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# ANALYSIS OF ISLAMIC RURAL BANKS EFFICIENCY IN THE EAST REGION OF INDONESIA

**Sri Cahyaning Umi Salama*[1]** iD

[1] Department of Islamic Economics, University of Muhammadiyah Malang, Indonesia

## ABSTRACT

*Islamic Rural Bank (BPRS) has important roles for micro-enterprises in Indonesia. This study analyzes the performance of Islamic Rural Bank in Eastern Indonesia, where the Muslim population is minority. Using 14 BPRS spread across a number of islands in Eastern Indonesia with a five-year vulnerability (2016-2020) and using the Data Analysis Envelopment (DEA) Variable Return to Scale (BCC) model, it can be concluded that only 4 Islamic Rural Banks have been able to be efficient for five consecutive years. -consistent even during a pandemic. Meanwhile, 2 Islamic Rural Banks have not been able to work efficiently for five years and the remaining 8 Islamic Rural Banks are still not consistently working efficiently. During the pandemic, 70% of Islamic Rural Banks that were efficient in the previous year were able to operate efficiently, while 30% of BPRS that were efficient in the year before the pandemic were unable to work efficiently. It is also known that all Islamic Rural Banks that were not efficient in the year before the pandemic remained inefficient during the pandemic.*

*Keywords: Islamic Rural Bank, efficiency, Eastern Indonesia, Data Envelopment Analysis (DEA), Pandemic.*
**JEL: G21; G14; O18.**

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## Introduction

Islamic banking in Indonesia is rapidly growing, both in the form of Islamic Commercial Banks, Islamic Business Units, and Islamic Rural Bank. Although Islamic banks in Indonesia are showing good development, they still have many things to improve in order to compete with conventional banks. Islamic banks have a greater potential for failure than conventional banks, especially in Asian countries (Alandejani et al., 2017). Meanwhile, in Middle Eastern countries, which are Muslim-majority countries, Islamic banks are more able to survive (Doumpos et al., 2017).

Indonesia, which is an Asian country that also has a Muslim majority population, does not rule out having a similar condition. According to the Islamic Banking Statistics 2020, the number of Islamic banking in Indonesia is still collected in the Western Region of Indonesia, especially on the island of Java. Meanwhile in Eastern Indonesia, there are still very few. So far, policies designed for Islamic banking aim to boost the real sector and MSMEs (Pratiwi, 2016; Sukmana & Kholid, 2013). If Islamic banks in Indonesia still dominate in Java and Sumatra, it will have an impact on the growth of the real sector and MSMEs in areas where there are few Islamic banks.

Islamic Rural Bank, as one of the Islamic banks that focuses on MSMEs and micro-financing also has an important role because it is closer to cooperatives so that the financing that is often given is for MSMEs (A'yun, 2020). Islamic Rural Bank is also less risky and more vulnerable to financial stability than conventional rural banks (Widarjono et al., 2021). In addition, the Return on Assets (ROA) of Islamic Rural Bank in Indonesia is strongly influenced by Third Party Funds and Non-Performing Loans (NPF) (Husaeni, 2017).

The development of Islamic banking in eastern Indonesia is not as good as in the western part of Indonesia. This is due to the demographic side of eastern Indonesia, the majority of which are non-Muslims, a lower human development index, and sharia financing. Even in a number of provinces, there are no sharia financing transactions at all.

Efficiency is used as an indicator to measure company performance, including Islamic banks or Islamic Rural Bank. If an Islamic Rural Bank can operate efficiently, it shows that the Islamic Rural Bank can manage customer funds. So far, many Islamic Rural Banks in Indonesia have operated efficiently (Abdul-Majid et al., 2017; Doumpos et al., 2017; Sukmana et al., 2020), but the level of efficiency is still below conventional banks (Zuhroh et al., 2015). It is not explained in detail whether the BPRS in Eastern Indonesia has also been efficient or not. The lack of research that focuses on the development of Islamic banks in the eastern region needs to be considered. Therefore, in this study, we will examine the performance of BPRS in Eastern Indonesia.

