THE NEXUS BETWEEN FINANCIAL LITERACY AND THE CREDIT STATUS IN INDONESIA

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Abstract

The ease of access to financial institutions leads to an increase in the number of both consumptive and productive loans. This increase must be balanced with the process of knowledge transfer about financial management so that customers can manage finances well and can pay credit according to a specified schedule. The objectives of this study are to discover factors influencing financial literacy, and test the relationship between literacy and credit status, so that it can become a guideline for banking policies in issuing credit. This research utilized 332 samples of credit clients in rural bank credit (RBC). The testing was done with multinomial logistic regression. The research results reveal that the factor which influences finance literacy is level of education. On the other hand, income, amount of loan, and credit status do not have an influence on finance literacy. The credit status (fluid and stalled) does not have a significant relationship towards finance literacy. Thus, the initial assumption that clients who have a fluid credit status will also have a higher literacy level is not proven. There are no differences in stalled credit clients and fluid credit clients in financial literacy.

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1. Introduction

Indonesian society's financial understanding, based on a survey conducted by the Financial Service Authority in 2013, is divided into four criteria: 1) well literate at 21.84%, 2) sufficient literate at 75.69%, 3) less literate at 2.06%, and 4) not literate at 0.41%. The financial literacy program that was proclaimed by the Financial Service Authority has been frequently responded to by various spheres, whether national banking, academicians, or various non-government organizations by making finance literacy programs like smart behaviour programs that are carried out by banks through smart behaviour agents divided into various regions in Indonesia.

The development of channelling banking funds in Indonesia every year has experienced an increase, whether in public banks or community credit banks (Otoritas Jasa Keuangan, 2017). The development of fund channelling programs by banks in Indonesia needs to be balanced with a financial knowledge transfer process to clients, so that they have a good understanding about managing finances and are more careful in using finances as well as can pay their obligations as creditors. Financial or individual literacy has substantive differences like education, age, and gender (Rooij et al. 2011). Research conducted by Rooij et al. (2011) also revealed that the majority of households in the Netherlands have limited financial literacy, as well as every privatization program considers that individuals who do not have a financial understanding will not invest in the stock market to prepare for their retirement.

Bahovec et al. (2015) mentioned that excessive debt is a problem that endangers individual and household financial prosperity. The research results found that a low level of financial literacy is one of the factors that can influence debt behaviour and an increase in debt. Research findings discovered that respondents with different levels of financial literacy resulted in varying debt behaviour. Thus, respondents with low finance literacy showed worse debt behaviour, such as more consumer debt than consumers with medium and high levels of financial literacy (Bahovec et al. 2015).

Having a financial understanding is important in making financial decisions. Research carried out by Rooij et al. (2011) found that a high level of financial literacy results in a high potential for stock market investing and a higher tendency to plan for one's retirement period. In a related article, Christelis et al. (2010) discovered that the tendency to invest in stocks is greatly connected with cognitive ability, whether it is for direct or indirect stock market participation through mutual funds and retirement accounts.

Having a good understanding of financial management is needed by company owners in developing their companies. Research by Kotzè and Smit (2008) found that personal finance education is very important to help individuals in managing their financial matters effectively. Research carried out by Eresia-Eke and Raath (2013) empirically revealed that the majority of small businesses showed signs of growth. This research did not show that there was a statistically significant connection between an owner's finance literacy and the overall business development. However, owners who did not have a good grasp of finances would hire individuals who had studied and understood about finances to help manage the organization's financial matters, so that the business could develop well.

Entrepreneurs who have good finance literacy will not only help the company develop, but they will also easily gain access to finances from financial institutions. Over the years, banking access in Indonesia has experienced changes. Ease of banking access by SMEs that was considered as non-bankable became easier due to government encouragement through various cheap credit programs. This was a blessing for SMEs who already had a good understanding of financial management, so that they could pay their obligations. Increasing the flow of funds for SMEs also had an effect on the increase of stalled credit according to the banking data that was issued by the 2017 Financial Protection Authority. This increase in stalled credit must be managed, in order that banks can remain in a safe condition. This needs related research on credit that is given to bank clients.

2. Literature review

2.1. Measuring financial literacy

Understanding financial literacy is very useful in making consumer financial decisions, whether it is collectively or individually, and also in facing market competition (Hastings et al. 2012). Measuring financial literacy basically combines conceptual and operational aspects, including the awareness, knowledge, and ability of an individual or society that are the subjects in accessing a financial institution to do a budgeting activity, manage savings, take out a loan, or make investments according to the level of financial understanding one possesses (Atkinson and Messy 2011).

