Conference Paper

Measuring the Efficiency of the Amil Zakat Agency Using *Data Envelopment Analysis*

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ABSTRACT

This study aims to measure the efficiency level of the financial performance of the National Amil Zakat Agency (BAZNAS) and the National Amil Zakat Agency (BAZNAS) of West Nusa Tenggara Province, for the 2017–2021 period as an intermediary institution. Efficiency is a meaningful way to measure the performance of zakat institutions in increasing more significant benefits, that is the society's economic improvement. This research used Data Envelopment Analysis (DEA) with an intermediation approach, assuming Constant Return to Scale (CRS) and Variable Return to Scale (VRS). The results showed that BAZNAS was CRS efficient, scoring 100% in 2018 and 2021, and as in VRS, BAZNAS was efficient in 2017, 2018, 2020 and 2021. Meanwhile, the BAZNAS of West Nusa Tenggara Province has been efficient in 2017, 2018 and 2020, and in VRS, the BAZNAS of West Nusa Tenggara Province has been efficient in 2017, 2018, 2020 and 2021. The inefficiency in BAZNAS and BAZNAS of West Nusa Tenggara Province is due to the use of input factors that are less than optimal, and the output produced is not optimal, so adjustments are needed to achieve the expected level of efficiency.

Keywords: *BAZNAS, Efficiency, Data Envelopment Analysis (DEA).*

INTRODUCTION

Zakat is an activity of channeling funds from people who have enough to those who need it. Zakat, according to Doktoralina et al. (2020) and Latief (2019), has an important role in overcoming poverty and reducing social inequality in society. This is because the main purpose of zakat is to improve the welfare of the people and reduce socio-economic disparities in society. Zakat must be managed by institutions that are by Islamic law, namely trustworthiness, benefit, justice, legal certainty, integration and accountability, to increase effectiveness and efficiency in the management of zakat. To carry out zakat management, the government established the National Amil Zakat Agency (BAZNAS) based in the national capital, Provincial BAZNAS located at the provincial level, and Regency/City BAZNAS located at the Regency/City level. BAZNAS as coordinator of national zakat management must be sound, credible, effective and efficient.

In 2020, during the Covid-19 pandemic, BAZNAS succeeded in increasing the collection of zakat, infaq, and alms (ZIS) by 30% of the collection of ZIS funds in 2019. Throughout 2020, BAZNAS collected ZIS funds of Rp. 385.5 billion (Baznas, 2021). However, this amount is still far from the potential for zakat in Indonesia, which is Rp. 327.6 trillion (kemenkopmk, 2021). Meanwhile, BAZNAS for West Nusa Tenggara Province in 2020 succeeded in increasing the collection of ZIS funds by 2.3% billion from 2019, namely from 26 billion in 2019 to 28.3 billion in 2020. However, this amount is still far from the potential for zakat in West Nusa Tenggara Province, which has a potential of IDR 1 trillion (Baznas, 2020). To find out to what extent the Amil Zakat Agency can raise funds and distribute the collected Zakat, Infaq and Alms (ZIS) it is necessary to have good governance standards, where one of the indicators is efficiency and effectiveness (Baznas, 2021). As stated in Law No. 23 of 2011 Article 3 that the purpose of managing zakat funds is to increase the effectiveness and efficiency of services in the management of zakat (Republik Indonesia, 2011).

Pujianto & Kristianingsih (2020) say that efficiency is an evaluation of the performance of zakat management carried out by the Zakat Management Organization (OPZ) and is an important point in maintaining the reputation of the Zakat Management Organization and maintaining public trust. So that the more efficient an OPZ, the greater the positive impact on the collection, management and distribution of zakat (Adiwijaya & Suprianto, 2020).

