8th INTERNATIONAL CONFERENCE OF ZAKAT PROCEEDINGS
ISSN: 2655-6251

Evaluation of the Efficiency and Productivity of Zakat Institutions in Poverty Alleviation: An Indonesia-Malaysia Study

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Paper was presented at the 8th International Conference of Zakat (ICONZ)
17 – 19 December 2024, Bandung, Indonesia

ABSTRACT

This study aims to evaluate the efficiency and productivity levels of zakat institutions in Indonesia and Malaysia. The Data Envelopment Analysis (DEA) and Malmquist Productivity Index (MPI) methods are employed to assess efficiency and productivity over the research period from 2017 to 2023. The sample includes 10 zakat institutions from Indonesia and 4 zakat institutions from Malaysia. The study utilizes secondary data obtained from the financial reports of the respective zakat institutions. The input variables considered are operational costs, employee expenses, and total assets, while the output variables are zakat receipt and zakat disbursement.The findings indicate that the efficiency levels of zakat institutions fluctuated throughout the study period. Notably, Malaysian zakat institutions exhibited higher efficiency levels compared to their Indonesian counterparts. However, in terms of productivity, Indonesian zakat institutions outperformed those in Malaysia. Additionally, the Covid-19 pandemic significantly impacted the productivity and efficiency of these institutions. The analysis further reveals that zakat disbursement and zakat receipt are identified as the primary source of inefficiency. This study provides recommendations for regulators, zakat managers, and researchers to explore further strategies to enhance the efficiency and productivity of zakat collection institutions.

Keywords: *Zakat Institutions, Efficiency, Productivity, DEA, MPI*

INTRODUCTION

Zakat is one of the Islamic social financial instruments that plays a very important role (Nurhasanah, 2011). Zakat requires Muslims to distribute a portion of their money to designated recipients according to predetermined guidelines and standards to improve socio-economic welfare (Wahab & Rahman, 2012). With the aim of avoiding the concentration of wealth in the hands of a few, zakat is essential for Islamic economics in reducing poverty, promoting income equality, and distributing wealth (Djaghballou et al., 2018). The potential of zakat as a macroeconomic tool in Islamic economics can affect the overall supply of labor and capital, overall consumption, overall savings and investment, and overall economic growth, all of which can contribute to economic growth and provide an alternative way to reduce poverty (Wahab & Rahman, 2012). According to Djaghballou et al. (2018), the institution in charge of managing zakat is essential to fostering economic activity and guaranteeing Muslims a minimal quality of life.

In Indonesia, based on the results of Laporan Kinerja BAZNAS 2023, the national Zakat potential in Indonesia in

2023 amounted to IDR 688.8 billion, However, the realization of Zakat in 2023 amounted to only IDR 651 billion, which is 5.5% fewer than its potential. Maulana & Fanani (2020) argue that the dominant factor causing the disparity between the potential and realization of Zakat funds absorbed by Zakat institutions is the significant number of Muzakki who channel their Zakat directly to individuals rather than through official Zakat institutions. BAZNAS

In Malaysia, zakat management is decentralized and regulated by individual states. To guarantee effective collection and distribution, organisations like as Pusat Urus Zakat (PUZ) have been established. However, there are still problems, such as inefficiency of distribution and concerns about reaching eligible users (Wira, 2019). Focus areas for improving zakat institutions include increasing zakat resources, managing them systematically, distributing them effectively, and implementing strict Islamic law (Suprayitno, 2013). Furthermore, initiatives are being undertaken to improve zakat collection, simplify payment procedures, educate Muslims about their zakat responsibilities, and implement corporate management principles through the use of information and communication technology (Wira, 2019).

It is imperative that zakat institutions solve a number of systemic issues. Since Zakat institutions are ultimately responsible for efficiently managing Zakat funds, they can put in place an ideal governance framework in this regard (Adiwijaya & Suprianto, 2020). As a result, it's critical to assess and sustain the productivity and efficiency levels of Zakat institutions themselves (Wahab & Rahman, 2012). Efficiency, according to Belanes et al. (2015), is a financial concept that assesses the extent to which input investments can produce outputs or profits. Conversely, productivity is defined by Kopelman (1986) as the ratio of one or more physical outputs to the physical inputs used in production.

Zakat can increase the productive capacity of communities and communities, encourage economic expansion and good employment (Rehman & Pickup, 2018). Therefore, zakat managers (amil zakat) must handle zakat diligently, professionally, and reliably (Maulana & Fanani, 2020). In addition, Widiastuti et al. (2021) emphasized that zakat institutions play an important role in promoting long-term empowerment. Communities that are still below the poverty line can be lifted by directing sustainable zakat donations to economically productive recipients (Djaghballou et al., 2018).

The objectives of this study are to measure the efficiency level, productivity level, performance, and potential improvement of zakat institutions in Indonesia and Malaysia. Besides, this study also analyzes the comparison of the efficiency level and productivity level of zakat institutions in Indonesia and Malaysia. This study provides insight into the efficiency and productivity of zakat institutions in managing zakat funds and is expected to provide information that facilitates decision-making for relevant stakeholders. This study can be beneficial for specific parties, such as zakat institutions, regulators, and academics. For zakat institutions, this research provides projections of efficiency, productivity, performance, and potential improvement in zakat institutions as a renewal of research in the Islamic social philanthropy sector. For regulators, this research can be one of the references for regulators to make regulations regarding to zakat sector. As well as for academics, this research provides information that can be used as a reference for further research in zakat sector.

