Financial Knowledge, Financial Attitude, Self-Efficacy, Mathematical Anxiety and Financial Literacy

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Abstract

Financial literacy is knowledge, skills, and beliefs that influence attitudes and behaviors to improve the quality of decision-making and financial management that not only knows and understands financial institutions but also community behavior that can be changed and enhanced regarding financial products and services. Financial literacy is needed to manage financial resources to achieve financial well-being successfully. This study aims to determine financial knowledge, attitudes, self-efficacy, and mathematical anxiety towards financial literacy. This study uses a quantitative method. The Population in this study consisted of all students in the Special Region of Yogyakarta. A sample of 100 respondents was selected based on specific criteria. The data collection technique for this study used a questionnaire. The study's results showed that financial knowledge, financial attitudes, and self-efficacy influenced financial literacy, while mathematical anxiety did not affect financial literacy.

Keywords: financial literacy, financial knowledge, financial attitude, self-efficacy, mathematical anxiety

INTRODUCTION

Diverse and complex financial products, such as investments, insurance, bank accounts, credit cards, pension funds, and others, bring new challenges that force people to face complex financial decisions (Philippas & Avdoulas, 2020). To be able to select which products and services are relevant, it is necessary to have the ability to understand financial information and implement it. OJK (2019), financial literacy is knowledge, skills, and beliefs that influence attitudes and behaviors to improve the quality of decision-making and financial management that not only knows and understands financial institutions but also community behavior that can be changed and improved related to financial products and services. Financial literacy is needed to manage financial resources to achieve financial well-being successfully (Lone and Bhat, 2022) Based on the results of the O.J.K. survey in S.N.L.I.K. in 2022, the level of financial literacy in Indonesia in 2022 was 49.68%, an increase compared to 2019, which was 38.03%. The results of the survey show that some people understand financial management.

Meanwhile, the survey results on the level of financial literacy of students in Indonesia in 2022 were 62.42%, an increase compared to 2019, which was 47.1%. However, this index is much lower than the financial inclusion index of 91.56% in 2019, 76.19%. Based on these data, there is a gap between the financial literacy index and the financial inclusion index, where financial inclusion is higher than the financial literacy index. Students who are intellectuals should already understand the concept of finance, be able to manage their finances independently, and be responsible for the financial decisions they make. For most students, the college period is the first time they manage their finances without parental supervision (Kartini & Mashudi, 2022). This shows that financial knowledge in personal finance will influence students to make sound financial decisions. Students need financial education because they grow and develop in different economic environments. For students to have the ability to understand, assess, and act in managing their finances, effective and efficient learning about financial literacy is needed as intellectuals because high financial literacy will form financial intelligence (Kartini & Mashudi, 2022).

Dam & Hotwani (2018) state that financial literacy is the ability to understand a financial decision, consider costs, and confidently decide what to do. Thomasa and Subhashreeb (2019) state that financial literacy has the knowledge, skills, and confidence to manage personal and corporate finances. Financial knowledge and financial attitudes affect financial literacy, and Skagerlund et al. (2018) state that self-efficacy and math anxiety affect financial literacy. Thomasa and Subashreeb (2019) distinguish the term financial knowledge by referring to the understanding of financial concepts, while financial literacy has two dimensions: financial concept theory and the use of financial information. Amagir et al. (2020) states that financial knowledge is an integral dimension but not equivalent to financial literacy. Financial knowledge is about formal financial service institutions, products and services of financial institutions, knowledge related to delivery channels, and product characteristics (Nusa and Martfiyanto, 2021).

Shih et al. (2020) states that attitude evaluates objects and ideas and can predict behavior. Money is a problem for people, not only as a utilitarian commodity but also as a representation of emotional value or through symbolic meaning; money has been recognized as a powerful motivator of behavior, and money attitudes are a driving force for compulsive buying (Amagir et al., 2020). Thomasa and Subashreeb (2019) state that financial attitudes refer to mental or psychological assessments of economic matters; if someone values earning money and is determined to achieve financial goals, then the individual will achieve financial literacy. Skagerlund et al. (2018) states that self-efficacy refers to the belief that one can succeed at a given task, cope well with the various challenges one may face throughout life and work well in certain circumstances without being overwhelmed. Widiawati et al. (2022) state that self-efficacy is a form of individual belief in one's actions and abilities to manage finances clearly and competently to achieve financial goals. Skagerlund et al. (2018) states that math anxiety is when someone feels anxious about things related to mathematics; math anxiety is not directly related to actual math ability, general personality traits, or anxious dispositions but rather a negative attitude towards numbers. Cavanagh & Sparrow (2010) math anxiety can arise in any situation related to mathematics.

