Impact of Financial Literacy on Financial Inclusion

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Keywords: Financial Literacy, Financial Inclusion and Logistic Regression.

Abstract: This study was conducted with the aim to find out the impact of financial literacy and financial inclusion on students of the Faculty of Economics, Tarumanagara University. Sampling method was done by stratified random sampling using questionnaire with 472 respondents. Meanwhile, the data analysis technique used is logistic regression analysis, with z-statistic test, F-test, and McFadden R-Square. The results of hypothesis testing show that age has a significant influence on financial literacy, while gender, education, investment experience, academic ability, and residence status have no significant effect on financial literacy. Other findings are financial literacy and income have a significant effect on financial inclusiveness, while financial information sources, distance to banks, and ownership of vehicles have no significant effect.

1 INTRODUCTION

In the current era of globalization, finance certainly has a very important role for the development of a country in both developing and developed countries. For that, the public needs to understand about the finance itself according to a survey conducted by the Financial Services Authority (OJK) in 2013. OJK is a state institution that aims to establish an integrated regulatory and supervisory system for all activities in the financial services sector, whether in the banking sector, the market sector capital, and non-banking financial services sector.

The survey conducted by the OJK shows that the financial literacy of the society is divided into 4 categories, namely: well literate (21.84%), sufficient literate (75.69%), less literate (2.06%), not literate 0.41%). The survey shows, there are still people of Indonesia who do not understand about financial literacy. There are only small amount of Indonesian people who have an understanding of financial literacy so that the financial literacy of Indonesian people need to be improved again. The financial literacy owned by the community will have an impact on the banking sector and capital market.

According to a World Bank survey conducted in 2010, Indonesians who were accessing the formal financial sector accounted for 49%, while Bank Indonesia findings in Household Balance Survey 2011 found 48% of households placed their money in informal or formal financial institutions, or around 52% of Indonesian households do not access the existing financial system. This shows that there are still Indonesian people who do not use the products and services provided by the state financial services. This is due to the inadequate knowledge of finances held by the public. To that end, the understanding of finance in Indonesia needs to be improved again, so that the people of Indonesia can use and access these financial products and services optimally.

Students as part of the community should have sufficient knowledge and understanding related to the financial system and its instruments and the various factors that determine the level of knowledge about the finance. Related to this matter, the study focuses on various factors that determine financial literacy and financial inclusion with the respondents of faculty of economics students.

2 LITERATURE REVIEW

2.1 Financial Literacy

Cude et al., (2006) defines financial literacy as a person's ability to read, analyze, manage, and communicate about a person's financial condition that affects material well-being.

Lusardi (2012) states that financial literacy is the ability and knowledge of finances owned by a person to manage or use some money. This is for

improving their standard of living associated with the behavior, habits, and influence of external factors.

Mason and Wilson (2000) defined financial literacy as the ability of an individual to acquire, understand, and then evaluate the existing information in making a decision by understanding the financial risks that can be generated later on when the decision is made.

From the above definitions, it can be concluded that financial literacy is the ability of an individual to read, understand, and analyze about the finances used in making decisions and financial management in certain situations in the future.

2.2 Financial Inclusion

Nasution et al., (2013) states that financial inclusiveness is a process that ensures ease in access, availability, and benefits of the formal financial system for all economic actors.

According to Bank Indonesia (2014), inclusive finance is also defined as a process of access to financial services (savings, insurance, remittances, and payments) and the timely and adequate credit needed by small or low-income groups at an affordable cost.

According to European Commission and World Bank (2008) in Supartoyo and Kasmiati (2013), financial inclusion is an activity that aims to eliminate all barriers both in the form of price and non-price to access the community in using and also utilizing financial products and services.

From the above definitions, it can be concluded that financial inclusion is a process or means to facilitate the community in accessing and utilizing financial services such as savings, insurance, etc.

Chen and Volpe (1998) in their study explained that men are more understanding of financial literacy than women. However, according to Krishna et al., (2007), it was found that women are more understanding of financial literacy compared with men. Meanwhile, according to research conducted by Nidar and Bestari (2012) and Rita and Pesudo (2014), one's gender does not affect one's literacy about finances.

Meanwhile, according to Shaari et al., (2013) in his study conducted on students in Malaysia with a sample of 384 people, it was found that there was a negative relationship between financial literacy with age. Ansong and Gyensare (2012) found that age affected the student's financial literacy.

