



Islamic Financial Literacy and Financial Inclusion: Examining the Intervening Role of Financial Self-Efficacy

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Abstract

Financial self-efficacy is used as an intermediary variable in this study to examine how Islamic financial literacy affects financial inclusion. The participants in this study are final-semester Muslim economics students. Accidental sampling is the method employed. The response percentage for the 300 questionnaires distributed—181 of which were returned—was 60%. The investigation came to two important conclusions. First, financial inclusion and financial self-efficacy are significantly impacted by Islamic financial literacy. Second, the effect of Islamic financial literacy on financial inclusion is not significant. These findings may have an impact on legislators, service providers, and institutions of higher learning. Islamic finance should be a subject covered in higher education, either as part of the core curriculum or as an elective. To help the consumer better understand the given product information, the service provider should give them comprehensive information. The provision of financial education to certain groups, such as housewives or workers in offices, must be addressed in a number of ways by policymakers.

Keywords: Islamic Financial Literacy, Financial Inclusion, Financial Self-Efficacy.

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I. Introduction

1.1. Background

Many nations are becoming more concerned about their citizens' lack of financial literacy. The underlying argument is that the commercial world has become more sophisticated, and the common citizen is less capable of dealing with it. Due to a lack of tools and awareness of basic financial principles, decision-making is less than optimal. Many underestimate financial intelligence, whereas financial intelligence is equipped to become more prosperous and meet one's financial goals. Specifically, financial literacy education in college is critical to future students' financial health and stability. Financial literacy is an essential competency, and efforts must be made to continuously improve these competencies to strengthen economic growth in each country (Messy & Monticone, 2016). Financial literacy education must also be provided in universities to equip students with financial knowledge to plan their financial futures. A significant determinant of financial literacy has been identified as financial education. According to a previous study, financial education can improve financial understanding and, as a result, boost financial literacy (Lyons et al., 2006). Financial literacy enhances the ability of individuals to monitor financial resources that further improve their economic security effectively. Individuals who have received a financial literacy education feel better able to make investment decisions and have controlled spending behavior (Jariwala, 2013).

Furthermore, improved financial literacy has been linked to a variety of outcomes, including retirement planning (Clark et al., 2012; Anderson et al., 2017; Niu & Zhou, 2018; Tan & Singaravelloo, 2020), stock market participation (Rooij et al., 2011; Sivaramakrishnan et al., 2017; Hsiao & Tsai, 2018; Zou & Deng, 2019; Bucher-Koenen et al., 2021), personal savings (Doan, 2020; Pangestu & Karnadi, 2020), appropriate use of debt (Stango & Zinman, 2009), mortgage terms (Duca & Kumar, 2014; Bialowolski et al., 2022), credit card behavior (Khandelwal et al., 2021), buying behavior (Potrich & Vieira, 2018; Anisa et al., 2020), financial advice (Gerrans & Hershey, 2017; Nguyen & Rozsa, 2019; Barthel & Lei, 2021), and financial self-efficacy (Rothwell et al., 2016; Mindra et al., 2017; Amagir et al., 2020).

One topic related to financial literacy that has received much attention from researchers is financial inclusion. There are many kinds of literature investigating the effect of financial literacy on financial inclusion (for example, Abel et al., 2018; Grohmann et al., 2018; Hussain et al., 2018; Bongomin et al., 2018; Mindra et al., 2017; Chikalipah, 2017; Bongomin et al., 2016). Nevertheless, prior research has shown inconsistent findings on financial literacy's impact on financial inclusion. For example, Abel et al., (2018);

Hussain et al., (2018); Ghormann et al., (2018); Morgan and Long (2020); Ritonga et al., (2021), and Akakpo et al., (2022) found that financial literacy had a positive effect on financial inclusion. However, a not significant relationship has been documented by Bongomin et al., (2016), Lyons and Kass-Hanna (2021), and Trianto et al., (2021), and a negative relationship has been found by Liu et al., (2021). Several studies have also attempted to extend prior studies by including various variables in the relationship, such as cognition (Bongomin et al., 2016), financial self-efficacy (Mindra et al., 2017), and cognition (Bannier & Schwarz, 2018).

Moreover, two critical reasons motivate this research. First, previous research still focuses on the Western view of financial literacy. According to this study, Islamic finance literacy aims to help students learn how to make financial decisions based on their religion. Muslim students must understand Islamic finance because it is part of their worship. Using a conventional financial system can be categorized as a sin for Muslims (Abdullah et al., 2017). Secondly, many studies have examined the effect of financial literacy on financial inclusion. However, few attempts have been made to explore financial self-efficacy's influence as a significant element in mediating the relationship between financial literacy and financial inclusion.

1.2. Objective

The purpose of this study is threefold. The first is to examine the effect of Islamic financial literacy on financial inclusion. The second is to investigate the impact of Islamic financial literacy on financial self-efficacy. The third is to explore the effects of financial self-efficacy on financial inclusion.