LITERATURE REVIEW

Zakat and Zakat Institution

Zakat is one of the five pillars of Islam that must be carried out by Muslims. In the Qur'an, Muslims are ordered to pay zakat in Surah At-Taubah verse 71 which means "*The believers, both men and women, are guardians of one another. They encourage good and forbid evil, establish prayer and pay alms-tax, and obey Allah and His Messenger. It is they who will be shown Allah's mercy. Surely Allah is Almighty, All-Wise*". In terminology, the word "zakat" means purification and growth which refers to a portion of a Muslim's assets that must be distributed or disbursed for specific purposes at a certain time, in accordance with the guidance of the Qur'an and Sunnah (Djaghballou et al., 2018).

Zakat plays a crucial role in socio-economic welfare and poverty alleviation among Muslims (Kaslam, 2009). The main objective of zakat is to achieve social and economic equality so that social disparities in society can be reduced (Kahfi, 2021). Zakat can also strengthen the ukhuwah between muzaki (someone who gives zakat) and mustahiq (someone who receives zakat) because zakat allows muzaki to ease the economic burden of mustahiq. In addition, in economic and financial conditions, zakat can be a solution to economic problems that occur in a country. In the long term, the main objective of zakat activities is for mustahiq to transform into muzaki in the future. If implemented properly, zakat has great potential to overcome economic stagnation and poverty (Rustyani & Rosyidi, 2018). This must be an important role for the existence of zakat institutions in handling zakat.

However, in its implementation, zakat institutions face several obstacles in collecting and distributing zakat funds to the community. This causes zakat funds to not be distributed efficiently. In Indonesia, regulations related to zakat management are discussed in Law No. 23 of 2011. The regulation states that the purpose of zakat management in Indonesia is to enhance the effectiveness and efficiency of services in zakat management, in parallel with increasing the utilization of zakat for the welfare of society and poverty alleviation. In the Malaysian context, zakat management regulations are not regulated in detail in the central Islamic law of Malaysia, but the management of zakat collection and distribution is carried out by the Zakat Collection Center (PPZ) which is formed from the Islamic Religious Council of the Federal Territory (MAIWP) based on fatwas determined according to each state (Nurhasanah, 20). The authority of the PPZ includes carrying out the functions of distribution planning, distribution implementation, distribution control, and reporting accountability for the implementation of zakat fund management (Sarif, 2013).

The Concept of Efficiency

The concept of efficiency has developed in several disciplines. In the financial concept, efficiency is a concept that can evaluate the extent to which input can produce output (Balanes et al., 2015). In the context of economics, achieving efficiency means achieving optimal profit (Ali & Ascarya, 2010). Referring to Wahab & Rahman (2012), the economic system assumes that a more efficient state occurs if the output produced can be greater without increasing or adding the input used. Efficiency in the context of economics and management is usually used to measure company performance (Rustyani & Rosidi, 2018). The concept of measuring economic efficiency proposed by Farrell (1957) includes two components, namely Technical Efficiency and Allocative Efficiency. Technical efficiency describes the company's ability to achieve maximum output based on the input used. While allocative efficiency describes the company's ability to use input resources optimally.

The theory of efficiency from an Islamic perspective, as explained by Karim (2015), states that production efficiency in Islam can be achieved through two approaches. The first approach is production efficiency based on minimal costs. Producers minimize production costs with the goal of reducing average production costs. The second approach involves production efficiency through optimal production. Maximizing output is achieved by utilizing production factors to the fullest extent, allowing producers to maximize the quantity of output produced as effectively and efficiently as possible in their production activities.

The Concept of Productivity

The concept of productivity is defined as the ratio of output to input. Productivity is also defined as a combination of effectiveness and efficiency. Effectiveness relates to achieving the expected output as per the target, while efficiency is the utilization of resources with the least possible input to achieve maximum results, thus productivity can be formulated (Gaspersz, 1998) as stated in Nurasyiah et al. (2019). In the Indonesian Dictionary (KBBI), productivity is defined as the ability to produce something. This pertains to the ability to produce goods and services in maximum quantities through the efficient utilization of human resources, among all other input units (Rustyani & Rosyidi, 2018). Therefore, productivity is often defined as the comparison between output and input of specific units (Nurasyiah et al., 2019). Measuring the productivity of production factors focuses on the output or income of an industry that results in profit or cost factors (Caves et al., 1982). According to Nurasyiah et al. (2019), productivity measurement complements efficiency measurement. This is because there can be many possibilities in an industry that is in an efficient condition but not productive, and vice versa.

Previous Studies

In its development, research related to the efficiency and productivity of zakat funds has been conducted by several authors. It has been found in previous research that there are differences in the selection of input and output variables in measuring efficiency and productivity in zakat institutions. For instance, Rustyani & Rosyidi (2018), examined the efficiency and productivity levels of zakat institutions in Indonesia using the Data Envelopment Analysis (DEA) dan Malmquist Productivity Index (MPI). The input variables in their study included collected funds, total expenses, and amil revenues, while the output variables comprised distributed funds and total assets. Their findings revealed that non-governmental zakat institutions in Indonesia experienced inefficiencies during the 2014-2015 period but achieved optimal efficiency in 2016. Additionally, the productivity of most zakat institutions increased in 2014 but declined during the 2015-2016 period.

Another study, conducted by Nurasyiah et al. (2019) compared the efficiency and productivity of zakat institutions in Malaysia and Indonesia. The input and output variables used in the study were zakat receipts and zakat expenditures. The study applied the DEA and MPI methodologies. The findings revealed that, in general, zakat institutions in Malaysia demonstrated low productivity changes but high efficiency levels, indicating their ability to effectively distribute zakat funds. In contrast, zakat institutions in Indonesia showed lower efficiency scores compared to Malaysia but exhibited better productivity. This suggests that zakat institutions in Indonesia are more focused on collecting zakat funds and increasing the amount collected rather than on the distribution process.

