# Efficiency of Pesantren's Baitul Maal Wa Tamwil (BMT): An Effort towards Islamic Microfinance Institution

Atika Rukminastiti Masrifah[1] and Hendri Tanjung[2]
[1]*Faculty of Economics and Management, University of Darussalam Gontor, Indonesia*
[2]*Ibn Khaldun University, Bogor, Indonesia*

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Abstract: Pesantren and Baitul Maal wa Tamwil (BMT) are not seemingly equal things to compare, ones are filled with spiritual and religious knowledge, where the other are located in economic environment. But time proves that Pesantren are really serious in developing an economic network among students, through Baitul Maal wa Tamwil. BMT based on Pesantren has an important role in driving the poor and micro enterprises (MEs) to empower them, alleviate poverty, reduce unemployment, as well as enhance economic development in Indonesia, especially Pesantren environment. Pesantren's BMT should be sustainable, effective, efficient and affordable to be able to serve the poor and MEs with excellence, so that the analysis of their efficiency is a must. The main aim of the paper is to analyze the technical efficiency (including pure technical and scale efficiencies) of some Pesantren's BMT using Data Envelopment Analysis (DEA). The results show that, generally the efficiency of Pesantren BMTs is relatively high. Scale efficiency also indicates that operating of BMTs are close to optimal scale. This result suggests that most Pesantren BMTs still focus on baitut tamwil activities, extending financing as their main business. While the future, BMTs should play a more active role in baitul maal activities as their main business.

## 1 INTRODUCTION

Islamic microfinance provides various instruments and ethical schemes that can be adopted and advanced for the purpose of micro enterprises (Rahman and Rahim, 2007). Islamic microfinance in Indonesia keep growing, especially BMTs and Cooperatives (Muchtar and Taufiq, 2013). That fact cannot be ignored as representation of economic impact, which keeps better in the grass-root level, especially in villages. Islamic microfinances do not purpose to the poverty reducement in financial aspect only but they also attempt to motivate the micro enterprise to empower their social capital.

It's time for those Pesantren's BMT to speak up in national economy stage. Pesantren's BMT are not home boarders, but they are not guests in this country also, thus they should be equated with other national economy contributors. Some Pesantren's BMT even felt unusual with their new big status. Same other management considered their BMT should not even appear in big level, because a proud of managing BMT is measured from satisfaction and prosperity of its members. Various reason emerged, but in Auhtor's understanding, there are those who are not ready to be published, due to its traditional managements and organizations. Most of the Pesantren's BMT listed in this research were already computer-literate and familiar with use of internet, but there are also those which were still off-line.

In accordance with its identity, Pesantren's BMT has a system of values and principles that are different from other business entity. It is a democratically managed enterprise to meet the aspirations and needs of members in economic, social and cultural aspects. A lot of Pesantren's BMT has a unique management process.

This research aimed to disclose a new map about economy potential of Pesantren's BMT that until this time remained almost unheard. A business entity labeled BMT is often equated with petty business and not even mentioned in increase to gross domestic products. In fact, performance of Pesantren's BMT was surprisingly good with total asset of IDR 342.43 billion. That number was the result of pesantren's BMT survey.



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## 2 LITERATURE REVIEW

Pesantren's BMT is a cooperative that develops due to the process of continuous educations, since the establishment, on the process of business development as well as in controlling their business activities. Pesantren's BMT has an emotional connection, trust and openness between managers and members. Such relationship resulted from the process of education and communications which are developed on an ongoing basis (Masrifah 2016).

Pesantren's BMT is also a cooperative that develops because of the power of leadership and charisma of the leader. The members became very loyal to participate in BMT activities since they are benefited from the leader influence of loyalty in providing care and services to its members (Masrifah, 2020). Uniqueness is wealth. With the unique opportunity Pesantren's BMT is open to synergize and enhance business productivity in the scale of local, regional and international levels.

The role of Pesantren's BMT in sustainable development is believed to be more relevant in the future because Pesantren's BMT concept is to rely on the entranced power of social networking. There are many financial institutions that were oriented to produce material benefits, without sufficient concern for environmental degradation and social problems such as unemployment, poverty, illiteracy, malnutrition, maternal and child mortality. Business is considered successful if it can produce maximum profit, even though sometimes it is causing an environmental damage and social problems. BMTs were developed instantly and only pursuing profit target material by misusing his identity, it never developed in a sustainable manner.

