The Efficiency of BPR/S Industry in Sumatra, Indonesia: Covid-19 Impact, Dual Banking, And Regional Analysis

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Financial institutions are one of the sectors that play a vital role in national and regional economic growth. BPR and BPRS are one of the banking financial industries that play a role in providing financial services to people with a weak economy and MSMEs, so it is necessary to accelerate improvements in BPR and BPRS. This study aims to measure the efficiency and performance of BPRs in Sumatra, see the impact of the pandemic on BPR and BPRS operations and conduct regional analysis on BPRs and BPRS in Sumatra. Using a sample of 30 BPRs and 30 BPRS in Sumatra, this study conducted observations during the 2016-2021 period. This study uses the Data Envelopment Analysis (DEA) analysis method with secondary data sourced from the financial statements of each BPR and BPRS. The input variables in this study are fixed assets, operating expenses and third-party funds. Meanwhile, the output variables of this research are the financing provided and operating income. The results of the study revealed that the average BPR and BPRS in Sumatra during the 2016 to 2021 period fluctuated. Then, in the CRS and VRS analysis, Lampung and North Sumatra regions have the highest efficiency compared to other regions. Meanwhile, during the Covid-19 pandemic, both BPRs and BPRS in Sumatra experienced a significant decrease in efficiency. This study also analyzes potential improvements to improve programs that cause inefficiencies in the input and output variables. In general, the causes of inefficiency of the two types of banks are operating income and the amount of financing provided. This study also provides recommendations to BPR-BPRS practitioners, regulators and academics as a basis for decision making in achieving optimal efficiency for future.

Keywords: BPR BPRS; Efficiency; Covid-19 Pandemic; MSME; Sumatra

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INTRODUCTION

The financial sector is one sector that has a vital role in influencing national or regional economic growth in an area (Adriani & Wiksuana, 2018; Supartoyo et al., 2018). In this case, the financial system affects the level of savings, which in turn will be reallocated to various investments, such as investment in technology, human resources, physical capital and others. The better a financial system in carrying out its functions, the greater its contribution to economic growth (Supartoyo et al., 2018). However, the emergence of the Covid-19 pandemic phenomenon was able to suppress the position of the financial market, especially the banking industry which is one of the actors in the financial sector (Diana et al., 2021). Of course, this will affect economic growth, considering that the banking industry plays an important role in the economy, both on a micro and macro scale (Fadlullah, 2015). This can happen because the main function of banking, namely intermediation as a party that collects funds from the public and distributes them back to the community and provides other services in the form of banking services, does not work properly (Verawaty et al., 2017).

BPRs and BPRS, which are part of the banking industry, take part in increasing economic growth, namely through the specific objective of providing financing to people with weak economies and the MSME sector (Hosen and Muhari, 2013). Wasiaturrahma et al (2020) stated that BPR is one of the alternative financial providers for people who are not touched by formal banking. Easy service procedures and simple financing schemes adapted to community conditions have made BPRs or BPRSs easy to reach by the community and the MSME sector (Hasbi and Apriyana, 2021).

Furthermore, MSMEs themselves are a potential sector and strategic partner for BPRs and BPRS in channeling financing (Hasbi and Apriyana, 2021). However, during the Covid-19 pandemic, business-based microfinance or working capital provided by the bank became problematic, this was because many MSMEs were affected by the pandemic (Aisyah and Maharani, 2020). This will affect the regional economy because high MSME loans have an impact on increasing financial access which will ultimately encourage MSMEs to expand their business and increase economic growth (Supartoyo et al., 2018).

Based on BPS data, it is known that in the second quarter of 2022, the economy in Sumatra is spatially dominated by North Sumatra Province with a contribution to GDP of 22.54%, Riau Province by 23.69%, South Sumatra Province by 13.69%, Lampung Province by 10,67%. And the province with the lowest contribution is Bengkulu Province with a percentage of 2.18% (BPS Sumut, 2022). Research from Ramadhanty and Auwalin (2021) explains that financing or credit products from banks have a significant and positive influence on regional economic growth. For this reason, through its intermediation function and the specific objectives of BPR and BPRS in providing financing to the community, it can be a momentum to achieve regional economic recovery. Although the economies of scale of the two types of banks are relatively small, the role of BPR and BPRS cannot be underestimated, because they can provide wider access to financial services to the MSME sector (Hartono et al., 2008).

With current conditions, measuring efficiency is very important, where efficiency is a description of a company's performance and is a factor that must be considered by the bank to act rationally in minimizing the level of risk and dealing with its operational activities (Fadhlullah, 2015). A company can be said to be efficient if the use of inputs in a certain amount can produce maximum output (Novandra, 2014). Gumilar and Komariah in Fadhlullah (2015) explain that the measurement of bank efficiency can be seen from the number of deposits, financing and total assets. The greater the number of deposits, financing and total assets, the more productive the bank is in carrying out its operational activities.

Many studies related to the efficiency of BPRs and BPRSs in Indonesia have been carried out before, including a study from Nugrohowati (2019) which analyzed the efficiency level of BPRS in Indonesia with regional zones in the 2012-2015 period. Anwar et al (2020) conducted a comparative analysis of the efficiency of BPRs in West Java and Bali. Hasbi and Apriyana (2021) analyzed the efficiency comparison of BPR and BPRS in West Java. Syamni et al (2021) analyzed the loan distribution of BPR Java and Sumatra. Supartoyo et al (2018) analyzed the influence of the BPR financial sector on regional economic growth in Sulawesi. Verawaty et al (2017) measure the effect of credit risk, liquidity, operational efficiency, and macroeconomic level on the performance of Regional Development Banks in Sumatra Island. Shabri and Azhari (2021) measure the profitability of BPRS in West Sumatra. Naufal and Firdaus (2017) analyzed the efficiency of a BPRS in the Greater Jakarta area.

Based on the research above, no research specifically discusses the efficiency of BPR and BPRS on the island of Sumatra from the 2016-2021 period, with

regional analysis, comparison of efficiency levels of BPR and BPRS, and the impact of the Covid-19 pandemic, as well as its relevance to economic growth. regional. Thus, this research is a novelty of previous research and deserves to be carried out as a contribution to science in particular.

This study tries to answer the question of how the level of efficiency, efficiency comparison, regional analysis and the impact of the Covid-19 pandemic on BPRs and BPRS on the island of Sumatra are. And the purpose of this study is to measure the efficiency level of BPR and BPRS in Sumatra from the 2016 period until 2021. Furthermore, this study also aims to compare the performance of BPR and BPRS in each research area, which is spread across the island of Sumatra, see the potential development of BPR and BPRS in Sumatra in the context of national economic recovery by optimizing the intermediation function, especially for the MSME sector. In addition, this research also provides benefits to related parties such as BPR and BPRS banks in making decisions and policies as well as improving bank performance, local government authorities in making regulations that support the sustainability of BPR and BPRS, and academics for further research.

LITERATURE REVIEW

Theoretical Basis

Rural Banks (BPR)

According to OJK, Rural Banks (BPRs) are banks that carry out business activities conventionally or based on sharia principles, which in their activities do not provide services in payment traffic. BPR based on its management is divided into two, namely Conventional BPR (BPR) and Sharia BPR (BPRS). Rural Banks (BPR) and Sharia Rural Banks (BPRS) have the same function and role as banks that carry out business activities by providing products and services for low-income communities as well as small, micro and medium enterprises (MSMEs) (Masrizal et al., 2022). However, the difference lies in the concept and the mechanism used. BPRS operates in the same way as other Islamic financial institutions, operating under a *zero*-usury policy (Iqbal, 1997). The BPRS is prohibited from providing additional credit or interest to customers, nor is it allowed to accept loans in that form. On the other hand, BPRS offers and accepts interest-free loans known as charity loans or *qardhul hasan*. Meanwhile, BPR regulates customer savings accounts with an interest system. In addition, BPRS charges interest on loans they provide to customers (Yuwana et al., 2012).

Islam prohibits the imposition of interest or what is called usury in Surah Ar-Rum verse 39. Chaudhry (1999) defines usury as an additional profit on principal assets without a real sector. Commercial practices in BPR are prohibited in Islam because usury is seen as a form of injustice. A payment system in which creditors can receive interest payments in addition to the principal amount is considered unfair. BPRS uses many alternative transactions to obtain funds and profits, namely by offering deposit accounts (wadiah yad-dhamanah) and mudharabah accounts. In this account, the bank has access to the money deposited as required for commercial purposes (Ajija et al., 2018). The BPRS operational system which is run based on the profit-sharing concept has implications for the income obtained by funding customers, which fluctuates by the income earned by the bank (Devi & Firmansyah, 2018). To offset this policy, BPRS has buying and selling-based financing (Murabahah), capital-based financing (Mudharabah/Musyarakah), or lease financing with ujroh (ijarah) (Amelia & Fauziah, 2017). The distribution or lending mechanism in a BPRS must also follow the Islamic code of ethics outlined in Islamic fiqh, such as the prohibition of allocating funds to industries that violate the law or are unethical such as liquor, pork, casinos, fake media and other unethical industries (Ika & Abdullah, 2011).

