

## Analysis Of Effect Social And Economic Indicators On Banking Literacy In North Sumatera

Pandapotan Tua. P. Nainggolan<sup>1</sup>, Irsad Lubis<sup>2</sup>, Ahmad Albar Tanjung<sup>2</sup>

<sup>1</sup>(Postgraduate Student, Department of Magister Economics, Faculty of Economics and Business, Universitas Sumatera Utara, Indonesia)

<sup>2</sup>(Postgraduate Lecturer, Department of Magister Economics, Faculty of Economics and Business, Universitas Sumatera Utara, Indonesia)

### Abstract:

Banking is a sector that has the highest level of Financial Literacy from the other sectors. The aim of this research to determine and analyze the influence of social and economic indicators on banking literacy in Province of North Sumatera. Analysis was performed by panel data regression with fix effect model and using data from 2016-2019 in 33 regencies of Province of North Sumatera by using Eviews 10. The results of estimation shows that GDP per Capita, Number of Employment, Urban Population have significant effect while Gender and Education do not have significant effect on Banking Literacy. The significant effect between GDP per Capita, Number of Employment and Urban Population on Banking Literacy become an insight to Government of North Sumatera to equalize income distribution, jobs and infrastructure of banking service such as Branch Office and ATM between urban and rural areas.

**Key Word:** Banking Literacy, GDP per Capita, Gender, Education, Employment, Urban Population, Fix Effect Model.

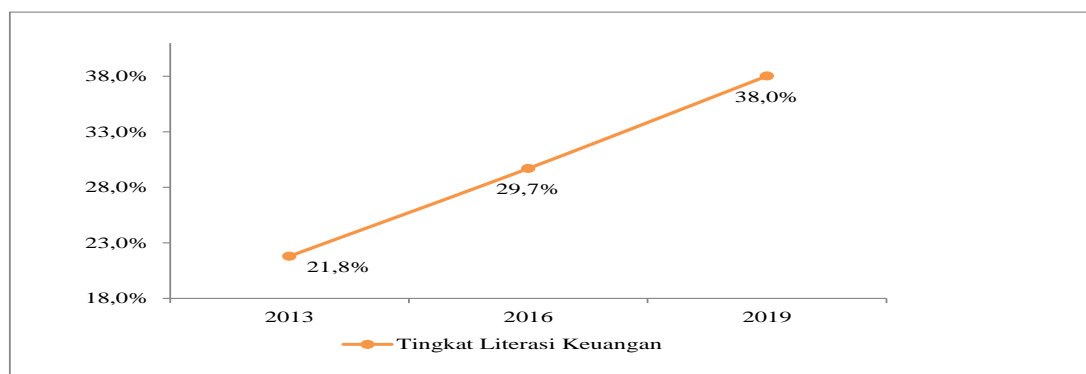
Date of Submission: 26-07-2021

Date of Acceptance: 11-08-2021

### I. Introduction

Trust in the policies taken by government in the financial sector is strongly effected by level of public financial literacy (Bernanke, 2006). Results of a study conducted by the Organization for Economic Cooperation and Development or OECD (2012) suggest that there is a significant relationship between level of knowledge about finance and behavior in utilizing financial products. Level of knowledge higher lead levels of participation in financial market is also higher. Participation rate higher push policies taken by the government in financial sector more effective.

According to Financial Services Authority (OJK) financial literacy is a knowledge, skills, and beliefs that influence attitudes and behavior to improve quality of decision making and financial management in order to achieve prosperity (OJK, 2017). To achieve this vision, several approaches are taken, namely 1) a geographic approach, 2) a target approach and 3) a sectoral approach (OJK, 2017). The development of level of financial literacy Indonesia can be seen in Figure 1.1.



Source: National Survey of Financial Literacy and Inclusion OJK 2013, 2016, and 2019

Figure 1.1. Indonesian Financial Literacy Index at 2013, 2016, and 2019

National Survey of Financial Literacy (SNLIK) conducted by OJK found the level of financial literacy Indonesia in 2019 amounted to 38.0%, which means that of the 100 people there are 38 people who have a well-

literacy literate. Indonesia's financial literacy rate in 2019 increased by 8.3% from 2016 and 16.2% from 2013. OJK survey 2019 was conducted involving 12,773 respondents from 34 provinces, 67 regencies/cities with different backgrounds related to gender, age, employment status, to the final level of education (OJK, 2019).

Bhushan and Medury (2013) research on residents in Himachal Pradesh, India found that gender, education level, income, type of work (civil servant and non-civil servant), and place of work have a positive effect on financial literacy level. Research conducted by Sanjib (2016) also pointed out that a significant factor affecting the level of financial literacy such as age, gender, education level, occupation, income, housing and culture.

**Table 1.1.** Financial Literacy Index by Province at 2016 and 2019

Nu	Province	Financial Literacy Index		
		2016	2019	Increasing
1	Aceh	32,7%	44,4%	11,7%
2	Sumatera Utara	31,3%	38,0%	6,7%
3	Sumatera Barat	27,3%	34,6%	7,3%
4	Riau	29,5%	43,2%	13,7%
5	Jambi	26,9%	35,2%	8,3%
6	Sumatera Selatan	31,3%	40,1%	8,8%
7	Bengkulu	27,6%	34,1%	6,5%
8	Bangka Belitung	29,5%	35,7%	6,2%
9	Lampung	26,9%	30,9%	4,0%
10	Kepulauan Riau	37,1%	45,7%	8,6%
11	DKI Jakarta	40,0%	59,2%	19,2%
12	Jawa Barat	33,0%	37,4%	4,4%
13	Jawa Tengah	33,5%	47,4%	13,9%
14	D.I. Yogyakarta	38,5%	58,5%	20,0%
15	Jawa Timur	35,6%	49,0%	13,4%
16	Banten	38,2%	39,3%	1,1%
17	Bali	37,5%	38,1%	0,6%
18	Nusa Tenggara Barat	21,5%	34,7%	13,2%
19	Nusa Tenggara Timur	28,0%	27,8%	-0,2%
20	Kalimantan Barat	30,5%	36,5%	6,0%
21	Kalimantan Tengah	26,2%	37,0%	10,8%
22	Kalimantan Selatan	23,3%	36,2%	12,9%
23	Kalimantan Timur	30,5%	39,6%	9,1%
24	Kalimantan Utara	26,5%	35,4%	8,9%
25	Sulawesi Utara	28,7%	38,9%	10,2%
26	Sulawesi Tengah	22,5%	39,6%	17,1%
27	Sulawesi Selatan	28,4%	32,5%	4,1%
28	Sulawesi Tenggara	26,5%	36,8%	10,3%
29	Gorontalo	23,3%	31,2%	7,9%
30	Sulawesi Barat	26,9%	34,9%	8,0%
31	Maluku	26,2%	36,5%	10,3%
32	Maluku Utara	27,3%	37,5%	10,2%
33	Papua Barat	19,3%	28,9%	9,6%
34	Papua	22,2%	29,1%	6,9%

Source: National Survey of Financial Literacy and Inclusion of OJK at 2016, 2019

The low increase of financial literacy in North Sumatera Province is not in accordance with the growth in GRDP level. Based on GRDP data at Constant Prices for North Sumatera Province in 2019 of IDR 539,527 Trillion, an increase of 5.2% from 2018. During the last three years, GRDP of North Sumatera has always increased by more than 5%, namely from 2016 to 2017 it has an increase of 5.12%, then from 2017 to 2018 it also increased by 5.18%. From related data during 2016-2019 GRDP of North Sumatera Province is the fifth largest GRDP compared to other provinces in Indonesia. It is inversely proportional to the low level of financial literacy.

