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PROFILING FINANCIAL INCLUSION IN INDONESIA: DOES IT SUPPORT BANK SAVINGS AND HUMAN DEVELOPMENT INDEX?

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ABSTRACT

The purpose of this study was to test its positive correlation on the human development index. This study uses publicly available data from the Indonesian Financial Authority, the Central Statistics Agency, and the World Bank's Global Financial Index Data. Data analysis using correlation analysis. The results showed that the financial inclusion index had a positive correlation with total credit and total savings in each province. It also shows a positive correlation to the provincial-level human development index. The significance of our research is the financial inclusion of the province which brings many benefits to the state to a degree. Therefore, our research is to increase financial inclusion in Indonesia. Financial inclusion research is very limited to provincial-level analysis in emerging markets such as Indonesia, this study aims to expand the literature in this area and fill it.

ABSTRAK

Tujuan penelitian ini bertujuan untuk menguji korelasi positifnya pada indeks pengembangan manusia. Penelitian ini menggunakan data yang tersedia untuk umum dari Otoritas Keuangan Indonesia, Badan Pusat Statistik, dan Data Indeks Keuangan Global Bank Dunia. Analisis data menggunakan menggunakan analisis korelasi. Hasil penelitian menunjukkan indeks inklusi keuangan memiliki korelasi positif terhadap total kredit dan total tabungan di setiap provinsi. Ini juga menunjukkan korelasi positif terhadap indeks pembangunan manusia tingkat provinsi. Signifikansi penelitian kami adalah inklusi keuangan membawa banyak manfaat bagi negara hingga tingkat provinsi. Oleh karena itu, implikasi dari penelitian kami adalah untuk meningkatkan inklusi keuangan di Indonesia. Penelitian inklusi keuangan sangat terbatas pada analisis tingkat provinsi di pasar negara berkembang seperti Indonesia, penelitian ini bertujuan untuk memperluas literatur di bidang ini dan untuk mengisi kesenjangan tersebut.

INTRODUCTION

The importance of financial inclusion towards financial development and economic growth is quite essential. Therefore, it is included in one of the Global Policy Agenda. Financial inclusion is on the supply side of financial services availability and accessibility. Inclusion is targeted to improve people's engagement in financial services. Thus, the evidence on how it improves people real engagement in bank services is limited. First, the article portraits the current condition of financial inclusion in Indonesia. Second, by analyzing province-level data, it shed light on how financial inclusion index of each province bring significant correlation to province's total credit and total third-party funds of commercial banks and rural banks in Indonesia. The data used in this research is sourced from Global Findex Data and Indonesian Banking Statistical Report issued by The Indonesian Financial Authority (OJK). The result indicates that province level financial inclusion data correlated positively with total credit and total third-party funds in the current period. Nevertheless, the correlation between inclusion and the non-performing loan is still unclear. These findings support the importance of financial inclusion toward financial services utilization.

Governments around the world emphasize the importance of financial inclusion and put it on the global policy agenda (Arun & Kamath, 2015; Bhatia & Chatterjee, 2010; Ergun, 2017). It refers to the delivery of banking services at an affordable cost to the vast sections of the disadvantaged and low-income group (Bhatia & Chatterjee, 2010). Financial services should be easily accessed effectively and affordably at excellent and sustainable quality (Queralt, Fu, & Romano, 2017). When all citizens can access financial products, they will be able to utilize it to improve their life quality (for education purposes, house ownership, and business capital). Thus, economic activities are improved and supported. Therefore, it is undoubted that financial development has a positive correlation toward economic growth (Liu, Lee, & He, 2016). Much research has mentioned the importance of financial inclusion towards economic development (Fungáčová & Weill, 2014).

This research is aimed to contribute more understanding on the current condition of financial inclusion in Indonesia, developing country with highest potential market among ASEAN Economic Community Countries. After understanding the full map of it, this research shed light on the correlation between financial inclusion index and real people engagement on banking products? The difference of this research from others is that the data using province level took from Indonesian Financial Authority, in which Indonesia is has 33 provinces managing by the same Central Bank. All provinces banking and financial policies is managed by The Central Bank of Indonesia *(Bank Indonesia)* and Indonesia Financial Authority (OJK). Rather than seeking the correlation among different countries with each owned financial directions, drawing correlation analysis in province level units enable us to get sharper evidence on the externalities of financial inclusion towards real total credit and total third-party funds.

