An Overview of Peer to Peer Lending in Indonesia

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Financial Inclusion

The process of:

- ✓promoting affordable, timely and adequate access to regulated financial products and services
- ✓broadening their use by all segments of society

Through the implementation of :

- tailored existing and innovative approaches
- including financial awareness and education

With a view to promote :

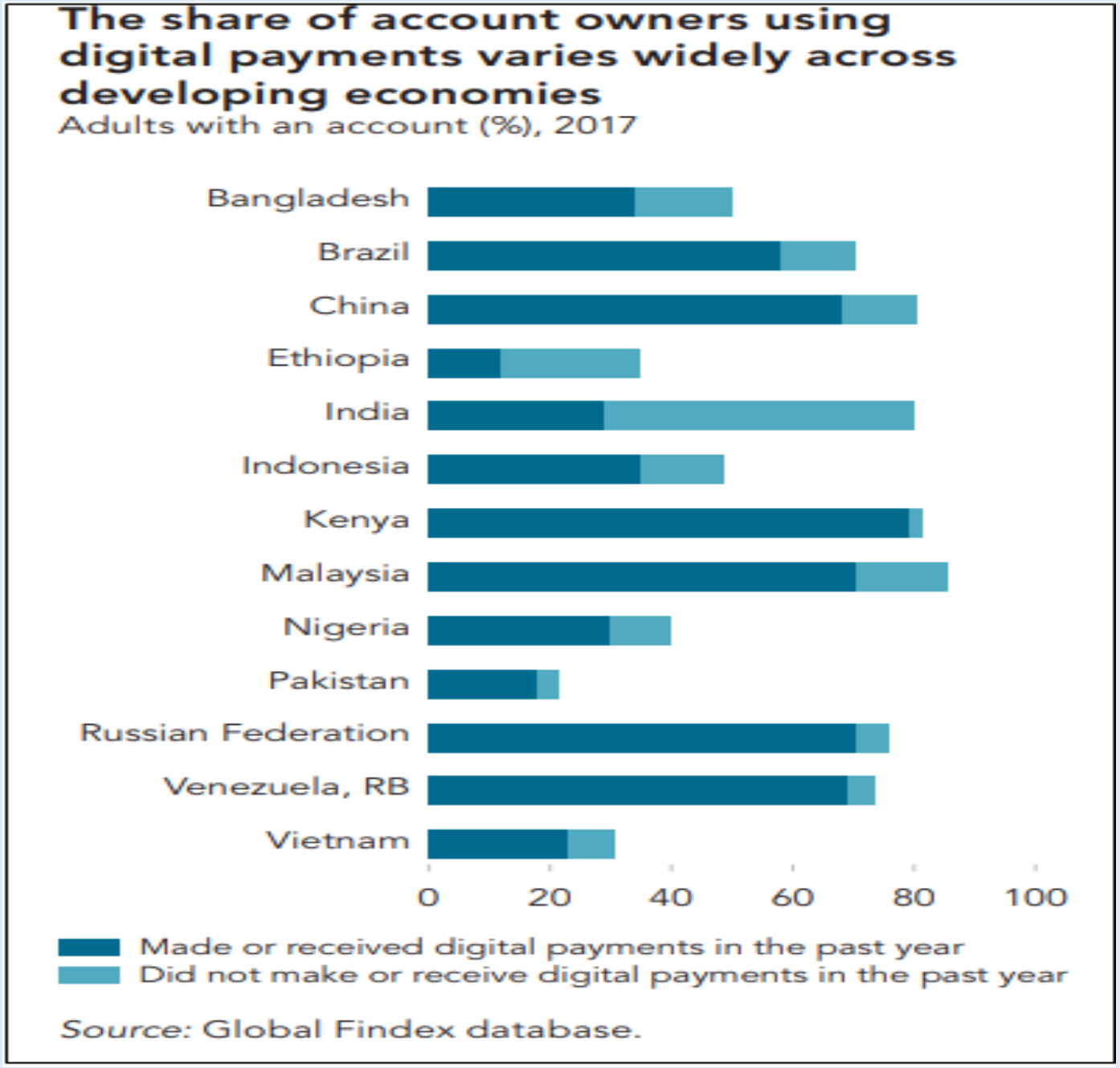
- ➢financial wellbeing
- ➢as well as economic and social inclusion

Source: OECD (2018). Financial inclusion and consumer empowerment in Southeast Asia.

Indonesia Financial Inclusion

- In 2014-2017, Indonesia has made the most progress across East Asia and the Pacific (World Bank)
- Adults bank account ownership proportion:
  - 48.9% (2017)
  - 36% (2014)
  - 20% (2011)
- Approximately 60 million unbanked adults use mobile phones.

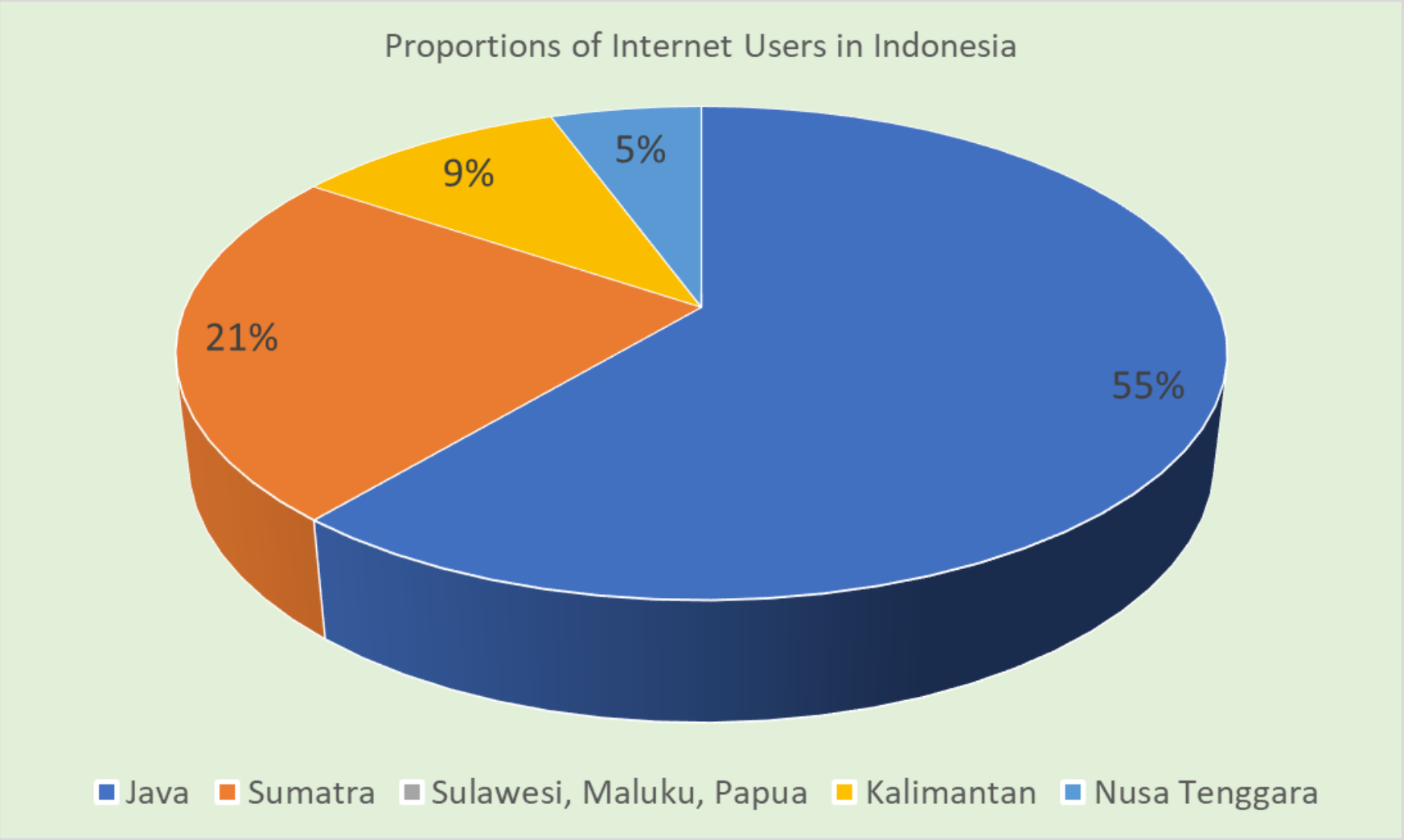
Global Findex (2017)



Indonesian Internet Users

171.17 million users

(64.8% of the population)



Source: Association of Internet Service Providers in Indonesia (June 2019)

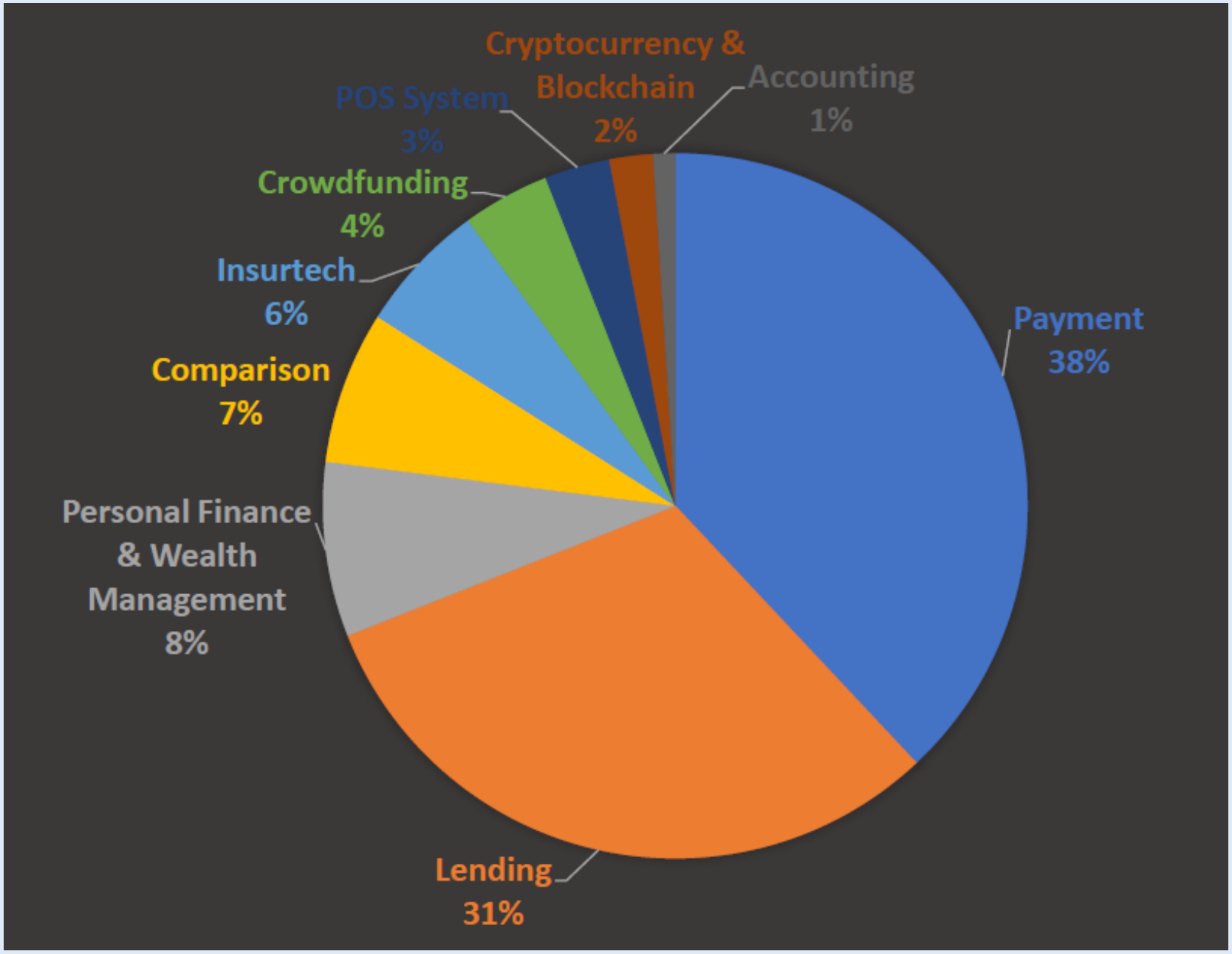
Fintech

1. Payment
2. P2P Lending
3. Personal Finance and Wealth Management
4. Comparison
5. Insurtech
6. Crowdfunding
7. POS System
8. Cryptocurrency & Blockchain
9. Accounting

