Understanding The Factors That Shape Financial Literacy Among Indonesia Stock Investors

Dr. Yanuar Dananjaya BSc., MM
Universitas Pelita Harapan

Renna Magdalena S.T., S.E., M.Ak
Universitas Pelita Harapan

ABSTRACT

This research paper aims to investigate the factors that influence the general financial literacy, financial report literacy, and stock investing literacy of Indonesian stock investors. Through a survey conducted among Indonesian stock investors, this study explores the relationship between age, income, education, experience, and marital status with financial literacy. The findings indicate that the impact of various factors on financial literacy differs across different types of financial literacy. The results provide insights for policymakers, financial educators, and stock investment professionals to develop effective financial literacy programs tailored to Indonesian stock investors.

Keywords: Financial literacy, stock investor, stock investing

1. Introduction

From the outside, Indonesia's economy looks formidable. It's GDP in 2022 was \$3.419 trillion, making Indonesia the 7th largest economy in the world (World Economics, n.d.). However, Indonesia faces a high level of income inequality, with poverty rate of 10.1% in 2021 (Asian Development Bank, n.d.) Additionally, several research found that financial literacy among Indonesians are low (Homan, 2015; Ouattara and Zhang, 2020; Dewi et. al., 2020; Lantara and Kartini, 2015). 2019 survey conducted by Indonesia Financial Services Authority (Otoritas Jasa Keuangan) on financial literacy rate among Indonesians found financial literacy index of 38.03% that is considered low (Otoritas Jasa Keuangan, 2021).

One subset of population that can be expected to have higher level of financial literacy are stock investors. Van Rooij, Lusardi, and Alessie (2011) reported that people with low financial literacy are significantly less likely to invest in stocks. The lack of financial literacy is a significant deterrent for an individual to invest in stock. It is thus inferred that those who invest in stock have higher financial literacy

compared to general population. Thomas and Spataro (2018) also found that financial literacy has a positive and significant effect on stock market participation.

Various demographic characteristics affect the financial literacy rate of an individual. For example, Chen and Volpe (1998) found that among college students in US that lower economic class, less work experience, and being females corelate with lower financial literacy. Taft et. al. (2013) found that age, education level, being male, and being married are positively related to financial literacy. Klaper and Lusardi (2020) found that people who are female, having lower education, and poor are more likely to have lower financial literacy. Bucher-Koenen et. al. (2021) found that female tends to have lower financial literacy compared to males, partly due to lower confidence level in females. De Clercq and Venter (2009) found that among undergraduate students, gender, age, language, race, and income levels affect the level of financial literacy. Kadoya and Khan (2020) found that being male and older age is associated with more financial knowledge.

Studies on financial literacy among general population in Indonesia found that individuals with higher level of education have higher financial literacy rate (Ouattara and Zhang, 2020; Santoso et. al., 2016; Lantara and Kartini, 2015). Individuals with higher income tend to have higher financial literacy rate (Ouattara and Zhang, 2020; Lantara and Kartini, 2015). Lantara and Kartini (2015) also found that among general population in Indonesia, males have higher financial literacy rate compared to females.

Fernandes (2016) researched financial literacy among small business owners and its connection with firm's financial performance. In contrast to instrument usually used to measure financial literacy in general population, financial literacy measurement among small business owner must measure the ability to read and understand fundamental financial statements (Brown et al., 2006 in Fernandes 2016). Dahmen and Rodríguez (2014) in Fernandes (2016) also define financial literacy for small business owners as "the ability to understand and use business financial statements to generate key financial ratios to evaluate and manage a business". Thus Fernandes (2016) developed an instrument to measure financial literacy based on respondent understanding of financial statement. Another type of financial literacy is literacy related to stock investment. Kacperczyk, Nieuwerburgh, and Veldkamp (2014) and Berk and Van Binsbergen (2015) shows that mutual fund managers with high stock investment skill outperform those with low skill.

