultaneous significance test (F Test) are presented Table 8.

Table 8. F Test

Model	Sum of Squares	Df	Mean Square	F	Sig.
<i>Regression</i>	241.678	2	120.839	404.022	000.022
<i>Residual</i>	2493.811	83	30.46		
<i>Total</i>	2735.488	85			

Source: processed primary data (2024)

It is based on Table 8. it is known that the significance value is $0.022 < 0.05$, which means that the variables of financial literacy (X1) and digital payment technology (X2) have a simultaneous influence on financial vulnerability (Y).

The results of the above research show that the financial literacy variable has no effect on financial vulnerability. The results of this study are supported by previous research conducted by Krishna et al. (2010), which states that financial literacy increases the financial knowledge of respondents. However, if this knowledge does not affect financial behavior, financial literacy does not affect financial vulnerability. Therefore, even if individuals are financially literate, they may still engage in behaviors that lead to financial vulnerability if they do not apply the knowledge in practical ways. For instance, a study on Malaysian households found that financial literacy improves financial well-being, but if households do not apply this knowledge in practical ways, they may still be financially vulnerable (Sabri *et al.*, 2021)

The result of hypothesis 2 showed that the digital payment technology (x2) has a positive effect on financial vulnerability (Y). These results are supported by Heo et al. (2021), which states that a person with the highest financial vulnerability is a user of digital payment technology. The increasing use of digital payment technology makes its users or students unable to plan or manage it properly. This can be seen from some users or students whose money expenses are more significant than the income they receive, so users or students have difficulty setting aside enough money at the end of the month, which will cause financial vulnerability. The use of digital payment technologies can sometimes increase financial vulnerability due to overspending or high-cost debt. Users of digital payment methods may not necessarily have higher financial literacy, and their behavior may not be significantly different from those who do not use these technologies.

Seldal and Nyhus (2022) found no association between the use of mobile payments or other digital payment methods, but younger generations and those with lower financial literacy were more financially vulnerable than other generations. This result suggests that further research is needed in different countries to understand the impact of the increasing digitalization of financial services. Furthermore, as COVID-19 has shifted more spending online and these new payment technologies have become more accessible, we need to better understand how they affect financial behavior

CONCLUSION

Based on the results of the research and discussion that has been carried out, the following conclusions can be drawn: the financial literacy variable (X1) does not affect the financial vulnerability variable (Y). The digital payment technology (X2) variable has a t count of 2.445 with a significance value of $0.017 < 0.05$, so the digital payment technology variable has a significant positive effect on the financial vulnerability (Y) variable.

Related to the limitations of the research that has been done before, here are some suggestions for further research: In future research with similar themes, it is expected to increase the number of other independent variables that have not been studied, such as digital literacy, financial inclusion, financial behavior, and others. Future research is expected to increase the population, and research samples are not only devoted to students of the Department of Accounting, Faculty of Economics and Business, Yogyakarta State University. However, they can also be expanded to other departments at Yogyakarta State University.