Although GRDP at constant prices in North Sumatera is high, GRDP per capita is still low. Based on table 1.2, it can be seen that GRDP per capita of North Sumatera Province in 2019 was 37.05 million rupiah or only ranked thirteenth from other provinces. According to Todaro (2011) income per capita is a measure that better describes level of welfare because income is measured by considering the population. Low GRDP per capita of North Sumatera may also have a relationship with a low level of financial literacy (OECD, 2015; Atikah, 2019; Rahmawati, 2019).

Table 1.2 Gross Regional Domestic Product per Capita (GRDP per Capita) at Constant Prices (Million Rupiah)

Province	2016	2017	2018	2019
Aceh	22.835	23.363	24.014	24.590
Sumatera Utara	32.885	34.184	35.571	37.049
Sumatera Barat	28.165	29.312	30.478	31.670
Riau	70.569	70.740	70.751	71.122
Jambi	37.729	38.834	40.044	41.181
Sumatera Selatan	32.700	34.060	35.670	37.261
Bengkulu	21.040	21.752	22.498	23.276
Lampung	25.569	26.615	27.741	28.935
Kep. Bangka Belitung	34.133	34.934	35.767	36.238
Kep. Riau	80.296	79.744	81.293	83.202
DKI Jakarta	149.832	157.637	165.872	174.137
Jawa Barat	26.924	27.971	29.161	30.247
Jawa Tengah	24.959	26.089	27.287	28.576
DI Yogyakarta	23.566	24.534	25.776	27.190
Jawa Timur	35.971	37.724	39.588	41.567
Banten	31.782	32.948	34.202	35.431
Bali	32.689	34.130	35.905	37.534
Nusa Tenggara Barat	19.306	19.091	18.029	18.542
Nusa Tenggara Timur	11.469	11.863	12.277	12.714
Kalimantan Barat	24.309	25.198	26.109	27.050
Kalimantan Tengah	32.900	34.371	35.561	36.992
Kalimantan Selatan	28.540	29.579	30.624	31.413
Kalimantan Timur	125.386	126.625	127.390	130.859
Kalimantan Utara	76.635	78.919	80.732	83.308
Sulawesi Utara	30.680	32.297	33.915	35.512
Sulawesi Tengah	31.151	32.860	34.411	36.347
Sulawesi Selatan	31.303	33.234	35.249	37.351
Sulawesi Tenggara	30.476	31.894	33.286	34.783
Gorontalo	20.427	21.478	22.540	23.642
Sulawesi Barat	21.068	22.001	22.951	23.817
Maluku	15.321	15.942	16.612	17.255
Maluku Utara	18.177	19.193	20.322	21.171
Papua Barat	61.242	62.170	64.498	64.683
Papua	44.342	45.577	48.093	39.854

Source : Central Bureau of Statistics of Indonesia, 2019

Besides a regional basis, OJK also conducted a survey of financial literacy levels based on financial services sector of Banking, Insurance, Retiring Funds, Financing Institutions, Mortgage, and Capital Markets. Based on survey results, it was found that banking industry has a higher financial literacy index compared to other financial industries (OJK, 2019).

Table 1.3 Financial Literacy Index by Sector at 2013, 2016, and 2019

Nu	Sector	Financial Literacy Index		
		2013	2016	2019
1	Banking	21,8%	28,9%	36,1%
2	Peransuransian	17,8%	15,8%	19,4%
3	Retiring Funds	7,1%	10,9%	14,1%
4	Financing Institutions	9,8%	13,0%	15,2%
5	Mortgage	14,9%	17,8%	17,8%
6	Capital Markets	3,8%	4,4%	4,9%

Source: National Survey of Financial Literacy and Inclusion OJK 2013, 2016, 2019

Based on table 1.3, it can be seen that banking industry in 2019 had a literacy rate of 36.1%, an increase of 7.2% from 2016 and an increase of 14.3% from 2013. High banking literacy index was caused by easy access for public to obtain banking services (OJK, 2019). This convenience is driven by availability of office network and spread throughout the entire corners of Indonesia (Nandru, et al. 2015). In addition to services provided by banking industry is very complete and answer almost all financial transactions are required by society (Badriatul, et al. 2015).

Allen, *et al.* 2012, In his research, he explained several reasons why account ownership can be used as an indicator to measure the level of financial literacy in the banking sector, including: 1) Majority of people have savings accounts so that they are compared between regions and even between countries, 2) Savings account ownership is also accompanied by a card as a facility for payments and payments. used more often, 3) Not everyone needs credit. The existence of a link between savings account ownership and level of financial literacy in banking sector can be the basis for looking at level of banking literacy in districts/cities in North Sumatera Province. The number of savings accounts districts / cities in North Sumatera province can be seen from Table 1.4.

Table 1.4 Number of Savings Accounts by Regency/City in North Sumatera Province from 2016 until 2019

Districts / Cities	2016	2017	2018	2019
Nias	222.487	463.680	525.131	613.521
Mandailing Natal	446.702	156.964	165.843	171.775
Tapanuli Selatan	416.242	455.272	509.203	536.191
Tapanuli Tengah	14.999	19.955	22.643	26.034
Tapanuli Utara	217.315	276.843	324.149	383.882
Toba Samosir	201.869	281.815	316.780	380.680
Labuhan Batu	543.310	683.668	776.260	819.217
Asahan	495.476	550.983	622.988	643.199
Simalungun	116.658	134.536	164.171	176.073
Dairi	149.754	214.705	251.600	277.293
Karo	290.234	378.026	420.393	473.153
Deli Serdang	620.947	778.421	914.929	1.000.954
Langkat	351.383	472.996	562.719	598.909
Nias Selatan	12.863	14.490	16.913	17.883
Humbang Hasundutan	32.864	31.531	42.272	24.299
Pakpak Bharat	669	836	984	1.362
Samosir	37.172	39.731	48.815	27.607
Serdang Bedagai	65.940	70.945	89.902	94.739
Batu Bara	62.989	63.616	72.222	63.876
Padang Lawas Utara	46.102	28.010	36.046	31.713
Padang Lawas	26.227	28.753	46.733	45.418
Labuhanbatu Selatan	10.935	13.044	13.924	17.487
Labuhanbatu Utara	21.452	23.027	24.653	26.285
Nias Utara	4.669	5.787	11.183	12.788
Nias Barat	2.794	3.456	6.666	7.615
Sibolga	199.979	284.663	315.088	350.902
Tanjung Balai	234.911	337.007	391.768	437.054
Pematang Siantar	618.911	761.982	838.488	921.129
Tebing Tinggi	319.590	427.319	483.812	530.203
Medan	3.548.306	4.167.803	4.505.441	4.647.931
Binjai	402.035	482.399	555.493	597.639
Padang Sidempuan	186.472	234.237	275.622	302.563
Gunung Sitoli	4.762	5.923	11.503	13.201
<b>Sumatera Utara</b>	<b>9.361.541</b>	<b>11.887.344</b>	<b>13.345.988</b>	<b>14.757.177</b>