However, in general, their main function is as a business entity that collects and distributes public funds. BPR-BPRS must be able to support rural modernization and provide financial services to low-income communities/micro and small enterprises (Law No. 10 of 1998 on Banking). BPR-BPRS services are mostly provided to low-income communities in the informal business sector. Therefore, the management and quality of the implementation of BPR and BPRS need to be improved. This increase is not only related to the development of the BPR-BPRS but also the growth of the real sector from the informal sector which is a large part of the community's economy (Septianto & Widiharih, 2010).

The efficiency of BPR and BPRS

The efficiency of conventional BPRs and Islamic BPRs has not received much attention in the academic literature (Jatmiko, 2017), although Sharari et al., (2015) emphasize that in Islamic financial institutions, efficiency is more concerned than profitability. Like commercial banks, rural banks must consistently improve their operational efficiency. Bank performance has been widely measured by efficiency. Archer (2010)

reveals that efficiency measures the extent to which time, effort, and expertise are expended. Customers prefer more efficient banks because they incur fewer transaction fees than inefficient banks. Banks with a high level of efficiency are more likely to have customer trust to obtain profitable results. Therefore, there is a clear urgency for the authorities and banks to maintain bank efficiency.

There are various ways to increase efficiency, among others, by increasing the concentration and profitability of microfinance institutions (Hartarska et al., 2013). In addition, according to Bos and Millone (2015) increasing the number of loans can increase efficiency. Furthermore, BPR efficiency is influenced by the profit component or the amount of margin they use (Amran et al., 2014). Operational efficiency can determine the survival of BPR in many banks that are present in poor communities (Nashihin & Harahap, 2014). Each country has microfinance institutions with a unique approach. For example, in the Middle East and North Africa, microfinance institutions need technology-based innovation to increase financial inclusion among the poor (Bassem, 2014).

Currently, microfinance institutions must balance two goals, namely eradicating poverty and maximizing income (Kaur, 2016). Interestingly, BPR-BPRS plays a role in reducing poverty while reducing cost efficiency at the same time. This strategy aims to maintain the existence of conventional BPRs as well as Islamic BPRs in various banks that are currently in the micro realm (Nashihin & Harahap, 2014).

Regional Economy

Since the start of the economic recovery program due to the COVID-19 pandemic that has hit all spheres of the national economy, various efforts and government support have been carried out amid the achievement of *herd immunity* and the *spillover* of the global crisis with the implementation of 5 main policies. One of these policies is through fiscal and monetary sector stimulus. The implementation of the program is realized to improve the quality of life of the community and create a stable economy, including the regional economy. The regional economy plays an important role in regional economic development and growth (Aginta & Someya, 2022). This is because the regional economy is usually supported by the small business sector (UMKM) which can contribute most of the regional GDP. MSMEs are an important pillar in the regional economy, not least for the western islands of the archipelago, namely Sumatra.

To welcome the great opportunity in optimizing the role of MSMEs in the regional economy, Verawaty et al., (2017) mention that micro-scale financial institutions hold strategic control over the regional economy. Wasiaturrahma et al., (2020) revealed that BPRs and BPRS which are part of the banking system are able to become alternative providers of financial services for people who are not covered by the banking sector. Considering the specific purpose of these two microfinance institutions is to provide products and services for low-income communities as well as micro, small and medium enterprises (MSMEs) both in cities and in rural areas (Syamni et al., 2021).

Previous Research

Several previous studies have examined bank efficiency, but very few have examined the efficiency of microfinance institutions and rural banks (Warninda & Hosen, 2015). The author found a previous study by Nugrohowati (2019) which measured the efficiency level of BPRS in Indonesia during the period 2012 to 2015 according to regional zones. By using the *Data Envelopment Analysis* (DEA) method, it was found that the average efficiency of the BPRS in each region has not yet reached the optimal level of efficiency. The author also found another study that compared BPR between provinces, namely the research of Anwar et al. (2020). By comparing 212 BPRs in West Java Province and 134 BPRs in Bali Province, it was found that the average efficiency of BPRs in Bali was higher than BPRs in West Java during the observation period. Several other studies that focus on assessing the development of regional rural banks have also been carried out, such as examining bank profitability (Shabri & Azhari, 2021), the health of regional banks (Khatrina et al., 2021), determining loan distribution for Java and Sumatra BPRs (Syamni et al., 2021).

Another comparative study was also conducted by Prayitno (2018), Hasbi & Apriyana (2021) who compared the efficiency levels of BPR and BPRS in Indonesia. During the observation period of each study, the results show that BPRs have higher efficiency performance than BPRS. Jatmiko's (2017) discusses the efficiency of BPR and BPRS with the *Stochastic Frontier Analysis* (SFA) method which is used to measure the ownership structure variables on the efficiency of BPR and BPRS in Indonesia. This study finds contrasting differences between BPRs and BPRS in Indonesia, where there is still a gap in efficiency levels between BPRs, while this is not seen in the case of BPRs during the observed period. Using the same research method, Agustina et al. (2019) observing 58 BPRS, the research

results show that overall, the average efficiency of BPRS during the study period has increased, but there is a gap between small BPRS and large BPRS, where large BPRS is more efficient than small BPRS.

This finding was then strengthened by the findings of a similar subsequent study in 2020 by Wasiaturrahma et al. Although with different research approaches, the results show that in terms of intermediation, both BPR and BPRS are still not efficient, but efficient in terms of production. This study also reveals that capital and location are factors that affect the efficiency of BPRs and BPRSs in Indonesia. While found in another study, Masrizal et al (2022) stated that overall economic freedom had a significant positive impact on the efficiency level of a BPRS. The research by Devi & Firmansyah (2018) implies that the efficiency of BPR in Indonesia is mainly caused by microeconomic variables where ROA and FDR directly have a significant and positive effect on efficiency.

RESEARCH METHODS

This study uses secondary data with a random sampling technique based on the area *(cluster random sampling)*. The DMUs taken are BPRs located in Sumatra which is divided into several regions which are plotted based on the geographical location of Sumatra, namely there are 5 regions, including Regional 1 covering the Aceh region, Regional 2 North Sumatra, Regional 3 covering West Sumatra, Riau and Batam, Regional 4 Jambi, Bengkulu, Bangka Belitung and South Sumatra, and Regional 5 Lampung. Secondary data is collected from quarterly financial reports provided on the official website of the Financial Services Authority. The financial statements studied are the balance sheet and the income statement. The report provides information about several financial items that can be used as input and output variables in this study. The panel data used in this study includes 30 BPRs and 30 BPRS in Sumatra over five years, from 2016-2021.

Table 1: Number of DMUs for each Regional

Regional	Number of DMUs
Regional 1: Aceh	12
Regional 2: North Sumatra	10
Regional3: West Sumatra, Riau, Batam	12
Regional 4: Jambi, Bengkulu, Bangka Belitung, South Sumatra	12
Regional 5: Lampung	14
Total	**60**

Non-parametric quantitative research is the focus of this research. The *Data Envelopment Analysis* is used to measure the level of decision-making efficiency (DMU). Output approach *Data Envelopment Analysis* used in this study aims to maximize output while maintaining the same amount of input. The input variables used are Operational Costs, Third Party Funds, and Fixed Assets. Operational costs include marketing, research & development, administration, and other operational expenses, then Third Party Funds include Mudharabah deposits, Wadiah Savings, and Mudharabah Savings, as well as Fixed Assets in the form of calculation of fixed assets with fewer depreciation costs. The output variables used are Operational Income and Credit/Financing in the form of Mudharabah, Murabahah, and Musyarakah financing for BPRS, while for BPR in the form of all types of credit financing provided.

The level of productivity and efficiency of business units can be measured using DEA, which was created by Charnes, Cooper & Rhodes in 1978 and then revised by Banker, Charnes & Rhodes in 1984. The benefit of using *Data Envelopment Analysis* (DEA), according to Hadini & Wibowo (2021), is that it can test a case that has a complex relationship between input and output used which cannot be successfully solved by other analytical methods. In addition, the *Data Envelopment Analysis* (DEA) method can also measure the value of efficiency using variable inputs and variable outputs generated in a company. In light of this, Hadad et al. (2003) stated that DEA can provide more accurate results compared to financial ratio analysis.

