Paper 46

Analysis Of The Relationship Between Financial Literacy And Financial Behavior Toward Financial Distress In Generation Y And Z During Covid-19 Pandemic (Case Study Bandung)

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Abstract - **The world's economic contraction in recent years is unavoidable, given the increasing number of deaths caused by Covid-19 infection. Economically, Indonesian people are unprepared to deal with the country's economic paralysis. People of all income levels, from the poorest to the richest, are seeing income declines, implying that many previously financially secure people have become poor or were on the verge of becoming poor. As the result, the number of Indonesians making loans is growing. However, this rapid disbursement was followed by a drop-in borrowers' compliance to pay installments. In this research, multiple linear regression was used to analyze the relationship between financial literacy and financial behavior toward financial distress in generations Y and Z. The result was financial literacy and financial behavior have a positive and moderate relationship toward financial distress. Furthermore, generations Y and Z in Bandung have a moderate level of financial literacy, and during the Covid-19 Pandemic, based on the InCharge Financial Distress/Financial Well-Being scale (IFDFW), generations Y and Z in Bandung experienced moderate financial distress.**

Keywords – **financial literacy, financial behavior, financial distress, IFDFW**

I. INTRODUCTION

A. Background and Context

One of the things that have recently become a big concern for the whole world is the Covid-19 pandemic because of the many problems and negative impacts that continue to occur. Several international institutions, including the International Monetary Fund (IMF) and the Organization for Economic Cooperation and Development (OECD), forecast a 4.4 percent and 4.2 percent decline in global economic growth in 2020, respectively [1]. The results of the Consumer Financial Literacy Survey conducted by the National Foundation for Credit Counselling (NFCC) in collaboration with the Harris Poll 2020 show that there is a decline in income and unexpected financial conditions, resulting in 58 percent of households experiencing difficulties in paying debts [2]. This will be exacerbated by data from the International Labor Organization (ILO), which predicts that the global unemployed will reach 205 million by 2022. Reflecting on what occurred during the covid-19 pandemic, so many people suffered financial distress. Disruptions in economic activity that result in a decrease in income or even a sudden loss of income, as well as unexpected increases in expenses, when combined with poorly planned financial behavior, can increase the likelihood of experiencing financial distress [3][4][5]. Therefore, it is very crucial to manage everything related to finances wisely by utilizing adequate financial knowledge as well as the application of financial behavior. Adequate financial knowledge and financial behavior can minimize the occurrence of financial difficulties in the worst circumstances that may occur unexpectedly. The level of financial literacy and financial behavior can indicate whether or not a person's financial knowledge and behavior are adequate. Financial literacy is considered a means to accelerate financial well-being, therefore, having financial literacy will help people with day-to-day financial tasks, deal with some financial emergencies, and even pull them out of the grip of poverty [6]. Individuals who are financially literate will be able to avoid financial problems, especially during the COVID-19 pandemic [7]. In Indonesia, according to the Financial Services Authority (Otoritas Jasa Keuangan (OJK)) which conducted a survey about financial literacy and financial inclusion in 2019 that covers 34 provinces and includes 12,773 respondents, the rate of financial literacy in Indonesia is 38.03% and the level of financial inclusion index is 76.19 [8]. Based on the survey, both of financial literacy index and the financial inclusion index in 2019 increased compared to the previous survey in 2016. Although the financial literacy index has increased since the previous survey in 2016, the percentage of financial literacy is much lower than the percentage of financial inclusion. This means that many people have access to, and even own various financial products, but they are unaware of the benefits and risks. Lower financial literacy can cause people to struggle financially from paycheck to paycheck, with little or no savings, and ultimately very likely to experience financial distress. Individuals who are financially literate, on the other hand, will be able to avoid financial distress, particularly throughout the COVID-19 pandemic [7]. Talking about the financial distress experienced by many people due to the Covid-19 pandemic, Standard Charted in 2020 has conducted a global survey of 12,000 adults in 12 countries (Hong Kong, India, Indonesia, Kenya, Mainland China, Malaysia, Pakistan, Singapore, Taiwan, UAE, UK, and US). The survey results are that COVID-19 has had a major impact on spending and the savings of many people from various generations, and generation Y (ages 25-44 years) is the most affected. Generation Y is more likely than any other generation to find it difficult to meet daily expenses and to have a higher level of the take-out loan. Despite these obstacles, the pandemic has galvanized generation Y to adequately plan for their financial health and encouraged them to change their financial management behavior. However, based on data from Statistics Indonesia Agency (Badan Pusat Statistik (BPS)), generation Y and generation Z are the generations most affected by the COVID-19 pandemic, the impact experienced is a reduction in working hours, which has implications for a decrease in wages [9]. Especially, based on the results of the 2020 Population Census, Generation Z (27.94%) and Generation Y (25.87%) dominate the total population of Indonesia [1]. This