1. Can P2P lending increase financial inclusion?

2. What are the opportunities and challenges of P2P lending?

Indonesia Fintech Ecosystem (May, 2018)



Source: Fintechnews.sg

Fintech Regulatory Bodies

BANK INDONESIA
BANK SENTRAL REPUBLIK INDONESIA

- eWallets
- eMoney
- Payment gateways
- Principals
- Switching companies
- Card issuers and acquirers
- Clearing houses
- Settlement agencies
- Cryptocurrency and Blockchain
- National payment gateway
- Payment Support, e.g. ATM, EDC and data centers

OJK OTORITAS JASA KEUANGAN

Indonesia Financial Service Authority

- Peer-2-peer lending
- Crowdfunding
- Digital banking
- Insurtech
- Fintech in capital markets
- Venture capital
- Online financing
- Data security
- Consumer protection

KEMKOMINFO

Ministry of Communication and Information Technology

- Telecommunications
- Information technology related

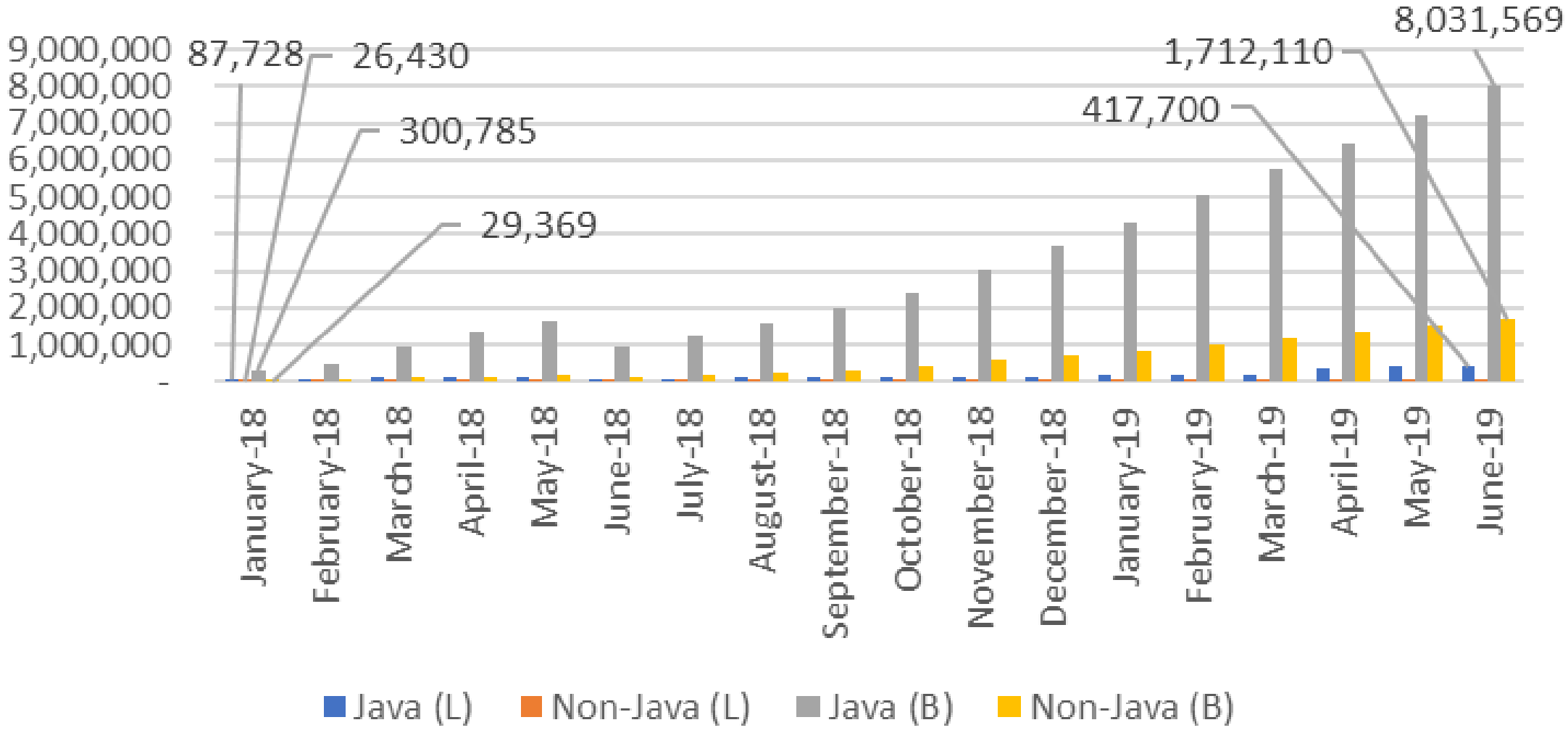
Sources: Bank Indonesia, Fintechnews.sg

Peer to Peer Lending in Indonesia (June 2019)

- 10,242,504 lender and borrower accounts
- More than IDR44.8 trillion loan disbursements
- P2P lending entities
  - 113 registered
  - 7 licensed

Source: https://www.ojk.go.id/id/kanal/iknb/data-dan-statistik/fintech/default.aspx

Lender and Borrower Accumulated Number of Accounts



Accumulated Number of Accounts

LENDER

Jan 2018 vs Jun 2019

- Java: 87,728 vs 417,700 accounts
- Non-Java: 26,430 vs 78,143 accounts

Growth (Jan 2018-Jun 2019):

