FINANCIAL LITERACY AND RISK PROFILE: AN EXTENSIVE OBSERVATION ON BANK EMPLOYEES

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Abstract: People with a high level of financial literacy tend to have better financial management skills to realize their financial well-being through effective financial decisions including investing according to their risk profile. The banking industry is an industry that has the highest inclusive level selected because it can represent financial literacy conditions. On the other hand, the gap between financial inclusion and financial literacy leads to a large number of investment (illegal) cases and complaints to regulators. The purpose of this research is to find out the level of financial literacy and type of risk profile, factors that affect it with bank employees in Bandung as research objects. The sampling technique used is a non-probability sampling technique that is purposive sampling with a total of 408 respondents. Data collection is through online questionnaires. There are three sections questionnaire, demographic factors, financial literacy, and risk profile. The data processing techniques used are descriptive statistical analysis and multiple regressions. The results showed that bank employees in Bandung had financial literacy indexes categorized as "medium" or "sufficient" (66.7%) with a risk profile index of "moderate" type (60%). Demographic factors that affect financial literacy are age, education level, and organizational position. While the factor that affects the risk profile is age and gender. Research has also revealed a strong correlation between financial literacy and risk profile.

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Financial products and services have increasingly become more complex and not easily comprehendible. Lusardi et al. (2010), stated that today consumers face a financial environment, which is more complicated than any previous generation. Consumers who do not have an in-depth understanding may be confused by the financial terms and mechanism to make an investment decision that makes financial literacy has become important. Based on a study by World Bank in 2018, it was found that the higher level of people's financial inclusion, the higher probability for them to make the right decisions regarding financial management, their use of financial products and services, sustain the development of the financial sector, and more broadly it will improve economic growth.

The risk profile will describe a person's tolerance level to risk or the extent to which he can bear the risk. These risk profiles are typically influenced

by factors such as age, environment, and understanding of investment and financial products. Risk profiles are also affected by risk appetite and risk tolerance. In investing, we must pay attention to the limitations of risk appetite and risk tolerance, to ensure that our investment objectives are achieved and not exceed the risk limit. However, there are limited studies that focus on the interaction between financial literacy and risk tolerance on investment or risk profile. It also with bank employees as an object.

Bandung has a population structure relatively the same as Indonesia. Based on financial data, such as securities accounts, savings accounts, giro, deposits, and payment instruments, Bandung is one of the cities whose ownership amount is categorized as high so that it can represent the level of financial inclusion in Indonesia. Based on the survey by OJK in 2019, financial literacy in Indonesia is still in the low category 38,3%. The highest financial literacy rating by the financial sector was 36.12% banking sector, meanwhile, this survey also mentioned that Indonesia's financial inclusion index reached 76.19. It means exceeding the government's target financial inclusion index of 75%. There is a large gap between the level of financial literacy and financial inclusion, it can be concluded that many people already have access to various financial services products but on the other hand, they do not yet fully understand the financial services products they use. These gaps raise the potential risk of being harmed by financial products and services providers. This survey also shows that the financial literacy index of west Java province decreased from 38.70% (2016) to 37.43% (2019). It made the national financial literacy index ranking falling dramatically from 2nd to 16th. Meanwhile, West Java's financial inclusion index increased by 20.17% from 68.31% (2016) to 88.48% (2019) boosting the national financial inclusion index rank from 15th to 6th. The results of this survey also led to a wider gap between the financial literacy index and the financial inclusion index from 29.61% (2016) to 51.05% (2019).

