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by Atika Jauharia Hatta Hambali

"Effect of gender as a moderating variable on financial vulnerability using hierarchical regressions: Survey evidence from Indonesian traditional market traders"

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EFFECT OF GENDER AS A MODERATING VARIABLE ON FINANCIAL VULNERABILITY USING HIERARCHICAL REGRESSIONS: SURVEY EVIDENCE FROM INDONESIAN TRADITIONAL MARKET TRADERS

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Abstract

Market traders have a significant contribution to GDP in Indonesia; however, their level of education is still low. This leads to a high level of financial vulnerability, so it is important to study this issue, and there is still not enough research on financial vulnerability. Market traders are considered to be more vulnerable to fraud and poor financial management, and this is more common among female traders who have a relatively high level of consumption and economic dependence on men. This study aims to determine the effect of financial behavior and digital financial literacy on financial vulnerability. In addition, the gender interaction between the two relationships was also tested to better understand whether gender weakens or strengthens the relationship. Using a survey method on 278 market traders in Indonesia and hierarchical regression analysis, the results show that digital financial literacy and financial behavior have a negative significant influence on financial vulnerability of market traders. This means that low digital financial literacy and poor financial behavior lead to high financial vulnerability of market traders. In addition, the results of the interaction test show that the negative effect of financial vulnerability is greater for men than women. This is because men usually provide for their families, so they will always try to improve their financial performance and productivity. An important implication of this study is to provide recommendations to the government and associations to further improve the digital literacy skills of market traders, especially female traders through training or mentoring.

INTRODUCTION

The Covid-19 pandemic hit the finances of small and medium-sized businesses (MSMEs) (Eggers, 2020), so they need large funding to be able to carry out their daily operations (De Vito & Gómez, 2020). This mainly triggered changes in people's behavior and activities followed by the development of business models that are now increasingly digitized (Gomber et al., 2018), which led to developments and innovations in financial technology (fintech). The interest in fintech adoption is dominated by the convenience and usefulness of this fintech, especially for the millennial generation (Aditya & Mahyuni, 2022). SMEs that use fintech are more successful at lessening the pandemic's harmful effects and assisting SMEs in recovering (Yuming et al., 2020), re-

sult in an ability to compete (Baden-Fuller & Haefliger, 2013), because fintech provides speed and flexibility (Chishti and Barberis, 2016; Fernando et al., 2018; Bernardo, 2017).

Despite the many advantages of using digital finance, there is a number of factors that are thought to make use of fintech highly vulnerable and risky, such as the risk of financial abuse, risk of fraud, risk of misuse of personal data, legal uncertainty, and inadequate operation of the fintech system (Ryu, 2018). Thus, in order not to be trapped in the various negative impacts caused by using fintech, it is necessary to have an understanding of digital financial literacy for individuals who will adopt fintech. Financial literacy can increase a person's susceptibility to fraud (Hermansson & Jonsson, 2021; Wei et al., 2021; Prasad et al., 2021); victims of fraud won't suffer losses (Wei et al., 2021; Korkmaz et al., 2022), will choose appropriate financial products (Mudzingiri et al., 2019), better understand financial markets and economic law (Ahmad & Shah, 2022; Zhang et al., 2021), be more accurate in assessing the credibility of creditors (Korkmaz et al., 2022), so individual financial vulnerability is reduced (Sabri et al., 2021).

The objective of this study is to establish a link between digital financial literacy and financial behavior on financial vulnerability. In addition, the interaction of gender between the two relationships is also tested to understand whether gender weakens or strengthens the relationship. Men with higher levels of digital literacy than women are less prone to fintech abuse. And men, who are generally the breadwinners of the family, will be more careful in managing their finances, so that their level of financial vulnerability will be lower than that of women. This study focuses on the state of financial vulnerability of market traders to the use of fintech, as they are an important sector in MSMEs that contribute to the country's GDP, while previous research has focused more on household financial vulnerabilities (Anderloni et al., 2012; Daud et al., 2019; Lee & Sabri, 2017).