- Java: 376.13%
- Non-Java: 195.66%

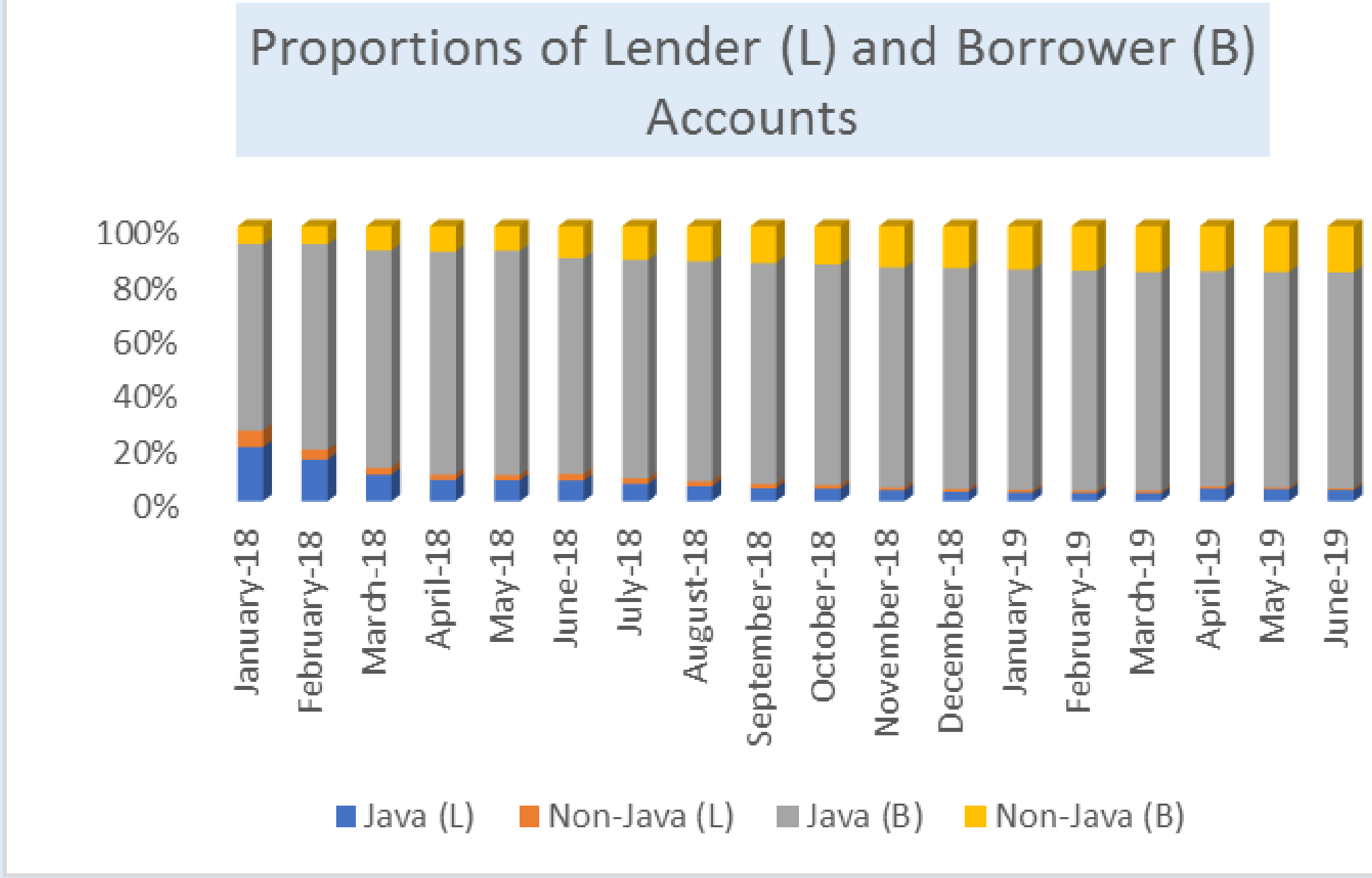
BORROWER

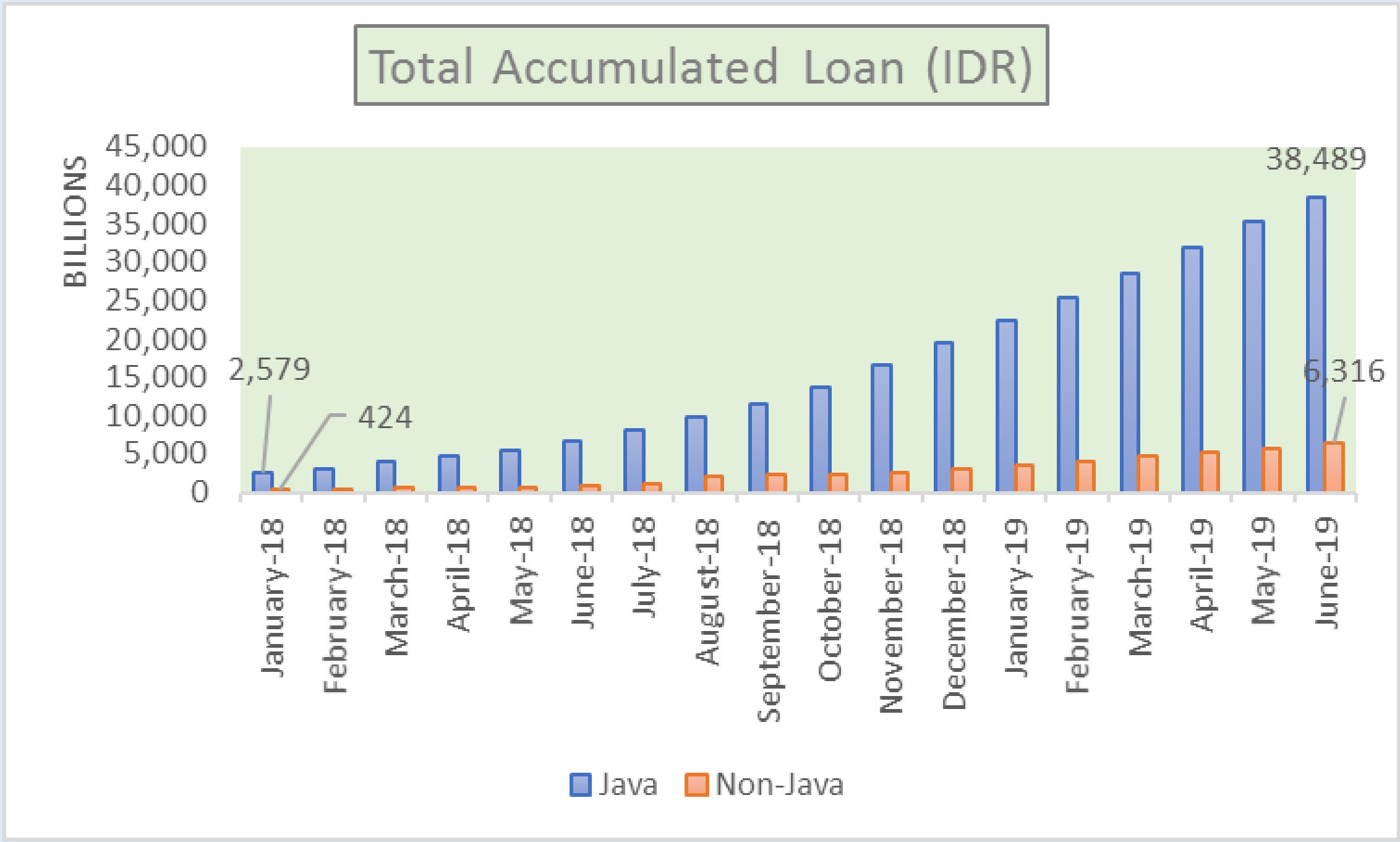
Jan 2018 vs Jun 2019

- Java: 300,785 vs 8,031,569 accounts
- Non-Java: 29,639 vs 1,712,110 accounts

Growth (Jan 2018-Jun 2019):

- Java: 2,570.20%
- Non-Java: 5,729.65%


Proportions of Lender (L) and Borrower (B) Accounts
100%
80%
60%
40%
20%
0%
January-18
February-18
March-18
April-18
May-18
June-18
July-18
August-18
September-18
October-18
November-18
December-18
January-19
February-19
March-19
April-19
May-19
June-19
Java (L)
Non-Java (L)
Java (B)
Non-Java (B)


Total Accumulated Loan (IDR)
BILLIONS
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
2,579
424
38,489
6,316
January-18
February-18
March-18
April-18
May-18
June-18
July-18
August-18
September-18
October-18
November-18
December-18
January-19
February-19
March-19
April-19
May-19
June-19
Java
Non-Java