Source : Bank Indonesia, 2020

The gap in ownership of savings accounts in districts/cities in North Sumatera Province shows a high gap in level of banking literacy. As one of sectors in financial literacy then factors affecting level of financial literacy also affect level of literacy of banking districts / cities in North Sumatera Province which is GRDP per capita, gender, level of education, employment, housing status, and age (OECD, 2015; Doshi, 2018; Sanjib, 2016; Lisa dan Bilal, 2012; Bushan dan Medury, 2013). Cole, *et al.* (2009) on his research in Indonesia and India found the higher level of financial literacy, the higher savings account usage. Agarwal, Tarun (2016) explained in his research that there is a significant relationship between level of financial literacy and ownership of a savings account. Research focused look at influence socio-economic indicators of aspects level literacy regional banks that use data in district and city.

## II. Material And Methods

This analysis was carried out on a regional basis using district/city data in North Sumatera Province. In summary, the framework of this research can be described as follows:

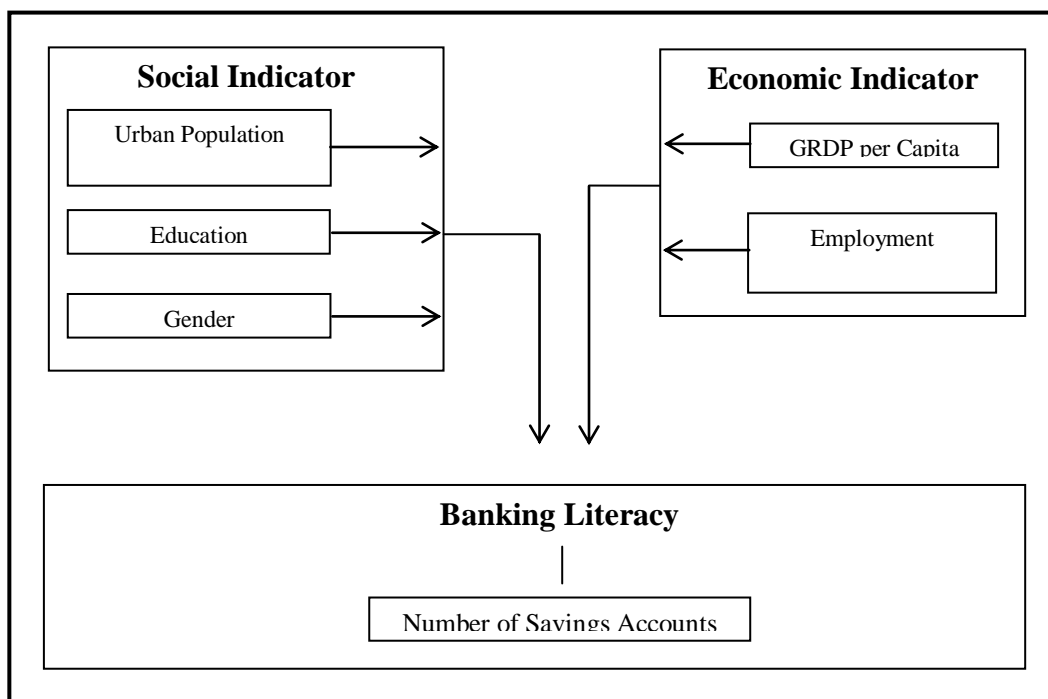


Figure 2.1. Research Framework

Then the hypothesis in this research are:

1. GRDP per Capita has positive effect on banking literacy in districts/cities in North Sumatera Province.
2. Employment has positive effect on the banking literacy in districts/cities in North Sumatera Province.
3. Gender has positive effect on banking literacy in districts/cities in North Sumatera Province.
4. Education level has positive effect on banking literacy in districts/cities in North Sumatera Province.
5. Urban Population has positive effect on banking literacy in districts/cities in North Sumatera Province.

This research was conducted in North Sumatera province with a total area of 72981.23 km<sup>2</sup>. North Sumatera Province consists of 33 districts/cities. The research was conducted using panel data formed from 2016-2019 and districts/cities in North Sumatera Province. Data were obtained from publication of Financial Services Authority (OJK), Bank Indonesia (BI) and the Central Bureau of Statistics (BPS). The definitions of variables or constructs that exist in this research are as follows: :

1. Banking Literacy is knowledge or understanding the residents of districts/cities in North Sumatera Province regarding bank services accompanied by involvement in these services such as having a savings account or using credit facilities offered by banks. In this case, banking literacy is measured by ownership of the number of savings accounts (in units of accounts) in each district/city in North Sumatera Province.
2. Gender is difference in roles, positions, responsibilities, and division of employment between men and women in districts/cities in North Sumatera Province. Gender in this research is seen from proportion of male population to total population in each district/city in North Sumatera Province. Gender is calculated in percent.
3. Savings Account is an account that is useful as a systematic record of deposits in the form of money (rupiah and foreign currency) of public opened in a network of banking branch offices in districts/cities in North Sumatera Province. Savings Account is calculated in units of account.
4. Gross Regional Domestic Product (GRDP) per Capita is amount of added value arising from all economic sectors in the district/city in North Sumatera Province compared to total population in the region. GRDP per Capita is calculated in rupiah.
5. Employment is a resident of district/city in North Sumatera Province in the age of labor force who have worked at least 1 hour (uninterrupted) during past week. Employment is calculated in units of people.
6. Education level is last level of formal education (which is structured and tiered) obtained by a person. Level of education in this research is seen from percentage of population who completed Diploma and Bachelor's degree which is calculated in percent.
7. Urban Population are all people who live in urban areas districts / cities in North Sumatera Province for six months or more or those who live less than six months but intended to stay. Urban population is calculated in units of people.

Data was analyzed using E-Views 10. The structure of panel data analysis is divided into:

1. Common Effect Model (CEM) is a model structure which will assume that the intercept and slope are fixed for each individual in each period of time. In general, the common effect model equations written as follows:  $Y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \epsilon_{it}$
2. Fixed Effect Model (FEM) is a model that pays attention to the diversity (heterogeneity) of individuals captured through the diversity of intercepts in each equation (Ekananda, 2016). Equation of model is written as follows:  $Y_{it} = \alpha_{0i} + \beta_1 X_{1it} + \beta_2 X_{2it} + \epsilon_{it}$
3. Random Effect Model (REM) assumes the difference in these characteristics in error of each model. In general, equation for the random effect model is written as follows :  $Y_{it} = \alpha + \beta_1 X_{1it} + \epsilon_{it}; \epsilon_{it} = \mu_i + v_t + w_{it}$

Then the selection panel data regression models estimated as follows:

1. Chow Test is used to select whether there are differences at intercept in each individual and between each time. In other words Chow test is a test that is used to select whether the model used is *common effect model* (CEM) or *fixed effect model* (FEM).
2. Hausman test is used to choose the best model that can be used between *fix effect model* (FEM) or *random effect model* (REM).