The added value is resulted from the cooperative joint venture that is based on shared value, honesty and responsibility as well as caring. The process is based on the principle that relies on independence, participation, transparency, education, training, and collaboration. The application of Pesantren's BMT value and principles consistently determine the productivity and security of future business BMT.

Expanding the financial institutions at Pesantren's environment it is really not an easy job, furthermore, if Pesantren do it with a small budget. Pesantren's BMT usually find a fissure wormholes business that can be expanded to the various places in regencies. Their business unit is not only in save and loan business but also in food and agriculture business such as bread and rice productions.

Moreover, the success of Pesantren's BMT was also helped by alumnus networking whom spread in various areas. Even though sometime, some of BMT Pesantren, they are still using an emotional market method. The Pesantren's BMT which in the beginning only scoped just at the regency level must have changed it into province scope.

The difference between this study and previous research is in the selection of case studies, namely pesantren's BMT. The reason for choosing pesantren's BMT as a case study in this study is the potential of Islamic Economics. Pesantrens have great economic potential, namely the strength of the alumni network (Winarsih, *et al.,* 2019), pesantren social capital and the existence of BMT which is very close to the community, so that it will encourage the rapid growth of pesantren's BMT. In addition, the selection of ZISWAF collection and distribution variables that are used as input variables and intermediary output of BMT pesantren.

In line with DEA approach, this study uses annual data from balance sheet, income statement in 2009-2014. This research was conducted in Bogor, Bandung, Solo, Yogyakarta and Sidogiri, where there were pesantren BMTs representing each region. The study was conducted from September 2015 to December 2015.

The population is pesantren's BMT in the provinces of West Java, Central Java, Yogyakarta and East Java. Considering that the BMT distribution data is not accurately available, then to get an adequate sample number is calculated based on information obtained from several data sources, especially from several BMT advisory institutions, such as Inkopsyah and Pinbuk. The sample includes Pesantren's BMT without any specific limitations, both in terms of operational area, size of assets and capital, types of microfinance service products as well as targets in the economic sector.

This study applies intermediation approach in calculating the efficiency of Pesantren's BMT, since this approach is the suitable to measure the efficiency of Pesantren's BMT due to its role as an intermediary between the borrowers and BMT. DEA method requires the input and output variables to measure the efficiency. Input variables include total third-party funds, total asset, operational cost and collection of ZISWAF fund, while output variables include total financing, total income and distribution of ZISWAF fund. These inputs and outputs will be analysed to measure Pesantren BMT's efficiency by using DEA method. The definition of inputs and outputs that proposed by this study are as follows:

Table 1: Input and Output Variables.

| | |
|---|---|
| **Intermediation Input** | |
| Total Third-Party Funds | Amount of Savings (general and Mudharabah futures) |
| | Abidin & Endri (2009); Ascarya & Yumanita (2009); |
| Total Asset | Total fixed assets |
| | Abidin & Endri (2009); Ascarya & Yumanita (2009); |
| Operational Cost of BMT | Total operational costs, including administrative costs and labor costs |
| | Hassan & Sanchez (2009); Haq, et al. (2010); Abidin & Endri (2009); Ascarya & Yumanita (2009); |
| Collection of ZISWAF | Amount of Zakat, Infaq, Sadaqah and Waqf funds collected by BMT |
| | Additional from the Author |
| **Intermediation Output** | |
| Total Financing | Total receivables (BBA), Financing (Musyarakah and Mudharabah), Receivables (Murabahah) and loans (Qord and others) |
| | Qayyum & Munir (2008); Ahmad (2011); Kablan (2012); |
| Total Income | Total income, both margin & profit sharing as well as other income (provision, etc. and assets between BMT units) |
| | Hassan & Sanchez (2009); Abidin & Endri (2009); |
| Distribution of ZISWAF | Amount of Zakat, Infaq, Sadaqah and Waqf funds distributed by BM |
| | Additional from the Author |

Tools to measure efficiency could be parametric and non-parametric. The parametric methods have advantages relative to the non-parametric methods of allowing for random error. These methods are less likely to misidentify measurement error, transitory differences in cost, or specification error for inefficiency (Bauer, et al., 1998). However, a disadvantage of the parametric methods is that they impose more structure on the shape of the frontier by specifying a functional form for it. There are three parametric econometric approaches, namely: 1) Stochastic frontier approach (SFA); 2) Thick frontier approach (TFA); and 3) Distribution-free approach (DFA). Parametric approach to measuring efficiency uses stochastic econometric and tries to eliminate the impact of disturbance to inefficiency.

