

## HOW THE COVID-19 OUTBREAK AFFECT THE EFFICIENCY OF ISLAMIC RURAL BANKS?

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### **Abstract**

*Islamic Rural Banks (BPRS) have an essential function for developing the Micro, Small, and Medium Enterprises (MSME) sector. For the BPRS to exist and not be liquidated, the BPRS needs to maintain its financial efficiency. This study aims to determine the efficiency of a BPRS in East Java. Then, this is to find out what affects the efficiency. Two Stages-Data Envelopment Analysis (DEA) calculate the efficiency. The first stage of data analysis is carried out by assessing the efficiency of the BPRS. The second stage is the analysis of variables that affect efficiency using logistic regression. This analysis also uses the description of the year of the Covid pandemic as a predictor variable. The results of this study found that the BPRS in East Java was categorized as inefficient (inefficiency). However, from the 20 samples used, there are three efficient BPRS based on the average individual BPRS during the 2012-2020 period. Based on logistic regression analysis, it is known that the factors that affect the efficiency of BPRS include Operational Costs and Operating Income, Earning Assets, and the pandemic era.*

**Keywords:** Efficiency; BPRS; Covid-19 Pandemic; DEA

### **Abstrak**

Bank Pembiayaan Rakyat Syariah (BPRS) mempunyai fungsi penting untuk pengembangan sektor Usaha Mikro Kecil dan Menengah (UMKM). Agar BPRS tetap eksis dan tidak terlikuidasi, maka BPRS perlu menjaga efisiensi keuangannya. Penelitian ini mempunyai maksud untuk mengetahui efisiensi BPRS di Jawa Timur. kemudian, ini yaitu untuk mengetahui apasaja yang mempengaruhi efisiensi tersebut. Two Stages-Data Envelopment Analysis (DEA) merupakan pendekatan untuk menghitung efisiensi. Tahap pertama analisis data dilakukan dengan menilai efisiensi BPRS. Tahapan kedua yaitu analisis variabel yang mempengaruhi efisiensi menggunakan regresi Logistic. Dalam analisis ini juga menggunakan keterangan tahun pandemi Covid sebagai variabel prediktor. Hasil dari penelitian ini menemukan bahwa BPRS di Jawa Timur secara keseluruhan masuk dalam kategori tidak efisien (inefisien). Namun dari 20 sampel yang digunakan, terdapat tiga BPRS



yang efisien berdasarkan rata-rata BPRS secara individu selama periode 2012-2020. Berdasarkan analisis regresi logistik diketahui faktor-faktor yang mempengaruhi efisiensi BPRS antara lain Biaya Operasional dan Pendapatan Operasional, Aktiva Produktif dan tahun pandemi.

**Kata kunci:** Efisiensi; BPRS; Pandemi Covid-19; DEA

## INTRODUCTION

Sharia Banking is a Bank that carries out its business activities based on Sharia Principles and by type consists of Sharia Commercial Banks (BUS), Sharia Business Units (UUS), and Sharia Rural Banks (BPRS) (Law NO.21 of 2008 concerning Sharia Banking). said that the primary function of banking is to carry out an intermediation function, namely to collect funds from people who have excess funds in the form of savings and channel them back to people who lack funds in the form of financing (Novandra2014). This function is carried out to increase the distribution of development, economic growth, and national stability towards improving people's living standards. In line with the direction of the intermediation function, the Sharia Banking Law has emphasized that in its activities, BPRS does not provide services in payment traffic, but the strategic role of BPRS effectively and efficiently leads to an increase in people's living standards (Novandra, 2014). The BPRS industry has a playing field that often intersects with other financial institutions, both commercial banks and microfinance institutions (OJK, 2019). BPRS has a specific objective: providing banking services and products for the economically weak and Micro, Small, and Medium Enterprises (MSMEs) in urban and rural areas (Khasanah et al., 2020; Lestari & Oktaviana, 2020; Ramadhan et al., 2017).