BI and OJK as regulators reported that there are still many complaints. OJK through Satgas Waspada Investasi (SWI) also reported that in 2019 had solved 442 cases of investment fraud, the number of cases is five times bigger than in 2017 with public losses in the period 2009 to 2019 reached Rp 92 trillion (OJK, 2019). This research has several benefits, for regulators in the financial sector, BI and OJK. The results of the research can be the basis of policymaking, especially the increase in public financial literacy. This is to support the government's target in the national financial inclusion strategy (SNKI), one of the targets is to increase financial literacy and inclusion. For the banking industry, the results of this research can also be a guideline to improve employee literacy to support employee productivity when offering financial products that are currently increasingly complex to customers. Thus, customers get comprehensive information. This research's advantages to examining financial literacy index as well as the relationship between financial literacy index, risk profiles, and demographics factors affecting it with a sample of the population of bank employees. Based on the explanation above, these research objectives determine the relationship between financial literacy and risk profile with an extensive observation of banks' employees in Bandung.

HYPOTHESIS DEVELOPMENT
Financial Literacy Level

H0. Financial Literacy among Bank Employees is well literate level (OJK)/high level (Chen and Volpe)

H1. Financial Literacy among Bank Employees is in lack literate level (OJK)/low level (Chen and Volpe)

DEMOGRAPHIC FACTORS TO FINANCIAL LITERACY

H0. There is no significant relationship between demographic factors to Financial Literacy among Bank Employees.

H1. There is a positive significant relationship between demographic factors to Financial Literacy among Bank Employees.

Age

H0. There is no significant relationship between age to Financial Literacy among Bank Employees.

H1. There is a significant relationship between age to Financial Literacy among Bank Employees.

Gender

H0. There is no significant relationship between gender to Financial Literacy among Bank Employees.

H1. There is a significant relationship between gender to Financial Literacy among Bank Employees.

Marital Status

H0. There is no significant relationship between marital status to Financial Literacy among Bank Employees.

H1. There is a significant relationship between marital status to Financial Literacy among Bank Employees.

Education

H0. There is no significant relationship between education to Financial Literacy among Bank Employees.

H1. There is a significant relationship between education to Financial Literacy among Bank Employees.

Managerial Position

H0. There is no significant relationship between a managerial position to Financial Literacy among Bank Employees.

H1. There is a significant relationship between a managerial position to Financial Literacy among Bank Employees.

Risk Profile Types

H0. The risk profile among Bank Employees in Bandung is moderate

H1. The risk profile among Bank Employees in Bandung is aggressive

Demographic Factors to Risk Profile

H0. There is no significant relationship between demographic factors to risk profile among Bank Employees.

H1. There is a positive significant relationship between demographic factors to risk profile among Bank Employees.

Age

H0. There is no significant relationship between age to risk profile among Bank Employees.

H1. There is a significant relationship between age to risk profile among Bank Employees.

Gender

H0. There is no significant relationship between gender to risk profile among Bank Employees.

H1. There is a significant relationship between gender to risk profile among Bank Employees.

Marital Status

H0. There is no significant relationship between marital status to risk profile among Bank Employees.

H1. There is a significant relationship between marital status to risk profile among Bank Employees.

Education

H0. There is no significant relationship between education to risk profile among Bank Employees.

H1. There is a significant relationship between education to risk profile among Bank Employees.

Managerial Position

H0. There is no significant relationship between a managerial position to risk profile among Bank Employees.

H1. There is a significant relationship between a managerial position to risk profile among Bank Employees.

Financial Literacy to The Risk Profile

H0. There is no significant relationship between financial literacy to risk profile among Bank Employees.

H1. There is a positive significant relationship between financial literacy to risk profile among Bank Employees.

