CHAPTER IV

DATA ANALYSIS AND DISCUSSION

4.1. Descriptive statistic

Descriptive statistical analysis is used to describe general overview of the data. The analyzed data is variable data before the emergence of Fintech until the emergence of Fintech within the period of 2013 - 2018, in which it is expected that rural banks began to know and take action on the worse financial credit condition of their firm. The analysis include mean, maximum, minimum and standard deviation using SPSS Statistic 25 program which could be seen in the following table.

Table 4.1.1 Descriptive statistical test - Non Performing Loan

	N	Mean	Std. Deviation	Minimum	Maximum
ANPLBF	50	2.05	1.68	0.10	7.60
ANPLAF	50	3.07	2.08	0.24	10.56

The results of descriptive test on NPL is indicated by the average value before the emergence of Fintech at 2.05 with a standard deviation of 1.68, then increased after the emergence of Fintech become 3.07 with a standard deviation of 2.08. It shows that there is an increase on NPLs at the Rural Banks after the emergence of Fintech. An increase on NPL can be caused by debtors unable to repay credit and do not perform a credit loan to Rural Bank but instead perform a credit loan to Fintech. Thus, the Rural Banks face a decline in income and cannot provide credit to the debtors.

Table 4.1.2 Descriptive statistical test – Return on Asset

	N	Mean	Std. Deviation	Minimum	Maximum
AROABF	50	4.22	1.46	1.72	8.39
AROAAF	50	3.71	1.18	1.96	6.94

The results of descriptive test on ROA is indicated by the average value before the emergence of Fintech at 4.22 with a standard deviation of 1.46, then decreased after the emergence of Fintech become 3.71 with a standard deviation of 1.18. It shows that there was a decrease on ROA at the Rural Banks after the emergence of Fintech. Decreasing of ROA can be caused by debtors unable to repay credit and rural bank cannot expand their credit that caused decreasing banks profitability. Banks face competition with Fintech which offers more benefits to debtors.

Table 4.1.3 Descriptive statistical test – Loan to Deposit Ratio

	N	Mean	Std. Deviation	Minimum	Maximum
ALDRBF	50	82.59	6.98	67.42	96.03
ALDRAF	50	82.23	6.69	67.37	92.87

The results of descriptive test on LDR is indicated by the average value before the emergence of Fintech at 82.59 with a standard deviation of 6.98, then decreased after the emergence of Fintech become 82.23 with a standard deviation of 6.69. It shows that there was a slightly decrease on LDR at the Rural Banks after the emergence of Fintech. Decreasing of LDR can be caused by the banks that are more discreet in giving credit loans because they are predicting the future risks which are considered high due to the emergence of Fintech.

Table 4.1.4 Descriptive statistical test – Net Loan to Total Asset Ratio

	N	Mean	Std. Deviation	Minimum	Maximum
ANLTABF	50	80.54	6.57	67.72	93.29
ANLTAAF	50	80.54	6.40	66.28	91.36

The results of descriptive test on NLTA is indicated by the average value before the emergence of Fintech at 80.54 with a standard deviation of 6.57, then there is no difference after the emergence of Fintech 80.54 with a

standard deviation of 6.40. It shows that there was no difference on NLTA at the Rural Banks after the emergence of Fintech. It means that after the emergence of Fintech, rural bank still has liquidity asset and rural bank still have stable income.

4.2. Normality Test

The normality test in research is needed to find out whether the data is normally distributed, so that the tools for analysis can be determined on the variables to be tested. The normality test in this research is used the Kolmogrov-Smirnov Test, the test uses the following criteria:

a. P-Value > 0.05 = data distribution is normal
b. P-Value < 0.05 = data distribution is not normal

Table 4.2.1 Normality test – Non Performing Loan

	Kolmogorov-Smirnov[a]		
	Statistic	df	Sig.
ANPLBF	0.130	50	0.105
ANPLAF	0.115	50	.200*

Normality test on NPL shows before the emergence of Fintech the data are normally distributed, and NPL after the emergence of Fintech shows the data is normally distributed.

NPL before the emergence of Fintech has a probability of p= 0.105 > 0.05, and NPL after the emergence of Fintech has a probability of p= 0.200* > 0.05.