II. Literature Review

2.1. Background Theory

2.1.1 Islamic Financial Literacy

Financial knowledge, financial literacy, and economic literacy are often used interchangeably in popular literature and media (Lyons & Kass-Hanna, 2021). Financial literacy emphasizes the importance of knowledge and understanding of financial concepts and risks and the confidence to implement them, including making effective decisions in various financial contexts to achieve financial prosperity (OECD, 2013, p. 33). Financial literacy is also knowledge of financial products and practices (Fox et al., 2005; Hogarth & Hilgert, 2002). As a result, financial literacy is defined in this study as the ability to manage financial resources using knowledge and skills.

Nonetheless, the literature on Islamic financial literacy is limited due to its novelty. The term "Islamic financial literacy" has no universally accepted definition. According to Abdullah et al., (2017), Islamic financial literacy is described as the ability to understand finance based on Sharia compliance. Similarly, Rahim et al., (2016), Albaity and Rahman (2019), and Ahmad et al., (2020) define Islamic financial literacy as a person's ability to employ financial knowledge, skill, and attitude in managing financial resources following Islamic principles. According to Abdullah and Anderson (2015), financial knowledge is the stock of information gained through education and/or experience directly relevant to fundamental Islamic finance concepts and products. As a result, Islamic financial literacy refers to knowledge of Islamic financial goods and principles.

2.1.2 Financial Self-Efficacy

In social learning theory, Bandura (1977) coined self-efficacy, which refers to belief in one's ability to complete a task. This study looked at two dimensions of self-efficacy: attitude (the assumption that money management impacts one's future) and confidence (in making financial decisions). The level of confidence in one's ability to deal with a financial issue without being overwhelmed is referred to as self-efficacy (Lown, 2011; Noor et al., 2020; Kim et al., 2020; Zia-ur-Rehman et al., 2021). Financial self-efficacy measures an individual's confidence in their ability to use financial products and services. Hence, financial self-efficacy in this study is defined as a student's confidence in using knowledge to deal with financial products or services.

2.1.3 Financial Inclusion

Financial inclusion is defined as the ability to get and use financial products and services (Suseno & Fitriyani, 2019). Owing to the growing recognition that the financial sector's development contributes to poverty reduction and economic progress in a mutually reinforcing manner, financial inclusion has been prioritized on the national agenda. In recent years, policymakers worldwide have prioritized financial inclusion (Roy & Patro, 2021). Financial inclusion is also important for economic development since it promotes growth and reduces inequality (Gupte et al., 2012; Prastowo, 2018). According to Massara and Mialou (2014), financial inclusion progresses through three dimensions: access, usage, and quality of financial services.

2.2. Hypotheses Development

2.2.1 The effect of Islamic financial literacy on financial inclusion

There are several reasons for studying Islamic financial literacy for all Muslim students in higher education institutions. First, Muslim students are expected to make the right financial decisions as the nation's next generation. Muslim students must understand that financial problems are not trivial problems. Islamic financial education equips them with sound financial decision behavior patterns. Islamic financial literacy also helps Muslim students make future financial decisions and further increases their well-being. Previous research has revealed that financial literacy is positively correlated with financial inclusion (Abel et al., 2018; Hussain et al., 2018; Ghormann et al., 2018; Morgan & Long, 2020; Ritonga et al., 2021; Akakpo et al., 2022).

Second, when students face conflicting financial decisions, deciding what should be done and the barriers involved is challenging. In this case, Islamic financial literacy enhances students' ability to make the right financial decisions. Financial literacy can provide insight into how to choose and why certain financial choices are more desirable. Financial literacy also gives individuals the knowledge and skills to assess whether financial products are suitable for improving their financial well-being (Shen & Hueng, 2018). Therefore, with Islamic financial literacy, students understand Islamic financial institutions and products and ultimately use the products.

H1: Islamic financial literacy has a significant positive influence on financial inclusion.

2.2.2 The impact of Islamic financial literacy on financial self-efficacy

Financial literacy, or financial understanding, is the capacity to process economic data to make informed financial management decisions (Lusardi & Mitchell, 2014). Islamic financial literacy equips people with the knowledge and cognitive abilities they need to comprehend the financial sector and deal with their financial concerns in a Sharia-compliant manner. Increasing Islamic financial literacy may be an effective way to enhance student financial self-efficacy; with their knowledge about Islamic financial literacy, students become confident in their ability to use it in dealing with financial products or services. Previous research has found a link between financial literacy and self-efficacy (Chong et al., 2021).

H2: Islamic financial literacy has a significant positive influence on financial self-efficacy.

2.2.3 The impact of financial self-efficacy on financial inclusion

According to Syakimah (2016), financial literacy can help Muslim students better understand Islamic services and encourage them to use them. Financial

literacy aids decision-making, which improves Muslim students' saving rates and creditworthiness by equipping them with financial understanding (World Bank, 2009; OECD, 2009). Students who have shown an elevated level of financial self-efficacy will likely feel better prepared to deal with difficult financial situations. They may have a lot more hope for their future initiatives. Students with stronger financial self-efficacy also better understand how to manage money and can seek out professional financial institutions. As a result, it can be concluded that financial self-efficacy has a direct and beneficial impact on financial inclusion. Thus, financial self-efficacy will help achieve financial inclusion.

