

Financial Literacy and its Impact on Money Mule Awareness Among Malaysian Higher Education Students

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Abstract

This study investigates the relationship between two types of financial literacy, which are short-term or daily budgeting and financial goal setting and its impact on money mule awareness among higher education students in Malaysia. An online survey questionnaire for data collection was used in this study and responses received were a total of 160 from various universities in Malaysia. To analyse, this research utilizes SmartPLS 4.0 to comprehensively understand how financial literacy contributes to awareness of money mule schemes fraud. The findings reveal that financial literacy on financial goals impacts significantly money mule awareness among higher education students in Malaysia. This indicates that educated youngster students are concerned about their dreams of future financial goals to prevent them from being fraudsters, scammers, or money mules. Nevertheless, short-term daily budgeting does not contribute significantly towards awareness of money mule fraud in Malaysia. The anticipated outcomes will be contributory for policymakers, educators, and financial institutions, guiding the development of effective strategies to promote money mule awareness, probably using advertising of how future financial goals impact if people are involved in money mule fraud.

Keywords: Budgeting, Financial Goals, Financial Literacy, Money Mule and Money Mule Awareness.

INTRODUCTION

Money mules are individuals who are recruited by criminal organizations to transfer illegally obtained money between different accounts, often with the promise of easy money. Money mules should understand that they might be blamed for the theft, even though they are being used by real criminals (Leukfeldt & Kleemans 2019). Criminals use various methods to recruit money mules to cover their illegal activities and one of the common methods is through online job postings or social media advertisements that promise easy money for simple tasks. These postings often target vulnerable individuals who are looking for quick ways to make money and may not fully understand the consequences of their actions. Another method is through romantic relationships, where criminals manipulate their partners into assisting with money laundering activities under the guise of love and trust. In some cases, criminals may directly approach individuals in person, posing as legitimate business (Bekkers, et al, 2023).

Financial Literacy

Financial literacy is a crucial skill for individuals to navigate the complex world of personal finance effectively (Chinen & Endo, 2014). Financial literacy fosters responsible financial behavior and protects individuals from falling victim to financial scams, including money mule activities (Karim et al, 2023). In the world of managing personal finances, financial budgeting and financial goals are the key tools for success. Financial literacy covers both short-term practical needs and long-term plans (Robb & Woodyard 2011). Short-term budgeting helps with day-to-day money matters, ensuring there's enough for immediate expenses and unexpected situations (Karim et al, 2023). On the other hand, long-term budgeting looks ahead, making strategic decisions for the future. It involves thinking about big goals and how to save or invest money for the long run Nababan and Sadalia (2013). Meanwhile, financial goals are the aspirations of individuals of their financial in the future. These

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goals vary widely and can include short-term objectives like paying off debts, medium-term goals like acquiring assets, and long-term goals such as achieving financial independence. Hence, financial literacy is pivotal in enabling individuals to set realistic and attainable goals aligned with their unique circumstances.

Recognizing the importance of understanding the connection between financial literacy and money mule awareness is essential in developing targeted interventions and educational strategies to safeguard the financial well-being of individuals. With the increasing use of technology and online platforms, individuals, especially youngsters are particularly vulnerable to scams and fraudulent activities that can compromise their financial security. In recent years, there has been a growing concern about the involvement of students in activities such as money muling, where they unknowingly become involved in illegal financial transactions. Hence, this academic journal research aims to shed light on the relationship between financial literacy and money mule awareness among higher education students in Malaysia. While existing research has explored financial literacy and financial scams independently, there is a noticeable gap in the literature regarding the specific relationship between two types of financial literacy, daily budgeting and financial goals with the awareness of money mule activities among higher education students. This research seeks to address this gap by investigating how variations in financial literacy levels impact students' susceptibility to money mule schemes.

LITERATURE REVIEW

Development of Hypotheses

This literature review explores the intersection of financial literacy, specifically daily budgeting and financial goals, with money mule awareness among students in Malaysia. Understanding the relationship between financial literacy especially on budgeting and financial goals, together with the of money mule awareness is important, especially among the student population were discussed in this section.