1. LITERATURE REVIEW AND HYPOTHESIS

The theory used as the basis for analyzing the phenomenon is the financial literacy theory developed by Lusardi and Mitchell (2014) to explain phenomena related to digital financial literacy and financial behavior on the financial vulnerability of market traders. While role theory developed by Kahn et al. (1964) was used to explain gender phenomena.

1.1. Digital financial literacy

Lusardi (2015) defined financial literacy as the capacity to successfully manage financial resources for long-term financial security. This ability can reduce the fixed costs of individuals seeking financial information (Hsiao & Tsai, 2018). Financial literacy can also reduce participation costs (Disney et al., 2015), so individuals are increasingly participating in stock market investments. Individuals who can invest tend to have funds in the equity market and participate in the stock market (Bellofatto et al., 2018). While digital literacy is a set of fundamental abilities for utilizing digital resources and information, it may also be used to create solutions for problems in the real world (Rizal et al., 2021). Digital literacy develops over time and advances in increments (Cartelli, 2010). Digital financial literacy is defined by the Financial Services Authority (OJK) as the ability to safely use digital financial products and services to make wise financial decisions.

According to the National Survey of Financial Literacy and Inclusion (SNLIK) in Indonesia, which the OJK conducted in 2019, the financial literacy index in Indonesia is 38.03%; this indicates that the Indonesian population as a whole has less knowledge of the features of various types of financial products and services offered by formal financial services institutions. While on the other hand, financial literacy is an important skill in the context of community empowerment, individual welfare, consumer protection, and increasing financial inclusion. Thus, the government must make an effort to increase the financial literacy level index in Indonesia, especially in this digitalization era. Many digital financial products may not be

widely understood by the public, so this can result in financial vulnerability for the community, especially market traders, most of whom have low literacy levels.

1.2. Financial behavior

Financial behavior is defined as actions related to financial management (Xiao, 2008; Chen & Lemieux, 2016). Financial behavior is typically described as a multidimensional concept that incorporates many financial market actions (Jorgensen et al., 2017), These behaviors can be in the form of credit management, retirement planning, or cash management (Jorgensen et al., 2017; Stolper & Walter, 2017). In the context of this study, the financial behavior of market traders is reflected in the cash management in buying and selling their merchandise. Good financial behavior reflects some good financial activities such as making a budget, paying bills on time, making expense plans, managing cash flow, managing credit, and planning pension funds (Kapoor et al., 2004).

1.3. Financial vulnerability

Financial vulnerability is typically understood as a limited capacity to participate in markets or a sense of helplessness resulting from the combination of personal traits (e.g., age, health, cognitive capacity, socioeconomic status), external conditions (e.g., discrimination), and individual circumstances (e.g., life transitions) (Cifuentes et al., 2020; Campbell & Lichtenberg, 2021). Vulnerable people are defined as risk customers, as market participants who may not be able to fully benefit from marketing strategies or who may be adversely affected (Lusardi, 2015; Hoffmann & McNair, 2019). While financial vulnerability in developed countries was defined as risk exposure to financial events that have the potential to be unfavorable, or some other researchers conceptualize it as a condition of experiencing income poverty (Lindner, 2013; Lewis & Lewis, 2014).

Poor financial literacy or numeracy, significant debt, meager income, or changes in personal circumstances, such as the death of a spouse or being fired, make vulnerable people more likely to experience financial loss (Cifuentes et al., 2020; Campbell & Lichtenberg, 2021). When they do not

exercise the appropriate level of care, financial service providers are more likely to make poor financial decisions and suffer financially. Additionally, they have poor financial stability, and their actions are more influenced by immediate situations (de la Cuesta-González et al., 2021; Nguyen & Su, 2021).

