The Role of Intellectual Capital in Intervening Financial Behavior and Financial Literacy on Financial Inclusion

NUR FADJRIH ASYIK[1]*, WAHIDAHWATI[2], NUR LAILY[3]
[1,2]Senior Lecture, Department of Accounting, Sekolah Tinggi Ilmu Ekonomi Indonesia Surabaya (STIESIA), INDONESIA
[3]Senior Lecture, Department of Management, Sekolah Tinggi Ilmu Ekonomi Indonesia Surabaya (STIESIA), INDONESIA

Abstract: -Education is very important to reduce the percentage rate of the number of unbanked people. This research was conducted by focusing and convincing many people about the importance of financial behavior in reducing financial inclusion in developing countries, such as Indonesia. The number of samples are use 500 respondents. The analysis method uses the Partial Least Square (PLS) method and structural equation model (SEM) based on variance. This research found that financial behavior and financial literacy have a positive and significant influence on financial inclusion. Intellectual capital also detected capable of intervening a strong relationship between financial behavior and financial literacy on financial inclusion. This discovery contributing is very important for stakeholders who want to improve financial access for all unbanked people in developing countries through the concept of financial behavior. There needs to cooperation from various elements, such as the central bank of each country, academics, practitioners, digital financial institutions, and social elements of the community to foster good financial behavior with each other, so that financial inclusion can be resolved in a directed manner.

Key-Words: - economics, environmental management, financial literacy, intellectual capital.

Received: June 28, 2021. Revised: February 13, 2022. Accepted: February 27, 2022. Published: March 17, 2022.

1 Introduction

The financial inclusion movement is carried out to suppress and reduce the number of unbanked people around the world, one of which is in Indonesia [1]. The primary reason people are classified as unbanked is the level of education, so this condition also affects their knowledge [1]–[5]. Education is very important to reduce the percentage rate of the number of unbanked people. This statement is supported by some old literature that an educated and financially knowledgeable society can succeed in financial inclusion [1], [3], [6], [7]. Financial knowledge includes knowledge of basic financial concepts, such as the basis of compound interest, the difference between nominal value and real value, basic knowledge of risk diversification, time value, value of money, and others [8]–[10]. Some of the literature shows that knowledge through education (Intellectual capital) is very important to reduce financial inclusion today.

Various countries in the world have planned several ways to reduce financial exclusion using two approaches, namely comprehensively by formulating a national strategy such as Indonesia, Nigeria, Tanzania or through various separate programs, for example financial education as carried out by the United States government after the 2008 crisis. The approach through a national strategy includes 3 (three) aspects, namely the provision of service facilities, the provision of suitable products, responsible finance through financial education and consumer protection. Implementing financial inclusion is carried out in stages, starting with obvious targets such as thorough recipients of government social program help or migrant workers, before gradually being used by the public [11]. If we look at several financial inclusion indicators between developed and developing countries, it can be seen that account ownership in developed countries, such as Europe, the United States, and OECD countries is currently above 50% of the total population and is inversely proportional with developing countries, such as Africa, Latin America, Indonesia, and East Asia, which are still around 30 percent on average. Percentage of account ownership in developed countries is also directly proportional to the level of income per capita, which is above US$20,000 on average. The higher the GDP per capita, the higher the percentage of account ownership in formal financial institutions. The lower the GDP per capita in developing countries, the lower the percentage of account ownership [12].

The comparison of financial access is also very different between developed and developing countries. In developed countries, only 8% of the population does not have access to finance, while in developing countries it still reaches 59% of the total population. To lend in developing countries, it is only between of 35% of Gross Domestic Product (GDP), while in Malaysia it has reached 100%. Meanwhile, in Indonesia, only 20% of the Indonesian population aged over 15 years has access to the financial sector. Only 2 million people or fewer than 1 percent of Indonesia's 230 million population can access the capital market. Data from the Financial Services Authority in 2016 shows that the level of financial knowledge of the Indonesian people is still at 28% while Malaysia is 66%, Thailand reached 73% and Singapore reached 98%. One factors causing the low level of financial knowledge is the geographical condition of Indonesia, which is around 60% in rural areas. This condition shows that, currently, the government still needs support from other parties in order to reduce the level of financial inclusion [1]. Financial knowledge theory has a close relationship with financial literacy because it can be taught and understood through financial education. The provision of financial education can also increase financial knowledge, and can reduce the occurrence of financial problems in the future, and increasing financial knowledge will also increase the ability of entrepreneurs to use financial services at existing financial institutions [13].