Money Mule Awareness

According to Rani et al, (2023), the lack of cooperation from the bank is the cause of the money mule. To reduce the involvement of more people in this money mule, financial institutions like banks need to provide alert awareness to customers by disclosing the warning signs of money mule scams. The bank can identify money mules through suspicious transaction records (Chaikin, 2009). However, there are also banks themselves that are not aware of the fraud committed, especially the mistakes that are often made by new bank employees by approving international bank transfers from customers who are deceived into believing that they have made a genuine transaction (Pardhey & Yuni, 2024). In Malaysia, it is clear in Section 14 of the Money Laundering and Terrorism Financing Act (AMLATFPUAA) of 2001 that financial institutions or banks are responsible for monitoring and reporting any suspicious activity.

When involved with the money mule or even if there is insufficient evidence, people should be required to make a report on all suspicious activities. A report can delay, block, and prevent this money-mule activity. Lack of knowledge on which channel to report any money mule fraud is a big problem that is often faced. According to a study by Eshiwani (2020) in Pakistan, there is a lack of knowledge about the appropriate authorities and reporting mechanisms for money mules. In addition to that, the complexity of making fraud reports and ultimately the results and actions taken are not satisfactory, making customers not interested in making a report. Apart from that, educated people think this is a shame for them, and it causes them to remain silent (Whitty, 2020).

Among the channels that can be reported on money mules' activities are the financial institutions, the authorities, such as the police or enforcement agencies, and also agencies and relevant organisations. The bank can provide awareness to customers by providing information about the signs of money mule and the risks to customers to increase awareness about money mule (Vedamanikam & Chethiyar, 2023).

Financial Literacy

Daily Budgeting

Financial literacy is a critical aspect of individual well-being and economic stability. Financial literacy encompasses various skills and knowledge related to managing personal finances, which is part of the definition of financial literacy under OECD 2016. Daily budgeting involves the ability to plan and manage day-to-day expenses, while financial goals refer to setting and achieving long-term financial objectives. Both components are integral to sound financial decision-making.

Financial literacy, specifically in the realm of daily budgeting, is an important aspect of personal finance. Daily budgeting involves the continuous process of making informed decisions about how to allocate financial resources for day-to-day expenses. This literature review looks into the various components of financial literacy associated with making daily decisions on personal expenses, crafting detailed budget plans, managing daily expenditures, setting aside money for bills, staying organized with upcoming bills, and cultivating a regular savings habit (Lusardi & Mitchell 2011; Garg & Singh 2017; Sabri 2011; Sari 2015).

University students today face various problems, including managing their time between studies and extracurricular activities. If they do not have enough time to revise, it makes them more likely to cheat in exams, especially now with the prevalence of online exams (Azemi et al., 2022; Azhar et al., 2023). In Malaysia, the level of financial literacy among students and their awareness of money mule activities has become a topic of concern (Henager & Mauldin 2015). Research has shown that individuals with low levels of financial literacy are more susceptible to becoming unwitting participants in money mule scams, where they are used to transfer illegally obtained money. With the increasing prevalence of financial scams and fraud, raising awareness about money mule activities is essential to protect individuals and financial institutions from being exploited.

With the increasing use of technology and online platforms, students are particularly vulnerable to scams and fraudulent activities that can compromise their financial security. Job scammers strategically leverage the online profiles and activities among students and younger professionals compared to older ones who have less presence on social networks compared to younger ones (Vidros et al, 2016). Hence, higher education students who are eager to find a job after studying, are at risk of falling victim to employment scams. Hence this study hypothesis 1 is:

H1: Financial Literacy on budgeting among higher education students positively related to the awareness of money mule

Financial Goal

Financial literacy is knowledge relating to financial management which is needed to enhance more well-being of life for the individual future (Kurniasari et al., 2018). Individuals with high financial literacy especially in their future determination are more empowered to set meaningful financial goals (Sari 2015). They possess the knowledge and skills to evaluate their financial situation, prioritize objectives, and develop strategies to achieve them. Diana-Rose & Zariyawati (2015) noted that early exposure to financial literacy is important for the younger generation, as they need to care about paying loans for any investment they make, as well as the need to financially support their own family. Many other prior studies look at paying university fees, buying a car or house, debt-free goals, financial independence, and providing support to family members (Aung and Mon (2020); Ibekwe and Oli (2020); Karim 2023; Nababan & Sadalia (2015). Hence, this study hypothesis 2 is:

H2: Financial Literacy on financial goals among higher education students positively related to the money mule awareness

As discussed above, a research framework was developed and this study analysed the effect of financial literacy budgeting and financial goals on money mule awareness among higher education students in Malaysia.