METHOD

This research used three variables as research models. The first variable is a demographic consisting of Age, Gender, Marital Status, Last Education, and Managerial Position. The second variable is Financial Literacy with 12 questions regarding basic financial literacy, investment, insurance, saving, etc. The last one is risk profile with 7 questions about
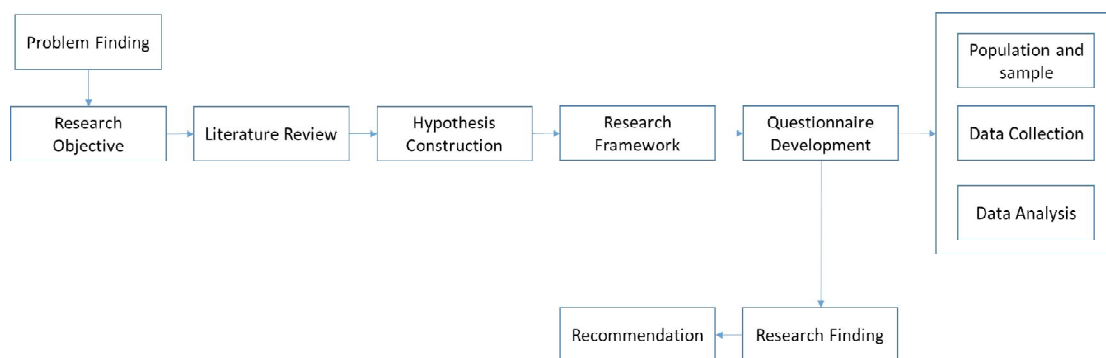

Figure 1.   Research Design

investment preference, attitude, and behavior in investing. This research will produce an index of financial literacy and risk profile on bank employees in Bandung. Besides, this research will also assess whether there is a correlation between 1). Demographic factors with financial literacy, as well as 2). Demographic factors and financial literacy with the risk profile.

The question that has been develop based on theories and industrial practices. This research uses a non-probability sampling technique that is purposive sampling. The data collected will be analyzed using descriptive statistical analysis methods and multilinear regression analysis. The regression is used to assess the correlation between demographic factors, financial literacy, and risk profile. To ensure that questionnaires that have been compiled are applicable, the results of the questionnaire will be tested using validity and reliability tests as well as normality tests, heteroscedasticity tests, and multicollinearity tests.

Financial literacy as a knowledge and understanding of financial concepts and risks, following skills, motivation, and confidence to apply their knowledge and understanding to make effective financial decisions, improve the financial well-being of individuals and communities, and participate in the economic field (Atkinson et al., 2016). Remund (2010), stated that one's understanding of the concept of finance, ability, and confidence to govern personal finances through appropriate short-term decision-making, long-term financial planning, and attention to economic events and conditions. Financial literacy represents the level of understanding of personal finances. This refers to the awareness and knowledge of the financial concepts necessary to manage personal finances and financial capabilities.

Financial literacy is also defined as a knowledge of basic financial investment concepts such as inflation, diversification of risks, and the ability to understand the mechanism of interest rates (Lusardi

and Mitchell, 2011). Another definition of financial literacy is the combination of awareness, knowledge, skills, attitudes, and behaviors in making a financial decision to achieve individual financial wellbeing (Zsótér, 2018). Huston (2010), said financial literacy encompasses awareness and knowledge of financial instruments and their applications in business and life. Carpena et al. (2011), states there are 3 (three) dimensions of financial literacy i.e. (1) computational skills, (2) understanding of basic finances, and (3) attitudes towards financial decisions. Willis

(2008), states that knowledge in the context of financial literacy includes knowledge, education, and information on finance and its resources, banking, deposits, credits, insurance, and taxes. The person's financial knowledge then develops into financial skills, the financial skill itself is defined as the ability in applying the financial knowledge possessed in daily life (Palameta et al., 2016).

Financial skills allow us to make rational and effective decisions regarding their finances and economic resources (Kurihara, 2013). By having ad-

Figure 2.   Research Framework

equate knowledge and skills, the community is expected to have confidence in financial services institutions as well as products and Service, the level of confidence in the ability must also be possessed by individuals, especially in conducting financial activities such as the recording of investment plans expenditures, budgets, and so on (Tustin, 2010).

RESULTS

Validity and Reliability Test

The purpose of the validity test is to measure accuracy. The validity test calculation is obtained by analyzing the correlation between items resulting in a correlation coefficient used to measure the validity rate of an item and to determine whether an item is worth using in a study. The correlation coef-

ficient significance test refers to a level of significance of 0.05, meaning an item is considered valid if it is significantly correlated to the total score. The Validity and Reliability Test of this research show in Table 1.