The main objective of this research is to investigate the effects of demographic characteristics to three types of financial literacy namely General Financial Literacy, Financial Report Literacy, and Stock Investing Literacy among stock investors in Indonesia. As such hypotheses to be tested are as follows:

H1a: There is a difference between the levels of General Financial Literacy among stock investors in Indonesia based on investor's age.

H1b: There is a difference between the levels of Financial Report Literacy among stock investors in Indonesia based on investor's age.

H1c: There is a difference between the levels of Stock Investing Literacy among stock investors in Indonesia based on investor's age.

H2a: There is a difference between the levels of General Financial Literacy among stock investors in Indonesia based on investor's income.

H2b: There is a difference between the levels of Financial Report Literacy among stock investors in Indonesia based on investor's income.

H2c: There is a difference between the levels of Stock Investing Literacy among stock investors in Indonesia based on investor's income.

H3a: There is a difference between the levels of General Financial Literacy among stock investors in Indonesia based on investor's education.

H3b: There is a difference between the levels of Financial Report Literacy among stock investors in Indonesia based on investor's education.

H3c: There is a difference between the levels of Stock Investing Literacy among stock investors in Indonesia based on investor's education.

H4a: There is a difference between the levels of General Financial Literacy among stock investors in Indonesia based on investor's experience.

H4b: There is a difference between the levels of Financial Report Literacy among stock investors in Indonesia based on investor's experience.

H4c: There is a difference between the levels of Stock Investing Literacy among stock investors in Indonesia based on investor's experience.

H5a: There is a difference between the levels of General Financial Literacy among stock investors in Indonesia based on investor's marital status.

H5b: There is a difference between the levels of Financial Report Literacy among stock investors in Indonesia based on investor's marital status.

H5c: There is a difference between the levels of Stock Investing Literacy among stock investors in Indonesia based on investor's marital status.

2. Literature Review and Hypotheses

Kadoya and Khan (2020) explain the positive relation between age and financial literacy as the result of older people having more exposure to economic and financial issues during their lifetimes compared to younger people. The exposure enables the learning of various financial knowledge to enhance literacy. Similarly, De Clercq and Venter (2009) argue that younger respondents have more limited experience on finance compared to older ones, and thus lower financial literacy.

Positive relation between income and financial literacy can result from both directions. Higher income can cause higher financial literacy as a person with high income needs to manage the residual income. The activity in managing residual income exposes the person to various financial concepts and thus enhances financial literacy (De Clercq and Venter, 2009). Similarly, West and Worthington (2018) explained that individuals with low income do not have the opportunity to acquire financial literacy skills beyond managing a household budget. On the other hand, a person with high financial literacy can manage his/her finance well and thus able to have higher income level (Klapper and Lusardi, 2012)

Lusardi et al. (2010) shows that people with lower cognitive skills tend to have lower financial literacy. It is possible that cognitive skill is related to education level. It is also possible that individuals with high levels of education will have higher income, and thus gain financial knowledge from managing more amount of money (West and Worthington, 2018).

Firli (2017) explained that married people are more motivated to manage their wealth compared to single people. Management of wealth for example through saving and investing and thus acquiring financial literacy from the process.

3.   Research Methodology

3.1   Definition of Variables

This research examines the association between stock investor characteristics (age, monthly income, education level, experience in stock investment, marital status) and financial literacy. There are three types of financial literacy being considered namely General Financial Literacy, Financial Report Literacy, and Stock Investing Literacy. General Financial Literacy is defined as the ability to process economic information and make informed decisions about financial planning, wealth accumulation, pensions, and debt (Lusardi and Mitchell, 2014), and a measure of the degree to which one understands key financial concepts (Remund, 2010). Financial report literacy focuses more to the understanding of financial report. Stock Investing Literacy focuses to understanding about aspects of stock investment.