Jaapar & Kamarulzaman (2020) assessed the efficiency of zakat collection and distribution by the Majlis Agama

Islam Perak (MAIPk) in Malaysia during the 2013-2017 period. The study employed DEA with a two-stage measurement approach using different sets of variables. In the first stage, input variables included the number of amil, number of branches, number of agents, and operational costs, with zakat collection as the output. This model measured the efficiency of zakat collection. In the second stage, inputs included zakat collection, number of staff, and operational costs, while zakat distribution was the output. This analysis evaluated the efficiency of zakat distribution. The findings revealed that MAIPk achieved full efficiency in zakat collection in 2017, while full efficiency in zakat distribution was attained in 2015.

Bahri et al. (2021) assessed the efficiency of zakat institutions in Indonesia from 2014 to 2020 using input variables such as salary expenses, operational costs, and total assets, while output variables included the amount of zakat collected and the amount of zakat distributed. The study found that during the 2014-2020 period, the efficiency of zakat institutions exhibited a fluctuating trend. Additionally, the research revealed that private zakat institutions were generally more efficient in managing inputs and maximizing desired outputs compared to public zakat institutions.

Additionally, Widiastuti et al. (2021) analyzed the productivity levels of zakat institutions in Indonesia based on their types: government institutions, social community organizations, and corporations. The input variables used in the study included socialization costs, salary expenses, and operational costs, while the output variables comprised the amount of zakat funds collected and the amount of zakat funds distributed. Using the MPI, the study found that government zakat institutions demonstrated the highest productivity compared to social community organizations and corporate zakat institutions. This superior productivity was attributed to contributions from technological innovations.

Ardiani et al. (2023) conducted an investigation into the efficiency and productivity of zakat institutions in Indonesia both before and during the Covid-19 pandemic, employing DEA and MPI methods. The input variables considered were operational costs and total assets, while the output variables included collected zakat funds and distributed zakat funds. Their findings revealed that three out of five zakat institutions displayed efficiency at different periods. The five zakat institutions studied exhibited fluctuating efficiency scores across the research periods.

Adinugroho et al. (2024) analyzed the efficiency levels of zakat management institutions in ASEAN, specifically in Indonesia, Malaysia, and Singapore, using the DEA method. The output variables in this study included funds collected and distributed, while the input variables consisted of Personnel Costs, Operational Costs, and Socialization Costs. The findings revealed that MAIK (Majelis Agama Islam dan Adat Istiadat Melayu Kelantan) and MUI (Majelis Ulama Indonesia) maintained consistent optimal efficiency for four consecutive years. In contrast, BAZNAS showed inefficiency, with efficiency levels of 55% in North Maluku, 77% in Papua, and 68% in East Nusa Tenggara. These results can serve as an evaluation tool for zakat institutions in managing funds and developing strategies for better fundraising and distribution.

Although various studies have been conducted on the efficiency and productivity of zakat funds, this research aims to carry out a comprehensive study measuring the efficiency and productivity of zakat funds in Indonesia and Malaysia during the observation period of 2017-2023.

METHODOLOGY

Data

This study uses secondary data obtained using random sampling techniques. The samples used in this study are zakat institutions in Indonesia and Malaysia. There are 10 zakat institutions in Indonesia and 4 zakat institutions in Malaysia selected based on data availability. Secondary data in this study were obtained from annual financial reports published on the official website of each zakat institution. The annual financial reports analyzed include reports on changes in zakat funds and reports on changes in amil funds. The period of years tested in this study covers from 2017 to 2023. The table below presents a list of the names of zakat institutions in Indonesia and Malaysia studied in this study.

Table 1. List of Zakat Institutions

No	The Names of Zakat Institutions	Financial Report (Year)
Indonesia		
1.	Badan Amil Zakat Nasional (BAZNAS)	2017-2023
2.	Dompet Dhuafa	2017-2023
3.	Inisiatif Zakat Indonesia	2017-2023
4.	LAZ Muhammadiyah	2017-2023
5.	LAZ Rumah Zakat	2017-2023
6.	LAZIS NU	2017-2023
7.	Laznas BSI Maslahat	2017-2023
8.	LAZ Panti Yatim Indonesia	2017-2023
9.	LAZ Rumah Yatim Ar-Rohman	2017-2023
10.	Laznas Yatim Mandiri	2017-2023
Malaysia		
1.	Majlis Agama Islam dan Adat Melayu Perak	2017-2023
2.	Majlis Agama Islam Melaka	2017-2023
3.	Majlis Agama Islam Selangor	2017-2023
4.	Majlis Agama Islam Wilayah Persekutuan	2017-2023

Method

This type of research is quantitative research with a non-parametric approach. This study uses two methods, namely Data Envelopment Analysis (DEA) and Malmquist Productivity Index (MPI). The Data Envelopment Analysis (DEA) method is used to measure the level of relative efficiency based on the Decision Making Units (DMU) tested in this study. The Malmquist Productivity Index (MPI) method is used to measure technological changes and also changes in the level of efficiency that explains the level of productivity of the zakat institutions tested.

To obtain maximum output variable results with the use of fixed input variables, this study uses an output-oriented approach in measuring the level of efficiency of zakat institutions in Indonesia and Malaysia. This is also in accordance with the operational objectives of zakat institutions in maximizing the collection and distribution of zakat funds which are currently still far from their potential. The input variables used in this study include Labor Cost, Operational Cost, and Total Asset. While the output variables used are Zakat Collection and Zakat Distribution.

Data Envelopment Analysis (DEA)

The Data Envelopment Analysis (DEA) method is a method commonly used to measure and analyze the relative efficiency level of each Decision-Making Unit. The DEA method was first formulated by Charnes, Cooper, & Rodhes in 1978 (Charnes et al., 1978). This method was then developed in 1984 by Banker, Charnes, & Cooper (Banker et al.,

1984). Charnes, Chooper, & Rodhes put forward an efficiency model known as the DEA CCR model by describing technical and scale efficiency with the assumption of Constant Return to Scale (CRS) where the comparison or change of an input and output in a company is the same (Coelli et al., 2005). Meanwhile, Banker, Charnes, & Cooper put forward what is called BCC which describes the level of technical efficiency with the assumption of Variable Return to Scale (VRS) where the comparison or change of an input and output in a company is not always the same (Rusydiana, 2018).