Research related to the performance efficiency of Zakat Management Organizations using the Data Envelopment Analysis (DEA) method has been widely applied. Fathurrahman & Hajar (2019) improves the performance efficiency of Amil Zakat Institutions in Indonesia using the DEA method by a production approach. The results of this study indicate that during the 2012-2016 period, LAZ Rumah Zakat was maximally efficient with an efficiency score of 100%. LAZ Dompet Dhuafa was efficient in the 2012-2013 period, but inefficiencies occurred in the 2015 and 2016 periods with efficiency scores of 78.71% and 64.33% respectively. Alfina & Putra (2021) researched the financial performance of Amil Zakat Institutions using the DEA method using a production approach. The results showed that the performance of LAZ DDR in 2016 was efficient with an efficiency score of 100%. Inefficiency occurred in 2017 with an efficiency score of 98.13%.

Based on the previous research, there were different efficiency measurement results for each OPZ, so researchers were interested in conducting research related to the performance efficiency of the Amil Zakat Agency. this research will flex on the efficiency measurement of the National Amil Zakat Agency (BAZNAS) and the National Amil Zakat Agency (BAZNAS) of West Nusa Tenggara Province during the period 2017 to 2021.

LITERATURE REVIEW

A. Efficiency

According to the Kamus Besar Bahasa Indonesia (KBBI), efficiency is the accuracy of work in carrying out something without wasting time, effort and money. Furthermore, efficiency can be defined as the ability of an organization to maximize output by using certain inputs or to use the minimum possible input to produce certain outputs (KBBI, n.d.). Efficiency refers to the relationship between *outputs* and *input* so efficiency can be defined as the ratio between *output* and *input*. According to Hadad et al. (2003) in Widyaningrum, (2016) three approaches can be taken in calculating the level of efficiency of an institution:

1. The Production Approach considers the amil zakat agency as a production institution that manages resources to provide services in the form of collecting and distributing funds to *Mustahiq* (Sidang, 2020).
2. The Intermediation Approach considers the amil zakat agency as a mediator institution that acts as an institution that distributes collected funds to *Mustahiq* (Nurhasanah & Lubis, 2017).
3. The Asset Approach considers the amil zakat agency as a credit lending institution whose *output* is measured by the assets owned by the institution (Hadad et al., 2003) in (Widyaningrum, 2016).

The efficiency measurement according to Nurhasanah & Lubis, (2017) can be done through two approaches:

1. *Input* Orientation Measurement

   Input-oriented measurement is a way of calculating the various *inputs* that can be reduced without changing the amount of *output* produced.
2. *Output Orientation Measurement*

   Output orientation, namely how to calculate different *outputs* that can be increased without changing the amount of *input* produced.

B. Data Envelopment Analysis (DEA)

Data Envelopment Analysis (DEA) is a mathematical programming technique used to evaluate the relative efficiency of a decision-making unit (DMU) in managing similar resources (inputs) to produce results (outputs) of the same type, where the form-function relationship of the inputs to the output does not need to be known (Notalin et al., 2021). According to Coelli et al. (2005) in Sidang (2020) there are two Data Envelopment Analysis (DEA) models that are often used in the DEA approach:

1. CCR Model/Constant Return Scale (CRS)

   The CCR model was developed by Charnes, Cooper, and Roodes in 1978. The assumption used in this model is that each company under supervision (DMU) has been operating at an optimal scale. As every time an addition of one unit of input x times, it will be followed by an addition of output x times as well.
2. BCC/Variable Return to Scale (VRS) models.

The BCC model was developed by Banker, Charnes, and Cooper in 1984. This model assumes that each observed company (DMU) has not yet been operating at an optimal scale. As every addition of one input unit x times, it does not mean that it is followed by the addition of one output unit, the addition of output can be greater than 1 or less than one.

RESEARCH METHOD

This research is quantitative research with a non-parametric Data Envelopment Analysis (DEA) approach. Data processing was performed using DEAP 2.1 software and Microsoft Excel. The data used in this study is secondary data obtained directly through the BAZNAS website and obtained directly from BAZNAS West Nusa Tenggara Province. The objects in this study are the financial reports of BAZNAS and BAZNAS of West Nusa Tenggara Province for the 2017-2021 period.