Lusardi and Mitchell (2011) stated that it is important to evaluate how people understand about finances, but in practice it is difficult to explore how individuals process economic information and make decisions about household finances. Lusardi and Mitchell (2011) designed steps in measuring the United States society's financial literacy by using the four main principles of simplicity, relevance, brief, and ability in differentiation.

According to the Australian Securities and Investments Commission - ASIC (2011), in understanding in-depth and knowing the level of an individual's financial literacy, a benchmark used includes one's knowledge of the value of a good and the priority scale in one's life; budgeting, savings, and how to manage money; credit management, the importance of insurance and protection against risks; investment basics; retirement; retirement planning; taking advantage of purchasing and comparing products; knowing where to go to look for advice and acquiring additional guidance and support; as well as how to recognize the potential for conflict in usage (priority). Meanwhile, according to the Financial Service Authority (2014), Indonesian society's financial literacy is divided into four parts, which are well literate, sufficient literate, less literate, and not literate.

2.2. Relation between financial literacy and bank credit clients

The level of financial literacy that a person has will influence the amount of credit taken from a bank/ financial institution. Financial literacy indicates an individual's level of understanding towards a financial concept and it can be seen from one's ability to interpret financial data accurately (Gathergood, 2012). An SME entrepreneur is faced with very complex decision making to achieve success in one's business. For instance, an entrepreneur must be able to decide saving and investing to develop one's business. Understanding finance literacy becomes crucial in making decisions related to financial matters. As Lusardi and Mitchell (2006) stated that those who have a high financial literacy and basic understanding of financial concepts can support their business expansions well.

Financial literacy improves an individual's ability to independently arrange one's personal finances, whether it is in helping with one's personal spending or in arranging household items, including in managing loans. Bahovec et al. (2015a) detected individual financial literacy users and analysed the relationship between different levels of financial literacy and socio-demographic characteristics. Financial literacy reveals how an individual understands financial concepts and shows the ability to interpret financial data accurately.

Having extensive knowledge about finances will affect the success in overcoming problems to access and manage loans. For example, financial literacy can assist in decision making such as making payments on time. Good debt management can improve one's credit value for potential loans to support the business performance (Adomako and Danso 2014).

Bosma and Harding (2006) explained that several companies have failed due to a lack of financial literacy, inefficient business acquisitions, and negligence of entrepreneurial activities. Various research supports the viewpoint that entrepreneurs who do not consider age will not be able to consistently do decision making activities by considering resource income, allocation, and utilization. In general, these activities have financial consequences. Therefore, to be effective, an entrepreneur must have a sufficient level of financial literacy.

Financial literacy is a form of education in improving one's potential financial decisions in the household. Eventually, it will increase savings and prosperity as credit clients from a financial institution. From an explanation by Cole et.al. (2009), with data obtained through the World Bank's Access to a Finance Survey with a sample of 3,360 households, Indonesia received a score of 52% for understanding the questions put forth based on the methodology of Lusardi and Mitchell (2006). This enables financial literacy or an understanding of financial knowledge in Indonesia to be better.

2.3. Interrelatedness of financial literacy and loan accessibility

Having financial literacy for a business owner or business manager is crucial to make company capital structure decisions. The importance for small and medium sized businesses is that it reflects the low agency costs that are used for loan source diversification to improve the business asset value. Nkundabanyanga et.al. (2014) discovered that many SME owners have limited information about bank products, low personal financial management, weak knowledge, a lack of abilities, and less expertise in finances, which makes the budgeting, record keeping, and financial planning become weak. This research used small and medium entrepreneurs in Uganda. The financial literacy and management ability were also very low, so that requests for financial products were also small.

Access to loans for small and medium business owners is determined by financial literacy. Receiving access to loans for businesses by having opportunities and entrepreneurs who are full of creative ideas will help improve revenue distribution and business growth (Nkundabanyanga et al., 2014). Loan access is one of the ways to improve the SME business capital structure. Possessing a capital structure is an important condition for a company's growth and development, such as SMEs that can be supported by manager/ owner characteristics. In the condition where it is difficult to gain access to financial resources, financial literacy is beneficial for business growth and competition, so that it facilitates SMEs in accessing funds from financial institutions (Delić et.al., 2016).

The condition which facilitates a finance source in a business environment is by developing a long-term relationship with a bank and being supported by good knowledge to evaluate the benefits and drawbacks of the financial resources. Loans are a financing source in adding an asset and as a revenue source for a financial institution or bank. Loans that are issued by a bank depend on society's savings. A low level of financial literacy will be related with low savings in the household. This is reported by households as being the main factor in engaging borrowing (Ombongi, 2015).