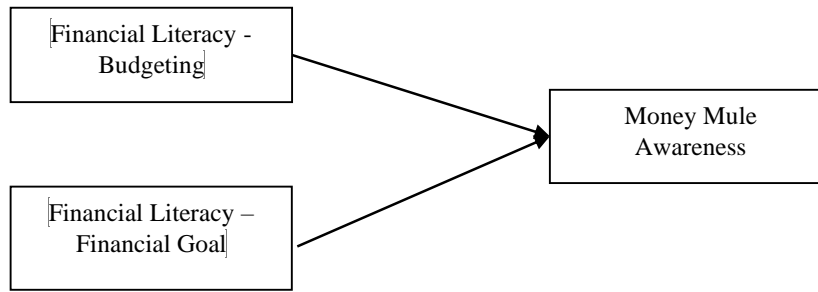


Figure 1: Framework of study

RESEARCH METHODOLOGY

Sampling Methodology

This study utilizes a non-probability sampling method, specifically convenience sampling, to collect data on the level of financial literacy and awareness of money mule activities among university students in Malaysia. The convenience sampling method is selected for its practicality and convenient access to potential participants. A total of 160 students will be selected to partake in the survey through a Google Form disseminated via WhatsApp. The recruitment of participants will primarily entail contacting individuals within the researcher's network, specifically acquaintances who are also educators in different universities throughout Malaysia. In addition, students who receive the survey link are urged to share it with their peers at other universities, to increase the variety of responses and obtain a more comprehensive understanding of the financial literacy and money mule awareness situation among Malaysian students.

Survey Instrument

The survey instrument for this study will consist of a meticulously designed questionnaire created using Google Forms. The questionnaire will consist of sections specifically addressing financial literacy, encompassing subjects such as budgeting and the financial goals of respondents. Another section will focus on money mule awareness. Action once involved in money mule scams. The questionnaire is designed to be thorough yet concise to effectively maximize the rate of response. Before distribution, a pilot test will be carried out among a limited number of students to detect any possible concerns regarding clarity, wording, or the pertinence of the questions. Upon receiving feedback, the survey instrument will be modified as needed to improve it for the primary data collection.

Data Collection Process

The data collection process entails distributing the survey link via WhatsApp, utilizing the connections of acquaintances who are professors at different universities in Malaysia. Students will be directly sent the survey invitation by these reliable contacts, increasing the probability of their participation. To foster a wide range of responses, participants are urged to distribute the survey link to their colleagues, particularly those from distinct academic institutions. The data collection period will span a designated duration, affording participants sufficient time to provide their responses. The gathered data will undergo anonymization and analysis to extract insights regarding the financial literacy and money mule awareness levels among university students in Malaysia. This will provide valuable information for both academic research and policymaking purposes.

The Likert scale was used in measuring items for this study. With ranging of 1 to 5, 1 for strongly disagree and 5 for strongly agree. Based on prior literature, this study adapted and modified a few items for this study. Both financial literacy on budgeting and financial literacy on financial goals used five items, while money mule awareness used six items. This study employed SmartPLS 4.0 software to analyse data. This study looks at the

measurement model on validity and reliability, together with the structural model to test for the relationship of three variables in this study.

FINDINGS AND DISCUSSION

The findings were divided into two, where the first part discussed descriptive findings, while the second part further discussed measurement and structural models to look at the significance and relationship of the data.

Descriptive Study

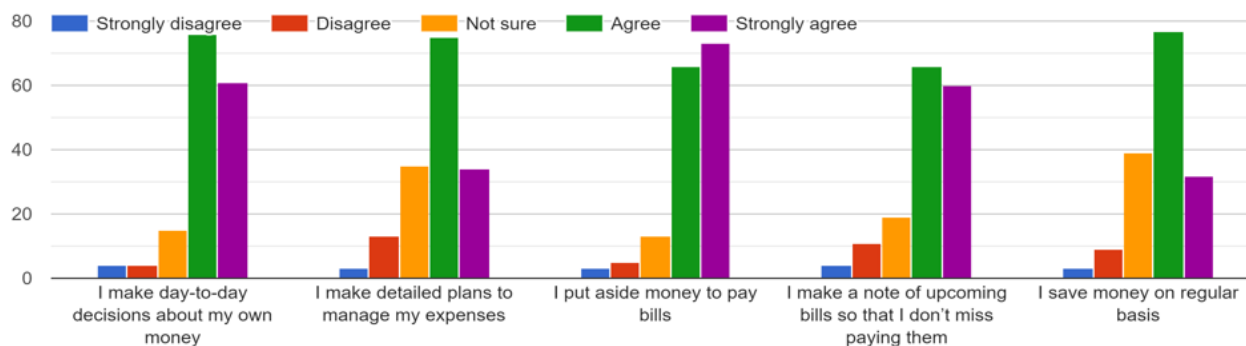
This section will discuss the findings on respondents’ feedback including the biography information on gender, age, race, university/college, mode of study, education level, education background, position, and monthly income/scholarship received. The other information to be discussed were financial literacy on budgeting, financial literacy on financial goals, and money mule awareness knowledge information from respondents.