According to Widayati (2012), university learning has an important role in the process of forming a student's financial literacy. Students living in different economic environments have a different understanding of finance, so an improvement in financial education is required to minimize the difference. Effective and efficient learning will help students to have the ability to read, understand, evaluate, and act in relation to their finances. The early existence of good knowledge in the management of finance expected students to have a better and prosperous life in the future. Then, Nidar and Bestari (2012) also explains that one's financial knowledge affects one's financial literacy in the future.

Chen and Volpe (1998) said that students who had experience related to taxes, insurance, and investment were able to apply the knowledge they had well.

Cude et al. (2006) explained that students with high GPA will have better financial literacy. Shaari et al. (2013) explained that students with high GPA have fewer financial problems than students with low GPA. Krishna et al. (2007) found that students with a GPA < 3 had a higher level of financial literacy than students with a GPA > 3. The study stated that the level of financial literacy was not determined by intellectual ability (analogous to the GPA score) but more determined by the educational background. Their financial literacy is learned from educational institutions.

Keown, (2011) found that people who live alone have a higher level of financial literacy than those living with their spouses or parents. This is because people who are living alone have a responsibility for their daily financial transactions and other financial decisions. However, according to Nidar and Bestari (2012), residence does not affect a person's financial literacy.

Wachira and Kihiu, (2012) has conducted a study on the effect of financial literacy on access to financial services in Kenya in 2009. As a result, access to financial services is not only influenced by the level of financial literacy but also influenced more by income level, distance from banks, age, marital status, gender, size of household, and level of education.

According to research conducted by Bhanot et al., (2012) in north-eastern India, financial information from a variety of sources helps in increasing financial inclusion. Other findings suggest that the distance from the post office is more significant to the inclusion of finances than the distance to the bank. This is because the people of northeast India have low access to banks.

The research conducted by Bhanot et al., (2012)

states that high income and high education have an influence in improving the status of financial inclusion, while ownership of vehicles has no significant effect on financial inclusion.

Based on the literature review above, the following questions can be asked: (1) do age, gender, education, investment experience, academic ability, and residence status affect a person's financial literacy?, and (2) do financial literacy, income, financial sources of information, distance to the bank, and ownership of motor vehicles affecting a person's financial inclusion?

3 RESEARCH METHODS

3.1 Population, Sample, and Data

The population in this study was all students of the Faculty of Economics Tarumanagara University registered in the odd semester of academic year of 2016/2017. The number of students recorded in the odd semester was 4,193 consisting of 2,032 students majoring in Management and 2,116 Accounting majors as many as 2,116 students.

Sampling method that was chosen in this research was stratified random sampling which was part of probability sampling technique with total sample of 472 respondents. After dividing the sample according to the level, the division of the questionnaire was done to obtain data.

3.2 Operational Definition of Variables

The independent variables used in this study consist of age(AGE), gender (JKN), knowledge (EDU), investment experience (EIN), grade point average (GPA), residence (TTG), financial literacy (LKF) income (INC), financial information sources (SFI), distance to bank (DFB), vehicle ownership (VHC), while the dependent variable are financial literacy (LKF) and financial inclusion (INF).

3.3 Analysis Method

This study uses logistic regression analysis model to find out what factors influence financial literacy and financial inclusion through research equation as follows.

$$\ln\left(\frac{pLKF}{1-pLKF}\right) = a_1 + a_2 AGE + a_3 JKN + a_4 EDU + a_5 EIN + a_6 GPA + a_7 TTG + \varepsilon_1 \quad (1)$$

$$\ln\left(\frac{pINF}{1-pINF}\right) = b_1 + b_2 LKF + b_3 INC + b_4 SFI + b_5 DFB + b_6 VHC + \varepsilon_2 \quad (2)$$

Several statistical tests were performed on the models used in this study to answer the above research questions, such as, partial test of each independent variable through the z-test, F-test to see the mutual influence of the independent variables on the dependent variable, and to measure how much the ability of the independent variables in explaining the change of the tested variable by the coefficient of determination (R^2).

4 RESULTS AND DISCUSSION

Based on the results of data processing, there are some characteristics of respondents. The largest respondents came from students in 2014 as much as 27% of 472 students. The least respondents were from students in 2009, 2010, 2011 and 2012 as many as 8 students (2%). From the 472 respondents, 218 people (46%) were from the Accounting department and the remaining 254 people (54%) came from the Management department.

According to the age, the respondents were dominated by students of 20 years old (about 27%). There was one participant, who was at least 16 years old, and the rest vary between the ages of 17-21 years, while as many as 4% aged over 21 years.

The number of male students is more dominant than female students with a ratio of 1: 0.80.