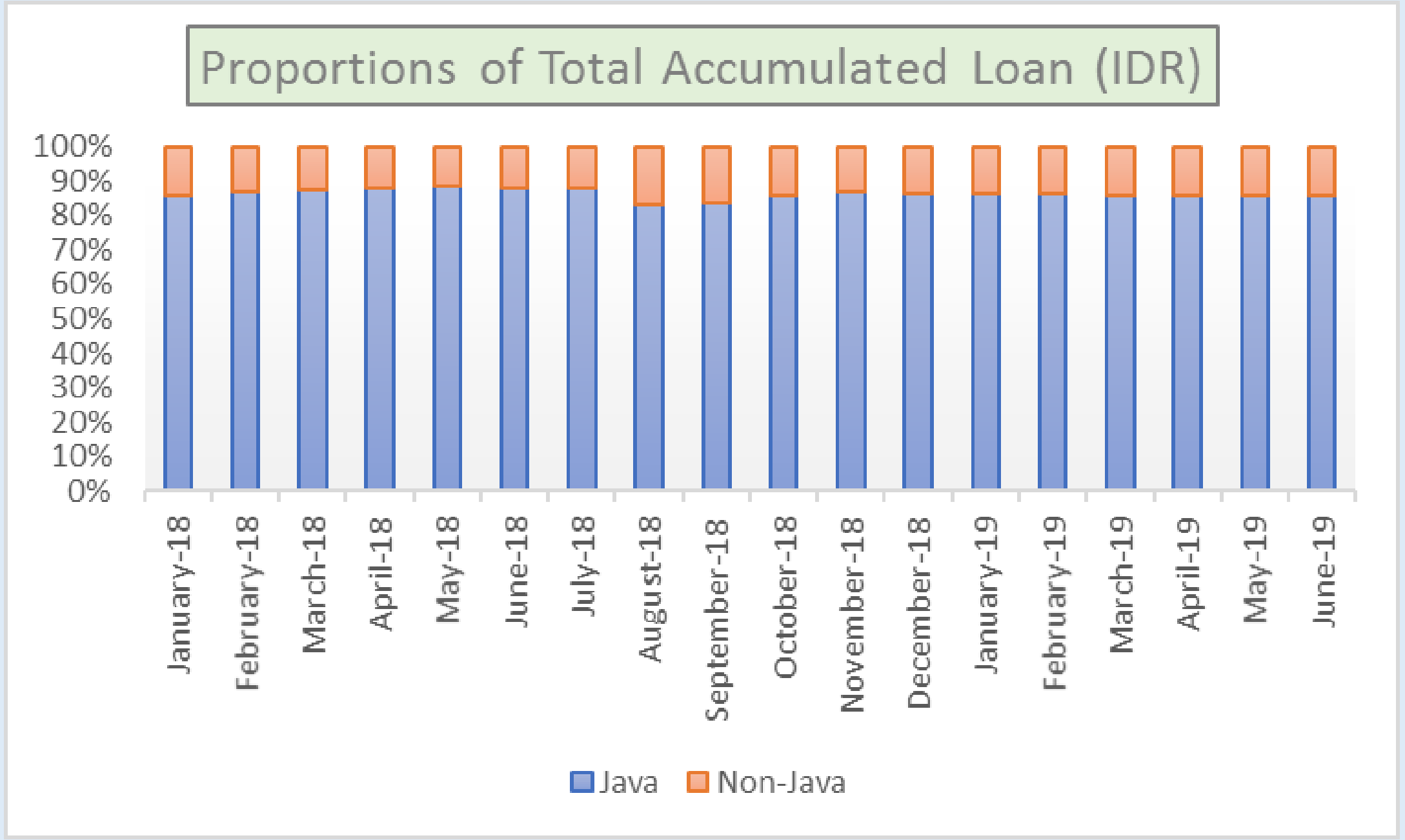
Total Accumulated Loan

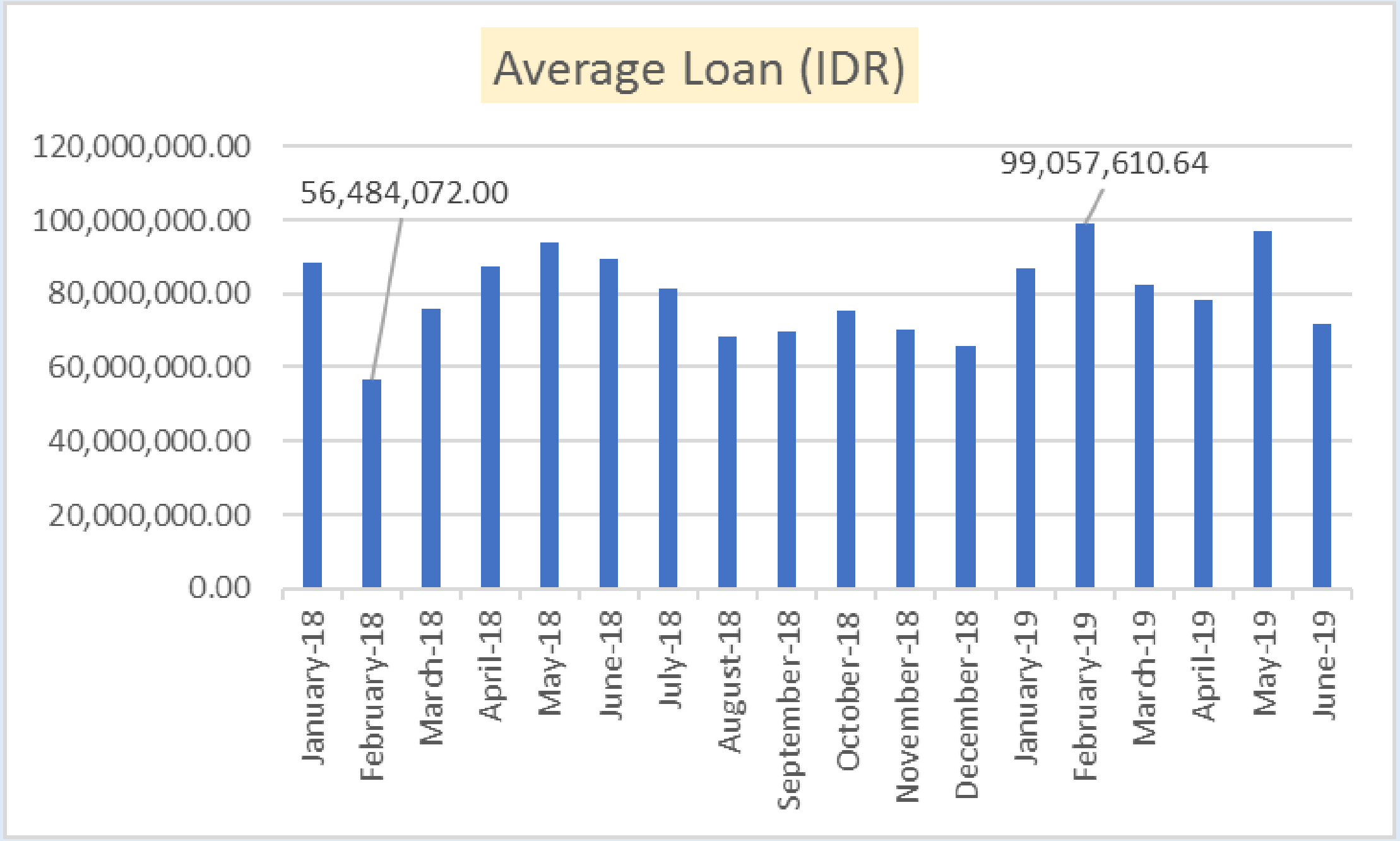
Java

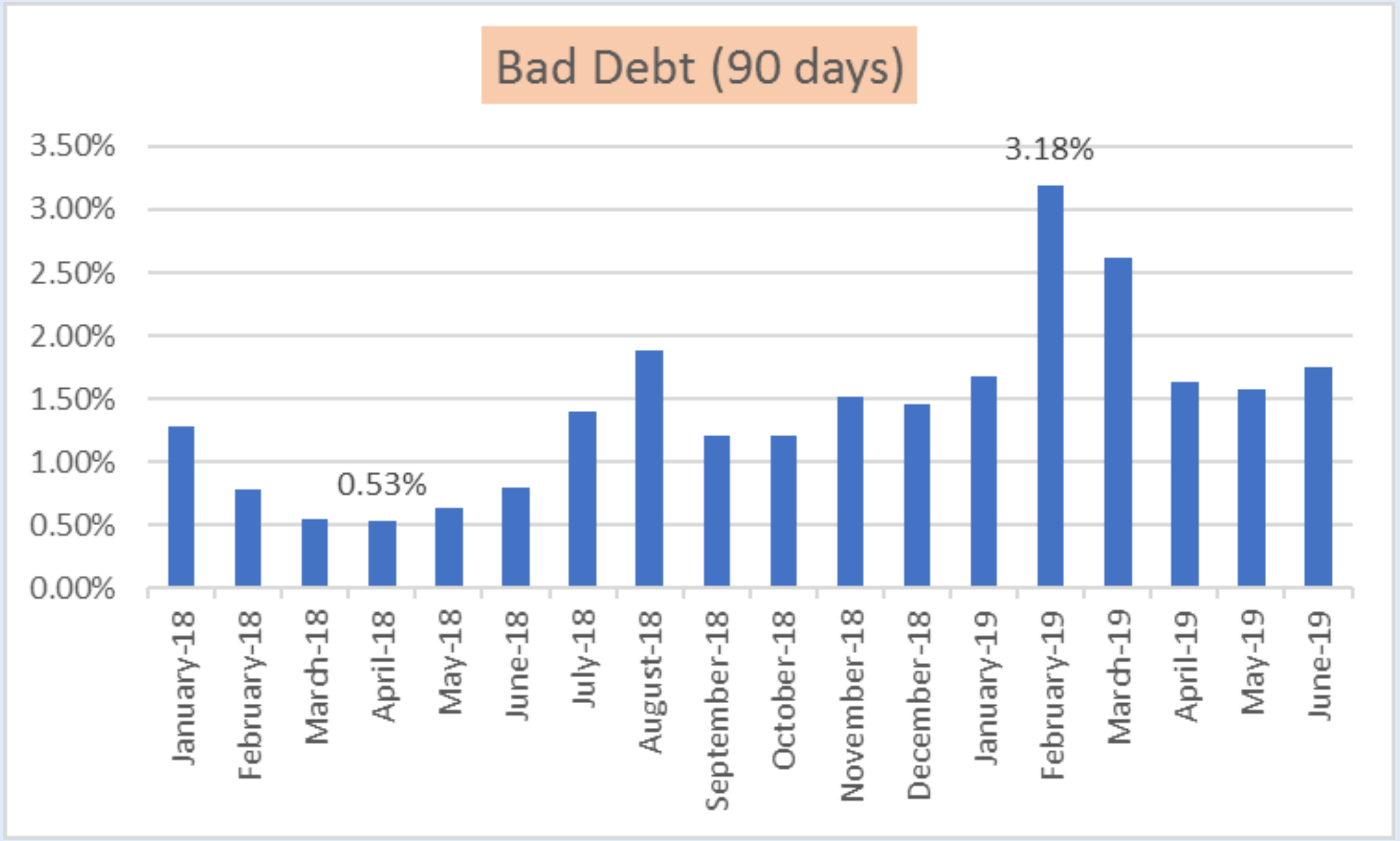
- IDR2,58 trillion (Jan 2018)
- IDR38,49 trillion (Jun 2019)
- Growth rate: 1393%

Non-Java:

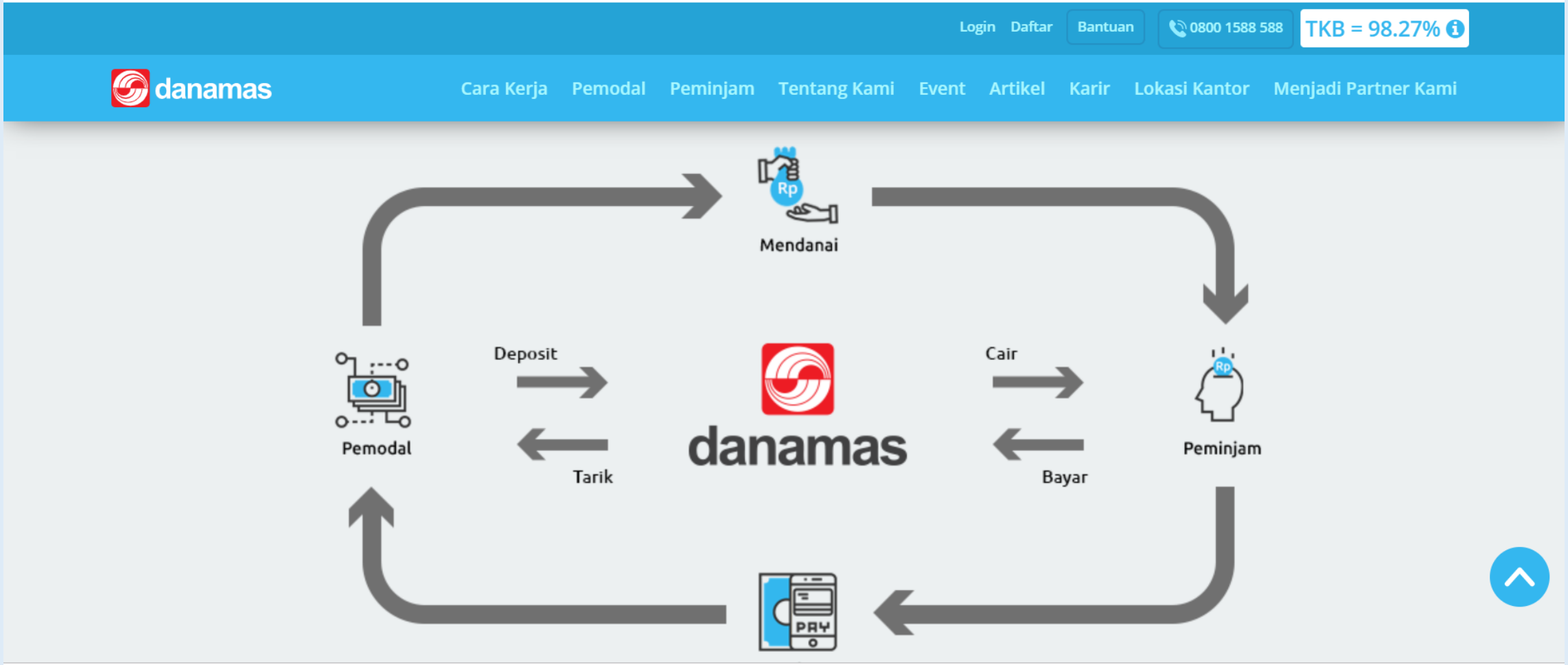
- IDR423 billion (Jan 2018)
- IDR6.32 trillion (Jun 2019)
- Growth rate: 1390%


Proportions of Total Accumulated Loan (IDR)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
January-18
February-18
March-18
April-18
May-18
June-18
July-18
August-18
September-18
October-18
November-18
December-18
January-19
February-19
March-19
April-19
May-19
June-19
Java
Non-Java


Average Loan (IDR)
120,000,000.00
100,000,000.00
80,000,000.00
60,000,000.00
40,000,000.00
20,000,000.00
0.00
56,484,072.00
99,057,610.64
January-18
February-18
March-18
April-18
May-18
June-18
July-18
August-18
September-18
October-18
November-18
December-18
January-19
February-19
March-19
April-19
May-19
June-19


Bad Debt (90 days)
3.50%
3.00%
2.50%
2.00%
1.50%
1.00%
0.50%
0.00%
3.18%
0.53%
January-18
February-18
March-18
April-18
May-18
June-18
July-18
August-18
September-18
October-18
November-18
December-18
January-19
February-19
March-19
April-19
May-19
June-19

Danamas (Conventional)



Investree (Conventional and Syariah)

Peer to Peer Lending Opportunities in Indonesia

- 183.3 Million Productive citizens in Indonesia
- 60 Million unbanked citizens
- 58.97 million SMEs → Government aims to reach up to IDR1,600 Trillion SME Credits
- As of June 2019: there are only 113 registered P2P lending
- FDI is up to 85% in P2P lending (POJK No. 77/POJK.01/2016)

Source: BPS, FinDex 2018

Peer to Peer Lending Challenges in Indonesia

- EY Fintech adoption survey (2017):
  - Indonesia < 10%
  - India > 50%
  - China > 69%
- Borrowers and lenders mostly reside in Java
- There are much more borrowers than lenders
- As of March 2019 → 600 illegal P2P lending that have been shutdown by the FSA (OJK)
- Bottlenecks (Indonesia Fintech Association, 2018):
  - Access to citizen digital ID (the civil registration office)
  - Credit scoring

Some useful links

- https://kr-asia.com/year-end-interview-what-to-watch-out-for-in-indonesias-fintech-landscape-2019
- https://www.digitalnewsasia.com/digital-economy/indonesia-leads-financial-inclusion-progress-global-findex-2017
- https://globalfindex.worldbank.org/
- https://www.cnbcindonesia.com/tech/20190309180739-37-59685/ditemukan-lagi-168-fintech-ilegal-total-ada-803
- https://www.indonesia-investments.com/news/todays-headlines/number-of-internet-users-in-indonesia-rises-to-171-million/item9144
- https://www.ojk.go.id/id/kanal/iknb/data-dan-statistik/fintech/default.aspx
- http://fintechnews.sg/
- https://danamas.co.id/web/HomeAction_home.action
- https://www.investree.id/

Thank You

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Assessing the Effectiveness of Indonesia Health Insurance Scheme: A Client's Perspective

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Abstract

In 2014, a Mandatory National Health Insurance Scheme (JKN—Jaminan Kesehatan Nasional), managed by Indonesia's Social Security Organising Body (known as BPJS--Badan Penyelenggara Jaminan Sosial) was introduced. Participation towards the program is mandatory for all Indonesian residents. By the end of 2018, JKN has 205.07 million participants, or 78.8% from a total of Indonesian residents, and targeted an increase of the participation of up to 95% of total Indonesia population in 2019. This study aims to evaluate the performance of BPJS from perspective of its customers, in this case Indonesia citizens, using perception surveys. Specifically, this study looks at the level of awareness, perceptions of, and support the Mandatory Health Insurance Scheme (JKN) among the citizens. It is important to conduct this survey in order to identify areas of improvement for the program and subsequently, the feedback could be used to inform further regulatory reforms specifically looking from the perspective of its clients. This paper will be organized as follows; first, we briefly review the implementation of Mandatory National Health Insurance Scheme (JKN) thus far and identify potential problems within customers' context. This will help to assess the current situation in the market and provide direction for the survey development. We will explain the implementation of the methodology used and follow this with the results of data analysis. Finally, the findings of the survey will be presented with emphasis on the implications for government to improve health insurance scheme in Indonesia.

Keywords: insurance; health insurance; perception survey

1. Introduction

Initially, National Health Insurance program in Indonesia (JKN) was given in a variety of ways to several communities according to staffing status or financial condition. However, since January 1, 2014, national health insurance products were merged and managed by one organization called BPJS Kesehatan. The participation towards the program is mandatory for all Indonesian residents, including foreigners who work for a minimum of six months in Indonesia. By the end of 2018, JKN has 205.7 million participants, or 78.8% from a total of Indonesian residents. In 2019, the program targeted

an increase of the participation of up to 95% of total Indonesia population. The biggest proportion (43.4%) of a total of JKN participants comes from category of PBI – The Recipient of State Budget Contribution Assistance, mainly the poor and the needy residents who receive Indonesian Health Cards (KIS—Kartu Indonesia Sehat) as the extension of the National Health Insurance program and whose fees are fully subsidized by the government.

Since its implementation, the national health insurance program (JKN) has benefited many people. In 2018, utilization of health services has reached 233.8 million, or an average of 640,765 people per day. Thus, it is undeniable that the JKN Program has opened wider access for the public to health services. However, there are some groups of people within the community that are not yet registered with JKN, mainly middle-income group. Previous research reported that this middle-income group is actually able to pay for the premium, but they do not have desire to become participants of JKN due to some underlying factors such as trust, the absence of urgency, and the bureaucracy that is perceived as complicated. In this study, we aim to evaluate customers' perception towards the national health insurance and test whether their perception influence their decision to participate with JKN.

