



Financial Literacy among the Millennial Generation: Relationships between Knowledge, Skills, Attitude, and Behavior

Vera Intanie Dewi¹, Erie Febrian², Nury Effendi³, and Mokhamad Anwar⁴

Abstract

This study aims to determine the level of financial literacy among the millennial generation and to examine the correlation of their financial knowledge, financial attitude, and financial skills with their financial behavior. Multiple choice questions were used to measure financial knowledge with results grouped into three categories: low, moderate, and high. Financial attitude, financial skills, and financial behavior were also grouped using the quartile method into three categories: poor, fair, and good. Chi-squared analysis was used to test the hypotheses, with correspondence analysis conducted to identify the characteristics of the millennial generation and to graphically illustrate the gap. Regarding financial attitude, financial skills, and financial behavior, the proportions of respondents in the 'fair' category, were 70.6%, 66.5%, and 72.2%, respectively. Significant relationships were found not only between financial attitude and financial management behavior, but also between financial skills and financial management behavior. However, the relationship was not significant between financial knowledge and financial behavior.

JEL classification: G40, G53

Keywords: Financial attitude, Financial behavior, Financial knowledge, Financial literacy, Financial skills.

¹ Universitas Padjadjaran and Universitas Katolik Parahyangan, Indonesia, vera_id@unpar.ac.id

² Universitas Padjadjaran, Indonesia

³ Universitas Padjadjaran, Indonesia

⁴ Universitas Padjadjaran, Indonesia

1. INTRODUCTION

The millennial generation refers to individuals born after 1980 or, more specifically, between 1982 and 2002 (Elam et al., 2007; Ng et al., 2010). Some have become leaders in companies, with strategic roles and positions in the economy. Although regarded as a generation that tends to consume, millennials are creative people and risk takers. They have many interesting ideas and productive characteristics. As the millennial generation is the largest population cohort in many countries, their behavior is interesting to study. Their lifestyle has changed in line with dynamic technological changes, especially in financial technology, often known as "fintech." Financial technology (fintech) is the use of technology in a financial system to make financial services deliver financial products and services more efficiently. It can have an impact not only on monetary and financial system stability but also on the reliability of payment systems. The impact of high growth in financial technology along with low levels of financial literacy can adversely affect the utilization of financial products. Indonesia, as a developing country, achieved 69% financial inclusion in 2017 (Otoritas Jasa Keuangan, n.d.). In the same year, according to a World Bank report, 69% of adults worldwide had bank accounts (Demirgüç-Kunt et al., 2018). The remaining 31% of adults did not have bank accounts, with most of these people living in seven developing countries, namely, Bangladesh, China, India, Indonesia, Mexico, Nigeria, and Pakistan (Demirgüç-Kunt et al., 2018). At the same time, the growth of financial inclusion is not in line with the increase in financial literacy, with this leading to an increase in investment fraud. Those facing financial problems probably have less financial knowledge, limited ability to obtain relevant financial information to make financial decisions, and a lack of financial skills. Individuals should be financially literate before using financial services and, therefore, it is important to increase financial literacy. Cudmore et al. (2010) and Navickas et al. (2014) argue that financial literacy is important for young people and that it has a positive impact on their personal finances. Low financial literacy continues to be a global problem that must be addressed (Tschache, 2009) as it may result in inappropriate financial decisions and the inability to survive economic shocks.

Hung et al. (2009) developed a financial literacy model using four dimensions: financial knowledge, financial skills, perceived knowledge, and financial behavior. The linkages between these variables is known as financial literacy. This model also aligns with Lusardi and Mitchell (2013), Xiao et al. (2014), and Khan et al. (2017) who state that financial literacy comprises knowledge, skills, and attitudes which affect an individual's financial behavior. According to Mastercard's 2015 Financial Literacy Index, the index scores in developed countries have remained the same, while in developing countries, they have declined (Tan, 2016). As revealed by Klapper et al. (2015), the level of financial knowledge in developed countries is different to that in most developing countries in the world. The socio-demographic factors, age, education, and income, have a positive correlation with financial knowledge, with a positive relationship found between financial knowledge and financial skills.

Financial literacy not only affects how an individual manages money and copes with financial problems, but it also has implications for the individual's ability to make personal financial decisions related to investments, financial risk tolerance, saving, borrowing, and lifestyle choices. Furthermore, financial literacy has an important role in influencing financial institutions, such as banks and non-bank financial institutions, in how they manage their businesses and the products offered to depositors and investors. The above all have an impact on economic growth and economic stability (Widdowson & Hailwood, 2007; Sarigül, 2014).

Nowadays, the choice of financial products and services facing the younger generation is more challenging than those faced by previous generations. This makes financial literacy important for millennials (Lusardi and Oggero, 2017). In addition to more and more complex and interrelated financial markets, the increasing uncertainty of the global economy makes the role of financial literacy more important, especially in terms of making sound investment decisions. The resolution of this problem requires joint efforts by the government, society, education institutions, the financial industry, and individuals themselves. Thus, responsible financial management behavior is needed in this era of the millennial generation. The economic and financial crises that occurred in recent decades have been the subject of studies by financial institutions and researchers worldwide. As shown in these studies, financial literacy is needed for responsible financial behavior to be established for the future.