H3: There is a significant positive influence of financial self-efficacy on financial inclusion.

Figure 1 illustrates the research model based on the hypotheses' development, as depicted below.

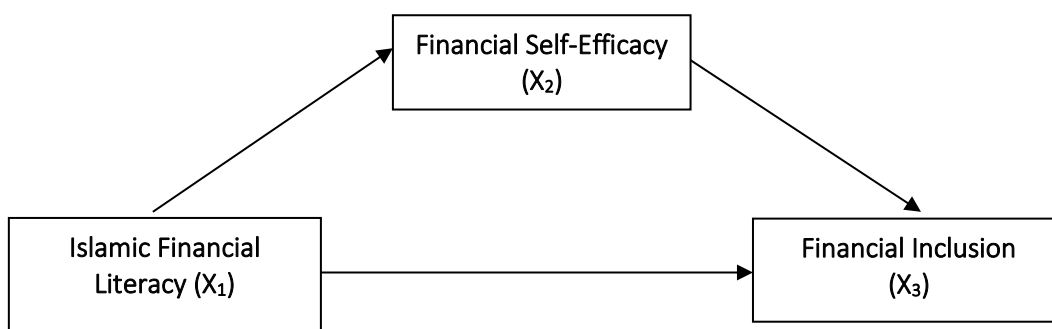


Figure 1. Research Model

III. Methodology

3.1. Population and Sample

This research was conducted in two economic colleges and one university, located close to each other in Malang, East Java, Indonesia. Respondents from this research were Muslim accounting students in the final semester. Three reasons justify the decision to use the last year student majoring in accounting at a college or university as follows.

1. Students now have more responsibility to manage their finances independently.
2. Economic students in the final semester have received at least three main courses related to this study: the bank and another financial institution course, the financial management course, and Sharia economic course.

3. Final-year students have more experience managing finances while studying in a college.

Due to the difficulty in obtaining Muslim students' data, this research used an accidental sampling technique. In this technique, 300 questionnaires were distributed to students encountered at the selected universities. The researchers and field officers collected 124 questionnaires and another 57 questionnaires from a lecturer. Thus, 181 out of 300 distributed questionnaires were returned. In other words, the response rate was 60%.

3.2. Operational Definitions and Measurements

- a. Islamic financial literacy

Islamic financial literacy is the understanding and knowledge of Islamic financial concepts. Prior research has thoroughly developed the measurement of Islamic financial literacy as a unidimensional variable with eight items. The measurement was based on three factors: hopelessness, religiosity, and financial satisfaction (Rahim et al., 2016).

- b. Financial self-efficacy

Financial self-efficacy is described as individual beliefs about his ability to manage his finances without experiencing difficulties. Financial self-efficacy was measured using six questions adapted from Lown (2011). Financial self-efficacy was assessed by evaluating an individual's sense of self-assuredness in dealing with serious issues, self-belief in coping abilities, approach to obstacles as opportunities, financial prospects, and degree of optimism about the future. On a five-point scale, respondents were asked to rate the extent to which the relevant items were precisely true or not at all true.

- c. Financial inclusion

Financial inclusion is the access and use of financial products and services. Financial inclusion was measured using eight questions adapted from previous research (Mindra et al., 2017). The measurement used the access, usage, and quality dimensions.

3.3. Data Analysis

The Partial Least Square (PLS) strategy was employed in the study, and Smart PLS software was used to analyze the data. According to Ghazali (2006), PLS is a variant-based approach to SEM that changes from a covariance-based

approach. While SEM based on covariance was utilized to assess causality/theory, PLS was used to predict.

IV. Results and Analysis

4.1. Respondents' Background

The following Table 1 shows the demographic data of the respondents.

Table 1. Demographic Data of the Respondents

Variable	Frequency	Percentage
<u>Age</u>		
• Less than 20	66	36.5
• Between 20 - 25 years	113	62.4
• Above 25 years	2	1.1
<u>Gender</u>		
• Male	82	45.3
• Female	99	54.7
<u>Study Program</u>		
• Accounting	98	54.1
• Management	83	45.9
<u>Monthly Financial Support</u>		
• Less than 1.5 million Rupiahs	5	2.8
• Between 1.5 – 2.5 million Rupiahs	121	66.9
• Above 2.5 million Rupiahs	55	30.4

Table 1 shows that the respondent's age was mostly between 20 and 25 years old, with 113 students (62.4%). The age of respondents was less than 20 years, amounting to 66 students (36.5%), and the last group of age above 25 was two people (1.1%). Furthermore, Table 1 also reveals that the number of female respondents was 54.7% compared to 45.3% of male respondents. Most respondents had monthly financial support between 1.5 – 2.5 million rupiah, 121 or 66.9%. As many as 55 people (30.4%) of respondents had monthly financial support above 2.5 million rupiahs, and five students (2.8%) had monthly financial support of less than 1.5 million rupiahs. The respondents were mainly from two accounting program programs, as many as 98 (54.1%) students, and 83 (45.9%) students were from the management program.