Measuring efficiency required input and output components. The selection of input and output components used in the study was carried out using an intermediary approach. The inputs used in this study are operational costs, personnel costs, and funds raised. Output used in this study is the funds distributed.

RESULTS AND DISCUSSION

Efficiency can be interpreted as the ability of an organization to maximize output by using certain inputs or using the minimum input possible to produce a certain output. To measure the efficiency of BAZNAS and BAZNAS West Nusa Tenggara Province, researchers used the DEA method with an intermediation approach, with the CRS and VRS Models.

A. National Amil Zakat Agency (BAZNAS)

a. BAZNAS Efficiency Measurement Results for the 2017-2021 Period with Output Orientation Assuming CRS and VRS

The Intermediation Approach sees the BAZNAS and BAZNAS West Nusa Tenggara Province as mediator institution that acts as an institution that distributes collected funds to *Mustahiq* (Nurhasanah & Lubis, 2017). The results of measuring the efficiency of BAZNAS for the period 2017 to 2021 are obtained by using the assumption of withdrawing the CRS output and the VRS is shown in the Table 4.1.

Table 4. 1
BAZNAS efficiency for the 2017-2021 period

Year	CRS	VRS	Scale
2017	77,3%	100,0%	77,3%
2018	100,0%	100,0%	100,0%
2019	86,1%	89,5%	96,2%
2020	98,0%	100,0%	98,0%
2021	100,0%	100,0%	100,0%

Source: processed data from BAZNAS

Based on Table 4.1, the BAZNAS efficiency score during the period 2017 to 2021 is not fully efficient. Based on output orientation with CRS assumptions, BAZNAS from 2017 to 2021 shows efficient performance with an efficiency score of 100% in 2018 and 2021, and experienced inefficiency in 2017 with a score of 77.3%, in 2019 with a score of 86 .1% and in 2020 with a score of 98%. Based on the output orientation with the assumption of VRS, BAZNAS from 2017 to 2021 showed efficient performance with an efficiency score of 100% in 2017, 2018, 2020 and 2021, and undergo inefficiency in 2019 with a score of 89.5%. The difference in value between the CRS assumptions and the VRS assumptions shows that BAZNAS is not yet efficient in scale. The efficiency scale is a comparison between the CRS and VRS efficiency scores (Rakhmawati, 2017).

b. Analysis of the Causes of Inefficiency at BAZNAS and Recommendations for Increasing Efficiency

Based on Table 4.1, BAZNAS is experiencing inefficiencies based on the output orientation of the CRS assumptions in 2017, 2019, and 2020, and undergo inefficiencies based on the output orientation of the 2019 VRS assumptions. The following are sources of inefficiency and targets for improvement at BAZNAS with output orientations of the CRS assumption as follows:

Table 4.2
Sources of Inefficiency and Improvement Targets of BAZNAS with CRS assumption output orientation

Year	Source	Target
2017	Distributed Funds	22.7%
	Operating costs	-16.6%
2019	Distributed Funds	13.9%
2020	Distributed Funds	10,3%

Source: processed data

Table 4.2 shows the causes of inefficiency at BAZNAS with an output orientation assuming the CRS in 2017, 2019 and 2020, namely due to a lack of the amount of output funds channeled and the excess use of operational cost inputs. Efforts that can be made by BAZNAS to achieve perfect efficiency are to increase

the amount of output funds channeled and reduce the use of inputs in the form of operational costs. In 2017, the total output of funds channeled by BAZNAS must be increased by 22.7% and the use of operational costs must be reduced by 16,6% so that BAZNAS can achieve perfect efficiency values. In 2019, the total output of funds channeled by BAZNAS must be increased by 13.9% so that BAZNAS achieves perfect efficiency. Likewise in 2020, the total output of funds channeled by BAZNAS must be increased by 10.3% so that BAZNAS can achieve perfect efficiency.