The DEA approach is used to measure technical efficiency, including the efficiency of financial institutions (Rusydiana et al., 2019; Rusydiana & Nugroho, 2017), according to a study conducted by Sharma et al. (2013) in several empirical investigations related to efficiency. In addition, information about *Decision Making Units* (DMUs) that are inefficient in utilizing inputs, and what factors are causing these inefficiencies can be obtained using the DEA approach. The DEA approach can identify the values of the input or output variables that must be met or modified to achieve the highest level of efficiency. The DEA method can even measure the efficiency of social institutions (Rusydiana, 2018).

The Charnes, Cooper and Rhodes (CCR) DEA model and the Banker, Charnes and Cooper (BCC) model are two DEA models that are often used until now since their introduction in 1984 (Coelli et al., 2005). The Charnes, Cooper & Rhodes (CCR) model, in accordance with the *Constant Return to Scale* (CRS) assumption, is one of the two fundamental models in the

DEA method. It is assumed that the production function is constant and that the change in the output value of the resulting DMU is constant (same). Second, the Banker, Charnes & Rhodes (BCR) (VRS) model is in accordance with the *Variable Return to Scale* (VRTS). This second model makes the opposite assumption to the previous model, namely that every change in the DMU output value is different from every change in a certain input value. Therefore, it can be stated that not every input will produce the same output value. To reflect banking activities, the CRV and VRS models are compared in this study to determine the level of banking efficiency.

This study is related to bank effectiveness. Bank efficiency can be assessed by comparing the costs incurred by different banks to produce the same level of production. An ineffective business will be eliminated from the market if there is ideal competition in the market. Only an effective business can survive in the market. Similarly, only effective banks will be able to compete successfully in the banking sector (Ascarya and Yumanita, 2009). Referring to the research of Bauer et al. (1998) the measure of the efficiency limit of financial institutions is measured based on the level of relative performance of financial institutions against the best estimates of the performance of financial institutions in the industry, with a note that all financial institutions must face the same market conditions.

RESULTS

Descriptive Statistics of BPRs in Sumatra

Tables 2 and 3 below are tables containing information on input and output variables of BPRs in Sumatra during the period 2016 to 2021.

Table 2: Descriptive Statistics of BPRs in Sumatra

Variables	Mean	Min	Max	Std.Dev
Input				
Fixed Assets	Rp4,852,672,228	Rp753.00	Rp118,391,073,00	Rp199.94,937.29
Operating Expenses	Rp29,681,475.62	Rp992,038	Rp861,639,294	Rp123,136,961.2
Third Party Funds	Rp181,423,718.4	Rp3,192,912	Rp4,416,895,393	Rp642,984,384.3
Output				
Total Financing	Rp275,780,854.7	Rp2,596,610	Rp7,529,151,036	Rp1,194,208,723
Operating Income	Rp40,967L,359,34	Rp969,657	Rp1,150,486,337	Rp169,572,091.6

Table 3: Descriptive Statistics in Sumatra

Variables	Mean	Min	Max	Std.Dev
Input				
Fixed Assets	Rp1,126,815,944	Rp1,518,000	Rp14,945,668	Rp1,991,441,976
Operating Expenses	Rp3,435,386,028	Rp583,341	Rp13,891,442	Rp2,712,012,941
Third Party Funds	Rp23,576,797.51	Rp2,510,000	Rp118,472,047	Rp23,644,521.52
Output				
Total Financing	Rp14,389,774.38	Rp7,500	Rp87,362,189	Rp15,946,796.18
Operating Income	Rp4,993,664,511	Rp330,026	Rp22,102,239	Rp4,580,851,775

Based on Tables 2 and 3 it can be concluded that the average value of BPR input and output variables are higher than the input and output values.

Panel Summary of BPR Efficiency per year

Using the DEA method, the efficiency level of BPR in Sumatra is analyzed using *a common frontier every* year. Table 4 below contains the average *Technical Efficiency* (TE), *Pure Technical Efficiency* (PTE), and *Scale Efficiency* (SE) scores from BPR Sumatra from 2016 (Panel A), 2017 (Panel B), 2018 (Panel C), 2019 (Panel D), 2020 (Panel E) and 2021 (Panel F) and the overall year (Panel G).

Table 4: Panel Efficiency of BPR and BPRS in Indonesia

Years/Type of Efficiency	Mean		Min		Max		Std.Dev	
	BPR	**BPRS**	**BPR**	**BPRS**	**BPR**	**BPRS**	**BPR**	**BPRS**
Panel A (2016)								
TE	0,656	0,627	0,342	0,242	1,000	1,000	0,198	0,199
PTE	0,686	0,709	0,365	0,372	1,000	1,000	0,202	0,203
SE	0,959	0,887	0,636	0,570	1,000	1,000	0,067	0,137
Panel B (2017)								
TE	0,672	0,633	0,385	0,261	1,000	1,000	0,195	0,178
PTE	0,704	0,698	0,390	0,352	1,000	1,000	0,195	0,188
SE	0,956	0,912	0,706	0,615	1,000	1,000	0,063	0,115
Panel C (2018)								
TE	0,646	0,611	0,332	0,315	1,000	1,000	0,156	0,181
PTE	0,712	0,681	0,339	0,334	1,000	1,000	0,184	0,176
SE	0,915	0,899	0,701	0,489	1,000	1,000	0,076	0,128
Panel D (2019)								
TE	0,650	0,623	0,284	0,284	0,952	1,000	0,160	0,213
PTE	0,723	0,665	0,286	0,367	1,000	1,000	0,196	0,194
SE	0,910	0,931	0,737	0,614	0,993	1,000	0,073	0,102
Panel E (2020)								
TE	0,630	0,592	0,346	0,229	1,000	1,000	0,168	0,183
PTE	0,695	0,641	0,368	0,324	1,000	1,000	0,198	0,156
SE	0,914	0,914	0,758	0,595	1,000	1,000	0,072	0,121
Panel F (2021)								
TE	0,638	0,597	0,230	0,206	1,000	0,955	0,199	0,202
PTE	0,713	0,647	0,237	0,229	1,000	0,984	0,232	0,188
SE	0,904	0,915	0,746	0,579	1,000	0,998	0,073	0,111
Panel G (All Yeras)								
TE	0,649	0,614	0,230	0,206	1,000	1,000	0,181	0,194
PTE	0,705	0,674	0,237	0,229	1,000	1,000	0,202	0,187
SE	0,926	0,909	0,636	0,489	1,000	1,000	0,074	0,120

According to the table, it can be concluded that the efficiency of BPR and BPRS in Sumatra fluctuates from year to year. Based on the average *Technical Efficiency* (TE) and *Pure Technical Efficiency* (PTE) scores at BPRs and BPRS in Sumatra, the lowest score for *Technical Efficiency* (TE) was in 2020 with values at TE BPR 0.630 and TE BPRS 0.597. Furthermore, the highest value of TE in BPR and BPRS was in 2017 with a value of 0.672 and 0.633, respectively. Then the average *Pure Technical Efficiency* (PTE) score was at the lowest and largest BPRs in 2016 and 2019 with a value of 0.686 and 0.723. And the lowest and largest BPRS were in 2020 and 2016 with values of 0.641 and 0.709.

BPR and BPRS Efficiency Scores in Sumatra

Table 5: Average BPR Efficiency Score in Sumatra

DMU	CCR Model	BCC Model	
	CRS	VRS	SE
BPR Aceh Utara	0,462	0,473	0,973
BPR Anugrah Swakerta	0,516	0,552	0,939
BPR Artha Aceh Sejahtera	0,550	0,570	0,963
BPR Asia Sejahtera	0,686	0,738	0,935
BPR Barelang Mandiri	0,547	0,617	0,889
BPR Cempaka Mitra Nagari	0,659	0,688	0,953
BPR Central Dana Mandiri	0,845	0,873	0,968
BPR Central Niaga Abadi	0,717	0,737	0,970
BPR Cipta Dana Mulia	0,434	0,450	0,968
BPR Dian Binarta	0,605	0,619	0,976
BPR Eka Bumi Artha	0,894	1,000	0,894
BPR Guna Rakyat	0,540	0,550	0,983
BPR Inti Dana Sentosa	0,893	0,953	0,938
BPR Maroba Ite Bengkulu	0,548	0,577	0,951
BPR Mitra Arta Mulia	0,461	0,541	0,848
BPR Mitra Central Dana	0,429	0,435	0,985
BPR Mitradana Madani	0,680	0,720	0,947
BPR Mukomuko Makmur	0,724	0,754	0,961
BPR Multi Tata Perkasa	0,991	0,997	0,994
BPR Nusantara Bona Pasogit 8 Dairi	0,591	0,720	0,821
BPR Palembang	0,766	0,879	0,878
BPR Pondok Meja Indah	0,561	0,720	0,785
BPR Prabumegah Kencana	0,511	0,546	0,939
BPR Prima Riau Sentosa Pekan Baru	0,817	0,869	0,939
BPR Sarimadu (Perseroda)	0,745	0,972	0,767
BPR Sejahtera Batam	0,864	1,000	0,864
BPR Sumber Pangasean Lampung Tengah	0,472	0,490	0,965
BPR Tilatang Kamang	0,428	0,437	0,979
BPR Tjandra Artha Lestari	0,766	0,814	0,946
BPR Ukabima Lestari	0,757	0,872	0,869

Based on the table of average efficiency scores of BPRs in Sumatra each year, it is known from the CRS assumption that there are no BPRs in Sumatra that achieve optimal efficiency levels (1,000) during the 6-year observation period. However, when viewed from the highest CRS score, BPR Multi Tata Perkasa achieved the highest average CRS score (0.991), and the lowest average CRS score was obtained by BPR Tilatang Kamang (0.428). Then, further analysis is needed through the BCC Model through VRS and SE assumptions. Based on the VRS assumption, it is known that BPR Eka Bumi Artha has achieved optimal efficiency (1,000). Meanwhile, the lowest VRS score was BPR Mitra Central Dana with an average VRS score of 0.435.