**Literature Review**

***Rural Bank and Islamic Rural Bank***

Fatwa The Indonesian Ulema Council (MUI) issued fatwa Number 1 of 2004 concerning bank interest. It was explained that bank interest is clearly haram and prohibited from being used in banking transactions, especially Islamic banking (Majelis Ulama Indonesia, 2004). One type of Islamic banking is the People's Financing Bank (Rural Bank) which is included in Islamic banking operates in only one province and prioritizes providing financing to MSMEs. Unlike other commercial banks, BPRs do not have technology such as ATMs, so they have a mix of banks and cooperatives. BPR in Indonesia is divided into two, namely conventional rural banks and Islamic rural banks. Recorded in the Financial Services Authority (OJK), there are as many as 163 Islamic Rural Banks in Indonesia.

**Table 1: Number of Islamic Rural Banks by Location**

| Province | Number of Islamic Rural Bank |
|---|---|
| East Java and West Java | 27 |
| Central Java | 26 |
| Yogyakarta | 12 |
| Lampung | 11 |
| Aceh | 9 |
| Banten, North Sumatera | 8 |
| West Sumatera, South Sumatera | 7 |
| Bengkulu, NTB, North Maluku | 3 |
| Riau, Riau Island | 2 |
| DKI Jakarta, South Sumatera, Bangka Belitung Island, South Kalimantan, East Kalimantan, Central Kalimantan, West Sulawesi, Bali | 1 |
| Jambi, West Kalimantan, Central Sulawesi, North Sulawesi, Gorontalo, southeast Sulawesi, NTT, Maluku, Papua, Irian Jaya Barat | 0 |

Source: (Otoritas Jasa Keuangan, 2021)

The majority of BPRS in Indonesia is located on the islands of Java and Sumatra. In contrast to the provinces outside Java and Sumatra. The development of a BPRS must be balanced with good financial performance. This is due to the small market share based on MSMEs with a high risk of default (Widarjono et al., 2021).

### *Efficiency*

Efficiency is a concept used to evaluate what has been invested (input) against what has been produced (output) (Belanès et al., 2015). It focuses on how goals are achieved using minimum resources. Efficiency can be divided into two components: output efficiency and input efficiency. A company is said to be technically efficient if it is able to produce maximum output from existing inputs or use minimum inputs to produce maximum output. Input efficiency is related to the company's ability to minimize existing inputs in producing certain outputs. In comparison, output efficiency is related to producing the optimal level of output (Palmer & Torgerson, 1999).

Three ways can be used to measure efficiency, namely the ratio approach; regression approach; and parametric and non-parametric approaches (Vincová, 2005). However, there are many approaches that can be used to measure bank efficiency. However, if the wrong method is used, the efficiency measure allows for bias by specification error (Berger & Humphrey, 1997).

Various input and output variables are used to measure efficiency. In Islamic banking, the input variables often used are labor, capital, and total savings (Ahmad et al., 2012), while the outputs used are loans and total income.

### Data and Research Methods

There are many methods used to measure efficiency, including Data Envelopment Analysis (DEA), Free Disposal Hull (FDH), Stochastic Frontier Approach (SFA), Thick Frontier Approach (TFA), and Distribution Free Approach (DFA). In this study, DEA is used because it is included in a linear programming model with the assumption that there are no random errors and can be used to measure technical efficiency (Vincová, 2005).

In DEA there are two variables used. In contrast to other quantitative methods that use dependent and independent variables, in DEA the variables used are input variables and output variables. There are two approaches to determine input and output variables, namely production and intermediation (Miah & Uddin, 2017). In the production approach, the input variable of Islamic financial institutions includes the operational costs of various assets, while the output is loans and third-party funds. In the intermediation approach, the amount of savings and investment can be used, and the output variables are operating costs and interest expenses. This research will measure the level of efficiency with an intermediation approach. The input variables used are operating expenses, capital, and total savings. While the output variables used are channeled financing, total income, and cash.

$$\max h_c = \frac{\sum_{r=1}^{s} u_r y_{rc}}{\sum_{r=1}^{m} v_i x_{ic}} \tag{1}$$

With constraint function: $\frac{\sum_{r=1}^{s} u_r y_{rj}}{\sum_{i=1}^{m} v_i x_{ij}} \leq 1$ ………… for each Islamic Rural Bank in the sample

$r = 1,2,\ldots, s$ (number of outputs)

$i = 1,2,\ldots, m$ (number of outputs)

$j = 1,2,\ldots, n$ (number of DMU)

Where:

$h_c$ = DMU relative efficiency

$s$ = number of outputs

$m$ = number of inputs
$y_{rc}$ = the value of the output r generated by the DMU
$x_{ic}$ = i input value used by DMU
$u_r$ = weight for output r
$v_i$ = weight for input r i