People with limited skills and the economy need MSMEs. Through MSMEs, people can develop skills and earn income. On the other hand, MSMEs also contribute to the Indonesian economy, especially during a crisis. MSMEs are resilient to the economic crisis because they do not depend on external factors such as debt in foreign currencies and imported raw materials in carrying out their operational activities (Naufal & Firdaus, 2017).

In the national banking system, BPRS serves to serve MSMEs. BPRS has a straightforward administrative process, fast service, and light requirements (Fauzi, 2018). It is different from commercial banks that provide financing in standard credit (non-adjustable) and whose location is only in urban areas. These things then make BPRS have a dominant market share, namely MSMEs. In line with this statement, Pratiwi et al. (2019) said that when viewed through the development of BPRS financing, the distribution of funding was always dominated by the MSME sector. MSMEs need the role of banking to deal with the obstacles they experience, such as



capital constraints amid the Covid-19 Pandemic, because the decline in MSME activity due to the Covid-19 pandemic will have a bad impact on the economy (Widiyaningtiyas & Dura, 2020; Raharjo et al., 2021; Tampongangoy et al., 2021, Setiawan, 2021).

East Java is a potential area for developing and optimizing BPRS financing. Based on data from bps.go.id East Java has the second largest number of MSMEs in Indonesia, 9,782,262. This number increased rapidly from 6,825,931 units in 2012. In addition, of the total 167 BPRS on a national scale, East Java is the region with the most BPRS. However, based on the 2019 Islamic Banking Statistics data, BPRS in East Java has decreased for the last nine years; some BPRS has been liquidated up to 27 units. The BPRS in East Java has performed its intermediation function well in managing deposits and channeling them in financing. It is an irony if the BPRS in East Java continues to decline. MSMEs play an important role, namely being the basis of people's economic development in East Java (BPS, 2016) which requires BPRS.

The importance of BPRS financing for the development and strengthening of the MSME sector in East Java requires a measurement of bank performance and health. The aim is to examine the factors that influence it. In this case, a measure is needed that can reflect the performance of a healthy, transparent, professional, and prudent bank and can maintain its stability, namely the measurement of efficiency (Kustanti & Indirani, 2016; Muharam & Pusvitasari, 2007; Nugroho & Anisa, 2018; Satibi et al., 2018; Sutawijaya & Lestari, 2009).

Measuring the efficiency of Islamic banking, especially BPRS, is very necessary. Several previous studies to look at the efficiency of Islamic banking in Indonesia, including BPRS, include (Adjei-Frimpong et al., 2015; Kustanti & Indirani, 2016; Novandra, 2014; Ramadhan et al., 2017; Sakti & Mohamad, 2018). The researcher states that Islamic banking in Indonesia is in the efficient category. However, a different opinion was expressed by (Ferari & Sudarsono, 2011; Khusnah et al., 2020; Naufal & Firdaus, 2017; Khairunnisa & Nisful, 2018) They say that Islamic banking in Indonesia and BPRS is included in the inefficient category because many of them have fluctuating efficiency levels making it unstable.

## **LITERATURE REVIEW**

Ferari & Sudarsono (2011) state that there are two types of efficiency in economic theory: technical efficiency and economic efficiency. Technical efficiency has a microeconomic picture, while economic efficiency has a macro-economic. Measurement of technical efficiency has a micro (small) scope, which only covers techniques and functional relationships in the



process of user inputs into outputs or in the production process. Measuring economic efficiency has a macro (broad) scope, where prices cannot be considered predetermined, but prices can be influenced by macro policies (Ferari & Sudarsono, 2011). Thus, it can be concluded that there are two types of efficiency, namely economic efficiency and technical or production efficiency. Efficiency compares output and input (Fauziah et al., 2015; Huri & Susilowati, 2004; Novandra, 2014; Rusydiana, 2018; Hakim & Anwar, 2017). By measuring efficiency, it can be seen how well a business manages inputs (materials used) into outputs or the amount of output produced.