2. LITERATURE REVIEW

2.1. Financial Behavior

Financial behavior is reflected in activities undertaken by the individual that demonstrate positive and negative behavior (Woodyard, 2013). Positive financial behavior includes managing cash, making savings provision for emergencies, conducting credit management, and planning long-term goals, such as retirement plans, managing risks through purchasing insurance, and making estate plans. Meanwhile, negative financial behavior includes being a spendthrift, relying on employer pension plans, and avoiding financial discussion. According to Xiao (2008), financial behavior is an individual's behavior related to money management. Two theories underlie the development of the theory of financial behavior, namely, the theory of planned behavior (TPB) to predict and understand an individual's behavior (Ajzen, 1991) and the trans-theoretical model (TTM) of behavior change to help people achieve positive behavior and change negative behavior (Prochaska et al., 1992). The two theories highlight the psychological theory used to help people change their unwanted behavior. The term "trans-theoretical" means turning theory into application.

The theory of planned behavior (TPB) is a theory of human behavior that further develops the theory of reasoned behavior which was introduced in 1967 by Fishbein. It was later defined, developed, and tested in the 1970s by Fishbein and Ajzen (1975). The purpose of this theory is to predict and understand human behavior. Based on the theory, a person's behavior is determined by his/her behavioral intentions. Ajzen and Fishbein (1980) stated that theories of attitude cannot predict behavior; therefore, the theory of reasoned behavior was developed by adding perceived behavioral control, with this known as the theory of planned behavior (TPB) (Ajzen, 1991). Based on this theory, the three factors that influence behavioral intentions are negative valence of attitudes about the target behavior, subjective norms, and perceived behavioral control (Ajzen & Fishbein, 1980; Ajzen, 1991). Research on financial behavior has continued to be developed for various situations (Akben-Selçuk, 2015; Huston, 2010; Soma et al. 2016).

From the explanation above, two theories, namely, that of human behavior and the psychological trans-theoretical model (TTM) contribute to the development of the theory of financial behavior. The theory of planned behavior (TPB) is used to understand and predict human behavior while the trans-theoretical model (TTM) of behavior change is used to facilitate behavior change by providing appropriate interventions. The TTM is considered a multi-stage theory as it

works from stage to stage to help individuals to change unwanted negative financial behavior and to shape positive financial behavior.

One of the objectives of research on consumer financial behavior is to improve the understanding of factors that influence the formation of and changes in financial behavior, with the role of financial education particularly important to understand. It is also important to identify the important characteristics of financial education programs that not only provide financial knowledge but also encourage positive financial behavior and change unwanted financial behavior.

Previous studies on financial behavior and financial literacy have been carried out by Bhushan and Medury (2013); Lusardi and Mitchell (2014); de Bassa Scheresberg (2013); van Rooij et al. (2011); Hung et al. (2009); Kempson (2009); Nye and Hillyard (2013); Woodyard (2013); Priyadharshini (2017); and Taylor and Wagland (2013).

2.2. Financial Knowledge

Financial knowledge reflects the individual's understanding of financial issues. It is measured by assessing various aspects of their basic financial knowledge, including: compound interest, inflation, deposits, the time value of money, diversification, interest rates, debt, and assets. Financial knowledge is the basis of financial literacy which helps individuals in making decisions and establishing good financial behavior. Financial knowledge has an important role at a time when the choice of financial products is increasingly complex, with products easily accessible by various depositors and investors. Government policies in many countries, and especially in developing countries, have sought to encourage increased access to financial services, an increase in the number of bank accounts and access to credit products, especially to the rapidly increasing number of loans for consumption. Financial literacy is not only the understanding of financial knowledge but also has other dimensions, namely, financial skills and financial attitude. Previous studies on financial knowledge have been conducted by Bakken (1966); Clark et al. (2017); Danes and Hira (1987); Hilgert et al. (2003); Hung et al. (2009); Knoll and Houts (2012); Khan et al. (2017); Lusardi and Mitchell (2014); Lusardi and Mitchell (2017); Robb and Woodyard (2011); Sarigül (2014); Sivaramakrishnan et al. (2017); van Rooij et al. (2011); Wagland and Taylor (2009); Woodyard (2013); Xiao et al. (2014); Walstad et al. (2010); and Yildirim et al. (2017).