Measurement of efficiency level using DEA method can be generated based on input and output variables used in the research (Bowlin, 1998; Sexton 1986). The advantage of DEA method is that this method allows measurement of efficiency level without requiring functional relationship on input and output variables used (Bowlin, 1998). In addition, DEA method also facilitates efficiency measurement in large numbers which is very difficult when done traditionally (Bhat et al., 2012). By generating relative efficiency level, DEA method also has clear measurement limitation based on decision making unit used only (Sexton, 1986).

Malmquist Productivity Index (MPI)

The Malquist Productivity Index (MPI) was first proposed by Caves et al. (1982) to compare changes in technological production based on input, output, and productivity indicators. MPI was then further developed by Coelli (1996) through the DEAP version 2.1 application. MPI is used to measure the level of productivity as technical efficiency and technological change (Fare et al., 1989). In its calculation, if the resulting index value is less than 1, it indicates a decrease in productivity. An index value of more than 1 indicates an increase in productivity. An index value equal to 1 indicates no change in productivity performance.

In a production system, MPI refers to the ratio of the distance function of two outputs that represent several inputs and technological production (Bjurek, 1996). The advantage of the MPI method used in this study is that MPI is a non-parametric method so that this method does not require special production formulas. MPI also allows measuring the level of productivity without making assumptions about the economic behavior of production units, such as minimizing costs or maximizing profits. This is useful when producers have different goals or uncertain goals. MPI also does not require price data, which is often unavailable (Djaghballou et al., 2018). In addition, MPI can be decomposed into two components, namely efficiency change and technical change (Førsund, 2016). Compared to Luenberger's productivity index, the Malmquist index tends to focus on productivity change (Boussemart et al., 2003).

RESULT AND DISCUSSION

Descriptive Statistics of Research Variabel

The table below presents descriptive statistics related to Zakat Institutions in Indonesia and Indonesia for the period of 2017-2023 based on the data of input and output variables that constitute the sample in this research.

Table 2. Descriptive Statistics

Variabel	Mean	Min	Max	St.Dev
Input				
Labor Cost	$47.033	$33.114.185	$4.384.799	$8.203.283
Operational Cost	$22.953	$22.498.578	$3.335.892	$5.306.424
Total Asset	$590.723	$760.129.174	$88.622.560	$187.108.385
Output				
Zakat Collection	$404.422	$251.046.628	$36.404.795	$65.437.599

Zakat Distribution	$397.697	$256.305.622	$32.458.917	$59.413.283

Source: Calculated by the author

Based on the table, it can be concluded that from the variables used there is a considerable variation in both input and output variables, which explains that there is a considerable difference in the size and capacity of the sample of zakat institutions used. In addition, the high level of zakat acceptance and distribution shows great potential in the collection of people's social funds. However, there is a large variation in the effectiveness of the management and distribution of these funds.

The Result of Data Envelopment Analysis (DEA)

This research analyzes the level of efficiency of Zakat Institutions in Indonesia and Malaysia for each year using the Data Envelopment Analysis (DEA) method and investigates the data using a common frontier approach. The table below explains the average values of Technical Efficiency Score (CRS), Pure Technical Efficiency Score (VRS), and Scale Efficiency (SE) of Zakat Institutions in Indonesia and Malaysia for the observation years starting from 2017 (Panel A), 2018 (Panel B), 2019 (Panel C), 2020 (Panel D), 2021 (Panel E), 2022 (Panel F), 2023 (Panel G), and the overall years (Panel H).

Table 3. Panel Efficiency

Years/ Type of Efficiency	Min	Max	Mean	St.Dev
Panel A (2017)				
CRS	0.042	1.000	0.382	0.276
VRS	0.044	1.000	0.621	0.344
SE	0.129	1.000	0.680	0.279
Panel B (2018)				
CRS	0.044	0.973	0.361	0.263
VRS	0.046	1.000	0.519	0.318
SE	0.232	0.992	0.761	0.255
Panel C (2019)				
CRS	0.091	1.000	0.460	0.316
VRS	0.129	1.000	0.578	0.296
SE	0.317	1.000	0.758	0.196
Panel D (2020)				
CRS	0.129	1.000	0.512	0.316
VRS	0.184	1.000	0.644	0.293
SE	0.331	1.000	0.763	0.195
Panel E (2021)				
CRS	0.120	0.998	0.425	0.247
VRS	0.156	1.000	0.572	0.258
SE	0.400	0.998	0.741	0.193
Panel F (2022)				
CRS	0.031	1.000	0.451	0.321
VRS	0.062	1.000	0.657	0.341
SE	0.131	1.000	0.687	0.253
Panel G (2023)				
CRS	0.023	1.000	0.438	0.285
VRS	0.042	1.000	0.671	0.343
SE	0.125	1.000	0.669	0.238
Panel H (All Years)				
CRS	0.023	1.000	0.433	0.294
VRS	0.042	1.000	0.609	0.319
SE	0.125	1.000	0.723	0.236

Source: Calculated by the author

Based on the efficiency scores assuming CRS, VRS, and SE, it is observed that in Zakat Institutions in Indonesia and Malaysia, the lowest CRS score was obtained in 2023 (0.023), while the highest CRS scores were achieved in 2020, (0.129). Furthermore, for the assumption of VRS in Zakat Institutions in Indonesia and Malaysia, the lowest score was obtained in 2023 (0.042), while the highest score was achieved in 2020 (0.184). Regarding the assumption of SE in Zakat Institutions in Indonesia and Malaysia, the lowest and highest values were found in 2017 (0.129) and 2021 (0.400), respectively. Therefore, it can be concluded that the average efficiency of Zakat Institutions in Indonesia and Malaysia, based on their efficiency scores, fluctuated from year to year.