4.2. Measurement Model

Reliability and validity tests were conducted to ensure the accuracy of the structural model analysis. Internal consistency can be used as a reliability indicator. Internal consistency measurement includes Cronbach Alpha, composite reliability, and Average Variance Extracted (AVE). Table 2 indicates

that both Cronbach's alpha scales and composite reliability exceeded the acceptable limit 0.7 (Hair et al., 2014). AVE scales should exceed 0.5, indicating that the construct clarifies 50% or more of the variance of its indicators (Hair et al., 2014). All the scales performed acceptably on this standard.

Table 2. AVE, Composite Reliability, and Cronbach Alpha

Indicator	AVE	Composite Reliability	Cronbach Alpha
Islamic Financial Literacy (X_1)	0.838893	0.973263	0.967734
Financial Self-Efficacy (X_2)	0.877977	0.972945	0.965153
Financial Inclusion (X_3)	0.766881	0.963324	0.956903

Construct validity was tested by examining convergent validity and discriminant validity. Convergent validity includes Average Variance Extracted (AVE) that must be greater than 0.50 (Henseler et al., 2009; Chin, 1998; Hair et al., 2014) and loading factors of indicators be greater than 0.7 (Hair et al., 2017). To confirm discriminant validity, this study used Fornell Larcker Cross Loadings and Heterotrait Monotrait ratio (HTMT) and cross loading. Fornell Larcker test must show that outer loadings on the constructs must be larger than any of its cross-loadings or its correlation on other constructs in the path model (Hair et al., 2017). HTMT ratios must also be less than one and ideally less than 0.9 (Hair et al., 2014; Henseler et al., 2009). The cross-loading procedure was also calculated to confirm discriminant validity. This procedure shows whether the indicators were to be declined or kept. Cross-loading values on the constructs must be larger than any other loading constructs values, where loading factors must be greater than 0.7 (Chin, 1998; Hair et al., 2017). All the results indicated that the validity criteria in this study had been met.

4.3. Structural Model

The multicollinearity analysis was employed to test the collinearity of the relationship between constructs. The multicollinearity was calculated directly from PLS-SEM Software by looking at the Variance Inflation Factor (VIF) number. VIF should be less than 5 (Hair et al., 2014). Since all variables had reflective measurement in this research, the Inner VIF values indicated potential multicollinearity problems. The inner VIF values of the latent variables in this study were less than 5. This test denoted no multicollinearity problem among the constructs in this study.

The evaluation of the structural model includes the assessment of the coefficient of determination (R^2), effect size (f^2), and predictive relevance (Q^2). The coefficient of determination (R^2) ranges from 0 to 1, with higher levels indicating more predictive accuracy. As a rough rule of thumb, the R^2 values

of 0.75, 0.50, and 0.25 can be considered substantial, moderate, and weak (Hair et al., 2017). The strength of the effect of a particular independent construct on the dependent construct in the model can be investigated by looking at the effect size or f square (f^2). The effect size can be obtained by running PLS. Hair et al., (2014) and Cohen (1998) recommend the criteria for determining the degree of the effect size as $f^2 = 0.02$ is classified as a small effect; $f^2 = 0.15$ is classified as a medium effect, and $f^2 = 0.35$ is a large effect. Table 3 indicates that Islamic financial literacy greatly affects financial inclusion and self-efficacy. Meanwhile, the predictive relevance (Q^2) of Stone Geisser must be greater than 0; Q^2 of 0.02 is small; 0.15 is medium; 0.35 has large predictive relevance for the constructs (Hair et al., 2017). The overall Fit Model shown by standardized root mean square residual (SRMR) must be less than 0.10 or 0.08 (Hu & Bentler, 1998). All criteria were met in this study.

4.4. Hypotheses Testing

Figure 2 portrays the inner model, and Table 3 shows the path coefficient of this study.

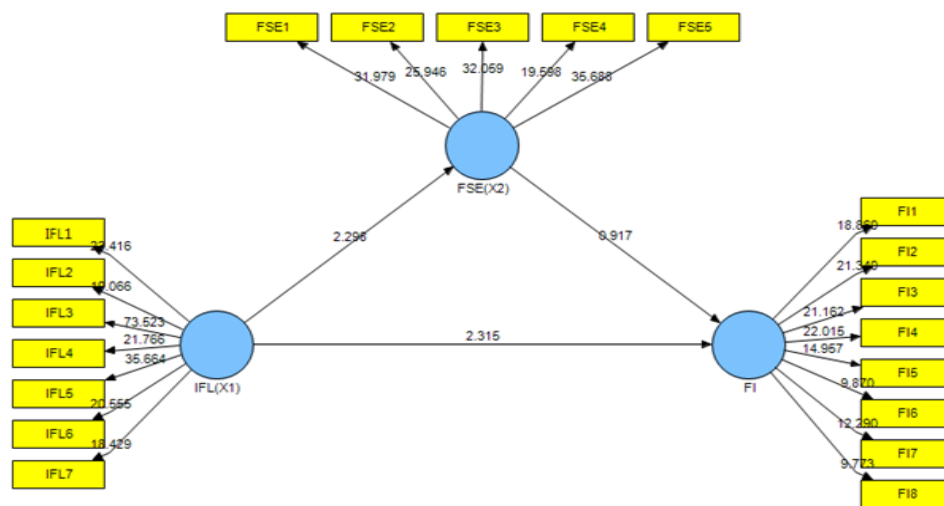


Figure 2. Inner Model

Table 3. Path Coefficients (Mean, STDEV, T-Values, Sig)