2.3. Financial attitude

Financial attitude refers to beliefs and values related to various concepts of personal finance (Priyadharsini, 2017). These values and beliefs can form financial behavior in making decisions, such as self-control, patience, long-term thinking, and the ability to solve financial problems. Financial attitude focuses on the ability to control one's individual self, through believing in one thing that is considered good in finance, for example, believing it is important to save money, making financial plans, being patient in facing financial problems and finding ways to cope, tolerance to risk, and perception of risk and returns (Diacon & Ennew, 2001). Previous studies on financial attitude have been carried out by Atkinson and Messy (2012); Cucinelli et al. (2019); Hilgert et al. (2003); Khan et al. (2017); Robb and Woodyard (2011); Sivaramakrishnan et al. (2017); van Rooij et al. (2011); Woodyard (2013); and Xiao et al. (2014).

2.4. Financial skills

Financial skills relate to the individual's ability, when making financial decisions, to minimize the possibility of getting caught up in financial problems (Priyadharsini, 2017). Personal financial problems can be caused by the lack of basic financial skills in preparing budgets, and the inability to understand credit and investment instruments or other financial products. The lack of financial literacy among individuals is one of the causes of the financial crisis (Lusardi & Mitchell, 2011). Financial skills can be improved by various approaches, including through education, training, and consultation. Improving financial skills can also be done by improving basic financial skills, such as preparing a budget and gathering financial information (Elbogen et al., 2011). Previous studies on financial skills include those carried out by Cramer et al. (2004) and Hung et al. (2009).

3. RESEARCH METHODOLOGY

This research is an explanatory study. The study population was comprised of individuals born between 1982 and 2002 (Elam et al., 2007) who live in West Java, Indonesia. According to Badan Pusat Statistik (BPS) (Statistics Indonesia) (2010) and the 2017 National Socio-Economic Survey [SUSENAS], the number of the millennial generation in Indonesia are about 88 million people or about 34% of the total population in Indonesia. West Java, with the largest population of any province in Indonesia, comprises approximately 18% of the Indonesian population. More than half of Indonesia's millennial generation population lives on the island of Java, especially in West Java province. According to the data from SUSENAS (2017), the total populations of millennial generation at West Java province are 16.503.650. Using Slovin's formula, the minimum sample is calculated below:

$$n = \frac{N}{1 + Ne^2} = \frac{16.503.650}{1 + 16.503.650 \times 0.1^2} = 99.99 \approx 100$$

Where:

- N : The number of population
- n : The number of the sample
- e : confident interval (10%)

Using a 10% of confidence interval the number of the minimum sample is 100 millennial aged people in West Java province, Indonesia. This study used non-list-based random sampling as data collection methods. One of sampling method of probability internet-based survey is using non-list-based random sampling that allows for the selection of a probability-based sample without the need to actually enumerate a sampling frame (Fricker, 2008). De Leeuw et al. (2012) stated that probability internet surveys often convinced as scientific surveys. Moreover, Wright (2005) revealed some advantages of online survey research are: (1) ability to provide access unique population and individuals in distance locations, (2) convenience of having automated data collection to save time, (3) less costly than paper survey. Using online survey research about 200 questionnaires are distributed by an online form rather than paper to several groups of employees at companys, students at university, members of associations, members of the community in the wide geographic region in West Java, Indonesia. The respondents also contacted by telephone, e-

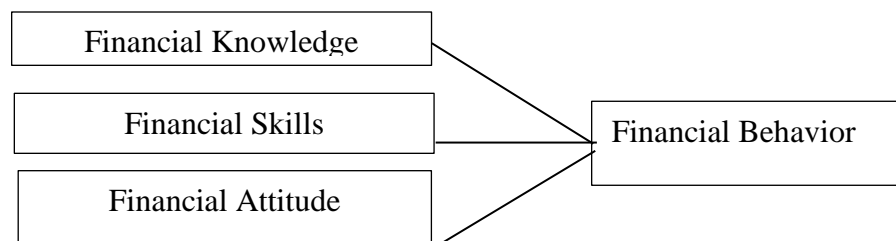
mail list of institution member, media social members, text message mobile phone and whatsapp message group members. This method is more economical and fast to create and deploy. According to internet world stats website, Indonesia holds the fourth rank after China, India and the United States as the top 20 countries with the highest level of internet penetration (internet world stats, 2019). Referring to this data, the target respondents not only have access to appropriate technology, (either a mobile phone or internet access), but also have an email address and are active using media social. Millennials are a digital generation who grew up amid rapidly advancing technology that is changing the way individuals interact and altering where and how millennials get their information, with the Internet displacing traditional media information such as newspapers and television as the source for news (National Chamber Foundation, 2012).

After validating the data, the number of valid questionnaires that will be used is 194 which complies with the minimum sample requirement according to Slovin's formula. The comprehensive questionnaire was designed to cover financial management behavior as the dependent variable and financial knowledge, financial attitude, and financial skills as independent variables. It included financial knowledge of credit management, savings, investment, and mortgages (Hilgert et al., 2003). Respondents were asked to answer "true" or "false" to 12 questions on financial knowledge. The score was calculated based on the percentage of correct answers and grouped into three levels: high (more than 80% correct answers); moderate (60%–79% correct answers); and low (below 60% correct answers) (Chen & Volpe, 1998). Indicators of financial attitude are also considered to demonstrate the individual's orientation toward personal finance, debt philosophy, approach to credit cards, financial security, and the extent to which they value personal finance (Marsh, 2006). The indicators of financial skills are financial control over cash and debts and skill in risk management.