Based on the table above, validity test results show that all items tested by the indicator get significant values for 5% (**) and 1% (***). Of the 12 items concerning financial literacy, 7 items have a significant value of 1% (***) and 5 items that have a significant value of 5% (**). As for the risk profile of 7 items, 6 items have a significant value of 1% (***) and 1 item that has a significant value of 5% (**). Reliability test results show Cronbach's alpha results for financial literacy are in the category "good" (0.8) and for risk profiles are in the category "okay" (0.7).

Table 1. Validity and Reliability Test

Variable	No	Measurement	Validity prob	Reliability Cronbach's α
Financial Literacy	1	Budgeting	0.04**	0.852
	2	Stock Market	0.02**	
	3	The function of the Stock Market	0.02**	
	4	Mutual Fund	0.001***	
	5	Asset Diversification	0.001***	
	6	Saving Account	0.02**	
	7	Insurance	0.001***	
	8	Numeracy	0.001***	
	9	Inflation	0.001***	
	10	Interest Compounding	0.001***	
	11	Time Value of Money	0.001***	
	12	Money Illusion	0.004**	
Risk Preference	13	Activity Preferences	0.001***	0.791
	14	Long of Investment Preferences	0.002**	
	15	Investment Portion Preferences	0.001***	
	16	Profit and Loss Tolerance	0.001***	
	17	Financial Scenario Preferences	0.001***	
	18	Financial Instrument Preferences	0.001***	
	19	Investment Decision	0.001***	

Normality Test

Not all populations are categorized as normal. Therefore, the normality test is required, the nor-

mality test aims to assess the distribution of data in a data group, whether the data is distributed normally or taken from a normal population.

This study used the Jarque-Bera Test to test the normality of the sample. In the Jarque-Bera test, the measures used are skewness and kurtosis. Based on the Jarque-Bera Test, the residues are normally distributed.

Heteroscedasticity Test

The heteroscedasticity test aims to see the variance inequality of the residual value from one observation to another in regression model. Based on the test, ρtest $=0.1560 > 0.05$ so H_0 is accepted and residuals are homoscedasticity.
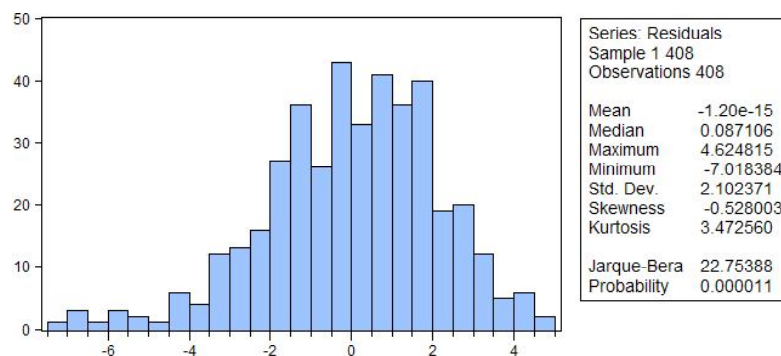

Figure 3. Jarque-Bera Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.608883	Prob. F(5,402)	0.1565
Obs*R-squared	8.004309	Prob. Chi-Square(5)	0.1560
Scaled explained SS	9.606662	Prob. Chi-Square(5)	0.0872

Figure 4. Breusch-Pagan-Godfrey Test

Variance Inflation Factors
Date: 07/22/20 Time: 23:11
Sample: 1 408
Included observations: 408

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.927845	84.59580	NA
AGE	0.000236	30.99099	1.845149
GDR	0.047423	2.024104	1.076546
MST	0.057534	1.709987	1.293236
EDU	0.038688	16.63390	1.179768
POS	0.019768	10.06323	1.754557

Figure 5. Variance Inflation Factor Test for The First Equation

Variance Inflation Factors
Date: 07/22/20   Time: 23:19
Sample: 1 408
Included observations: 408