Therefore, the next hypothesis test will be conducted with non-parametric tests using the Paired Sample T-Test.

Table 4.2.2 Normality test – Return on Asset

	Kolmogorov-Smirnov[a]		
	Statistic	df	Sig.
AROABF	0.106	50	0.200
AROAAF	0.116	50	0.200

Normality test on ROA shows both data are normally distributed, it is caused by,

ROA before the emergence of Fintech has a probability of p= 0.200 > 0.05, and ROA after the emergence of Fintech has a probability of p= 0.200 > 0.05.

Therefore, the next hypothesis test will be conducted with non-parametric tests using the Paired Sample T-Test.

Table 4.2.3 Normality test – Loan to Deposit Ratio

	Kolmogorov-Smirnov[a]		
	Statistic	df	Sig.
ALDRBF	0.100	50	.200*
ALDRAF	0.127	50	0.126

Normality test on LDR shows both data are normally distributed, it is caused by,

LDR before the emergence of Fintech has a probability of p= 0.200* > 0.05, and

LDR after the emergence of Fintech has a probability of p= 0.126 > 0.05.

Therefore, the next hypothesis test will be conducted with Paired Sample T-Test.

Table 4.2.4 Normality test – Net Loan to Total Asset

	Kolmogorov-Smirnov[a]		
	Statistic	df	Sig.
ANLTABF	0.084	50	.200*
ANLTAAF	0.100	50	.200*

Normality test on NLTA shows both data are normally distributed, it is caused by,

NLTA before the emergence of Fintech has a probability of p= 0.200*> 0.05, and

NLTA after the emergence of Fintech has a probability of p= 0.200*> 0.05.

Therefore, the next hypothesis test will be conducted with Paired Sample T-Test.

4.3. Hypothesis Testing

4.3.1. The effects before and after the emergence of Fintech on NPL

1. Fist Hypothesis Testing

Table 4.3.1a Wilcoxon Signed Rank Test

	Z	Sig. (2-tailed)
NPL Before and After The Emergence of Fintech	-3.639b	0.000

Table 4.3.1b Paired Sample T-Test

	N	Correlation	Sig. (2-tailed)
NPL Before and After The Emergence of Fintech	50	0.714	0.000

The results of the normality test of NPL show that the data is normally distributed in the Kolmogrov-Smirnov Test, so the

hypothesis test will be conducted by testing the Paired Sample T-Test of which results are in table 4.3.1b.

Based on sample of 50 companies, the results from Paired Sample T-Test show that the correlation value is obtained at 0.741 and Sig. (2-tailed) shows the number of 0.000. Because p= 0.000 < 0.05, then H0 is rejected or H1 is accepted and it can be said that there is a negative difference on NPL before and after the emergence of Fintech.

4.3.2. The effects before and after the emergence of Fintech on ROA

1. Second Hypothesis Testing

Table 4.3.2a Wilcoxon Signed Rank Test

	Z	Sig. (2-tailed)
ROA Before and After The Emergence of Fintech	-3.712b	0.000

Table 4.3.2b Paired Sample T-Test

	N	Correlation	Sig. (2-tailed)
ROA Before and After The Emergence of Fintech	50	0.786	0.001

The results of the normality test of ROA show that the data is normally distributed in the Kolmogrov-Smirnov Test, so the hypothesis test will be conducted by testing the Paired Sample T-Test of which results are in table 4.3.2b.

Based on sample of 50 companies, the results from Paired Sample T-Test show that the correlation value is obtained at 0.786 and Sig. (2-tailed) shows the number of 0.001. Because p= 0.001 < 0.05, then H0 is rejected or H1 is accepted and it can be said that there is a

negative difference on ROA before and after the emergence of Fintech.

4.3.3. The effects before and after the emergence of Fintech on LDR

1. Third Hypothesis Testing

Table 4.3.3a Wilcoxon Signed Rank Test

	Z	Sig. (2-tailed)
LDR Before and After The Emergence of Fintech	-1.105b	0.269

Table 4.3.3b Paired Sample T-Test

	N	Correlation	Sig. (2-tailed)
LDR Before and After The Emergence of Fintech	50	0.742	0.654

The results of the normality test of LDR show that the data is normally distributed in the Kolmogrov-Smirnov Test, so the hypothesis test will be conducted by testing the Paired Sample T-Test of which results are in table 4.3.3b.