Meanwhile, non-parametric approach is used to measure the efficiency using non-stochastic approach and tends to combine disturbance into inefficiency. One of the non-parametric approaches, known as data envelopment analysis (DEA), is a mathematical programming technique that measures the efficiency of a decision-making unit (DMU) relative to other similar DMUs with the simple restrictions that all DMUs lie on or below the efficiency frontier (Seiford and Thrall, 1990).

Table 2: Difference Between Nonparametric and Parametric Approach.

| Nonparametric | Parametric |
|---|---|
| Deterministic | Stochastic |
| Based on external observation | Based on central tendencies |
| Analyses each vector (DMU) separately, individual measure | A single estimated regression equation applies to each observation vector |
| No assumption on production function, no misspecification | Have to impose the functional form |
| Random error does not exist, sensitive to extreme obs. and measurement error | Allows for random error, minimize specification error for Efficiency |
| Efficient frontier produced is relative to other DMUs | Efficient frontier produced is relative to other DMUs |
| Identifies the source of inefficiency | N/A |

In 1978, DEA was first introduced by Charnes, Cooper, and Rhodes. DEA does not require an a priori assumption about the analytical form of the production function so imposes very little structure on the shape of the efficient frontier. DEA can be applied to analyse different kind of input and output without initially assigning weight. The efficiency produced is a relative efficiency based on observed data. DEA does not need assumption of the production function and preference of decision maker can be accommodated in the model. Besides producing efficiency value for each DMU, DEA also determines DMUs that are used as reference for other inefficient DMUs.

$$Efficiency\ of\ DMU_0 = \frac{\sum_{k=1}^{p} \mu_k y_{k0}}{\sum_{i=1}^{m} v_k x_{i0}}$$

DMU = decision making unit
n = number of DMU evaluated
m = different inputs
p = different outputs
$x_{ij}$ = number of input i consumed by DMUj
$y_{kj}$ = number of output k produced by DMUj

There are two DEA models that are most frequently used, namely, the CCR model and BCC model. CCR model was developed by Charnes, Cooper, and Rhodes in 1978. The CCR assumes that each DMU operates with constant return to scale. CCR model measure the OVERALL efficiency (OE = TE x SE). Overall Efficiency (OE) = Allocative Efficiency (AE) x Technical Efficiency (TE).

$$\max_{\mu_k, v_i} \sum_{k=1}^{P} \mu_k \, y_{k0}$$

$$s.t \quad \sum_{i=1}^{m} v_i x_{i0} = 1$$

$$\sum_{k=1}^{p} \mu_k \, y_{kj} - \sum_{i=1}^{m} v_i x_{ij} \leq 0 \quad j = 1, \ldots, n$$

$$\mu_k \geq \varepsilon, v_i \geq \varepsilon \quad k = 1, \ldots, p \quad i = 1, \ldots, m$$

$x_{ij}$ : number of input i consumed by DMUj
$y_{kj}$ : number of output k produced by DMUj

BCC model was developed by Banker, Charnes, and Cooper in 1974. The BCC assumes that each DMU can operate with variable return to scale. BCC model measures the TECHNICAL efficiency (TE). Technical Efficiency can be broken down into Pure Technical Efficiency (PTE) and scale efficiency (SE), so that Technical Efficiency (TE) = Pure Technical Efficiency (PTE) x Scale Efficiency (SE). Therefore, OE = AE x PTE x SE.

$$\max_{\mu_k, v_i} \sum_{k=1}^{P} \mu_k \, y_{k0} - \mu_0$$

$$s.t \quad \sum_{i=1}^{m} v_i x_{i0} = 1$$

$$\sum_{k=1}^{p} \mu_k \, y_{kj} - \sum_{i=1}^{m} v_i x_{ij} - \mu_0 \leq 0, j = 1, \ldots n$$

$$\mu_k \geq \varepsilon, v_i \geq \varepsilon \quad k = 1, \ldots, p \quad i = 1, \ldots, m$$

$x_{ij}$ : number of input i consumed by DMUj
$y_{kj}$ : number of output k produced by DMUj

The efficiency measurement of financial institution can be approached from their activities. There are three main approaches to explain the relationship between input and output of banks, namely production approach, intermediation approach, and modern (or assets) approach (Freixas and Rochet, 1998). This study uses the intermediation approach to measure the efficiency of Pesantren's BMT.