This study measures the efficiency levels of Zakat Institutions in Indonesia and Malaysia based on two efficiency models, namely Constant Return to Scale (CRS) and Variable Return to Scale (VRS). The efficiency assumption based on CRS indicates optimal results when the

CRS value reaches 1.000. Similarly, the efficiency assumption for VRS also has the same standard value. During the study period, there was no Zakat Institution that reached the maximum efficiency, both based on CRS and VRS assumptions. Then, overall, LAZ Rumah Zakat is the zakat institution with the highest efficiency level both based on CRS and VRS assumptions. In Malaysia, the zakat institution with high efficiency level is Majlis Agama Islam Selangor. On average, zakat institution in Malaysia has higher efficiency level compared to zakat institution in Indonesia in terms of CRS and VRS. While on average, the scale efficiency of zakat institution in Indonesia has a higher value. The measurement result of the efficiency level of Zakat Institution in Indonesia and Malaysia during the period of 2017-2023 can be seen in the table below.

Table 4. Efficiency Scores

DMU	CRS	VRS	SE
BAZNAS	0,409	0,638	0,650
Dompet Dhuafa	0,458	0,635	0,682
Inisiatif Zakat Indonesia	0,449	0,498	0,919
LAZ Muhammadiyah	0,456	0,564	0,836
LAZ Rumah Zakat	0,916	0,938	0,974
LAZIS Nahdatul Ulama	0,695	0,849	0,831
LAZNAS BSI Maslahat	0,175	0,201	0,791
Panti Yatim Indonesia	0,151	0,459	0,480
Rumah Yatim	0,215	0,239	0,904
Yatim Mandiri	0,097	0,366	0,621
Mean	**0,402**	**0,539**	**0,769**
Majlis Agama Islam dan Adat Melayu Perak	0,400	0,699	0,565
Majlis Agama Islam Melaka	0,651	0,783	0,747
Majlis Agama Islam Selangor	0,745	0,966	0,771
Majlis Agama Islam Wilayah Persekutuan	0,243	0,689	0,349
Mean	**0,510**	**0,784**	**0,608**

Source: Calculated by the author

Furthermore, the graph below illustrates the efficiency trend of the Zakat Institution in Indonesia during the period 2017 to 2023. Based on the graph, it can be seen that the overall efficiency of Zakat Institutions in Indonesia and Malaysia has fluctuated. The efficiency trend under CRS and VRS assumptions below shows a decrease in 2018 and 2021. On the other hand, the efficiency trend on scale efficinecy in the graph below shows a graph that tends to increase and stabilize, until there is a decrease in the period 2022 to 2023. Overall, the decline in the 2021 period in the CRS and VRS assumptions is inseparable from the Covid-19 pandemic phenomenon which has an impact on almost all sectors of life, especially the economy and health. This is also reinforced by the trend of scale efficiency in the period 2021 to 2023 which shows a gradual and continuous decline, which indicates that the increase in input no longer results in a proportional increase in output, indicating that the institution is over-extended and requires a reduction in input to achieve optimal efficiency.

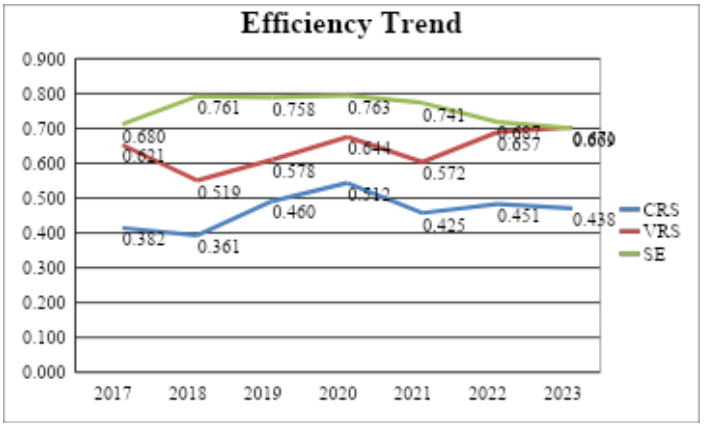

Figure 1. Efficiency Trends
Source: Calculated by the author

Potential improvement results can also be obtained from the use of the DEA method in this study. Potential improvement measures the amount of value that needs to be increased so that the DMU can achieve maximum efficiency. The potential improvement analysis uses the last observation year in the research period, which is 2023, and is conducted separately from the previous years.

Potential improvement provides information on which variables cause inefficiency and the amount of value that needs to be improved to achieve optimal efficiency. The results of potential improvement for Zakat Institutions in Indonesia and Malaysia can be seen in the graph below.

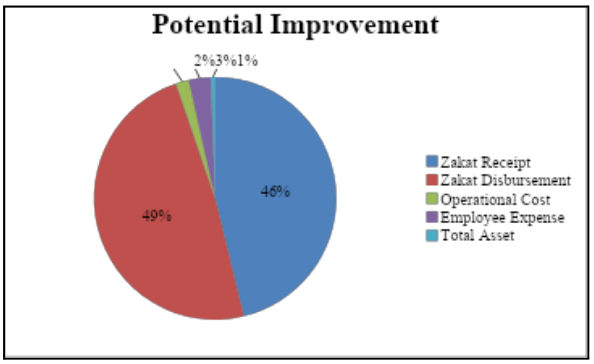

Figure 2. Potential Improvement
Source: Calculated by the author

Based on the graph above, in general it can be seen that the biggest cause of inefficiency in the output variable comes from the distribution of zakat and collection of zakat, which are 48% and 46%. Zakat Institutions in Indonesia and Malaysia can achieve optimal efficiency if total assets, employee expenses, and operational costs are reduced by 1%, 3%, and 2%, respectively. In addition, zakat disbursement and zakat receipt need to be increased by 48% and 46% respectively.