1.4. Theoretical background

This study uses the theory of financial literacy developed by Lusardi and Mitchell (2014) to explain phenomena related to digital financial literacy and financial behavior on the financial vulnerability of market traders. This theory states that financial literacy consists of a number of abilities and knowledge about finances owned by a person to be able to manage or use a certain amount of money to improve his standard of living and aim to achieve prosperity. The concept of financial literacy has been widely associated with behavior and financial well-being. Financial literacy has an impact on financial well-being such as not being in debt (Cifuentes et al., 2020; Campbell & Lichtenberg, 2021). Financial literacy is also associated with the accumulation of assets/investments (Hassan Al-Tamimi & Anood Bin Kalli, 2009; Baihaqqy et al., 2020) and savings (Mahdzan et al., 2013; Peiris, 2021). A number of studies have also linked financial literacy with financial vulnerability in the household sector (Anderloni et al., 2012; Daud et al., 2019; Lee & Sabri, 2017). Thus, there is still a gap, namely there is still very little research that links digital financial literacy with financial vulnerability by focusing on market traders. This study expands the concept of financial literacy in the context of financial technology that is currently booming in recent years. Market traders who do not have good knowledge and understanding of digital finance, and have poor financial behavior will be more prone to experiencing financial difficulties.

With regard to gender, this study uses the role theory developed by Kahn et al. (1964), which states that there are differences and reactions from individual roles to other people's expectations of these roles, including the roles of a man and a woman. It is believed that the variation in gender roles will minimize the impact of digital financial knowledge and financial behavior on financial vulnerability (Ozmete & Hira, 2011; Tang et al., 2015).

Men in Indonesia prefer to handle work related to electronic goods, including digital devices that are currently being developed, so they have a better understanding of digital technology than women. Traditionally, men who act as breadwinners are usually more careful in managing their finances, compared to women who are more economically dependent on men. Thus, the negative effect of financial vulnerability will be higher for men than women.

1.5. Hypothesis development

The development of a testable hypothesis is based on the results of previous research. This study focuses on the financial vulnerability condition of market traders to the use of fintech, while previous research has focused more on financial literacy and financial behavior on household financial vulnerabilities.

1.5.1. Digital financial literacy and financial vulnerability

Researchers have found that some traits, such as financial literacy and social isolation, can increase a person's susceptibility to fraud because of the general public's misunderstanding of financial services in general and fintech in particular (Hermansson & Jonsson, 2021; Wei et al., 2021). Because they are at the height of their money accumulation, older persons with bad financial position are more likely to be duped by financial predators. Higher financial literacy increases the likelihood that victims of fraud will not suffer losses (Wei et al., 2021; Korkmaz et al., 2022). Those with high financial knowledge will choose appropriate financial products, are less likely to be late or choose default programs when borrowing, and are less prone to making financial mistakes (Mudzingiri et al., 2019). More specifically, individuals with high financial literacy are better to detect fraud (Wei et al., 2021; Prasad et al., 2021). High financial knowledge is mainly related to digital finance, enabling a family to have a better understanding of financial markets and economic law (Ahmad & Shah, 2022; Zhang et al., 2021). When individuals find relevant information, they may be more accurate in assessing the credibility of companies offering financial services and assessing the returns and risks of the products they

offer (Korkmaz et al., 2022). Good financial literacy will reduce individual financial vulnerability (Sabri et al., 2021). Thus, market traders who have a better level of digital financial knowledge will further reduce their level of financial vulnerability, such as fraud by financial service providers.

1.5.2. Financial behavior and financial vulnerability

The literature found that financial behavior has a relationship with financial vulnerability (Miron-Shatz, 2009), financial satisfaction (Dowling et al., 2009), and financial well-being (Sabri et al., 2020). Financial vulnerabilities of market traders can occur as a result of poor cash management, for example buying merchandise at a purchase price that is too high because they do not have relationships with large wholesalers so the profits obtained are not maximized or even suffer losses. The behavior of market traders who are poor in managing cash can also have an impact on their decisions to get funds from loans, making it easier to be persuaded by online loans that provide easy credit applications but set very high-interest rates, so that it will greatly disrupt the merchant's finances (Anderloni et al., 2012). Financial behavioral practices such as borrowing and spending money on unnecessary products increase financial vulnerability as debt obligations increase (Fei et al., 2020). Good financial behavior will further reduce financial pressure (Delafrooz & Paim, 2011) or reduce financial vulnerability (Sabri et al., 2021). Thus, the better the financial management carried out by market traders, the smaller the financial vulnerabilities faced.