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T-Statistics (O/STERR)	Sig P
FSE(X2) → FI (X3)	-0.23785	-0.26109	0.25928	0.25928	0.917355	0.36364
IFL (X1) → FI (X3)	0.504224	0.516342	0.21783	0.21783	2.314755	0.02504
IFL (X1) → FSE(X2)	0.429753	0.426844	0.187007	0.187007	2.298063	0.02605

Islamic financial literacy had a significant impact on financial inclusion. The p -value (0.02504) < 0.05 demonstrated this. As a result, the findings confirm H1, arguing that Islamic financial literacy had a considerable positive impact on financial inclusion. This study's findings are consistent with those of earlier researchers (Abel et al., 2018; Hussain et al., 2018; Ghormann et al., 2018; Morgan & Long, 2020; Ritonga et al., 2021; Akakpo et al., 2022). Hence, individuals with a high level of financial knowledge will better understand basic financial concepts (Lusardi & Mitchell, 2011). Islamic financial literacy also aids students in making sound financial decisions when using official financial institutions' services and products. In this case, economic students in higher institutions took compulsory and elective courses. One of the compulsory subjects related to this study was banks and other financial institutions. This subject was given in the early semester of lectures. In the subject, students were taught about Sharia and non-Sharia-based financial institutions. Another course that could be taken was Islamic economics (Sharia economics).

The findings also suggest that Islamic financial literacy had a substantial beneficial influence on financial self-efficacy (p (0.02605) < 0.05). In other words, the more Islamic financial literacy a student has, the more self-financial efficacy he or she has. As a result, H2 was acceptable. This study's findings align with those of earlier investigations (Rothwell et al., 2016; Mindra et al., 2017). In this regard, Islamic financial literacy refers to managing money and making sound financial decisions. The ability of Muslim students to discern financial choices, prepare for the future, and respond appropriately to factors that affect their financial decisions will be enhanced by their financial education. Financial literacy is also associated with sentiments of empowerment and evaluative judgment while making financial decisions among Muslim students.

The impact of financial self-efficacy on financial inclusion was likewise shown to be non-significant (p (0.36364) > 0.05) in this study. This finding contradicts previous research, which revealed that financial self-efficacy impacted financial inclusion (Rothwell et al., 2016; Mindra et al., 2017). A possible explanation for this is that Muslim students did not have the confidence to use existing financial products or services, such as saving products, for students. Students also found it challenging to control personal expenses, causing the allowance they received often run out and sometimes even having to borrow from friends. This behavior made it difficult for them to do regular savings activities. Furthermore, previous studies have shown that students in higher institutions often face financial stress during their studies (Northern et al., 2010; Lim et al., 2014; Heckman et al., 2014; Fosnacht & Calderone, 2017). Financial stress is characterized as an inability to pay one's financial responsibilities, but it can also have psychological or emotional consequences (Northern et al., 2010). Much of this financial stress can be attributed to

college cost burden and cost of living. It causes students may seek financial help from other sources, such as family members or friends.

V. Conclusion and Recommendation

5.1. Conclusion

This paper analyzed the effects of Islamic financial literacy on financial inclusion with financial self-efficacy as an intervening variable. First, the impact of Islamic financial literacy on financial inclusion was significant. Second, the effect of Islamic financial literacy on financial self-efficacy was also significant. However, third, the effect of financial self-efficacy on financial inclusion was not significant. The insignificant impact indicates that financial self-efficacy did not mediate the relationship between Islamic financial literacy and financial inclusion. This study contradicts recent research by Rothwell et al., (2016) and Mindra et al., (2017), which indicated that financial knowledge boosts financial self-efficacy and, as a result, financial inclusion.

5.2. Recommendation

These findings potentially impact higher education, service providers, and policymakers. Higher education plays an essential role in forming student Islamic financial literacy. Higher education should include the topic of Islamic finance literacy in the learning process, whether included in the curriculum or as an extracurricular. Through a combination of well-planned teaching methods, media, and learning resources, the students are expected to have more Islamic financial management skills. It will help the students prepare for their current and increasingly complex future lives. Previous research has shown that financial education could improve individual behavior in making better financial decisions (Duflo & Saez, 2003; Lusardi et al., 2006; Madrian & Shea, 2001). In fact, Islamic financial literacy should be included in the education curriculum to educate school children to save money and nurture the habit of saving regularly. In addition, the service provider should provide complete information to the customer to increase their understanding regarding the product information offered. Policymakers also need to identify various ways financial education can be provided and targeted to specific groups, such as students.

This research has three drawbacks. First, using self-reported scales to quantify research variables increased the likelihood of some results being skewed by traditional method bias. Thus, questionnaires and in-depth interviews should be used in future studies. Second, because this study only looked at students from two colleges and one university, the findings may not apply to other

higher education types. More education institutions in East Java should be included in future studies to expand the scope. Third, this research was carried out using a snapshot research method. To assess the validity of the researched theories and study findings, more research is required. Longitudinal data could help the researchers better understand the causation and interrelationships between variables affecting the development of Islamic financial literacy.