Firdaus & Hosen (2013) Efficiency of Islamic Commercial Banks Using a Two-Stage Data Envelopment Analysis Approach for the Second Quarter of 2010-Quarter IV of 2012. The results of this study indicate that Islamic Commercial Banks in Indonesia have fluctuating efficiency levels. Then another conclusion is that bank branches, NPF, and CAR have a significant adverse effect on bank efficiency, while ROA and ROE have a significant positive impact. Ismail et al. (2016) found that conventional banks are efficient in using information and electronic technology, while Islamic banks are efficient in allocating and using their resources. Furthermore, this study found that capital and bank size had a significant positive effect on efficiency, while loan quality was found to have a significant negative impact on efficiency. Ramadhan et al. (2017) measure the efficiency of the BPRS for the period 2016. The overall results of the BPRS can be said to have reached the level of efficiency. This research is also supported by Naufal & Firdaus (2017) but contradicts Fauzi (2018), Khairunnisa & Nisful (2018), and Khusnah et al. (2020).

On the other hand, the Covid-19 pandemic has infected in Indonesia. The world also has an impact on the economic sector. In Indonesia, based on data from the Ministry of Health as of March 2021, the highest Covid-19 cases in Indonesia were found in Java Island. The first position is DKI Jakarta, with 368,944 cases and 6184 deaths. West Java is in second place with 239,434 cases, and 2896 people died. East Java is in the third position with 136,397 cases with 9644 deaths (Ministry of Health, 2021). Indirectly, this will also affect community credit installment payments that have a loan (credit) to the bank. It will affect the bank's overall income. The Deposit Insurance Corporation (LPS) conveyed that the impact of the coronavirus outbreak (Covid-19) had made many BPRS fail. It is because the losses that have occurred in some BPRS have been categorized as very heavy, such as data submitted by the Financial Services Authority (OJK) that the CAR (Capital Adequacy Ratio) can be minus 200%-300%. The status of a failed bank is a condition in which the banking supervisory authority can stop certain bank operations, so banks must maintain their financial efficiency.



## **METHOD**

The research is a quantitative study that uses an explanatory design in which the object to be studied is to examine the relationship between the hypothesized variables (Mulyadi, 2011). From a total population of 34 BPRS in East Java, 20 samples were obtained using the purposive sampling technique.

The research data is the related BPRS Annual Financial Report for 2012-2020 through the official website of the Financial Services Authority (OJK) ([www.ojk.go.id](http://www.ojk.go.id)). Data analysis used the Two stage-Data Envelopment Analysis (DEA) method (Elvira, 2012; Fatimah & Mahmudah, 2014; Binuko et al., 2015; Nurlela, 2015; Sa'diyah, 2016). There are two stages of data analysis, the first stage, the DEA method, is used to assess the efficiency of a BPRS in East Java. The second stage is to see the factors that influence the efficiency performance of BPRS in East Java using Logistic Regression (Jeryana et al., 2014). The variables used are Total Savings, Fixed Assets, and Operational Costs as input variables. Then the variables of Profit-Sharing Financing, Murabahah Receivables, Earning Assets, and Operating Income as output variables in DEA processing. In the Logistic Regression processing, all of these variables are used as independent variables and the categorization of efficiency values as the dependent variable.

## **RESULTS AND DISCUSSION**

### **Efficiency Analysis Using DEA**

The efficiency of 20 BPRS in East Java during the 2012-2020 measure uses DEAP 2.1 software. Data processing is carried out using an input-oriented intermediation approach with Variable Return to Scale (VRS) assumption. Suppose the efficiency value is 1. The BPRS is efficient and vice versa. If the efficient value is less than 1, the BPRS is in the inefficient category. During the nine years of the research period, three BPRS achieved an efficiency value of 1 (one), namely BPRS Baktimakmur Indah, Unawi Barokah, and Lantabur Tebuireng. The three BPRS have an efficiency value of 1 for nine consecutive years. Meanwhile, other BPRS still have fluctuating values, so the average efficiency value has not yet reached the efficiency value.

The average efficiency value of 20 BPRS in East Java fluctuated and never reached a score of 1 from 2012 to 2020. The highest efficiency score of BPRS was in 2016, with a score of 0.942. The lowest efficiency value was in 2020, with a score of 0.847. Based on the measurement results, the overall average value of BPRS for 9 years is 0.9, where the value is less than 1, so BPRS in East Java is still classified as inefficient (Table 1).