People engagement in banking support country's growth. For example, based on the research done by Loayza dkk. (2000), aceross the countries, higher saving rates is going to end up with higher economic growth. Their statement was also confirmed by (Habibullah & Hidthiir, 2004). It also influences gross domestic product growth positively (Masson dkk., 2016). The ability to save money to bank reflects the ability to manage money and maintain economic survival. People who save more in the bank is less probably to suffer from the financial crisis (Ergun, 2017). In Africa, household saving positively influences economic growth (Mongale dkk., 2018). Not only saving, people access on credit facilities also improves their opportunities to grow up their welfare. People might use it for expanding the business, investing in property, and funding education. Nevertheless, on the demand side, the people willing–to maximize financial products if the products can be easily accessed. Therefore, inclusion and product utilization are interrelated.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Many definitions on financial inclusion stated in the researches, the main idea is that, it is the adequate access to affordable, quality, and sustainable essential financial services (Queralt et al., 2017), so that both privileged and disadva~~e~~ntaged people have the same chance to access it (Bhatia & Chatterjee, 2010; Iqbal & Sami, 2017). In details, people could access secure transaction to receive and store money, get access to both short term and long term credit, utilize long-term saving and investments, and to have insurance products (Arun & Kamath, 2015). In a disruptive era, banks are getting more creative to provide numer~~u~~ous products. Not only common services like savings, credit, and payments, banks also cooperated with insurance companies to provide a bundling insurance package. Banks, together with Asset Management Companies, offer~~s~~ mutual funds. People's access towards banking products are getting limitless; they can do transactions from home (*e-banking and SMS banking).*

Financial inclusion has significant role in driving economic growth and alleviating poverty (Iqbal & Sami, 2017). Although it has been me~~a~~ntioned by many researchers, for example, Liu et al. (2016), Fungáčová & Weill (2014). Not many of them provide~~s~~ in-depth analysis of real data of inclusion and economic indicator. Iqbal and Sami (2017) provide~~s~~ seven years of macro data analysis on how its impact towards economic growths in India. They found the positive and significant impact of a number of bank and credit deposit ratio on GDP of the country. Higher financial inclusion for a nation means higher probability to improve welfare, especially for the poor (Queralt et al., 2017). Higher inclusion helps the poor to access best suit financial products and prevent them from informal borrowing with the unexpected high-interest rate. It also assists the poor to save and plan the money for obtaining particular life goals.

Brief Portrait of Financial Inclusion in Indonesia

Indonesian Financial Authority has conducted 2 times financial inclusion and literacy survey in 2013 and 2016. Only survey report done in the year 2016 is available for public access in OJK website (Otoritas Jasa Keuangan, 2016b). Based on the report, financial inclusion index ~~is~~ increased from 59.74% (in the year 2013) to 67.82% (in the year 2016). People access banking facilities by representation office and ATM. Besides bank, they also aware on services provided by insurance, pension fund, stock exchanges, and fund agencies. Financial decision is mostly influenced by media (TV advertisement), not by precise information from banks.

Based on the Global Findex Data, Bank accounts ownership of Indonesian middle and low-income people shows an increased pattern from 2011, 2014, to 2017. Average individual account ownership is 18% during the year 2011, 35% during the year 2014, and 48% during the year 2017. Meaning to say, in the year 2017, 48% percent of respondents are having a bank account. Those data covers respondents from all genders, all economic levels, and with a minimum age of 15 years old. For business account ownership, the average percentage is 18% (for 2011), 34% (for 2014), and 47% for (2017). It showed an increasing trend. Nevertheless, compared to Malaysia and Singapore (other ASEAN countries), Indonesia is still far away behind. In 2017, account ownership in Malaysia is around 83% on average, while in Singapore, the account owner is 100% already. The increasing pattern of account ownership in Indonesia is relatively good, but there are still lots of homework to do.

Surprisingly, although this country is cat~~a~~gorized as a developing country, none of the people reporting difficult access to financial services due to unaffordable price, far away distance, religious reason, and insufficient fund. The Indonesian government, through the Central Bank, has launched several programs that the Government made to improve people engagement in Banking Services. For example, to improve people's saving the Indonesian government created *Gerakan Indonesia Menabung* (Indonesian Saving Program) on February 10, 2010. The Central Bank of Indonesia launched *Tabunganku* program, in which, people can open a free-cost saving account. People can save their money, withdraw money from automated teller machine (ATM), transfer money, and doing financial transactions with Rp. 0,- administrative cost. Based on the data gotten from the Indonesian Financial Authority, in the year 2016, there are 79.401 bank representation offices spread of around 33 provinces in Indonesia (Otoritas Jasa Keuangan, 2016a). The numbers of ATM spread are more than the number of representation offices. Bank cooperated with supermarkets (example: Indomaret and Alfamart) for providing financial services like money withdrawals, money transfers, and payments.

Different form savings, credit products is less utilized by people in Indonesia. The most common way to obtain credit is by borrowing money to families or neighbors. That phenomena is also commonly happened in China, Brazil, Rusia, India, and South Africa (Fungáčová & Weill, 2014). To promote microcredit, The Government created microcredit product, named, *Kredit Usaha Rakyat (KUR).* KUR offers low-interest credit for small, micro, and medium enterprise to expand their capital. KUR is expected to support micro-business in Indonesia.