Based on the knowledge of finance, 70% of the students of the Faculty of Economics Tarumanagara University have an average level of financial knowledge, while only about 1% of students have a low level of knowledge. The rest have a high financial knowledge. Almost 77% of the respondents had a GPA above 3.

Meanwhile, from 472 students, about 9% had invested in stocks and the rest invested in other forms such as savings.

Approximately 353 students (75%) still live with their parents with average income or allowance each month ranging from Rp1 million to Rp 5 million and there are 15 (3%) who have income or allowance every month above Rp 5 million.

The average distance from student residence to bank is about 3 km. Only about 18% (86) of students stay in residence that has more than 3 km distance from bank. Whereas of the 472 students who made as respondents, about 53% (251 people) have motor vehicles in the form of two-wheeled vehicles or four wheels.

Looking at how or from which source the respondent obtained financial information, about 48% (227 people) obtained financial information from family, 3% from friends, about 33% (156 people) got it from lectures and 16% from printed media. This reflects that more financial information is obtained by students from word of mouth rather than from the media. Therefore, it can be interpreted that first, the socialization of finance for the community, especially students through the media, is not optimal. Second, the desire of the community or students, especially in reading or seeking information through the media, has not been maximized. Thus, it will be more effective and efficient if the information about finances is disseminated through lectures or seminars and or by word of mouth.

To know the various factors that determine the financial literacy, especially among students of the Faculty of Economics Tarumanagara University, an analysis was conducted through logistic regression with the following results.

Table 1: Financial Literacy Logistic Regression Analysis.

Variable	Coefficient	Std.Error	z-Stat	Prob.
C	-6.234	1.607	-3.880	0.000
JKN	-0.303	0.205	-1.480	0.139
AGE	0.238	0.077	3.082	0.002
GPA	0.308	0.197	1.561	0.118
TTG	-0.007	0.224	-0.031	0.975
EIN	0.239	0.328	0.728	0.467
EDU	0.093	0.166	0.558	0.577
McFadden R-Squared				0.032
LR Statistic				20.170
Probability (LR Statistic)				0.003
Observation with Dependent Variable = 0				284
Observation with Dependent Variable = 1				188

From the results of table 1 above, it can be explained that out of the 472 students of the Faculty of Economics, about 188 students have understood various things about finance. However, about 284 people have less understanding about finance. Thus, it can mean that students, especially students of Faculty of Economics Tarumanagara University, still has limited understanding in various things about finance, so it needs good action through socialization through the media or lectures, and information from mouth to mouth, so that their understanding can be improved.

Other results that can be obtained from table 1 above is the financial literacy on the students of the Faculty of Economics Tarumanagara University that is determined by sex is opposite to each other, which means that the understanding of students about finance is lower for male students than female. This

finding is in line with the finding of Nidar and Bestari (2012) and Rita and Pesudo(2014).

The same thing applies for the factor of residence, where students who are living with parents are more understanding about finance than students who live alone. These results reinforce the finding of Nidar and Bestari (2012). This condition proves that the financial knowledge of students is more dominantly obtained from parents than the students themselves who seek it. This is contrary to finding of Keown (2011), which states that people who live alone are much more responsible in doing financial transactions than when living with parents.

Age, GPA, investment experience and knowledge have a positive effect on the understanding of finance, which means that increasing age, investment experience and knowledge of a person will increase the understanding of the financial or vice versa.

The higher the academic ability of a person shown by the GPA increases his or her understanding of finances or vice versa. The more often a person engages in activities related to investment, the more the understanding of finance increases and the more knowledge an individual has about the financial will increase his understanding as well.

To find out how much influence of each factor that determines one's financial literacy can be done through the following table.

Table 2: Odd Ratio Determinants of Financial Literacy.

Variabel	Coefficient	Odd Ratio
JKN	-0.303	0.739
AGE	0.238	1.269
GPA	0.308	1.361
TTG	-0.007	0.993
EIN	0.239	1.270
EDU	0.093	1.097

From table 2 above, a person of male sex has a lower financial understanding of about 73.90% compared to female sex. Although statistically this result is not significant, it can be explained that women have a tendency to be more careful than men in making an investment decision. Thus, it will encourage women to learn and understand finances before making a decision.