A non-parametric quantitative approach to Data Envelopment Analysis (DEA) was used in this study with an input-oriented Variable Return to Scale (BCC) model. Of all the Islamic Rural Bank in Indonesia, there are fifteen Islamic Rural Bank in Eastern Indonesia. However, the data used are only 14 Islamic Rural Bank because they have had financial reports for the last five years (2016-2020) while the remaining one Islamic Rural Bank still does not meet the requirements as research objects. Fourteen Islamic Rural Bank come from five provinces: Bali, North Maluku, West Nusa Tenggara, West Sulawesi, and South Sulawesi.

**Figure 1: Number of Islamic Rural Banks in Eastern Indonesia**
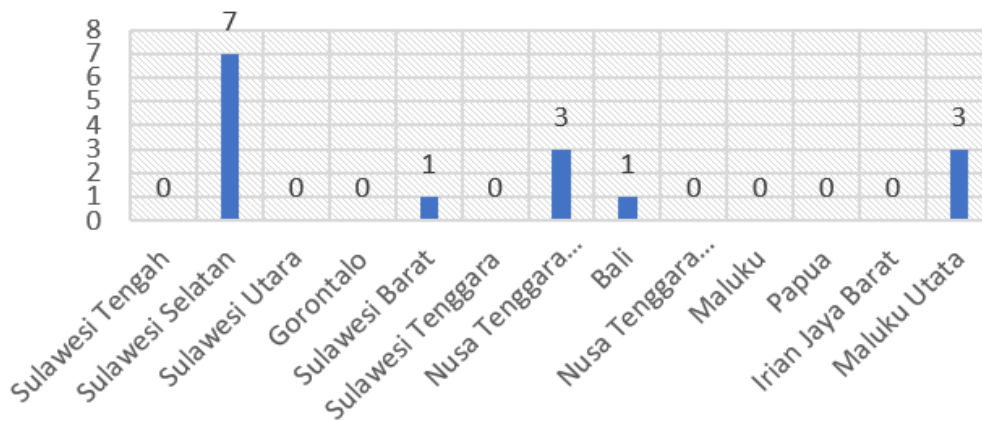


Source: Financial Services Authority

There are two models used in DEA, namely Constant Returns to Scale (CCR) and Variable Returns to Scale (BCC). CCR is used to measure each DMU with the assumption that the ratio between the addition of input and output is the same and the DMU is known to operate optimally. BCC which is the result of the development of the CCR model and is used to assume that the ratio of input and output is not the same. In this study, the BCC model is used to measure efficiency because it determines efficiency without considering constraints with the assumption that the BPRS is not operating optimally.

**Finding and Discussion**

BPRS as a sharia banking financial institution that focuses on financing MSMEs has excellent potential. However, so far it has been noted that the majority of BPRS in Indonesia is only centered in the Western Region of Indonesia, especially in Java and Sumatra.

Data processing using DEA shows that many Islamic Rural Bank in Eastern Indonesia has not worked efficiently. If we look at the distribution of the number of Islamic Rural Bank in Eastern Indonesia, it is not proportional to the area and population. However, a possible factor is the cause of the small number of Islamic Rural Bank because the Muslim population is a minority in the area. A person's religiosity to influence someone's behavior, especially those in particular community groups to use Islamic banking products (Usman et al., 2017). The challenge of Islamic banking in Muslim minority areas is the lack of human resources with Islamic banking knowledge (Rassool, 2018).

### Table 2: BPRS Efficiency Score in Eastern Indonesia

| DMU's Name | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|
| Bali-Fajar Sejahtera Bali | 0,32 | 0,59 | 0,38 | 0,42 | 0,48 |
| Malut-Bahari Berkesan | 0,57 | 0,78 | 1 | 1 | 1 |
| Malut-Bobato Lestari | 1 | 1 | 1 | 1 | 1 |
| NTB-Dinar Ashri | 1 | 1 | 1 | 1 | 1 |
| NTB-Patuh Beramal | 0,68 | 0,82 | 0,85 | 1 | 1 |
| NTB-Tulen Amanah | 1 | 1 | 1 | 1 | 0,87 |
| Sulbar-Nurul Ikhwan | 1 | 1 | 1 | 1 | 1 |
| Sulsel-Dana Moneter | 1 | 0,76 | 1 | 1 | 0,98 |
| Sulsel-Gowata | 0,72 | 1 | 0,80 | 0,96 | 0,89 |
| Sulsel-Harta Insan | 0,49 | 0,39 | 1 | 1 | 0,89 |
| Sulsel-Indo Timur | 1 | 1 | 0,99 | 0,40 | 0,41 |
| Sulsel-Investama Mega | 1 | 1 | 1 | 1 | 1 |
| Sulsel-Niaga Madani | 0,40 | 0,43 | 0,56 | 0,93 | 0,71 |
| Sulsel-Surya Sejati | 0,62 | 1 | 1 | 1 | 1 |