1.5.3. Gender as a moderating variable

The results of a survey related to Indonesia's digital literacy status in 2021 from the Ministry of Communication and Information and Katadata Insight noted that 55% of male respondents had a high digital literacy score, while female respondents who scored above the average were 45%. The role theory proposed by Kahn et al. 1(964) stated that there are differences and reactions from individual roles to other people's expectations of these roles, including the roles of a man and a woman. It is believed that the variation in gender
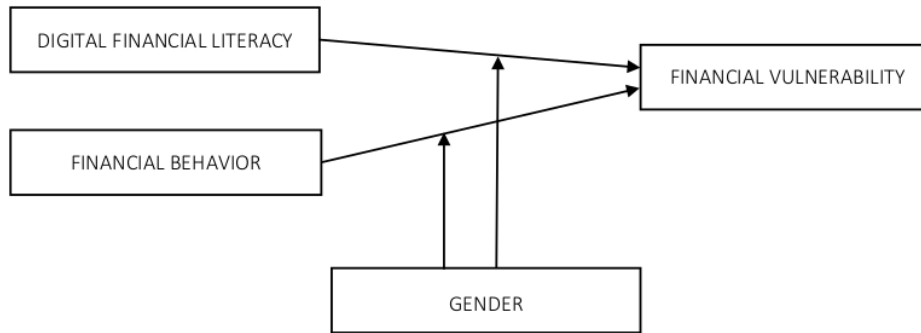
Figure 1. Research model

roles will minimize the impact of digital financial behavior and financial knowledge on financial vulnerability (Ozmete & Hira, 2011; Tang et al., 2015). Men are thought to be more literate in information technology than women. In terms of digital content production and information and data literacy, male students performed better (Schaumburg, 2001; Halder et al., 2010; Rizal et al., 2021). In addition, men dominate computer use more than women (Geissler & Horridge, 1993), and men are the main computer users compared to women (Becker & Sterling, 1987; Idowu et al., 2004). Men are therefore more likely to be computer literate and to have a greater level of digital literacy than women, which makes it harder for them to be duped while using digital financial goods and less vulnerable to financial risks overall.

Traditional beliefs in Indonesia emphasize that men dominate their role as the breadwinner of the family, while women tend to be economic dependence and become household manager (Cunningham, 2008). Therefore, men will always try to improve their financial performance and productivity (Fan & Babiarz, 2019), so they will be more careful in managing their finances compared to women. Women tend to be more wasteful and poorer in financial management because they earned money easily, and they do not need to work hard to get the money. Thus, men are more careful in managing their finances because they feel that the money is the result of their hard work, they will spend it carelessly and wastefully, so it will reduce their level of financial vulnerability compared to women.

This study aims to examine the relationship between digital financial literacy and financial behavior on financial vulnerability. In addition, the gender interaction between the two relationships was also tested to better understand whether gender weakens or strengthens the relationship. Therefore, in line with the above goal, the proposed hypotheses are:

H1: Digital financial literacy has a negative effect on the financial vulnerability of market traders.

H2: Financial behavior has a negative effect on the financial vulnerability of market traders.

H3: Gender (male) strengthens the influence of digital financial literacy on financial vulnerability.

H4: Gender (male) strengthens the influence of digital financial literacy on financial vulnerability.

The research model is shown in Figure 1.

2. RESEARCH METHODOLOGY

The study was carried out using a questionnaire instrument in a survey-method technique. The subjects used were market traders in the Special Region of Yogyakarta, Surakarta, Semarang, Surabaya, and Malang using convenience sampling techniques. The research questions instrument for each variable refers to the results of pre-

vious studies. Digital financial literacy constructs were adapted from the indicators found in Putri et al. (2022), which were modified by the researcher. The indicators are payment, risk tolerance, phishing, saving behavior, spending behavior, self-protection, decision-making, practical know-how, awareness, social norm constraint, consumer awareness, access dimension, and literacy dimension. Meanwhile, financial vulnerability is measured on a scale tested by Lichtenberg et al. (2020). The financial behavioral question items were adapted from the study of Daud et al. (2019). Despite the fact that the items in the questionnaire have been shown to be valid and reliable, the questionnaire was first discussed with specialists to ensure that the existing sentences would not slant readers' perceptions. A Likert scale of 1 to 5 is used to evaluate each question item on financial behavior and digital financial literacy. The range goes from strongly disagree (1) to strongly agree (5). Meanwhile, for the question of financial vulnerability, a scale of 1 to 3 is used, starting from vulnerable to not vulnerable. To prevent respondents from filling out the form arbitrarily, one question has been stated negatively. The value is also flipped for the negated sentence. To find out how financial behavior and digital literacy affect financial risk, a series of hierarchical regression analyses were performed. The estimated regression model is as follows:

$$FVhat = b_0 + b_1K_1 + b_2K_2 + b_3K_3 + \mu, \quad (1)$$

where $Fvhat$ – Financial Vulnerability; K_1 – control variable 1: Age; K_2 – control variable 2: Marital Status; K_3 – control variable 3: Educational Background; μ – Residual.

$$FVhat = b_0 + b_1K_1 + b_2K_2 + \\ +b_3K_3 + b_4DFL + b_5FB + \mu, \quad (2)$$

$$FVhat = b_0 + b_1K_1 + b_2K_2 + \\ +b_3K_3 + b_4DFL + b_5FB + b_6G + \mu, \quad (3)$$

where DFL – Digital Financial Literacy; FB – Financial Behavior; G – Gender; dummy 1 = female, 2 = male.

$$FVhat = b_0 + b_1K_1 + b_2K_2 + b_3K_3 + \\ +b_4DFL + b_5FB + b_6G + b_7G \cdot DFL + \mu , \quad (4)$$

$$FVhat = b_0 + b_1K_1 + b_2K_2 + b_3K_3 + \\ +b_4DFL + b_5FB + b_6G + b_7G \cdot FB + \mu, \quad (5)$$

$$FVhat = b_0 + b_1K_1 + b_2K_2 + b_3K_3 + \\ +b_4DFL + b_5FB + b_6G + b_7G \cdot DFL + \\ +b_8G \cdot FB \mu. \quad (6)$$

Testing of research instruments was carried out using validity and reliability tests. The validity test was carried out using the Kaiser-Meyer-Olkin test, with a rule of thumb >0.5, then the instrument was valid. Meanwhile, for reliability testing using Cronbach's Alpha with a limit of >0.6, then the instrument is reliable (Hair et al., 2006). The method of data analysis was to use multiple hierarchical regression with SPSS software. Before using regression analysis, the normality test and classical assumption test were carried out, to eliminate the bias of the research results, namely heteroscedasticity and multicollinearity tests.

3. RESULT

The total sample obtained was 319 market traders spread in Yogyakarta, Surakarta, Semarang, Surabaya, and Malang as respondents, with 41 people who filled out incompletely; the final sample that can be used for analysis was 278 respondents.

Table 1. Demographic data

Variable	Item	Frequency	%
Gender	Female	222	80%
	Male	56	20%
	Total	278	100%
Age	18-40	98	35%
	41-50	77	28%
	51-60	69	25%
	61-Above	34	12%
	Total	278	100%
Marital Status	Married	238	86%
	Single	40	14%
	Total	278	100%
Education	Elementary School	67	24%
	Junior High School	48	17%
	Senior High School	125	45%
	Diploma's Degree	7	3%
	Bachelor's Degree	26	9%
	Other	5	2%
	Total	278	100%

Table 2. Descriptive statistics

Variable	N	Minimum	Maximum	Mean	Std. Deviation
FB	278	2.83	5	3.8183	.34469
FV	278	1.06	2.5	1.6587	.25621
DFL	278	1	4.64	3.204	.49316

The demographic data in table 1 show that most respondents are female, have an average age of 40 and above, were married, and the average educational background is senior high school graduate.

Table 2 shows the descriptive statistics, indicating that the majority of respondents answered "unsure" on questions related to financial literacy, while the majority of respondents answered "agree" on statements related to financial behavior; this can be seen from the mean value, which is more toward 3 for unsure and towards 4 for agreeing. Meanwhile, on questions related to financial vulnerability, the majority of respondents are in a fairly vulnerable condition, because it is close to a value of 1.