According to Iqbal & Sami (2017), many factors affect financial inclusion, such as place of living, the absence of legal identity, gender bias, level of income and bank charges, rigid terms and conditions, and type of business. Related to the place of living, based on the secondary data from the Central Bank of Indonesia and OJK, the numbers representatives office of commercial banks in Indonesia is increasing from year to year. In Indonesia, the level of income and bank charges barrier is minimum--free-admin cost bank account, named, TabunganKu program. This type of account does not require~~d~~ any minimum balance in the account. Type of business barrier refers to limited access for small business and unorganized enterprise for the credit loan. To overcome this barrier, Central Bank of Indonesia implemented simple administration proc~~s~~edures for microcredit program *(Kredit Usaha Rakyat)* within a certain minimum ceiling. The entities should only submit the recommendation letter from the district office.

Table 1. Total Banks and Banks' Representation Offices in Indonesia

Year	2012	2013	2014	2015	2016
Total Banks	120	120	119	118	116
Total Bank Representation Offices	29.945	31.847	32.739	32.963	32.730

Source: *Statistic of Indonesian Banking Desember 2016*
*) Excluding Rural banks

From Table 1, total banks from the year 2012 until 2016 have decrease, but the bigger banks merged to the bankrupt banks. Nevertheless, the total numbers of representation offices are increasing. The increased number of representation offices followed by an addition in ATM and virtual ATM (collaboration with minimarkets such as Indomaret and Alfamart).

From the supply side, big banks are consistent with wider financial inclusion as long as the market remains contestable (Owen & Pereira, 2018). Thus, they mentioned that portfolio diversification is a must to scale up economic of scale. They also stated that the diversification is only for big banks, not for small banks. The findings of their research might not be applicable for Indonesian Banking. In Indonesia, the populations of rural banks are a lot.

Financial Inclusion to People's Engagement in Bank Services

Although the trend in account ownership of Indonesian people is increasing, based on the Global Findex data, there are still several account ownership boundaries. For example, in the year 2017, 33% of respondents reports (age 15+) are having no account because the financial institutions location are too far away from home, 19% of them do not have account because of inability to access expensive services, and few of them do not have account because of other reasons (religiosity, lack of trust in financial institutions, etc).

Significant reasons for saving are for educational purposes. Nevertheless, the percentage of savings is still far less than 50%. They save the money, but in emergency cases, the source of money comes up from borrowing. It reflects insufficiency in saving.

People were still borrowing money to cover their related needs. Surprisingly, primary reason for borrowing money is for health and medical purposes. A minority of them borrow money for expanding the business. Percentage of people's borrowing on the financial institution is much less than on family or friends. In 2017, on average, the highest percentage on the source of borrowing money is borrowing from family and friends. Less than 20% of them borrowed money from the financial institution. It reflects the current demand on financial help~~s~~, but people still have boundaries in accessing the services. Besides, they also have limited access to credit card facilities. In conclusion, the dema~~i~~nd is available, so the supplies need to be more accessible.

Data from Global Findex reflects the actual demand on financial services, but also limited access to it. By increasing financial inclusion, the gap between demand and supply could be minimal. Thus, people are~~is~~ going to be able to access it more. Automatically, financial inclusion will support increasing pattern on savings and credits. As the score of financial inclusion index higher, it reflects the province's capability to supply financial products. As the score higher, it also reflects effortless, more effective, and more qualify access towards financial services. Thus, the total number of savings and credit will be higher. On the other hand, as the score of province-level financial inclusion lower, people in that province~~-~~have more boundaries to access financial services. It makes them challenging to maximize the services. Then, people's saving and credit are lower than province with higher inclusion score.

H_1: Province-level financial inclusion index positively correlates with province total savings.

H_2: Province-level financial inclusion index is positively correlates with province total credits.

Financial Inclusion to Human Development Index (Index Pembangunan Manusia/IPM)

The previous studies about the association between financial inclusion and human development is limited. We found few studies such as Raichoudhury (2016), he states that levels of human development and financial inclusion in a country move closely with each other, although a few exceptions exist He found that the states with relatively high level of financial inclusion are also the states with high level of human development and vice versa. The countries like Switzerland, Japan, Italy, Spain and South Korea which rank high in financial inclusion are also found to have high development index. Furthermore, the countries like Congo Democratic Republic, Central African Republic, Guinea, Burundi, and Afghanistan which rank lowest on index of financial inclusion perform poorly on human development index as well. Besides, countries such Austria, Netherlands and Ireland have relatively higher levels of human development as compared to their levels of financial inclusion. Similarly, countries like Portugal, Malta, Malaysia, and Turkey perform relatively better in financial inclusion than in human development. The analysis indicates that the level of human development and that of financial inclusion are positively correlated. Therefore, there is a need for coordinated effort towards encouraging financial inclusion. His study compared the index financial inclusion (IFI) developed by Sarma (2012) to measure financial inclusion across countries and analyzed the relationship between financial inclusion and human development. According to Beck, et al. (2007) financial inclusion reduces income inequality and alleviates poverty. Naturally, the lower the level of poverty, the higher is the level of human development.