LITERATURE REVIEW

Financial Knowledge

The disintermediation trend requires people to decide how much to save, where to invest, and to take responsibility for prudent decumulation not to exhaust their assets while meeting their needs (Thomasa & Subhashreeb, 2019). Despite the rapid proliferation of financially complex products into the retail market, including student loans, mortgages, credit cards, retirement accounts, and annuities, many have proven difficult for financially unsophisticated investors to utilize. The influence of financial knowledge has a direct and positive effect on financial literacy (Thomasa & Subhashreeb, 2019). Amagir et al. (2020) found statistically significant and large differences in the level of financial knowledge of students from different Dutch high school tracks. Students with higher cognitive abilities displayed higher levels of financial knowledge, and financial education positively related to financial knowledge and influenced financial literacy. The results of a study conducted by Dam & Hotwani (2018) showed that financial knowledge affects financial literacy. Cordero et al. (2020) determine whether student training on financial concepts helps improve financial literacy because more significant variation in school characteristics and the general Population increases the prospect of detecting the influence of certain factors. The results of the study indicate that the availability of financial education is positively and significantly related to financial literacy. Nusa and Martfiyanto (2021) financial knowledge affect financial literacy.

H1: Financial knowledge has a positive effect on financial literacy

Thomasa & Subhashreeb (2019) state that individual attitudes toward money will affect their literacy and behavior toward finance. People who view money only as a measure to get what they want can never have proper financial planning for the future, which is a significant problem in this modern era. Thus, individuals with the right attitude and mindset towards money will be more vulnerable in financial planning and saving from an early age. Students are more vulnerable to making financial decisions; there is more risk for them to make bad calls, and bad decisions can be made. Research by Thomasa and Subhashreeb (2019) shows that financial attitudes directly and positively affect financial literacy. Amagir et al. (2020), the results of the study stated that attitudes toward money are positively related to financial literacy.

H2: Financial attitudes have a positive effect on financial literacy

Skagerlund et al. (2018) found that emotional factors, including personal efficacy, math anxiety, and financial anxiety, significantly affect financial literacy, whereas self-efficacy positively affects financial literacy. This study is in line with research conducted by Grimes et al. (2022), which found that self-efficacy has a significant and positive effect on the financial literacy of young Indonesians. Research conducted by Widiawati et al. (2022) on students showed that self-efficacy significantly impacts financial literacy.

H3: Self-efficacy has a positive effect on financial literacy

Financial literacy is an important life skill that is equally important for the benefit of oneself and society. Financially illiterate individuals to improve their level of financial literacy is ineffective. They are becoming financially literate in understanding numbers and having an emotional attitude towards numbers that does not interfere with the individual's daily involvement in mathematics and financial decisions (Skagerlund et al., 2018). Mathematics anxiety significantly negatively affects financial literacy, as found in the study of Skagerlund et al. (2018). Mathematics anxiety is indeed not related to mathematical ability, but mathematics anxiety is more about negative attitudes toward numbers. This negative attitude will make someone tend to avoid involvement in decision-making. Amagir et al. (2020) research states a negative relationship between mathematics scores and money quality.