The research model briefly expressed as follows:

$$REKTAB_{it} = \alpha + \beta_1 PKOTA_{it} + \beta_2 PDDKN_{it} + \beta_3 GNDR_{it} + \beta_4 TK_{it} + \beta_5 PDRBK_{it} + \epsilon_{it}$$

description :

- i : District / City in North Sumatera Province
- t : years of 2016, 2017, 2018, 2019
- $\beta_{1,2,3...}$  : variable slope 1,2,3 ...
- $\alpha$  : intercept
- REKTAB : Banking Literacy
- PKOTA : Total Urban Population (person)
- PDDKN : Population Education Level (person)
- GNDR : Percentage of Male Population (percent)

### III. Result

Table 3.1 The Result of Uji Chow (Chow Test)

Redundant Fixed Effects Tests			
Pool: Untitled			
Test cross-section fixed effects			
Effects Test	Statistic	d.f.	Prob.
Cross-section F	77.041008	-32,94	0.0000
Cross-section Chi-square	436.154278	32	0.0000

Source: Data analyzed by *Eviews 10.0*

Based on Table 3.1 it can be seen that F probability value of 0.000 is less than 5% alpha so that the decision is to reject  $H_0$  and accept  $H_1$ . This means that the selected model is *fixed effect model* (FEM).

Table 3.2 The Result of Hausman Test

Correlated Random Effects - Hausman Test			
Pool: Untitled			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f	Prob.
Cross-section random	36.467499	5	0.0000

Source: Data analyzed by *Eviews 10.0*

Based on Table 3.2 it can be seen that the value of the probability p-value of 0.000 is less than 5% alpha so that the decision is to reject  $H_0$  and accept  $H_1$ . This means that the selected model is *fixed effect model* (FEM). Based on Chow test and Hausman test the best model is *fix effect model* (FEM).

Table 3.3 Simultaneous Test (Statistical F Test)

	Value
F-statistic	396.7677
Prob(F-statistic)	0.000000

Source: Data analyzed by *Eviews 10.0*

Based on Table 3.3 it can be seen that the regression results show the value of 396.7677 F-statistic and probability value of 0.00000 or tarah significant at  $\alpha = 5\%$ . Values explained a significant probability that all independent variables together been able to explain variation in the dependent variable models.

Table 3.4 Partial Test (Statistical t Test)

Variable	Coefficient	t-Statistic	Prob.
PDRBK?	0.026646	5.100862	0.0000
TK?	2.290477	5.215278	0.0000
GNDR?	-6162353.	-0.186937	0.8521
PDDKN?	5106.000	0.844690	0.4004
PKOTA?	4.116285	4.063480	0.0001

Source: Data analyzed by *Eviews 10.0*

Based on table 3.4, it can be seen the influence of each independent variable of GRDP per Capita, Employment, Gender, Education and Urban Population on the dependent variable of Banking Literacy Level. Coefficient of GRDP per capita (PDRBK) with a probability of 0.026646  $0.0000 < \alpha$  at a significance level of 5%, then an individual basis GRDP per capita variable positive and significant impact on the level of banking literacy. Value of coefficient of Labor (TK) is 2.290477 with a probability of 0.0000  $< \alpha$  at a significance level of 5%, then Employment variable individually has a positive and significant effect on the level of banking literacy.

Gender coefficient value of -6162353 with probability 0.8521  $> \alpha$  at the 5% significance level, then individually variable Gender and no significant negative effect on the level of banking literacy. Education coefficient value of 5106.000 with probability 0.4004  $> \alpha$  at a significance level of 5%, then individually Education variables and no significant positive effect on the level of banking literacy. Coefficient of urban population with a probability of 4.116285  $0.0001 < \alpha$  at a significance level of 5%, then individually variable Urban Population positive and significant impact on the level of banking literacy.

### Estimating the Regression Equation

Then the panel data regression equation in general and its interpretation is as follows :

$$\text{REKTAB} = 1.283.934 + 0,026646 \text{ PDRBK} + 2,290477 \text{ TK} - 6.162.353 \text{ GNDR} + 5106,00 \text{ PDDKN} + 4,116285 \text{ PKOTA}$$

The interpretation of model equation is as follows:

1. Each additional one rupiah GRDP per Capita (PDRBK) and assuming other variables constant, it will increase Banking Literacy rate of 0.026646 and partially significant effect (prob value  $0.0000 < 5\%$ ).
2. Each additional person Number of Employment (TK) and assuming other variables constant, it will increase Banking Literacy rate of 2.290477 and partially significant effect (prob value  $0,000 < 5\%$ ).
3. Each additional one percent gender (GNDR) and assuming other variables constant and will reduce Banking Literacy rate of 6,162,353 and partially no significant effect (prob value  $0.8521 > 5\%$ ).
4. Each addition of one percent with Diploma to Bachelor's Education Level (PDDKN) and assuming of other variables being constant will increase Banking Literacy Level by 5106.00 and partially have no significant effect (prob value  $0.4004 > 5\%$ ).
5. Each additional person Urban Population number (PKOTA) and assuming other variables constant, it will increase Banking Literacy rate of 4.116285 and partially significant effect (prob value  $0.0001 < 5\%$ ).

Table 3.5 Output Regression Cross Effect

Fixed Effect (Cross)	Coefficient
NIAS	1534517.
MANDAILING NATAL	649167.6
TAPANULI SELATAN	1005119.
TAPANULI TENGAH	541970.6
TAPANULI UTARA	1038456.
TOBA SAMOSIR	865886.8
LABUHAN BATU	60736.33
ASAHAN	-414262.7
SIMALUNGUN	-1064283.
DAIRI	838718.6
KARO	222750.9
DELISERDANG	-7092051.
LANGKAT	-964056.1
NIAS SELATAN	1041818.
HUMBANG HASUNDUTAN	884337.0
PAKPAK BHARAT	1276618.
SAMOSIR	967930.3
SERDANG BEDAGAI	-552742.9
BATUBARA	-544690.3
PADANG LAWAS UTARA	703507.0
PADANG LAWAS	694762.0
LABUHAN BATU SELATAN	-152185.9
LABUHAN BATU UTARA	84703.15
NIAS UTARA	1158258.
NIAS BARAT	1150921.
SIBOLGA	590131.1
TANJUNG BALAI	431911.7
PEMATANG SIANTAR	200308.2
TEBING TINGGI	723272.5
MEDAN	-7307794.
BINJAI	147931.3
PADANG SIDEMPUAN	513522.7
GUNUNG SITOLI	764810.5

Source: Data analyzed by Eviews 10.0

Based on the table above, the estimation equation for each district/city is as follows :