The Result of the Malmquist Productivity Index (MPI)

Through the results of the Efficiency Change Index (EFFCH) and Technical Change Index (TECHCH), factors influencing productivity changes can be identified. To determine the causes of changes in EFCH, reference can be made to the values of the Pure Efficiency Change Index (PECH) and Scale Efficiency Change Index (SECH) generated. The Total Factor Production (TFP) value indicates changes in the index. If the value of M > 1, it explains an increase in productivity, and conversely, if M < 1, it indicates a decrease in productivity. If M = 1, there is no improvement in productivity. The results of the Malmquist Productivity Index (MPI) analysis based on the years of Zakat Institutions in Indonesia and Malaysia, which are the research objects in this study, can be seen in the table below.

Table 5. The Productivity of Zakat Institutions

Year	effch	techch	pech	sech	tfpch
2017-2018	1,112	0,970	0,991	1,122	**1,080**
2018-2019	0,931	1,890	0,942	0,988	**1,761**
2019-2020	0,687	0,325	0,845	0,813	0,223
2020-2021	1,759	1,133	1,251	1,041	**1,993**
2021-2022	0,940	0,368	0,967	0,972	0,345
2022-2023	0,820	1,264	0,801	1,024	**1,037**
Mean	**0,994**	**0,824**	**0,956**	**1,040**	**0,819**

Source: Calculated by the author

The table above explains the changes in total productivity (TFPCH) of Zakat Institutions in Indonesia and Malaysia and its influencing factors, namely Technical Change (TECHCH) and efficiency change (EFFCH) during the observation period. From the MPI analysis, it can be concluded that the productivity trend fluctuates from year to year. The average score result shows that the productivity of Zakat Institution has decreased (0.819), which is equally caused by efficiency change (0.994) and technical change (0.824). This explains that changes in efficiency and technical change contribute to the decline in productivity of Zakat Institutions in Indonesia and Malaysia.

In 2017-2018 and 2018-2019, the average productivity level of Zakat Institutions increased with TFPCH scores of (1.080) and (1.761). In the 2017-2018 period, the increase in productivity was dominantly influenced by the increase in efficiency change (1.112) despite the decrease in technical change (0.970). Then, in the 2018-2019 period, the increase in productivity was dominantly

influenced by an increase in technical changes (1.890) although efficiency changes showed a decrease (0.931).

Furthermore, the results in the 2019-2020 period found that the productivity level of the Zakat Institution experienced a significant decline and was the lowest productivity level throughout the study period with a score of (0.223). This decrease was affected by a decrease in efficiency changes (0.687) and technical changes (0.325). This means that in that period, technical change became the main contributor to the decline in the productivity level of Zakat Institutions in Indonesia and Malaysia.

In 2020-2021, the productivity level experienced a significant increase and was the highest productivity level throughout the study period with a score of (1.993). This was influenced by an increase in efficiency changes (1.759) and technical changes (1.113). Then in 2021-2022, the productivity level decreased again with a score of (0.345). This was influenced by a significant decrease in terms of technical changes (0.368), as well as changes in efficiency (0.940). In the final period, 2022-2023, the productivity level showed an increase with a TFPCH score of (1.037), which was influenced by an increase in technical change (1.264), although the efficiency change showed a decrease (0.821). It can be concluded that during the study period, both efficiency changes and technical changes contributed to the increase or decrease in productivity of Zakat Institutions in Indonesia and Malaysia, and technical changes had a greater influence.

Further analysis involves examining the trends of efficiency changes (EFFCH), technical changes (TECHCH), and productivity changes (TFPCH) in Zakat institutions during the observation period from 2017 to 2023. The figure below illustrates the trend graphs of EFFCH, TECHCH, and TFPCH.

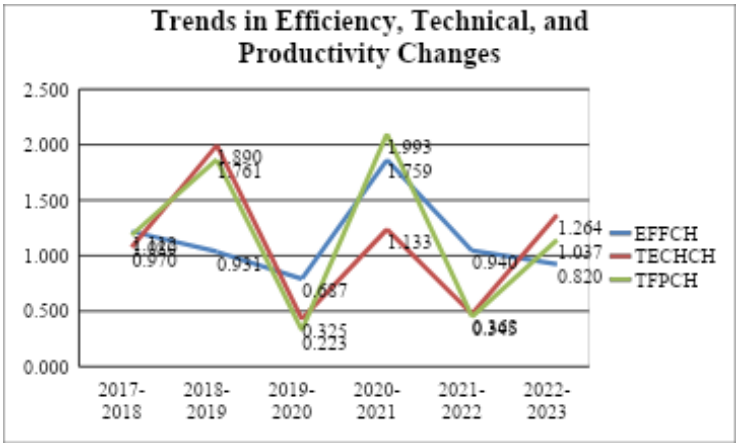

Figure 3. The Trends in Efficiency, Technical, and Productivity Changes of Zakat Institutions

Source: Calculated by the author

Based on Figure 3, it can be concluded that changes in efficiency (EFFCH), technical (TECHCH), and productivity (TFPCH) have almost the same pattern with a fluctuating trend from year to year. The lowest decrease occurred in the 2019-2020 and 2021-2022 periods. Then, the highest increase in TFPCH (1,993) and EFFCH (1,759) was achieved in the 2020-2021 period, while TECHCH (1,890) was achieved in the 2018-2019 period. The decline in the lowest productivity levels in both periods is closely related to the Covid-19 pandemic phenomenon. In the Covid-19 period, from 2019 to 2022, the average productivity level of the Zakat Institution experienced a significant decline. This is influenced by a decrease in efficiency change (EFFCH) and is more dominantly influenced by technical change (TECHCH). Thus, it can be concluded that the Covid-19 pandemic that occurred during this period caused a decrease in the productivity level of the Zakat Institution, with technical changes (TECHCH) being the main factor causing a decrease or increase in the productivity of Zakat Institutions in Indonesia and Malaysia.

