BUKTI CORRESPONDING AUTHOR

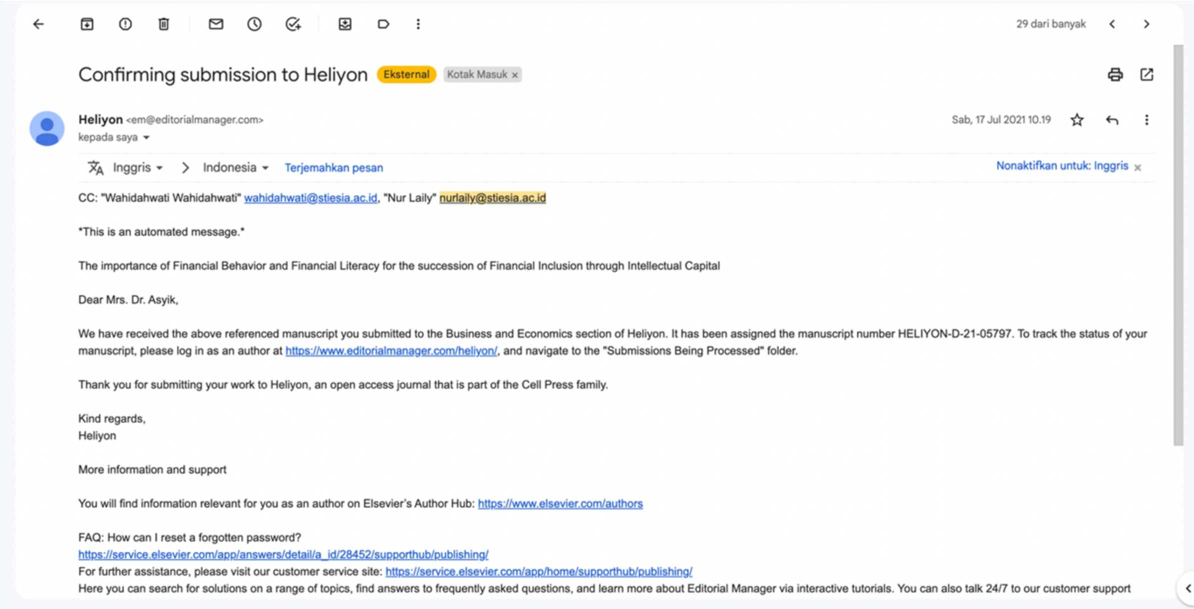
NUR FADJRIH ASYIK *Email: nurfadjrih@stiesia.ac.id*

WSEAS [5107-1594]

The Role Of Intellectual Capital In Intervening Financial Behavior and Financial Literacy on Financial Inclusion", ID: 5107-1594

1. SUBMITTED ARTIKEL (17 JULI 2021) – 10.19

Heliyon em@editorialmanager.com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Heliyon <em@editorialmanager.com> Sab, 17 Jul 2021 10.19
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CC: "Wahidahwati Wahidahwati" wahidahwati@stiesia.ac.id, "Nur Laily" nurlaily@stiesia.ac.id

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The importance of Financial Behavior and Financial Literacy for the succession of Financial Inclusion through Intellectual Capital

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2. REVISI I (12 AGUSTUS 2021) – 20.03

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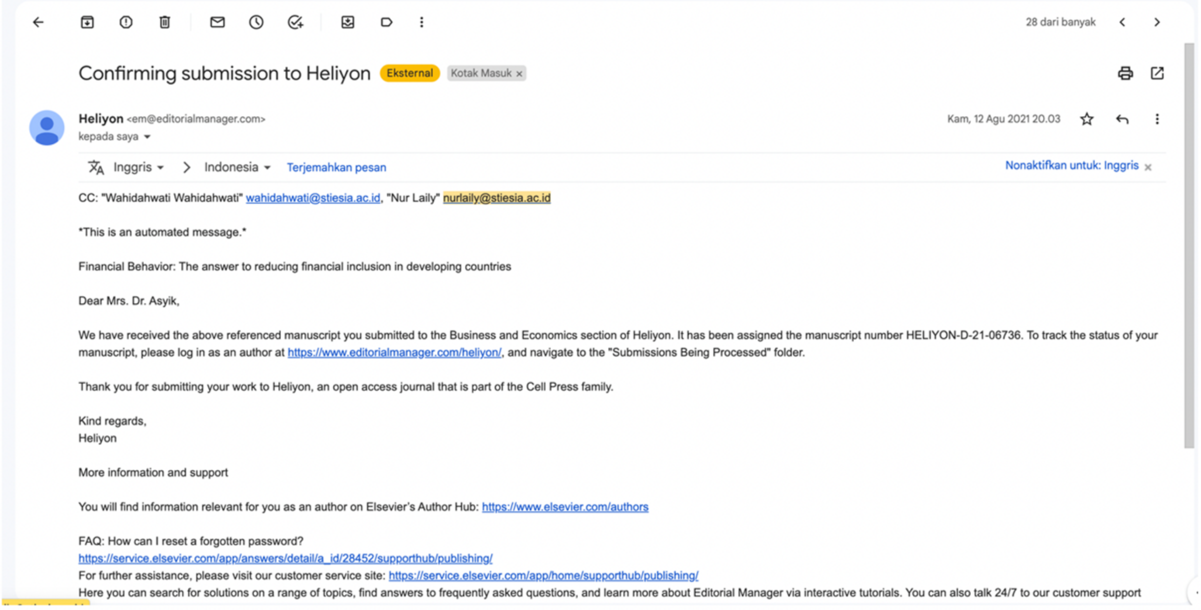
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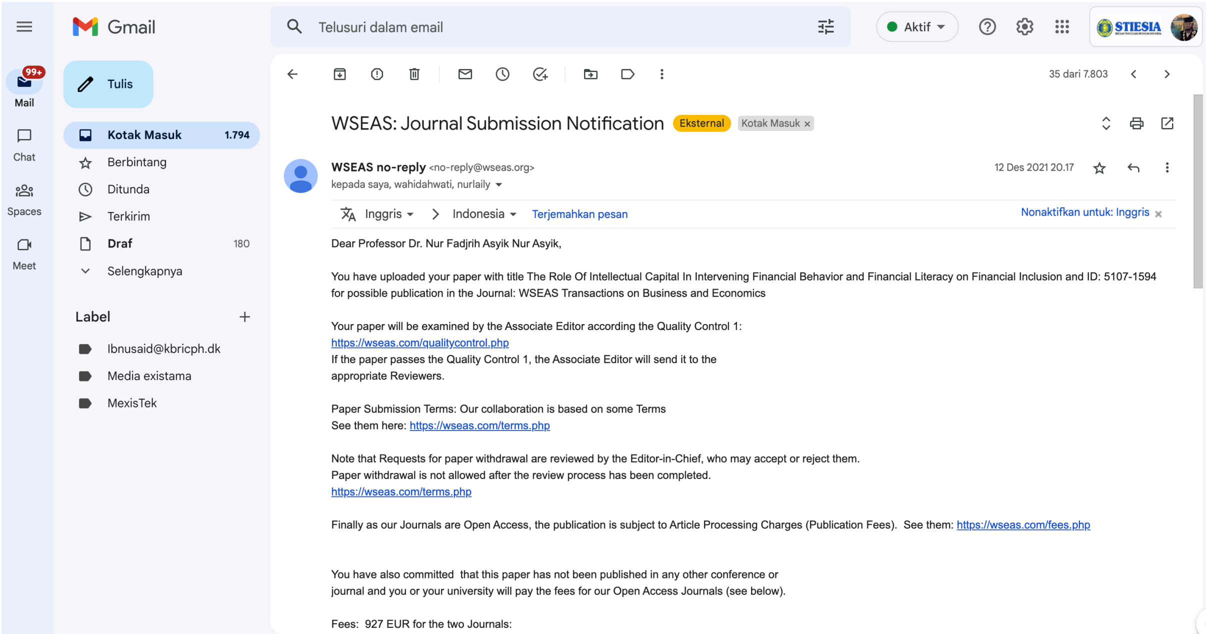
3. REVISI II TANGGAL (12 DESEMBER 2021) - 20.17

Klarifikasi Submit Paper/ WSEAS: Journal Submission Notification



Dear Professor Dr. Nur Fadjrih Asyik Nur Asyik,

You have uploaded your paper with title The Role Of Intellectual Capital In Intervening Financial Behavior and Financial Literacy on Financial Inclusion and ID: 5107-1594
for possible publication in the Journal: WSEAS Transactions on Business and Economics

Your paper will be examined by the Associate Editor according the Quality Control 1:
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You can access your paper and related information at https://wseas.org/wseas/en/authorsArea.action in the 'Authors area'. For this purpose, please use the username and password already sent to you. You may also revise the authors' information or the paper itself via this page, or check its status.