The intermediation approach describes banking activities as intermediary in charge of transforming the money borrowed from depositors (surplus spending units) into the money lent to borrowers (deficit spending units). According to Freixas and Rochet, (1998), the intermediation approach is complimentary to the production approach and is more appropriate to the case of a main branch, which is not directly in contact with customers.

# 3 ANALYSIS MODEL

There are five Pesantren's BMTs in the sample, including BMT Maslahah Sidogiri, BMT Ta'awun Ngruki Surakarta, BMT Barakah Yogyakarta, BMT Ghozaly Bogor and BMT Daarut Tauhid Bandung, with data period 2009-2014. Some indicators to be discussed include total third-party funds, total asset, operational cost and collection of ZISWAF fund, total financing, total income and distribution of ZISWAF fund. Mostly, the rapid growth of Pesantren's BMT was supported by its network of Pesantren alumni who have been spread in many provinces of Indonesia.

DEA method delivers three efficiency measurements: 1) Technical Efficiency-TE; 2) Pure Technical Efficiency-PTE; and 3) Scale Efficiency-SE, where TE is a multiplication of PTE and SE. TE of BMTs in 2009-2014 has been slightly fluctuating, but has been significantly increasing in 2012-2013 to reach 91% in 2013 (see figure 1). Fluctuation of TE in Pesantren's BMT has been contributed also by PTE fluctuation.

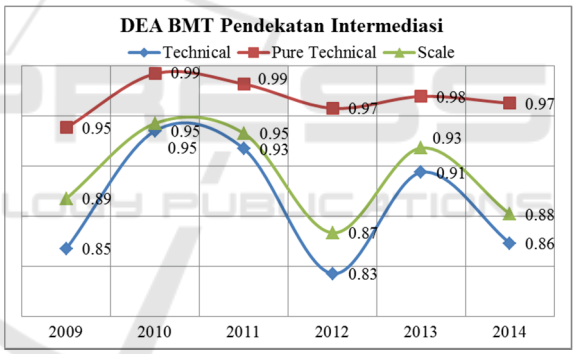
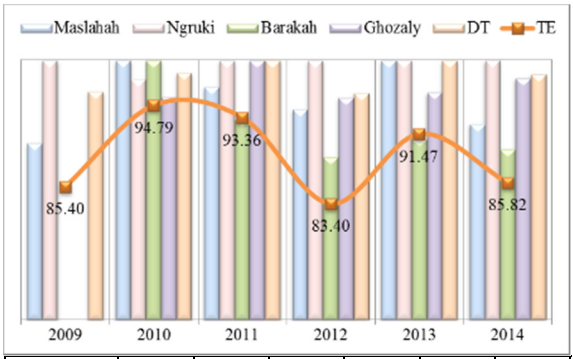


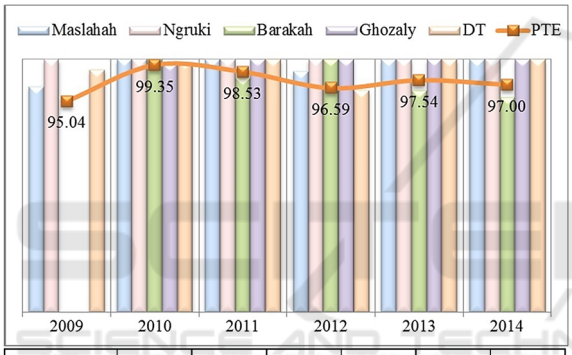

Figure 1: Efficiency of Pesantren's BMT.