Furthermore, the parameter estimation test is carried out to determine whether the Logistic model above is feasible or not using the Likelihood Ratio (G Test). Overall, the efficiency of the BPRS in East Java is included in the inefficient category ( $0.9 < 1$ ). Besides, three BPRS are included in the efficient category from 2012 to 2020, namely BPRS Baktimakmur Indah, BPRS Unawi Barokah, and BPRS Lantabur Tebuireng. The three BPRS have been able to allocate their resources appropriately. In addition, they also have a scale of economics; they carry out operational expansion and various types of attractive products and good service and use of technology.

The results of this study strengthen previous research conducted by Khairunnisa & Nisful (2018) and Khusnah et al. (2020) regarding the analysis of the efficiency of BPRS in East Java. The cause of inefficiency is caused by the number of input variables that are greater than the target or the required amount, while the number of output variables is less than the target. It is known that the realization of the BPRS Total Savings achievement in East Java is an average of Rp. 22,542,763,000,000, while the savings target that should be on average is Rp. 14,620,214,000,000. Adiwarman A. Karim in Utama et al. (2016) which revealed that "Efficient is doing the things right", which means doing everything in the right way to get optimal results. In using resources, both human, material, and financial resources, accuracy is needed so that satisfaction can be achieved. In line with the research results, one of the causes of inefficiency is the inappropriate allocation of resources (Permono & Darmawan, 2000).

Fixed asset inefficiency occurs because the use of fixed assets exceeds the required target or is not maximal. To overcome this, the BPRS must maximize the use of fixed assets that it already has, but if it cannot maximize the BPRS, it needs to reduce less productive assets or procure offices with a rental system. Also, Operational Cost input inefficiency occurs because the amount of Operating Cost incurred is greater than required. One of the reasons for operating costs is many workers used. BPRS has a problem; namely, the increase in the number of workers is not matched with adequate skills, causing the bank to experience decreased productivity (Sutawijaya and Lestari, 2009).

The efficiency value in the previous stage was categorized as the efficiency value less than one would be classified as number 0, while the efficiency value of 1 was categorized as 1. The results of the efficiency categorization were used as the dependent variable and linked to the analysis of factors using Logistic regression. Data processing using Logistic regression is assisted by Eviews 9 software. Table 2 show the results of logistic regression.



The efficiency value of several BPRS in East Java decreased during the Covid-19 pandemic, namely in 2020. The efficiency value decreased at least 1% from the previous year's efficient value. Several things caused this decreased efficiency. The risk of BPRS financing fluctuates and is in a fairly healthy position, but the profitability of the BPRS has generally increased from year to year. Thus, it concludes that the increase in the profitability of the BPRS comes from other performance factors of the bank (Cahya et al., 2021). Distribution of financing to MSMEs so that MSMEs can produce goods and services. This situation is the opposite during the COVID-19 pandemic. As many as 40% of MSME actors choose not to make bank loans as a source of business development funds during the COVID-19 pandemic (Siregar & Pujiono, 2021). This phenomenon certainly disturbs the stability of the BPRS, which leads to inefficiency.

### **Operational Costs Affect the Efficiency of BPRS in East Java**

Operational costs are not directly related to the company's products but are related to the company's daily operating activities. So that when Operational Costs are high, Sharia People's Financing Banks (BPRS) in East Java have an increased opportunity to fund banking operations to encourage optimal performance. Operating Expenses and high loan repayments together will be followed by an increase in Net Profit. The effect of Operational Costs indicates that employees' productivity or human resources at a BPRS in East Java is still relatively low. Therefore, there is a need to sacrifice costs to improve human resource quality by various steps such as training or seminars organized by universities or Bank Indonesia. The results of this study are in line with research conducted by Suhel (2011) and Iqbal et al. (2017), who found that the variable cost of staff or operating costs had a positive effect on efficiency.