Based on sample of 50 companies, the results from Paired Sample T-Test show that the correlation value is obtained at 0.742 and Sig. (2-tailed) shows the number of 0.654. Because p= 0.654 > 0.05, then H0 is accepted or H1 is rejected and it can be said that there is no negative difference on LDR before and after the emergence of Fintech.

4.3.4. The effects before and after the emergence of Fintech on NLTA

1. Fourth Hypothesis Testing

Table 4.3.4a Wilcoxon Signed Rank Test

	Z	Sig. (2-tailed)
NLTA Before and After The Emergence of Fintech	-1.192b	0.233

Table 4.3.4b Paired Sample T-Test

	N	Correlation	Sig. (2-tailed)
NLTA Before and After The Emergence of Fintech	50	0.677	0.998

The results of the normality test of NLTA show that the data is normally distributed in the Kolmogrov-Smirnov Test, so the hypothesis test will be conducted by testing the Paired Sample T-Test of which results are in table 4.3.3b.

Based on sample of 50 companies, the results from Paired Sample T-Test show that the correlation value is obtained at 0.6777 and Sig. (2-tailed) shows the number of 0.998. Because p= 0.998 > 0.05, then H0 is accepted or H1 is rejected and it can be said that there is no negative difference on NLTA before and after the emergence of Fintech.

4.4. Discussion

4.4.1. The effect of the emergence of Fintech on NPL

The objective of this research is to determine the effect of the emergence of Fintech on Non-Performing Loans (NPL) conducted in Rural Banks in 2013 - 2018. The method in this research was conducted during 6 years and divided into two, that is 3 years before the emergence of Fintech and 3 years after the emergence of Fintech. In the test on NPL, the value used is the average NPL before the emergence of Fintech and the average NPL after the emergence of Fintech. The first variable in this study is non-performing loan. Because the data is normally distributed, then the next test used is Paired Sample T-Test. The results of the test indicate that there is a negative difference before and after the emergence of Fintech on NPL. This result supports the first hypothesis in the study which says that there is a negative difference on NPL before and after the emergence of Fintech.

Jagtiani and Lemieux (2017) stated that the credit facilities for consumers at a lower cost and Fintech facilities made it easier for borrowers to make loans. It causes a decline in profits at the Rural Bank, because the borrower cannot pay off the loan which causes an increase in the NPL. Another reason that causes borrowers move to Fintech to make loans is found in a research conducted by Thakor and Merton (2018). It stated that Fintech firms have other potential cost advantages which may partially offset advantage of banks such as lower regulatory costs and more effective utilization of information technology.

Another research, The Joint Small Business Credit Survey Report (2015) and Schweitzer and Barkley (2017) proven the same thing that there is a negative effect before and after the emergence of Fintech. It caused difficulties in performing loans in the bank, so people switch to take loans in Fintech that provides convenience to the debtor. Yang (2015), stated that Fintech can help Rural Banks become better, because the emergence

of Fintech made the Rural Bank to change their strategy become more modern and collaborate with Fintech companies to be efficient.

From the journals above and the results obtained from this research, it is indicated that there is a negative difference before and after the emergence of Fintech on NPL. It can occur because there is an increase in NPL, which can be said that Rural Bank runs into a decline in profits and unhealthy because there are borrowers who do not perform a credit refund. Another research stated that Fintech can decrease NPL of rural banks through change the rural banks strategy or collaborate with Fintech company.

4.4.2. The effect of the emergence of Fintech on ROA

The second variable in this study is return on asset. Because the data is distributed normally, then the next test used is Paired Sample T-Test. The results of the test indicate that there is negative a difference before and after the emergence of Fintech on ROA. This result supports the second hypothesis in the study which says that there is a negative difference on ROA before and after the emergence of Fintech.