H4: Mathematics anxiety is negatively related to financial literacy

RESEARCH DESIGN

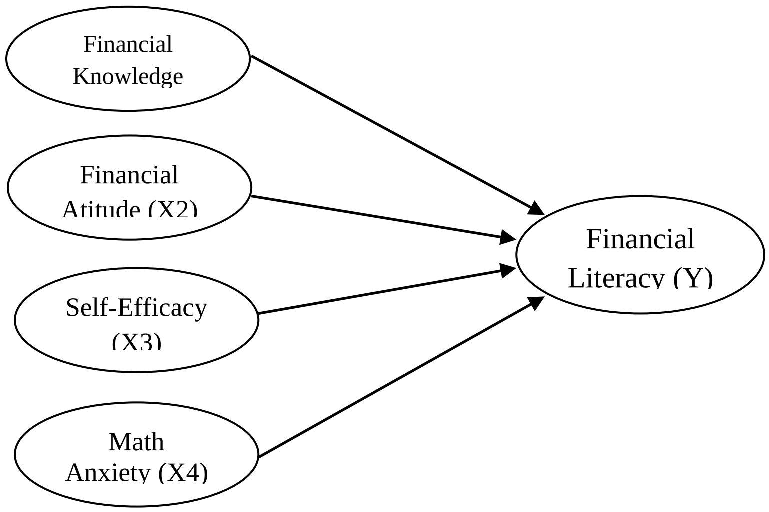

Figure.1 Research Design

RESEARCH METHODS

The study was conducted on students in the Special Region of Yogyakarta. Sampling used a purposive sampling technique. Sugiyono (2016) states that purposive sampling takes sample members from the Population by considering specific criteria. The respondents' criteria in this study are as follows: 1) Students studying financial management, investment management, and capital markets. 2) Students who have savings accounts. 3) Students have capital market accounts. This study uses the formula from Lemeshow because the target Population is vast and the number changes, namely undergraduate students in the Special Region of Yogyakarta. So, the minimum sample needed in this study is 96 respondents, rounded up to 100 respondents Pane & Purba (2020). The data collection technique is survey for this study used a questionnaire. Data analysis used SPSS version 2020, using multiple linear regression for hypothesis testing.

RESULTS AND DISCUSSION

Research variables are all attributes, characteristics, or values of people, objects, or activities that have certain variations determined by researchers to be studied and then concluded. The variables used are independent variables and dependent variables.

Table. 1
Validity Test Result

Variable	Indicator	*Person Correlationn*	Sig.	Information
Financial Knowledge (X1)	X1.1	0,508	0,000	Valid
	X1.2	0,570	0,000	Valid
	X1.3	0,527	0,000	Valid
	X1.4	0,617	0,000	Valid
	X1.5	0,592	0,000	Valid
	X1.6	0,532	0,000	Valid
	X1.7	0,535	0,000	Valid
Financial Attitude (X2)	X2.1	0,472	0,000	Valid
	X2.2	0,500	0,000	Valid
	X2.3	0,556	0,000	Valid
	X2.4	0,518	0,000	Valid
	X2.5	0,538	0,000	Valid
	X2.6	0,547	0,000	Valid
	X2.7	0,473	0,000	Valid
	X2.8	0,399	0,000	Valid
	X2.9	0,541	0,000	Valid
Self-Eficacy (X3)	X3.1	0,858	0,000	Valid
	X3.2	0,789	0,000	Valid
	X3.3	0,849	0,000	Valid
	X3.4	0,878	0,000	Valid
	X3.5	0,833	0,000	Valid
Math Anxiety (X4)	X4.1	0,861	0,000	Valid
	X4.2	0,846	0,000	Valid
	X4.3	0,835	0,000	Valid
	X4.4	0.790	0,000	Valid
Financial Literacy (Y)	Y.1	0,522	0,000	Valid
	Y.2	0,625	0,000	Valid
	Y.3	0,613	0,000	Valid
	Y.4	0,593	0,000	Valid
	Y.5	0,617	0,000	Valid
	Y.6	0,535	0,000	Valid
	Y.7	0,501	0,000	Valid
	Y.8	0,543	0,000	Valid
	Y.9	0,397	0,000	Valid
	Y.10	0,369	0,000	Valid
	Y.11	0,470	0,000	Valid
	Y.12	0,438	0,000	Valid
	Y.13	0,212	0,035	Valid

Source: Processed Primary Data (2024)

Based on table 1 states that all statement items used to measure the variables of financial knowledge, financial attitudes, self-efficacy, and math anxiety toward financial literacy have a Pearson Correlation value with a total score of all statements <0.05. So, all statements in the research questionnaire are declared valid and suitable for research instruments.

Table. 2
Data Reliability Test

Variabel	***Cronbach's Alpha***	**Keterangan**
Financial Knowledge (X1)	0,625	*Reliabel*
Financial Attitude (X2)	0,629	*Reliabel*
Self-Eficacy (X3)	0,896	*Reliabel*
Math Anxiety (X4)	0,852	*Reliabel*
Financial Literacy (Y)	0,743	*Reliabel*

Source: Processed Primary Data (2024)

Based on the reliability test results in Table 2 above, it can be concluded that the statements measuring the variables of financial knowledge, financial attitudes, self-efficacy, mathematics anxiety, and financial literacy are reliable because they have met the minimum requirements that have been determined.

Table. 3
Multiple Linear Regression Test Results

Variable	***Unstandardize Coefficients* B**	**T**	***Sig.***
Financial Knowledge → Financial Literacy	0,528	3,606	0,000
Financial Attitude → Financial Literacy	0,510	2,585	0,011
Self-Eficacy → Financial Literacy	0,514	3,000	0,003
Math Anxiety → Financial Literacy (Y)	- 0,324	- 1,799	0,075

Source: Processed Primary Data (2024)

This study examines the effect of financial knowledge, financial attitudes, self-efficacy, and mathematical anxiety on students' financial literacy. The disintermediate trend requires people to decide how much to save and where to invest and take responsibility for prudent decumulation so as not to exhaust their assets while meeting their needs (Thomasa & Subhashreeb, 2019). This study is in line with research conducted by Thomasa and Subhashreeb (2019), which states that financial knowledge has a significant effect on financial literacy. This is reinforced by research conducted by Dam and Hotwani (2018), which shows that financial knowledge significantly affects financial literacy. The broader the financial knowledge of students, the better they understand the use of the money they have, thereby increasing their behavior to save and be more prosperous in finance.