### **Earning Assets Affect Eff in East Java**

Earning Assets will increase the bank's income and profits if the returns made by the BPRS customers are smooth. Returns made by BPRS customers in East Java are still not smooth, thereby increasing the value of Earning Asset Quality. The greater the value indicated by the productive asset quality variable, the greater the bank's profit that must be reserved so that the net profit obtained by the bank will be smaller. Reserve funds will reduce liquidity while the bank loses the opportunity to invest. The results of this study are in line with research (Hesti, 2010) and Chatarine & Lestari (2010), which say that Earning Assets negative affect efficiency.

**Table 1. The Efficiency Sharia Rural Banks**

BPRS	Years Observation									Average
	2012	2013	2014	2015	2016	2017	2018	2019	2020	
Amanah Sejahtera	1	0,736	0,889	0,637	1	1	0,826	0,537	0,732	0,817
Mandiri Mitra Sukses	1	0,970	0,906	0,977	0,945	0,753	0,999	0,610	0,697	0,871
Baktimakmur Indah	1	1	1	1	1	1	1	1	1	1
Annisa Mukti	1	1	1	1	1	0,938	1	0,892	0,777	0,956
Meru Nusantara Mandiri	0,739	0,653	1	0,825	1	0,947	1	1	0,996	0,907
Unawi Barokah	1	1	1	1	1	1	1	1	1	1
Lantabur Tebuireng	1	1	1	1	1	1	1	1	1	1
Sarana Prima Mandiri	0,647	0,720	0,929	0,717	0,759	0,766	0,918	0,718	1	0,797
Asri Mandiri Nusantara	1	0,920	0,94	1	0,994	1	1	0,937	0,795	0,954
Bhakti Haji	1	1	1	0,905	1	1	1	1	1	0,989
Daya Artha Mentari	0,82	0,735	1	0,657	0,588	0,611	0,925	0,751	0,643	0,748
Ummu	0,615	0,721	0,757	0,393	0,708	0,657	0,465	0,609	0,480	0,601
Artha Pamenang	1	0,811	0,789	0,851	1	0,980	1	0,805	0,820	0,895
Rahma Syariah	0,821	1	0,614	0,833	0,972	1	0,937	1	0,732	0,879
Al Mabur Babadan	1	0,877	1	1	1	0,925	0,963	0,842	1	0,956
Madinah	1	0,898	0,608	0,812	0,868	0,872	1	1	1	0,895
Situbondo	1	1	1	1	1	1	1	0,708	0,784	0,944
Bumi Rinjani Batu	1	1	1	1	1	1	0,789	0,738	0,505	0,892
Mitra Harmoni Kota Malang	0,553	1	1	1	1	1	1	1	1	0,950
Tanmiya Artha	1	1	0,568	1	1	1	0,99	1	1	0,951
Average (year)	0,910	0,902	0,900	0,880	0,942	0,922	0,941	0,857	0,847	

**Source: Author's analysis (2021)**



**Table 2. Logistic Regression**

Variable	Coefficient	Std.Error	z-Statistic	Prob.	Wald Test
C	0,269975	0,112638	2,39683	0,0165	
Financing	-0,280840	0,252307	-1,113087	0,2657	1,238966
Fixed Assets	-0,142913	0,121089	-1,180227	0,2379	1,392945
Operating Expenses	0,479107	0,233036	2,055936	0,0398	4,226871
Profit Sharing Financing	-0,101380	0,156986	-0,647590	0,5184	0,417045
Murabahah Receivables	0,258498	0,291360	0,887211	0,3750	0,787145
Earning Assets	-0,620239	0,362986	-1,708715	0,0875	2,919701
Operating Income	0,383669	0,226957	1,690421	0,0909	2,857511

**Source: Author's analysis (2021)**

### **Operating Income Affect the Efficiency of BPRS in East Java**

The source of the increase in bank income is Income from the distribution of financing, better known as margin or profit-sharing. Likewise, Income from BPRS operations in East Java is a very reliable income because their main function is to channel financing to MSMEs. The financing disbursed by BPRS in East Java includes financing for mudharabah (profit sharing), musyarokah (sales and purchases), and ijarah (lease) contracts. The higher the number of customers who pay for financing, the operating Income will be better, the value will increase while increasing the value of banking operational efficiency. The results of this study are in line with research conducted by Chatarine & Lestari (2010) and Suhel (2011).