Someone who has good financial behavior, then he will be responsible for his finances by using money effectively and budgeting, saving money and controlling expenses, making investments, and paying debts on time [2]. Behavioral finance results from of putting expectations and values into action, expecting behavioral finance will mediate the relationship of expectations to financial well-being [14]. Financial behavior emerged in the 1990s in line with the demands of the development of the business and academic world, which addressed behavioral aspects or elements in making financial and investment decisions. Behavioral finance describes how a person treats, manages, and uses the financial resources.

Financial knowledge, skills, and beliefs possessed by an individual affect his financial attitudes and behavior. An increase in one's knowledge can affect active participation in financial-related activities, as well as more positive financial behavior in an individual [3]. In addition, the relationship between behavior and a person's attitude is seen in his positive attitude for the long term, which is likely to show better financial behavior compared to someone who has financial attitudes and behavior in the short term. Financial literacy and financial inclusion are important things for the government to pay attention to. This is because financial literacy and financial inclusion impact on people's welfare [6], [15], [16]. The higher the financial literacy index and the financial inclusion index in Indonesia, the higher the level of community welfare. Therefore, this research was conducted by focusing and convincing many people about the importance of financial behavior and financial literacy for the succession of financial inclusion through the intellectual capital of the people in Indonesia.

This writing then discusses the grand theory used in understanding the flow of thought in writing this article. Then the next chapter will discuss the research methods used and the discussion of the test results. In the last section, the novelty of this research will be concluded, which can be used as a variety of new concepts in overcoming financial inclusion in developing countries, such as Indonesia.

2 Literature Review

This sub-chapter will describe the grand theory that underlies this research, as well as some literature that is used as a reference for preparing of this research hypothesis. Early theories that can explain a person's behavior, focused on two possibilities (1) behavior is gained from heredity as biological instincts-then known as "nature" explanations and (2) behavior is not inherited but got from experience during life. The various alternatives that developed from the two approaches then gave rise to various perspectives in social psychology as a set of basic assumptions about the most important things that can be considered as something that can understand social behavior [17]. This study considers several grand theories that are appropriate for explaining the understanding of human, financial behavior, namely:

2.1 Field Theory

This theory examines social behavior through the concept of "field" or "space of life" - life space. This concept emphasizes that individual character (instincts and habits) is very independent from the influence of the situation in which the individual carries out activities in his life space (past, present, future). Living space contains all facts that can determine individual behavior. Living space includes everything that must understand the concrete behavior of individual humans in a certain psychological environment at a certain time. A person's behavior or movement will occur if there is sufficient force to push it. When the unbanked community gets a positive boost, financial inclusion will also decline, and vice versa [18]. Psychologically, a person's basic needs will arise because of the influence of the surrounding environment in which the person is located.

2.2 Theory of Reasoned Action

This theory is related to belief, attitude, intention and behavior [17]. Will is the best predictor of behavior, meaning that the best way to know what someone will do is to know that person's will. However, basically everyone will make judgments based on different reasons (not always based on will). An important concept in this theory is the focus of attention (salience), which is considering something that is important. Intention is determined by subjective attitudes and norms on specific attitudes towards something, a person's behavior is not only influenced by attitudes but also by subjective norms, namely believes in ourselves about what other people want us to do and attitudes toward a behavior that is accompanied by subjective norms, thus forming an intention or intention to behave in a certain way. Intention or intention one function of two basic determinants: an individual's attitude towards a behavior (personal aspect) and a person's perception of a social pressure in doing or not doing that behavior. Behavior is also influenced by a person's intentions, which are also influenced by the attitude carried out by that person, while his own attitude is influenced by beliefs about the opinions of others and the motivation to obey those opinions. Individual attitude towards a behavior (personal aspect) and a person's perception of a social pressure in doing or not doing the behavior.