Individuals view money only as a measure to get immediate desires; they need proper financial planning for the future, which is a significant problem in this modern era. Thus, individuals with the right attitude and mindset towards money will be more prone to financial planning and saving early on. This prevents their chances of going bankrupt or failing to enjoy the benefits of early financial savings. This study's results align with research conducted by Thomasa & Subhashreeb (2019), which shows that financial attitudes directly and positively influence financial literacy. This study is reinforced by research conducted by Amagir et al. (2020), which states that attitudes toward money are positively related to financial literacy. Students understand that attitudes towards money affect the management of their finances, thereby reducing compulsive purchases.

Self-efficacy refers to the belief that one can succeed at a given task, cope well with the various challenges one may face throughout life and perform well in a particular domain without being overwhelmed (Skagerlund et al., 2018). Based on the results of the hypothesis test in this study, it was found that self-efficacy influences students' financial literacy. This study's results align with research conducted by Skagerlund et al. (2018), who found that emotional factors, including personal efficacy, math anxiety, and financial anxiety, have a significant effect on financial literacy. This is also reinforced by research conducted by Grimes et al. (2022) that shows that self-efficacy significantly and positively affects literacy. It is concluded that students with high self-confidence can cope well with various challenges and work well in certain circumstances.

Based on the results of the hypothesis test in this study, it was found that mathematics anxiety did not affect students' financial literacy. These results were obtained from the statistical test value t, which had a significance value of 0.075, more significant than the significance value used, which was 0.05. So, the fourth hypothesis (H4) was rejected. This is because students who major in finance have enjoyed mathematics-related material since they were in school (Prihastari et al., 2023). This aligns with research by Mahuda et al. (2021) that states that mathematics anxiety does not affect students' literacy skills. This study is reinforced by research by Nasution et al. (2019) that shows that mathematics ability affects confidence in analyzing statistics and being critical of statistical information. Mathematics anxiety is not related to a person's conceptual understanding of financial topics but to the ability to respond correctly to items requiring numeracy skills (Storozuk & Maloney, 2023). High mathematical ability does not mean that students do not have mathematical anxiety. This arises because of students' inability to adapt to mathematics learning, which causes them to feel afraid and have difficulties, ultimately resulting in low learning outcomes and student achievement in mathematics (Mahuda et al., 2021).

CONCLUSION

Intellectual students should already understand financial concepts, be able to manage their finances independently and be responsible for their financial decisions. Knowledge in personal finance will influence students in making sound financial decisions. Financial literacy will affect students' financial management. The study showed that financial knowledge and attitudes positively correlated with students' financial literacy. In addition, self-efficacy also showed a positive influence on students' financial literacy, while math anxiety did not show a significant influence on the same.

The results of the study indicate that financial knowledge has a significant influence on students' financial literacy. Therefore, universities and higher education institutions in Yogyakarta must integrate more systematic and applicable financial education programs into the curriculum. This program is not only focused on basic financial theory, but also involves practical applications relevant to students' needs, such as personal budget management, investment, and long-term financial planning.

This study opens opportunities for further research that explores the relationship between other variables such as social, cultural, and economic factors on students' financial literacy. Longitudinal studies that observe changes in students' financial literacy from the first year to graduation could also provide deeper insights into how financial literacy develops over time.

REFERENCES

Amagir, A., Groot, W., Maassen van den Brink, H., & Wilschut, A. (2018). A review of financial-literacy education programs for children and adolescents. *Citizenship, Social and Economics Education, 17*(1), 56-80.

Amagir, A., Groot, W., Maassen van den Brink, H., & Wilschut, A. (2020). Financial literacy of high school students in the Netherlands: knowledge, attitudes, self-efficacy, and behavior. *International Review of Economics Education, 34*, 1-15.

Cavanagh, R. and Sparrow, L. (2010) Measuring Mathematics Anxiety: Constructing and Validating the Measure. The 2010 AARE International Research in Education Conference, Melbourne, 28(2), 1-13.

Cordero, J. M., Gil-Izquierdo, M., & Pedraja-Chaparro, F. (2020). Financial education and student financial literacy: A cross-country analysis using PISA 2012 data. *The Social Science Journal*, *59*(1), 15–33.