Instrument used to measure General Financial Literacy follows Al-Tamimi (2009), Fernandes (2016), Klaper and Lusardi (2020), and Singh and Ansari (2022) in the form of questionnaire examining respondent's understanding of the following concept: risk reduction through diversification, inflation concept, compound interest, and risk-return relation. Instrument used to measure Financial Report Literacy follows Fernandes (2016), examining respondent's understanding of company financial report components.

A questionnaire is developed to measure Stock Investment Literacy. Lusardi and Mitchel (2014) proposed that any questionnaire that measures financial literacy must adhere to the following four principles: simplicity, relevance, brevity, and capacity to differentiate. Simplicity means that the questions must measure knowledge of the building blocks fundamental to respondent's decision-making. Relevance means the questions should relate to concepts used in respondent's decision-

making process. Brevity means the number of questions must be small to encourage wide participation of respondents. Capacity to differentiate means ability to differentiate respondents with high and low financial literacy. The questionnaire developed is simple and relevant for stock investors as it measures respondent's understanding of financial ratios, dividend yield calculations, stock price correlation, and valuation. It is also brief as it only consists of four questions. As for the capacity to differentiate, it will be clear from the data analysis section that there are some respondents that score very high points while others score very low points thus differentiating the level of literacy.

All three instruments measuring General Financial Literacy, Financial Report Literacy, and Stock Investing Literacy use four multiple questions with one point for each correct answer, resulting in zero to five total points. Total points above median are considered high literacy level, while total points below median is considered low literacy level.

A similar method is used for the classification of stock investor characteristics. Respondents with age same or above median are classified as older while respondents with age below median are classified as younger. Respondents with monthly income same or above median are classified as higher income while respondents with monthly income below median are classified as lower income. Education level is classified as either high school degree or undergraduate and above. Experience in stock investment is proxied by the number of years an investor has been investing in the stock market. Respondents with years of experience above median are classified as more experienced while those below median are classified as less experienced. Lastly, marital status are classified as either single or married.

3.2 Data and Analysis

Respondents for this research are stock investors in Indonesia stock market with minimum 1 year experience and own minimum one stock at the time of the survey. Education level is minimum high school certificate. Monthly income is limited to a maximum of Rp 60 millions.

Chi-square test is used to determine if there is association between stock investor characteristics and literacy. There are five characteristics (age, monthly income, education, experience, and marital status) and three types of literacy (General Financial Literacy, Financial Report Literacy, and Stock Investing Literacy) yielding 15 tests. Data analysis is done using SPSS 22.0

4. Finding And Discussion

4.1 Findings

Data from 153 respondents is collected. Descriptive statistics of each variable is as follows:

	Age (years)	Monthly Income (Mills	Stock Investing Experience	General Financial Literacy Points	Financial report Literacy Points	Stock Investing Literacy Points
Average	35.6	17.1	3.8	3.1	2.4	3.3
Max	59	55	20	4	4	4
Min	18	5	1	1	0	1

Table 4.1: Data descriptive statistics on respondent's age, monthly income, stock investing experience, and literacy points

Additionally, 26 respondents (17%) have high school degree as highest education level, 104 respondents (68%) have undergraduate degree, 22 respondents (14%) have graduate degree, and 1 respondent (1%) has postgraduate degree. On marital status, 43 respondents (28%) are single while 110 respondents (72%) are married. 143 respondents are male while only 10 respondents are female. This characteristic is not included in the analysis as the small number of female respondents does not allow for a reliable chi-square test.

Among the three types of financial literacy, respondents are the most proficient at Stock Investing Literacy and the least proficient at Financial Report Literacy. This can be seen from the average points whereby Stock Investing Literacy has the highest average point of 3.3 while the lowest is Financial Report Literacy with 2.4. It is also notable that some respondents score zero point in Financial Literacy category while there is no zero point in the other two categories.