An individual with a low literacy level can borrow without considering the size of the loan, so that the burden of debt and interest rate that will be paid can experience outstanding payments, so that it makes the financial institution have low performance. Financial education teaches about how knowledge, abilities, and ethics are needed to adopt a good money management practice by channelling, receiving, saving, borrowing, and investing money appropriately. This can assist in adding loans from clients and reducing the form of debt and outstanding balance, so that the financial institution performance can also be improved (Ombongi, 2015).

Regarding the level of financial knowledge, especially about loans towards financial institutions or banks, entrepreneurs need to know the interest rate level that is offered by the bank. Besides knowing the interest rate level, they also need to know how to make debt payments, in order that the bank does not channel more funds than is needed which stalls the credit (Bengi and Njenje, 2016). Several banks allocate resources to support training for business clients to improve their financial record keeping and credit management ability. Financial literacy is an initial source of knowledge to measure loans that originate from initial funds that are used to build a business (Mutegi et.al., 2015).

This study focuses on the effect of the level of customer literacy on credit status. Credit status of bank customers shows the ability of customers to pay credit instalments. The study wants to examine the effect of the level of financial literacy on the credit status, where no previous research had found the effect of financial literacy on the credit status of customers.

3. Data and methodology

Research design: The research design used in this study is quantitative analysis. The researcher collected information through questionnaires and direct interviews with clients of rural bank credit (RBC) in Central Java, Indonesia. There were 332 RBC client samples taken. The study aims to analyse the influence of the level of financial literacy on education, the influence of the level financial status on income, the influence of the level financial status on amount of loan, and the influence of the level financial status on credit status on RBC in Central Java. The analysis in this research used a Logistic Regression Analysis model, so that the predictor variables (level of education, income, amount of loan, and credit status) were known, and a real influence on the level of finance literacy as a response variable was seen. Besides that, a further analysis in the form of a correlation analysis was done to find out the tendency or strong relationships between variables (financial literacy, education, income, and size of loan) with the level of credit return fluidity. This correlation analysis was done to support the previous logistic regression analysis results.

Research model: The financial literacy of rural bank credit clients used indicators that were issued by the Financial Service Authority and research by Chen and Volpe (1998), by looking at the averages of the correct answers that were then grouped into four categories, including not literate (< 30%), less literate (30% < 60%), sufficient literate (60% < 80%), and well literate (>80%) to facilitate the observations. The loan amounts were used as a predictor variable because an individual's ability in financial literacy will influence budgeting, managing loans, or doing investments (Atkinson and Messy, 2011).

The research variables used were financial literacy (FL) as the dependent variable and education (Edu), income, Amount of loans (AoL), and credit status (CS) as independent variables. The model that was used is:

$$\mathrm{FL} = \ln\left[\frac{p}{1-p}\right] = \beta_0 + \beta_1\,\mathrm{Edu} + \beta_2\,\mathrm{Income} + \beta_3\,\mathrm{AoL} + \beta_4\,\mathrm{CS} + \varepsilon_i \quad ...(1)$$

Explanation:

Li = Response variable, here Financial Literacy (1= *Not Literate*, 2 = *Less Literate,* 3 = *Sufficient Literate*, 4 = *Well Literate*); β_0 = Constant; β_1 = 1st predictor variable coefficient; β_2 = 2nd predictor variable coefficient; β_3 = 3rd predictor variable coefficient; β_4 = 4th predictor variable coefficient; Edu = 1st predictor variable, here the level of education; Income = 2nd predictor variable, here income; AoL = 3rd predictor variable, here amount of loan; CS = 4th predictor variable, here credit status.

4. Results

This research used a credit client financial literacy indicator by asking about their understanding of general finance, insurance, banking, capital model, simple calculating, and client financial attitude. The general finance literacy asked about investments, inflation, and client financial management. The results in Table 1 reveal that the education, income, and credit status variables have a relationship with the level of financial literacy.

The education variable in Table 1 reveals that a college or university degree education level is considered the highest well literate compared with other education levels at 37 percent. The highest less literate literacy level is at the elementary school level. This shows that the higher the level of clients' education level, the better their financial literacy level will be. The client income variable indicates that a client income level of more than 25 million has a well literate financial literacy level of 60 percent. This reveals that clients who have a good financial understanding will find it easier to produce high incomes.

The client loan amount variable for rural bank credit in Table 1 displays that the majority of them have a sufficient literate level of 59 percent. The loan amounts with the highest well literate individuals are clients who have loans of more than 50 million. The level of financial literacy from each of the loan amount levels is almost the same so that clients who borrow 1-5 million are distributed with about the same finance literacy level as the larger loan amounts. This means that there is no connection between clients with small or large amounts of loans and the level of financial literacy.