- **Kabupaten Nias :**

$$REKTAB = (1.283.934 + 1.534.517) + 0,026646 PDRBK + 2,290477 TK - 6.162.353 GNDR + 5106,00 PDDKN + 4,116285 PKOTA$$

- **Kabupaten Mandailing Natal :**

$$REKTAB = (1.283.934 + 649.167,6) + 0,026646 PDRBK + 2,290477 TK - 6.162.353 GNDR + 5106,00 PDDKN + 4,116285 PKOTA$$

- **Kabupaten Tapanuli Selatan :**

$$REKTAB = (1.283.934 + 1.005.119) + 0,026646 PDRBK + 2,290477 TK - 6.162.353 GNDR + 5106,00 PDDKN + 4,116285 PKOTA$$

- **Kabupaten Tapanuli Tengah :**

$$REKTAB = (1.283.934 + 541.970,6) + 0,026646 PDRBK + 2,290477 TK - 6.162.353 GNDR + 5106,00 PDDKN + 4,116285 PKOTA$$

- **Kabupaten Tapanuli Utara :**

$$REKTAB = (1.283.934 + 1.038.456) + 0,026646 PDRBK + 2,290477 TK - 6.162.353 GNDR + 5106,00 PDDKN + 4,116285 PKOTA$$

- **Kabupaten Toba Samosir :**

$$REKTAB = (1.283.934 + 865.886,8) + 0,026646 PDRBK + 2,290477 TK - 6.162.353 GNDR + 5106,00 PDDKN + 4,116285 PKOTA$$

- **Kabupaten Labuhan Batu :**

$$REKTAB = (1.283.934 + 60.736,33) + 0,026646 PDRBK + 2,290477 TK - 6.162.353 GNDR + 5106,00 PDDKN + 4,116285 PKOTA$$



- **Kabupaten Asahan :**  
REKTAB = (1.283.934 - 414.262,7) + 0,026646 PDRBK + 2,290477 TK - 6.162.353 GNDR + 5106,00  
PDDKN + 4,116285 PKOTA
- **Kabupaten Simalungun :**  
REKTAB = (1.283.934 - 1.064.283) + 0,026646 PDRBK + 2,290477 TK - 6.162.353 GNDR + 5106,00  
PDDKN + 4,116285 PKOTA
- **Kabupaten Dairi :**  
REKTAB = (1.283.934 + 838.718,6) + 0,026646 PDRBK + 2,290477 TK - 6.162.353 GNDR + 5106,00  
PDDKN + 4,116285 PKOTA
- **Kabupaten Karo :**  
REKTAB = (1.283.934 + 222.750,9) + 0,026646 PDRBK + 2,290477 TK - 6.162.353 GNDR + 5106,00  
PDDKN + 4,116285 PKOTA
- **Kabupaten Deliserdang :**  
REKTAB = (1.283.934 - 7.092.051) + 0,026646 PDRBK + 2,290477 TK - 6.162.353 GNDR + 5106,00  
PDDKN + 4,116285 PKOTA
- **Kabupaten Langkat :**  
REKTAB = (1.283.934 - 964.056,1) + 0,026646 PDRBK + 2,290477 TK - 6.162.353 GNDR + 5106,00  
PDDKN + 4,116285 PKOTA
- **Kabupaten Nias Selatan :**  
REKTAB = (1.283.934 + 1.041.818) + 0,026646 PDRBK + 2,290477 TK - 6.162.353 GNDR + 5106,00  
PDDKN + 4,116285 PKOTA
- **Kabupaten Humbang Hasundutan :**  
REKTAB = (1.283.934 + 884.337,0) + 0,026646 PDRBK + 2,290477 TK - 6.162.353 GNDR + 5106,00  
PDDKN + 4,116285 PKOTA
- **Kabupaten Pakpak Bharat :**  
REKTAB = (1.283.934 + 1.276.618) + 0,026646 PDRBK + 2,290477 TK - 6.162.353 GNDR + 5106,00  
PDDKN + 4,116285 PKOTA
- **Kabupaten Samosir :**  
REKTAB = (1.283.934 + 967.930,3) + 0,026646 PDRBK + 2,290477 TK - 6.162.353 GNDR + 5106,00  
PDDKN + 4,116285 PKOTA
- **Kabupaten Serdang Bedagai :**  
REKTAB = (1.283.934 - 552.742,9) + 0,026646 PDRBK + 2,290477 TK - 6.162.353 GNDR + 5106,00  
PDDKN + 4,116285 PKOTA
- **Kabupaten Batubara :**  
REKTAB = (1.283.934 - 544.690,3) + 0,026646 PDRBK + 2,290477 TK - 6.162.353 GNDR + 5106,00  
PDDKN + 4,116285 PKOTA
- **Kabupaten Padang Lawas Utara :**  
REKTAB = (1.283.934 + 703.507,0) + 0,026646 PDRBK + 2,290477 TK - 6.162.353 GNDR + 5106,00  
PDDKN + 4,116285 PKOTA
- **Kabupaten Padang Lawas :**  
REKTAB = (1.283.934 + 694.762,0) + 0,026646 PDRBK + 2,290477 TK - 6.162.353 GNDR + 5106,00  
PDDKN + 4,116285 PKOTA
  
- **Kabupaten Labuhan Batu Selatan :**  
REKTAB = (1.283.934 - 152.185,9) + 0,026646 PDRBK + 2,290477 TK - 6.162.353 GNDR + 5106,00  
PDDKN + 4,116285 PKOTA
- **Kabupaten Labuhan Batu Utara :**  
REKTAB = (1.283.934 + 84.703,15) + 0,026646 PDRBK + 2,290477 TK - 6.162.353 GNDR + 5106,00  
PDDKN + 4,116285 PKOTA
- **Kabupaten Nias Utara :**  
REKTAB = (1.283.934 + 1.158.258) + 0,026646 PDRBK + 2,290477 TK - 6.162.353 GNDR + 5106,00  
PDDKN + 4,116285 PKOTA
- **Kabupaten Nias Barat :**  
REKTAB = (1.283.934 + 1.150.921) + 0,026646 PDRBK + 2,290477 TK - 6.162.353 GNDR + 5106,00  
PDDKN + 4,116285 PKOTA
- **Kota Sibolga :**  
REKTAB = (1.283.934 + 590.131,1) + 0,026646 PDRBK + 2,290477 TK - 6.162.353 GNDR + 5106,00  
PDDKN + 4,116285 PKOTA

- **Kota Tanjung Balai :**  
 $REKTAB = (1.283.934 + 431.911,7) + 0,026646 PDRBK + 2,290477 TK - 6.162.353 GNDR + 5106,00 PDDKN + 4,116285 PKOTA$
- **Kota Pematang Siantar :**  
 $REKTAB = (1.283.934 + 200.308,2) + 0,026646 PDRBK + 2,290477 TK - 6.162.353 GNDR + 5106,00 PDDKN + 4,116285 PKOTA$
- **Kota Tebing Tinggi :**  
 $REKTAB = (1.283.934 + 723.272,5) + 0,026646 PDRBK + 2,290477 TK - 6.162.353 GNDR + 5106,00 PDDKN + 4,116285 PKOTA$
- **Kota Medan :**  
 $REKTAB = (1.283.934 - 7.307.794) + 0,026646 PDRBK + 2,290477 TK - 6.162.353 GNDR + 5106,00 PDDKN + 4,116285 PKOTA$
- **Kota Binjai :**  
 $REKTAB = (1.283.934 + 147.931,3) + 0,026646 PDRBK + 2,290477 TK - 6.162.353 GNDR + 5106,00 PDDKN + 4,116285 PKOTA$
- **Kota Padang Sidempuan :**  
 $REKTAB = (1.283.934 + 513.522,7) + 0,026646 PDRBK + 2,290477 TK - 6.162.353 GNDR + 5106,00 PDDKN + 4,116285 PKOTA$
- **Kota Gunung Sitoli :**  
 $REKTAB = (1.283.934 + 764.810,5) + 0,026646 PDRBK + 2,290477 TK - 6.162.353 GNDR + 5106,00 PDDKN + 4,116285 PKOTA$