Technical efficiency of five Pesantren's BMT on average has been increasing from 85.4% in 2009 to 94.8% in 2010, and then has been decreasing to reach 84.4% in 2012. The best performer was BMT Ta'awun Ngruki with scored 100% in four years, followed by BMT Maslahah Sidogiri with only scored less than 100% in 2010 and 2013. However, most Pesantren's BMT should be alerted, since their technical efficiencies decreased to less than 100% in 2014.




| TE | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|---|---|
| Maslahah | 68.16 | 100 | 89.68 | 81.15 | 100 | 75.46 |
| Ngruki | 100 | 92.87 | 100 | 100 | 100 | 100 |
| Barakah | | 100 | 77.19 | 62.78 | 69.66 | 65.91 |
| Ghozaly | | 85.90 | 100 | 85.74 | 87.71 | 93.11 |
| DT | 88.04 | 95.20 | 99.95 | 87.33 | 100 | 94.63 |
| **TE** | **85.40** | **94.79** | **93.36** | **83.40** | **91.47** | **85.82** |

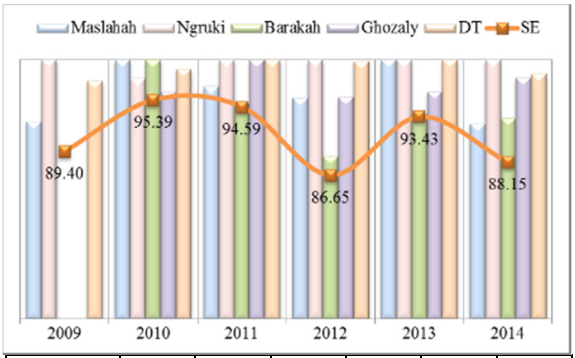
Figure 2: Technical Efficiency.




| PTE | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|---|---|
| Maslahah | 89.31 | 100 | 100 | 95.22 | 100 | 100 |
| Ngruki | 100 | 100 | 100 | 100 | 100 | 100 |
| Barakah | | 100 | 92.65 | 100 | 87.70 | 84.98 |
| Ghozaly | | 98.07 | 100 | 100 | 100 | 100 |
| DT | 95.82 | 98.68 | 100 | 87.75 | 100 | 100 |
| **PTE** | **95.04** | **99.35** | **98.53** | **96.59** | **97.54** | **97.00** |

Figure 3: Pure Efficiency.

Pure technical efficiency of five Pesantren's BMTs has been steadily increasing from 95% in 2007 to reach 99.4% in 2010 and then has been decreasing to reach 97% in 2014. The best performer was BMT Ta'awun Ngruki with scored 100% in all 6 years, followed by BMT Maslahah Sidogiri and BMT Ghozaly Bogor with scored 100% in all 4 years. All BMTs have reached 100% PTE in 2013-2014. Meanwhile, BMT Barakah Yogya seemed struggle with its PTE in 2013-2014 due to their investment in new headquarter office building. BMT Maslahah started with low PTE in 2007 (89%) but it has been improving steadily to reach 100% in 2010 until 2014.




| SE | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|---|---|
| Maslahah | 76.32 | 100 | 89.68 | 85.22 | 100 | 75.46 |
| Ngruki | 100 | 92.87 | 100 | 100 | 100 | 100 |
| Barakah | | 100 | 83.31 | 62.78 | 79.43 | 77.56 |
| Ghozaly | | 87.59 | 100 | 85.74 | 87.71 | 93.11 |
| DT | 91.88 | 96.47 | 99.95 | 99.52 | 100 | 94.63 |
| **SE** | **89.40** | **95.39** | **94.59** | **86.65** | **93.43** | **88.15** |

Figure 4: Scale Efficiency.

Meanwhile, scale efficiency of five Pesantren's BMTs has slightly increased from 89.4% in 2007 to reach 95.4% in 2010 with a decrease to 86.7 % in 2012 and further increase to 93.4% in 2013. The best performer was BMT Ta'awun Ngruki with 5 year scored 100%, followed by BMT Maslahah with only two year scored 100% in 2010 and 2013. BMT Ghozaly and Daarut Tauhid has only one year reached 100% in scale efficiency, due to their expanding units. Meanwhile, BMT Barakah should be given a warning, since its scale efficiencies slid to 83% in 2011 and 77% in 2014 from previously 100% in the previous first years.

Return to scale (RTS) shows if a Pesantren's BMT still in increasing stage (increasing return to scale or IRS, where one additional input resulted in more than one output), optimum stage (constant return to scale or CRS, where one additional input resulted in one output), or decreasing stage (decreasing return to scale or DRS, where one additional input resulted in less than one output). RTS of five Pesantren's BMTs have been fluctuate in 2009-2014, but they have been stagnant in 2013 to 2014, where all five Pesantren's BMTs have reached CRS in all years, which means all BMTs have reached the optimal stage.