Meanwhile, the source of inefficiency in BAZNAS with an output orientation with the assumption of VRS can be seen in the Table 4.3:

Table 4.3
Sources of Inefficiency and Targets for Improvement of BAZNAS with the orientation of the output of the VRS Assumption

Year	Source	Target
2019	Distributed Funds	10.5%
	Personnel Expenses	-4.1%

Source: processed data

Table 4.3 shows the causes of inefficiency at BAZNAS with an output orientation of the 2019 VRS assumption, namely, there is a shortage of output in the form of distributed funds and an excess in the use of input in the form of personnel costs. To achieve perfect efficiency, the total output of channeled funds for BAZNAS in 2019 must be increased by 10.5% and the use of personnel costs for BAZNAS in 2019 must be reduced by 4.1%.

B. BAZNAS West Nusa Tenggara Province

a. Results of BAZNAS Efficiency Measurement of West Nusa Tenggara Province 2017-2021 Period with Output Orientation CRS and VRS Assumptions

Based on the results of data processing that has been carried out, the results of measuring the efficiency of BAZNAS in West Nusa Tenggara Province during the period 2017 to 2021 using the output orientation of the CRS and VRS assumptions are shown in the Table 4.4:

Table 4. 4
The efficiency of BAZNAS Prov. West Nusa Tenggara for the 2017-2021 period

Year	CRS	VRS	Skala
2017	100,0%	100,0%	100,0%
2018	100,0%	100,0%	100,0%
2019	82,9%	83,0%	99,9%
2020	100,0%	100,0%	100,0%
2021	94,7%	100,0%	94,7%

Source: processed data from BAZNAS Prov. NTB

Based on Table 4.4, the West Nusa Tenggara Province BAZNAS efficiency score during the period 2017 to 2021 has not been fully efficient. Based on the *output* orientation with the CRS assumption, BAZNAS of West Nusa Tenggara Province

during the period 2017 to 2021 has been efficient with an efficiency score of 100% in 2017, 2018 and 2020, and encountered inefficiency in 2019 and 2020 with an efficiency score of 82,9% and 94,7%. Based on the *output* orientation with the assumption of VRS, West Nusa Tenggara BAZNAS has been efficient with a score of 100% in 2017, 2018, 2020 and 2021, and only experienced inefficiency in 2019 with an efficiency score of 83%. The difference in value between the CRS assumptions and the VRS assumptions shows that BAZNAS West Nusa Tenggara Province is not yet efficient in scale. The efficiency scale is a comparison between the CRS and VRS efficiency scores (Rakhmawati, 2017).

b. Analysis of the Causes of Inefficiency at BAZNAS West Nusa Tenggara Province and Recommendations for Increasing Efficiency

According to Table 4.4, BAZNAS of West Nusa Tenggara Province faced inefficiencies based on the output orientation of the CRS assumption in 2019 and 2021 and experienced inefficiencies based on the output orientation of the VRS assumption in 2019. Table 4.5 shows a source of inefficiency and potential areas for improvement at BAZNAS with an output orientation of the CRS assumption:

Table 4.5
Sources of Inefficiency and Improvement Targets BAZNAS of West Nusa Tenggara Province with VRS assumption output orientation

Year	Source	Target
2019	Distributed Funds	17.1%
	Operating costs	-9,8%
	Personnel Expenses	-6,4%
2021	Distributed Funds	3,8%

Source: processed data

Table 4.5 shows the causes of inefficiency at BAZNAS West Nusa Tenggara Province with an output orientation of the 2019 CRS assumption, due to a lack of disbursed funds and excess use of inputs in the form of operational costs and employee costs. Efforts that can be made by BAZNAS in 2019 to achieve perfect efficiency, by increasing the amount of output of funds channeled must be 17,1%, reducing the use of operational cost inputs must by 9,8% and reducing inputs for the use of employee costs by 6,4%.