The dependent variable, financial management behavior, was measured using seven items, consisting of questions which measured consumption, cash flow management, savings and investment, and credit management (Dew & Xiao, 2011). To determine the financial attitude, financial skills and financial management behavior, a Likert-type scale was used, with ratings ranging from 1 to 5 (strongly disagree, disagree, neither agree nor disagree, agree, strongly agree). The levels of financial attitude, financial skills, and financial management behavior were grouped using the quartile method into three categories: poor, fair, and good.

Face validity was used to measure the validity of the questionnaire, with this undertaken by individuals with finance competencies in the use of statistics analysis, that is, in using biserial correlation. Reliability was assessed using Cronbach's alpha. Chi-squared analysis was used to test the hypotheses with a significance level of 5%. Furthermore, the current study used correspondence analysis to reveal the characteristics of respondents in the sample, exploring the data and showing the gap graphically. Based on the above theories and findings from previous research, the conceptual model and hypotheses are formulated as shown in Figure 1 below:

Figure 1. Conceptual Model



The current study proposes the following hypotheses:

*H*₁: There is a relationship between financial knowledge and financial management behavior.

*H*₂: There is a relationship between financial attitude and financial management behavior.

*H*₃: There is a relationship between financial skills and financial management behavior.

4. RESULT AND DISCUSSION

With regard to gender, females comprised about 49% of respondents, while about 51% of respondents were male. As shown in Table 1 (see Appendix), about 45.9% of millennials had a high level of financial knowledge. Respondents were found to have a high level of knowledge on savings and lending interest rates, investment in mutual funds, and the risks of credit. About 54.1% of millennials had a moderate and low level of financial knowledge. Regarding financial attitude, financial skills, and financial behavior, the proportions of respondents in the "fair" category were 70.6%, 66.5%, and 72.2%, respectively. Few of the respondents have a "good" category. This result is significant and consistent, showing alignment with the finding of Lusardi and Oggero (2017) finding that millennials in advanced economics and emerging economics are lacking basic financial skills and on average, 28% of millennials are financially literate.

As shown in the empirical findings, the values of financial attitude and financial behavior were 0.001 smaller than 0.05 (the level of significance) (Table 2). This indicates the correlation between financial attitude and financial management behavior in respondents from the millennial generation. Individuals with a good financial attitude from the millennial generation are capable of managing their money, especially in terms of their expenses and income. They always compare prices before buying, seek information about goods they are going to buy, and keep records of their expenses. They are also willing to set aside funds to invest for their future well-being.

Respondents from the millennial generation with a good financial attitude demonstrated better financial behavior in making financial decisions. The other finding was that respondents had a better orientation towards personal finance than was the case with their philosophy on debt. Moreover, financial skills and financial management behavior showed a correlation, with a *p*-value of 0.039, which was less than 0.05. The study findings showed that respondents from the millennial generation were capable of controlling their finance on cash and debt. They were organized in managing money, keeping bills in places where they were easy to find, and always checking the record of their bills on their credit card statements. Respondents valued life insurance and had enough money to pay for this provision. However, the study's findings showed no correlation between financial knowledge and financial management behavior in the millennial generation respondents. The *p*-value of financial knowledge, at 0.295, was higher than the level of significance of 0.05. More than 50% of respondents demonstrated their financial knowledge by providing correct answers to questions on interest, savings, mutual funds, mortgages, and financial risks if bills are not paid on time.