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Many Thanks for your submission

The WSEAS Team

4. NOTIFIKASI - LETTER OF ACCEPTANCE (21 DESEMBER 2021) – 18.07

Bukti Accepted

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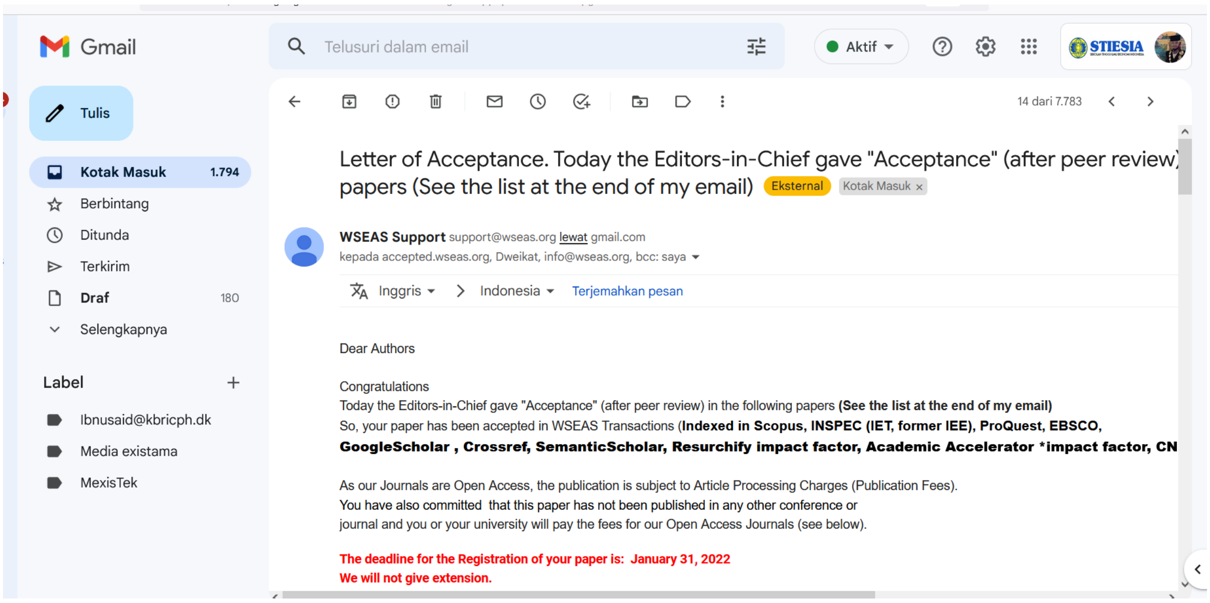

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WSEAS has launched a compulsory certification from all the authors and for all the papers in order for the Administration of WSEAS to certify and authenticate that each accepted paper by the Editors-in-Chief is backed by a minimum of 3 reviewers' positive recommendation. More Details see on the web.

Our Journals are candidates in SCIE *ISI Clarivate Analytics and have passed the first step of evaluation while 7 of them have been indexed already in Scopus. Some of them have also received Impact Factor from Resurchify

Best Regards

Dr. Maria Makrynaki
WSEAS Managing Editor
00359 88501 0581

Title	Paper Number
Circular Economy on Cattle-Oil Palm Integration System to Realize Sustainable Agriculture (Case Study: District Penawar Aji Tulang Bawang)	5107-1600
The Impact of Perceived Benefits of Corporate Social Responsibility Initiatives on Wetland Farming Communities in Indonesia	5107-1597
24 sectors DTC control with fuzzy hysteresis comparators for DFIM fed by three-level inverter	5103-1156
On modelling the structural quasiness of complex systems	5102-927
How government size optimization affect on European economies?	5107-1596
Enhancing the Performance of Reverse Power Relay for Generator Protection	5116-731
The Role Of Intellectual Capital In Intervening Financial Behavior and Financial Literacy on Financial Inclusion	5107-1594

Title	Paper Number
Factors Affecting Trust Mediated by Fashion Knowledge and Satisfaction (Study on Muslim brand store visitors)	5107-1593
Solution Non Linear Partial Differential Equations By ZMA Decomposition Method	5106-1525
Robust Phishing Detection Against Adversaries	5118-155
Congestion Management in Power Transmission Lines with Advanced Control Using Innovative Algorithm	5116-730
A Liouville type theorem in higher order related to semi-linear parabolic equations on Heisenberg group	5106-1524
Optimal Placement of PSO based Photovoltaic (PV) Distributed Generation (DG) in a Distribution System	5103-1155
A Comprehensive Survey on Security Attacks to Edge Server of IoT Devices through Reinforcement Learning	5105-1422
Modeling the Impact of Screening on the Transmission Dynamics of Human Papillomavirus with Optimal Control	5103-1153
Implementation of UPQC Alleviating Power Quality Issues in a Hybrid Grid Integrated System	5116-729
Machine learning approach for intrusion detection systems as a cyber security strategy for Small and Medium Enterprises	5107-1587
Design of Convolutional Neural Network Based onFPGA	5103-1152
Factors influence Green Product Consumption Intention in Malaysia: A Structural Approach	5107-1586

5. RESPON LANJUTAN (22 DESEMBER 2021) 2:13 PM

On Wed, Dec 22, 2021 at 2:13 PM <nurfadjrih@stiesia.ac.id> wrote:

Dear WSEAS,

Thank you for your quick response, we will pay the registration fee of our accepted paper in WSEAS Transactions *on Business and Economics, entitled "* The Role Of Intellectual Capital In Intervening Financial Behavior and Financial Literacy on Financial Inclusion"....*as soon as possible,,and will inform to you very well,,*

Dear WSEAS,

herewith we attach our payment invoice for our article ID 5107-1594 entitled, "**The Role Of Intellectual Capital In Intervening Financial Behavior and Financial Literacy on Financial Inclusion",**

And we need your help to change our revised article,

On Wed, Dec 22, 2021 at 7:15 PM WSEAS <wseas.headquarters@gmail.com> wrote:

Thank you!

We remain at your disposal,
Best Regards
Maria Georgieva

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6. PEMBERITAHUAN FEE PUBLICATION (23 DESEMBER 2022) 12:44:39

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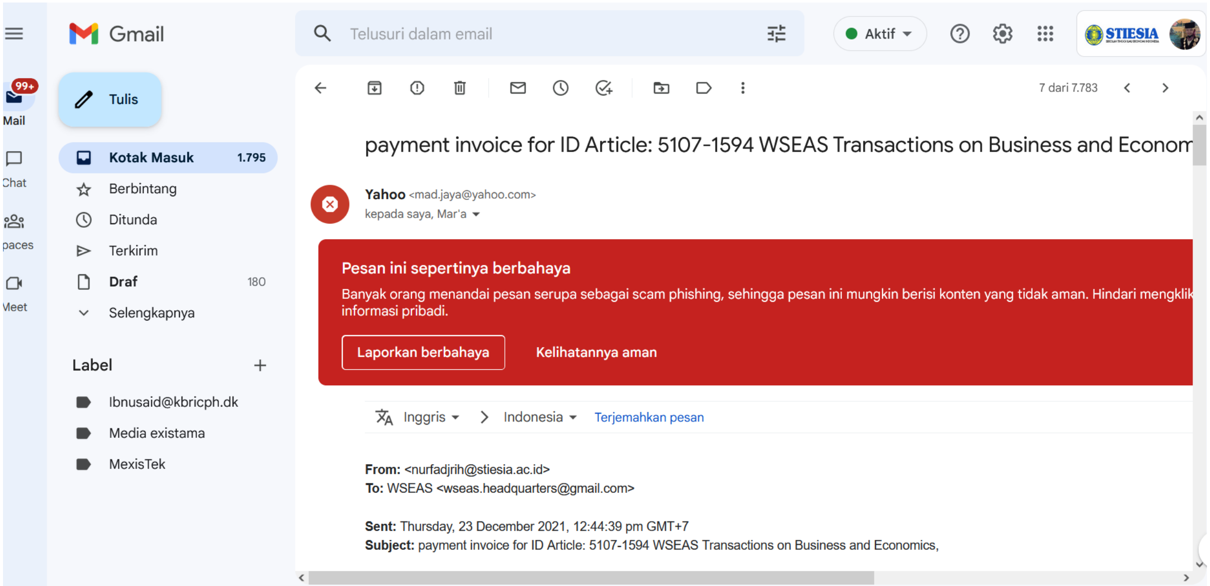

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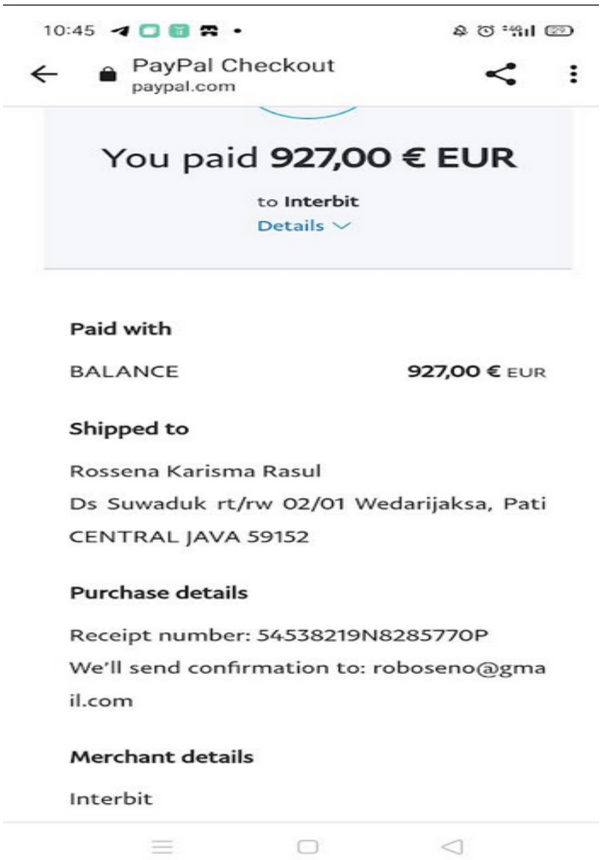
To: WSEAS <wseas.headquarters@gmail.com>

Sent: Thursday, 23 December 2021, 12:44:39 pm GMT+7

Subject: payment invoice for ID Article: 5107-1594 WSEAS Transactions on Business and Economics,



7. REVISI III: FORMAT DARI REVIEWER (14, 19, DAN 20 JANUARI 2022)

a. 14 JANUARI 2022

From: editing@wseas.org
To: "nur fadjrih" <nurfadjrih@stiesia.ac.id>
Sent: Friday, January 14, 2022 11:57:34 AM
Subject: WSEAS [5107-1594]

Dear Dr. Nur Fadjrih ASYIK,

I am contacting you with regards your article titled "The Role Of Intellectual Capital In Intervening Financial Behavior and Financial Literacy on Financial Inclusion", ID: 5107-1594 and my email is related to your revised version.