The results of the Malmquist Productivity Index (MPI) analysis based on the Zakat Institutions in Indonesia and

Malaysia that were the subject of this study can be seen in the table below.

Table 6. The average Malmquist Index

DMU	effch	techch	pech	sech	tfpch
BAZNAS	1,128	0,817	1,000	1,120	0,915
Dompet Dhuafa	1,069	0,838	1,000	1,069	0,869
Inisiatif Zakat Indonesia	1,086	0,786	1,000	1,086	0,854
LAZ Muhammadiyah	1,148	0,742	1,116	1,029	0,852
LAZ Rumah Zakat	1,032	0,820	1,000	1,032	0,845
LAZIS Nahdatul Ulama	0,995	0,678	0,996	0,999	0,675
LAZNAS BSI Maslahat	1,000	0,675	1,000	1,000	0,675
Panti Yatim Indonesia	0,937	0,931	0,936	1,001	0,873
Rumah Yatim	1,000	0,954	1,000	1,000	0,954
Yatim Mandiri	1,000	0,921	1,000	1,000	0,921
Mean	**1,040**	**0,816**	**1,005**	**1,034**	**0,843**
Majlis Agama Islam dan Adat Melayu Perak	0,834	0,832	0,764	1,091	0,694
Majlis Agama Islam Melaka	0,837	0,828	0,779	1,075	0,693
Majlis Agama Islam Selangor	0,963	0,908	0,904	1,065	0,874
Majlis Agama Islam Wilayah Persekutuan	0,954	0,874	0,954	1,000	0,833
Mean	**0,897**	**0,861**	**0,850**	**1,058**	**0,774**

Source: Calculated by the author

The individual analysis of zakat institutions in Indonesia and Malaysia reveals that none of these institutions experienced an increase in productivity during the study period. However, LAZ Rumah Yatim (0.954), Yatim Mandiri (0.921), and BAZNAS (0.915) emerged as the three zakat institutions with the highest productivity levels. The high productivity of these three institutions is primarily attributed to an improvement in efficiency change (EFFCH), despite a decline in technical change (TECHCH). On the other hand, LAZIS Nahdatul Ulama and LAZNAS BSI Maslahat recorded the lowest productivity levels, each with a Total Factor Productivity Change (TFPCH) score of 0.675. The low productivity in these institutions is mainly driven by a significant decline in technical change. Furthermore, the analysis indicates that, on average, Indonesian zakat institutions (0.843) have a higher productivity level compared to Malaysian zakat institutions (0.774).

DISCUSSION

This study reveals several important findings. First, no zakat management institutions in Indonesia or Malaysia have achieved optimal efficiency, as evidenced by PTE (VRS), TE (CRS) and SE scores. These findings align with the research by Adinugroho et al. (2024), which also found that the efficiency levels of zakat institutions in both countries have yet to reach optimal levels. Similarly, Fathurrahman & Hajar (2019) identified fluctuating and suboptimal efficiency in national zakat institutions. Meanwhile, Nurasyiah et al. (2019) noted that zakat institutions in Malaysia exhibit high efficiency levels but low productivity growth. Conversely, zakat institutions in Indonesia show higher productivity change scores compared to Malaysia, despite having lower efficiency levels. Several factors contributing to low efficiency scores include the declining number of zakat workers (amil) (Jaapar & Kamarulzaman, 2020), and the suboptimal distribution of zakat funds (Parisi, 2017). To address these issues, effective management is crucial to ensure that social funds are well-managed and financial reports are prepared professionally and transparently (Siahaan et al., 2024). When zakat funds are distributed properly and efficiently, they not only provide direct benefits to the recipients but also help ensure more efficient fund utilization.

This study also reveals that the Covid-19 pandemic had a significant impact on the efficiency of zakat institutions. The efficiency of zakat

institutions in Indonesia and Malaysia during the pandemic was recorded as better than in the pre-pandemic period, although it declined in 2021. During the same period, Ardiani et al. (2023) also noted an improvement in the efficiency of zakat institutions in 2020, which subsequently regressed to inefficiency in 2021. Masruki et al. (2021), reported that zakat collection in Malaysia increased during the pandemic due to special incentives provided by the government to zakat institutions, enabling swift and efficient distribution of aid across states and strengthening the role of zakat institutions in mitigating the socio-economic impact of the pandemic. Similar findings were reported by Permatasari & Hidayatullah (2021), who concluded that zakat institutions in Indonesia were able to operate efficiently during the pandemic and effectively fulfilled their role as collectors and distributors of social funds. However, Bahri et al. (2021), offered a different perspective, stating that the efficiency of zakat institutions stagnated during 2019-2020 due to the significant shocks and disruptions caused by the pandemic. These differing results may stem from variations in sample size, study periods, or the use of different analytical variables, all of which could influence the final outcomes of the research.