Table 6: Efficiency Score of BPRS in Sumatra

DMU	CCR Model	BCC Model	
	CRS	VRS	SE
BPRS Adeco Langsa Aceh	0,786	0,802	0,982
BPRS Al Washliyah Medan	0,372	0,391	0,952
BPRS Al-Yaqin Simalungun Sumut	0,376	0,499	0,747
BPRS Aman Syariah Lampung Timur	0,661	0,676	0,982
BPRS Amanah Bangsa Simalungun	0,301	0,382	0,783
BPRS Baiturrahman Aceh Besar	0,657	0,671	0,978
BPRS Bandar Lampung	0,596	0,655	0,909
BPRS Berkah Dana Fadhlillah (Perseroda) Kampar Riau	0,575	0,583	0,986
BPRS Gayo Aceh Tengah	0,686	0,704	0,975
BPRS Gebu Prima Medan	0,629	0,650	0,964
BPRS Haji Miskin Kab Tanah Datar Sumbar	0,750	0,764	0,982
BPRS Hasanah Pekanbaru Riau	0,546	0,552	0,990
BPRS Hikmah Wakilah Aceh	0,774	0,798	0,970
BPRS Kota Juang Aceh Jeumpa	0,764	0,809	0,948
BPRS Kotabumi (Perseroda) Lampung Utara	0,512	0,764	0,667
BPRS Lampung Timur	0,899	0,914	0,975
BPRS Mentari Pasaman Saiyo Pasaman Barat Sumbar	0,447	0,551	0,812
BPRS Metro Madani Kota Metro Lampung	0,499	0,685	0,727
BPRS Mitra Agro Usaha Bandar Lampung	0,728	0,759	0,959
BPRS Muamalat Harkat Bengkulu	0,610	0,618	0,988
BPRS Pudu Arta Insani Deli Serdang	0,398	0,400	0,995
BPRS Rahmah Hijrah Agung Aceh	0,639	0,647	0,988
BPRS Rahmania Dana Sejahtera Aceh Jeumpa/Bireuen	0,594	0,679	0,853
BPRS Rajasa Lampung Tengah (Perseroda)	0,638	0,694	0,909
BPRS Serambi Mekah Langsa Aceh	0,816	0,921	0,893
BPRS Sindanglaya Kotanopan Deli Serdang Sumut	0,464	0,688	0,716
BPRS Taman Indah Darussalam Aceh	0,753	0,842	0,910
BPRS Tani Tulang Bawang Barat Lampung	0,743	0,794	0,933
BPRS Tengku Chiek Dipante Pidie Aceh	0,537	0,627	0,853
BPRS Way Kanan (Perseroda) Lampung	0,661	0,687	0,957

Based on the table of average efficiency scores of BPRS in Sumatra each year, it is known from the assumptions of CRS and VRS that no BPRS in Sumatra has reached the optimal level of efficiency (1,000) during the 6-year observation period. However, if viewed from the lowest CRS and VRS scores, Amanah Bangsa Simalungun BPRS achieved the lowest average CRS and VRS scores, namely 0.301 and 0.382. And the highest average CRS score was obtained by the East Lampung BPRS (0.899). Then, based on the VRS assumption, it is known that the Serambi Mekah Langsa Aceh BPRS achieved the lowest VRS score (0.921).

Table 7: Efficiency Scores of BPR and BPRS in Sumatra by Regional

DMU/REGIONAL	CCR Model	BCC Model	
	CRS	VRS	SE
Regional 1	0.668	0.712	0.940
Regional 2	0.534	0.890	0.600
Regional 3	0.627	0.693	0.912
Regional 4	0.632	0.682	0.934
Regional 5	0.671	0.738	0.909

Based on the table above, it is known that the CRS scores of BPR and BPRS in each region of Sumatra have not yet had a BPR that has reached the optimal level of efficiency (1,000). Likewise, the VRS score which shows the same results, where there are no regions that have BPR and BPRS with optimal efficiency levels in Sumatra during the observation period. The highest CRS scores were found in regional 5 (Lampung) with a value of 0.671, and the highest VRS score was obtained by regional 2; (North Sumatra). Meanwhile, the minimum CRS score was obtained by regional 2 (North Sumatra) with a value of 0.534 and the minimum VRS score was held by regional 4 (Jambi, Bengkulu, Bangka Belitung and South Sumatra) with a value of 0.682.

Efficiency Score and Comparison of Efficiency Trends of BPR and BPRS Sumatra

This study also analyzes the comparison of the efficiency of BPR and BPRS in Sumatra, intending to see the extent two types of banks operate optimally. The following is a graph of the efficiency trend of BPR and BPRS in Sumatra and a comparison of the two types of banks.

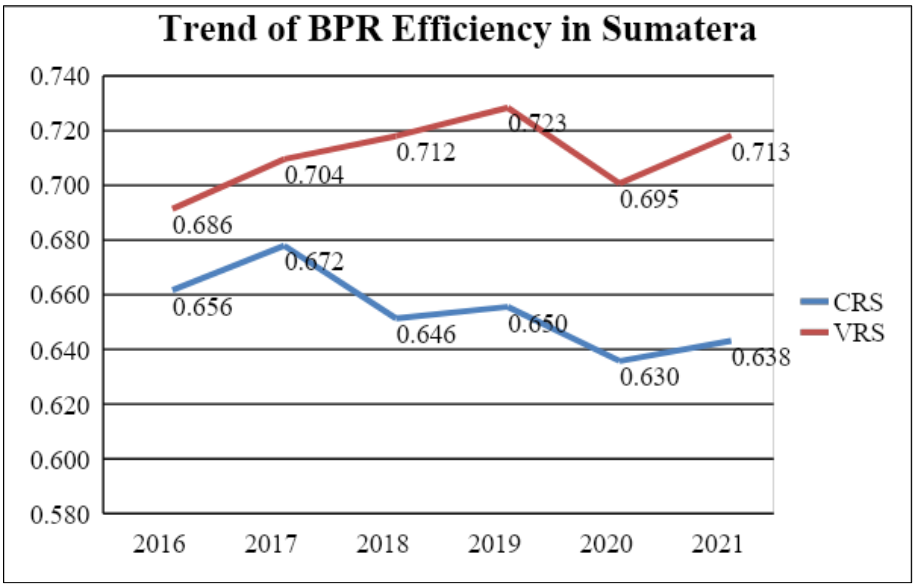

Figure 1: Trends in BPR Efficiency in Sumatra

Figure 1 provides information regarding trends in BPR efficiency in Sumatra from 2016 to 2021. Based on the efficiency graph, it is known that Technical Efficiency (CRS) shows movements that tend to fluctuate from year to year. Pure Technical Efficiency (VRS) shows an increasing trend until 2019, which then decreases in 2020 until it increases again in 2021. The efficiency value of Sumatran BPR on the assumption of CRS increased in 2017, then the efficiency level continued to experience a fluctuating downward trend from 2020 to 2021.

Furthermore, this study also observes the efficiency trend of BPRS in Sumatra. The results of the CRS and VRS trend analysis can be seen in the image below.