Meanwhile, in 2021, the cause of the inefficiency of BAZNAS in West Nusa Tenggara Province will be the lack of output funds being disbursed. Therefore, to achieve perfect efficiency, the total output of funds channeled by West Nusa Tenggara Provincial BAZNAS in 2021 must be increased by 3,8%.

The source of inefficiency at BAZNAS of West Nusa Tenggara Province with an output orientation of the VRS assumption is shown in Table 4.6 as follows:

Table 4.6
Sources of Inefficiency and Improvement Targets BAZNAS of West Nusa Tenggara Province with VRS assumption output orientation

Year	Source	Target
2019	Distributed Funds	17.0%
	Operating costs	-3.4%
	Personnel Expenses	-7,0%

Source: processed data

Table 4.6 shows the causes of inefficiency at BAZNAS of West Nusa Tenggara Province with an output orientation of the 2019 VRS assumption, because the number of funds disbursed was insufficient and the excess use of inputs in the form of operational costs and employee costs. Efforts that can be made by BAZNAS West Nusa Tenggara Province in 2019 to achieve a perfect efficiency score are to increase the total output of funds distributed by 17.0%, reduce the use of operational cost inputs by 3.4% and reduce the total input costs for personnel by 7%.

The result of this study are in line with previous research conducted by Rahmayanti (2014); Al-Parisi (2017); Burhanudin & Indrarini (2020); Nurhasanah & Lubis (2017) and Afni Afida (2017) who examined the efficiency of zakat management organizations using the DEA method. Whereas the findings of this study reveal the prevalence of inefficiency in zakat management organizations, for example, due to an excess of inputs in the form of operating costs, as well as a deficiency of output funds disbursed.

CONCLUSION

The findings of calculating the efficiency of BAZNAS for the period 2017 to 2021 are not fully efficient. Based on output orientation with CRS assumptions, BAZNAS was efficient with an efficiency score of 100% in 2018 and 2021, and undergo inefficiency in 2017 with a score of 77.3%, in 2019 with a score of 86.1% and in 2020 with a score of 98%. Meanwhile, based on the output orientation with the assumption of VRS, BAZNAS has been efficient with an efficiency score of 100% in 2017, 2018, 2020 and 2021, and experienced inefficiency in 2019 with a score of 89,5%.

The results of calculation of the efficiency of BAZNAS for West Nusa Tenggara Province during the period 2017 to 2021 are not fully efficient. Based on the output orientation with the CRS assumption, BAZNAS of West Nusa Tenggara Province has been efficient with an efficiency score of 100% in 2017, 2018 and 2020, and experienced inefficiency in 2019 and 2020 with an efficiency score of 82,9% and 94,7%. each. Meanwhile, based on the output orientation with the assumption of VRS, BAZNAS NTB has been efficient with a score of 100% in 2017, 2018, 2020 and 2021, and experienced inefficiency in 2019 with an efficiency score of 83%.

Efforts that can be made to increase the efficiency value of BAZNAS and BAZNAS of West Nusa Tenggara Province which are experiencing inefficiency are

based on the causes of these inefficiencies. Therefore, BAZNAS and BAZNAS in West Nusa Tenggara Province need to increase the number of funds disbursed and reduce the use of inputs in the form of operational costs and employee costs to achieve a perfect efficiency score.

According to Adiwijaya & Suprianto (2020), efficiency is a good or bad assessment of the performance of zakat management carried out by an Amil Zakat Agency. Thus, the more efficient BAZNAS and BAZNAS of NTB Province, the higher the level of public trust to pay zakat, infaq and alms through BAZNAS.

LIMITATION

This research has several limitations, including:

1. This research only measures the efficiency of amil zakat institutions without analyzing in detail the factors that influence this efficiency.
2. The research carried out only uses five years of data, thus causing the efficiency assessment to be limited to only five years.
3. The research only uses two amil zakat institutions that have different positions, so they cannot be compared with each other

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