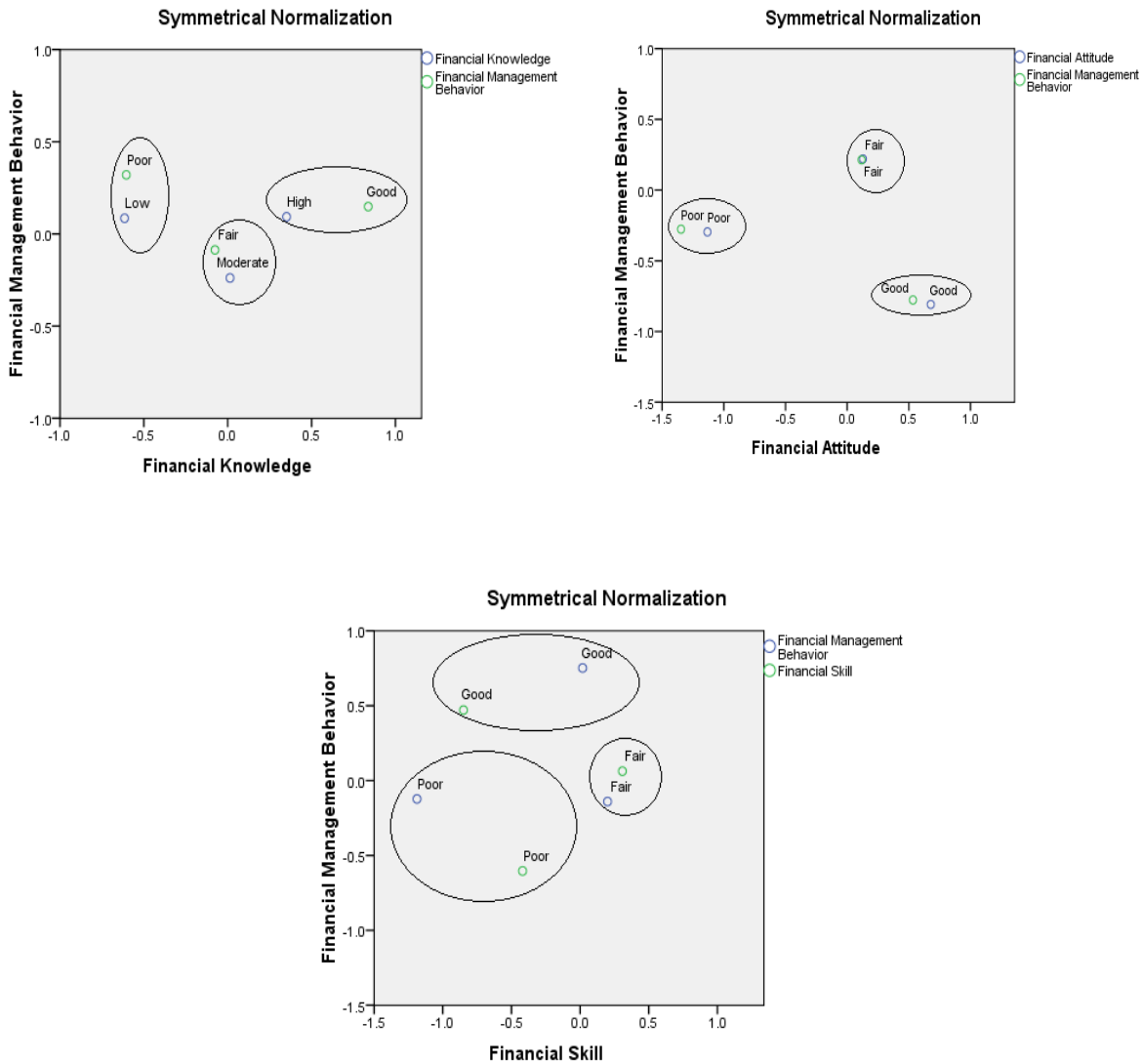


Figure 2. Mapping of Millennial Generation's Financial Literacy Characteristics

Figure 2 presents the correspondence analysis, showing that the bi-plot of a poor financial attitude and poor financial management behavior is relatively contiguous. This not only shows that respondents from the millennial generation with a poor financial attitude also have poor financial management behavior, but that millennial respondents with a fair financial attitude have fair financial management behavior, while those with a good financial attitude have good financial management behavior. The mapping of respondents' characteristics in financial skills and financial knowledge categories in relation to financial management behavior, shows the same gap graphically. Although financial knowledge and financial management behavior do not have a significant correlation, Figure 2 shows the proximity of these categories.

5. CONCLUSIONS

Based on the current study's results, it can be concluded that financial attitude and financial skills both have a correlation with financial management behavior. Millennials with a better financial attitude and skills will demonstrate good financial behavior in managing their money. These results are significant and consistent, showing alignment with the findings of Ameliawati and Setiyani (2018) and Lai (2010) in which the strong relationship between financial attitude and financial behavior was stated. Although financial knowledge does not have a significant correlation with financial behavior, the characteristics of these categories show their proximity. The current study's findings are also significant and consistent with Parrotta and Johnson's (1998) finding that financial behavior is predicted by financial attitudes, but not by financial knowledge. However, we argue that enhanced financial knowledge is an important factor in fostering good financial management behavior. Financially literate individuals from the millennial generation are better able to demonstrate good financial behavior for their economic security and well-being. Financially, they are capable of fostering their community's economic development.

ACKNOWLEDGEMENT

The authors express their thanks to, and acknowledge the support of, Lembaga Pengelola Dana Pendidikan (LPDP), Ministry of Finance, Republic of Indonesia, which by funding this paper, made it possible, through the BUDI-DN 2017 scholarship.