For testing the research instrument, it was found that all the items on the statements of financial vulnerability showed a value of Kaiser-Meyer-Olkin MSA above 0.5, so the financial vulnerability instrument was valid, and so did the instrument of digital financial literacy and financial behavior. As for the result of reliability testing, the three instruments show a value of 0.634 for financial vulnerability, 0.865 for digital financial literacy, and

0.758 for financial behavior, all were above 0.6 so the overall research instrument was reliable.

Table 3 displays the outcomes of the model test, showing a significant value that is smaller than 0.05; this indicates the research model is good, which means that financial literacy and financial behavior can predict financial vulnerability. These results are also shown from the increasing value of the f test. It can be also observed that the R^2 value is increasing, showing that variations in digital financial literacy and financial behavior can explain variations in financial vulnerability better for the model. The results of hypothesis 1 indicated that digital financial literacy negatively affected financial vulnerability; this result can be seen in the digital financial literacy value, which is smaller than 0.05 and shows a significant effect with a negative beta in models 2, 3, 4, 5 and 6, thus H_1 was supported. The same result is obtained for hypothesis 2, which also shows evidence support; this can be seen from the significant value and negative beta in models 5 and 6, thus H_2 was supported. Regarding the moderating effect of gender, the results shown that gender can increase the effect of digital financial literacy and financial behavior

Table 3. Hypothesis testing result

Variable	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	B	Sig	B	Sig	B	Sig	B	Sig	B	Sig	B	Sig
Demographic Factor												
Age	1.773E−5	.989	−.001	.254	−.002	.253	−.002	.195	−.002	.152	−.002	.148
Status	−.134	.050	−.136	.003	−.136	.003	−.137	.003	−.125	.006	−.129	.005
Education	.012	.374	.028	.038	.028	.038	.028	.034	.025	.055	.026	.047
Gender					−.004	.918	−.838	.002	−1.282	.001	−1.446	.000
Independent Factor												
FB			−.070	.141	−.069	.146	−.089	.061	−.483	.000	−.383	.008
DFL			−.114	.001	−.114	.001	−.411	.000	−.115	.001	−.296	.010
Moderating Factor												
DFL*Gender							.261	.002			.160	.098
FB*Gender									.331	.001	.241	.031
F Test	3.867		5.822		4.836		5.635		5.949		5.585	
F Sig	.010		.000		.000		.000		.000		.000	
R^2	.041		.097		.097		.127		.134		.142	
ΔR^2			.056		0		.030		.007		.008	

on financial vulnerability. Table 3 shows that beta coefficient values on DFL*Gender and FB*Gender are positive and significant in models 4 and 5, since the dummy notation for gender, namely 1 for women and 2 for men, the negative effect of digital financial literacy and financial behavior on financial vulnerability will be stronger for men than women, so H_3 and H_4 were supported.

4. DISCUSSION

This study contributed to the theory of financial literacy proposed by Lusardi and Mitchell (2014) in the context of financial technology that digital financial literacy can reduce financial vulnerability. In addition, good financial behavior will lead to low financial vulnerability. The findings revealed that low digital financial literacy makes market traders more susceptible to fraud, such as the theft of their savings through the abuse of personal information. As a result, market traders who do not have an understanding of the process for conducting digital financial transactions can be used by scammers to take opportunities for their gain. This study is in line with that by Mudzingiri et al. (2019) that market traders who have high financial knowledge will choose appropriate financial products, choose suitable loan programs, and are less prone to making financial mistakes. More specifically, this study is also consistent with Wei et al. (2021), Prasad et al. (2021), Gathergood (2012), and Yusof et al. (2015) that market traders with high digital financial literacy are better able to detect fraud, then will reduce individual financial vulnerability.

The results for financial behavior indicated that good financial management, especially good cash management carried out by market traders, can reduce the level of financial vulnerability. Market traders who can manage their finances well, namely by making spending arrangements by buying goods according to their abilities, paying their trade debts regularly, saving and investing using their finances, and having a financial budget, as well as traders who have long-term financial goals (Kapoor et al., 2004), tend to be able to reduce the level of financial vulnerability. The results of this study are consistent with the research conducted by Daud et

al. (2019) and Sabri et al. (2021) that good financial behavior will reduce the level of financial vulnerability.