Graph 4.1 shows Stock Investment Literacy has the highest number of respondents with full mark of four points, while Financial Report Literacy has the lowest number. Financial Report Literacy has 11 respondents that score zero point, whereas no respondent with zero point in the other two categories. Financial Report Literacy also has the highest number of respondents that score 1 or 2 points compared to the other two categories, while stock investment literacy has the lowest nu,ber of such respondents. The data further supports that respondents are the most proficient at Stock Investing Literacy and the least proficient at Financial Report Literacy.
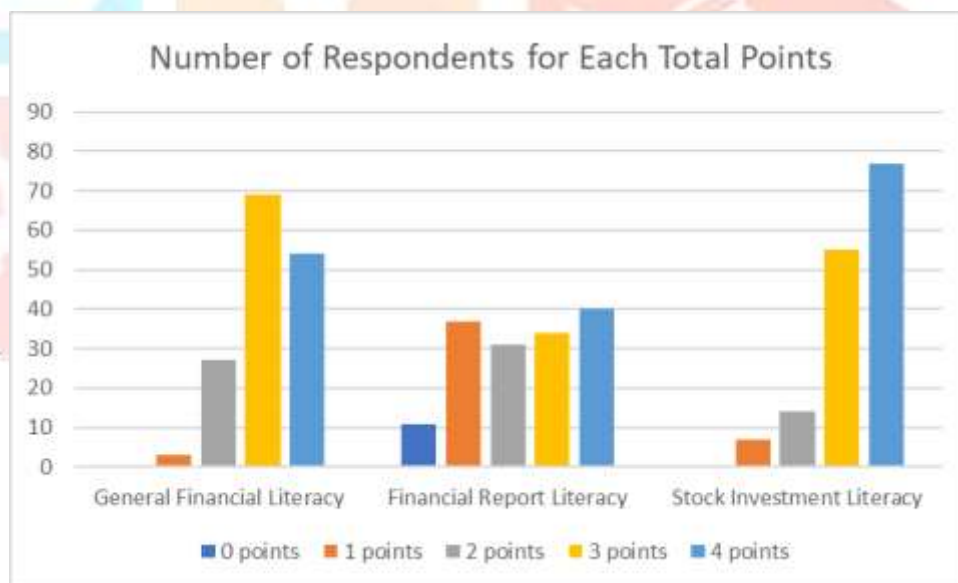
Graph 4.1: Number of respondents for each total points

Result of the 15 chi-square tests are as follows:

Age vs. Literacy										
		General Financial Literacy			Financial Report Literacy			Stock Investment Literacy		
		High	Low	Sig.	High	Low	Sig.	High	Low	Sig.
Younger	Count	54	19	0.056	48	25	0.464	29	44	0.012
	Expected Count	58.7	14.3		50.1	22.9		36.7	36.3	
Older	Count	69	11		57	23		48	32	
	Expected Count	64.3	15.7		54.9	25.1		40.3	39.7	

Table 4.2: Association between respondent's age and literacy

Monthly Income vs. Literacy

		General Financial Literacy			Financial Report Literacy			Stock Investment Literacy		
		High	Low	Sig.	High	Low	Sig.	High	Low	Sig.
Lower Income	Count	49	15	0.312	37	27	0.014	29	35	0.293
	Expected Count	51.5	12.5		43.9	20.1		32.2	31.8	
Higher Income	Count	74	15		68	21		48	41	
	Expected Count	71.5	17.5		61.1	27.9		44.8	44.2	

Table 4.3: Association between respondent's monthly income and literacy

Education vs. Literacy

		General Financial Literacy			Financial Report Literacy			Stock Investment Literacy		
		High	Low	Sig.	High	Low	Sig.	High	Low	Sig.
High School	Count	17	9	0.034	11	15	0.002	11	15	0.369
	Expected Count	20.9	5.1		17.8	8.2		13.1	12.9	
Undergraduate and Above	Count	106	21		94	33		66	61	
	Expected Count	102.1	24.9		87.2	39.8		63.9	63.1	