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Behavioral finance is a new paradigm of a financial theory. This theory seeks to make it easier to understand and predict systematic financial markets [20]. This theory is implicated when someone makes psychological decisions. Simply put, behavioral finance focuses on the concept of human behavior from the point of view of psychology that influences the individual's human decisions. Psychology can also be referred to as money psychology. This is because there is evidence that psychological influences can bury the character of each individual as homo economics. Homo economics is a term which states that humans are economic creatures who aim to fulfill all their needs, including their desires [21], [22]. Homo economics theory only thinks rationally about all its actions, but it is not always under the reality in human life, especially to prioritize needs [22].

2.3 Financial Behavior and Financial Inclusion

Someone who has good financial behavior will be responsible for his finances by using money effectively by budgeting, saving money and controlling expenses, making investments, and paying debts on time. Behavioral finance result from putting expectations and values into action, expecting behavioral finance will mediate the relationship of expectations to financial well-being [14]. According to [23], the keys to having a basic understanding of behavioral finance include:

a) Psychology is the scientific study of behavior and mental processes that are influenced by one's physical, mental and external environment.

b) Sociology is a systematic study of behavior and social groups that focuses on the influence of social relations between people's attitudes and behavior.
c) Finance is concerned with determining value and making decisions that function to allocate capital, including acquisitions, investments, and financial management.

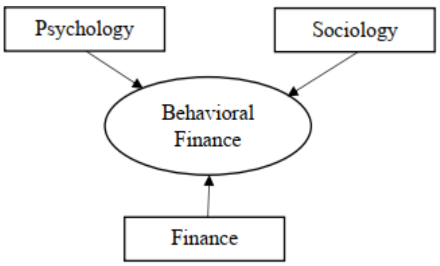


Fig. 1: Aspects in Financial Behavior
Sources: Ricciardi, Victor & Simon (2008)

Research conducted [4], [24] states that individual financial planning responsibilities need to be carried out as early as possible, because financial management errors will be very detrimental and difficult to correct in the future.

2.4 Financial Literacy and Financial Inclusion

Financial literacy is a basic need for everyone to avoid financial problems [1]. Financial difficulties can arise if there is an error in financial management (mismanagement). Having financial literacy is the most important thing to get a prosperous life [6]. With proper financial management supported by good financial literacy, the community's standard of living is expected to improve and increase. This is because even though a person's income level is high, without proper financial management, financial security will definitely be difficult to achieve.

The need for education to the public on financial products, both bank and non-bank, is very urgent so that the public is not easily deceived by irresponsible parties. The importance of financial literacy as all aspects of personal finance is not because it makes it difficult to use the money they have, but it is hoped that individuals can enjoy life by using the financial resources they have appropriately. Those who are literate will have many advantages. Statements submitted [11] show that financial literacy programs can be a cure for various diseases related to financial crises. Some of the positive sides for those who have high financial literacy include having skills in financial management, making financial decisions that apply to information and minimizing opportunities for making financial mistakes, having investments in the capital market, and being able to minimize and overcome financial problems that arise. In the future, it will be beneficial for a prosperous, healthy and happy life.

2.5 Financial Behavior and Financial Literacy to Reduce Financial Inclusion through Intellectual Capital

Intellectuals are abilities possessed by individuals from birth, so that intellectuals will develop to adapt to their environment and move by themselves to all changes in situations and conditions [3]. This person's ability is seen when he is doing activities. The activities that he does can show that the individual is mastered in a certain field and not, so that the intellectual development of this individual will adapt to the situations and conditions that exist around his environment [16]. For the ability to understand a certain concept, an individual needs a process, such as learning or training, over a certain period. This proves that an individual can receive learning when they practice and evaluate in a structured manner. Thus, this intellectual concept with financial inclusion assumes that when the government or cooperative educational institutions conduct training or coaching for some people who are classified as unbanked, they will understand financial services until finally they are separated from the unbanked group [3]. Of course, this result can affect on the succession of financial inclusion programs from the government for a better future. Another opinion states that financial inclusion needs to be encouraged so that economic growth can grow [15]. Financial inclusion will provide benefits to the community that will enable them to improve their standard of living, especially for those who live in remote areas and in border areas [25]. Financial inclusion is an important element in supporting sped up economic growth. This action is carried out by optimizing the contribution of the financial sector and opening access to financial services as widely as possible to the public, especially also for business actors [4]. From the various theoretical explanations and opinions above, this research plans the following hypotheses.