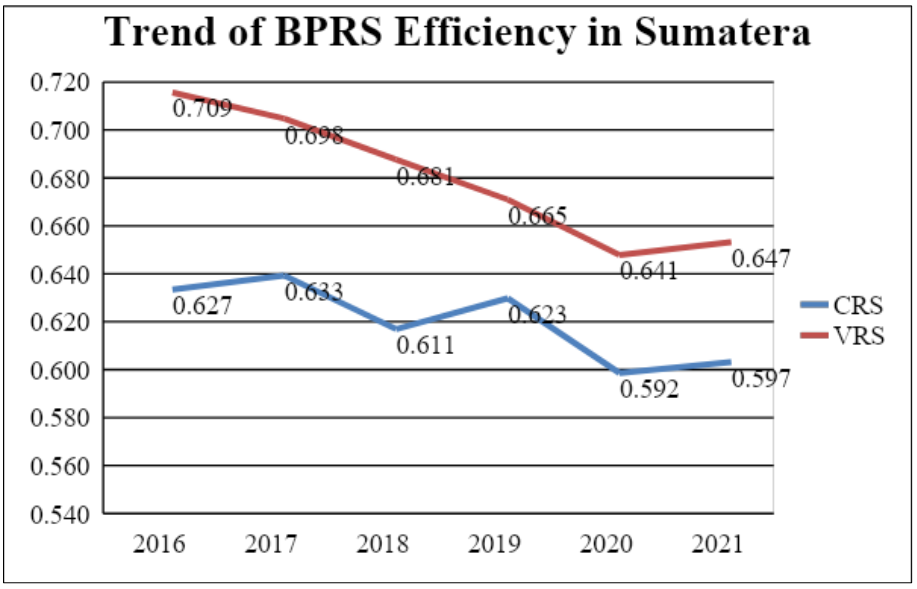

Figure 2: Trends in BPRS Efficiency in Sumatra

Figure 2 explains the trend in the efficiency of BPRS in Sumatra from 2016 to 2021. Based on the efficiency graph, it is known that Technical Efficiency (CRS) shows a trend that tends to fluctuate from year to year. The efficiency value of the Sumatran BPRS increased in 2017, then decreased in 2018, until it increased again in 2019, and in 2020 the efficiency of the BPRS decreased again until 2021 there was a small increase, which was only 0.005. Furthermore, Pure Technical Efficiency (VRS) shows a downward trend until 2019, which then increases in 2021, although the increase tends to be small.

The next analysis is a comparison of the efficiency of BPR and BPRS in Sumatra. The comparison between the two types of banks uses the average value of the CRS efficiency score for the 6-year study period. The results are as follows.

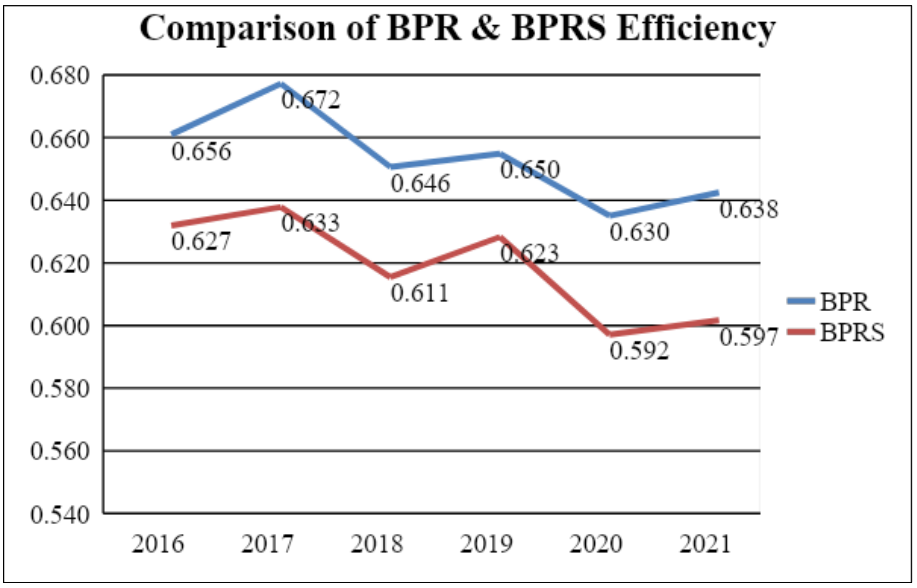

Figure 3: Comparison of the Efficiency of BPR and BPRS in Sumatra

Judging from Figure 3 above, it can be concluded that the efficiency value of BPR is higher than that of BPRS. And an interesting finding in this analysis is that there is a similar pattern in the efficiency trend of BPR and BPRS. The efficiency trend of the two types of banks fluctuates from year to year and shows a decrease in efficiency values. The efficiency of BPR and BPRS both showed an increase in 2017, 2019 and 2020, although the increase in efficiency tends to be small and not higher than efficiency in 2017.

The comparison of the efficiency of BPR and BPRS in the entire Sumatra region in the 2016 to 2021 observation period can be seen in the image below.

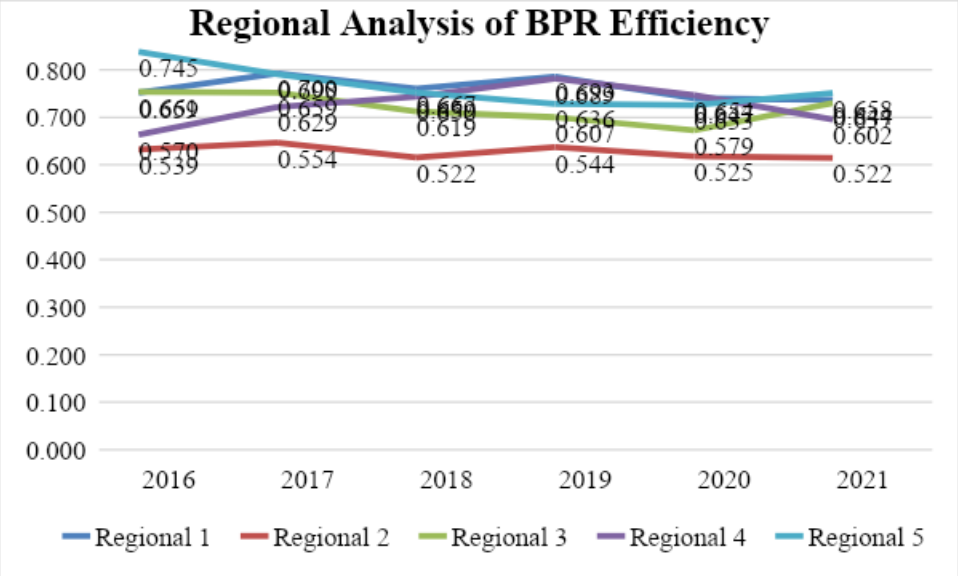

Figure 4: Comparison of the Efficiency Trends of BPR and BPRS in Sumatra

The figure above shows the efficiency level of BPR and BPRS in Sumatra in each region. It can be seen that regional 2 (North Sumatra) is the region with the lowest efficiency level among the five regions in Sumatra. Overall, the efficiency level of BPRs and BPRSs in Sumatra shows a fluctuating movement during the period from 2016 to 2021. Based on the figure above, it is known that the efficiency trend of BPRs and BPRSs throughout the Sumatra region has decreased simultaneously in 2020. As we know, in that year Covid -19 was declared a pandemic that hit Indonesia, including the Sumatra area. Several regions again showed an increase in efficiency levels in 2021.

The efficiency of BPR and BPRS in Sumatra During the Covid-19 Pandemic The

emergence of the Covid-19 pandemic at the end of 2019 has so far been a major disaster for the financial sector, including the microfinance industry such as BPR and BPRS. The image below provides information on the efficiency level of BPR and BPRS in Sumatra caused by the Covid-19 pandemic.