The second finding of this study identifies potential improvements to enhance the efficiency of zakat institutions in Indonesia and Malaysia. It was found that optimal efficiency can be achieved by reducing total assets by 1%, employee expenses by 3%, and operational costs by 2%, while increasing zakat distribution by 48% and zakat collection by 46%. The primary focus for improvement lies in the variables of zakat collection and distribution, which have been proven to be the dominant factors contributing to inefficiency. These findings align with studies by Bahri et al. (2021) and Nurasyiah et al. (2019), which highlighted that inefficiencies in zakat institutions are often linked to the management of zakat collection and distribution. Burhanudin & Indrarini (2020), also identified zakat collection as a significant factor in institutional inefficiency. Additionally, Mukhlishin et al. (2024), emphasized structural issues in the zakat payment system, such as decentralized collection and institutional fragmentation, as major obstacles. Many zakat institutions face limited capacity and resources to manage and distribute funds effectively, with key challenges including human resources, technology, and administration. Ineffective distribution further delays the delivery of zakat to beneficiaries, diminishing its impact and hindering future contributions. Choiriyah et al. (2020) stated that zakat is an effective tool for addressing poverty, and economic policies should include zakat as a strategy to reduce poverty. Therefore, the performance of zakat institutions in their operations, particularly in zakat collection and distribution, must be optimized to support this potential.

The third finding reveals a declining trend in productivity among zakat institutions in Indonesia and Malaysia during the study period, with overall average productivity showing a downturn. However, the 2020-2021 period recorded the highest productivity change, with a score of 1.993, likely due to rapid adaptation to the Covid-19 pandemic. In contrast, a significant decline occurred in 2019-2020, driven by the initial challenges of the pandemic. This trend was influenced by changes in efficiency and technical efficiency. These findings align with Ardiani et al. (2023), who observed an increase in zakat institutions' productivity during the pandemic, showcasing their resilience compared to profit-oriented sectors, which faced severe downturns. Widiastuti et al. (2021) offered a different perspective, noting increased productivity levels before the pandemic, particularly in government-managed zakat institutions. In contrast, private zakat institutions

experienced a decline due to the high costs associated with technological innovation, which not all institutions could afford. Unlike private institutions, government-managed zakat institutions received substantial support and attention in enhancing zakat potential. Djaghballou et al. (2018) and Salleh & Chowdhury (2020), emphasized that technology holds significant potential to boost zakat outputs through operational efficiency and increased public awareness of zakat payments. Similarly, Abidin & Utami (2020) found that the digitalization of zakat payments positively impacted zakat collection, increasing receipts by up to 56%. A well-designed policy is essential to improve zakat management productivity by effectively optimizing and integrating available resources to maximize zakat collection and ensure efficient and targeted distribution (Hafasnuddin et al., 2022). Zakat has proven to be an effective tool in achieving poverty alleviation and improving community welfare (Choiriyah et al., 2020; Miah, 2021; Razak, 2020). Therefore, the effective and efficient use of technology in zakat collection and distribution can support financial inclusion, which in turn plays a crucial role in poverty alleviation and the improvement of community welfare (Yahaya & Ahmad, 2018).

On the other hand, technological advancements can also lead to a decline in productivity if institutions fail to optimize available resources, including technology, human resources, and natural resources (Rustyani & Rosyidi, 2018). The rapid development of technology demands that zakat institutions employ competent human resources in zakat practices. However, the number of intellectuals committed to and loyal to zakat institutions remains relatively limited, which hampers the growth of these institutions (Widiastuti et al., 2021). Although the use of technology for zakat collection expanded significantly during the pandemic, the inability to utilize technology optimally can result in costs that outweigh the benefits. As highlighted by Rustyani & Rosyidi (2018), decisions to adopt technology must align with the specific needs of the institution and focus on improving the quality and quantity of available human resources.

CONCLUSION

This study analyzes the level of efficiency and productivity of zakat management institutions in Indonesia and Malaysia from 2017 to 2023 using the Data Envelopment Analysis (DEA) and Malmquist Productivity Index (MPI) methods. The results of the study indicate that during the research period, none of the zakat institutions achieved optimal efficiency levels, with efficiency trends showing fluctuations. A similar pattern was observed in the productivity levels of zakat institutions in Indonesia and Malaysia, where, on average, there was a decline in productivity, predominantly caused by changes in technical (TECHCH). Additionally, the Covid-19 pandemic affected the efficiency and productivity levels of zakat institutions in both Indonesia and Malaysia. Based on the analysis of potential improvements, the variables that contribute most to inefficiency are output variables, particularly zakat distribution and zakat receipts.

Recommendations

Zakat Institutions

For zakat institutions, it is recommended to focus on enhancing their efficiency and productivity levels. Zakat institutions should also innovate in utilizing technology effectively. Moreover, they should consider increasing collaboration with fintech companies to improve the collection and distribution of zakat funds. It is crucial for zakat institutions to implement good governance by emphasizing aspects such as

accountability, transparency, and professionalism. Additionally, they could adopt investment and business strategies aimed at maintaining capital and generating income, as well as meeting the needs of zakat distribution.

Regulators

Regulators, including BAZNAS and other relevant authorities, should prioritize improving the quality of human resources within zakat institutions. This is important to enhance accountability, transparency, and professionalism in managing zakat funds. Conducting regular performance evaluations of zakat institutions is also vital to ensure smooth operations and effective zakat distribution to those in need. It is expected that regulators will provide full support to zakat management institutions in Indonesia and Malaysia through appropriate regulations, particularly concerning the roles of nazir (zakat administrators).

Academics

This study acknowledges its limitations, such as the sample size not covering all zakat institutions in Indonesia and Malaysia. Moreover, it did not conduct an in-depth analysis of the causes of inefficiency in managing zakat funds. Therefore, for academics, there is an opportunity to enhance and expand this study in the future. Future research could include additional variables beyond those considered in this study, increase the sample size, update the study period, conduct a more in-depth analysis of the reasons for inefficiency in zakat institutions, examine the financial performance of zakat institutions, and utilize other relevant analytical tools such as Two-Stage DEA, Stochastic Frontier Analysis (SFA), or others to obtain more objective results. This could lead to the formulation of more targeted policy recommendations.

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