2. Literature Review

2.1. National Health Insurance Scheme in Indonesia

As a form of service improvement for the community, BPJS Kesehatan opened up wider opportunity for participants to get more benefits (especially in terms of non-medical benefits) through a Coordination of Benefit (CoB) scheme with commercial insurance companies. Besides being stated in Article 28 of Presidential Regulation Number 111 of 2013, this CoB scheme is expected to improve services for participants who are able to pay more.

The principle of CoB involves the coordination of benefits imposed when participant of BPJS Kesehatan buys additional health insurance from the organizer of the additional health insurance program or the other agency which works in collaboration with BPJS Kesehatan. BPJS Kesehatan will later guarantee fees according to the applicable rates in the National Health Insurance (JKN) program, while the rest of the fees will be the responsibility of commercial insurance as long as it complies with the

applicable provisions and procedures. On the first launch of CoB scheme in 2014, BPJS Kesehatan started working in collaboration with 30 private insurance companies. Until 2018, there were 26,938 health facilities where patients can get treatment under the BPJS. The number includes 9,863 community health centers (Puskesmas and private clinics), 2,139 hospitals, 1,194 dentists and 1,058 opticians. At present, BPJS Kesehatan has synergized with dozens of private health insurance companies or better known as Additional Health Insurance (AKT) in implementing CoB.

Coordination in providing benefits for participants in JKN is carried out by BPJS Kesehatan with Additional Health Insurance Providers (AKT) who sell indemnity products, cash plans and managed care. BPJS Kesehatan takes role as the first guarantor; and Provider of Additional Health Insurance (AKT) as the first payer.

According to the new regulation regarding CoB scheme as stated in BPJS Kesehatan Regulation No. 4/2016, it has some differences with the previous regulation, which is more beneficial for AKT participants and companies.

First, in terms of participation, if previously the business entity directly registered JKN-KIS membership to BPJS Kesehatan, now with the issuance of new CoB rules, the business entity can register JKN-KIS membership through the AKT company.

Secondly, in terms of payment of contributions, if in the past the payment of contributions was made separately between JKN-KIS contributions and AKT premiums, now JKN-KIS contribution payments can be made together with AKT premium payments.

Third, in terms of health services, if the old CoB rules limit referrals only from first-level health facilities (FKTP) in collaboration with BPJS Health, then in the new CoB rules, CoB JKN-KIS participants can use referrals from non-BPJS Health FKTP partners with companies AKT, with the reference note for specialistic cases.

2.2.National Health Insurance Practices in ASEAN

2.2.1. Singapore

Healthcare in Singapore is overseen by the Singapore Ministry of Health. This largely consists of a universal health care system managed by the government with a significant private health sector. In addition, financing health care costs is carried out through a mixture of direct government subsidies, mandatory savings, national health insurance, and cost sharing.

Singapore generally has an efficient and widespread system of healthcare as it was ranked 6th in the World Health Organization's ranking of the world's health systems in 2000. Also, The Economist Intelligence Unit (2014) ranks Singapore health system as the second best (after Japan) of 166 in the world. Similarly, Bloomberg 2017 Health Care Efficiency Index ranks it second best among 55 countries.

Ramesh & Bali (2017) stated that Singapore government intervenes heavily and comprehensively in the health sector. Although health services are not free in Singapore, the government pays a lot of costs associated with the medical system, such as paying for most hospitals, making them public, and paying attention to most doctors in the city.

According to the publication of InterNations (2019), it is mandatory for Singaporean citizens and permanent residents to have some kind of health protection. The Ministry of Health provides a national savings scheme named MediSave, which helps members of the Central Provident Fund (CPF) pay for hospitalization, surgery, and certain outpatient costs for themselves or close family members. Established in 1984, MediSave is the oldest component of public health services in Singapore. Every Singaporean employee and Permanent Resident needs to set aside 8 to 10.5% of their annual income. The money is collected in a special savings account, where it is subject to tax-free interest. The exact percentage depends on the person's age. The lowest contribution for those under the age of 35 and the highest for the 50+ age group.

Regarding Health Insurance, all Singaporeans and permanent residents get basic health insurance named MediShield Life which covers basic public hospital treatments. For further coverage, they can purchase Integrated Shield Plan (IP) which gives them the option to get treated in better class wards and private hospitals. They can also add on by paying higher premiums for added insurance coverage through IP Riders. As for, MediSave can only be used to pay MediShield Life and Integrated Shield Plan (IP).

CIMB Research shows that around two-thirds of Singapore's population currently have IP, up from 43% in 2006. According to the Ministry of Health (MOH), IP coverage grew at a steady 6% CAGR during 2006 -15, that might be driven by the increasing prosperity and an the aging population. In 2014, the percentage of those who remained without insurance reached 6% and that number disappeared in 2015.

2.2.2. Malaysia

Regarding national health insurance in Malaysia, The Malaysian government has announced a free national health insurance scheme for low-income people, with an initial fee of RM2 billion (US $ 481 million) in December 2018.

The B40 National Protection Scheme (Below 40 percent), which has begun on January 1, 2019 provides protection against 36 critical illnesses. Payments up to RM 8.000 during the period to be announced on time. Under the scheme, there is a reimbursement payment of RM 50 per day up to 14 days, or RM 700 a year for hospitalization.

This scheme is a significant step taken by the Government of Pakatan Harapan (PH) to build a comprehensive social safety net from aspects of inclusive health insurance and takaful coverage (according to sharia) for low income groups for free.

The insurance scheme is guided by the manifesto PH to increase access to health services that are urgently needed, alleviate the cost of living and improve people's welfare. Targeted recipients between the ages of 18 and 55 will be covered for a period of five years. More than four million households are expected to benefit from this scheme.

According to Bank Negara Malaysia Report (2017), the insurance and takaful industries in Malaysia had healthy annual rates of 10.47 percent in the 20 years before 2016, and it accounted for 6% of the Malaysian financial system assets in 2016. As for, the ratio of life insurance policies and family takaful contracts to total population increased from 25.3% in 1996 to 56% in 2016. Responding to this situation, Bank Negara Malaysia (BNM) has targeted the national insurance penetration rate to achieve 75% in 2020 from the current 56%.

2.3.Customer Perceptions

Popular studies featured in services marketing literature show that customers form perceptions about service providers, based on how the service providers deliver the services, physical evidence provided in the service offering, response to emergencies, service performance, trustworthy behavior, accuracy, honesty and consistency, and good manners of service providers (Agarwal & Kumar, 2016; Parasuraman, Zeithaml, & Berry, 1985).

According to Gronroos (1982), there are two dimensions of customer perceptions of a service, namely technical quality (what is provided) and functional quality (how

services are provided). Sasser et al. (1978) proposed three different attributes (level of material, facilities, and personnel) which are all related to the process of service delivery. Furthermore, Gronroos (1990) identified six specific dimensions, namely, professionalism and skills, reliability and trust, attitudes and behavior, accessibility and flexibility, recovery, and reputation and credibility.

2.3.1. Perceptions Towards National Insurance Health Scheme

A research study about perceptions of NHIS in Ghana found that price is considered to be a barrier to the enrollment (Jehu-Appiah, et al., 2011). Prices (including premium fees and registration), convenience and benefits of national health insurance scheme (NHIS) are all factors that are significantly associated with enrolment and retention. To overcome this, a possible solution might be to implement better premiums or waivers for the poor in order to provide fair and equitable participation (Jakab & Krishnan, 2004; Aryeetey et al., 2010; Jehu-Appiah et al., 2010).

Second, at convenience, the scheme's administrative arrangements might be a potential barrier. To improve overall community satisfaction, scheme administrators must be responsive to people's preferences (Carrin et al., 2005) by overcoming operational difficulties that appear to inhibit registration (De Allegri et al., 2009).

Third, both the insured and the uninsured have a positive perception about the benefits of NHIS regarding the benefits of economic, psychological and social insurance (Arhinful 2003). However, those who have not been insured and previously insured are somewhat less positive about the benefits of the scheme, and this may be related to their decision not to register and renew membership.

2.3.2. Perceptions towards Providers

The credibility of the health care system in relation to quality care factors is a determining factor in how people perceive health insurance (Arhinful 2003). Growing dissatisfaction from insured clients who feel that they are given poorer quality care and wait longer than cost-paying clients need to be addressed immediately to maintain and attract new members (Bruce et al., 2008).

The mechanism to reimburse provider costs is a powerful instrument that forms incentives for facility managers and individual providers (Yazbeck, 2009). Thus provider

payment reforms may be needed to regulate financial incentives to influence provider behavior towards insured clients.

In addition, from the patient's perspective, constant supply of essential medicines is a prerequisite for the credibility of the scheme and for the quality of health care provided (Mamadani & Bangser, 2004). Frequent delays in reimbursing service providers affect the availability of drugs in public facilities.

With the frequent outages, insured clients must buy medicines on the open market, reduce

In contrast to the attitude of providers, previous research shows that the technical quality of care and service delivery is perceived positively (Jehu-Appiah et al., 2010). It is also proven that there is effect of quality care on enrollment (Criel et al., 1998; Haddad et al., 1998; Atim & Sock, 2000; Chee et al., 2002; Criel & Waelkens, 2003; Musau, 2004; Baltussen & Ye, 2006; De Allegri et al., 2006; Kamuzora & Gilson, 2007; Ndiaye et al., 2007; Basaza et al., 2008).

2.3.3. Perceptions towards Community Attributes

Community attributes have significant role towards health insurance enrolment as those were proven by the previous research that factors which influence positive perceptions in the public health sector involve personal experiences in health services, family experiences, media reports, and experiences of close friends (Setswe et al., 2016).

A research conducted by Jehu-Appiah et al. (2010) highlights the fact that household decisions to register are influenced by community attributes such as health beliefs, attitudes and peer pressure. Besides, the other researches also expose the importance of peer contexts on individual differences (Daddis, 2010), which in turn is influenced by factors such as prevailing ideas about insurance, members' past experience, credibility of scheme management and applicable health service contexts (Arhinful, 2003). Peer pressure is found to be negatively related to enrolment. Information spreads quickly in the community, people listen to each other and perceptions of individuals can have a cumulative effect in a community.

Community beliefs and attitudes, the values and knowledge people have about the concept of health insurance and risk sharing, are considered to be influencing household perceptions towards the need and participation in health insurance (Lee et al., 2010). Trust and public health attitudes are considered positive, in the sense that households show a

good understanding of the principles and concepts of sharing insurance and health risks, in line with findings from previous studies in Ghana (Akazili, 2010). Those who are not insured are more positive in their understanding, suggesting that low participation rates are not necessarily the result of failure to understand the concept of health insurance, but are more likely to be the result of other factors, such as household preferences.

3. Methodology

The data was collected using online questionnaire and distributed via Amazon MTurk. Questionnaire was used to measure perception towards hospital/providers, perception towards BPJS Kesehatan, and perception towards community attributes among three categories of people which are people with private health insurance, people with only public health insurance (BPJS Kesehatan), and people with no insurance.

A Likert scale was used to measure (1 = strongly disagree to 5 = strongly agree) 23 item statements on perceptions based on previous research conducted in Ghana by Jehu-Appiah et al., (2010). Data were analyzed using IBM SPSS Statistics. First, we checked the validity and reliability of construct then drop selected items which are not valid or reliable (from 23 items, there are 2 items which are not reliable). Second, we used one-way ANOVA to see whether there are differences in perception between three groups of people. Third, logistic regression was run to determine the association of perception on BJPS Kesehatan enrollment.