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	1.347357	106.4256	NA
BDG	0.074820	4.331026	1.157063
STC	0.065119	3.441724	1.138806
FST	0.073487	4.182737	1.168706
MTF	0.084275	5.008903	1.239949
ADV	0.069077	3.222936	1.319192
SVA	0.061973	3.251412	1.091773
INS	0.054126	2.116708	1.068730
NUM	0.081032	4.941612	1.126397
INF	0.072737	3.942889	1.236985
INT	0.056837	2.387773	1.117806
TVM	0.064355	3.289186	1.160889
MIL	0.075146	4.408107	1.134439
AGE	0.000294	33.46381	1.992376
GDR	0.056045	2.072401	1.102233
MST	0.068548	1.765023	1.334859
EDU	0.046468	17.30850	1.227615
POS	0.025228	11.12582	1.939822

Figure 6.   Variance Inflation Factor test for the second equation

Multicollinearity Test

Multicollinearity is a phenomenon in which predictor variables in some regression models can be predicted linearly from others with a substantial degree of accuracy. The multicollinearity test aims to see a linear relationship between independent variables in the regression model.

The result from the first test obtained that the Centered VIF, for all variables VIF < 10 so H_0 is accepted. It means variables didn't correlate with each other.

Based on the second test, from the Centered VIF, for all variables VIF < 10 so H_0 is accepted. Variables are also didn't correlate with each other. It means qualified with multicollinearity test.

The Relation Between Demography and Financial Literacy

One of the objectives of this study is to know the relation between some demographic factors and

Table 2.   Research Correlation Between Demography and Financial Literacy

Demography Factors	Probability	Coefficient
Age	0.0691*	0.0280
Gender	0.1420	0.3204
Marital Status	0.7886	-0.0644
Education	0.0498**	0.3871
Position	0.0000***	-0.6602

the level of financial literacy, to know the relation between these variables, multivariate regression was conducted. The results of the analysis showed in Table 2.

From the results of the study, there are 3 variables of demographic factors that affect a person's financial literacy index. The three variables are age, education, and managerial positions. Age has significance at 10%, the significance of education at

5%, while the significance of managerial positions at 1%.

Age and education levels have a positive correlation with the financial literacy index. This means that the older a person is, the higher the probability of having a better level of financial literacy index. Likewise with the level of education, the higher the educational background, the higher the level of financial literacy. Meanwhile, managerial positions have a negative correlation with the financial literacy index. In this study, the code used for top-level management was 0, 1 for mid-level management, 2 for first-rate management, and 3 for operational staff. Therefore, from the results of research obtained that the higher a person's position in an organization then it is likely to have a higher level of financial literacy.

How Financial Literacy Affects The Risk Profile

Another objective of the study is to find out how financial literacy indicators affect a person's risk profile. To find out, multivariate regression was conducted. The results of the analysis are presented in Table 3 below.

Table 3. Research Correlations Between Demography, Financial Literacy & Risk Profile

Demography Factors and Financial Literacy	Probability	Coefficient
Budgeting	0.7476	0.0881
Stock Market	0.0040***	0.7383
Function of Stock Market	0.7977	-0.0695
Mutual Fund	0.1785	0.3913
Asset Diversification	0.3692	0.2363
Saving Account	0.7755	-0.0710
Insurance	0.9261	0.0248
Numeracy	0.3579	0.2620
Inflation	0.3583	-0.2480
Interest Compounding	0.5870	0.1296
Time Value of Money	0.8674	-0.0424
Money Illusion	0.0730*	0.4928
Age	0.0061***	-0.0472
Gender	0.0000***	-1.1726
Marital Status	0.1775	-0.3537
Education	0.5810	0.1191
Position	0.7662	0.0473

Based on the Table above, four variables have a significant effect on the risk profile. The first is an understanding of the illusion of money with significance at 10%. While the other three variables are, the stock market, age, and gender are of significance at 1%.