We kindly ask you to provide us your revised version in the exact WSEAS format which you will find enclosed to this email.

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WSEAS Editing Department
editing@wseas.org
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b. 19 JANUARI 2022

On Wednesday, 19 January 2022, 04:16:21 pm GMT+7, editing@wseas.org <editing@wseas.org> wrote:

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Kindly correct the margins, spacing, fonts and adjusted as per the attached template.

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From: "nur fadjrih" <nurfadjrih@stiesia.ac.id>
To: editing@wseas.org
Sent: Wednesday, January 19, 2022 11:04:38 AM
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To: editing@wseas.org
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Subject: Re: WSEAS [5107-1594]

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c. 20 JANUARI 2022

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To: editing@wseas.org
Sent: Thursday, January 20, 2022 9:42:52 AM
Subject: Re: WSEAS [5107-1594]

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Best Regards,

Melandri Elvira
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8. KONFIRMASI DARI WSEAS ATAS HASIL REVISIAN (24 JANUARI 2022) 13:24

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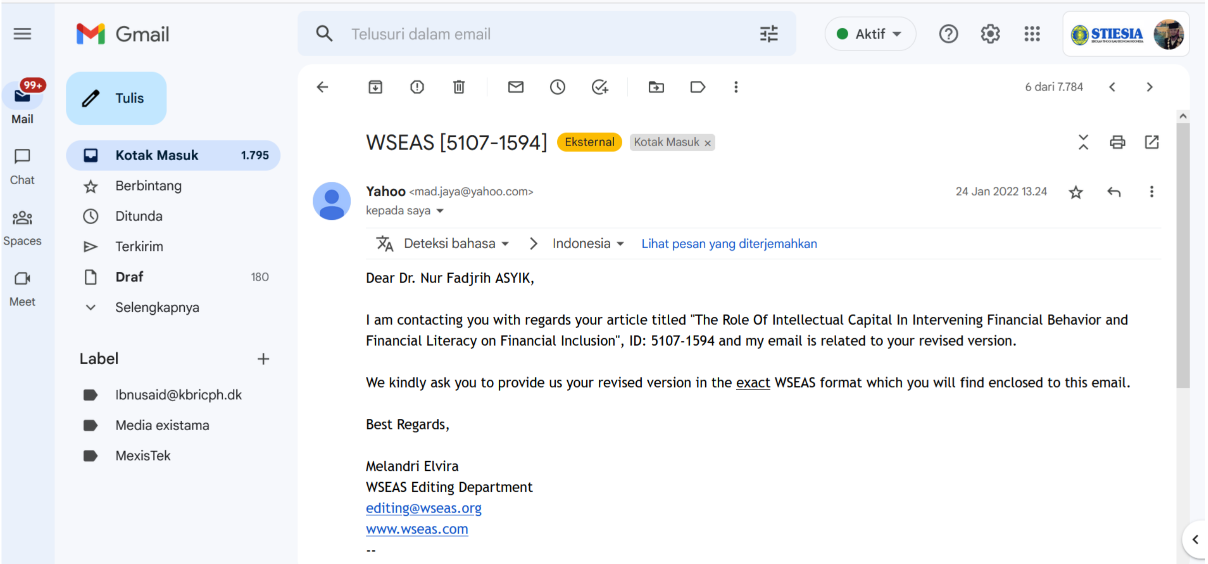

Dear Dr. Nur Fadjrih ASYIK,

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Lampiran Berkas Revisi

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, Indonesia School of Economics (STIESIA) Surabaya, Indonesia
[3]Senior Lecture, Department of Management, Indonesia School of Economics (STIESIA) Surabaya, Indonesia

*Corresponding author email: nurfadjrih@stiesia.ac.id

Abstract: -Education is very important to be able 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 to reduce financial inclusion in developing countries such as Indonesia. The number of samples in this study were 500 respondents.The analysis method uses the Partial Least Square (PLS) method through the statistical test tool of the structural equation model (SEM) based on variance. This study 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. The novelty of financial behavior emerged from the development of a science between psychology, social science and finance.

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

Received: Revised: Accepted:

1. Introduction

The financial inclusion movement is carried out to be able to suppress and reduce the number of unbanked people around the world, one of which is in Indonesia(Jaya, 2019). The main reason why people are classified as unbanked is the level of education, so this condition also affects their knowledge (Ilahiyah, Soewarno, & Jaya, 2021; Jaya, 2019; Schmied & Marr, 2016; Sethi & Sethy, 2019; Sharma, 2016). Education is very important to be able 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(Ilahiyah et al., 2021; Jaya, 2019; Pham & Doan, 2020; Ratnawati, 2020a). 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 (Grohmann, 2017; Ramesh Prasad, 2014;

Trinugroho, Sawitri, Toro, Khoiriyah, & Santoso, 2017). 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 formulated 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. In general, the approach through a national strategy includes 3 (three) aspects, namely the provision of appropriate service facilities, the provision of suitable products, responsible finance through financial education and consumer protection. The implementation of financial inclusion is generally carried out in stages, starting with clear targets such as through recipients of government social program assistance or migrant workers, before gradually being used by the general public.(Hidajat, 2015).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. Furthermore, the 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. On the other hand, the lower the GDP per capita in developing countries, the lower the percentage of account ownership(Huang & Chen, 2015).

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. In terms of lending, in developing countries it is only in the range 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 have access to the financial sector. Furthermore, only 2 million people or less 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 of the factors causing the low level of financial knowledge is the geographical condition of Indonesia, which in general is around 60% in rural areas. This condition shows that eCurrently, the government still needs support from other parties in order to be able to reduce the level of financial inclusion(Jaya, 2019). Herdjiono & Damanik (2016) stated that 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.(Arifin, 2017).

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 (Sethi & Sety, 2019). Behavioral finance is the result of putting expectations and values into action, with the expectation that behavioral finance will mediate the relationship of expectations to financial well-being(Burcher, Serido, Danes, Rudi, & Shim, 2021). Financial behavior emerged in the 1990s in line with the demands of the development of the business and academic world which began to address behavioral aspects or elements in the process of making financial and investment decisions. Behavioral finance describes how a person treats, manages, and uses the financial resources he has. Research conducted by Mien, Nguyen Thi Ngoc (2015) states that financial literacy and financial knowledge affect financial behavior.

Financial knowledge, skills, and beliefs possessed by an individual affect his financial attitudes and behavior(Mien, Nguyen Thi Ngoc, 2015). An increase in one's knowledge can have an impact on active participation in financial-related activities, as well as more positive financial behavior in an individual(Ilahiyah et al., 2021). 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 have an impact on people's welfare(Pham & Doan, 2020; Ratnawati, 2020b; Sahela, Susanti, & Adjie, 2021). 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 and Hypothesis Development

This sub-chapter will describe the grand theory that underlies this research as well as some literature that is used as a reference for the preparation of this research hypothesis.

Early theories that are considered capable of explaining a person's behavior, focused on two possibilities (1) behavior is acquired from heredity in the form of biological instincts-then known as "nature" explanations and (2) behavior is not inherited but obtained from experience during life. they are known as "nurture" descriptions. The various alternatives that developed from the two approaches then gave rise to various perspectives in social psychology in the form of a set of basic assumptions about the most important things that can be considered as something that can be used to understand social behavior (Fishbein, M, & Ajzen, 1975). This study considers several grand theories that are appropriate to explain 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 possible facts that can determine individual behavior. Living space includes everything that must be known to 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(Statman, 2008). 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 (Fishbein, M, & Ajzen, 1975). 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 contained in this theory is the focus of attention (salience), which is considering something that is considered 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 beliefs 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 is one of the functions of two basic determinants, namely, 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. 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. 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.(Jackling, Cooper, Leung, & Dellaportas, 2007). Simply put, this theory explains that someone will do an action, when it is considered positive and other people will also do it.

Behavioral finance is a new paradigm of a financial theory, this theory seeks to make it easier to understand and predict systematic financial markets (Bebbington, Gray, Thomson, & Walters, 1994). 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 economicus. Homo economicus is a term which states that humans are economic creatures who aim to fulfill all their needs, including their desires(Bostan, 2011; Latan, Ringle, & Jabbour, 2018). Homo economicus theory only thinks rationally in all its actions, but it is not always in accordance with the reality in human life, especially in terms of prioritizing needs (Bostan, 2011).

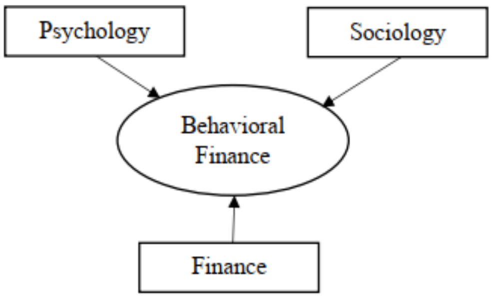
2.3. Financial Behavior and Financial Inclusion

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 is the result of putting expectations and values into action, with the expectation that behavioral finance will mediate the relationship of expectations to financial well-being(Burcher et al., 2021).

according to (Ricciardi, Victor & Simon, 2008), 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 on 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.

Figure 1. Aspects in Financial Behavior



Sources: Ricciardi, Victor & Simon (2008).

Research conducted (Navickas, Gudaitis, & Krajnakova, 2014; Schmied & Marr, 2016) 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(Jaya, 2019). 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(Pham & Doan, 2020). With proper financial management supported by good financial literacy, the community's standard of living is expected to improve 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 in the form of 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(Hidajat, 2015)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 are relevant 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. (Ilahiyah et al., 2021). This person's ability is seen when he is doing activities. The activities or 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.(Sahela et al., 2021). For the ability to understand a certain concept, an individual needs a process such as learning or training over a certain period of time. 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 begin to understand financial services until finally they are separated from the unbanked group.(Ilahiyah et al., 2021). Of course, this result can have an impact 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(Ratnawati, 2020b). IFinancial 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 as well as in border areas.(Sanjaya & Nursechafia, 2016). Financial inclusion is an important element in supporting accelerated 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(Schmied & Marr, 2016).