Dermine (2017) stated that Fintech disturbs traditional banking services especially in providing credit and this disruption was evidenced by the success of the Fintech company called Lending Club in the US, which resulted in a decrease in ROA for traditional banks. This research is also supported by Boot (2017), who stated that the development of Fintech may put customers in the driving seat and the platforms would give them easier access to a variety of providers or services. Asset in Rural Banks runs into decreased, for example the decreasing number of people who make loans at Fintech, it caused the income at the rural bank will decrease.

Another research according to Guo and Liang (2016) in their research conducted in commercial bank in China, stated that there is a change in the scenario in the financial services business, where the Rural Bank gets a threat from the emergence of Fintech. This research also

supported by Nakashima (2018), which stated that there is a negative significant effect before and after the emergence of Fintech.

Skan, Dickerson, & Masood (2015) stated that the emergence of Fintech brings new ideas for rural banks. Johnes et al (2018) proved that Fintech can help rural bank to reduce operating cost, and the impact is relating to the size, complexity and nature of business.

From the journals above and the results obtained from this research, it is indicated that there is a negative difference before and after the emergence of Fintech on ROA. It is can occur because there is a decrease on ROA, which can be said that Rural Bank run into decreased overall profit and the level of profit achieved by the company. Another research also stated that Fintech can make rural banks get new ideas and reduce cost.

4.4.3. The effect of the emergence of Fintech on LDR

The third variable in this study is loan to deposit ratio. Because the data is distributed normally, then the next test used is Paired Sample T-Test. The results of the test indicate that there is no negative difference before and after the emergence of Fintech on LDR. This result did not support the third hypothesis in the study which says that there is a negative difference on LDR before and after the emergence of Fintech.

According to Thompson (2017), Fintech provide convenience to the public to make loans because nowadays many people are using mobile online transactions. Based on the research, there are some of the easiness of the emergence of Fintech, that are Fintech could facilitate higher payment frequencies, help tailor payment amounts to individual participation levels, and greatly reduce the number of middlemen that a person must pass through to get service from buyer to seller. According to Ozili (2018), digital finance or often called financial technology provides benefits to borrowers, those are greater control of customers' personal finance, quick financial decision-making, and ability to make and receive payments within seconds. Those benefit become a threat and challenge for

rural banks, because the system for providing credit still uses traditional method with several requirements that the debtor have to be passed.

Scott, Van Reenen, and Zachariadis (2017) stated that the emergence of Fintech can affect banks performance. This is evidenced by innovation in digital finance that can have long-term positive effects for banking performance through changes in infrastructure and different technological standards.

The results of Paired Sample T-Test show there is no negative differences on LDR before and after the emergence of Fintech, and this result is opposite to previous research which states that there are negative differences before and after the emergence of Fintech. The results obtained from this research test indicate that rural banks still have sufficient liquidity for their business expansion.

4.4.4. The effect of the emergence of Fintech on NLTA

The fourth variable in this study is net loan to total asset ratio. Because the data is distributed normally, then the next test used is Paired Sample T-Test. The results of the test indicate that there is no negative difference before and after the emergence of Fintech on NLTA. This result did not support the fourth hypothesis in the study which says that there is a negative difference on NLTA before and after the emergence of Fintech.

Vives (2017) stated that Fintech is a competitor for traditional banking, because Fintech acts as a new entrants using a different strategy from traditional banks. Millennials prefers to take loan to Fintech which offer digital services with which the younger generation is at ease.

CGAP (2015) and Boot (2017) have the same result which is Fintech give positive impact to traditional bank. Offering easiness to customer make them have frequent transaction, so bank have liquid asset. In addition, join ventures or other types of alliance between Fintech and rural bank give positive impact toward banking services, because banks can fulfill obligations in providing funds to third parties.

According to Lu (2018), Fintech provides consumers with better, safer, and more accessible financial services and provide easiness for SMEs to take loans. It can happen because Fintech as online-based lender has utilized big data and artificial intelligence to offer loan services to small businesses.

The results of Paired Sample T-Test show there is no negative differences on NLTA before and after the emergence of Fintech, and this result is opposite to previous research which states that there is negative difference before and after the emergence of Fintech. The results obtained from this research test indicate that rural banks still have liquidity, because only a few assets are bound in the loan.