REFERENCES

- Ali, H., & Elviana, E. (2022). Determination of Financial Distress and Stock Prices: The Effect of Financial Performance and Sales Growth (Financial Management Review Literature). *Dinasti International Journal of Economics, Finance & Accounting*, 3(3), 241–252. <https://doi.org/https://doi.org/10.38035/dijefa.v3i3.1323>
- Anderloni, L., Bacchiocchi, E., & Vandone, D. (2012). Household financial vulnerability: An empirical analysis. *Research in Economics*, 66(3), 284–296
- Arikunto, S. (2010). *Metode penelitian*. Rineka Cipta
- Assidiq, Y. (2023). *Mahasiswa UMY Terjerat Pinjol, Rektor: Buat Gaya Hidup, Bukan Bayar Kuliah*. ReJogja. https://rejogja.republika.co.id/berita/s0tnje399/58-mahasiswa-umy-terjerat-pinjol-rektor-buat-gaya-hidup-bukan-bayar-kuliah#google_vignette
- Bachdar, S. (2018). *Generasi Milenial Masih Pembelanja Online Terbesar di Indonesia*. Marketeers. <https://marketeers.com/generasi-milenial-masih-pembelanja-online-terbesar-di-indonesia/>
- Barberis, N., & Thaler, R. (2003). A survey of behavioral finance. *Handbook of the Economics of Finance*, 1, 1053–1128
- Bodewyn, R., Endang, R., Nurita, E., & Tua, M. (2020). Akibat Kualitas Kredit dan Penambahan Biaya Operasional Buana Akuntansi. *Jurnal Buana Akuntansi*, 6(2), 99–111
- BPS. (2023). *Data Statistika Penduduk di Indonesia*
- Budiati, I., Susianto, Y., Adi, W. P., Ayuni, S., Reagan, H. A., Larasaty, P., Setiyawati, N., Saputri, V. G., & Pratiwi, A. (2018). *Profil Generasi Milenial Indonesia*. Jakarta: Kementerian Pemberdayaan Perempuan dan Perlindungan Anak
- Carpenter, F., Cole, S. A., Shapiro, J., & Zia, B. (2011). Unpacking the causal chain of financial literacy. *World Bank Policy Research Working Paper*, 5798
- Danuri, M. (2019). *Development and transformation of digital technology*. (2nd ed., Vol. 15). Infokam
- Davis, F. (2017). *Passage through crisis: Polio victims and their families*. Routledge

- Demetrius, L., & Wolf, C. (2020). *Evolutionary entropy and the second law of thermodynamics*. ArXiv Preprint
- Disney, R., & Gathergood, J. (2013). Financial literacy and consumer credit portfolios. *Journal of Banking & Finance*, 37(7), 2246–2254
- Djojosoedarso, S. (2003). *Prinsip-Prinsip Manajemen Resiko dan Asuransi*. Salemba Empat.
- Fuller, R. (2000). The task-capability interface model of the driving process. *Recherche - Transports - Sécurité*, 66, 47-57
- Gaol, C. J. L. (2012). *Sistem Informasi Manajemen*. Grasindo
- Ghozali, I. (2013). *Aplikasi Analisis Multivariat dengan Program IBM SPSS 21 Update PLS Regresi*. Badan Penerbit Universitas Diponegoro
- Ghozali, I. (2016). *Aplikasi Analisis Multivariete Dengan Program IBM SPSS 23*. Badan Penerbit Universitas Diponegoro
- Heo, W., Lee, J. M., & Rabbani, A. G. (2021). Mediation Effect of Financial Education between Financial Stress and Use of Financial Technology. *Journal of Family and Economic Issues*, 42, 413–428
- Hilgert, M. A., Hogarth, J. M., & Beverly, S. G. (2003). Household financial management: The connection between knowledge and behavior, *Federal Reserve Bulletin*, 89
- Houston, R. (2020). Harnessing genomics to fast-track genetic improvement in aquaculture. *Nature Reviews Genetics*, 21(7), 389–409
- Janna, N. M., & Herianto, H. (2013). *Konsep uji validitas dan reliabilitas dengan menggunakan SPSS*. Salemba empat
- Kemendikbud. (2017). *International Programme for Student Assessment (PISA)*. Litbang.Kemdikbud.Go.Id. <https://litbang.kemdikbud.go.id/pisa>
- Khare, N., & Chaturvedi, S. K. (2012). Tracing the signature of various frontal systems in stable isotopes (oxygen and carbon) of the planktonic foraminiferal species *Globigerina bulloides* in the Southern Ocean (Indian sector). *Oceanologia*, 54(2), 311–323. <https://doi.org/https://doi.org/10.5697/oc.54-2.311>
- Kim, H. H., Maurer, R., & Mitchell, O. S. (2016). Time is money: Rational life cycle inertia and the delegation of investment management. *Journal of Financial Economics*, 121(2), 427–447
- Krishna, A., Rofaida, R., & Sari, M. (2010). Analisis Tingkat Literasi Keuangan di Kalangan Mahasiswa dan Faktor-Faktor yang Mempengaruhinya (Survey Pada Mahasiswa Universitas Pendidikan Indonesia. *Proceedings of The-4th International Conference on Teacher Education*
- Litner, G. (1998). Behavioral Finance: Why Investors Make Bad Decisions. *The Planner*, 1
- Liu, Y., Huang, D., Huang, Q., Yang, H., Li, Z., & Wang, M. (2019). The impact of mobility, risk, and cost on the users' intention to adopt mobile payments. *Information Systems and E-Business Management*, 319–342
- Lusardi, A., Michaud, P. C., & Mitchell, O. S. (2017). Optimal financial knowledge and wealth inequality. *Journal of Political Economy*, 125(2), 431–477
- Lusardi, A., & Tufano, P. (2015). Debt literacy, financial experiences, and overindebtedness. *Journal of Pension Economics & Finance*, 14(4), 332–368
- Mandell, L., & Klein, L. S. (2007). Motivation and financial literacy. *Financial Services Review*, 16(2), 105–116