implies that the pandemic has had a negative impact on a large number of Indonesians. According to a report from United Nations Children's Fund (UNICEF), during the pandemic, three out of four Indonesian households saw their income fall, with urban families faring the worst. At the same time, nearly a quarter of households are facing higher costs and an increased risk of food insecurity. Many middle-income people become impoverished or vulnerable. People in all income groups—from the poorest to the richest—reported similar percentages of income declines, implying that many previously economically secure people became poor or were on the verge of becoming poor [10]. The causes of the decline in income during this pandemic could be various, such as a reduction in working hours which has implications for wage reduction, and even there are some Indonesians have lost their jobs, this is consistent with data showing that Indonesia's unemployment rate is rising. In February 2020, BPS revealed that in Indonesia there were 6.88 million unemployed, this number increased by 60,000 people compared to the same period in 2019. The unemployment rate reached 4.99% of the total workforce of 137.91 million people. Especially, there is three hundred thousand fewer youth entering the labor market during the same period. Meanwhile, according to Agus Eko Nugroho, Head of the Indonesian Institute of Sciences Economic Center (Lembaga Ilmu Pengetahuan Indonesia (LIPI)), based on results of research conducted by the Indonesian Institute of Sciences in 2020, 87.3% of business owners and 64.8% of workers feel they are experiencing financial distress during the pandemic. Most people take advantage of their savings, assets, and loans from relatives to maintain purchasing power. Besides that, both workers and business owners find it difficult to pay bills and installments during the pandemic [11]. With an increasing number of unemployed people, an increasing number of people at risk of falling into poverty due to reduced or even lost sources of income, and many people struggling to pay bills and installments during the covid-19 pandemic, this means and implies that the Indonesian people are experiencing financial distress. Economically, the Indonesian people are unprepared to deal with the country's economic paralysis. The lack of financial literacy among people contributes to their lack of preparedness. Financially illiterate people are more likely to be exposed to immoral formal and informal financial institutions, incurring high return costs [7]. Furthermore, according to OJK data as of December 2020, the number of Indonesians who make loans are increasing. There were 43.57 million borrower accounts (loan recipients) and most of the borrowers were aged 19-34 years (which means they are generations Y and Z). Loan distribution is still mostly centered on the island of Java, total new loans in Jakarta reached Rp20.68 trillion, West Java Rp20.53 trillion, Banten Rp6.67 trillion, Central Java Rp20.53 trillion, and East Java Rp8.18 trillion. However, this rapid disbursement was followed by a decrease in the compliance level of borrowers to pay installments before 90 days from 96.35% in the previous year to 95.22% in 2020. In July 2021, the percentage of non-performing loans grew by 3.01% compared to the previous month (month to month/ m-to-m) and also increased by 4.35% compared to July 2020 (year on year/yoy). Based on the type of use, the largest non-performing loans were for capital loans of Rp110.46 trillion, or 4.38% of the total loans. Next, investment loans are Rp44.89 trillion or 3.04% of the total loans granted, and loans for consumption are Rp30.81 trillion or 1.97% of the total loans. Therefore, this study aims to analyze the relationship between financial literacy and financial behavior towards personal financial distress in generations Y and generations Z. This research will focus on the Bandung area because it is one of the cities in West Java, and West Java, as previously stated, is one of the provinces with a high loan disbursement.

B. Literature Review

O'Neill, Sorhaindo, Prawitz, Kim, and Garman in 2006 describe financial distress as a stress response characterized by mental or physical discomfort about one's overall financial well-being. This definition refers to beliefs about one's ability to manage wealth, such as paying bills, repaying debts, and meeting one's basic needs and desires [12]. A person's financial distress level is determined objectively by facts such as the amount and predictability of the person's income, assets, and debt. However, financial distress can also be understood subjectively because some people may feel differently distressed about their finances more than other people even though under the same circumstances (the same income, assets, debt, and so on) [13].

Financial literacy is defined as an indicator of one's understanding of key financial concepts and skill in managing personal finances through adequate, short-term decision-making and appropriate, long-term financial planning while keeping paying attention to economic circumstances and life situations [14]. Similarly, OJK defined financial literacy as the knowledge, skills, and beliefs that influence attitudes and actions to improve the quality of decision-making and financial management to achieve prosperity. Foo Yu and Jupri in 2015 researched the respondent's internal factors such as spending habits, savings habits, financial management, and financial literacy. As a result, the independent variables of spending habits, savings habits, and financial management have a positive linear correlation with the dependent variable of financial distress. The remaining variable, financial literacy and financial distress have a positive but weak linear correlation [15]. In 2013, Idris examines the relationship between financial literacy and financial distress with the object of study was Malaysian youth. The study also reveals a positive but weak relationship between financial literacy and financial distress [5].