### **Savings Affect the Efficiency of BPRS in East Java**

The size of the deposit collected by the BPRS depends highly on the Funding product, the services provided to customers, and the reputation of the BPRS. Third-Party Funds (TPF) significantly affect bank efficiency (Anggraeni, 2017; Sari & Tanjung, 2020). When total savings increase, it will cause an increase in profitability and increase efficiency levels. However, this study is not in line with previous research. This could be due to the inappropriate allocation of resources. The BPRS has not been optimal in managing its Total Deposits to be distributed to generating assets. Increased efficiency is supported by revenue sharing, administrative costs on savings funds such as savings, providing banking services and services based on information technology.

### **Fixed Assets Affect the Efficiency of BPRS in East Java**

Fixed Assets variable relates to the size of a company, which is a BPRS. Total assets are one of the indicators that affect the level of bank efficiency.



The greater the total assets of a company, the more efficient the bank is (Demirguc-Kunt Levine (2000) and Casu and Girardone (2006) in Anggraeni (2017)). This research does not support this. A BPRS with significant total assets is not necessarily more efficient than a BPRS with a small size because an increase in the size of the bank's total assets can lead to high operational costs. BPRS Unawi Barokah has a lower number of inputs compared to other BPRS. However, this BPRS is able to become an efficient BPRS because it is able to optimize its input so that it becomes an income for the BPRS. In addition, assets refer to scale efficiency (Ayadi, 2013).

The study is the same as the results of research conducted by Ayadi (2013) and Ranaswijaya et al. (2019), which said that Fixed Assets did not affect efficiency.

### **Profit-Sharing Financing Affect the Efficiency of BPRS in East Java**

Profit-sharing financing is implementing the cooperation agreement between the BPRS and the customer. The BPRS in East Java applies investment financing, which is dominated by MSME businesses in trade, agriculture, and other productive businesses. The income earned will affect the amount of profit earned by the bank (Firdaus (2009) in Ridha Rochmanika (2012)). From this statement, it can be understood that the thing that affects the amount of profit is income from the financing channeled. BPRS in East Java has a high amount of profit-sharing funding, but it is estimated that the BPRS has bottlenecks in repaying loans by customers. So that the amount of financing for the results owned does not affect efficiency. The study results are consistent with the research conducted by Nizar & Anwar (2015), which said that financing did not affect the efficiency value of BPRS in East Java.

### **Murabahah Affect the Efficiency of BPRS in East Java**

Murabahah receivables are implementing a sale and purchase contract between a BPRS and a customer. The BPRS in East Java applies working capital financing, which is dominated by MSMEs in trade, agriculture, and other productive businesses. From murabahah receivables, the BPRS will earn income following the agreed ratio of the goods needed by the customer. The margin income will increase the BPRS profit. The amount of revenue obtained by the BPRS will affect the profitability and efficiency achieved. The amount of Murabaha receivables does not affect efficiency, possibly due to non-performing financing. The study results are consistent with research conducted by Nizar & Anwar (2015), which says that the relationship between Murabahah Receivables and efficiency has no effect.



## CONCLUSION

BPRS in East Java have an average efficiency value that fluctuates from 2012 to 2020, so they are included in the inefficiency category. However, individually, there were three efficient BPRS during the research period: BPRS Baktimakmur Indah, BPRS Unawi Barokah, and BPRS Lantabur Tebuireng. Factors that affect the efficiency of BPRS in East Java, namely Operational Costs and Operating Income, have a positive effect. Meanwhile, Earning Assets have a negative effect on the efficiency of BPRS in East Java. For Total Savings, Fixed Assets, Profit Sharing Financing and Murabahah Receivables do not affect the efficiency of BPRS in East.