With regard to gender, the results of this study contributed to the role theory developed by Kahn et al. (1964) in market trader's context that indicated gender was able to moderate the influence of digital financial literacy and financial behavior on financial vulnerability. The results are in line with those obtained by Geissler and Horridge (1993), Schaumburg (2001), Halder et al. (2010), and Rizal et al. (2021) that men are considered to be more technology literate and tend to use computer technology more often than women, so they are better at identifying fraudulent acts and using digital technology. Meanwhile, women who have lower literacy levels will rarely use digital technology, including in the financial sector, so they will be more vulnerable to fraud or misuse of financial data. Meanwhile, in their financial behavior, men as breadwinners will manage their finances more carefully. In addition, men are also heads of households and, as decision-makers, will determine the course of the household, including household finances. The findings demonstrated that men were more negatively impacted by financial activity than women related to financial vulnerability. These outcomes are consistent with Sabri et al. (2021).

Practically, this study has implications for the policy recommendations that can be taken to reduce the financial vulnerability of market traders. The central and local governments can collaborate with OJK in providing digital financial literacy training so that the ability to understand digital payment instruments, how to use them, and the function of using digital payments can improve. Academics from universities can be involved in the training activities, because they have experience in designing training. It is recognized that market traders are very busy, so the time to develop themselves in increasing financial knowledge is very limited. Therefore, innovative and varied forms of training are needed. Such as training that is not fixated on structured teaching, at a certain time and place. But it is necessary to carry out flexible training based on local wisdom that applies in the community, such as social gathering activities for market traders or regular community meetings.

This recommendation is in line with the findings of Agabalinda and Steel (2021) who found that there were strong association between the use of informal financial services and financial literacy; this suggests that promoting informal financial services may be more efficient in raising financial literacy and inclusion than formal financial training. In addition, the emphasis of training on women's groups must be given priority, this is because women's groups are more vulnerable than men.

CONCLUSION

This study aims to examine the effect of digital financial literacy and financial behavior on financial vulnerability of traditional market traders. In addition, gender interactions in both relationships are also explored. Using survey data, this study has shown that the vulnerability of traditional market traders can be predicted through a negative effect of digital financial literacy and financial behavior. The financial vulnerability of market traders can be reduced when digital financial literacy is high and financial behavior is good. This study also provided results that gender interacts strongly with the relationship between digital financial literacy and financial behavior towards financial vulnerability. This means that increasing financial literacy and financial behavior can reduce financial vulnerability, which is higher for men than women. Thus, this study recommends that more attention be paid to training and understanding of digital financial literacy and financial behavior in a group of female traders than male traders.

The weakness of this study is that it is difficult to compile an instrument that market traders can understand easily, even though it uses a questionnaire that has been tested by previous research and reviewed by experts before being used as a research instrument for market traders. Perhaps because the majority of traders in the sample are relatively old, ranging from 40 to 50 years old, and many are even over 60 years old and have a high school level in their educational background. Future research for the instrument can eliminate terms that are difficult for market traders to understand, and use simpler language. In addition, future research may be able to use a sample by taking market traders who are relatively younger, namely around 30 years old, who may have a high level of financial literacy due to their relatively high level of education, and who tend to be more familiar with terms in the use of fintech. The second weakness of this study is the use of cross-sectional data so that it cannot capture the real market traders' vulnerabilities from time to time. Thus, future research can concentrate more on using data longitudinally so that the actual performance of market traders can be captured.

AUTHOR CONTRIBUTIONS

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Formal analysis: Julianto Agung Saputro, Cahyo Indraswono, Atika Jauharia Hatta.
Funding acquisition: Dody Hapsoro.
Investigation: Dody Hapsoro, Julianto Agung Saputro, Cahyo Indraswono.
Methodology: Dody Hapsoro, Atika Jauharia Hatta, Muhammad Sabandi.
Project administration: Julianto Agung Saputro, Cahyo Indraswono.
Resources: Dody Hapsoro, Atika Jauharia Hatta.
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Supervision: Dody Hapsoro.
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