4. Results

4.1.Descriptive summary characteristic

Majority of respondents are female (65.3%) as compared with male (34.7%) and most of them are in age category above 36 years (33.8%) which are adult population. Respondents' profile also reveal that majority of them are employed (75.2%) mostly as private employee (38.8%). Most of the respondents have monthly expenditure within range IDR1,000.001 – IDR3,000,000 (37.7%) and most of them also married (53.3%) and possess a bachelor's degree (54.2%). About 93.3% respondents are considered having a good health condition (not unwell) and most of the do not have any children (64.7%) (see Table 1).

Table 1. Descriptive statistics

Item	Option	Percentage (%)
Gender	Female	65.3
	Male	34.7
Age	< 16-20	6.2
	21-25	19.2
	26-30	26.9
	31-35	13.8
	above 36	33.8
Monthly expenditure	<IDR1.000.000	9.9
	IDR1.000.001 - IDR3.000.000	37.7
	IDR3.000.001 - IDR5.000.000	22.8
	IDR5.000.001 - IDR7.000.000	11.1
	IDR7.000.001 - IDR9.000.000	6.8
	IDR9,000.001 - IDR11,000,000	6.2
	IDR11,000,001 - IDR13,000,000	2.5
	>IDR13,000,000	3.1
Education	Elementary	1.2
	Junior high school	0.0
	Senior high school	22.9
	Bachelor's degree	54.2
	Master's degree	16.9
	Doctoral degree	4.8
Marriage Status	Single	46.7
	Married	53.3
	Widow	0.0
	Divorce	0.0
Number of Children	0	64.7
	1	12.6
	2	13.8
	3	7.8
	4	1.2
	5	0.0
	>5	0.0
Employment	Unemployed	3.0
	Student	21.8
	Government employed	7.3
	Private employee	38.8
	Others	29.1
Health status	very well	22.0
	well	52.4
	neutral	18.9
	unwell	6.7
	very unwell	0.0
Freq. of using BPJS Kesehatan	Never	40.7
	1	16.8
	2	9.6
	3	7.8
	4	4.8
	>4	20.4
Freq. of accompanying family using BPJS Kesehatan	Never	30.5
	1	18.6
	2	16.2
	3	4.8
	4	3.0
	>4	26.9

4.2. Level of Awareness towards BPJS Kesehatan Services and Reasons for (Not) Enrolling with BPJS Kesehatan

The level of awareness towards BPJS Kesehatan was measured by answering several statements about BPJS Kesehatan. Respondents were asked to give a "correct",

"incorrect", or "not sure" answer for each statement. The results show that people with only public insurance mostly has better awareness of BPJS Kesehatan services compared with people with private insurance and uninsured. Only for the third statement "customers can go directly to BPJS Kesehatan providers to get treatment", people with public insurance has better understanding than the other categories. For the statement that states "Indonesian residents have option for not having BPJS Kesehatan", people who are uninsured have better understanding than the other group with 56% of them correctly answer that statement. The detail of proportion of respondents who have given correct answers is shown in Table 2 below.

Tabel 2. Understanding of BPJS Kesehatan

Understanding of BPJS Kesehatan	**People with only Public Insurance (%)**	**People with private insurance (%)**	**People with no Insurance (%)**
BPJS Kesehatan providers have free health services	80.00	79.70	81.30
BPJS Kesehatan has the same health services with private insurance	31.60	20.30	13.50
Customers can go directly to BPJS Kesehatan providers to get treatment	52.70	57.60	37.50
Indonesia Residents have option for not having BPJS Kesehatan	40.00	39.00	56.00
BPJS Kesehatan monthly fee is depend on the class of facilities wanted	96.80	93.20	81.30

For people with only public insurance and people with private insurance, the biggest reason of enrolling for BPJS kesehatan is because they aware that they need financial protection against illness. The second reason is because BPJS Kesehatan is more affordable than private insurance. For both categories, most of them responded that BPJS Kesehatan has no better service than private insurance. The following Table 3 show the detail proportion of reasons people enroll with BPJS Kesehatan.

Table 3. Reasons for Enrolling

Reasons	People with only Public Insurance (%)	People with private insurance (%)
Financial protection against illness	87.20	100.00
BPJS Kesehatan is more affordable	82.00	84.20
BPJS Kesehatan has better service than private insurance	21.30	7.90
Community opinion leader ask me to join	44.70	34.20
Relative asked me to join	72.40	42.10

The main reason people not enrolling with BPJS Kesehatan (Table 4) is because they think the registration process is too complicated (57.10% agree with the statement). The second reason is because they already have employer who paid for the costs of their healthcare insurance (37.60%) and the third one is because they are not confidence with BPJS Kesehatan service scheme. This finding is aligned with pervious study by Arthinful (2013) which found that the scheme itself, such as the administrative arrangement and the benefit received, perceived as somewhat less positive by people with no insurance and may relate to their decision not to register.

Table 4. Reasons for Not Enrolling

Reasons	People with no Insurance (%)
Cannot afford premium	25.00
Mostly healthy do not need to insure	18.80
No close facility in the area	31.30
Have private health insurance	25.00
No confidence in the scheme	37.50
Registration is too complicated	57.10
Employers pays my costs of health care	37.60

4.3.Perceptions

This study adopt perception statements from previous study by Jehu-Appiah, et al., (2011) and grouped 23 statements related to perceptions towards healthcare providers (technical quality of care, service delivery adequacy, provider attitude), perceptions towards scheme (benefit of BPJS Kesehatan, price, and convenience of BPJS Kesehatan), and perceptions towards community attributes (peer pressure and health belief and attitude). However, convenience of BPJS Kesehatan, one of the dimensions of

perceptions towards scheme construct, has Cronbach's alpha off 0.397 (less than cut-off value of 0.6). Thus, it will not be included in further analysis. All other dimensions will be analyzed further as we consider its value as valid (factor loading and KMO > 0.5 and sig. <0.05) and reliable (cronbach's alpha > 0.6)[1]. Table 5 show the detail for factor loading and cronbach's alpha for each construct and measurement.

Table 5. Perception factors and alpha score

Dimension	No	Items	Factor Loading	KMO and Bartlett's Test	Cronbach's Alpha
Technical quality of care	1	Treatment is effective for recovery and cure	0.632	7.80 Sig. 0.000	0.739
	2	The quality of drugs is good	0.611		
	3	The provider makes a good diagnosis	0.629		
	4	The doctors do a good clinical examination	0.702		
	5	I can get immediate care if I need it	0.703		
	6	The quality of Indonesia insurance will be better with BPJS Kesehatan	0.694		
Service delivery adequacy	7	There are sufficient number of good doctors	0.812	0.761 Sig. 0.000	0.748
	8	The doctors for women are adequate	0.762		
	9	The medical equipment is adequate	0.754		
	10	The rooms are adequate	0.695		
Benefit of BPJS	11	Will save money from paying hospital bills	0.805	0.642 Sig. 0.000	0.65
	12	Will not need to borrow money to pay for hospital care	0.709		
	13	Joining the scheme will benefit me	0.797		
Convenience of BPJS	14	The district scheme office location is convenient	0.790	0.500 Sig. 0.001	0.397
	15	The collection of insurance cards is convenient	0.790		

[1] although peer pressure and price have cronbach's alpha less than 0.6, we decided to include it in further analysis since its value is close to 0.6.

Dimension	No	Items	Factor Loading	KMO and Bartlett's Test	Cronbach's Alpha
Providers' attitude	16	Attitude of health staff should be improved (R*)	0.866	0.500 Sig. 0.000	0.665
	17	Availability of drugs should be improved (R*)	0.866		
Peer pressure	18	Opinion leaders in my community affect my decision to enroll	0.830	0.500 Sig. 0.000	0.544
	19	Experience of others with health insurance affects my decision to enroll	0.830		
Health beliefs and attitude	20	Health is a matter of fate (in the hands of God) and insurance cannot help me deal with its consequences (R*)	0.885	0.500 Sig. 0.000	0.721
	21	Buying insurance may bring bad luck and illness (R*)	0.885		
Price	22	The additional fee is too high to get treatment in providers is too high (R*)	0.836	0.500 Sig. 0.000	0.567
	23	The registration fee is too high (R*)	0.836		

4.3.1. Perception Differences between Insured and Uninsured People

We analyzed the results with one-way ANOVA method to test whether there is any differences between perception towards providers, perception towards scheme and perception towards community attitude among three categories of people (people with private health insurance, people with only public health insurance, and people with no insurance) (Table 6). The results show that there are differences between groups in technical quality service (dimension of perception towards providers) and price (dimension of perception towards scheme) with p-value < 0.001 and p-value < 0.005, respectively. Furthermore, based on multiple comparison result, we can conclude that there is different perception of technical quality service for people with no insurance and people in the other categories (people with only public insurance and people with private insurance). For price perception which explain affordability, significant different shows

in people with only public insurance and people with private insurance with value of sig. 0.003 (sig < 0.05).

Table 6. Results of One-way ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
MEAN_TECHNICALQUAL	Between Groups	4.047	2	2.024	6.809	.001
	Within Groups	48.442	163	.297		
	Total	52.489	165			
MEAN_SERVICEDLVRY	Between Groups	1.976	2	.988	1.752	.177
	Within Groups	90.808	161	.564		
	Total	92.785	163			
MEAN_BENEFIT	Between Groups	.139	2	.070	.204	.816
	Within Groups	56.239	165	.341		
	Total	56.378	167			
MEAN_ATTITUDE	Between Groups	.886	2	.443	.978	.378
	Within Groups	75.651	167	.453		
	Total	76.537	169			
MEAN_PEER	Between Groups	3.131	2	1.565	2.314	.102
	Within Groups	112.313	166	.677		
	Total	115.444	168			
MEAN_HEALTHBELIEF	Between Groups	2.344	2	1.172	1.621	.201
	Within Groups	118.572	164	.723		
	Total	120.916	166			
MEAN_PRICE	Between Groups	7.358	2	3.679	5.612	.004
	Within Groups	106.861	163	.656		
	Total	114.218	165			

Table 7. Results of Multiple Comparisons (Post-hoc test)

Dependent Variable	(I) INSURANCE	(J) INSURANCE	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
MEAN_TECHNICAL QUAL	People with only public insurance	People with private insurance	.17889	.09093	.153	-.0411	.3988
		People with no insurance	.53068*	.15180	.002	.1635	.8979
	People with private insurance	People with only public insurance	-.17889	.09093	.153	-.3988	.0411
		People with no insurance	.35179	.15764	.081	-.0295	.7331
	People with no insurance	People with only public insurance	-.53068*	.15180	.002	-.8979	-.1635
		People with private insurance	-.35179	.15764	.081	-.7331	.0295
MEAN_SERVICEDLVRY	People with only public insurance	People with private insurance	.16991	.12659	.544	-.1364	.4762
		People with no insurance	.33043	.20912	.348	-.1755	.8364
	People with private insurance	People with only public insurance	-.16991	.12659	.544	-.4762	.1364
		People with no insurance	.16053	.21794	1.000	-.3667	.6878
	People with no insurance	People with only public insurance	-.33043	.20912	.348	-.8364	.1755
		People with private insurance	-.16053	.21794	1.000	-.6878	.3667
MEAN_BENEFIT	People with only public insurance	People with private insurance	.06184	.09717	1.000	-.1732	.2969
		People with no insurance	.01523	.15801	1,000	-.3669	.3974
	People with private insurance	People with only public insurance	-.06184	.09717	1.000	-.2969	.1732
		People with no insurance	-.04661	.16456	1.000	-.4446	.3514