H1: Financial literacy has a positive relationship with financial distress

Financial behavior can be defined as the study of how people actually behave in financial decision-making (a financial setting) [16][17]. Marlina in 2019 has been analyzed financial behavior traits' impact on financial distress, then the finding was financial behavior has a positive effect on financial distress, and the effect is significant. Financial behavior in that study used 3 indicators consists of capacity for self-control, planning, and patience.

H2: Financial behavior has a positive relationship with financial distress

II. METHODOLOGY

A. Financial Literacy Index Calculation

To create a financial literacy index in this study refers to the method developed by the OJK in 2013. Overall, calculating the financial literacy index entails several steps, including providing a score for every variable, measuring the weight for each variable, and finally establishing a financial literacy index. The first step is to give a score for every variable, each questionnaire question received a score of one for correct answers and zero for incorrect answers (including do not know). The second step to calculate the financial literacy index is measuring the weight, the author used a simple weight approach wherein every variable from every variable group was given equal weight. Equation (1) shows the formula for calculating weight for every financial literacy variable, by dividing 1 with the total number of questions in the questionnaire

$$Financial\ Literacy\ Weight = 1/N \qquad (1)$$

Where:
N : total number of questions in the questionnaire.

The Financial Literacy Index is then generated for each observation in each group of variables (basic and advanced). Equations (2) and (3) show the formula for calculating the basic and advanced financial literacy index by multiplying the total score of the variables and the weight of the correlation. The basic and advanced financial literacy index scores are multiplied by 100 for better interpretation.

$$FLI\ Basic = score.weight.100 \qquad (2)$$

$$FLI\ Advanced = score.weight.100 \qquad (3)$$

Where:
FLI Basic : basic financial literacy index
FLI Advanced : advanced financial literacy index

Score : the score of respondent in answering questions of basic or advanced financial literacy in questionnaire

Weight : the simple weight of basic or advanced financial literacy variables

After calculating the basic and advanced financial literacy indexes for each observation, the total score financial literacy index for each respondent is calculated. Equation (4) shows the formula for calculating the overall financial literacy index.

$$FLI = 0.5.FLI\ Basic + 0.5.FLI\ Advance \qquad (4)$$

Where:
FLI : total financial literacy index
FLI Basic : basic financial literacy index
FLI Advanced : advanced financial literacy index

To interpret the financial literacy index, in Indonesia, OJK categorizing the financial literacy index into three group, such as low, moderate, and high literate [18]. Table 1 describe the interpretation of financial literacy index.

Table 1 - FINANCIAL LITERACY INDEX INTERPRETATION

Score	Interpretation
Financial literacy index ⩽ 60	Low literate
60 < Financial literacy index ⩽ 80	Moderate literate
Financial literacy index > 80	High literate

B. Financial Distress Index Calculation

The author uses the IFDFW method to calculate the financial distress index in this study. The financial distress index is calculated by adding up all the numbers given by the respondents from answering the 8 questions in the questionnaire. After that, the total score will be divided by 8 to calculate the index. Individual scores can range from 8 (one point for each question) to 80 (10 points for each question). While the financial distress index will range from

1 (the highest financial distress index) to 10 (the lowest financial distress index). The whole outcome could further reflect the level of financial distress/financial well-being experienced by the individual.

Table 2 is the interpretation of the financial distress index [19].

Table 2 - IFDFW SCORE INTERPRETATION

Score	Interpretation
1.0-1.9	Overwhelming financial distress
2.0-2.9	Extremely high financial distress
3.0-3.9	Very high financial distress
4.0-4.9	High financial distress
5.0-5.9	Average financial distress
6.0-6.9	Moderate financial distress
7.0-7.9	Low financial distress
8.0-8.9	Very low financial distress
9.0-9.9	Extremely low financial distress
10.0	No financial distress

C. Financial Literacy, Financial Behavior, and Financial Distress

Multiple linear regression was used in this study to examine the relationship between the financial literacy index and financial behavior toward the financial distress index.