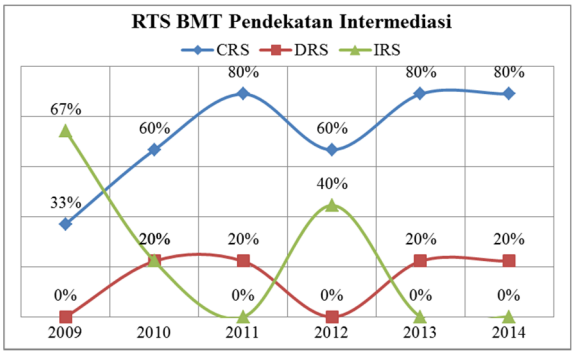



Figure 5: Return to Scale Pesantren's BMT.

In 2009-2014, Pesantren's BMT suffers weakness in some aspect, mostly third-party funds, total asset, operational cost and collection of ZISWAF fund. This inefficiency basically can be refined, because it can be used to measure the level of efficiency, this method can also be used to determine the potential improvements of each pesantren BMT by referring to the BMT pesantren which is already efficient or benchmarking. Based on the results of processing data in Figure 4, it appears that the number of financing customers and total financing must be increased to improve their efficiency. In addition, from the input side, the number of employees and total assets can still be reduced to increase the efficiency of pesantren's BMT.

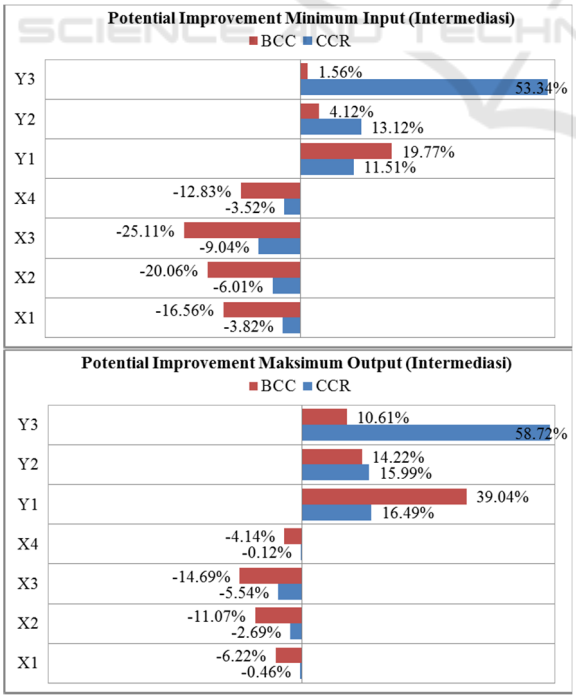



Figure 6: Potential Improvement of Pesantren's BMT.

Moreover, based on figure 4, it appears that total financing, operating income and ZISWAF fund disbursement must be increased by 11.51%, 13.12% and 53.34% respectively to improve the efficiency value. In addition, from the input side, the total third-party funds, total assets, operational costs and ZISWAF fund raising can still be reduced to increase the efficiency of pesantren BMT, by 3.82%, 6.01%, 9.04% and 3.52% respectively.

In 2014, the total distribution of ZISWAF funds had a development potential of 53.34%, so that the output could still be improved with an increase in the amount of ZISWAF funds disbursed by 53.34%, from the average amount of funds disbursement, due to get the optimum output with the standard number of inputs.

Interpretation of the potential for input development with the intermediation approach is also seen negatively. If in 2014 operating costs have a development potential of 9.04%, then the input can still be increased efficiency by reducing the amount of operating costs by 9.04% from the average amount of operating costs per period in that year, due to minimize input to get the optimum results output. In contrast to maximizing output with reasonable input, the reduction in operational costs is only 5.54% of the average operating cost per period in that year.

Reference Frequencies on input-output processing using the DEA method shows what pesantren BMTs are used as benchmarks by BMT pesantren that are not efficient yet. In Figure 4, it can be seen that based on the intermediation approach, the Pesantren's BMT referred in 2014 were BMT Maslahah, BMT Ngruki, BMT DT and BMT Ghozaly. The Maslahah BMT was referred by 17 other pesantren's BMTs. Then BMT Ngruki was referred by 8 other pesantren's BMTs. The BMT DT was referred by 5 other pesantren's BMT, while BMT Ghozaly was referred by 3 others.