References

- Abdullah, M. A., Sabar, S., & Abu, F. (2017). Factors determining Islamic financial literacy among undergraduates. *Journal of Emerging Economies and Islamic Research*, 5(2), 67-76.
- Abdullah, M.A., & Anderson, A., (2015). Islamic Financial Literacy among Bankers in Kuala Lumpur. *Journal of Emerging Economies and Islamic Research*, 3 (2), 79-94. <https://doi.org/10.24191/jeeir.v3i2.9061>
- Abel, S., Mutandwa, L., & Le Roux, P. (2018). A Review of Determinants of Financial Inclusion. *International Journal of Economics and Financial Issues*, 8(3), 1-8.
- Ahmad, G., Widyastuti, U., Susanti, S., & Mukhibad, H. (2020). *Determinants of the Islamic financial literacy. Accounting*, 6(6), 961-966.
- Akakpo, A. A., Amidu, M., Coffie, W., & Abor, J. Y. (2022). Financial literacy, financial inclusion and participation of individual on the Ghana stock market. *Cogent Economics & Finance*, 10(1), 2023955.
- Albaity, M., & Rahman, M. (2019). The intention to use Islamic banking: an exploratory study to measure Islamic financial literacy. *International Journal of Emerging Markets*, 14(5), 988-1012.
- Amagir, A., Groot, W., van den Brink, H. M., & Wilschut, A. (2020). Financial literacy of high school students in the Netherlands: knowledge, attitudes, self-efficacy, and behavior. *International Review of Economics Education*, 34, 100185.
- Anderson, A., Baker, F., & Robinson, D. T. (2017). Precautionary savings, retirement planning, and misperceptions of financial literacy. *Journal of Financial Economics*, 126(2), 383-398.
- Anisa, N. A., Arifin, S., Setyowati, L., Hidayah, N., & Megasari, A. D. (2020). Financial literacy on impulsive buying behavior in y generation. *Quantitative Economics and Management Studies*, 1(1), 70-75.
- Bandura, A. (1997). *Self-Efficacy – The Exercise of Control* (Fifth Printing, 2002). New York: W.H. Freeman & Company.
- Bannier, C. E., & Schwarz, M. (2018). Gender-and education-related effects of financial literacy and confidence on financial wealth. *Journal of Economic Psychology*, 67, 66-86.
- Barthel, A. C., & Lei, S. (2021). Investment in financial literacy and financial advice-seeking: Substitutes or complements? *The Quarterly Review of Economics and Finance*, 81, 385-396.
- Bialowolski, P., Cwynar, A., Xiao, J. J., & Weziak-Bialowolska, D. (2022). Consumer financial literacy and the efficiency of mortgage-related

- decisions: new evidence from the Panel Study of Income Dynamics. *International Journal of Consumer Studies*, 46(1), 88-101.
- Bongomin, G.O.C, Ntayi, J. M., Munene, J. C., & Nkote Nabeta, I. (2016). Social capital: a mediator of financial literacy and financial inclusion in rural Uganda. *Review of International Business and Strategy*, 26(2), 291-312.
- Bucher-Koenen, T., Alessie, R. J., Lusardi, A., & Rooij, M. V. (2021). Fearless woman: Financial literacy and stock market participation. *National Bureau of Economic Research Working Paper*. Article No: w28723.
- Chikalipah, S. (2017). What determines financial inclusion in Sub-Saharan Africa?. *African Journal of Economic and Management Studies*, 8(1), 8-18.
- Chin, W. W. (1998). The partial least squares approach to structural equation modeling. *Modern methods for business research*, 295(2), 295-336.
- Chong, K. F., Sabri, M. F., Magli, A. S., Abd Rahim, H., Mokhtar, N., & Othman, M. A. (2021). The Effects of Financial Literacy, Self-Efficacy and Self-Coping on Financial Behavior of Emerging Adults. *The Journal of Asian Finance, Economics and Business*, 8(3), 905-915.
- Clark, R. L., Morrill, M. S., Allen, S. G., 2012. Effectiveness of Employer-Provided Financial Information: Hiring to Retiring. *American Economic Review*, 102(3), 314–18.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences (2nd Ed.)*. New York: Routledge.
- Doan, M. D. (2020). The correlation between financial literacy and personal saving behavior in Vietnam. *Asian Economic and Financial Review*, 10(6), 590-603.
- Duca, J. V., & Kumar, A. (2014). Financial literacy and mortgage equity withdrawals. *Journal of Urban Economics*, 80, 62–75.
- Duflo, E. & Saez, E. (2003). The role of information and social interactions in retirement plan decisions: Evidence from a randomized experiment. *Quarterly Journal of Economics*, 118, 815-842.
- Fosnacht, K., & Calderone, S. M. (2017). Undergraduate financial stress, financial self-efficacy, and major choice: A multi-institutional study. *Journal of Financial Therapy*, 8(1), 7.
- Fox, J., Bartholomae S., & Lee J (2005) Building the case for financial education. *Journal of Consumption Affairs*, 39,195– 214.
- Gerrans, P., & Hershey, D. A. (2017). Financial adviser anxiety, financial literacy, and financial advice seeking. *Journal of Consumer Affairs*, 51(1), 54-90.