III. RESULTS

A. Financial Literacy Index

Utilizing a simple weighted scale from 0 to 100, the average score of basic financial literacy of Bandung's generations Y and Z is 67.9. Whereas, the average score of advanced financial literacy of generations Y and Z in Bandung is 60.5. Thus, the average overall financial literacy index of generations Y and Z in Bandung is 64.2. The financial literacy index shows that the level of financial literacy of generations Y and Z in Bandung is categorized as moderate literate. Specifically, the results from the questionnaire revealed that more than half of the respondents that is 119, or 51%, had a financial literacy index equal to or higher than the average value of the financial literacy index of 64.2.

In this study, generations Y and Z has various literacy levels, ranging from low literate to high literate when classified by gender, education level, and income level. Men in generations Y and Z with as many as 100 people have an average financial literacy index of 68.7, whereas women with as many as 134 people have an average financial literacy index of 60.9. When classified by education level, those with a master's degree have an average financial literacy index of 80.6, while those with the lowest education level in this study, elementary school education, have an average financial literacy index of 45. Afterward, when income level is classified, people in generations Y and Z with incomes greater than IDR 20,000,000 per month, with as many as 6 people, have an average financial literacy index of 83.1, whereas those with the lowest incomes in this study, less than IDR 5,000,000 per month, with as many as 178 people, have an average financial literacy index of 62.4.

From the categorization of financial literacy index based on the level of education and income level, there seems a trend that tends to continue to go up, which means the higher a person's level of education or income level, the greater the possibility of having a higher financial literacy index. However, these findings require further investigation.

B. Financial Distress Index

Individual financial distress index ranges from 1 to 10. Overall, in this study, the people of Bandung who were born between 1981-2004 with as many as 234 people, have an average financial distress index of 6.2. This index result indicates those people experienced moderate financial distress.

When categorized by gender, men with as many as 100 people have an average financial distress index of 6.6, whereas women with as many as 134 people have an average financial distress index of 6.0. Both women and men can be interpreted to experience moderate financial distress. Furthermore, when categorized by income levels, as many as 6 people whose income is higher than IDR 20,000,000 had an average financial distress index of 8.0, in other words very low financial distress. While as many as 178 people, who have the lowest income levels in this study, below IDR 5,000,000 had an average financial distress index of 6.0, meaning moderate financial distress. Subsequently, when categorized based on education levels, generations Y and Z whose last education level is master's degree had an average financial distress index of 6.8. Whereas people with the lowest education level on this study, that is elementary school had an average financial distress index of 2.5. The financial distress index that is categorized based on education level and income level consistently shows a trend that tends to go up. This might imply that the higher a person's level of education or income level, the more likely it is to have a higher index of financial distress which means less likely to be in financial distress. These findings, however, necessitate further investigation.

C. Relationship Between Financial Literacy and Financial Behavior Toward Financial Distress

The percentage of the total variance in the dependent variable (financial distress) that can be predicted from the independent variables (financial literacy and financial behavior) is denoted by R-Square. Based on multiple linear regression results in this study, the R-squared is 17.7%, which indicates that 17.7% of the variance in financial distress can be predicted from the variable financial literacy and financial behavior. Whereas, 82.3% are influenced by variables not identified in this study. Furthermore, the value of the coefficient correlation (R) is 0.421, indicating that there is a moderate relationship between the dependent and independent variables. as proposed by Hopkins, a correlation coefficient value between 0.3 and 0.5 implies a moderate relationship [20].

Equation (5) shows the model generated in this study. Financial literacy will increase the financial distress index by 0.005 if there is an addition of one percentage point. The addition of one point of financial behavior will increase the financial distress index by 4.089.

$$FDI = 4.293 + 0.005FLI + 4.089FB + \varepsilon \qquad (5)$$

Where:
FDI : Financial Distress Index
FLI : Financial Literacy
FBI : Financial Behavior
ε : Error

Table (3) show that financial literacy has a coefficient of 0.005 and a p-value of 0.354 which indicates that financial literacy has a positive relationship with financial distress but statistically not significant, thus H1 is not supported. Whereas financial behavior has a coefficient of 4.089 and a p-value of 0.000, it implies that financial behavior has a positive relationship with financial distress and is statistically significant because the p-value is lower than 0.05, thus H_2 is supported.