The age factor shows a positive influence on a person's understanding of finances, where an increasing age of a person will increase his or her understanding of finance by about 1.269 times. This study proves the finding of Ansong and Gyensare, (2012) and is in contrary to the finding of Shaari et al., (2013). The same applies to improving one's

academic ability, if an increase in academic capacity will increase financial literacy by about 1,361 times, investment experience and financial knowledge will increase by about 1.270 and 1.097 respectively. This finding is consistent with the findings of Chen and Volpe(1998); Nidar and Bestari (2012 and Widayati, (2012). Another factor that determines a person's understanding of finances is with whom one is living. The findings show that someone who lives with parent's financial understanding of about 99.30% is more likely to live alone. This condition means that the financial understanding is more than just obtained from parents. It is more to someone who is looking for the meaning themselves.

Although statistically some factors have no influence in determining one's literacy to finance, but together, all the factors that exist in this research, statistically have a significant contribution to one's financial literacy, especially students. This is proven by probability value LR Statistic which is smaller from 5% (See table 1).

About 3.20% of a person's understanding of finance is determined by sex, age, academic ability, residence status, investment experience and financial knowledge, while almost 96.80% is determined by other variables that are not studied in this research.

Decisions made by a person in what form and where the money saved will be placed is commonly known as financial inclusion. Financial inclusion, which is influenced by financial literacy, is also determined by other factors such as income, distance from residence to bank and ownership of motor vehicles.

The results of research on various factors that determine financial inclusion are shown in the following table.

Table 3: Financial Inclusion Logistic Regression Analysis.

Variable	Coefficient	Std.Error	z-Stat	Prob.
C	-2.193	1.021	-2.149	0.032
LKF	6.862	1.889	3.632	0.000
DFB	-0.552	0.406	-1.358	0.175
SFI	-0.256	0.248	-1.031	0.303
INC	1.448	0.338	4.282	0.000
VHC	0.574	0.345	1.662	0.097
McFadden R-Squared				0.148
LR Statistic				41.153
Probability (LR Statistic)				0.000
Observation with Dependent Variable = 0				41
Observation with Dependent Variable = 1				431

Table 3 shows that 431 respondents (91.30%) have banking accounts as financial means, so that it can be interpreted almost all respondents have utilized financial services, especially banking.

Overall financial literacy, distance to bank, financial information, income, and motor vehicle ownership have a statistically significant effect on the utilization of financial services, as evidenced by LR statistic probability values being smaller than 5% at a 95% confidence level. But partially there are several factors that are not statistically significant in determining the utilization of financial services, such as distance to banks and financial information.

How much influence each factor has on financial inclusion can be shown in the following table.

Table 4: Odd Ratio Determinants of Financial Inclusion.

Variabel	Coefficient	Odd Ratio
LKF	6.862	955.275
DFB	-0.552	0.576
SFI	-0.256	0.774
INC	1.448	4.255
VHC	0.574	1.775

Based on the results in table 4 above, the financial inclusion of someone who has adequate financial literacy is higher by 955,275 points than those who have less adequate financial literacy. The more you understand about finances, the person will be better able to utilize various financial services in financial management or vice versa. This finding is in accordance with the result of Wachira and Kihiu, (2012). Increasing one's income will further increase the probability of someone taking advantage of various financial services in managing their finances. In this study, an increase in the probability of using financial services will increase by about 4.255% if there is an increase in income. These results are in line with the finding of Bhanot et al. (2012). The influence of the financial information factor in this study contradicts the findings of Bhanot et al., (2012) where according to Bhanot, financial information will make it easier for someone to take advantage of various financial services. However, in this study, financial information negatively affects the use of financial services. Similar results were also found for factors of distance to banks and ownership of motor vehicles to the use of financial services. In another sense, the distance to the bank and the ownership of a motor vehicle do not make a significant difference to someone using financial services.

The utilization of financial services by a person in this study, approximately 14.80% is determined by financial literacy, distance to bank, financial information, income and motor vehicle ownership, while 85.20% is determined by other factors.

5 CONCLUSIONS

The results of this study found several things, (1). A person's age is statistically significant to financial literacy, but gender, academic ability, residence status, investment experience and financial knowledge do not have a statistically significant effect on one's understanding of finances, and (2). Income and financial literacy are statistically significant in determining the utilization of a person's financial services, but factors such as distance to the bank, financial information and motor vehicle ownership have no statistically significant effect on a person's financial inclusion.

6 RECOMMENDATIONS

This study suggests several things: (1) To improve financial literacy, it is necessary to socialize various things about finances such as understanding, types, instruments and mechanisms and various positive and negative impacts related to finance, so that people feel more comfortable when making decisions related to their finances, and (2) In relation to financial inclusion, technology is needed to provide convenience, comfort and security to the community in placing its finances and increase the number of financial institutions from the lowest level to the highest that are easily accessible by the community.

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