Table 3.6 Output Regression Period Effect

Period	Coefficient
2016	8316.846
2017	34911.91
2018	-5141.239
2019	-38087.52

Source: Data analyzed by *Eviews 10.0*

Based on these data, estimating equations fixed effect model in 2017 gives the coefficient of the literacy rate of banking the highest compared with other time periods while the lowest occurred in 2019, assuming the value of GDP per capita (PDRBK), Number of Employment (TK), Gender (GNDR), Education Level (PDDKN) and Urban Population (PKOTA) are equal to zero.

Table 3.7 Output of Determinant Coefficient ( $R^2$ )

	Nilai
R-squared	0.993638
Adjusted R-squared	0.991133

Source: Data analyzed by *Eviews 10.0*

Based on Table 3.7, it can be seen that the  $R^2$  value of 0.993638 which means that variables of capita GDP, Employment, Gender, Education and Urban Population are able to explain the variation of Banking Literacy Level variable of 99.36%, remaining 0.006% is explained by other variables that are not included in the model.

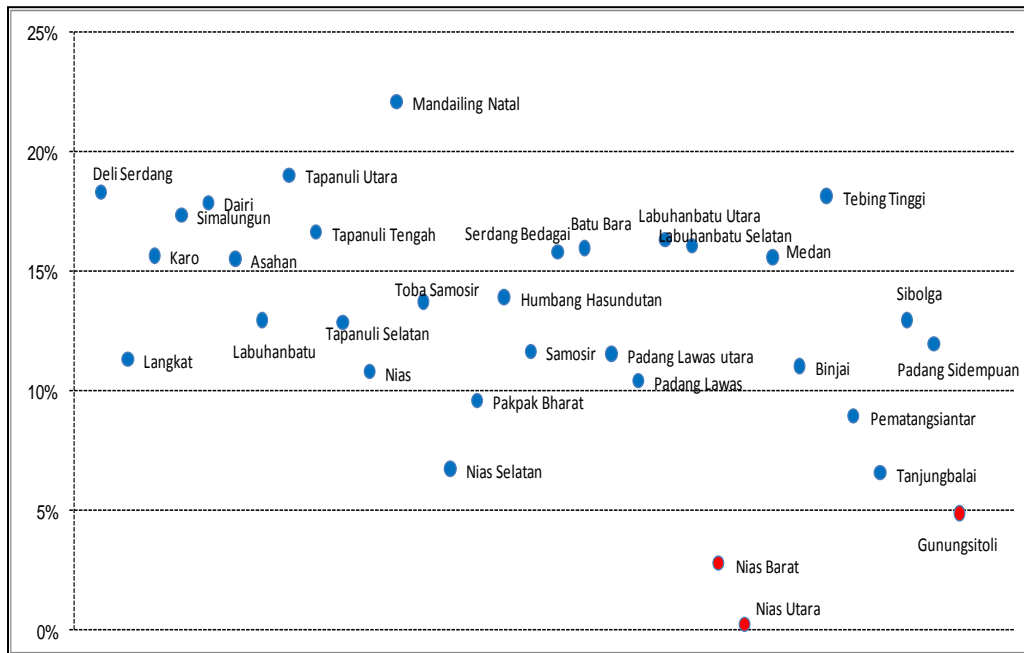
#### IV. Discussion

##### Effect of GRDP per Capita on Banking Literacy

Positive relationship between GRDP per Capita and Banking Literacy Level is same as the theory presented by the OECD (2015). The higher level of GRDP per capita, greater budget allocated for education will be. With a higher level of education, people will have a good ability to understand financial products, especially banking. This result can be the same as that presented by researchers Atikah (2019), the Ummah, et al. (2015), Daniel Beres (2012), Asyatun (2018) and Rahmawati (2019). Higher the value of GRDP per Capita of an area, more its population has ability to access financial services.

Ozdemir, *et al.* (2018) explains in his research that higher income of a region, greater government spending to education sector that would affect the level of financial literacy community. Government's budget on higher education sector which would encourage the availability of facilities and infrastructure that support

implementation of quality education. Figure 4.4 shows percentage of education budget excluding regional transfers to the expenditure budget of each district/city in North Sumatera Province.



Source: Ministry of Education and Culture, 2019

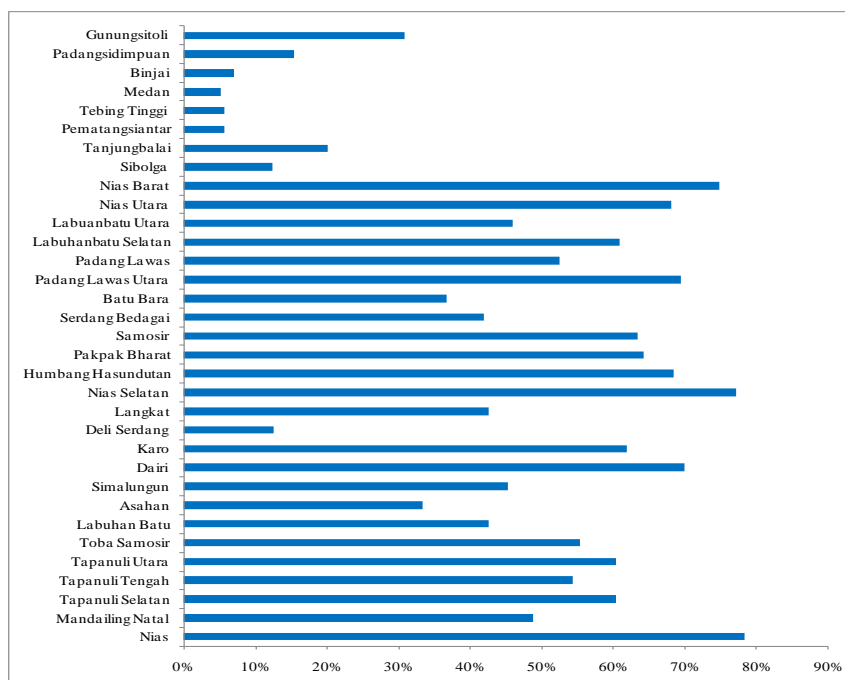
Figure 4.1 Percentage of Education Budget without Regional Transfers to Regional Expenditures in 2019

Based on Figure 4.1, it can be seen that regions have the lowest percentage of the education budget outside of regional transfers to regional budget are Nias Utara, Nias Barat and Gunung Sitoli Districts. District / City which has highest per capita GRDP such as Medan Rp 68.76661 million, Tebing Tinggi Rp 57.62064 million and Labuhan Batu Selatan district of Rp 55,313,132 has a large percentage of education budget. So in general, level size of GRDP per Capita in a district/city is accordance with percentage size of education budget in each district/city. This shows that GRDP per Capita has positive influence on the level of banking literacy through availability of higher education budgets.