- Moore, D. (2003). Survey of Financial Literacy in Washington State: Knowledge, Behavior, Attitudes, and Experiences. *Technical Report of Social and Economic Sciences Research Center*, 3–39
- Muhammad, N. (2023). *E-Wallet, Metode Pembayaran Digital yang Paling Banyak Digunakan Warga RI saat Belanja Online*. Katadata
- Muliadi, M. L., & Japarianto, E. (2021). Analisa Pengaruh Perceived Ease of Use Terhadap Behavior Intention Melalui Perceived Usefulness Sebagai Media Intervening Pada Digital Payment Ovo. *Jurnal Manajemen Pemasaran*, 15(1), 20–27
- Nababan, Darman, & Sadalia, I. (2012). Analisis Personal Financial Literacy dan Financial Behavior Mahasiswa Strata I Fakultas Ekonomi. *Jurnal Ekonomi Dan Bisnis*, 10–13
- OECD. (2011). *Measuring financial literacy: questionnaire and guidance notes for conducting an internationally comparable survey of financial literacy*. OECD. <https://www.oecd.org/finance/financial-education/49319977>
- OJK. (2013). *Perlindungan Konsumen Sektor Jasa Keuangan*. BPK. bpk.go.co.id
- Otoritas Jasa Keuangan. (2023). *Membangun Keyakinan Nasabah Aset Digital Dari Risiko Siber*. OJK. <https://ojk.go.id/ojkinstitute/id/capacitybuilding/upcoming/1508/membangun-keyakinan-nasabah-aset-digital-dari-risiko-siber>
- Patil, S. (2014). Impact of Plastic Money on Banking. *International Journal of Management Research and Business Strategy*, 1–11
- Phung, A. (2007). *Behavioral Finance*. Program for International Student Assessment (PISA). <https://www.investopedia.com/university/behavioral-Finance/>
- Pramesti, N. I. (2023). Pengaruh Literasi Keuangan Digital, Perilaku Keuangan dan Impulsive Buying Terhadap Kerentanan Keuangan Dengan Pay Later Sebagai Pemoderasi. *Jurnal Ekonomi Dan Bisnis*, 7–10
- Putra, W. (2022). *Kata Pengamat soal Banyak Mahasiswa Terjerat Pinjol*. Detik Jabar. <https://www.detik.com/jabar/berita/d-6408844/kata-pengamat-soal-banyak-mahasiswa-terjerat-pinjol>
- Putri, F. C. (2023). Interpretasi Laporan Keuangan Pemerintah Provinsi Bali Tahun 2019-2021. *Jurnal Ekonomika*, 14(1), 145–158. <https://doi.org/https://doi.org/10.35334/jek.v14i1.3150>
- Remund, D. L. (2010). Financial Literacy Explicated: The Case for a Clearer Definition in an Increasingly Complex Economy. *Journal of Consumer Affairs*, 44(2), 276
- Ricciardi, V., & Simon, H. K. (2000). What is behavioral finance? *Business, Education & Technology Journal*, 2(2), 1–9
- Rizka, I. J. (2019a). Peranan Biaya Kualitas Dalam Mendukung Pengendalian Kualitas Produk Pada Ud. Mutiara Rasa Jember. *Jurnal Imiah Pendidikan Dan Pembelajaran*, 3(1), 74. <https://doi.org/10.23887/jipp.v3i1.17113>
- Sabri, MF., Aw, EC., Rahim, HA., Burhan, NAS., Othman, MA., Simanjuntak, M. (2021). Financial Literacy, Behavior and Vulnerability Among Malaysian Households: Does Gender Matter? *Int. Journal of Economics and Management* 15 (2): 241-256. <http://www.ijem.upm.edu.my/vol15no2/6.%20Financial%20Literacy,%20Behavior%20and%20Vulnerability%20Among%20Malaysian%20Households.pdf>
- Sanusi, A. (2014). *Metodologi Penelitian Bisnis*. Salemba Empat