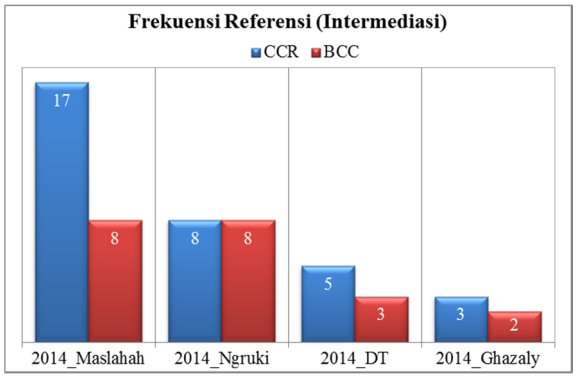



Figure 7: Reference Frequencies on input-output processing using the DEA method.

The role of Pesantren's BMT in sustainable development is believed to be more relevant in the future because Pesantren's BMT concept is to rely on the entranced power of social networking. Development of BMT is also felt very potential if using this pesantren network. Based on education statistics in 2012/2013, the Ministry of Religion of the Republic of Indonesia, the number of students in the pesantren around 3,65 million. While the number of pesantren themselves in 2013 totaled approximately 27,290. This amount is very large if it could be used to BMT development. The approach that must be done is to get approval from the kiai in each pesantren. When the kiai agrees, the santri can certainly be agreed. This is due to the pesantren culture which is very obedient to the words of the kiai. Economic actors in pesantren can be taken from the officials, while the manager is the leader of the pesantren, the kiai, the ustadz, and even his students can become managers.

# 4 CONCLUSIONS

Every research is supported with valid and accurate field research data would ended-up useful to its readers. To Pesantren's BMT enthusiasts, this result would grow more confidence in them that Pesantren's BMT as socio-economy institution based on family principle is already running on the right track. To non-Pesantren's BMT enthusiasts, especially banking sector, this result could be their refence library in assessing credible and business-worth partner BMT.

In terms of intermediation, technical efficiency, pure technical and scale are only reflected in the 10 BMT pesantren or 43% of the total BMT pesantren. While 39% of pesantren BMTs only experience pure technical efficiency, the remaining 17% is an inefficient BMT pesantren. This means that as much as 17% of pesantren BMTs have not performed their functions as intermediaries or intermediation optimally. Based on the development potential to achieve more efficient conditions, operational income and ZISWAF BMT Pesantren fund disbursement can still be increased.

# REFERENCES


Abdelkader, I. B., Hathroubi, S., & Jemaa, M. M. (2014). Microfinance Institutions' Efficiency in the MENA Region: a Bootstrap-DEA Approach. *Research Journal of Finance and Accounting, Vol.5, No.6,*, 179-191.

Abidin, Z., & Endri. (2009). Kinerja Efisiensi Teknis Bank Pembangunan Daerah: Pendekatan Data Envelopment Analysis (DEA). *Jurnal Akuntansi dan Keuangan, Vol. 11, No. 1*, 21-29.

Ahmad, U. (2011). Efficiency Analysis of Microfinance Institutions in Pakistan. *Munich Personal RePEc Archive, Paper No. 34215*.

Ali, M., & Ascarya. (2010). Analisis Efisiensi Baitul Maal wat Tamwil dengan Pendekatan Two Stage Data Envelopment Analysis (Studi Kasus Kantor Cabang BMT MMU dan BMT UGT Sidogiri). *Tazkia Islamic Finance & Business Review, Vol. 5, No. 2, August - December*, 110-125.

Ascarya, & Yumanita, D. (2009). Intermediation Efficiency Analysis of Islamic Rural Banks In Indonesia: Two Stage Dea Approach. *Centre for Central Bank Education and Studies Working Paper*.

Bassem, B. S. (2008). Efficiency of Microfinance Institutions in the Mediterranean: An Application of DEA. *Mediteranean & Middle East Papers: Transition Studies Review, Vol. 15, Iss: 2*, 343-354.

Bauer, Paul W., Berger, Allen N., Ferrier, Gary D., and Humphrey, David B. (1998), "Consistency Conditions For Regulatory Analysis of Financial Institutions: A Comparison of Frontier Efficiency Methods", Financial Services Working Paper, 02/97, Federal ReserveBloem, J. (2012). Micro, Small Medium Enterprise (MSME) Definitions. *Partners Worldwide, Vol. Summer*.