## REFERENCES

- Adjei-Frimpong, K., Gan, C., Ying, L., Hu, B., & Cohen, D. (2015). Efficiency and productivity change in the banking industry: Empirical evidence from New Zealand banks. *Investment Management and Financial Innovations*, 12(1), 19–25.
- BPS. (2016). Sensus Ekonomi 2016 dan Sutas 2018. <http://Diskopukm.Jatimprov.Go.Id>, 2–4.
- Cahya, A. D., Widyastuti, M. L., & Fatharani, H. (2021). Peran Perbankan dalam Pembiayaan UMKM di Tengah Pandemi COVID-19. *Jurnal Ilmiah Keuangan Dan Perbankan (FIDUSIA)*, 4(2), 138–149. <http://fe.ummetro.ac.id/ejournal/index.php/JPK/article/view/613>
- Fauzi, M. (2018). Efisiensi bank pembiayaan rakyat syariah (BPRS) di provinsi Jawa Tengah. *Jurnal Ekonomi & Keuangan Islam*, 4(1), 31–40. <https://doi.org/10.20885/jeki.vol4.iss1.art4>
- Fauziah, E., Selpiyani, & Setyawan, S. (2015). Analisis pembiayaan warung mikro di kota Bandung. *Prosiding Keuangan & Perbankan Syariah*, 1, 499–506.
- Ferari, N., & Sudarsono, H. (2011). Tingkat Efisiensi Perbankan Syariah Dan Konvensional Dengan Menggunakan Data Envelopment Analysis (Dea). *Jurnal Ekonomi & Keuangan Islam*, 1(2), 141–148.
- Firdaus, M. faza, & Hosen, M. N. (2013). Efisiensi Bank Umum Syariah Menggunakan Pendekatan Two-Stage Data Envelopment Analysis. *Buletin Ekonomi Moneter Dan Perbankan*, 16(2), 167–188. <https://doi.org/10.21098/bemp.v16i2.31>
- Huri, M. D., & Susilowati, I. (2004). Pengukuran Efisiensi Relatif Emiten Perbankan Dengan Metode Data Envelopment Analysis (Dea). *Dinamika Pembangunan*, 1(2), 95–110.
- Ismail, F., Shabri Abd. Majid, M., & Rahim, R. A. (2013). Efficiency of Islamic and conventional banks in Malaysia. *Journal of Financial Reporting and Accounting*, 11(1), 92–107. <https://doi.org/10.1108/jfra-03-2013-0011>
- Khairunnisa, A. H., & Nisful, L. (2018). *Efisiensi Pembiayaan Bank Pembiayaan Rakyat*. 15–27.
- Khasanah, U., Meldona, M., & Djakfar, M. (2020). Studi Dampak Pemberdayaan Sistem Keuangan Syariah Al-Ijarah Bagi Pelaku Umkm. *El Dinar*, 8(2), 115–129. <https://doi.org/10.18860/ed.v8i2.8856>