REFERENCES

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), pp.179-211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T).
- Ajzen, I., & Fishbein, M. (1980). *Understanding Attitudes and Predicting Social Behavior*. Englewood Cliffs, NJ: Prentice Hall.
- Akben-Selçuk, E. (2015). Factors influencing college students' financial behaviors in Turkey: Evidence from a national survey. *International Journal of Economics and Finance*, 7(6), pp.87-94. <https://doi.org/10.5539/ijef.v7n6p87>.
- Ameliawati, M., & Setiyani, R. (2018). The influence of financial attitude, financial socialization, and financial experience to financial management behavior with financial literacy as the mediation variable. *KnE Social Sciences*, pp.811-832. <https://doi.org/10.18502/kss.v3i10.3174>.
- Atkinson, A., & Messy, F.-A. (2012). Measuring financial literacy. Results of the OECD/International Network on Financial Education (INFE) Pilot Study. *OECD Working Papers on Finance, Insurance and Private Pensions*, No. 15, OECD Publishing.
- Badan Pusat Statistik (BPS) (Statistics Indonesia) (2010). *Indonesia Population Census 2010*. Badan Pusat Statistik (BPS).
- Bakken, M.R. (1966). *Money Management Understanding of Tenth Grade Students*. University of Alberta.
- Bhushan, P., & Medury, Y. (2013). Financial literacy and its determinants. *International Journal of Engineering, Business and Enterprise Applications*, 4(2), pp.155-160.

- Chen, H., & Volpe, R.P. (1998). An analysis of personal financial literacy among college students. *Financial Services Review*, 7(2), pp.107-128. [https://doi.org/10.1016/S1057-0810\(99\)80006-7](https://doi.org/10.1016/S1057-0810(99)80006-7).
- Clark, R., Lusardi, A., & Mitchell, O.S. (2017). Employee financial literacy and retirement plan behavior: A case study. *Economic Inquiry*, 55(1), pp.248-259. <https://doi.org/10.1111/ecin.12389>.
- Cramer, K., Tuokko, H.A., Mateer, C.A., & Hultsch, D.F. (2004). Measuring awareness of financial skills: Reliability and validity of a new measure. *Aging & Mental Health*, 8(2), pp.161-171. <https://doi.org/10.1080/13607860410001649581>.
- Cucinelli, D., Trivellato, P., & Zenga, M. (2019). Financial literacy: The role of the local context. *Journal of Consumer Affairs*. <https://doi.org/10.1111/joca.12270>.
- Cudmore, B.A., Patton, J., Ng, K., & McClure, C. (2010). The millennial and money management. *Journal of Management and Marketing Research*, 4, pp.1-28.
- Danes, S.M., & Hira, T.K. (1987). Money management knowledge of college students. *Journal of Student Financial Aid*, 17(1), pp.4-16.
- De Leeuw, E. D., Hox, J., & Dillman, D. (2012). *International handbook of survey methodology*. Routledge. <https://doi.org/10.4324/9780203843123>.
- Demirgüç-Kunt, A., Klapper, L., Singer, D., Ansar, S., & Hess, J. (2018). *The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution*. World Bank. <https://doi.org/10.1596/978-1-4648-1259-0>.
- Dew, J., & Xiao, J.J. (2011). The Financial Management Behavior Scale: Development and validation. *Journal of Financial Counseling and Planning*, 22(1), 43-59. Retrieved from <http://afcpe.org/journal-articles.php?volume=387&article=403>
- Diacon, S., & Ennew, C. (2001). Consumer perceptions of financial risk. *Geneva Papers on Risk and Insurance – Issues and Practice*, 26, 389-409. <https://doi.org/10.5038/1936-4660.6.2.5>.
- de Bassa Scheresberg, C. (2013). Financial literacy and financial behavior among young adults: Evidence and implications. *Numeracy*, 6(2), pp.1-21. <https://doi.org/10.5038/1936-4660.6.2.5>.
- Elam, C., Stratton, T., & Gibson, D.D. (2007). Welcoming a new generation to college: The millennial students. *Journal of College Admission*, 195, 20-25.
- Elbogen, E.B., Tiegreen, J., Vaughan, C., & Bradford, D.W. (2011). Money management, mental health, and psychiatric disability: A recovery-oriented model for improving financial skills. *Psychiatric Rehabilitation Journal*, 34(3), pp.223-231. <https://doi.org/10.2975/34.3.2011.223.231>.
- Fishbein, M. E. (1967). Readings in attitude theory and measurement.
- Fishbein, M., & Ajzen, I. (1975). *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research*. Reading, MA: Addison-Wesley.
- Fricke, R. D. (2008). Sampling methods for web and e-mail surveys. *The SAGE handbook of online research methods*, 195-216. <https://doi.org/10.4135/9780857020055.n11>.
- Hilgert, M.A., Hogarth, J.M., & Beverly, S.G. (2003). Household financial management: The connection between knowledge and behavior. *Federal Reserve Bulletin*, 89, pp.309-322.
- Hung, A.A., Parker, A.M., & Yoong, J.K. (2009). Defining and measuring financial literacy. In *RAND Labor and Population Working Paper Series*, Santa Monica, CA: RAND