Coelli, T., Rao, D. P., O'Donnell, C. J., & Battese, G. E. (2005). *An Introduction to Efficiency and Productivity Analysis: Second Edition.* USA: Springer.

Danuri, O., & Fadlan, M. (2015). *Pesantren-Pesantren Berpengaruh di Indonesia.* Jakarta: Erlangga.

Freixas, Xavier and Rochet, Jean-Charles. (1998). *Microeconomics of Banking*, The MIT Press, Cambridge, Massachusetts, London, England

Haq, M., Skully, M., & Pathan, S. (2010). Efficiency of Microfinance Institutions: A Data Envelopment Analysis. *Asia-Pacific Financial Markets, Forthcoming*.

Hassan, M., & Sanchez, B. (2009). Efficiency Analysis of Microfinance Institutions in Developing Countries ◊. *Networks Financial Institute Working Paper 12*.

Jayamaha, A. (2012). Efficiency of Small Financial Institutions in Sri Lanka using Data Envelopment Analysis. *Journal of Emerging Trends in Economics and Management Sciences, Vol. 3, No. 3*, 565-573.

Kablan, S. (2012). Microfinance Efficiency in the West African Economic and Monetary Union: Have Reforms Promoted Sustainability or Outreach? *Munich Personal RePEc Archive, Paper No. 39955*.

Karim, A. (2014). *Kajian Pengembangan Islamic Financial Inclusion.* Jakarta: Karim Consulting Indonesia.

Masrifah, A. R. (2016). *Efisiensi BMT Pesantren dalam Pengelolaan Harta Usaha Mikro* (Doctoral dissertation, Tesis. Sekolah Tinggi Ekonomi Islam Tazkia. Tidak diterbitkan).

Masrifah, A. R. (2020). Efisiensi Baitul Māl wat Tamwīl (BMT) Pesantren di Indonesia. *Islamic Economics Journal*, *6*(1), 75-100.

Muchtar, I., & Taufiq, M. (2013). *100 Koperasi Besar Indonesia.* Jakarta: Peluang.

Qayyum, A., & Ahmad, M. (2008). Efficiency and Sustainability of Microfinance. *Munich Personal RePEc Archive, Paper No. 11674*.

Rahman, A & A. Rahim. (2007). Islamic Microfinance: A Missing Component in Islamic Banking. *Kyoto Bulletin of Islamic Area Studies*, 1-2: 38-53.

Singh, S., Goyal, S., & Sharma, S. K. (2013). Technical Efficiency and Its Determinants in Microfinance Institutions in India: A Firm Level Analysis. *Journal of Innovation Economics, Vol. 1, No.11*, 15-31.

Seiford, L.M. and R.M. Thrall. (1990). Recent Developments in DEA: the Mathematical Programming Appoach to Frontier Analysis. *Journal of Econometrics*, 4: 7-38.

Undang-Undang Republik Indonesia Nomor 20. (2008). *Undang-Undang RI No.20 tentang Usaha Mikro, Kecil dan Menengah*. Retrieved from http://www.bi.go.id/id/tentang-bi/uu-bi/Documents/UU20Tahun2008UMKM.pdf

Undang-Undang Republik Indonesia Nomor 25. (2002). *Undang-Undang RI No.25 tentang Perkoperasian*. Retrieved from http://www.depkop.go.id/phocadownload/regulasi/uu/uu%201992%2025%20perkoperasian.pdf

Widayati, T. (2003). Peran Perbankan dalam Pengembangan Keuangan Mikro. In *Bunga Rampai Lembaga Keuangan Mikro* (pp. 10-18). Bogor: Business Innovation Center of Indonesia.

Widiyanto, & Ismail, A. G. (2008). Sustainability of BMT Financing for Developing Micro Enterprises. *MPRA Paper No. 7434*, 1-30.

Winarsih, R., Masrifah, A. R., & Umam, K. (2019). The Integration Of Islamic Commercial And Social Economy Through Productive Waqf To Promote Pesantren Welfare. *Journal of Islamic Monetary Economics and Finance*, *5*(2), 321-340.

Yumanita, D., & Ascarya. (2005). Analisis Efisiensi Perbankan Syariah di Indonesia. *PPSK Working Paper Series No: WP/01/05*, 1-60.