H$_1$: Financial behavior is important to reduce financial inclusion

H$_2$: Financial literacy is important to reduce financial inclusion

H$_3$: Financial behavior and financial literacy are important in reducing financial inclusion through intellectual capital.

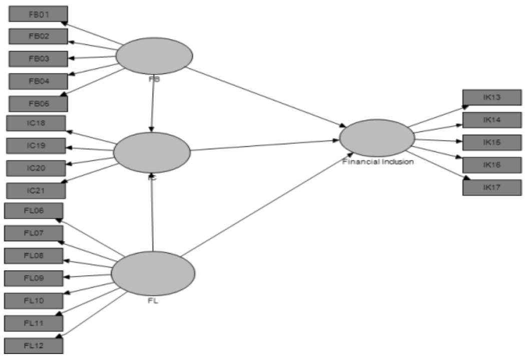


Fig. 2: Research framework

3 Method

The research was conducted using quantitative methods. The data collection technique uses a questionnaire and literature study [26]. Thus, the data collected will be classified as secondary data. The population in this study are all Indonesian citizens who live in urban Surabaya and have the status of immigrants. The sampling method applied purposive sampling technique. The criteria used in determining the suitability of the sample in this study include:

1. Indonesian citizens who have migrated to urban Surabaya and have savings or loans at banks.
2. Indonesian citizens who have migrated to urban Surabaya with a minimum education of Senior High School and income.
3. Indonesian citizens who have migrated to urban Surabaya are at least 35 years old and married.
4. Indonesian citizens who have migrated to the city of Surabaya who have jobs.
5. Indonesian citizens who have migrated to the urban area of Surabaya, but whose place of residence is over 10 km (kilometers) from the city center.

So, based on the above criteria, the number of samples set in this study was 500 immigrants in Surabaya. Determination of the value of each answer using a Likert scale. The descriptions are: Strongly agree (5); Agree (4); Neutral (3); Disagree (2); Strongly Disagree(1) [26].

Table 1. Operational Definition and Measurement of Variables

No.	Variable	Indicator
1.	***Financial Behavior* (X1)**	1) Create and record expense and expenditure budgets, 2) Provide funds for unexpected expenses, 3) The habit of saving once every month, 4) Perform price comparisons before making a purchase 5) Pay bills on time.
2.	***Financial Literacy* (X2)**	1) Economic transactions and the like 2) Economic resources 3) Shopping concept 4) Save concept 5) Tax 6) Financial crime 7) Beliefs regarding financial institutions, their products and services [27].
3.	**Financial inclusion (Y)**	Financial Knowledge Financial Behavior Financial Attitude Future planning [1].
4.	***Intellectual Capital* (Z)**	Curiosity and motivation Experience Innovation and Creativity Competency ability [3].

The analytical method in this study uses the Partial Least Square (PLS) method through a variance-based structural equation model (SEM) statistical test tool. Data analysis of this research was carried out using Smart PLS and applying verification analysis comprised three stages, namely measuring the outer model, evaluating the structural model (inner model), and testing the research hypothesis.

4 Results and Discussions

4.1 Characteristics of Respondents

The descriptive results of the characteristics of the respondents in this study used the number of male respondents 175 people, less than the number of female respondents, 325 people. Respondents in this study were 455 people aged 22-25 years, while those aged 26-29 years were 30 people and respondents aged 30-42 years were 15 people. The educational background of the respondents used is only Senior Highschool graduates. The current occupations of respondents are diverse, ranging from self-employed, contract employees, and permanent employees. This condition causes the amount of income he gets to vary from IDR 2,500,000 - IDR 4,500,000 every month. The needs of life are high enough to make their consumption power is also high. This resulted in their ability to save only about 12.88% of the total income of respondents (unbaked people).