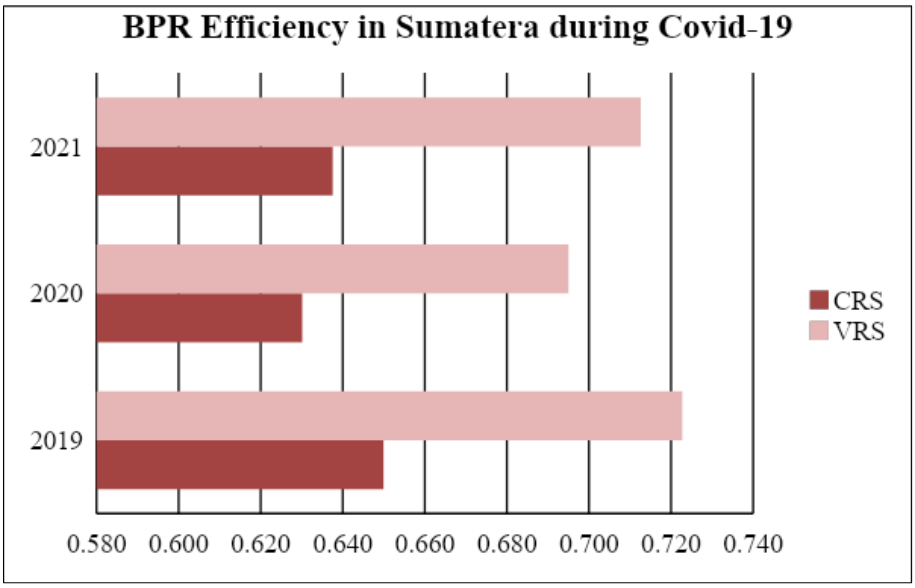

Figure 5: BPR Efficiency During the Covid-19 Period

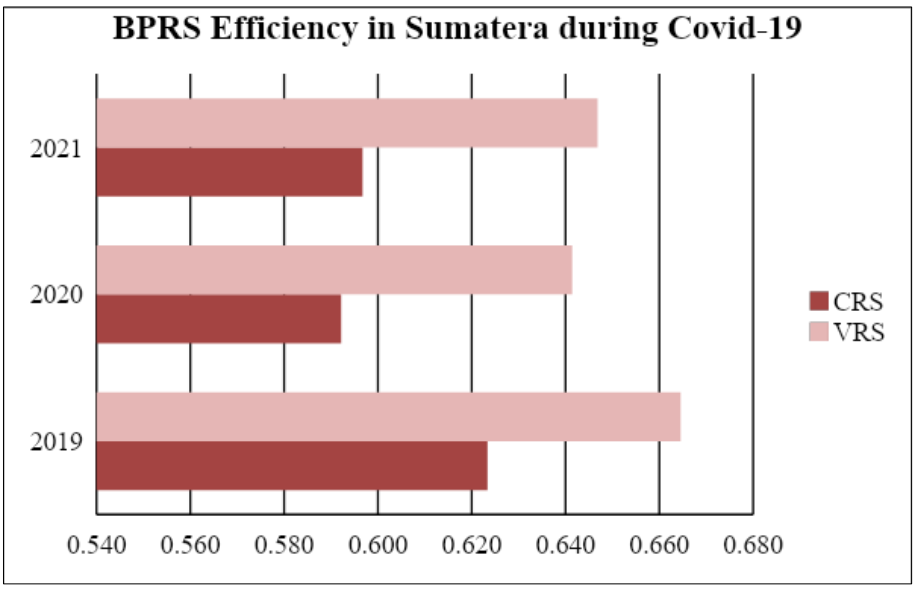

Figure 6: BPRS Efficiency During the Covid-19 Pandemic

Figures 4 and 5 represent the efficiency level of BPR and BPRS in Sumatra during the Covid-19 period, namely from 2019-2021. It can be concluded that the efficiency of BPR and BPRS in Sumatra in the analysis of CRS (*Constant Return to Scale*) and VRS (*Variable Return to Scale*) has decreased. In 2019 BPRs and BPRS in Sumatra showed an increase. However, in 2020 the efficiency level of the two types of banks decreased. This happened due to the emergence of the Covid-19 pandemic at the end of 2019 and began to spread massively in 2020. Then in 2021, the efficiency of BPR and BPRS began to improve again, although the increase that occurred tended to be small.

Potential Improvement

By using the DEA method, it is known the results of *potential improvements* are used to obtain values that need to be improved by BPRs and BPRSs in Sumatra to achieve the optimum level of efficiency, which then obtains what variables must be improved by BPRs and BPRS in each region. 2021 is the last year of observation which is to be analyzed separately from previous years to get an overview of the value that must be achieved.

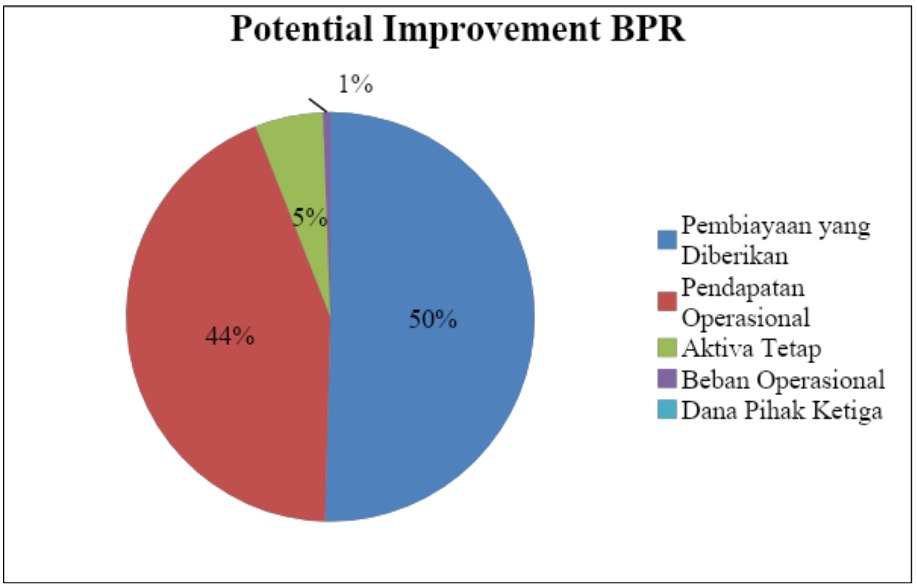

Figure 7: Potential Improvement of BPR in Sumatra

Figure 6 provides general information regarding *input* variables *output* that is the source of the inefficiency of BPR in Sumatra. Variables *input* that causes inefficiency in rural banks in Sumatra only come from fixed assets and operating expenses. Furthermore, the output variables of BPR's sources of inefficiency are the financing provided and operating income. Based on the analysis of *potential improvement*, if the BPR in Sumatra wants to achieve an optimal level of efficiency, then fixed assets need to be reduced by 5% and operating expenses reduced by 1%. Then, in the output variable, the amount of financing provided and operating income need to be increased by 50% and 44%.

Next is the analysis of the *potential improvement* of BPRS in Sumatra. The results of the analysis are represented in the image below.

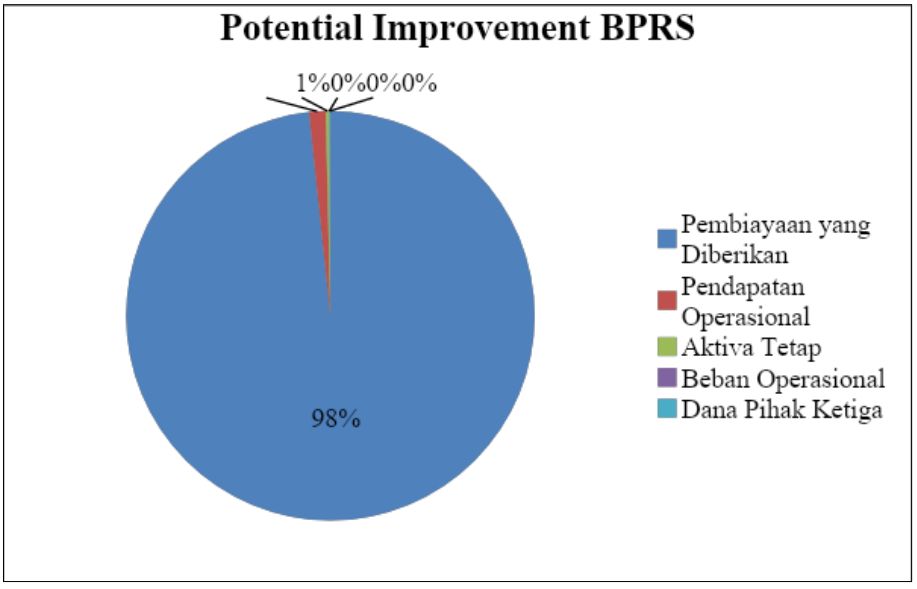

Figure 8: Potential Improvement of BPRS in Sumatra

Similar to the *potential improvement* of rural banks in Sumatra, the *Potential Improvement* of BPRS in Sumatra also shows that the source of inefficiency comes. In BPRS, the source of inefficiency only comes from the output variable, namely the amount of financing provided and operating income. If the BPRS in Sumatra wants to achieve optimal efficiency, BPRS needs to increase the amount of financing provided by 99% and the operating income by 1%. From the *potential improvement* of BPRS in Sumatra, an interesting thing was found, the biggest source of inefficiency is the financing provided.