Based on Human Development Report (2016) published by the United Nations Development Program (UNDP) since 1990 as independent, analytically, and empirically grounded discussions of major development issues, trends and policies. Human development is all about human freedoms: freedom to realize the full potential of human life, not just a few, nor of most, but of all lives in every corner of the world−now and in the future.

Arora (2012) stated that the existing literature on financial inclusion also treats the issue as mainly supply-centric and does not take cognizance of the fact that poor human development and high illiteracy levels in developing economies may prevent a large section of the population from benefitting from financial inclusion efforts, because of low awareness and comprehension of the financial services available.

Laha (2015) who studied the association between financial inclusion and human development in south Asia states that the process of financial inclusion reinforces the process of human development. The process of financial inclusion can be seen as an effective instrumental mechanism in order to enlarge people's choice in respect of some basic indicators of human development. In the context of Indian economy, the level of human development and that of financial inclusion are positively correlated in the sense that states having high level of human development are also the states with a relatively high level of financial inclusion. Human development is a process of enlarging people's choice. The first human development report of United Nations Development in 1990 identified three important indicators reflecting reasonable choices of people for sustaining a life with dignity. The most important choices are considered to be a long and healthy life, to be educated and to enjoy a decent standard of living. Furthermore, Nanda and Kaur (2016) found a strong and significant correlation between financial inclusion and human development. By ensuring easy and affordable access to formal financial services, it helps to augment the pace of human development. Based on those explanations above, we composed the third hypothesis as follows.

H_3: The financial inclusion has a positive relationship with the human development in Indonesia.

RESEARCH METHOD

This research is driven by literature and proven by secondary data. Secondary data used sourced from publicly available data in the website of Indonesian Financial Authority (Otoritas Jasa Keuangan, 2016a, 2016b) for province-level inclusion index and banking services data, Central Buereau of Statistics (http://ipm.bps.go.id/data/nasional) for province-level human development index data, and Global Financial Inclusion Data issued by the World Bank (http://microdata.worldbank.org) for general information of Indonesian Inclusion. As the banking data is in billion rupiahs, the researcher uses Ln function to reduce the data size and make it comparable with the inclusion and human development index (HDI) scale. Financial inclusion and HDI data are ratio data stated from 0 to 100. We analyzed all data through correlation analysis, in order to find the possible relationship between financial inclusion and two others externalities (engagement in banking services and human development index)

People Engagements in Bank Services cover both third party funds and credit. Demand deposits, saving deposits, and time deposits are the components of third party funds. The third party funds numbers is the total of the fund collected both by commercial banks and rural banks. Total amount of credit is the summary of all purposes credit, either for business capital or for others purposes (consumption, and investment). Human development index in is defined as a composite index representing the social and economic achievement of the particular area. The components of HDI as mentioned in UNDP human development reports are longevity, education, and income (United Nations Development Programme, 2016). Financial inclusion definition is almost the same as significant researches, it is understandable as the sufficient access to affordable, quality, and sustainable essential financial services (Queralt et al., 2017).

Raichoudhury (2016) followed a multidimensional approach for construction of the index of financial inclusion (IFI), although it is like the UNDP approach for computation of Human Development Index (HDI) and Gender-related Development Index (GDI) it differs in the manner in which dimensions indexes are constructed. Instead of using an average of the dimension indexes as in UNDP's methodology, our index is similar to that of Sarma (2012) i.e. distance from the worst and ideal situation. We follow Raichoudhury (2016) in which IFI is designed by calculating a dimension index for each dimension of financial inclusion. The dimension index d_i is calculated by the following formula.

$$d_i = w_i * ((A_i-m_i)/(M_i-m_i)) \quad (1)$$

Where Wi is weight attached to the dimension I, 0 ≤ Wi ≤ 1; Ai isactual value of dimension I; Mi is upper limit of the value of dimension i, fixed by pre-specified rule; m_i is lower limit of the value of dimension I, fixed by pre-specified rule. The above formula ensures that 0 < di < 1. The country's achievement in dimension i will be higher if the value of di is higher. If n dimensions of financial inclusion are considered, then a country's achievement in these dimensions will be given by a point X = (d1, d2, d3, …., dx) on the n-dimensional space. In the n-dimensional space, the point O = (0, 0, 0,…, 0) represents the point of worst situation while the point W = (w1, w2, …., wn) represents an ideal situation indicating the highest achievement in all dimensions.