- Corporation. https://www.rand.org/pubs/working_papers/WR708.html.
<https://doi.org/10.2139/ssrn.1498674>.
- Huston, S.J. (2010). Measuring financial literacy. *Journal of Consumer Affairs*, 44, 296-316. <https://doi.org/10.1111/j.1745-6606.2010.01170.x>.
- Kempson, E. (2009). Framework for the development of financial literacy baseline surveys: A first international comparative analysis. *OECD Working Papers on Finance, Insurance and Private Pensions*, No. 1. OECD Publishing. <https://doi.org/10.1787/5kmdpz7m9zq-en>.
- Khan, M.N., Rothwell, D.W., Cherney, K., & Sussman, T. (2017). Understanding the financial knowledge gap: A new dimension of inequality in later life. *Journal of Gerontological Social Work*, 60(6-7), pp.487-503. <https://doi.org/10.1080/01634372.2017.1317311>.
- Klapper, L., Lusardi, A., & van Oudheusden, P. (2015). *Financial Literacy Around the World*. Washington, DC: World Bank.
- Knoll, M.A., & Houts, C.R. (2012). The financial knowledge scale: An application of item response theory to the assessment of financial literacy. *Journal of Consumer Affairs*, 46(3), pp.381-410. <https://doi.org/10.1111/j.1745-6606.2012.01241.x>.
- Lai, C.-W. (2010). How financial attitudes and practices influence the impulsive buying behavior of college and university students. *Social Behavior and Personality: an international journal*, 38(3), 373-380. <https://doi.org/10.2224/sbp.2010.38.3.373>.
- Lusardi, A., & Mitchell, O.S. (2011). Financial literacy around the world: An overview. *Journal of Pension Economics & Finance*, 10(4), pp.497-508. <https://doi.org/10.1017/S1474747211000448>.
- Lusardi, A., & Mitchell, O.S. (2013). Debt and debt management among older adults. *Draft*. Ann Arbor, MI: Michigan Retirement Research Center.
- Lusardi, A., & Mitchell, O.S. (2014). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature*, 52(1), pp.5-44. <https://doi.org/10.1257/jel.52.1.5>.
- Lusardi, A., & Mitchell, O.S. (2017). How ordinary consumers make complex economic decisions: Financial literacy and retirement readiness. *Quarterly Journal of Finance*, 7(03), p.1750008. <https://doi.org/10.1142/S2010139217500082>.
- Lusardi, A., & Oggero, N. (2017). Millennials and financial literacy: a global perspective. *Global Financial Literacy Excellence Center*, May.
- Marsh, B.A. (2006). Examining the personal finance attitudes, behaviors, and knowledge levels of first-year and senior students at Baptist universities in the state of Texas. Doctoral dissertation, Bowling Green State University.
- National Chamber Foundation. (2012). The Millennial Generation: Research Review. U.S. Chamber of Commerce Retrieved from <https://www.uschamberfoundation.org/sites/default/files/article/foundation/MillennialsGeneration.pdf>.
- Navickas, M., Gudaitis, T., & Krajinakova, E. (2014). Influence of financial literacy on management of personal finances in a young household/Finansinio rastingumo itaka jaunimo asmeniniu finansu valdymui. *Business: Theory and Practice*, 15(1), pp.32-32. <https://doi.org/10.3846/btp.2014.04>.
- Ng, E.S., Schweitzer, L., & Lyons, S.T. (2010). New generation, great expectations: A field study of the millennial generation. *Journal of Business and Psychology*, 25(2), pp.281-292. <https://doi.org/10.1007/s10869-010-9159-4>.