Biography

Table 1. Respondent’s biography

Item	Total	Percentage (%)
Gender		
-Male	40	75%
-Female	120	25%
Age		
-<20 years	29	18.1%
-20-30 years	128	80%
-31-40 years	1	0.6%
-41-50 years	2	1.2%
Race		
-Malay/Bumiputra	156	97.5%
-Chinese	4	2.5%
University/College		
-Universiti Poly-Tech Malaysia	81	50.6%
-Universiti Kebangsaan Malaysia	42	26.3%
-Universiti Teknologi MARA	13	8.1%
-International Islamic University Malaysia	11	6.9%
-Islamic Science University of Malaysia	5	3.1%
-Others	8	5.0%
Education Level		
-Undergraduate	157	98.1%
-Postgraduate	3	1.9%

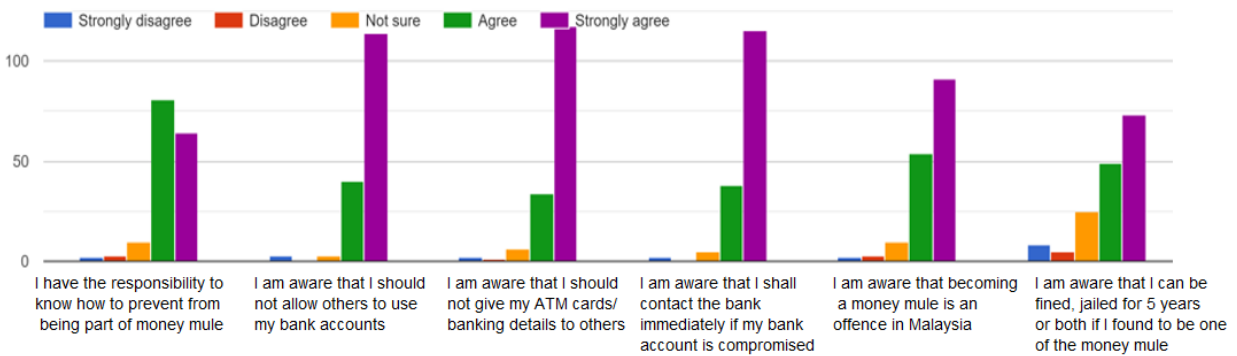
Financial Literacy-Daily Budgeting



Financial Literacy-Financial Goal



Money Mule Awareness



Measurement Model

In this study, we test the convergent and discriminant validity for assessing the measurement model. Hair et al. (2017) mentioned that convergent validity was determined according to factor loading, average variance extracted (AVE), and composite reliability (CR). The results validated that all criteria were satisfactory as the items loading were higher than 0.7 (except for Budget 2, Budget 4, and Financial Goal 1), however, we did not remove the items as it made the CR value lower. The AVE also shows higher than 0.5 hence the convergent validity for scale measurement in this study was fulfilled as shown in Table 1 below.

Table 2. Convergent Validity

VARIABLE	ITEM	LOADING	COMPOSITE RELIABILITY (CR)	AVERAGE VARIANCE EXTRACTED (AVE)
Financial Literacy				
-Daily Budgeting	Budget1	0.809	0.717	0.521
	Budget2	0.694		
	Budget3	0.726		
	Budget4	0.648		
-Financial goal	FinGoal1	0.657	0.880	0.66
	FinGoal3	0.816		
	FinGoal4	0.904		
	FinGoal5	0.851		
Money Mule Awareness	Aware1	0.734	0.905	0.722
	Aware2	0.906		
	Aware3	0.904		

	Aware4	0.911		
	Aware5	0.777		

Table 3 below shows the heterotrait-monotrait (HTMT) ratio of correlation, a multitrait-multimethod as per suggestion by Henseler et al. (2015) with values less than the threshold level. Based on prior studies, the discriminant validity would be questionable if the value of HTMT is more than 0.85 (Kline, 2015).