Dam B, L., and Hotwani, M. (2018). Financial Literacy: Conceptual Framework and Scale Development. *SAMVAD:SIBM Pune Research Journal*, (15), 67-68.

Grimes, Paul W. & Lopus, Jane S. & Amidjono, Dwi Sulistyorini, (2022). Financial life-skills training and labor market outcomes in Indonesia, *International Review of Economics Education, Elsevier*, vol. 41(C). 1-21.

Kartini, T., & Mashudi, U. (2022). Literasi Keuangan (Financial Literacy) Mahasiswa Indekos. *Jurnal Pendidikan Ekonomi UM Metro*, 10 (2), 154-164.

Lemeshow, S., Hosmer Jr., D.W., Klar, J. and Lwanga, S.K. (1990) Adequacy of Sample Size in Health Studies. John Wiley & Sons Ltd., Chichester, 1-5.

Lone, U.M., Bhat, S.A. (2024). Impact of financial literacy on financial well-being: a mediational role of financial self-efficacy. *J Financ Serv Mark* (29), 122–137.

Mahuda, I., Nasrullah, A., dan Marlina, M. (2021). Kontribusi Self-concept Matematis dan Kecemasan Matematika Terhadap Kemampuan Literasi Matematika Mahasiswa. *Wacana Akademika: Majalah Ilmiah Kependidikan*, 5 (1), 58-59.

Nasution, M. L., Yerizon, Y., and Gusmiyanti, R. (2019). Students' validations on their solution in mathematical problem-solving Students' validations on their solution in mathematical problem solving. *Jurnal Matematika Kreatif-Inovatif,* 12 (1), 85-96.

Nusa, G. H., dan Martfiyanto, R. (2021). Pengaruh Pengetahuan, Perilaku, Dan Sikap Keuangan Terhadap Literasi Keuangan Pada Mahasiswa S-1 Akuntansi Universitas Jendderal Achamd Yani Yogyakarta. *Bilancia: Jurnal Ilmiah AkuntansI*, 5 (2), 226-237.

Otoritas Jasa Keuangan OJK. 2019. Strategi Nasional Literasi Keuangan Indonesia. (http://www.ojk.go.id/. Diakses 1 Juli 2023)

Pane, D., & Purba, T. (2020). Pengaruh Kualitas Produk, Kualitas Pelayanan dan Kepercayaan Konsumen Terhadap Minat Beli Di Situs E-Commerce Bukalapak. *Jurnal Ilmiah Kohesi*, *4*(3), 156-167.

Philippas, N. D., & Avdoulas, C. (2019). Financial literacy and financial well-being among generation-Z university students: Evidence from Greece. *The European Journal of Finance*, *26*(4–5), 360–381.

Prihastari, E. B., Hidayah, I., Masrukan, M., & Susilo, B. E. (2023). Analisis Literasi Statistik pada Mahasiswa PGSD dalam Mata Kuliah Statistik Pendidikan. *Jurnal Basicedu*, *7*(1), 671–680.

Shih, H.M, Chen. B.H., Mei-Hua. C., Ching-Hsin. W., Li-Fen. Wang. (2022) A Study of the Financial Behavior Based on the Theory of Planned Behavior, *International Journal of Marketing Studies*, Canadian Center of Science and Education, 14(2), 1-12.

Skagerlund, Kenny., Lind. T., Strömbäck.C., Tinghög. G., Västfjäll. D. (2018). Financial literacy and the role of numeracy–How individuals' attitude and affinity with numbers influence financial literacy, *Journal of Behavioral and Experimental Economics (formerly The Journal of Socio-Economics)*, Elsevier, 74(C), 18-25.

Storozuk, A., & Maloney, E. A. (2023). What's Math Got to Do with It?: Establishing Nuanced Relations between Math Anxiety, Financial Anxiety, and Financial Literacy. *Journal of Risk and Financial Management*, *16*(4), 238.

Sugiyono. 2016. Skala Pengukuran Dan Instrumen Penelitian Metode Penelitian Kuantitatif, Kualitatif, dan R&D. Bandung: Alfabeta.

Thomasa, B., and P. Subhashreeb. (2019). Factors Influencing Financial Literacy among Engineering Factors Influencing Financial Literacy among Engineering. *Procedia Computer Science*, 172, 480-487.

Widiawati, W., Khusaini, K., Yustira, A. L., dan wahab. (2022). Peningkatan Literasi Keuangan Melalui Efikasi Diri dan Sosial . *Ekuitas: Jurnal Pendidikan Ekonomi*, 10 (2), 319-330.