Table 4.4: Association between respondent's education and literacy

Experience vs. Literacy

		General Financial Literacy			Financial Report Literacy			Stock Investment Literacy		
		High	Low	Sig.	High	Low	Sig.	High	Low	Sig.
Less Experience	Count	49	20	0.008	38	31	0.001	30	39	0.125
	Expected Count	55.5	13.5		47.4	21.6		34.7	34.3	
More Experience	Count	74	10		67	17		47	37	
	Expected Count	67.5	16.5		57.6	26.4		42.3	41.7	

Table 4.5: Association between respondent's experience and literacy

Marital Status vs. Literacy

		General Financial Literacy			Financial Report Literacy			Stock Investment Literacy		
		High	Low	Sig.	High	Low	Sig.	High	Low	Sig.
Single	Count	32	19	0.245	29	14	0.843	18	25	0.19
	Expected Count	34.6	21.6		29.5	13.5		21.6	21.4	
Married	Count	32	11		76	34		59	51	
	Expected Count	34.6	8.4		75.5	34.5		55.4	54.6	

Table 4.6: Association between respondent's marital status and literacy

Out of the 15 hypotheses, 8 are rejected and 7 are accepted (6 with 95% confidence level, and 1 with 90% confidence level). For General Financial Literacy being older, having higher education, and more experience in stock investing are associated with higher literacy. No significant association between monthly income or marital status and General Financial Literacy. However, from table 4.3 it can be inferred that there is a weak association between higher income and higher General Financial Literacy. From 51.5 expected count of respondents with low income and high literacy if there is no association, there are actual only 49 respondents. From 71.5 expected count of respondents with high income and high literacy if there is no association, there are actual 74 respondents. The same case with low literacy group.

For Financial Report Literacy, having higher income, having higher education, and more experience in stock investing are associated with higher literacy. No association between age or marital status with Financial Report Literacy. However, from table 4.2 it can be inferred that there is a weak association between being older and higher Financial Report Literacy. From 50.1 expected count of respondents with younger age and high literacy if there is no association, there are actual only 48 respondents. From 54.9 expected count of respondents with older age and high literacy if there is no association, there are actual 57 respondents. The same case with low literacy group.

For Stock Investment Literacy, only being older is associated with higher literacy. The other four characteristics have no association with Stock Investment Literacy. However, from the difference between expected count and actual data, it can be inferred that there is weak association between higher income, higher education, more experience, and being married with higher Stock Investment Literacy.

4.2   Discussion

Using the same instrument used in this research to measure General Financial Literacy, Klaper and Lusardi (2020) found that worldwide only 33% of respondents score at least three points. Among stock investors in Indonesia, the corresponding percentage is 80% (123 out of 153 respondents), suggesting that General Financial Literacy is much higher among stock investors than in general population. The result is also in contrast with various research in Indonesia that generally find that Indonesians' literacy rate is low. Stock investors are exposed to various financial management and financial decision making during their investing activities. Those exposures enhance stock investors' financial literacy (De Clercq and Venter, 2009; West and Worthington, 2018).

Among three types of financial literacy, Indonesian stock investors are most proficient in Stock Investing Literacy, followed by General Investing Literacy, and lastly Financial Report Literacy. High level of proficiency in Stock Investing Literacy is due to respondent characteristics of minimum 1 year experience in stock investing and still owning stock. Respondent average investing experience is 3.8 years. Thus, the majority of investors seem to have enough experience to learn various stock investing skills. Survivorship bias may also play a role whereby investors with low investing skill might soon stop investing due to poor performance.