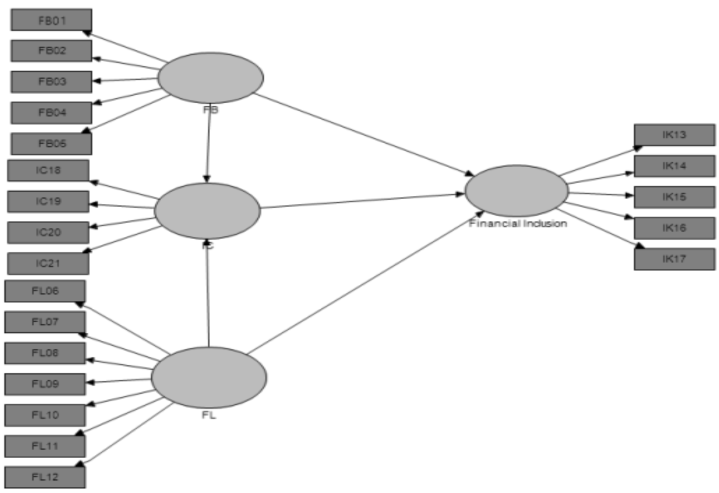
From the various theoretical explanations and opinions above, this research formulates the following hypotheses.

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 to reduce financial inclusion through intellectual capital.

Figure 2. Research framework



3. Methodology

The research was conducted using quantitative methods. The data collection technique uses a questionnaire and literature study(Likert, 1932). 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 as 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 more than 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 as follows: Strongly agree (5); Agree (4); Neutral (3); Disagree (2); Strongly Disagree (1)(Likert, 1932).

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 (Kaiser & Menkhoff, 2017).
3.	**Financial inclusion (Y)**	1) Financial Knowledge 2) Financial Behavior 3) Financial Attitude 4) Future planning (Jaya, 2019).
4.	***Intellectual Capital*** **(Z)**	1) Curiosity and motivation 2) Experience 3) Innovation and Creativity 4) Competency ability (Ilahiyah et al., 2021).

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 consisted of three stages, namely measuring the outer model, evaluating the structural model (inner model), and testing the research hypothesis.

4. Results and Discussions

The results of the data analysis that have been carried out have found several things, including the following.

4.1. Characteristics of Respondents

The descriptive results of the characteristics of the respondents in this study used the number of male respondents as many as 175 people, less than the number of female respondents as many as 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).

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		reliable
	FB02	0.966	valid		
	FB03	0.966	valid	0.816	
	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 3. shows that 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

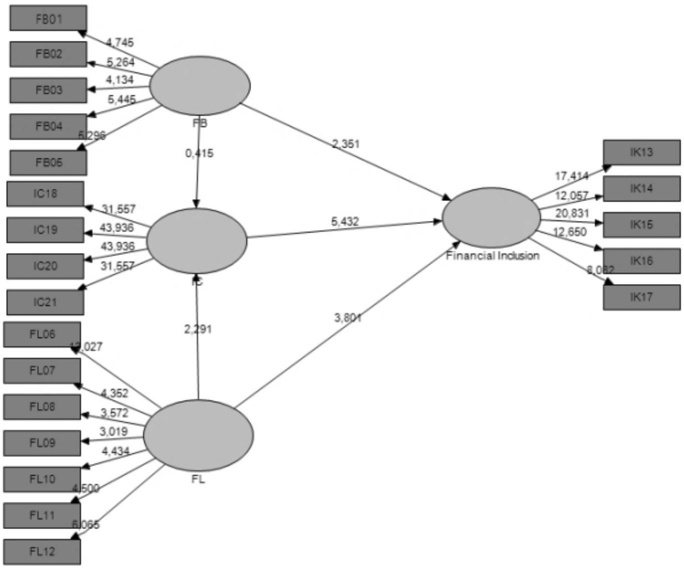
The stages before carrying out the SEM test, will be testing the outer model and inner model. This outer model test uses Composite reliability data which measures a construct. Dimensions are considered reliable if they have a composite reliability value (ρc) above 0.7, as follows.

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 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%.

Figure 2. Hypothesis 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 (α= 5%) obtained 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

a. *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 indicates 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 in general. 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 (Arifin, 2017; Mien, Nguyen Thi Ngoc, 2015). This result also indicates that the first hypothesis is not rejected.

b. *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 indicates 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 in general(Widyatini, 2019). These results also indicate that the second hypothesis is not rejected.

c. *Intellectual capital is able to 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 indicates that there is a significant positive relationship between financial behavior and financial literacy with financial inclusion. These results also indicate 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 in general(Sethi & Sety, 2019). This result also indicates that the third hypothesis is not rejected.

The findings of this study are certainly different from several previous studies (Arifin, 2017; Grohmann, 2017; Herdjiono & Damanik, 2016; Divine et al., 2021; Jaya, 2019; Kaiser & Menkhoff, 2017; Kandari, Bahuguna, & Salgotra, 2021; Lusardi & Tufano, 2015; Mien, Nguyen Thi Ngoc, 2015; Nigam, Srivastava, & Banwet, 2016; Pham & Doan, 2020; Ramesh Prasad, 2014; Sahela et al., 2021). 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 ups and downs 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.(Lusardi & Tufano, 2015; Nigam et al., 2016). Of course this findingcontributing 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 that 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. KThis 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 very 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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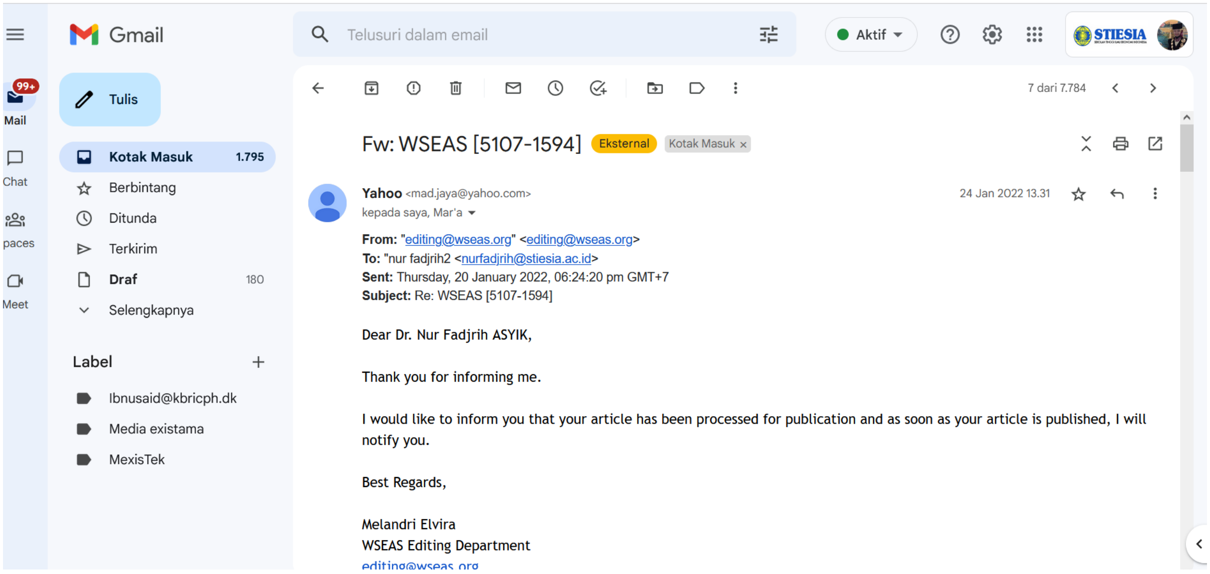
9. KONFIRMASI DARI WSEAS – ARTIKEL DAPAT DIPROSES UNTUK PUBLIKASI (24 JANUARI 2022) 13:31

Klarifikasi Fw: WSEAS [5107-1594]



From: "editing@wseas.org" <editing@wseas.org>

To: "nur fadjrih2 <nurfadjrih@stiesia.ac.id>

Sent: 24 January 2022, 13:31

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a. 2 FEBRUARI 2022

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Tell us if you agree to be published now or not
and if the authors made the changes that you have asked.

We remind you that you were a reviewer of this article. See your comments below.

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Paper ID: **5107-1594**

Title: **The Role Of Intellectual Capital In Intervening Financial Behavior and Financial Literacy on Financial Inclusion**

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Does the paper contain direction for future research and recommendations?: **No.**

Is the English language appropriate?: **NO**

Are the Sessions and their paragraphs well and clearly written? Which Sessions and which Paragraphs of this paper need extensions and clarifications? Please, specify: **There are many grammatical errors. They should be corrected. Under table 2, they need to explain the abbreviated notations. Discussion: It says "The findings of this study are certainly different from several previous studies". They need to explain the differences**

Which mathematical equations in the article need clarifications? Which Theorems need clarifications and extensions? Are the mathematical theorems accompanied by the proper numerical examples? Please, specify.: **There is no mathematical equation need clarification. Results were presented in tables and figures.**

For Experimental Work. Do you believe that these experiments were really held ? With what Equipment? Where? Are they accompanied with Photos, Tables and other Documentation?: **The survey technique was used. The results are presented with tables and figures.**