Larger distance between X and O indicates higher financial inclusion. And smaller distance between X and W also indicates higher financial inclusion. In this paper, we use a simple average of the Euclidian distance between X and O and the inverse Euclidian distance between X and W. Both the distances are normalized by the distance between O and W, to make them lie between 0 and 1. The inverse distance between D and W is considered for computing the simple average between the 37 distances. This makes IFI a number that lies between 0 and 1 and is monotonically increasing. Thus for computation of IFI, first we calculate X1 (distance between X and O) and X2 (inverse distance between X and W) and then take a simple average of X1 and X2 to compute IFI. The formula are given below.

X1 = Sqrt (((d1)^2 + (d2)^2 +..+ (dn)^2)/((w1)^2+(w2)^2+..+(wn)^2)) (2)
X2 = 1 – (Sqrt (((w1-d1)^2 +(w2-d2)^2+..+ (w3-dn)^2)/ ((w1)^2+(w2)^2+..+(wn)^2))) (3)
IFI = ½ (X1+X2) (4)

X1 gives the normalized Euclidean distance of X from the worst point O, normalized by the distance between the worst point O and the ideal point W. This is done to make the value of X1 lie between 0 and 1. Higher value of X1 implies more financial inclusion. X2 gives the inverse normalized Euclidean distance of X from the ideal point W. The numerator gives the Euclidean distance of X from the ideal point W, normalizing it by the denominator and subtracting by 1 gives the inverse normalized distance. This is done to make the value of X2lie between 0 and 1. The higher distance is considered because higher value of X2 implies higher financial inclusion.
IFI is the simple average of X1 and X2 indicating the distance from both the worst point and the ideal point. Since, we consider all dimensions to be equally important in measuring the inclusiveness of a financial system, then wi = 1 for all i. Thus, the ideal situation will be W = (1,1,1,…,1) in the n-dimensional space. The formula will be as follow.

A1 = Sqrt ((d1)^2 + (d2)^2 +..+ (dn)^2)/n (5)
A2 = 1 – Sqrt (((1-d1)^2 +(1-d2)^2+..+ (1-dn)^2)/n) (6)
IFI = ½ (A1+A2) (7)

In this study, we have identified three dimensions for evaluating the extent of financial inclusion: banking penetration to measure depth, availability of banking services and usage of banking services. Arora (2012) follower methodology used by UNDP in the construction of the Human Development Index, further the Ordinary Least Square (OLS) regression method is performed to examine the relationship.

RESULT AND DISCUSSIONS

We did the correlation testing between the province level financial inclusion index and the total credit in Indonesia 2016. Based on Figure 1, we found that the financial inclusion has a positive relationship toward total credit. Iqbal & Sami (2017) support our findings where they found the positive and significant impact of a number of bank and credit deposit ratio on GDP. The details are presented below.

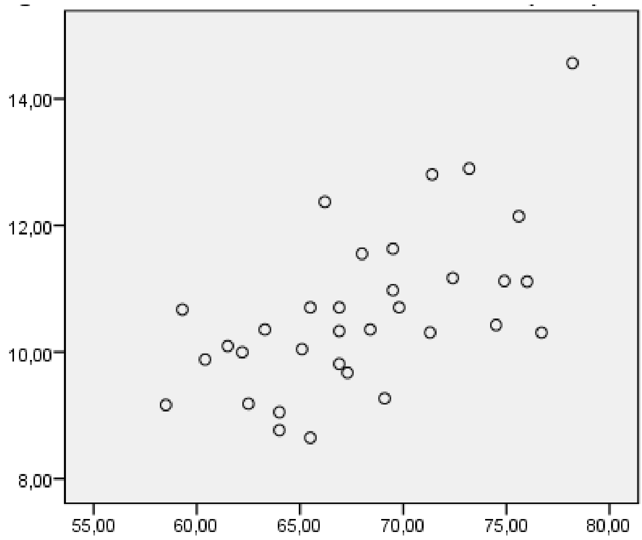

Figure 1. Financial Inclusion to Total Credit

Furthermore, we also examined the impact of province level financial inclusion to the total third-party funds. Interestingly, we also find the linear correlation where the higher financial inclusion, the larger total funds from third party. Financial inclusion related to the availability of financial services in a country, therefore when the inclusion is more available, the more people save their money in the financial institution like banks.