Indonesian stock investors are least proficient in Financial Report Literacy because among the three types of financial literacy examined in this research, Financial Report Literacy has the most technical character. It usually takes formal training or education for someone to learn how to read and understand financial reports. The result might look peculiar as stock investors are supposedly need to analyze a company's financial reports to make buy/sell decision on the stock of that company. There are two possible explanations. First, Indonesian stock investors tend to rely on technical analysis on making investment decision and pay little attention to fundamental analysis. Second, widely available and free information on company financial ratios enable investors to perform simple fundamental analysis without the need to read financial reports.

For General Financial Literacy, income and marital status do not correlate significantly with literacy level. In general population, individuals with higher (lower) income are more (less) exposed to various money management and financial decision making which affects the level of financial literacy. Married people are also more motivated to manage their finances compared to single people. Stock investors perform money management and financial decision making on a regular basis regardless of income, thus nullifying the effect of income to financial literacy level.

For Financial Report Literacy, age and marital status do not correlate significantly with literacy level. Reading and understanding financial reports requires high cognitive ability. It can be argued that there is no relation between cognitive ability and age or marital status. Thus, there is no relation between age or marital status and Financial Report Literacy. On the other hand, it is likely that individuals with higher level of education, higher income, or longer experience in stock investing have high cognitive ability that enable them to read and understand financial reports. Thus, explaining the relation between education, income, and experience with Financial Report Literacy.

For Stock Investing Literacy, most demographic characteristics examined in this research do not corelate with literacy level. This is because the 3.8 years average stock investing experience among respondents is long enough for respondents to learn various skills needed in stock investment.

4.3 Conclusion

Main findings of this research are as follows. Indonesian stock investors have higher financial literacy compared to general population. Among three types of financial literacy, Indonesian stock investors score lowest in Financial Report Literacy, with variation of literacy level likely due to different cognitive ability among investors. Indonesian stock investors scores very high in Stock Investing Literacy, suggesting that investors have the skill needed to perform investing activities. In this research, some demographic factors that are known to affect financial literacy levels did not show a significant effect due to different characteristics between the general population and stock investors.

5. Research Limitation

This study does not examine the effect of financial literacy on investing performance. While the relation between an individual's financial literacy and his/her financial condition is well established, the existence of financial literacy relation with investing performance among stock investors is not well researched. Future study will establish whether stock investor's financial literacy will affect the investing performance.

6. Acknowledgements

References

Adil, M., Singh, Y., & Ansari, M. S. (2022). How financial literacy moderate the association between behaviour biases and investment decision?. Asian Journal of Accounting Research, 7(1), 17-30

Asian Development Bank. (n.d.). Indonesia: Poverty. Retrieved April 18, 2023, from https://www.adb.org/countries/indonesia/poverty

Berk, J. B., & Van Binsbergen, J. H. (2015). Measuring skill in the mutual fund industry. Journal of financial economics, 118(1), 1-20.

Brown, R. B., Saunders, M. N., & Beresford, R. (2006, June). You owe it to yourself: The financially literate manager. In Accounting Forum (Vol. 30, No. 2, pp. 179-191). No longer published by Elsevier

Bucher-Koenen, T., Alessie, R. J., Lusardi, A., & Van Rooij, M. (2021). Fearless woman: Financial literacy and stock market participation (No. w28723). National Bureau of Economic Research

Campbell, J. Y., Ramadorai, T., & Ranish, B. (2014). Getting better or feeling better? How equity investors respond to investment experience (No. w20000). National Bureau of Economic Research.

Chen, H., & Volpe, R. P. (1998). An analysis of personal financial literacy among college students. Financial services review, 7(2), 107-128.

Dahmen, P., & Rodríguez, E. (2014). Financial Literacy and the Success of Small Businesses: An Observation from a Small Business Development Center. Numeracy: Advancing Education in Quantitative Literacy, 7(1).

De Clercq, B., & Venter, J. M. P. (2009). Factors influencing a prospective chartered accountant's level of financial literacy: an exploratory study. Meditari: Research Journal of the School of Accounting Sciences, 17(2), 47-60

Dewi, V. I., Febrian, E., Effendi, N., Anwar, M., & Nidar, S. R. (2020). Financial literacy and its variables: The evidence from Indonesia. Economics & Sociology, 13(3), 133-154.