**Effect of Employment on Banking Literacy**

A positive relationship between the number of employment on banking literacy levels in accordance with the theory presented earlier. Bushan, et al (2013), Atikah (2019) said that the level of financial literacy of working population is higher than non-working population. Working population have more open access to financial services, particularly banking services. This is because the majority of companies will provide the company payroll by transfer into a savings account each worker. In addition, working population has a chance to save part of their income to savings.

However, research conducted by Worthington (2008) explained that the level of financial literacy is influenced by professional and managerial job status. Al-Tamimi (2009) explains that the level of financial literacy in the financial sector is the highest compared to people who work in other sectors. Based on the data in Figure 4.2 shows that most employment in the districts/cities in North Sumatera Province in agriculture. This can be an indication why coefficient influence of employment on the level of banking literacy is small, which is 2.290477.



Source: Central Bureau of Statistics, 2020

Figure 4.2. Percentage of Agricultural Sector Workers by District/City in North Sumatera Province in 2019

### Effect of Gender on Banking Literacy

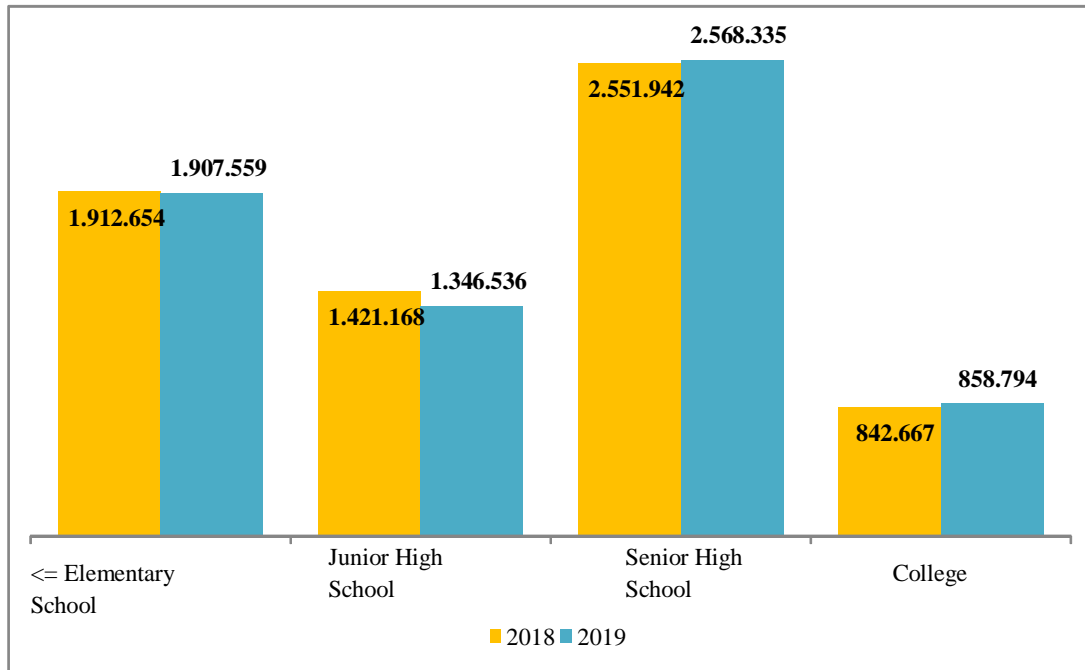
Gender research results negatively affect banking literacy is an anomaly because it does not correspond to the theory presented earlier. Churilova, et al. (2019) stated that gender does not affect the ownership of savings accounts in countries upper middle and high income. Countries with upper middle and high income have lower inequality between men and women. Women and men have more equal access to education, employment compared to low income countries.

This can be a cause of gender negatively affect the banking literacy in North Sumatera Province. World Bank (2020) said that Indonesia is a upper middle income country with a Gross National Income (GNI) in 2019 amounted to USD 4,050. In addition, gender has negative effect on banking literacy and also supports the development targets stated in Sustainable Development Goals (SDGs) in the fifth point, namely gender equality. (Bappenas, 2020).

### Effect of Level Education on Banking Literacy

Residents who have higher levels of education will have higher financial knowledge (Atkinson and Messy, 2013). In addition, higher levels of education would encourage someone to get a job with a higher salary than those who did not finish school. This result can be same as the research - past studies. Jana, D, et al. (2019), Lusardi and Mitchell (2017), and Bushan P, et al. (2013), explained that education has positive relationship to financial literacy. The higher a person's education level, higher ability to understand and understand various knowledge, including knowledge of finance (Jana, Debabrata, et al. 2019).

Besides a positive relationship between level of education and financial literacy also influenced by increase in workers' education in North Sumatera Province located at the level of College. Based on Figure 4.3, it can be seen that the number of employment with the last educational level of Higher Education in 2018 was 842,667 people, an increase of 16,127 people (1.91%) in 2019 to 858,794 people. This increase is highest percentage increase compared to increase in workers with a high school education level. These data show that labor force in North Sumatera Province have increased education. With higher education, it will encourage population to get better jobs and incomes, thereby increasing access to banking services. This results in the level of education not having significant effect on the level of banking literacy.



Source: Central Bureau of Statistics, 2020

Figure 4.3. Population Aged 15 Years and Over Who Worked According to Education Recently in North Sumatera Province 2018-2019

### Effect of Urban Population on Banking Literacy

A positive relationship between the number of urban population with banking literacy rate equal to the theory presented earlier. Financial literacy rate higher than urban population living in rural communities (Lisa and Bilal, 2012). The results of this research are also similar to studies conducted by Bushan and Medury (2013), Sanjib Das (2016). Lisa and Bilal (2012) explained that there are 52% of people in urban Ghana who have bank accounts, while in rural areas only 21%. These facts illustrate the state of inequality between rural and urban areas in terms of employment and salary levels. Greater opportunities for employment and higher wages received easier it is someone familiar with and access to financial services especially banks.

Research conducted by Anwar, et al. (2020) to farmers in Maros, South Sulawesi discovered that cause of people in rural areas have a low level of financial literacy is distance that must be taken to gain access to financial services. It is caused by a lack of infrastructure of financial services in rural than in urban areas. Urban areas generally have more banks and ATMs than rural areas. Table 4.4 is the number of bank branch offices and ATM networks by district/city in North Sumatra Province.