Benchmarking

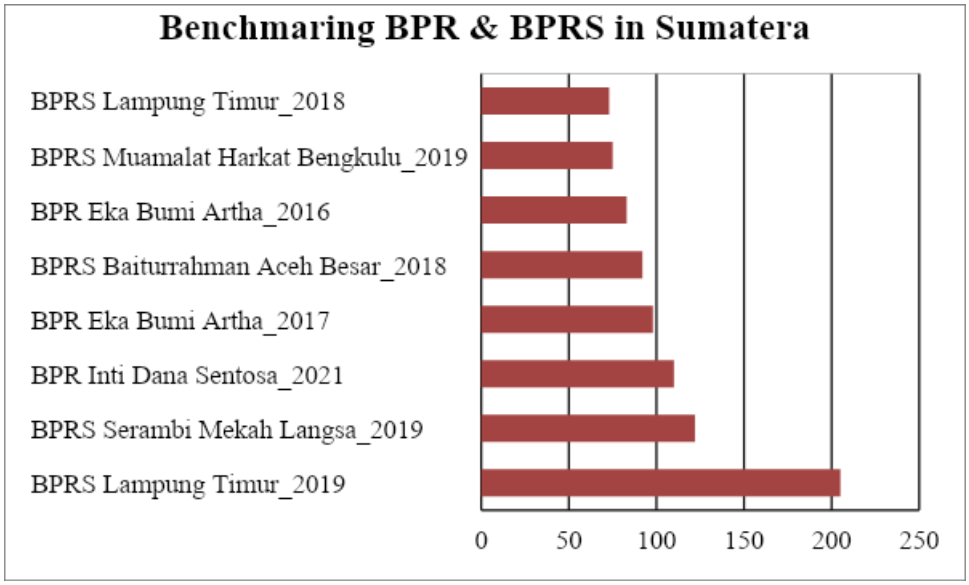

Figure 9: Benchmarking of BPR and BPRS in Sumatra

Figure 9 represents *benchmarking*, namely showing BPR or BPRS in Indonesia which is a reference for other BPRs and BPRS, especially for banks that have not yet reached the optimal level of efficiency. Based on the frontier analysis, it was found that the East Lampung BPRS in 2018-2019 became the bank with the most referrals, namely 278 banks, both BPR and BPRS. Then, BPRS Serambi Mecca 2019 had as many as 122 banks. Next is BPR Inti Dana Sentosa 2021 with a total referral of 110 banks. Followed by BPR Eka Bumi Artha 2016-2017 with a total of 181 referrals, BPRS Baiturrahman Aceh Besar 2018 with 92 referrals, and BPRS Muamalat Harkat Bengkulu 2019 with 75 referrals. This explains the efficiency condition of BPR and BPRS in 2016-2019 is better than the efficiency in 2021 itself.

DISCUSSION

Based on the results of research related to the efficiency of BPR and BPRS in Sumatra during the 2016-2021 period, several findings can be used by banking management, regulators and academics for further policy-making and improvement of existing BPR and BPRS in Sumatra, as well as further research.

The first finding is based on the efficiency score table of BPR and BPRS in Sumatra, which fluctuates from year to year. Likewise, with efficiency scores based on CRS and VRS, it is known that the efficiency trend of BPR and BPRS shows a fluctuating movement from 2016-2021. Then when compared between the two types of banks, it is found that BPR has a higher level of efficiency than BPRS. The results of this study support research from Almas (2018) which also states that the efficiency level of BPR is higher than BPRS. Likewise, the research from Hidayah and Pusrnomo (2014) states that the efficiency level of conventional banks is higher than Islamic banks in Indonesia. In the research of Priyadi et al (2021), it is explained that BPRS provides more low-risk financing which affects the level of profitability, which in turn also affects efficiency.

The second finding, the results of this study are based on efficiency scores on the CCR and BCC models per region, it is known that regional 5, namely Lampung province, is the region with the highest CRS score, and regional 2, namely North Sumatra, has the lowest CRS score. Then, a comparison of the efficiency levels of BPR and BPRS per region found that regional 2, namely the province of North Sumatra, was the region with the lowest efficiency level compared to other regions. This can happen because North Sumatra is the center of economic growth on the island of Sumatra, so competition in this province is quite tight and affects the level of bank efficiency. In addition, Aprilia (2012) explains that regional economic growth has a positive and significant effect on third-party bank funds in the area concerned.

The third finding, during the Covid-19 pandemic, the efficiency of BPRs tends to fluctuate, where in 2020 the efficiency level of BPRs decreased and then increased in 2021, although the increase was

relatively small. Then, in BPRS, during the pandemic the efficiency level of the BPRS experienced a significant decline, especially in 2020, and then in 2021 it increased again even though the efficiency level was still small. This explains that both types of banks both experienced a decline at the beginning of Covid-19 starting to spread massively in Indonesia, and increased again in 2021. It can be concluded that in 2021, BPRs and BPRSs began to adapt to the Covid-19 pandemic phenomenon. and towards recovery. The results of this study are consistent with research from Hasbi and Apriyana (2021) who explained that the Covid-19 pandemic had an impact on BPRs and BPRS in West Java. Setyono et al (2021) explained that the decline in the efficiency level of Islamic banks was due to economic conditions experiencing turmoil during the pandemic. Likewise, Notalin et al (2021) state that the decrease in the efficiency level of Islamic Commercial Banks is caused by a decrease in the level of income from the financing provided as a result of hampered investment by third parties. To overcome this, banks need to maintain their liquidity properly. In addition, the government's role is very important in making policies, especially in terms of financing to stimulate economic growth (Pratomo and Ramdani, 2021).

Bank management is also required to create a new strategy to adapt to the situation (Tahliani, 2020). Especially during the Covid-19 pandemic, where the economic slowdown due to the pandemic can reduce payment activities. However, on the other hand, the Covid-19 phenomenon has accelerated the adoption of digital technology. Banks can take advantage of this opportunity to innovate in integrating *digital banking* with customer interaction (Mawarni et al., 2021) with the aim that transactions made by customers will be easier, more effective and more efficient. Thus, the level of customer satisfaction can increase, especially in lending products (Marlina and Humairah, 2018). Furthermore, by digitizing, banks have made long-term investments for the future, and it is projected that digital services will become one of the main drivers of sustainable banking industry growth (Sumadi, 2020). And in turn can help regional economic growth. Supartoyo et al (2018) explain that the BPR financial sector affects regional economic improvement.

The fourth finding is on the analysis of *potential improvement*. From the results of efficiency analysis using DEA with an *output-oriented approach*, there is a table that shows the difference between the original value in the data and the projected value of efficiency, in each of the variables used in this study (*input* and *output*) or known as *slack*. Through *Slack*, the source of inefficiency in both types of banks can be identified. If a variable tends to be low, it can be said that BPR and BPRS are not fully efficient, because *inputs* can be reduced without reducing *output*. Based on the analysis of potential improvement, to achieve optimal efficiency, fixed assets need to be reduced by 5% and operating expenses reduced by 1%. Then, in the output variable, the amount of financing provided and operating income need to be increased by 50% and 44%. And, in BPRS the amount of financing provided must be encouraged to be increased by 99% and operating income by 1%. Ningsih and Mahfuz (2020) stated that during the Covid-19 pandemic there was a decline in the collection and financing of funds in the banking sector, which of course had an effect on bank efficiency and became a source of bank inefficiency. Of course, this will affect the bank's intermediation function, namely in lending to customers. The distribution of financing can affect operating income and the level of efficiency of banks in obtaining profits Sahputra (2017). Syamni et al (2021) explain that internal factors in banks, namely operational costs, operating income, third-party funds, and capital adequacy ratios can simultaneously affect lending to rural banks in Indonesia, especially Java and Sumatra.

From the analysis of potential improvement, it can be concluded that the biggest cause of inefficiency comes from the output variable, namely the financing provided. The financial sector has a vital role in triggering regional economic growth. In this case, Supartoyo et al (2018) explains that the BPR financial sector affects regional economic improvement. Through its intermediation function, namely the financing distributed by BPR or BPRS to MSMEs, it can be used to improve and develop MSME businesses. Harahap (2019) states that microfinance has a significant influence on the development of MSMEs, as can be seen from increasing business capital, sales turnover, income, business expansion and increasing workforce. In turn, through this, people's incomes can increase and become one of the efforts to recover and improve the regional economy.

The fifth finding is based on the number of referrals or benchmarking of BPR and BPRS in Sumatra. It is known that there are 5 banks with the highest number of referrals, namely BPRS East Lampung in 2018-2019, BPRS Serambi Mekah in 2019, BPR Inti Dana Sentosa 2021, BPR Eka Bumi Artha 2016-2017, BPRS Baiturrahman Aceh Besar 2018 and BPRS Muamalat Harkat Bengkulu 2019. This explains that the efficiency of BPR and BPRS in 2016-2019 is better than

the efficiency in 2021 itself. In addition, the large number of referrals also explains if the bank can manage daily operations of the bank well. Of course, this indirectly requires the bank to be more professional, accountable and transparent in managing bank finances. Ilhamsyah's (2018) explains that professionalism has a positive and significant influence on the quality of banking internal audits. Therefore, the banking sector is expected to be transparent in expressing what it finds and nothing is hidden in conveying it to interested parties. This is also intended to increase public confidence in the banking sector.