Besides, to get a stronger conclusion, different regression methods are performed by collecting all financial literacy variables, as well as demographic

Table 4. Research Correlations Between Demography, Financial Literacy and Risk Profile

Demography Factors and Financial Literacy	Probability	Coefficient
Financial literacy	0.0062***	0.2111
Age	0.0034**	-0.0489
Gender	0.0000***	-1.1399
Marital Status	0.2454	-0.3009
Education	0.7089	0.0796
Position	0.7498	0.0497

factors, then regression of those variables with the accumulation of risk profile variables. The result of the second regression is reported in Table 4.

Based on regression analysis conducted with two scenarios of variable types obtained relatively similar results. The result of the analysis is that the variable rate of financial literacy and gender is of significance at 1%, while age is of significance at 5%. Thus, the results of the study show that the level of financial literacy affects the risk profile of the individual.

DISCUSSION

The Financial Literacy Index is the aggregate summary value of all financial literacy questions. This shows an aggregate index for the financial literacy of all respondents. From the overall question, the average financial literacy score of respondents was 8 with financial literacy index of 66,7%. This indicates that the level of financial literacy in bank employees in Bandung is categorized as "good". Based on Chen and Volpe (1998) the results of this survey are categorized as "medium level", while

based on the theory used by OJK in the national survey of financial literacy and inclusion (SNLIK), the results of this survey are categorized as "sufficient literate". In detail, the survey results showed that the majority of respondents consisting of 248 respondents, or 79% of all respondents had the financial literacy index same or above the average value of the financial literacy index of 66,7%.

Individuals with higher levels of financial literacy tend to have a higher risk profile than individuals with lower levels of financial literacy. The results of this study are consistent with the research conducted by Rooij et al. (2011). In his research, Rooij et al. (2011), used demographic variables such as age, education, gender, marital status, number of children, retirement accounts, self-employment, income, and wealth quartile. While in this study used five variables namely, age, gender, marital status, education, and managerial position.

Of these five variables, two demographic variables have a significant correlation, namely, age and gender. Both indicators correlate with negative coefficients. In other words, older individuals will reduce financial activity and high-risk investments (Bellante and Green, 2004). In their study, got the same result of how age factors have a relationship with risk appetite.

Regression analysis shows that men like more risks than women (Aren and Zengin, 2016). However, the results of this study also confirm that there is no significant correlation between marital status, education level, and managerial position to risk profile. Marital status also did not correlate with research conducted by Aren and Zengin (2016). Meanwhile, education levels did not have an important relationship with risk profiles because financial education is not taught in formal education. This is as stated in the study conducted by Matuska and Christiansen (2008). In this study, it is mentioned that individuals get more financial literacy from the channel or informal platforms. Informally obtained knowledge will bring individuals to a higher risk profile.

The results of this study confirmed previous research conducted by Dewi and Barlian (2020) and Windayani and Krisnawati (2019), that the majority of respondents are at the medium level. The risk profile response briefly illustrates the aggregate value of all risk profile questions. This indicates the aggregate risk profile type of all respondents. From the overall question, the value of the respondent's average risk profile is 12.6 or 60%, which is categorized as a "Moderate" profile. These results also show similarities with research conducted by Tallo et al. (2015), in this study concluded that professional worker respondents have a moderate risk profile towards aggression, this is because professional workers tend to have the good financial knowledge to make good investment decisions. The significant influence between the three variables and financial literacy confirms the results of a previous study conducted by Chen and Volpe (1988), which stated that there is a significant correlation between age and education with financial literacy. Meanwhile, the results of Windayani and Krisnawati (2019), research state that there is a positive influence between income (in this study equal to managerial position) on financial literacy.

In the regression research to determine the effect of demography and financial literacy on the risk profile, the result showed that 3 variables had a significant effect on risk profiles that are age, gender, and financial literacy. The results of this study are similar to research from Saputra and Anastasia (2013) which stated that there is a significant influence between age and gender with the risk profile. Research by Windayani and Krisnawati (2019), concluded that there is a positive correlation between financial literacy and risk profile. There has been a lot of previous research on financial literacy as well as risk profile. However, research on both topics generally takes samples of students, millennials, women, or productive ages. Researchers have not found any research with a sample of bank employees.