- Ghozali, Imam. (2006). *Structural Equation Modelling Metode Alternatif dengan Partial Least Square*. Semarang: Universitas Diponegoro.
- Grohmann, A., Klühs, T., & Menkhoff, L. (2018). Does financial literacy improve financial inclusion? Cross country evidence. *World Development*, *111*, 84-96.
- Gupte, R., Venkataramani, B., & Gupta, D. (2012), Computation of financial inclusion index for India, *Procedia – Social and Behavioral Sciences*, *37*, 133-149.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2014). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Thousand Oaks, CA: Sage.
- Hair, J., Hult, G., Ringle, C., et al. (2017) *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)* (2nd ed) Sage Publications, Thousand Oaks.
- Heckman, S., Lim, H., & Montalto, C. (2014). Factors related to financial stress among college students. *Journal of Financial Therapy*, *5*(1), 19-39.
- Henseler, J., Ringle, C.M., Sinkovics, R.R (2009). The Use of Partial Least Squares Path Modeling in International Marketing. New Challenges to International Marketing. *Advances in International Marketing*, *20*, 277–319
- Hsiao, Y. J. & Tsai, W. C. (2018). Financial literacy and participation in the derivatives markets. *Journal of Banking & Finance*, *88*, 15-29.
- Hu, L., & Bentler, P. M. (1998). Fit Indices in Covariance Structure Modeling: Sensitivity to Under Parameterized Model Misspecification. *Psychological Methods*, *3*, 424-453.
- Hussain, J., Salia, S., & Karim, A. (2018). Is knowledge that powerful? Financial literacy and access to finance: An analysis of enterprises in the UK. *Journal of Small Business and Enterprise Development*, *25*(6), 985-1003.
- Jariwala, H. (2013), *To study the level of financial literacy and its impact on investment decision- an in-depth analysis of investors in Gujarat state* (PhD thesis). V.M. Patel Institute of Management, Ganpat University, Ganpat Vidyanagar.
- Khandelwal, R., Kolte, A., Veer, N., & Sharma, P. (2021). Compulsive buying behaviour of credit card users and affecting factors such as financial knowledge, prestige and retention time: a cross-sectional research. *Vision*, 1-9.
- Kim, Y. K., Lim, Y., Maleku, A., Kagotho, N., & Yang, M. (2020). Financial stress and depression among African refugees in the southern United States: A serial multiple mediation analysis of financial self-efficacy and

- financial anxiety. *Journal of Immigrant & Refugee Studies*, 18(2), 151-171.
- Lim, H., Heckman, S., Montalto, C. P., & Letkiewicz, J. (2014). Financial stress, self-efficacy, and financial help-seeking behavior of college students. *Journal of Financial Counseling and Planning*, 25(2), 148-160.
- Liu, S., Gao, L., Latif, K., Dar, A. A., Zia-UR-Rehman, M., & Baig, S. A. (2021). The Behavioral Role of Digital Economy Adaptation in Sustainable Financial Literacy and Financial Inclusion. *Frontiers in Psychology*, 12.
- Lown, J. M. (2011). Development and validation of a financial self-efficacy scale. *Journal of Financial Counseling and Planning*, 22(2), 54.
- Lusardi, A. & Mitchell, O. (2006), Financial literacy and planning: implications for retirement wellbeing, *Pension Research Council Working Paper* No. 1, The Wharton School, University of Pennsylvania, Philadelphia, PA.
- Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. *Journal of economic literature*, 52(1), 5-44.
- Lusardi, A., & Mitchell, S.O. (2011). *Financial literacy around the world: an overview*, *Journal of Pension Economics and Finance*, 10 (4), 497-508.
- Lyons, A. C., & Kass-Hanna, J. (2021). Financial inclusion, financial literacy and economically vulnerable populations in the Middle East and North Africa. *Emerging Markets Finance and Trade*, 57(9), 2699-2738.
- Lyons, A.C., Chang, Y., & Scherpf, E.M. (2006), Translating Financial Education into Behaviour Change For Low-Income People, *Journal of Financial Counseling and Planning*, 17(2), 27-44.
- Madrian, B. & Shea, D. (2001). Preaching to the converted and converting those taught: Financial education in the workplace. *Working Paper*, University of Chicago
- Massara, M. A., & Mialou, A. (2014). Assessing countries' financial inclusion standing-A new composite index: International Monetary Fund, *Working Paper*. Article No:14/36.
- Messy, F., & Monticone, C. (2016), Financial education policies in Asia and the Pacific, *OECD Working Papers on Finance, Insurance and Private Pensions*, OECD Publishing, Paris, Article No: 40.
- Mindra, R., Moya, M., Zuze, L. T., & Kodongo, O. (2017). Financial self-efficacy: a determinant of financial inclusion. *International Journal of Bank Marketing*, 35(3), 338-353.
- Morgan, P. J., & Long, T. Q. (2020). Financial literacy, financial inclusion, and savings behavior in Laos. *Journal of Asian Economics*, 68, 101197.