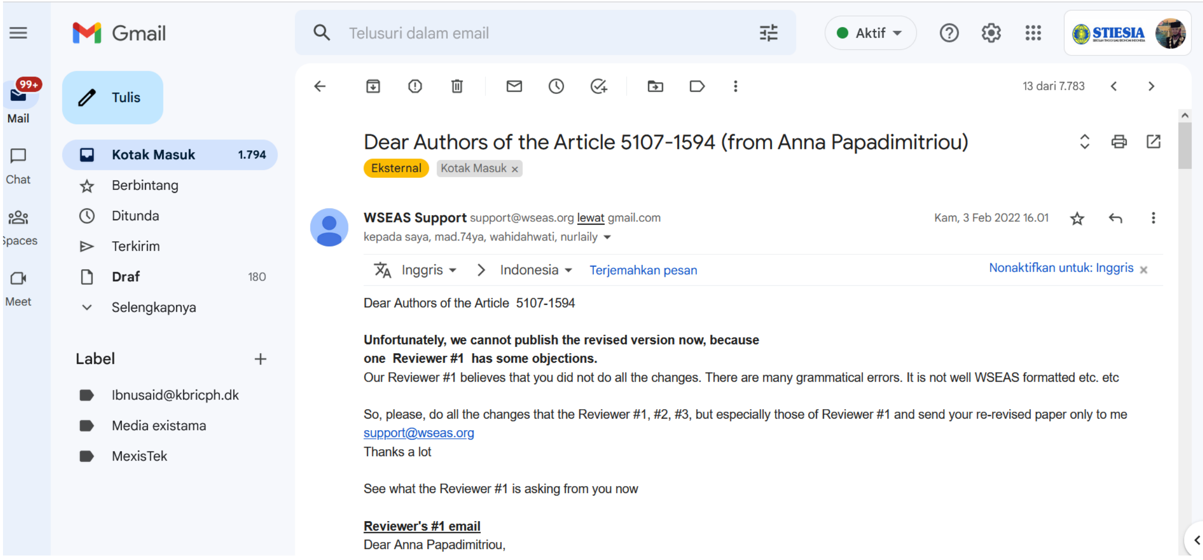
For Articles in Biomedical, Financial and Social Sciences we demand strong and well-documented Statistics. Have the authors carried out and included the right Statistical tests like: t-text, Chi Square etc? Please, check.: **Partial Least Square Method and structural equation model were used. They are right techniques.**

What Simulation / Statistics / Experiments / Experimental Analysis in the paper need extension and more clarifications? In which paragraphs?: **None**

Can you check if the Figures and Tables of the article are dully illustrated and presented inside the text? Are they connected with the main text of the article?: **Yes, they are presented the text. They are connected with the main article.**

Do the authors use abbreviations without the necessary explanations? If the authors use the abbreviation GOT, what GOT stands for?: **Yes, except GDP which was defined after using the abbreviated form.**

b. 3 FEBRUARI 2022



On Thu, Feb 3, 2022 at 6:42 PM WSEAS Support <support@wseas.org> wrote:
Dear Authors of the Article 5107-1594

Unfortunately, we cannot publish the revised version now, because one Reviewer #1 has some objections.
Our Reviewer #1 believes that you did not do all the changes. There are many grammatical errors. It is not well WSEAS formatted etc. etc

So, please, do all the changes that the Reviewer #1, #2, #3, but especially those of Reviewer #1 and send your re-revised paper only to me support@wseas.org
Thanks a lot

See what the Reviewer #1 is asking from you now

Reviewer's #1 email
Dear Anna Papadimitriou,

I hope this email finds you well.
I reviewed the paper, 5107-1594, the second time. The authors did not do all the changes. There are many grammatical errors. It is not well Wseas formatted.
I only read 7 pages of the paper, I was very upset about seeing unchanged mistakes. If they do all changes and put the paper in Wseas format, it can be published.

Please find my comments below:

Abstract:
"The number of samples in this study were 500 respondents.The analysis method uses the Partial Least Square (PLS) method through the statistical test tool of the structural equation model (SEM) based on variance." Should be rewritten.
Main body, the paragraphs have to start without intend.

2nd page, left column:
"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%."
Data are plural, it should be …in 2016 show that…..
2nd page, left column:

"This condition shows that eCurrently, the government still needs support from other parties in order to be able to reduce the level of financial inclusion[1]. Herdjiono & Damanik (2016) stated that financial knowledge"

What is eCurrently?
A reference should be numbered, it is not numbered.
2nd page, left column:

"existing financial institutions.[14]." Remove the full stop before the reference number.
2nd page, left column:
"Behavioral finance describes how a person treats, manages, and uses the financial resources he has._Research conducted by Mien, Nguyen Thi Ngoc (2015) states that financial literacy and financial knowledge affect financial behavior."
"he has._" is unnecessary

2nd pager right column:

"possibilities (1) behavior is acquired from heredity in the form of biological instincts-then known as "nature" explanations and (2) behavior is not inherited but obtained from experience during life. they are known as "nurture" descriptions."
What does it mean ". they" in the above sentence?

3rd page left column:
The paragraph ends with "namely:". You should write them, you cannot continue the subsection without completing the sentence..

3rd page left -right columns:
"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. **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.** 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.[21]."

The same sentence repeated three times. **I wrote this in my first review, they did not change.**

What does "Simply put, this theory explains that someone will do an action, when it is considered positive and other people will also do it." mean?
A reference cannot be referred in the text "According to [25], the keys to having a basic understanding of behavioral finance include:"

Page 4:

“Fig. 1: Aspects in Financial Behavior”

It is not Wseas format, It should be Fig. 1 Aspects in……

There should be space between Figure 1 and the paragraph

“Research conducted [4], [26] states that individual financial planning responsibilities need to…” Which research was conducted? And a reference cannot be referred to as [26] states that….. .

The full stop must be removed between sentence and the reference number.
“IFinancial inclusion will provide benefits to the community that will enable them to improve their….”
What does “IFinancial” mean?
What does “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.” mean?

Page 5:

“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 as follows: Strongly agree (5); Agree (4); Neutral (3); Disagree (2); Strongly Disagree (1)[28]” should be rewritten.
Table 1 or other tables and figures should be in picture format, otherwise it cannot show meaningful results as in table 1. For example, the numbers of indicators cannot be seen.

Numbering references in the text: Please put space between the sentence and reference number.

“The results of the data analysis that have been carried out have found several things, including the following.” Rewrite this.

Page 6: “The descriptive results of the characteristics of the respondents in this study used the number of male respondents as many as 175 people, less than the number of female respondents as many as 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.” Rewrite with simple and clear sentences.

Table 2: it should be in picture format, otherwise the words or the numbers cannot be read correctly.

Page 7:

“Based on Table 3 shows that all question items have a correlation value (r) greater than 0.3, while the alpha coefficient is greater than 0.6.” remove “shows that”
…..

If you have further questions, please let me know.
Best regards,
****

c. 4 FEBRUARI 2022

Dear WSEAS (Professor Anna),,

Thank you for your help and your response. First of all, I would like to apologize for not reading carefully the first notification given. I have reviewed and corrected total improvement from abstract to conclusions as you directed. I have also attached the final manuscript which has been completely revised. We hope this is appropriate and worthy of publication as soon as possible.

Berkas Revisi 4 February 2022

The Role Of Intellectual Capital In Intervening Financial Behavior and Financial Literacy on Financial Inclusion

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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: May 31, 2019. Revised: May 4, 2020. Accepted: May 22, 2020. Published: May 29, 2020
(WSEAS will fill these dates in case of final acceptance, following strictly our data base and possible email communication).

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.

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. 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 [19]. Simply put, this theory explains that someone will do an action when it is positive and other people will also do it.

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].

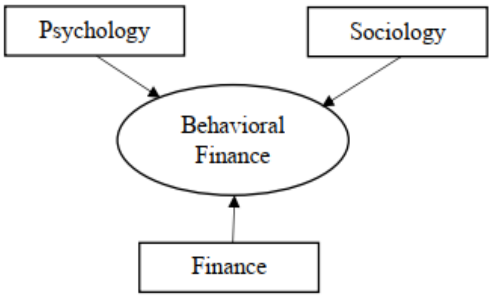
2.3. Financial Behavior and Financial Inclusion

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:

d) Psychology is the scientific study of behavior and mental processes that are influenced by one's physical, mental and external environment.
e) Sociology is a systematic study of behavior and social groups that focuses on the influence of social relations between people's attitudes and behavior.
f) Finance is concerned with determining value and making decisions that function to allocate capital, including acquisitions, investments, and financial management.

Figure 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.

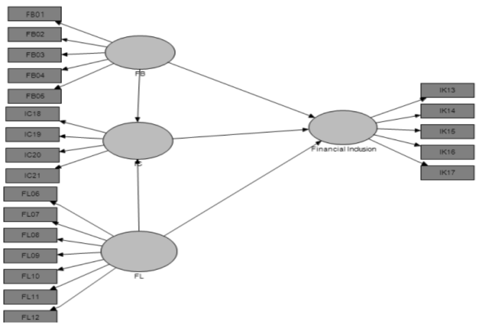
Another opinion states that financial inclusion needs to be encouraged so that economic growth can grow [15]. Financial inclusion will provide benefits to the community that will enable them to improve their standard of living, especially for those who live in remote areas and in border areas [25]. Financial 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.

H1: Financial behavior is important to reduce financial inclusion

H2: Financial literacy is important to reduce financial inclusion

H3: Financial behavior and financial literacy are important in reducing financial inclusion through intellectual capital.

Figure 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:

6. Indonesian citizens who have migrated to urban Surabaya and have savings or loans at banks.
7. Indonesian citizens who have migrated to urban Surabaya with a minimum education of Senior High School and income.
8. Indonesian citizens who have migrated to urban Surabaya are at least 35 years old and married.
9. Indonesian citizens who have migrated to the city of Surabaya who have jobs.
10. 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)**	6) Create and record expense and expenditure budgets, 7) Provide funds for unexpected expenses, 8) The habit of saving once every month, 9) Perform price comparisons before making a purchase 10) Pay bills on time.
2.	***Financial Literacy*** **(X2)**	8) Economic transactions and the like

		9) Economic resources 10) Shopping concept 11) Save concept 12) Tax 13) Financial crime 14) Beliefs regarding financial institutions, their products and services [27].
3.	**Financial inclusion (Y)**	5) Financial Knowledge 6) Financial Behavior 7) Financial Attitude 8) Future planning [1].
4.	***Intellectual Capital* (Z)**	5) Curiosity and motivation 6) Experience 7) Innovation and Creativity 8) 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).