The credit status variable reveals that the majority of the clients have a sufficient literate at 59 percent. Credit clients with a stalled status mostly have a sufficient literate level of 79 percent, and 4 percent of credit clients have a well literate level. The condition above is the same as credit clients with a fluid status, as the majority of them have a financial literacy level of sufficient literate at 57 percent, and 19 percent of credit clients with a fluid status have a well literate level. There is relatively no difference in the fluid or stalled credit status. The distribution of financial literacy levels in fluid clients and stalled clients are similar so that there is no relationship between the financial literacy level and the client credit status.

Table 1

Cross tabulation in the finance literacy level

	Less Literate		Sufficient Literate		Well Literate		Total	Chi-Square
	Freq	%	Freq	%	Freq	%		
Gender	76	23	196	59	60	18	332	
- Male	40	20	120	61	38	19	198	
- Female	36	27	76	57	22	16	134	
Education	76	23	195	59	61	18	332	30.45*
- Elementary school	32	40	42	52	7	9	81	
- Middle school	34	19	113	64	30	17	177	
- High school	3	9	22	65	9	26	34	
- College or University	7	18	17	45	14	37	38	
- Master to up	0	0	1	50	1	50	2	
Income	76	23	196	59	60	18	332	20.534**
- 1-5 million	62	25	147	59	42	17	251	
- 6-10 million	8	17	32	68	7	15	47	
- 11-15 million	3	25	5	42	4	33	12	

	Less Literate		Sufficient Literate		Well Literate		Total	Chi-Square
	Freq	%	Freq	%	Freq	%		
- 16-20 million	0	0	5	83	1	17	6	
- 21-25 million	1	17	5	83	0	0	6	
- >25 million	2	20	2	20	6	60	10	
Amount of loan	76	23	196	59	60	18	332	6.629
- <=10 million	47	24	118	59	35	18	200	
- 11-20 million	15	27	31	56	9	16	55	
- 21-30 million	5	19	18	69	3	12	26	
- 31-40 million	3	19	9	56	4	25	16	
- 41-50 million	1	11	7	78	1	11	9	
- >50 million	5	19	13	50	8	31	26	
Credit status	76	23	196	59	60	18	332	4.982***
- Stalled	4	17	19	79	1	4	24	
- Fluid	72	23	177	57	59	19	308	

*P-Value: *p<0.001, **p<0.05, ***p<0.10*

Table 2 conveys that the -2 log likelihood experienced a reduction in the *chi-square* of 52.169 and the p-value of 0.000 when the independent variable was added. This reveals that the model with the independent variable provides better accuracy to predict the financial literacy level.

Table 2

Model fitting information

Model	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	330.546			
Final	278.377	52.169	10	.000

Table 3 shows that the overall model prediction ability is 62.3 percent.

Table 3

Classification

Observed	Predicted			
	Less Literate	Sufficient Literate	Well Literate	Percent Correct
Less Literate	10	66	0	13.2%
Sufficient Literate	2	193	1	98.5%
Well Literate	1	55	4	6.7%
Overall Percentage	3.9%	94.6%	1.5%	62.3%

Table 4 displays the contributions of every independent variable towards the model. The variables which contribute towards the model is education, while the other variables do not contribute to the model. These research results convey that the variables which have a relationship towards finance literacy is the education level variables. Meanwhile, client income, amount of loan, and credit status are not connected with financial literacy.

Table 4

Likelihood ratio tests

Effect	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood of the Reduced Model	Chi-Square	df	Sig.
Intercept	305.144	26.767	2	.000
Education	298.992	20.615	2	.000
Income	281.862	3.485	2	.175
Amount of loan	278.826	.449	2	.799
Credit status	283.559	5.182	2	.075

The chi-square statistic is the difference in -2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0.

5. Discussion

The research findings show that the education level is one of the factors that have a relationship with financial literacy. The education level of the society shows a level of understanding of various life issues, including financial management. These results are in line with Agarwal et al., (2015); Alsemgeest, (2015); and Dwiastanti, (2015) that the high level of one's education is positively and significantly related to the cognitive aspects of financial literacy.

In this study, 18 percent of respondents were well-literate. It means that in general customers with elementary to postgraduate education understand investment as well as their benefits and risks to be accepted, able to manage personal finances, and understand the use of credit cards. All customers with elementary school to postgraduate education are at a sufficient-literate level. In addition, lower levels of education are also dominated by sufficient-literate customers. However, there are also many less-literate customers, that is, almost a quarter of them. They only know financial institutions and their products and services without the skill to use them. The results of this study also show that none of the customers included in the category of not-literate. Moreover, the results also document the level of financial literacy of Rural Bank customers, which is mostly at the sufficient-literate level and this is owned by almost all levels of education. Thus, customers with low education tend to have poor financial literacy, even though it will harm them.