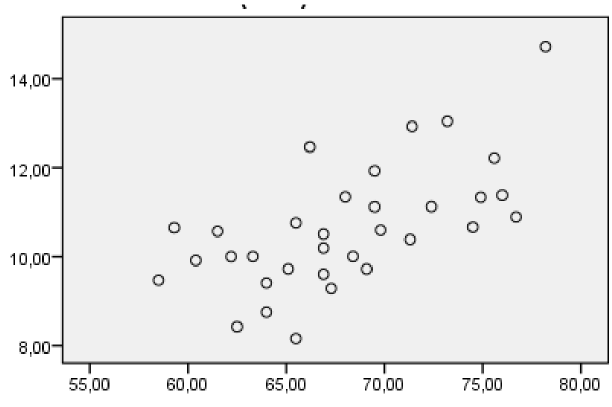

Figure 2. Financial Inclusion to Total Third Party Funds

Then, based on those data, in detail we found on Jakarta Province-A capital city of Indonesia was the highest credit by Small Medium Enterprise's (SME's) compared than other provinces in Indonesia as presented in Figure 3 below.

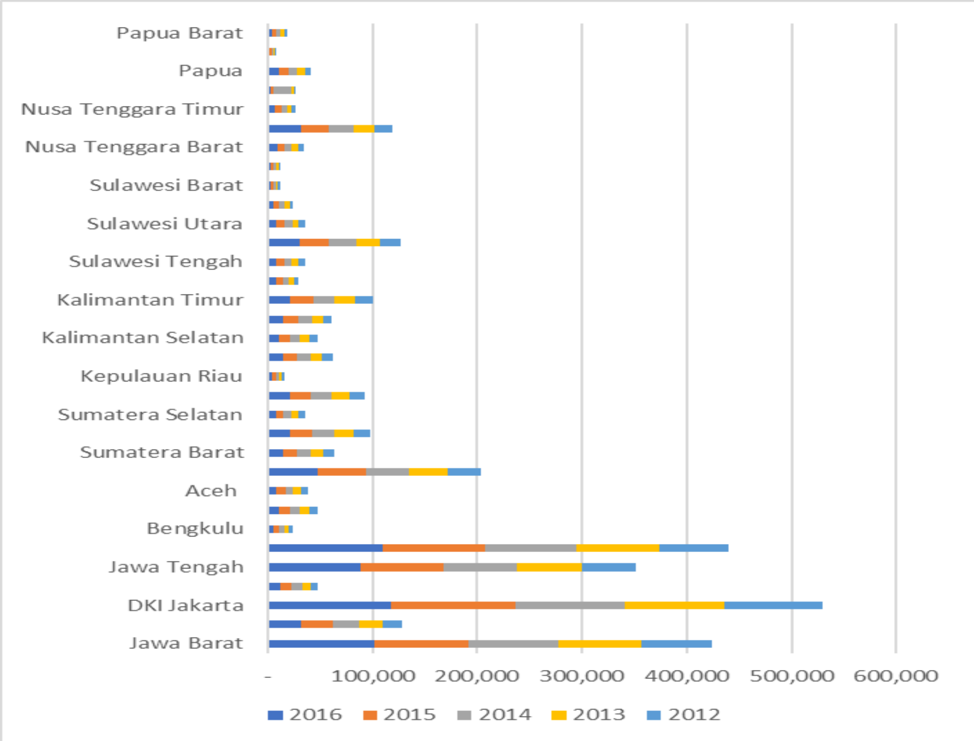

Figure 3. SME's Credit based on the Project Location

We also found the similar findings in total saving, where Jakarta is a province with the most significant saving up to 2,500,000 (in Billion IDR) in 2016. In addition, by the year the saving total for all provinces become larger as presented in Figure 4.