Figure 3 Gender respondents

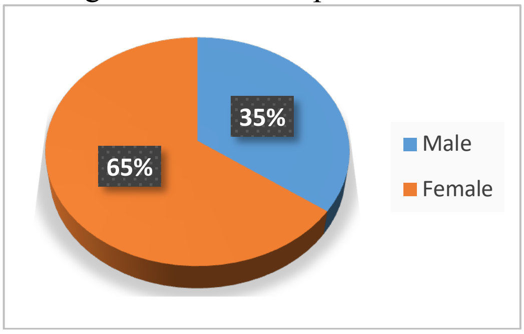
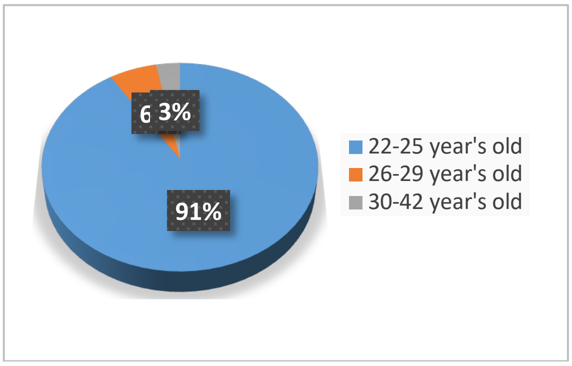
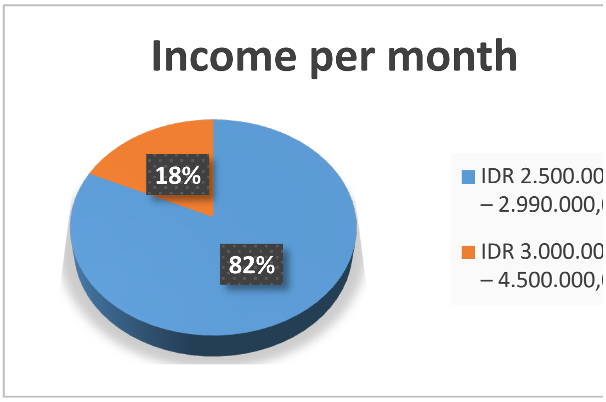


Figure 4 Respondent's age





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

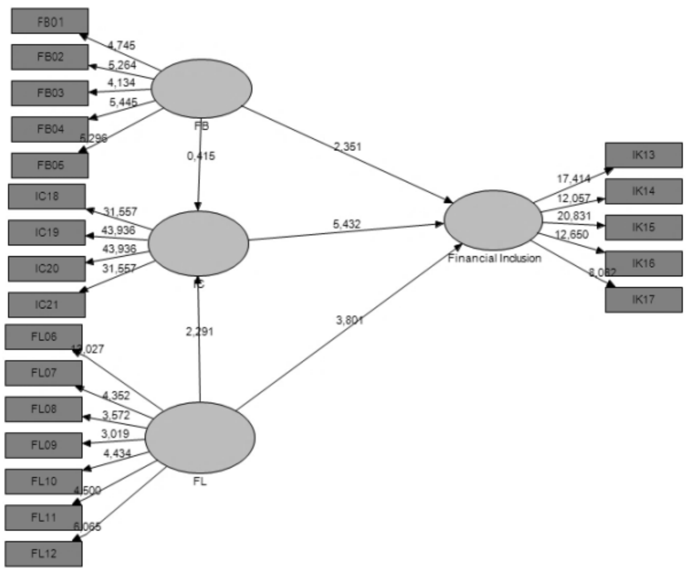
The stages before carrying out the SEM test will test the outer model and inner model. This outer model test uses composite reliability data, which measures a construct. Dimensions are reliable if they have a composite reliability value above 0.7, as follows.

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%.

Figure 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 (α= 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.

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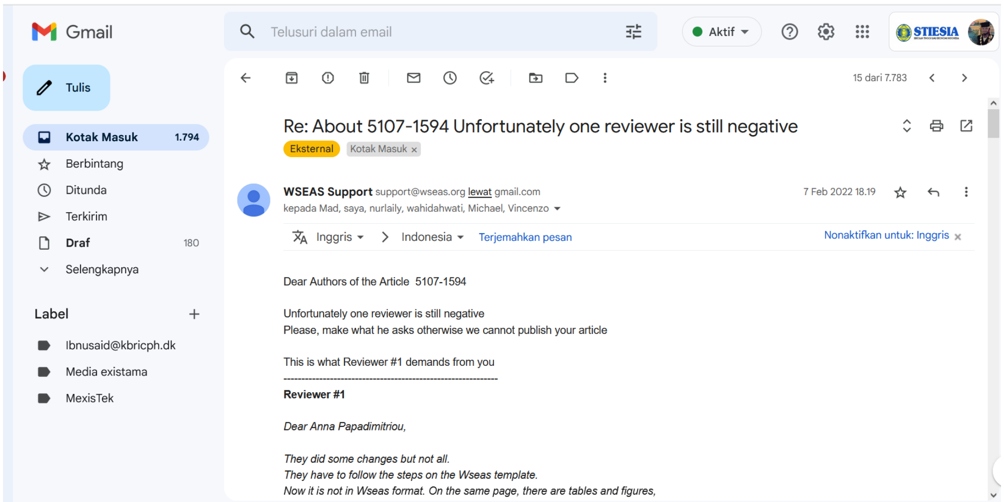
11. REVISI V: KLARIFIKASI REVISI REVIEWER #1 DAN REVISI ARTIKEL YANG DILAKUKAN (7 DAN 8 FEBRUARI 2022) 18.19

a. 7 FEBRUARI 2022

Re: About 5107-1594 Unfortunately one reviewer is still negative Sen, 7 Feb 2022 18.19



On Mon, Feb 7, 2022 at 3:35 PM

Dear WSEAS,,

I apologize for forgetting to revise the figures and tables in this article, now we have corrected the article again, and we hope this is the last one, because it is the editor's obligation to edit the format or journal template, because we have already paid the publication fee, We hope your wisdom for us, because we really hope this article is published as soon as possible,

But if the article is still difficult to publish, it looks like we are asking for a refund of the APC fee we previously paid for EUR 927.

On Mon, Feb 7, 2022 at 6:19 PM WSEAS Support <support@wseas.org> wrote:

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Unfortunately one reviewer is still negative
Please, make what he asks otherwise we cannot publish your article

This is what Reviewer #1 demands from you

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Dear Anna Papadimitriou,

They did some changes but not all.
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Now it is not in Wseas format. On the same page, there are tables and figures, the text between any of two continues in two columns, then after the figure or table they start the new two columns.They did not change the grammatical mistakes and they changed the font of references from Times New Roman to Arial. I think they did not follow the Wseas template and did not read our comments. They have to revise it.

Best regards,
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Please, send me by email the re- re - revised version

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Anna Papadimitriou

Dear Authors of the Article 5107-1594
Unfortunately one reviewer is still negative
Please, make what he asks otherwise we cannot publish your article
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Reviewer #1

Dear Anna Papadimitriou,
They did some changes but not all.
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Best regards,
Reviewer #1

Please, send me by email the re- re - revised version
Thanks

Anna Papadimitriou

7 Feb 2022 20.35

Berkas Paper yang direvisi (I)

The Role Of Intellectual Capital In Intervening Financial Behavior and Financial Literacy on Financial Inclusion

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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.
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(WSEAS will fill these dates in case of final acceptance, following strictly our data base and possible email communication).

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.

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. 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 [19]. Simply put, this theory explains that someone will do an action when it is positive and other people will also do it.

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].

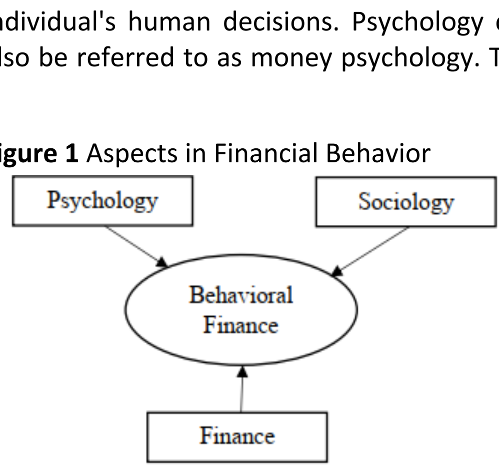
2.3. Financial Behavior and Financial Inclusion

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:

g) Psychology is the scientific study of behavior and mental processes that are influenced by one's physical, mental and external environment.
h) Sociology is a systematic study of behavior and social groups that focuses on the influence of social relations between people's attitudes and behavior.
i) Finance is concerned with determining value and making decisions that function to allocate capital, including acquisitions, investments, and financial management.

Figure 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

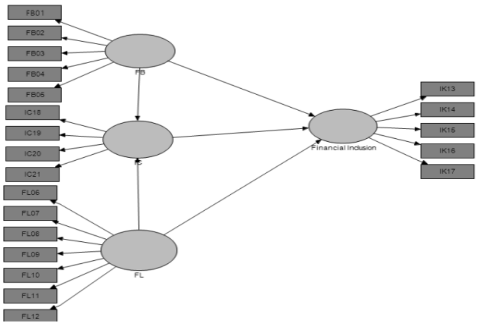
Intellectuals are abilities possessed by individuals from birth, so that intellectuals will develop to adapt to their environment and move by themselves to all changes in situations and conditions [3]. This person's ability is seen when he is doing activities. The activities that he does can show that 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.