- Khusnah, N., Zaki, I., & Rani, L. N. (2020). Analisis Efisiensi Bank Pembiayaan Rakyat Syariah (Bprs) Di Jawa Timur Menggunakan Data Envelopment Analysis (Dea) Periode 2012-2018. *Jurnal Ekonomi Syariah Teori Dan Terapan*, 7(2), 294. <https://doi.org/10.20473/vol7iss20202pp294-304>
- Kustanti, H., & Indirani, A. (2016). Analisis Efisiensi Bank Umum Syariah (BUS) dan Unit Usaha Syariah (UUS) dengan Metode Data Envelopment Analysis (DEA) Periode 2010 - 2014. *Jurnal Studi Manajemen Dan Organisasi*, 13, 140–148.
- Lestari, I. F., & Oktaviana, U. K. (2020). Peranan Komite Audit Dan Dewan Pengawas Syariah Terhadap Kualitas Laporan Keuangan (Studi Kasus pada BPRS di Jawa Timur). *El Dinar*, 8(1), 29. <https://doi.org/10.18860/ed.v8i1.7611>
- Muharam, H., & Pusvitasari, R. (2007). Analisis Perbandingan Efisiensi Bank Syariah di Indonesia Dengan Metode Data Envelopment Analysis (periode Tahun 2005). *Jurnal Ekonomi Dan Bisnis Islam*, II(3), 80–116.
- Mulyadi, M. (2011). Penelitian Kuantitatif Dan Kualitatif Serta Pemikiran Dasar Menggabungkannya [Quantitative and Qualitative Research and Basic Rationale to Combine Them]. *Jurnal Studi Komunikasi Dan Media*, 15(1), 128.
- Naufal, F. M., & Firdaus, A. (2017). Analisis Efisiensi Bank Pembiayaan Rakyat Syariah (Bprs) Wilayah Jabodetabek Dengan Pendekatan Two Stage Data Envelopment Analysis (Dea). *Equilibrium: Jurnal Ekonomi Syariah*, 5(2), 196. <https://doi.org/10.21043/equilibrium.v5i2.2612>
- Novandra, R. (2014). Analisis Perbandingan Efisiensi Perbankan Syariah Dan Konvensional Di Indonesia Comparison. *December 2014*, 183–193.
- Nugroho, L., & Anisa, N. (2018). *Inovbiz. December 2018*.
- OJK. (2019). *Laporan Perkembangan Keuangan Syariah Indonesia 2018*. OJK. <https://www.ojk.go.id/id/kanal/syariah/data-dan-statistik/laporan-perkembangan-keuangan-syariah-indonesia/Pages/2018.aspx>
- Pratiwi, A., Nurlita, B., Puspita, D., & Wahyudi, S. (2019). Pengujian Potensi Kebangkrutan Grup Bank Pembiayaan Rakyat Syariah di Indonesia The Assessment of Bankruptcy Potential of Sharia Rural Banks in Indonesia. *Jurnal Economia*, 15(1), 114–134.
- Raharjo, T. H., Prasetyo, I., & Kristina, L. (2021). Perbandingan Kinerja Keuangan BPR dan BPRS di Jawa Tengah Selama Pandemi Covid-19. *PERMANA : Jurnal Perpajakan, Manajemen, Dan Akuntansi*, 13(2), 233–250.
- Ramadhan, A., Purnomo, D., Muhtarom, M., & Chuzaimah, C. (2017). Mengukur Tingkat Efisiensi Bank Pembiayaan Rakyat Syari'ah dengan Menggunakan Data Envelopment Analysis (DEA). *Cakrawala: Jurnal Studi Islam*, 12(2), 113–120. <https://doi.org/10.31603/cakrawala.v12i2.1704>
- Rusydiana, A. S. (2018). Efisiensi Dan Stabilitas Bank Umum Syariah Di Indonesia. *Akuntabilitas*, 11(2), 203–222. <https://doi.org/10.15408/akt.v11i2.7033>



- Sakti, M. R. P., & Mohamad, A. (2018). "Efficiency, stability, and asset quality of Islamic vis-à-vis conventional banks: evidence from Indonesia. *The Eletronic Library*, 34(1), 1-5.
- Satibi, E., Utami, W., & Nugroho, L. (2018). A COMPARISON OF SHARIA BANKS AND CONVENTIONAL BANKS IN TERMS OF EFFICIENCY , ASSET QUALITY AND STABILITY IN INDONESIA FOR THE PERIOD 2008-2016 Lucky Nugroho Finance Finance and and of Commerce of Commerce International International. *International Journal of Commerce and Finance*, 4(1), 134-149.
- Sutawijaya, A., & Lestari, E. P. (2009). Efisiensi Teknik Perbankan Indonesia Pascakrisis Ekonomi: Sebuah Studi Empiris Penerapan Model Dea. *Jurnal Ekonomi Pembangunan: Kajian Masalah Ekonomi Dan Pembangunan*, 10(1), 49. <https://doi.org/10.23917/jep.v10i1.808>
- Widiyaningtias, A., & Dura, J. (2020). *Analisis Komparatif Financial Performance BPR dan BPRS Jawa Timur Sebelum dan Saat*. xx(April), 1486-1497.