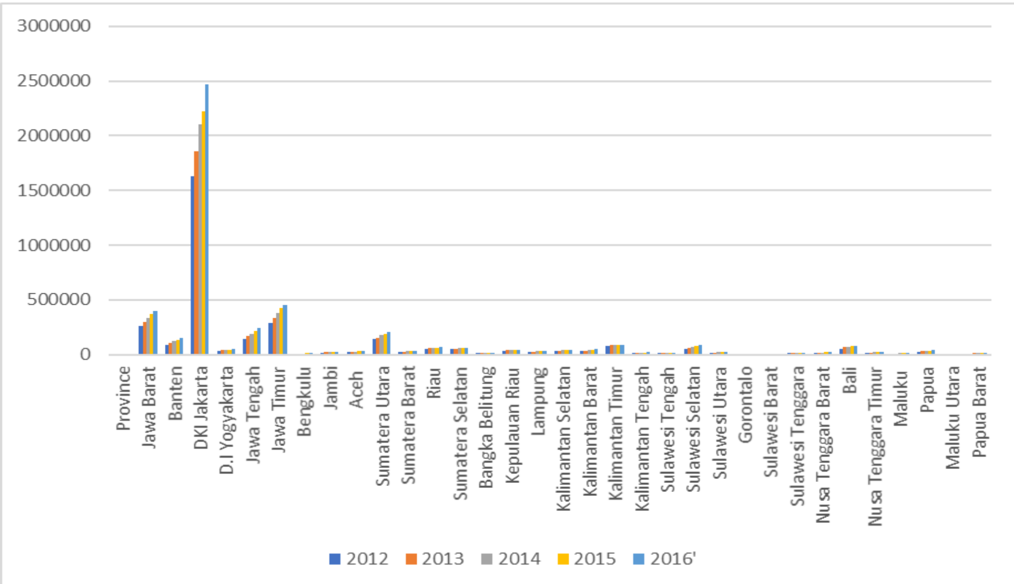

Figure 4. Total Saving and Clearing from third party in the General Bank(in Billion IDR)

Based on Global Findex Database from World Bank 2018, we found that Indonesia's saving and credit was lower than East Asia & Pacific countries, nevertheless higher than Lower middle-Income countries. The details are in Figure 5 below.

East Asia & Pacific			Lower middle income
Population, age 15+ (millions) 188.9		GNI per capita ($)	3,400
	Country data	East Asia & Pacific	Lower middle income
Saving in the past year (% age 15+)			
Saved at a financial institution	21.5	30.6	15.9
Saved at a financial institution, 2014	26.6	36.7	14.4
Saved using a savings club or person outside the family	29.9	8.6	13.0
Saved any money	61.8	53.1	39.7
Saved for old age	27.4	23.2	13.2
Credit in the past year (% age 15+)			
Borrowed from a financial institution or used a credit card	18.4	21.5	9.8
Borrowed from a financial institution or used a credit card, 2014	13.7	19.5	10.0
Borrowed from family or friends	35.7	29.6	30.4
Borrowed any money	54.8	46.8	42.9
Outstanding housing loan	6.0	10.8	5.0

(Source: Global Findex Database – World Bank 2018).

Figure 5. Saving and Credit in The Past Year (% age 15+) in Indonesia

Then, the debit card ownership based on the demography factors such income, education, and age. We found that the highest debit card ownership was the people who aged 15+ in the secondary education or more rather than others. By the year, that percentage keeps growing fro 2011 to 2017 as presented in Figure 6.

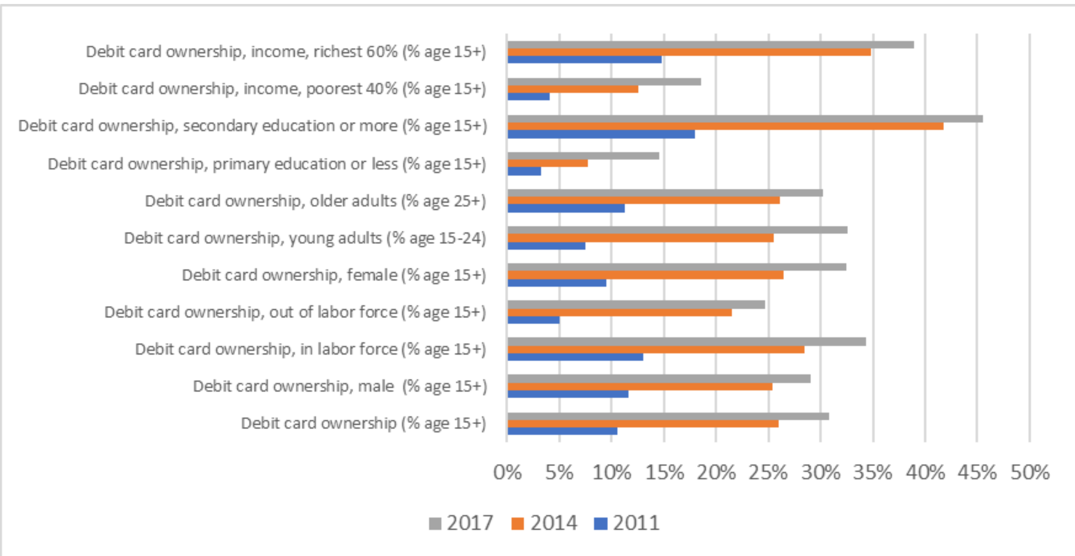

Figure 6. Debit Card Ownership from Global Findex Data

Unfortunately, in Indonesia, the net performing loan (NPL) ratio was also high among the provinces in 2016. It is a ratio of NPL compared to the total loan. East Kalimantan was the largest province with NPL ratio compared to other provinces, while West Papua was the lowest. The details are presented in Figure 7.