Table 3. HTMT ratio of correlations

VARIABLE	1	2	3	
Financial Literacy				
1 Financial Budgeting				
2 Financial Goal	0.797			
3 Money Mule Awareness	0.435	0.483		

Structural Model

For evaluating the structural model R2, standard beta, and t-values via a bootstrapping procedure with a resample of 5,000, the predictive relevance (Q2), and the effect sizes (f2) were inspected as recommended by Hair et al. (2017). The results are shown in Table 3.

Table 4. Structural model

Hs	Path relationship	Std. beta	Std Dev	t-value	Decision	f2	R2	VIF	Q2
H1	Financial Literacy- Budgeting → money mule awareness	0.172	0.108	1.378	Not supported/ Not accepted	0.018 (Small effect)	0.205	2.409	
H2	Financial Literacy- Financial goal → money mule awareness	0.359	0.104	3.329**	Supported/ Accepted	0.096		2.409	

Note: **p < 0.01

This study has developed a total of two hypotheses. The statistical results reveal hypothesis 2, financial literacy on financial goals supported the money mule awareness with $\beta = 0.359$ and $p < 0.01$. For hypothesis 1, financial literacy on budgeting does not support on money mule awareness among higher education students in Malaysia.

In this study, the R2 value for money mule awareness is 0.205. Hair et al. (2017) have recommended looking at the difference changes in R2 value to get the f2 value (effect size). Cohen (1988) has made the recommendation that the size value 0.02 represented a small effect, a medium effect with a value of 0.15, and a large effect with a value of 0.35. In this study, hypothesis 1, f2 is 0.018 representing a small effect, while hypothesis 2 is considered acceptable with a t-value of 3.329.

DISCUSSION

Higher education students' awareness of money mule hopefully increase in Malaysia. This study looks at two perspectives, financial literacy budgeting and financial literacy financial goal. The study on higher education students' money mule awareness was little known in this area, especially when focusing on financial literacy. Therefore, this study's objective was to identify whether financial literacy among university students towards their role in understanding money mule fraud. To understand financial literacy, this study compares the two areas of financial literacy usually used, which are daily budgeting and financial goals. Findings show that financial literacy on financial goals supports and influences the university's students' money mule awareness. However financial literacy based on budget criteria was little known concluding that the financial literacy on budgeting currently is insufficient to make students responsible towards money mule awareness.

CONCLUSION

In the beginning, this study expects both financial literacy towards money mule awareness to be similar. However, financial literacy based on budget criteria was little known regarding awareness of money mules compared to the financial literacy of financial goals. In addressing the issue of money mules, it is necessary to make a collaborative effort involving both financial institutions and individuals to remain alert and identify warning signs of suspicious activity Rani, Zolkafil, and Nazri (2023). Mistakes within bank procedures and human errors can inadvertently aid criminals in their schemes. This proactive approach not only protects people from exploitation but also ensures the security of money transactions. In examining the financial landscape of students in Malaysia, we aim to contribute empirical understandings that can inform policymakers, educators, and financial institutions in designing effective educational programs and interventions. The outcomes of this research are anticipated to provide an understanding of the factors influencing financial literacy and money mule awareness among higher education students, especially in an increasingly digitalized and interconnected world (Zuraidah & Nasution 2021).