- Nye, P., & Hillyard, C. (2013). Personal financial behavior: The influence of quantitative literacy and material values. *Numeracy*, 6(1), art.3. <https://doi.org/10.5038/1936-4660.6.1.3>.
- Otoritas Jasa Keuangan (OJK) Indonesia (Financial Services Authority) (n.d.). <www.ojk.go.id>.
- Parrotta, J.L., & Johnson, P.J. (1998). The impact of financial attitudes and knowledge on financial management and satisfaction of recently married individuals. *Journal of Financial Counseling and Planning*, 9(2), 59-75.
- Priyadharshini, S.H. (2017). From financial literacy to financial well-being: A study of the level of financial literacy of women teaching faculty in educational institutions in Coimbatore region. Doctoral dissertation, Bharathiar University, Coimbatore.
- Prochaska, J.O., DiClemente, C.C., & Norcross, J.C. (1992). In search of how people change: Applications to addictive behaviors. *American Psychologist*, 47(9), pp.1102-1114. <https://doi.org/10.1037/0003-066X.47.9.1102>.
- Robb, C.A., & Woodyard, A.S. (2011). Financial knowledge and best practice behavior. *Journal of Financial Counseling and Planning*, 22(1), pp.60-70. <https://doi.org/10.4148/jft.v3i1.1453>.
- Sarigül, H. (2014). A survey of financial literacy among university students. *Journal of Accounting & Finance*, (64), pp.207-244.
- Sivaramakrishnan, S., Srivastava, M., & Rastogi, A. (2017). Attitudinal factors, financial literacy, and stock market participation. *International Journal of Bank Marketing*, 35(5), pp.818-841. <https://doi.org/10.1108/IJBM-01-2016-0012>.
- Soma, A.M., Primiana, I., Wiryono, S.K., & Febrian, E. (2016). Determinant analysis of financial literacy affecting market discipline performance. *International Journal of Economics, Commerce and Management*, IV, 75-97.
- Tan, G. (2016). Overall financial literacy score hits a record low in Mastercard's latest Financial Literacy Index. <https://www1.mastercard.com/content/intelligence/en/research/press-release/2016/progress-towards-wellbeing-stagnant.html> (Retrieved on 6 March 2018).
- Taylor, S.M., & Wagland, S. (2013). The solution to the financial literacy problem: What is the answer? *Australasian Accounting, Business and Finance Journal*, 7(3), pp.69-90. <https://doi.org/10.14453/aabfj.v7i3.5>.
- Tschache, C.A. (2009). Importance of financial literacy and financial literacy content in curriculum. Doctoral dissertation, Montana State University–Bozeman, College of Education, Health & Human Development.
- van Rooij, M., Lusardi, A., & Alessie, R. (2011). Financial literacy and stock market participation. *Journal of Financial Economics*, 101(2), pp.449-472. <https://doi.org/10.1016/j.jfineco.2011.03.006>.
- Wagland, S.P., & Taylor, S. (2009). When it comes to financial literacy, is gender really an issue? *Australasian Accounting, Business and Finance Journal*, 3(1), 13-25.
- Walstad, W.B., Rebeck, K., & MacDonald, R.A. (2010). The effects of financial education on the financial knowledge of high school students. *Journal of Consumer Affairs*, 44(2), pp.336-357. <https://doi.org/10.1111/j.1745-6606.2010.01172.x>.
- Widdowson, D., & Hailwood, K. (2007). Financial literacy and its role in promoting a sound financial system. *Reserve Bank of New Zealand Bulletin*, 70(2).
- Woodyard, A. (2013). Measuring financial wellness. *Consumer Interests Annual*, p.59.
- Wright, K. B. (2005). Researching Internet-based populations: Advantages and disadvantages of online survey research, online questionnaire authoring software packages, and web

survey services. *Journal of computer-mediated communication*, 10(3), JCMC1034. <https://doi.org/10.1111/j.1083-6101.2005.tb00259.x>.

Xiao, J.J. (2008). Applying behavior theories to financial behavior. In *Handbook of Consumer Finance Research* (pp. 69-81). New York, NY: Springer. https://doi.org/10.1007/978-0-387-75734-6_5.

Xiao, J.J., Chen, C., & Chen, F. (2014). Consumer financial capability and financial satisfaction. *Social Indicators Research*, 118(1), pp.415-432. <https://doi.org/10.1007/s11205-013-0414-8>.

Yildirim, M., Bayram, F., Oğuz, A., & Günay, G. (2017). Financial literacy level of individuals and its relationship to demographic variables. *Mediterranean Journal of Social Sciences*, 8(3), pp.19-26. <https://doi.org/10.5901/mjss.2017.v8n3p19>.

APPENDIX

Table1.
The level of Financial Literacy

Financial Literacy	Category	Range of Category	f	Percentage (%)
Financial Knowledge	High	Over 80%	89	45.9
	Moderate	60% -79 %	53	27.3
	Low	Below 60%	52	26.8
Financial Attitude	Good	Over 4.29	26	13.4
	Fair	3.26 – 4.29	137	70.6
	Poor	Below 3.26	31	16.0
Financial Skill	Good	Over 3.89	29	14.9
	Fair	2.55 – 3.89	129	66.5
	Poor	Below 2.55	36	18.6
Financial management behavior	Good	Over 4.35	30	15.4
	Fair	3.23 – 4.35	140	72.2
	Poor	Below 3.23	24	12.4

Source: Data processing result

Table 2.
Chi-squared test

Variable	Chi-Squared	Contingency Coefficient	P-Value
Financial knowledge	4.928	0.157	0.295
Financial attitude	18.593	0.296	0.001
Financial Skill	10.097	0.222	0.039

Source: Data processing result

Table 3.
Contingency Table- Financial Knowledge and Financial Behavior Management

Categories	Poor (1)	Fair (2)	Good (3)	Total
-------------------	-----------------	-----------------	-----------------	--------------

Low (1)	9	39	4	52
Moderate (2)	6	39	8	53
High (3)	9	62	18	89

Source: Data processing results

Table 4.
Contingency Table- Financial Attitude and Financial Behavior Management

Categories	Poor (1)	Fair (2)	Good (3)	Total
Poor (1)	10	18	3	31
Fair (2)	13	105	19	137
Good (3)	1	17	8	26

Source: Data processing results