Table 3 - HYPOTHESIS TESTING RESULT

	Hypothesis	Coefficient	Significant Level	Conclusion
H_1	Financial literacy has positive relationship with financial distress	0.005	0.354	Positive, not significant
H_2	Financial behavior has positive relationship toward financial distress	4.089	0.000	Positive, significant

IV. DISCUSSION

The financial literacy index is the result of the answer to 10 basic financial literacy questions and 9 advanced financial literacy questions. Based on the calculation of the financial literacy index, the finding was the average overall financial literacy index for generations Y and Z in Bandung is 64.2, indicating a moderate level of financial literacy. According to the results, it can also be revealed that more than half of the respondents (51%), had a financial literacy index equal to or higher than the average value of the financial literacy index of 64.2. According to the findings, generations Y and Z in Bandung experienced moderate financial distress during the COVID-19 pandemic, with an average financial distress index of 6.2. In other words, generations Y and Z in Bandung are experiencing financial distress but are not extremely depressed. They may feel the negative impact in terms of finances caused by the covid-19 pandemic, but it is not significant enough to make them feel very uncomfortable or depressed about their financial situation. Additionally, both of financial literacy index and financial distress index, when categorized based on income and education level, shows a tendency that the higher the income earned or the higher level of education level, the higher the level of satisfaction with financial conditions, thus resulting in the lower the level of financial distress. However, this is need further investigation because not covered in this study and the proportion of the respondent in each category is not adequate to be compared.

According to the multiple linear regression model, there is a positive and moderate relationship between the dependent and independent variables. A one-point increase in financial literacy raises the financial distress index by 0.005, while a one-point increase in financial behavior raises the financial distress index by 4.089. In other words, the higher the level of financial literacy and financial behavior, the lower the level of financial distress experienced because a higher financial distress index indicates a lower level of difficulty, as indicated by the descriptive terminology of IFDFW, the highest score for the financial distress index is 10, indicating no financial distress or the highest level of financial well-being. This study's findings are compatible with previous research by Marlina in 2019, Foo Yu and Jupri in 2015, and Idris in 2013, which found a positive relationship between financial literacy and financial distress, as well as a positive relationship between financial behavior and financial distress [16][15][5].

Overall, the findings of this study show that more than half of respondents have a higher financial literacy index than the study's average, which was 64.2. Whereas the majority of respondents, as many as 65%, have a financial behavior index that is higher than the average financial behavior index in this study, which was 0.4. Besides, nearly half of the respondents, have a financial distress index greater than the study's average financial distress index of 6.2. All of these findings are reflected in the multiple linear regression results, which show that individuals with higher levels of financial literacy and better financial behavior tend to have a higher financial distress index. For the real interpretation, individuals who are more financially literate, for example understanding the concepts of interest, inflation, time value of money, financial products and returns, and then implementing good financial behavior such as spending less than income, prepare for retirement funds, already have an emergency fund, have insurance will not worry about meeting their living expenses, thus tend to be more satisfied with their financial situation, not worried, and less financially distressed.

V. CONCLUSION

This study aims to analyze the level of financial literacy of generations Y and Z in Bandung, to find out whether generations Y and Z in Bandung experience financial distress during the Covid-19 pandemic, and lastly to identify the relationship between financial literacy index and financial behavior index toward financial distress index. The first findings showed that generations Y and Z in Bandung have a moderate level of financial literacy with an average score of 64.2. The second finding was during Covid-19 pandemic, generations Y and Z in Bandung experienced moderate financial distress with an average score of 6.2. Lastly, the third finding was there is positive and moderate relationship between financial literacy and financial behavior toward financial distress. Which indicates that any increase in the number of financial literacy index and financial behavior index will increase the number of financial distress index. The multiple linear regression results also imply that people who are more financially literate, like understand the concepts of interest, inflation, time value of money, financial products, and returns, and at the same time implement good financial behavior such as spending less than income, saving for retirement, having an emergency fund and insurance, will not worry about meeting their living expenses, and thus tend to be more satisfied with their financial conditions.

The result of this study is financial literacy and financial behavior have a positive and moderate relationship toward financial distress. However, in this research, the variable financial literacy and financial behavior can only predict as much as 17.7% of financial distress. Therefore, further research can add other variables that can increase the percentage of predictions, such as financial attitude, financial management, and many more. In addition, this research is only focused on being carried out in one geographic area of one country, which may limit the representativeness of the sample from each strata of society. Thus, to obtain a more overview of the complete, future studies may need to maximize the number of samples as much as possible and take proportions into account when comparing generations. The authors believe that more respondents will provide a more reliable and more even picture of the population, which in turn can lead to better results. In addition, further research can also investigate more about the correlation between education level and income on the financial literacy index or financial distress index, with the appropriate number of respondents being compared in each category.

Since there seems a pattern of the economic recession that usually occurs every decade, and in the end can directly affect each individual's personal finances, it is preferable for each individual to be aware of the need to improve financial literacy and financial behavior in order to properly manage personal finances and making a better financial decision. Like the findings in this study, by increasing financial literacy and better financial behavior, individuals can reduce the likelihood of experiencing financial distress in life, especially when many unexpected things occur such as pandemics or economic recessions.

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