Figure 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:

11. Indonesian citizens who have migrated to urban Surabaya and have savings or loans at banks.
12. Indonesian citizens who have migrated to urban Surabaya with a minimum education of Senior High School and income.
13. Indonesian citizens who have migrated to urban Surabaya are at least 35 years old and married.
14. Indonesian citizens who have migrated to the city of Surabaya who have jobs.
15. 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)**	11) Create and record expense and expenditure budgets, 12) Provide funds for unexpected expenses, 13) The habit of saving once every month, 14) Perform price comparisons before making a purchase 15) Pay bills on time.
2.	***Financial Literacy*** **(X2)**	15) Economic transactions and the like 16) Economic resources 17) Shopping concept 18) Save concept 19) Tax 20) Financial crime 21) Beliefs regarding financial institutions, their products and services [27].
3.	**Financial inclusion (Y)**	9) Financial Knowledge 10) Financial Behavior 11) Financial Attitude 12) Future planning [1].
4.	***Intellectual Capital*** **(Z)**	9) Curiosity and motivation 10) Experience 11) Innovation and Creativity 12) 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).

Figure 3 Gender respondents

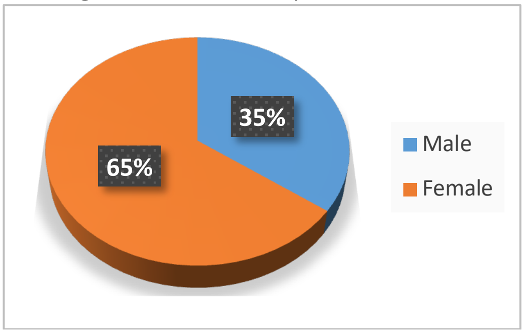
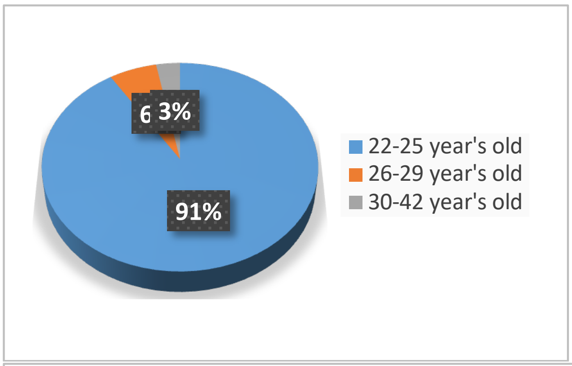
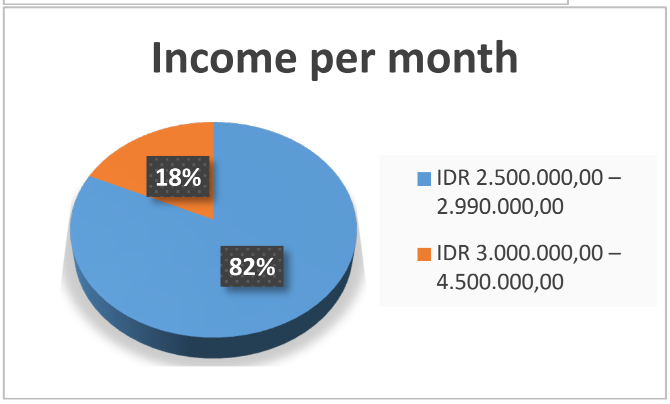


Figure 4 Respondent's age





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		
	IK13	0.762	valid	0.792	reliable

Financial inclusion (Y)	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

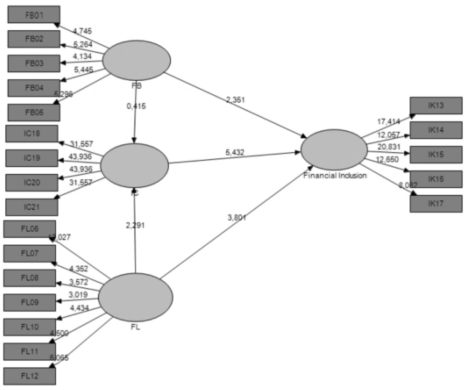
The stages before carrying out the SEM test will test the outer model and inner model. This outer model test uses composite reliability data, which measures a construct. Dimensions are reliable if they have a composite reliability value above 0.7, as follows.

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%.

Figure 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 (α= 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.

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The Role Of Intellectual Capital In Intervening Financial Behavior and Financial Literacy on Financial Inclusion

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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.
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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.

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. 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 [19]. Simply put, this theory explains that someone will do an action when it is positive and other people will also do it.

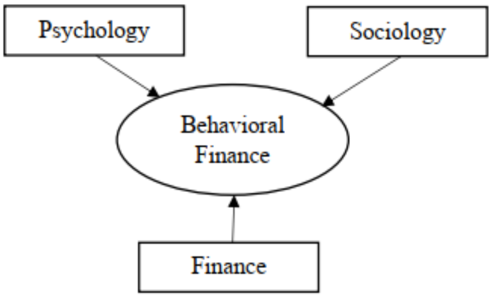
Behavioral finance is a new paradigm of a financial theory. This theory seeks to make it easier to understand and predict systematic financial markets [20]. This theory is implicated when someone makes psychological decisions. Simply put, behavioral finance focuses on the concept of human behavior from 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:

j) Psychology is the scientific study of behavior and mental processes that are influenced by one's physical, mental and external environment.
k) Sociology is a systematic study of behavior and social groups that focuses on the influence of social relations between people's attitudes and behavior.
l) Finance is concerned with determining value and making decisions that function to allocate capital, including acquisitions, investments, and financial management.

Figure 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.

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:

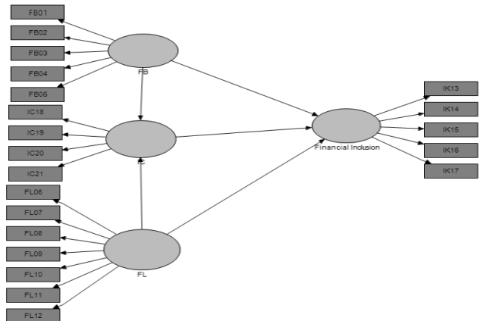
16. Indonesian citizens who have migrated to urban Surabaya and have savings or loans at banks.
17. Indonesian citizens who have migrated to urban Surabaya with a minimum education of Senior High School and income.
18. Indonesian citizens who have migrated to urban Surabaya are at least 35 years old and married.
19. Indonesian citizens who have migrated to the city of Surabaya who have jobs.
20. 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)**	16) Create and record expense and expenditure budgets, 17) Provide funds for unexpected expenses, 18) The habit of saving once every month, 19) Perform price comparisons before making a purchase 20) Pay bills on time.
2.	***Financial Literacy* (X2)**	22) Economic transactions and the like 23) Economic resources 24) Shopping concept 25) Save concept 26) Tax 27) Financial crime 28) Beliefs regarding financial institutions, their products and services [27].
3.	**Financial inclusion (Y)**	13) Financial Knowledge 14) Financial Behavior 15) Financial Attitude 16) Future planning [1].
4.	***Intellectual Capital* (Z)**	13) Curiosity and motivation 14) Experience 15) Innovation and Creativity 16) Competency ability [3].

Figure 2 *Research framework*



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).

Figure 3 Gender respondents

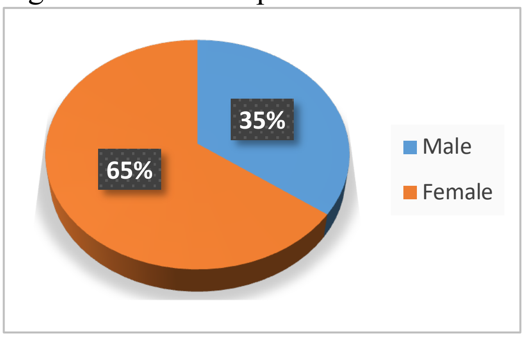
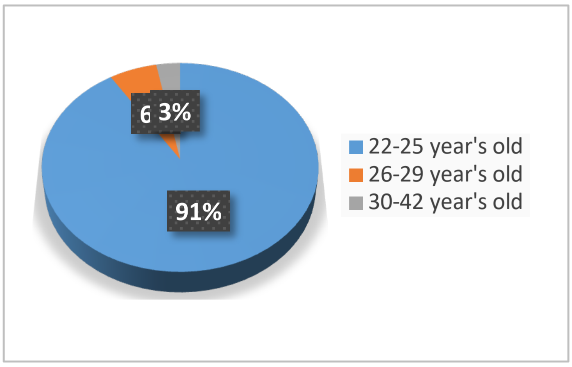
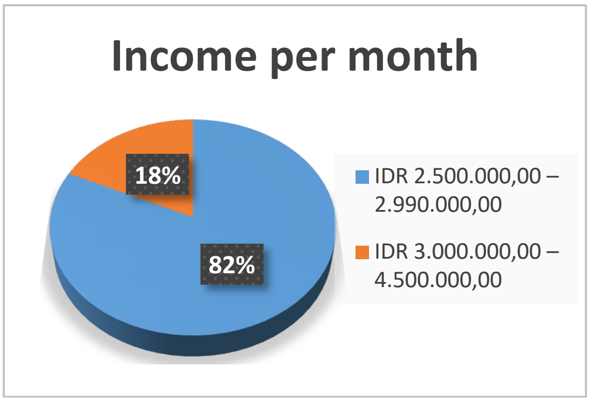


Figure 4 Respondent's age





4.2. Validity and Reliability Test

Table 2 Research Instrument Test Results

Variable	Items	Correlation (r) r	Status	Coefficient 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

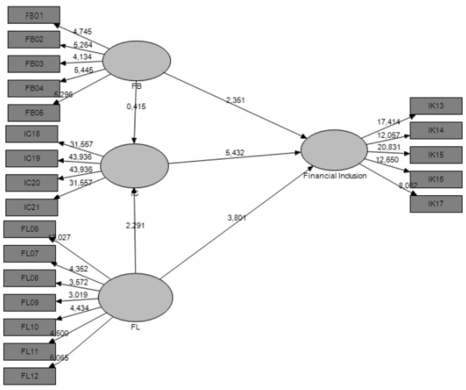
The stages before carrying out the SEM test will test the outer model and inner model. This outer model test uses composite reliability data, which measures a construct. Dimensions are reliable if they have a composite reliability value above 0.7, as follows.