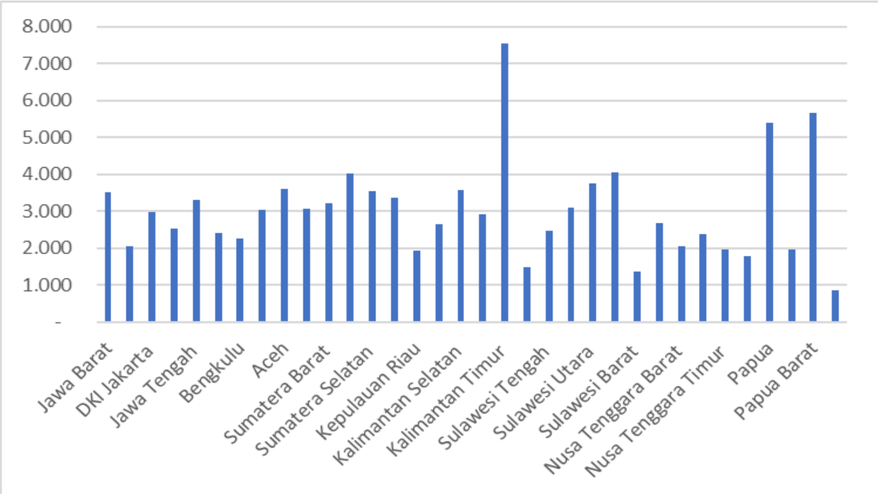

Figure 7. Indonesia NPL Ratio in 2016

In the last, we attempted to relate the financial inclusion and human development then we found that the province with the high financial inclusion was also the province with the high human development as presented in Figure 8 below.

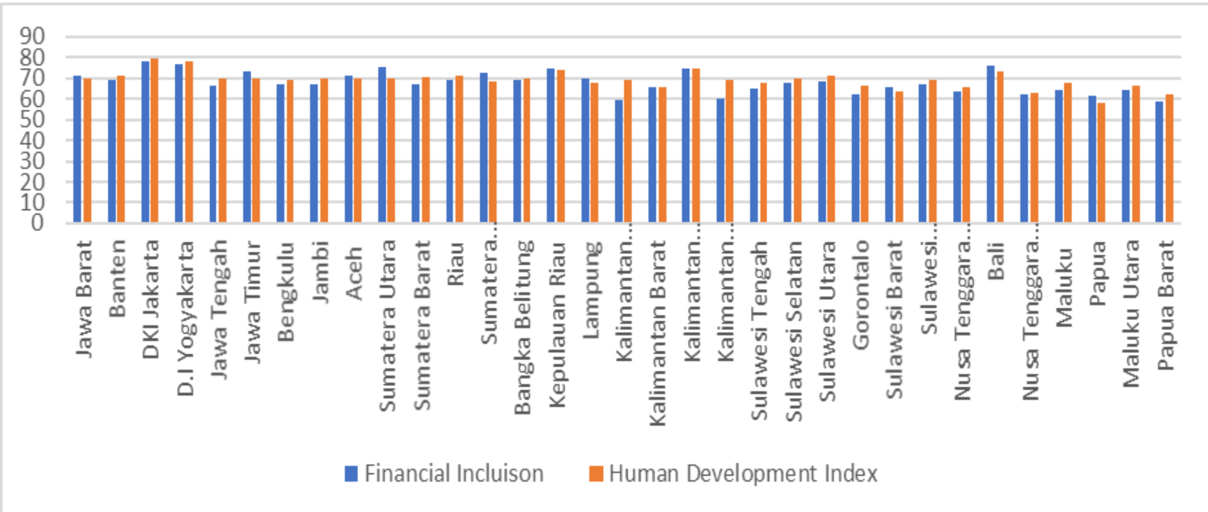

Figure 8. Financial Inclusion and Human Development Index in Indonesia 2016

In regression analysis, the financial inclusion has positive relationship significantly at 1% level ($p<0.001$) toward the human development by the coefficient 0.62. It supports Nanda & Kaur (2016), Laha (2015), Arora (2012), and Raichoudhury (2016) who found the positive correlation between financial inclusion and the human development.

CONCLUSION

In conclusion, financial inclusion in Indonesia is quite essential. We found that financial inclusion index has positive correlation towards both total credits and total savings in each province. It also shows positive correlation towards province-level human development index. This research is providing empirical evidence on how financial inclusion brings positive impacts to the country. The significances of our research are the financial inclusion brings many benefits to the country up to the province level. Therefore, the implication of our study is to enhance the financial inclusion in Indonesia. Research in financial inclusion is very limited in the province level analysis in the emerging market like Indonesia, this paper aims to extend the literature in this field and to fill that gap.

Nevertheless, we aware that our research contains many limitations such as data level, methods, and the variables. We suggest to further research to improve the data level up to the district level, various methods to robust the testing and to make sure the results are consistent and unbiased, then extending some other variables which may correlate to the financial inclusion in Indonesia.

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