Fernandes, M. I. T. (2016). Financial literacy levels of small businesses owners and its correlation with firms' operating performance. (Master's thesis, Faculdade de Economia do Porto, Portugal).

Firli, A. (2017, March). Factors that influence financial literacy: A conceptual framework. In IOP Conference Series: Materials Science and Engineering (Vol. 180, No. 1, p. 012254). IOP Publishing.

Hassan Al-Tamimi, H. A., & Anood Bin Kalli, A. (2009). Financial literacy and investment decisions of UAE investors. The journal of risk finance, 10(5), 500-516

Homan, H. S. (2015, May). Comparative study of students financial literacy and its demographic factors. In International Conference on Economics and Banking (iceb-15) (pp. 106-111). Atlantis Press.

Kacperczyk, M., Nieuwerburgh, S. V., & Veldkamp, L. (2014). Time-varying fund manager skill. The Journal of Finance, 69(4), 1455-1484

Kadoya, Y., & Khan, M. S. R. (2020). Financial literacy in Japan: New evidence using financial knowledge, behavior, and attitude. Sustainability, 12(9), 3683.

Klapper, L. F., Lusardi, A., & Panos, G. A. (2012). Financial literacy and the financial crisis (No. w17930). National Bureau of Economic Research.

Klapper, L., & Lusardi, A. (2020). Financial literacy and financial resilience: Evidence from around the world. Financial Management, 49(3), 589-614

Lantara, I. W. N., & Kartini, N. K. R. (2015). Financial literacy among university students: Empirical evidence from Indonesia. Journal of Indonesian Economy and Business: JIEB., 30(3), 247.

Lusardi, A., Mitchell, O. S., & Curto, V. (2010). Financial literacy among the young. Journal of consumer affairs, 44(2), 358-380

Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: theory and evidence. Journal of Economic Literature, 52(1), 5–44

Otoritas Jasa Keuangan. (2021). National Strategy on Indonesian Financial Literacy (SNLKI) 2021-2025. Retrieved April 18, 2023, from https://www.ojk.go.id/en/berita-dan-kegiatan/publikasi/Pages/National-Strategy-on-Indonesian-Financial-Literacy-(SNLKI)-2021---2025.aspx

Ouattara, B., & Zhang, Y. F. (2020). Financial literacy and poverty reduction: the case of Indonesia

Remund, D. L. (2010). Financial Literacy Explicated: The Case for a Clearer Definition in an Increasingly Complex Economy. Journal of Consumer Affairs, 44(2), 276-295

Santoso, A. B., Trinugroho, I., Nugroho, L. I., Saputro, N., & Purnama, M. Y. I. (2016). Determinants of financial literacy and financial inclusion disparity within a region: Evidence from Indonesia. Advanced Science Letters, 22(5-6), 1622-1624

Taft, M. K., Hosein, Z. Z., Mehrizi, S. M. T., & Roshan, A. (2013). The relation between financial literacy, financial wellbeing and financial concerns. International journal of business and management, 8(11), 63.

Thomas, A., & Spataro, L. (2018). Financial literacy, human capital and stock market participation in Europe. Journal of Family and Economic Issues, 39, 532-550.

Van Rooij, M., Lusardi, A., & Alessie, R. (2011). Financial literacy and stock market participation. Journal of Financial economics, 101(2), 449-472

West, T., & Worthington, A. C. (2018). Synthesizing an index of financial literacy using not-for-purpose survey data. Economic Notes: Review of Banking, Finance and Monetary Economics, 47(2-3), 331-352

World Economics. (n.d.). Indonesia | GDP | 2022 | Economic Data | World Economics. Retrieved April 18, 2023, from https://www.worldeconomics.com/Country-Size/Indonesia.aspx