Different results can be seen in income, loan amount, and credit status, where the three do not have an influence on the level of customers' financial literacy. This is supported by the results of statistics from the calculation of Likelihood Ratio Tests which show 0.175 that income levels have no relation to the financial literacy level. Each individual may have a condition that contradicts the benefits of financial literacy, by managing finances or looking for additional sources of funds to improve personal well-being either personally or family. Customers with high income reaching 25 million tend to be between the less-literate and sufficient-literate levels. Indonesia is ranked fourth in the world with the highest level of consumer optimism. This consumer optimism is about the prospect of local employment, personal financial conditions and the desire to shop. This consumptive index shows that the Indonesian people in general, including the Central Java community, tend to need additional funds for their daily needs. With the existence of consumer loans provided by the Rural Credit Banks, this further increases their consumption and this contrasts with the benefits of financial literacy. Therefore, the amount of one's income does not affect the level of financial literacy. This study is in line with Agarwal et al., (2015) that the amount of income does not depend on the financial literacy level.

Financial literacy can be a key to success in making financial decisions and in taking credit (Gathergood, 2012 and Hastings et al., 2012). However, this study shows different results that there is no relationship between the amount of credit and understanding of financial literacy. It might happen because respondents chose to trust financial advisors or someone who had better financial experience as expressed by (Disney, Gathergood, and Weber, 2015). The results of this study support researches of (Villa and Diagne, 2012) and Agarwal et al., (2015).. Various life factors may cause respondents to take large amounts of loans even though their financial literacy is bad. Life factors include daily needs, divorce, and layoffs. Therefore, they need additional funds by borrowing money from banks to support their daily lives.

The average number of loans taken by respondents in this study is less than ten million (<10 million). Regarding the number of loans, one important thing is the type of collateral. Therefore, this study proves that the high or low credit loans by respondents do not affect the level of financial literacy as long as the respondent has collateral which can be used to take large amounts of loans. Large levels of debt that are not based on financial management knowledge can be caused by household needs or even marital status, and lifestyle that cannot be linked to the level of education or the amount of income. This is commonly called the symptoms of financial depression as described in the study of (Berger, Collins, and Cuesta, 2015). Loans in the amount of 41-50 million are included in the Sufficient Literate category with a score of 77.8%. With a sufficient literate condition, respondents are brave enough to take a large amount of credit. This might occur because the collateral factor owned is one of the successes of the respondents in getting a large amount of credit beyond the ability to manage credit and the success of credit payments.

This study found that credit status has a relationship with financial literacy. The findings of this study can be taken into consideration by banks in providing credit to customers. Credit and debt management are interrelated activities. Bad debt management will result in the LDR (Loan to Deposit Ratio) of financial institutions, in this case the Rural Banks (BPR), exceeding the safe limit of the LDR value determined by Bank Indonesia (BI). Respondents who answered questions related to banking literacy scored high; 75 percent of customers are in the Well-Literate category but they have credit status as stalled credit customers. Barua dan Sane (2014) shows that literacy rates cause a reduction in the number of days and months in late credit payments. Therefore, it is necessary in increasing financial education to improve the ability of customers who have low literacy levels. The results of this study document that 59 percent of Indonesian bank credit customers are at sufficient literate level and 79.2 percent of them are customers with bad credit. This figure is quite high because more than three quarters of customers are stalled credit even though they have good financial literacy. Thus, whatever the customer's credit status, fluid or stalled, is not affected by the customer's financial literacy level.

6. Conclusions

Bank lending to small and medium-sized communities has become a trend of banking business today. Therefore, there must be a real effort by banks to provide an understanding of financial management to their customers so there is no increase in stalled credit. Low financial understanding can lead to errors in financial management. The findings of this study indicate that credit status (fluid and stalled) does not have a significant relationship to financial literacy. Therefore, there is no difference between stalled credit customers and fluid credit customers in financial literacy. The average level of financial understanding of credit customers is at the level of sufficient literate. This is in accordance with the customer's financial attitude where the average respondent has a good attitude in financial management. Other findings show that education and religiosity have significant relationships towards financial literacy. Thus, respondents who have a higher level of education show a better level of literacy. The results of this study support previous researches where the higher education has a significant positive relationship to the cognitive aspects of financial literacy.

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