CONCLUSIONS

The financial literacy index among bank employees in Bandung is in the range of 66,7%, categorized as "Medium" (Chen and Volpe)/ "Sufficient Literate" (OJK). It is above the national financial literacy index (38%) either West Java fi-

nancial literacy index (37,43%), but still below the national financial inclusion index (76,2%). This is ironic because bank employees who work day-to-day in the financial industry but whose financial literacy index has not achieved "well literate" or "high knowledge".

Uses of two standards, Chen and Volpe with OJK producing different categories. Based on OJK, some groups of respondents become "up" classes in the financial literacy index. Some groups with the categories "Low Level of Knowledge" and "Medium Level of Knowledge" by Chen and Volpe, changed to "Sufficient Literate" and "Well Literate".

The risk profile index among bank employees in Bandung is in the range of 60%, categorized as "Moderate". This can mean that the majority of bank employees in Bandung invest intending to earn income periodically and capital growth in the medium to long term. They can accept the risk of lower investment value in the short term to obtain higher capital growth potential in the medium to long term.

The Financial Literacy level was affected by age, education, and managerial position. These three variables are important factors that should be considered to improve the financial literacy index of bank employees in Bandung.

The Risk Profile type was affected by age, gender, and financial literacy. These three variables are the most influential factors in determining the risk profile of bank employees in Bandung.

The strong correlation between financial literacy and risk profile can be interpreted that knowing well financial products and services as well as the benefits and risks will cause more courage to invest in a measurable way to get a better return on investment.

RECOMMENDATIONS

Government; collaboration among stakeholders to optimize financial literacy programs, five recommendations to improve financial literacy for a government institution. First, to strengthen a national framework of financial education and literacy strategies, ministry and institution must make education strategies and planning. It also including determining targets and segments. Second, develop finan-

cial education and literacy digitally, to reach the wider target, through social media and used influencers, open online courses. Third, strengthen sharia financial education and literacy, in an integrated and religious community-based. Fourth, Build and strengthen financial education and literacy infrastructure, appropriate educational tools will support the delivery of educational objectives following the segments. Last one; strengthen strategic alienation with stakeholders and communities for more massive and engaged education. Strategic alliances with schools, universities, ministries/institutions.

Business Environment; synergy from all financial industry players is needed through product development along with business models. It can also utilize banking technology and physical networks as well as provide joint education and training for employees and the public. Some strategic recommendations for improving financial literacy for the business environment, firstly, product cross-selling, by selling bank products and services with other financial products such as investment or insurance. Cross-selling will force bank employees to learn in detail about the product that they sell, it also improves their financial literacy. Secondly, the reward for employees, provide stimulation to employees by rewarding them with investment/ insurance products for their future and experience to use more complex financial products and services. The last one, joint education, and training, in collaboration with educational institutions (ex-house) or cooperation internally between companies (in-house).

Banking Employees and Industry; good financial literacy will support employees to decide which types of investments are suitable with their risk profiles. Therefore, management can improve the welfare of its employees by improving their financial literacy through some programs such as socialization, education, and training regularly, it can be combined with other training programs and designed as needed based on objectives. Company culture will encourage values for employees from daily practices, traditions, beliefs in the work environment. A good corporate culture will be the foundation of a strong culture that makes the company grow. It would be great if financial literacy was a

part of it. Community, change agents to campaign for the importance of financial literacy as a way of caring for management to employees

Future Academic Research; the author suggested expanding the sample to bank employees in Indonesia or employees working in the financial industry. Using probability-sampling techniques to ensure the sample represents population proportionally according to demographic data. Further research can also add more demographics variables, such as bank type (public bank, sharia bank, local bank and government or rural bank), more questions about all financial products such as government bond, pension fund, credit, digital bank and also combining with financial inclusion as well as with payment transaction preferences.

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