Table 4.4 Number of Branch Offices and ATMs of Commercial Banks in North Sumatera Province

District/City	Number of Branch Offices	ATM
Nias	14	44
Mandailing Natal	28	27
Tapanuli Selatan	48	15
Tapanuli Tengah	23	49
Tapanuli Utara	38	67
Toba Samosir	36	63
Labuhan Batu	101	159
Asahan	75	90
Simalungun	69	71
Dairi	26	37
Karo	58	84
Deli Serdang	113	228
Langkat	92	91
Nias Selatan	8	7
Humbang Hasundutan	12	9
Pakpak Bharat	3	2
Samosir	7	10
Serdang Bedagai	42	43
Batu Bara	12	28
Padang Lawas Utara	4	6
Padang Lawas	6	5
Labuhanbatu Selatan	13	9
Labuanbatu Utara	9	8
Nias Utara	2	2
Nias Barat	1	2
Sibolga	20	31
Tanjungbalai	34	74
Pematangsiantar	68	185
Tebing Tinggi	42	171
Medan	662	2379
Binjai	44	149
Padangsidempuan	36	103
Gunungsitoli	5	8
Sumatera Utara	1796	4426

Source: Bank Indonesia, North Sumatera Province, 2020

Based on table 4.4, it can be seen that the number of commercial bank branch offices in North Sumatera Province is 1,796 offices. Medan, Deli Serdang District, and Labuhan Batu are area that have number of savings account the highest and has the number of urban residents is greater than the countryside, while the Nias Barat, Nias Utara and Pakpak Barat are area that have number of savings accounts smallest and majority of inhabitants are in rural areas. This shows that urban areas have infrastructure service commercial bank branches more than rural areas. Easy access to bank services will encourage higher literacy levels.

## V. Conclusion

According to analysis carried out and an explanation of effect socio-economic indicators on banking literacy in North Sumatera Province, conclusions of this research are as follows:

1. GRDP per Capita has positive and significant effect on the level of Banking Literacy.
2. Employment has positive and significant effect on the level of Banking Literacy.
3. Gender has negative and insignificant effect on the level of Banking Literacy.
4. Education has positive and insignificant effect on the level of Banking Literacy.
5. Urban Population has positive and significant effect on the level of banking literacy.

Suggestions that can be submitted based on the results of analysis carried out previously in this research are as follows::

1. The important role of Banking Literacy in improving ability of district/city communities in North Sumatera Province to choose, utilize banking products and services that are useful for improving welfare of their people is the reason for district/city governments in North Sumatera Province to conduct socialization about bank services in North Sumatera Province each district.

2. From the analysis, it is found GRDP per Capita, Employment and Urban Population significant effect on the level of Banking Literacy District / City in North Sumatera Province. GRDP per capita gap height and banking infrastructure facilities gap such as bank branches, ATMs between urban and rural areas into something that must be considered by Government in North Sumatera Province. Equitable distribution of banking service infrastructure can be done by coordinating with banks, especially local government-owned banks to open branch offices, expand ATM networks in rural areas. In addition the number of workers in urban areas also become inputs to North Sumatera Provincial government to create jobs in rural areas.
3. Estimation results of the research found three variables that have significant effect that GRDP per Capita, Employment and Urban Population while two other variables, namely Level of Education and Gender does not significantly this can be input for other researchers who want to deepen the findings by adding another variable.

### References

- [1]. Agarwal, Tarun. 2016. An Analysis Of The Twin Pillars Of The Banking in India: Financial Literacy and Financial Inclusion. *Gavesana Journal of Management*. 8 : 23-31.
- [2]. Allen, Franklin, et al. 2012. The Foundation Of Financial Inclusion: Understanding Ownership and Use Of Formal Accounts. *Policy Research Working Paper*. 6290 : 1-59.
- [3]. Atikah. 2019. Analisis Faktor Yang Mempengaruhi Inklusi Keuangan Syariah Serta Pengaruhnya Terhadap Kesejahteraan di Indonesia [Tesis]. Yogyakarta : Universitas Islam Negeri Sunan Kalijaga.
- [4]. Atkinson, Adele and Anne Messy, Flore. 2013. Measuring Financial Literacy: Results Of The OECD / International Network on Financial Education (INFE) Pilot Study. *OECD Working Papers on Finance, Insurance and Private Pensions*. 15 : 1-56.
- [5]. Badan Pusat Statistik (BPS). 2020. *Provinsi Sumatera Utara Dalam Angka 2020*.
- [6]. Badriatul Ummah, Bintan, et al. 2015. Analisis Inklusi Keuangan dan Pemerataan Pendapatan di Indonesia. *Jurnal Ekonomi dan Kebijakan Pembangunan Institut Pertanian Bogor*. 4 : 1-19.
- [7]. Berger, Allen et al. 2010. *The Oxford Handbook of Banking*, Oxford University Press. New York.
- [8]. Bhushan, Puneet and Medury, Yajulu, 2014. Financial Literacy and its Determinants. *International Journal Of Engineering, Business and Enterprise Applications (IJEBA)*. 13 : 145-160.
- [9]. Churilova, E.U, et al. 2019. Financial Inclusion : Gender and Country Differences. *Journal of Advanced Research in Law and Economics*. 44 : 1884-1897.
- [10]. Cole, Shawn, et al. 2009. Financial Literacy, Financial Decisions, and the Demand for Financial Services : Evidence from India and Indonesia. *Harvard Business School*. 117 : 1-37.
- [11]. Das, Sanjib, 2016. Financial Literacy : Measurement and Determinants. *EPRA International Journal Of Economic and Business Review*. 4 : 88-93.
- [12]. Ekananda, Mahyus, 2016. *Analisis Ekonometrika Data Panel*, Mitra Wacana Media. Jakarta.
- [13]. Kementerian Pendidikan dan Kebudayaan (Kemdikbud). 2020. *Neraca Pendidikan Daerah Tahun 2020*.
- [14]. Lusardi, Annamaria dan Mitchell, Olivia S, 2017. The Economic Impotance of Financial Literacy : Theory and Evidence. *Journal of Economic Literature*. 50 : 5 - 44.
- [15]. Nandru, P., Anand, B., Rentala, S. 2015. Factors Influencing Financial Inclusion Through Banking Services. *Journal of Contemporary Research in Management*. 10 : 4-15.
- [16]. Organisation for Economic Co-operation and Development (OECD). 2015. OECD/INFE Toolkit For Measuring Financial Literacy and Financial Inclusion. *OECD Publishing*.
- [17]. Otoritas Jasa Keuangan (OJK), 2018. *Booklet Perbankan Indonesia 2018*.
- [18]. Ozdemir, K.K., Kokkizil, M., Uysal, G. 2018. Financial Literacy in Developing Countries. *Sosial Indicators Research*. 143 : 325-353.
- [19]. Todaro, Michael P, 2000. *Pembangunan Ekonomi Dunia Ketiga*, Edisi 7. Penerbit Erlangga, Jakarta.
- [20]. World Bank. 2000. *Pembangunan Berspektif Gender*. World Bank Publications, USA.
- [21]. Xu, Lisa dan Bilal Zia, 2012. Financial Literacy Around the World : An Overview of the Evidence with Practical Suggestions for the Way Forward. *The World Bank Development Research Group*. 6107 : 1-58.

Pandapotan Tua. P. Nainggolan, et. al. "Analysis Of Effect Social And Economic Indicators On Banking Literacy In North Sumatera." *IOSR Journal of Economics and Finance (IOSR-JEF)*, 12(4), 2021, pp. 36-50.