Source: processed data

DMU is declared efficient if it has an efficiency score equal to 1. If the score is less than 1, it is declared efficient. However, if the DMU has a score of 0.75 - <1 it is considered almost efficient with little evaluation.

Even though the Covid-19 pandemic hit Indonesia, several Islamic Rural Bank were still able to work efficiently, namely Bahari Berkesan, Bobato Lestari, Dinar Ashri, Patuh Beramal, Nurul Ikhwan, Investama Mega, and Surya Sejati. However, not a few also experience inefficiency. What happened at Tulen Amanah, Dana Moneter, and Harta Insan.

Fajar Sejahtera Bali for five consecutive years has not been able to operate efficiently. Its efficiency score never reaches 1 and is only around 0.5. Compared to other Islamic Rural Bank, only Fajar Sejahtera Bali cannot be efficient or nearly efficient. This shows that much needs to be addressed in its operations. Based on the analysis using DEA, Fajar Sejahtera Bali must look at the performance of other Islamic Rural Bank in order to be able to operate efficiently.

Some BPRS has an excellent level of efficiency based on an analysis using DEA. For five consecutive years, Bobato Lestari, Dinar Ashri, Nurul Ikhwan, and Investama Mega were able to operate efficiently. The four Islamic Rural Banks are used as benchmarks for other Islamic Rural Bank that is still not efficient.

A number of Islamic Rural Bank have performed quite well by continuously improving the company's performance. This can be seen from the DEA efficiency score which always increases from year to year. This happened at Bahari Berkesan, Patuh Beramal, and Surya Sejati. The three Islamic Rural Banks at the beginning of the research period still did not operate efficiently. However, in the following year the score increased to have a perfect efficiency score.

### Before and During Covid-19

The pandemic has had many effects on many business sectors, especially MSMEs. Many MSMEs have had to go out of business due to the pandemic. However, this is inversely proportional to the Islamic banking industry. The pandemic has occurred since 2020, but in

fact many Islamic Rural Banks in Eastern Indonesia can work efficiently. As many as 50% of BPRS in Eastern Indonesia work efficiently while the rest are almost efficient. An efficient Islamic Rural Bank during the pandemic has also operated efficiently in the previous year.

The existence of a pandemic has forced Islamic banking to find a strategy to survive. The strategies used by Islamic banking during the pandemic are customer restructuring, making backups, creating a customer base, building friendships with customers using technology (Zoom, Google Meet, and others), and requiring teller and customer service employees to be able to do marketing and have their own customers (Oktafia et al., 2021). However, many Islamic Rural Banks have decreased efficiency during the pandemic compared to before the pandemic. Tulen Amanah, Dana Moneter, and Harta Insan actually operated less efficiently during the pandemic. The possibility that happened was caused by the large operational costs and the lack of financing channeled so that income decreased. If this continues, it will threaten the company due to inefficiency.

## Conclusion

Based on the efficiency analysis of 14 Islamic Rural Bank in Eastern Indonesia, it can be concluded that 4 Islamic Rural Bank or 28.5% Islamic Rural Bank have been efficient for five consecutive years, while the remaining operations are still not consistently efficient. In addition, as many as 2 BPRS were unable to be efficient for five consecutive years.

Another fact shows that during the COVID-19 pandemic, 70% of the efficient Islamic Rural Bank in 2019 were able to survive and work efficiently despite the pandemic. Meanwhile, the other 30% of Islamic Rural Banks are not able to work efficiently even though they have been efficient in the previous year. The decline in the performance of the Islamic Rural Bank was caused by the large number of expenses in the field of operating expenses. All inefficient Islamic Rural Bank from before the pandemic all operated inefficiently during the pandemic.

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