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%.

Figure 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 (α= 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.

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The Role Of Intellectual Capital In Intervening Financial Behavior and Financial Literacy on Financial Inclusion

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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.

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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.

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. 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 [19]. Simply put, this theory explains that someone will do an action when it is positive and other people will also do it.

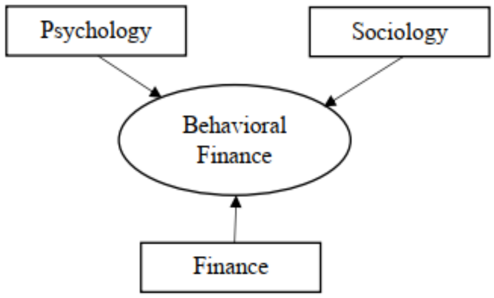
Behavioral finance is a new paradigm of a financial theory. This theory seeks to make it easier to understand and predict systematic financial markets [20]. This theory is implicated when someone makes psychological decisions. Simply put, behavioral finance focuses on the concept of human behavior from 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:

m) Psychology is the scientific study of behavior and mental processes that are influenced by one's physical, mental and external environment.
n) Sociology is a systematic study of behavior and social groups that focuses on the influence of social relations between people's attitudes and behavior.
o) Finance is concerned with determining value and making decisions that function to allocate capital, including acquisitions, investments, and financial management.

Figure 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

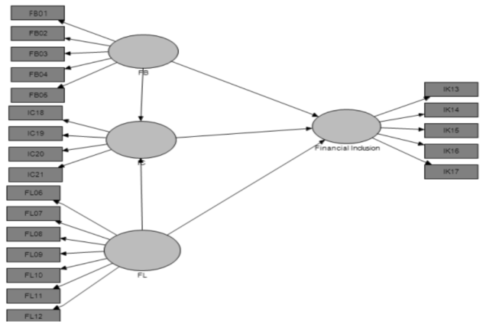
Intellectuals are abilities possessed by individuals from birth, so that intellectuals will develop to adapt to their environment and move by themselves to all changes in situations and conditions [3]. This person's ability is seen when he is doing activities. The activities that he does can show that 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.

Figure 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:

13. Indonesian citizens who have migrated to urban Surabaya and have savings or loans at banks.
14. Indonesian citizens who have migrated to urban Surabaya with a minimum education of Senior High School and income.
15. Indonesian citizens who have migrated to urban Surabaya are at least 35 years old and married.
16. Indonesian citizens who have migrated to the city of Surabaya who have jobs.
17. 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)**	21) Create and record expense and expenditure budgets, 22) Provide funds for unexpected expenses, 23) The habit of saving once every month, 24) Perform price comparisons before making a purchase 25) Pay bills on time.
2.	***Financial Literacy*** **(X2)**	29) Economic transactions and the like 30) Economic resources 31) Shopping concept 32) Save concept 33) Tax 34) Financial crime 35) Beliefs regarding financial institutions, their products and services [27].
3.	**Financial inclusion (Y)**	17) Financial Knowledge 18) Financial Behavior 19) Financial Attitude 20) Future planning [1].
4.	***Intellectual Capital*** **(Z)**	17) Curiosity and motivation 18) Experience 19) Innovation and Creativity 20) 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).

Figure 3 Gender respondents

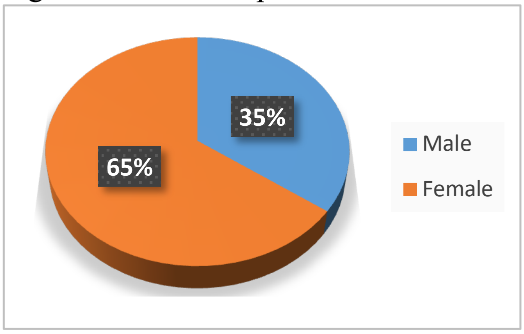
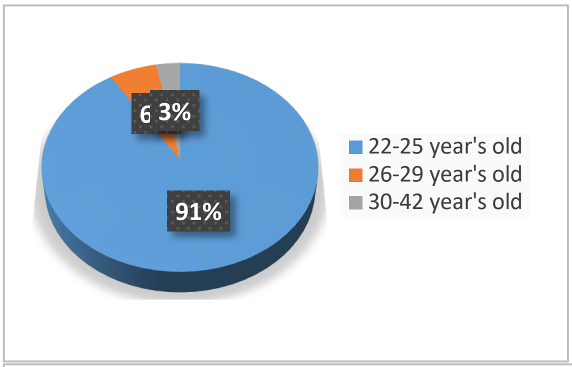
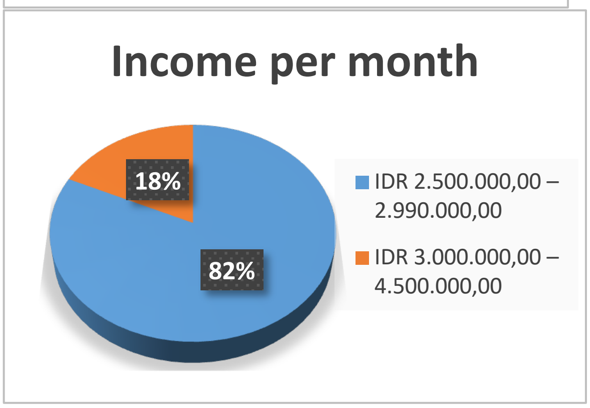


Figure 4 Respondent's age





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		

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%.

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.

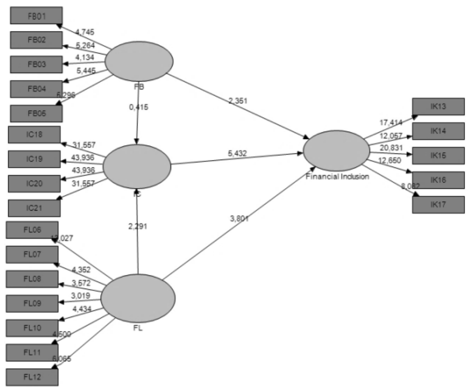
4.3. SEM (Structural Equation Model) Test

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

Figure 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 (α= 5%) got 1,964. The presentation is as follows.

Table 4 Influence between research variables

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.

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

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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Nur Fadjrih Asyik has implemented the Algorithm, organized and executed the experiments of all sections.

Nur Laily handled for the Statistics.

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

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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.

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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.

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. 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 [19]. Simply put, this theory explains that someone will do an action when it is positive and other people will also do it.

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.

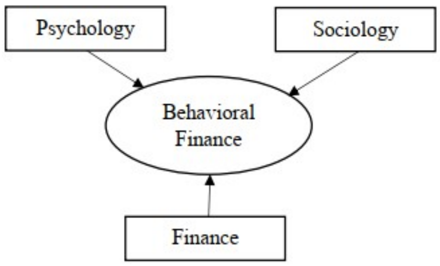

Fig. 1: Aspects in Financial Behavior

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.

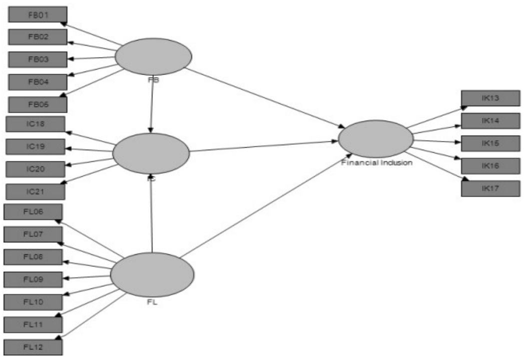

Fig. 2: Research framework

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).

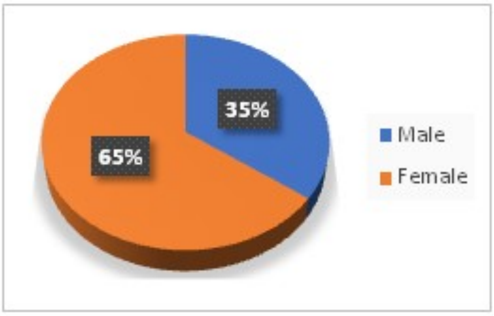

Fig. 3: Gender respondents

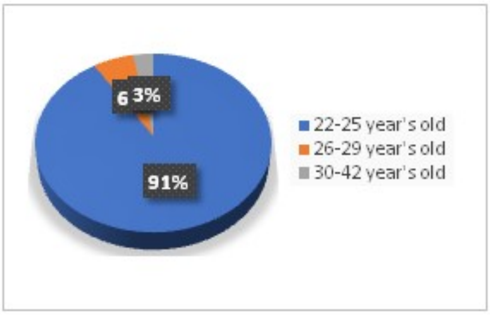

Fig. 4: Respondent's age

4.2 Validity and Reliability Test

Table 2. Research Instrument Test Results

Variable	Items	Correlation (r) r	Correlation (r) Status	Coefficient Alpha	Coefficient 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.

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

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

through intellectual capital on financial inclusion is 0.208 or 20.8%.

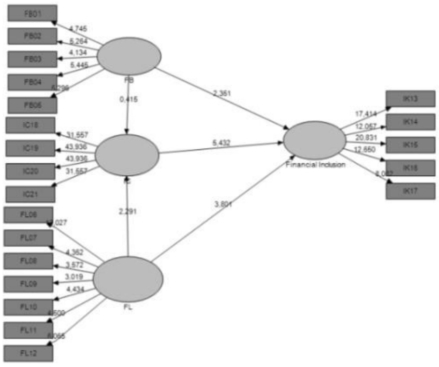

Fig. 5: Test results

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 (= 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.

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