- Nguyen, T. A. N., & Rozsa, Z. (2019). Financial literacy and financial advice seeking for retirement investment choice. *Journal of Competitiveness*, 11(1), 70-83.
- Niu, G., & Zhou, Y. (2018). Financial literacy and retirement planning: evidence from China. *Applied Economics Letters*, 25(9), 619-623.
- Noor, N., Batool, I., & Arshad, H. M. (2020). Financial literacy, financial self-efficacy and financial account ownership behavior in Pakistan. *Cogent Economics & Finance*, 8(1), 1806479.
- Northern, J. J., O'Brien, W. H., & Goetz, P. W. (2010). The development, evaluation, and validation of a financial stress scale for undergraduate students. *Journal of College Student Development*, 51(1), 79-92.
- Syakimah, N. M. S. (2016). The influence of financial literacy and Islamic finance awareness on financial behaviour: students' perspective, *Doctoral dissertation*, Universiti Utara Malaysia.
- OECD. (2009). Financial literacy and consumer protection: overlooked aspects of the crisis, available at www.financial-education.org/dataoecd/32/3/43138294.pdf
- OECD. (2013). Advancing national strategies for financial education. Paris: OECD.
- Pangestu, S., & Karnadi, E. B. (2020). The effects of financial literacy and materialism on the savings decision of Generation Z Indonesians. *Cogent Business & Management*, 7(1), 1743618.
- Potrich, A. C. G. & Vieira, K. M. (2018). Demystifying financial literacy: a behavioral perspective analysis. *Management Research Review*, 41(9), 1047-1068.
- Prastowo, P. (2018). Analisis regional keuangan inklusi perbankan syariah terhadap ketimpangan pendapatan di Indonesia. *Jurnal Ekonomi dan Keuangan Islam*, 4(1), 51-57.
- Rahim, S. H. A., Rashid, R. A., & Hamed, A. B. (2016). Islamic financial literacy and its determinants among university students: An exploratory factor analysis. *International Journal of Economics and Financial Issues*, 6(7S), 32-35.
- Ritonga, M., Windari, F., Sihite, T. H., Al Ihsan, M. A., & Siregar, M. (2021). The Influence of Financial Literacy, Financial Inclusion and Consumptive Behavior on Student Interests in Management Department, Faculty of Economics and Business, Labuhanbatu University in Using Financial Institution Products and Services. *Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences*, 4(3), 4005-4013.
- Rothwell, D. W., Khan, M. N., & Cherney, K. (2016). Building financial knowledge is not enough: financial self-efficacy as a mediator in the

financial capability of low-income families — *Journal of Community Practice*, 24(4), 368–388.

- Roy, P., & Patro, B. (2021, September). Measuring Financial Inclusion in India— An Index Considering Banking and Insurance Indicators. In *Interdisciplinary Research in Technology and Management: Proceedings of the International Conference on Interdisciplinary Research in Technology and Management (IRTM, 2021)*, 26-28 February, 2021, Kolkata, India (p. 32). CRC Press.
- Shen, Y., Hu, W., & Hueng, C. J. (2018). The effects of financial literacy, digital financial product usage and internet usage on financial inclusion in China. In *MATEC Web of Conferences*. EDP Sciences.
- Stango, Victor, & Jonathan Zinman, 2009, Fuzzy math, disclosure regulation, and credit market outcomes: Evidence from Truth-in-Lending reform, *Working paper*, University of California Davis.
- Suseno, P., & Fitriyani, Y. (2019). Role of the development of Islamic finance to financial inclusion: empirical study in Islamic banking countries. *Jurnal Ekonomi & Keuangan Islam*, 4(1),1-8.
- Tan, S., & Singaravelloo, K. (2020). Financial literacy and retirement planning among government officers in Malaysia. *International Journal of Public Administration*, 43(6), 486-498.
- Trianto, B., Rahmayati, R., Yuliaty, T., & Sabiu, T. T. (2021). Determinant factor of Islamic financial inclusiveness at MSMEs: Evidence from Pekanbaru, Indonesia. *Jurnal Ekonomi Dan Keuangan Islam*, 7(2), 105-122.
- Rooij, M. V., Lusardi, A., & Alessi, R. (2011). Financial literacy and stock market participation, *Journal of Financial Economics*, 101(2), 449-472.
- World Bank (2009), *The Case for Financial Literacy in Developing Countries. Promoting Access to Finance by Empowering Consumers*, The World Bank, Washington, DC.
- Zia-ur-Rehman, M., Latif, K., Mohsin, M., Hussain, Z., Baig, S. A., & Imtiaz, I. (2021). How perceived information transparency and psychological attitude impact on the financial well-being: mediating role of financial self-efficacy. *Business Process Management Journal*.
- Zou, J., & Deng, X. (2019). Financial literacy, housing value, and household financial market participation: Evidence from urban China. *China Economic Review*, 55, 52-66

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