- Saraswati, A. M., & Nugroho, A. W. (2021). Perencanaan Keuangan dan Pengelolaan Keuangan Generasi Z di Masa Pandemi Covid 19 melalui Penguatan Literasi Keuangan. *Warta LPM*, 24(2), 309–318. <https://doi.org/https://doi.org/10.23917/warta.v24i2.13481>
- Scheresberg, C. (2013). *Financial literacy and financial behavior among young adults: Evidence and implications*. (2nd ed., Vol. 62). Numeracy
- Seldal, M. N., & Nyhus, E. K. (2022). Financial vulnerability, financial literacy, and the use of digital payment technologies. *Journal of Consumer Policy*, 45(2), 281–306
- Sewel, M. (2007). *Behavioral Finance*. University of Cambridge
- Šubová, N., Mura, L., & Buleca, J. (2021). Determinants of household financial vulnerability: Evidence from selected eu countries. *E a M: Ekonomie a Management*, 24(3), 186–207. <https://doi.org/https://doi.org/10.15240/TUL/001/2021-3-011>
- Sugiyono. (2005). *Memahami Penelitian Kualitatif*. Alfabeta
- Sugiyono. (2014). *Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif, dan R&D*. Alfabeta
- Sugiyono. (2017). *Metode Penelitian Evaluasi: Pendekatan Kuantitatif, Kualitatif, Dan Kombinasi*. Alfabeta
- Suharsimi, A. (2005). *Manajemen penelitian*. Rineka Cipta
- Thaler, R. H. (1994). *Quasi rational economics*. Russell Sage Foundation
- Waliyyudin, M. N. (2023). *Di Balik Melonjaknya Utang 'Paylater' Anak Muda: Dampak Psikologis, Kerentanan, Hingga Absennya Pemerintah*. The Conversation. <https://theconversation.com/di-balik-melonjaknya-utang-paylater-anak-muda-dampak-psikologis-kerentanan-hingga-absennya-pemerintah-205121>
- Wewege, L., & Thomsett, M. C. (2019). *The digital banking revolution: how fintech companies are transforming the retail banking industry through disruptive financial innovation*. Walter de Gruyter GmbH & Co KG
- Widayat. (2010). *Penentu Perilaku Berinvestasi* (2nd ed., Vol. 1). Ekonomika-Bisnis
- Yakoboski, P. J., Lusardi, A., & Hasler, A. (2018). *Millennial financial literacy and Fin-tech use: Who knows what in the digital era*. TIAA Institute
- Yunitasari, E., Maduwinarti, A., & Mulyati, A. (2022). Pengaruh E-Payment Dan E-Service Quality Terhadap Kepuasan Pelanggan Pengguna Shopee Food di Kota Surabaya. *Seminar Nasional 2022*, 141–145