Dependent Variable	(I) INSURANCE	(J) INSURANCE	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
	People with no insurance	People with only public insurance	-.01523	.15801	1.000	-.3974	.3669
		People with private insurance	.04661	.16456	1.000	-.3514	.4446
MEAN_ATTITUDE	People with only public insurance	People with private insurance	-.11418	.11156	.923	-.3840	.1556
		People with no insurance	-.21217	.18188	.735	-.6520	.2277
	People with private insurance	People with only public insurance	.11418	.11156	.923	-.1556	.3840
		People with no insurance	-.09799	.18971	1.000	-.5568	.3608
	People with no insurance	People with only public insurance	.21217	.18188	.735	-.2277	.6520
		People with private insurance	.09799	.18971	1.000	-.3608	.5568
MEAN_PEER	People with only public insurance	People with private insurance	.16084	.13634	.719	-.1689	.4906
		People with no insurance	-.33860	.22853	.421	-.8913	.2141
	People with private insurance	People with only public insurance	-.16084	.13634	.719	-.4906	.1689
		People with no insurance	-.49944	.23785	.112	-1.0747	.0758
	People with no insurance	People with only public insurance	.33860	.22853	.421	-.2141	.8913
		People with private insurance	.49944	.23785	.112	-.0758	1.0747
MEAN_HEALTHBELIEF	People with only public insurance	People with private insurance	-.25603	.14227	.221	-.6001	.0881

Dependent Variable	(I) INSURANCE	(J) INSURANCE	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
		People with no insurance	-.11055	.23013	1.000	-.6672	.4461
	People with private insurance	People with only public insurance	.25603	.14227	.221	-.0881	.6001
		People with no insurance	.14547	.24011	1.000	-.4353	.7263
	People with no insurance	People with only public insurance	.11055	.23013	1.000	-.4461	.6672
		People with private insurance	-.14547	.24011	1.000	-.7263	.4353
MEAN_PRICE	People with only public insurance	People with private insurance	-.45356*	.13547	.003	-.7813	-.1259
		People with no insurance	-.14839	.22529	1.000	-.6933	.3966
	People with private insurance	People with only public insurance	.45356*	.13547	.003	.1259	.7813
		People with no insurance	.30517	.23454	.585	-.2622	.8725
	People with no insurance	People with only public insurance	.14839	.22529	1.000	-.3966	.6933
		People with private insurance	-.30517	,23454	.585	-.8725	.2622

4.3.2. Association of perceptions with BPJS enrollment

In this study, logistic regression results (Table 7) show that there is only one dimension of perceptions associated with people's decision to enroll with BPJS Kesehatan, which is peer pressure with value of sig. 0.021 (sig. <0.05). Peer pressure dimension is part of perception towards community attitude. Previous study by Jehu-Appiah, et al., (2011) also found that peer pressure is one of the factors associated with public insurance enrollment though other factors such as benefit, convenience and price which part of perception towards scheme was also mentioned.

Table 7. Effects of perception on BPJS Kesehatan enrollment

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	MEAN_TECHNICALQUAL	.667	.441	2.287	1	.130	1.949
	MEAN_SERVICEDLVRY	.324	.323	1.009	1	.315	1.383
	MEAN_BENEFIT	-.060	.430	.019	1	.889	.942
	MEAN_ATTITUDE	.058	.316	.034	1	.854	1.060
	MEAN_PEER	-.677	.292	5.364	1	.021	.508
	MEAN_HEALTHBELIEF	-.005	.288	.000	1	.988	.996
	MEAN_PRICE	-.043	.291	.022	1	.883	.958
	Constant	.517	2.221	.054	1	.816	1.677

a. Variable(s) entered on step 1: MEAN_TECHNICALQUAL, MEAN_SERVICEDLVRY, MEAN_BENEFIT, MEAN_ATTITUDE, MEAN_PEER, MEAN_HEALTHBELIEF, MEAN_PRICE.

5. Conclusion and Discussion

Perception towards hospital/providers (technical service quality factor) is different between insured (people with only public health insurance (BPJS Kesehatan) and people with private health insurance) and uninsured people. Perception towards BPJS Kesehatan scheme, particularly in price factor, is different between people with only public insurance and people with private insurance.

Specifically, our findings show that there is significant difference in technical service quality between people with no insurance, people with public insurance, and people with only private insurance. This result indicates that people with no insurance have perception that BPJS Kesehatan has no satisfactory quality in terms of service, drug, and medical staff. Peer pressure may have influence towards people's decision to enroll since Indonesian population is often believe what other people say and it also may lead to their resistant for BPJS Kesehatan enrollment. Moreover, there is different perception towards price of BPJS Kesehatan between people with only public insurance and people with private insurance. People with only public insurance perceived the premium and additional service price of BPJS Kesehatan as high, while people with private insurance perceived the price of BPJS Kesehatan as lower.

There is an association between perception and people's decision to enroll in BPJS Kesehatan. This study shows that community attitude is the only perception attribute associated with people's decision to enroll with BPJS Kesehatan. This finding is

important as it suggest to focusing effort in this area in order to improve enrollment and achieve BPJS target to increase the participation of up to 95% of total Indonesia population. However, the findings are different than previous study which shows that scheme factors is the strongest factors associated with public insurance enrollment (Jehu-Appiah, et al., 2011). This difference may be related to different characteristics of Indonesia population. Consumers' decision making in Indonesia is often influenced by others recommendation and they tend to believe about others past experiences while using certain service or product, including insurance. According to Jehu-Appiah, et al., (2011) intervention should be done to meet people expectation of public insurance in order to make them satisfied, minimized dropouts, and finally attract new members.

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Financial Inclusion in Indonesia: A Province Level Analysis on People Engagement in Banking Services and Human Development Index

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Abstract

Financial inclusion is a well-received goal of countries around the world since it is expected to support economic development. Because it reflects effective and efficient access to banking services, people can maximize the utilization of financial services to helps them cope with life strategies and emergencies. Easy access to financial services is making them able to have a more financial choice for better decision making in life. Nevertheless, research providing the real proof of its positive externalities is still limited. With province-level data, this paper is aimed to (1) capture the brief profile of financial inclusion in Indonesia, (2) examine its direct effect towards people's engagement in banking services, and (3) examine its positive correlation to human development index. This article is using publicly available data from the Indonesian Financial Authority, Central Bureau of Statistics, and The World Bank Global Financial Index Data. By using correlation analysis, 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.

Keywords: *financial inclusion; savings; credits; human development index; life expectancy; financial services*

JEL: A13, B26, D23, G21, O16

Introduction

The financial inclusion towards financial development and economic growth is quite essential. Therefore, it has included in one of the Global Policy Agenda. Financial inclusion is on the supply side of financial services availability and accessibility. Inclusion pushing is in order 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 (Otoritas Jasa Keuangan). The result indicates that province level financial inclusion data correlated positively with total credit and total third-party funds on the current period. Nevertheless, the correlation between inclusion and the non-performing loan is still unclear. These findings support the importance of financial inclusion towards financial services utilization.

Governments around the world emphasize the importance of financial inclusion and put it on global policy agenda (Arun & Kamath, 2015; Bhatia & Arnav 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 & Arnav 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 Communitty 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 differencet 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 *(Otoritas Jasa Keuangan)*. 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, Schmidt-hebbel, & Serven (2000), across 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, Bayoumi, & Samiei, 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, Mashamaite, & Khoza, 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 inon 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 areis interrelated.

Literature Review on Financial Inclusion

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 disadvaentaged people have the same chance to access it (Bhatia & Arnav 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 numerуous 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, offers 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 pгoverty (Iqbal & Sami, 2017). Although it has been meantioned by many researchers, for example, Liu et al. (2016), Fungáčová & Weill (2014). Not many of them provides in-depth analysis ofon real data of inclusion and economic indicator. Iqbal and Sami (2017) provides 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~~ve~~ conducted 2 times financial inclusion and literacy survey in~~on~~ 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 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~~on~~ 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. I~~O~~n 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~~a~~ are still lots of homework to do

Surprisingly, although this country is cate~~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 ~~of~~ 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 neighbours. 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~~ness~~, 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.

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

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~~k~~ of ~~Perbankan~~ Indonesian Banking Desember 2016*
*) Excluding Rural banks

From the supply side, big banks are consistent with wider~~broad~~ 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~~on~~ 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.

H1 – Province-level financial inclusion index positively correlates with province total savings.

H2 – 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 cognisance 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 be 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 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:

Hypothesis 3: The financial inclusion has a positive relationship with the human development in Indonesia.

Data and Methodology

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 way dimensions indexes are constructed. Instead of using an average of the dimension indexes as in UNDP's methodology, our index is like 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 indexes d_i is calculated by the following formula:

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

where:

Wi = weight attached to the dimension I, $0 \leq Wi \leq 1$

Ai = actual value of dimension i

Mi = upper limit of the value of dimension i, fixed by pre-specified rule

m_i = lower limit of the value of dimension I, fixed by pre-specified rule

The upper and lower limits used in this paper are discussed in section 3.1 The above formula ensures that $0 < d_i < 1$. The country's achievement in dimension i will be higher if the value of d_i is higher. If n dimensions of financial inclusion are considered, then a country's achievement in these dimensions will be given by a point $X = (d_1, d_2, d_3, \ldots, d_x)$ on the n-dimensional space. In the n-dimensional space, the point $O = (0, 0, 0, \ldots, 0)$ represents the point of worst situation while the point $W = (w_1, w_2, \ldots, w_n)$ 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

distances. This makes IFI a number that lies between 0 and 1 and is monotonically increasing. Thus for computation of IFI, first we calculate X_1 (distance between X and O) and X_2 (inverse distance between X and W) and then take a simple average of X_1 and X_2 to compute IFI. The formulae are given below:

$X_1 = \text{Sqrt}\left(((d_1)^2 + (d_2)^2 + .. + (d_n)^2)/((w_1)^2+(w_2)^2+..+(w_n)^2)\right)$

$X_2 = 1 - \left(\text{Sqrt}\left(((w_1-d_1)^2 +(w_2-d_2)^2+..+ (w_3-d_n)^2)/ ((w_1)^2+(w_2)^2+..+(w_n)^2)\right)\right)$

$IFI = \frac{1}{2}(X_1+X_2)$

X_1 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 X_1 lie between 0 and 1. Higher value of X_1 implies more financial inclusion.

X_2 gives the inverse normalizedEuclidean 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 X_2lie between 0 and 1. The higher distance is considered

because higher value of X_2 implies higher financial inclusion. IFI is the simple average of X_1 and X_2 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 $w_i = 1$ for all i. Thus, the ideal situation will be W = (1,1,1,…,1) in the n-dimensional space. The formula will be:

$A_1 = \text{Sqrt}((d_1)^2 + (d_2)^2 + .. + (d_n)^2)/n$

$A_2 = 1 - \text{Sqrt}(((1-d_1)^2 + (1-d_2)^2 + .. + (1-d_n)^2)/n)$

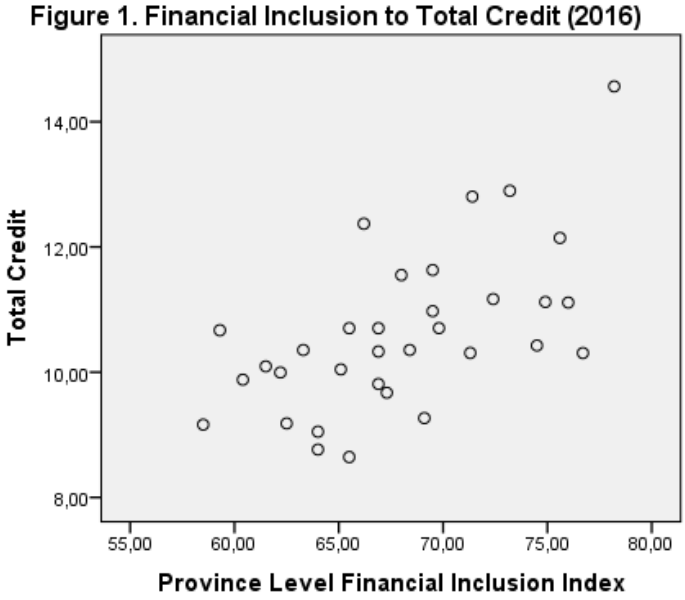
$IFI = ½ (A_1 + A_2)$

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.