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSION

This study aims to measure the level of efficiency, performance and potential for improvement in BPRs in Indonesia, and to compare them for each research region. The analysis was carried out using *Data Envelopment Analysis* (DEA) with a research period of 2016-2021. Based on the results of the analysis, several findings were obtained, namely, the efficiency of BPR fluctuates from year to year. Then, in the CRS and VRS analysis, regional 2 (North Sumatra) has the highest efficiency compared to other regions, which is then followed by regional 5 (Lampung). Furthermore, in the efficiency analysis during the Covid-19 pandemic, BPRs and BPRS in Sumatra experienced a decrease in efficiency in 2020. The results of the potential improvement analysis show that if BPRs want to achieve optimal efficiency, BPRs need to increase the financing provided and operating income by 50% and 44 %. Then, the fixed assets and operating expenses need to be reduced by 5% and 1%. Likewise with BPRS in Sumatra, if you want to achieve optimal efficiency, the BPRS needs to increase the amount of financing provided by 99% and operating income by 1%.

RECOMMENDATIONS

For Practitioners (Banking)

For banking management, it is hoped that the results of this study can be used as a reference for improving efficiency in BPR. And also, more transparency in the publication of financial statements to increase customer confidence in micro banking institutions.

BPR parties are expected to pay attention to and continue to improve their level of efficiency, taking into account the sources of inefficiency, namely fixed assets and operating expenses, as for BPRS, namely financing provided and operating income. For this reason, it is hoped that the BPR and BPRS will maximize these inputs and outputs, especially in the financing provided such as productive financing. Through productive financing provided by the bank, it plays a role in improving welfare and increasing the business of the MSME sector in Sumatra, which can support regional economic recovery.

BPRs and BPRSs need to integrate products and services with technology, considering that the current competitors of BPRs and BPRS are not only from fellow banking institutions but also from the technology-based microfinance industry, such as Fintech. Revitalizing the digitalization of banking products owned will make BPR access to the public wider.

For Regulators

Regulators and local governments can use the results of this research as a basis for consideration in preparing a strategic roadmap to strengthen the ecosystem of micro institutions such as BPR and BPRS, to increase the efficiency of these institutions. As well as more support for BPRs and BPRS in Sumatra, by paying attention to their human resources, professionalism, customer trust and in the publication of financial reports.

BI and OJK need to encourage commercial banks to channel financing through the mediation of BPR and BPRS in areas that are not covered by commercial banks using the linkage program.

Given the increasingly fierce competition in microfinance, it is necessary to establish a policy of limiting the operating area of BPRs and BPRS in Sumatra so that they do not compete with other BPRs. So, the implication is that BPRs will have stronger capital so that businesses can develop and increase competitiveness with other banks.

For Academics

For academics, researchers are expected to be able to follow up on the findings of this study. Further research can use other independent variables that can affect the efficiency of BPR and BPRS in Sumatra. In addition, the efficiency level of BPR and BPRS can be compared with the efficiency level of commercial banks to measure how far the competition in the micro-segment is with larger banks. Furthermore, further research can also use other relevant approaches such as the Malmquist Index for productivity measurement (Rani et al., 2017).

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APPENDIX

Appendix 1: CRS Score of BPR BPRS in Sumatra

DMU/REGIONAL	CCR Model	BCC Model	
	CRS	VRS	SE
REGIONAL 1			
Regional 1_BPR Aceh Utara	0.462	0.473	0.973
Regional 1_BPR Artha Aceh Sejahtera	0.550	0.570	0.963
Regional 1_BPRS Adeco Langsa Aceh	0.786	0.802	0.982
Regional 1_BPRS Baiturrahman Aceh Besar	0.657	0.671	0.978
Regional 1_BPRS Gayo Aceh Tengah	0.686	0.704	0.975
Regional 1_BPRS Hikmah Wakilah Aceh	0.774	0.798	0.970
Regional 1_BPRS Kota Juang Aceh Jeumpa	0.764	0.809	0.948
Regional 1_BPRS Rahmah Hijrah Agung Aceh	0.639	0.647	0.988
Regional 1_BPRS Rahmania Dana Sejahtera Aceh Jeumpa/Bireuen	0.594	0.679	0.853
Regional 1_BPRS Serambi Mekah Langsa Aceh	0.816	0.921	0.893
Regional 1_BPRS Taman Indah Darussalam Aceh	0.753	0.842	0.910
Regional 1_BPRS Tengku Chiek Dipante Pidie Aceh	0.537	0.627	0.853
Mean	**0.668**	**0.712**	**0.940**
REGIONAL 2			
Regional 2_BPR Guna Rakyat	0.540	0.983	0.550
Regional 2_BPR Mitradana Madani	0.680	0.947	0.720
Regional 2_BPR Multi Tata Perkasa	0.991	0.994	0.997
Regional 2_BPR Nusantara Bona Pasogit 8 Dairi SUMUT	0.591	0.821	0.720
Regional 2_BPRS Al Washliyah Medan	0.372	0.952	0.391
Regional 2_BPRS Al-Yaqin Simalungun Sumut	0.376	0.747	0.499
Regional 2_BPRS Amanah Bangsa Simalungun	0.301	0.783	0.382
Regional 2_BPRS Gebu Prima Medan	0.629	0.964	0.650
Regional 2_BPRS Pudu Arta Insani Deli Serdang	0.398	0.995	0.400
Regional 2_BPRS Sindanglaya Kotanopan Deli Serdang Sumut	0.464	0.716	0.688
Mean	**0.534**	**0.890**	**0.600**
REGIONAL 3			
Regional 3_BPR Asia Sejahtera	0.686	0.738	0.935
Regional 3_BPR Barelang Mandiri	0.547	0.617	0.889
Regional 3_BPR Cempaka Mitra Nagari	0.659	0.688	0.953
Regional 3_BPR Mitra Arta Mulia	0.461	0.541	0.848
Regional 3_BPR Prima Riau Sentosa Pekan Baru	0.817	0.869	0.939
Regional 3_BPR Sarimadu (Perseroda)	0.745	0.972	0.767
Regional 3_BPR Sejahtera Batam	0.864	1.000	0.864
Regional 3_BPR Tilatang Kamang	0.428	0.437	0.979
Regional 3_BPRS Berkah Dana Fadhlillah (Perseroda) Kampar Riau	0.575	0.583	0.986
Regional 3_BPRS Haji Miskin Kab Tanah Datar Sumbar	0.750	0.764	0.982
Regional 3_BPRS Hasanah Pekanbaru Riau	0.546	0.552	0.990
Regional 3_BPRS Mentari Pasaman Saiyo Pasaman Barat Sumbar	0.447	0.551	0.812
Mean	**0.627**	**0.693**	**0.912**

REGIONAL 4			
Regional 4_BPR Anugrah Swakerta	0.516	0.552	0.939
Regional 4_BPR Central Dana Mandiri	0.845	0.873	0.968
Regional 4_BPR Central Niaga Abadi	0.717	0.737	0.970
Regional 4_BPR Dian Binarta	0.605	0.619	0.976
Regional 4_BPR Maroba Ite Bengkulu	0.548	0.577	0.951
Regional 4_BPR Mitra Central Dana	0.429	0.435	0.985
Regional 4_BPR Mukomuko Makmur	0.724	0.754	0.961
Regional 4_BPR Palembang	0.766	0.879	0.878
Regional 4_BPR Pondok Meja Indah	0.561	0.720	0.785
Regional 4_BPR Prabumegah Kencana	0.511	0.546	0.939
Regional 4_BPR Ukabima Lestari	0.757	0.872	0.869
Regional 4_BPRS Muamalat Harkat Bengkulu	0.610	0.618	0.988
Mean	**0.632**	**0.682**	**0.934**
REGIONAL 5			
Regional 5_BPR Cipta Dana Mulia	0.434	0.450	0.968
Regional 5_BPR Eka Bumi Artha	0.894	1.000	0.894
Regional 5_BPR Inti Dana Sentosa	0.893	0.953	0.938
Regional 5_BPR Sumbe r Pangasean Lampung Tengah	0.472	0.490	0.965
Regional 5_BPR Tjandra Artha Lestari	0.766	0.814	0.946
Regional 5_BPRS Aman Syariah Lampung Timur	0.661	0.676	0.982
Regional 5_BPRS Bandar Lampung	0.596	0.655	0.909
Regional 5_BPRS Kotabumi (Perseroda) Lampung Utara	0.512	0.764	0.667
Regional 5_BPRS Lampung Timur	0.899	0.914	0.975
Regional 5_BPRS Metro Madani Kota Metro Lampung	0.499	0.685	0.727
Regional 5_BPRS Mitra Agro Usaha Bandar Lampung	0.728	0.759	0.959
Regional 5_BPRS Rajasa Lampung Tengah (Perseroda)	0.638	0.694	0.909
Regional 5_BPRS Tani Tulang Bawang Barat Lampung	0.743	0.794	0.933
Regional 5_BPRS Way Kanan (Perseroda) Lampung	0.661	0.687	0.957
Mean	**0.671**	**0.738**	**0.909**