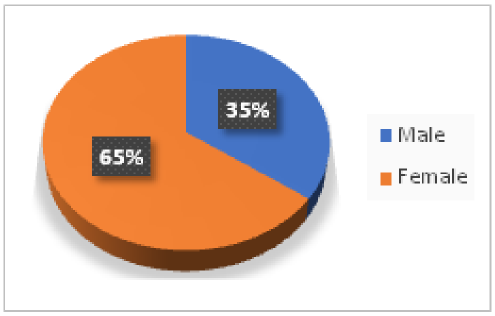
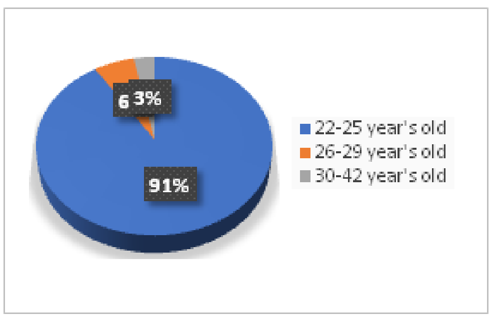


Fig. 3: Gender respondents



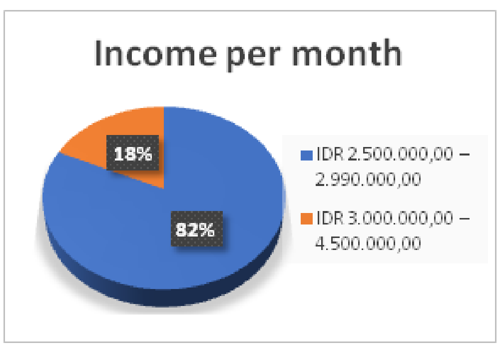


Fig. 4: Respondent's age

4.2 Validity and Reliability Test

Table 2. Research Instrument Test Results

Variable	Items	Correlation (r)		Coefficient	
		r	Status	Alpha	Status
Financial Behavior (X1)	FB01	0.410	valid	0.816	reliable
	FB02	0.966	valid		
	FB03	0.966	valid		
	FB04	0.965	valid		
	FB05	0.963	valid		
Financial Literacy (X2)	FL06	0.543	valid	0.776	reliable
	FL07	0.918	valid		
	FL08	0.918	valid		
	FL09	0.342	valid		
	FL10	0.918	valid		
	FL11	0.918	valid		
	FL12	0.431	valid		
Financial inclusion (Y)	IK13	0.762	valid	0.792	reliable
	IK14	0.737	valid		
	IK15	0.839	valid		
	IK16	0.771	valid		
	IK17	0.631	valid		
Intellectual Capital (Z)	IC18	0.886	valid	0.839	reliable
	IC19	0.896	valid		
	IC20	0.896	valid		
	IC21	0.886	valid		

Based on Table 2, all question items have a correlation value (r) greater than 0.3, while the alpha coefficient is greater than 0.6. Thus, it means that all question items for each variable are valid and reliable for further testing.

4.3 SEM (Structural Equation Model) Test

The stages before carrying out the SEM test will test the outer model and inner model. This outer model test uses composite reliability data, which measures a construct. Dimensions are reliable if they have a composite reliability value above 0.7, as follows.

Table 3. Composite reliability calculation results

Dimension	***Composite Reliability***	***R-Square***
Financial Behavior (X1)	0.884	-
Financial Literacy (X2)	0.834	-
Financial inclusion (Y)	0.863	0.780
Intellectual Capital (Z)	0.939	0.208

The inner model is evaluated using R-Square for the dependent construct. The results of the calculations that have been carried out to find that the R-Square value for the influence of financial behavior and financial literacy variables on financial inclusion is 0.780 or 78%, While the influence of financial behavior and financial inclusion variables through intellectual capital on financial inclusion is 0.208 or 20.8%.

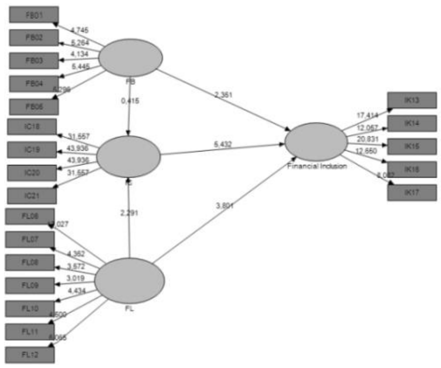


Fig. 5: Test results

Hypothesis testing is done by comparing the t-count value with the t-table value, if the t-count value is greater than t-table, then the relationship is significant between the variables and vice versa when t-count is less than t-table, then there is no significant relationship between the variables. The amount of data tested is 500, then the value of t table ($\alpha = 5\%$) got 1,964. The presentation is as follows.