Results and Discussions

We did the correlation testing between the province level financial inclusion index and the total credit in Indonesia 2016.

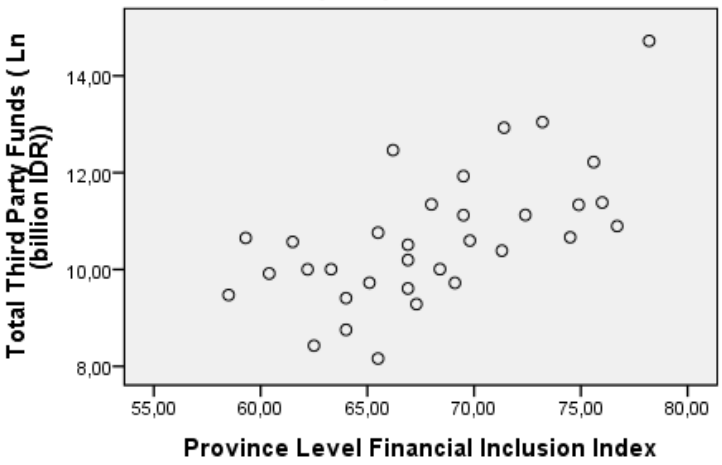
Figure 1. Financial Inclusion to Total Credit (2016)



Based on Figure 1, we found that the financial inclusion has a positive relationship toward total credit. Iqbal and Sami (2017) supports 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.

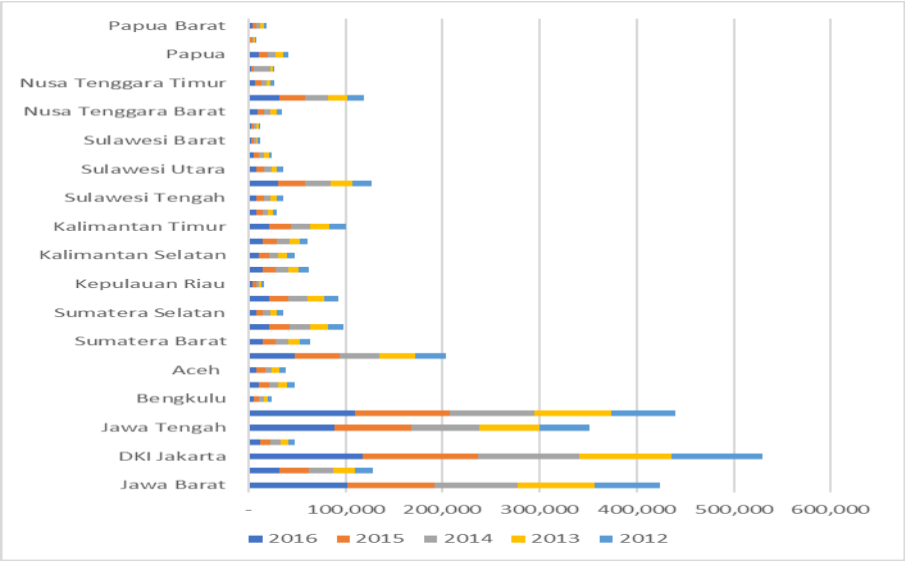
Furthermore, we also examined the impact of province level financial inclusion to the total third-party funds. Interestingly, we also find the linear correlation where the higher financial inclusion, the larger total funds from third party. Financial inclusion related to the availability of financial 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 (2016)



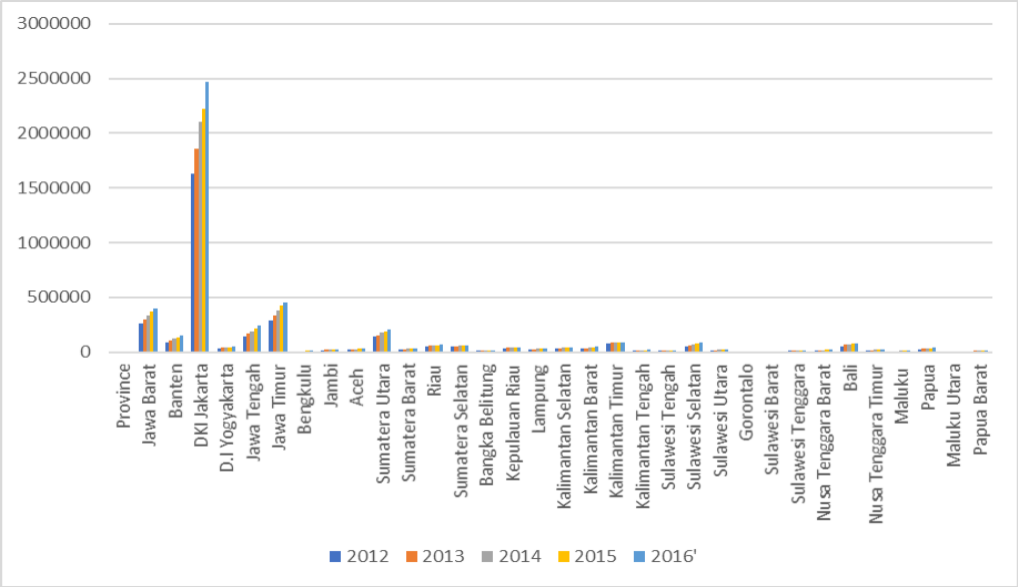
Then, based on those data, in detail we found on Jakarta Province-A capital city of Indonesia was the highest credit by Small Medium Enterprise's (SME's) compared than other provinces in Indonesia as presented in Figure 3 below.

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:

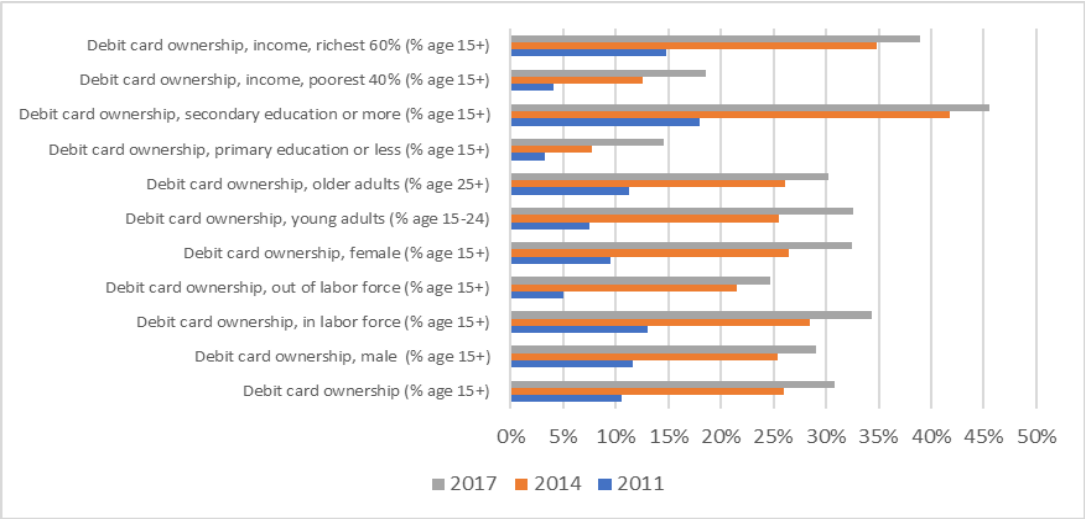
Figure 5. Saving and Credit in The Past Year (% age 15+) in Indonesia (Source: Global Findex Database – World Bank 2018).

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

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

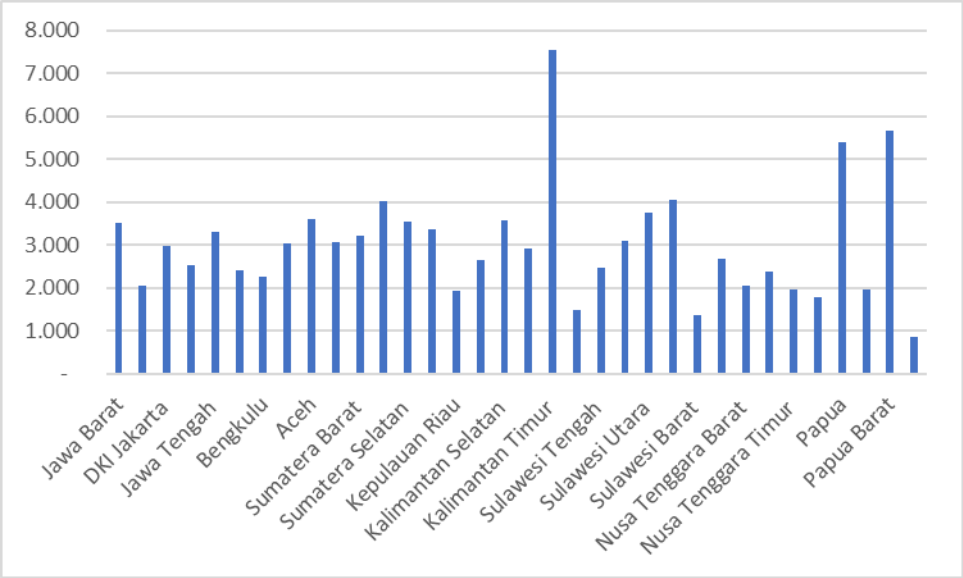
or more rather than others. By the year, that percentage keeps growing fro 2011 to 2017 as presented in Figure 6.

Figure 6. Debit Card Ownership from Global Findex Data



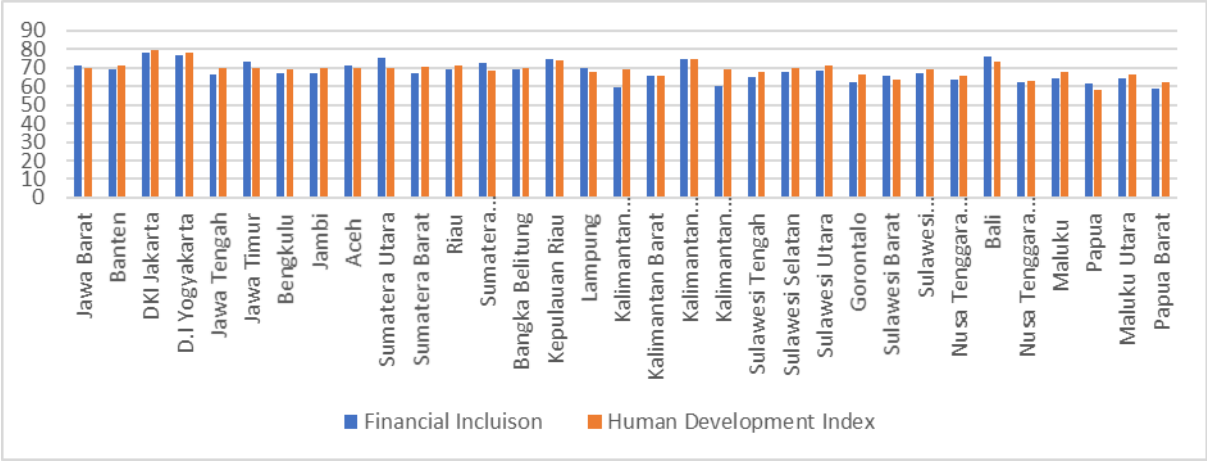
Unfortunately, in Indonesia, the net performing loan (NPL) ratio was also high among the provinces in 2016. It is a ratio of NPL compared to the total loan. East Kalimantan was the largest province with NPL ratio compared to other provinces, while West Papua was the lowest. The details are presented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