REFERENCES

- Azemi, A., Rosly, A. S., Mohamad, A., Ishak, S. N., & Palil, M. R. (2022). Impacts of Achievement in Secondary School on Performance in Accounting Professional Examinations in Bumiputra's Academic Institution. *The Asian Journal of Professional & Business Studies*, 3(2).
- Azhar, S. M. F. J., Azemi, A., Rossli, M. A. H., & Nadzri, M. S. (2023). The Effect of Control on The Prevention of Online Examination Fraud. *The Asian Journal of Professional & Business Studies*, 4(2).
- Azhar, Sheikh Muhammad Faris Jamil, et al. "The Effect of Control on The Prevention of Online Examination Fraud." *The Asian Journal of Professional & Business Studies* 4.2 (2023).
- Bekkers, L., Van Houten, Y., Spithoven, R., & Leukfeldt, E. R. (2023). Money Mules and Cybercrime Involvement Mechanisms: Exploring the Experiences and ms of Young People in the Netherlands. *Deviant Behavior*, 1-18.
- Chaikin, D. (2009). How Effective Are Suspicious Transaction Reporting Systems?. *Journal of Money Laundering Control*, 12(3), 238-253.
- Eshiwani, M. M. (2020). Detecting financial crimes using pattern recognition techniques: case of mobile money transactions (Doctoral dissertation, Strathmore University).
- Garg, N., & Singh, S. (2017). Financial literacy among youth. *International Journal of Social Economics*, 45(1), 173-186.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). A primer on partial least squares structural equation modeling. Sage. <https://doi.org/10.15358/9783800653614>
- Henager, R., & Mauldin, T. (2015). Financial literacy: The relationship to saving behavior in low-to moderate-income households. *Family and Consumer Sciences Research Journal*, 44(1), 73-87.
- Ibikwe, C. C. & Oli, N. P. (2020). Ponzi schemes and risks of patronage among undergraduates in tertiary institutions in Anambra state, South-East, Nigeria, *International Journal of Management Studies and Social Science Research*, 96-107.
- Karim, N. A., Ab Wahid, Z., Ariffin, S. N. K., Nor, S. H. S., Nazlan, A. N., & Kassim, S. (2023). Financial Literacy among University Students and its Implications towards Financial Scams. *Information Management and Business Review*, 15(3 (I)), 124-128.
- Kurniasari, N. T., Fariyanti, A., & Ristiyanto, N. (2018). Fraud Prevention Strategy (Fraud) In Government Financial Management Using.
- Leukfeldt, R., & Kleemans, E. E. (2019). Cybercrime, money mules and situational crime prevention: Recruitment, motives and involvement mechanisms. In *Criminal networks and law enforcement* (pp. 75-89). Routledge.
- Lusardi, A., & Mitchell, O. S. (2011). Financial literacy and retirement planning in the United States. *Journal of Pension Economics and Finance*, 10(4), 509-525.
- Nababan, D., & Sadalia, I. (2013). Analisis Personal Literacy Dan Financial Behavior Mahasiswa Strata 1 Fakultas Ekonomi Universitas Sumatera Utara. *Media Informasi Manajemen*, 1(1), 1-16.
- Pardhey, N., & Yuni, D. N. (2024). Legal Efficiency of Secure Transactions Framework in India: A Multi-Dimensional Regulatory System. In *Fintech Applications in Islamic Finance: AI, Machine Learning, and Blockchain Techniques* (pp. 171-182). IGI Global.
- Rani, M. I. A., Zolkafil, S. Z. S., Nadzri, F. A. A., Naz, S. N. F. S. M., & Azemi, A. (2023). Exploring Money Mule Recruitment: An Initiative in Combating Money Laundering. *International Journal of Business and Economy*, 5(1), 10-18.
- Rani, M. I. A., Zolkafil, S., & Nazri, S. N. F. S. M. (2023). The Trends and Challenges of Money Mule Investigation by Malaysian Enforcement Agency. *International Journal of Business and Technopreneurship*, 13(1), 37-50.
- Robb, C. A. & Woodyard, A. S. (2011). Financial knowledge and best practice behavior. *Journal of Financial Counseling and Planning*, 22(1), 60-70

- Sabri, M. F. (2011). Pathways to financial success: Determinants of financial literacy and financial well-being among young adults. Dissertation. Iowa State University
- Sari, D. A. (2015). Finalcial Literacy Dan Perilaku Keuangan Mahasiswa. Buletin Bisnis & Manajemen, 01(02), 171–189.
- Vedamanikam, M., & Chethiyar, S. D. M. (2023). Knowledge of Money Laundering and Rationalization of Money Mule Job Acceptance: A Study among Higher Education Students in Malaysia. Pakistan Journal of Criminology, 15(3).
- Vidros, S., Koliass, C., & Kambourakis, G. (2016). Online recruitment services: another playground for fraudsters. Computer Fraud & Security, 2016(3), 8-13.
- Whitty, M. T. (2020). Is there a scam for everyone? Psychologically profiling cyberscam victims. European Journal on Criminal Policy and Research, 26(3), 399-409.
- Zuraidah, Z., & Nasution, E. S. (2021). The Effect of Financial Literacy on Financial Behavior Moderated by Information Access. In Proceedings of International Conference on Multidisciplinary Research (Vol. 4, No. 1, pp. 37-42).