Table 4. Influence between research variables

Hypothesis	Influence					t count	koef.path	Information
H1	***Financial behavior***	→	***Financial inclusion***			2,913*	-0.691	Significant
H2	***Financial literacy***	→	***Financial inclusion***			4,272*	1.136	Significant
H3	***Financial behavior & Financial literacy***	→	***Intellectual capital***	→	***Financial inclusion***	5,513*	0.416	Significant

The test results shown in table 4 will then be presented and carried out with wetting and discussion with some of the previous literature. The explanation is as follows.

4.4 Discussions

Financial behavior has a positive and significant influence on financial inclusion with a CR value (t count > t table (2,913 > 1,964) and a path coefficient of -0.691, this coefficient shows that there is a significant negative relationship between financial behavior and financial inclusion. The increasing public financial behavior in developing countries this will also suppress the level of financial inclusion. Conversely, when the financial behavior of people in developing countries is still low, the level of financial inclusion will be higher. This condition will certainly make it difficult for the country to prosper and prosper its people [13], [28]. This result also shows that the first hypothesis is not rejected.

Financial literacy has a positive and significant influence on financial inclusion with a CR value (t count > t table (4,272 > 1,964) and a path coefficient of 1,136, this coefficient shows that there is a significant positive relationship between financial literacy and financial inclusion. The better the level of public financial literacy, this will also increase inclusion finance [29]. These results also show that the second hypothesis is not rejected.

Intellectual capital can intervene strongly in the relationship between financial behavior and financial literacy on financial inclusion with a CR value (t count > t table (5.513 > 1.996) and a path coefficient of 0.416, this coefficient shows that there is a significant positive relationship between financial behavior and financial literacy with financial inclusion. These results also show that a person's intellectual capital ability regarding financial behavior and financial literacy can grow access to finance for the community, so that financial inclusion can be reduced [2]. This result also shows that the third hypothesis is not rejected.

The findings of this research are certainly different from several previous studies [1], [3], [31]–[33], [6], [8], [9], [13], [16], [27], [28], [30]. This difference is not only a research gap, but leads to a recent finding on the development of a science between psychology, social science and finance that gave rise to the current concept of financial behavior.

5 Conclusions

Data collection, calculation, testing and analysis of data that have been carried out found findings that financial behavior and financial literacy have a positive and significant influence on financial inclusion. These results prove that a person's behavior and intellectuality about finances plays a very important role in the difficulties of financial inclusion in developing countries. These two variables also depend on the level of public education that he takes. When a person has received a proper education, then he will be smarter in behavior to maintain his financial ability [31], [32]. Of course, this finding contributing is very important for stakeholders who want to improve financial access for all unbanked people in developing countries, through the concept of financial behavior.

We give great appreciation to the respondents for helping in obtaining opinions and data for carrying out this research in the new normal period. We realize it is difficult to conduct research in the new normal because many parties keep their distance from each other for the sake of mutual health. This updated concept is still difficult to apply and translate into learning curricula for the unbaked community in developing countries today. This is because the differences in behavior and intellectuality of the unbanked people in each developing country are unique and not the same as Indonesia. There needs to be cooperation from various elements, such as the central bank of each country, academics, practitioners, digital financial institutions, and social elements of the community to foster good financial behavior with each other, so that financial inclusion can be resolved in a directed manner.

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Contribution of Individual Authors to the Creation of a Scientific Article (Ghostwriting Policy)

Wahidahwati has carried out the simulation and the optimization.
Nur Fadjrih Asyik has implemented the Algorithm, organized and executed the experiments of all sections.
Nur Laily handled for the Statistics.

Sources of Funding for Research Presented in a Scientific Article from

Sekolah Tinggi Ilmu Ekonomi Indonesia (STIESIA), Surabaya, Indonesia.