MODERNIZING WAQF PERFORMANCE EVALUATION BY WAQF MANAGEMENT EFFICIENCY INDEX

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ABSTRACT

A strong Waqf system will not only complete the equality for a comprehensive Islamic financial system that supports a more equitable distribution of wealth to ensure justice, it will also use Islamic financial services, particularly in the management and investment of the Waqf funds. Waqf assets in Malaysia are set under the legislation of the religious authority in each state. The diversity of Waqf assets resulted to the disuniformity of Waqf administration and management, and a huge gap existed in the collection and distribution of Waqf funds. This paper aims to measure the efficiency scores of Waqf departments in all states that run Waqf funds in their State Islamic Religion Councils (SIRCs). Data envelopment analysis (DEA) can best measure the Waqf management efficiency (WME) index measurement. In assessing the technical efficiency score of each state, WME index using DEA analysis was applied with the consecutive periods of years of the whole state precisely. The findings showed that the most improving Waqf department of SIRCs is Penang state, which has seen increasing WME Index in four periods of investigation; therefore, this state became the benchmark for the rest of the states in Malaysia.

Keywords: Waqf, efficiency, Waqf management efficiency index, data envelopment analysis, Malaysia

INTRODUCTION

Waqf, as voluntary giving, has the meaningful objective of the Islamic concept of development. Economic development in Islam does not portray worldly gain, monetary profit, abundance of capital, and property. Islam promotes the worldly development as the means, not the goal, for a successful life hereafter. Islam does not object to development; however, the concept of *Tazkiyyah* (purification) of the wealth in Islam is the ultimate goal in Zakat giving. The purification process involves growth and expansion of human activities, actions, and transactions. Once the heart, soul, and wealth are purified, *Alfalah* (betterment, development, or gains) will be the output. The Waqf is motivated by the beauty of the human soul, which will then result in love, kindness, and goodness for the benefit of benevolent and giving soul. Islam elevates souls to the highest horizon of the complete humane inclination when it enables kindness by all vicegerents of Allah, as the Prophet (pbuh) said:

> *"All of the creation are Allah's dependents, and the most beloved of them to Allah are the most beneficial of the to His dependents".*
> (Related by al-Tabarani and 'Abd al-Razzaq)

Waqf or Islamic endowment is highly synonymous with poverty alleviation. The objective of Waqf in a nation must be aligned with the objective of Shariah, i.e., Maqasid Shariah. The central objective of Shariah in Waqf implementation is for the relief of hardships and the welfare of the people. All Islamic jurists agree that the government is responsible for the welfare management of a nation. At the beginning of the process, the role of the government is to inculcate a good understanding of Waqf practice in the community. The collection and distribution process is essential in managing Waqf funds and in fulfilling the purpose of bridging the income gap within society. An altruism society that is created from the Waqf system will enhance the brotherhood among society and the strength of a nation will be created by economic development, thereby eradicating spiritual poverty. By expressing its economic content, Waqf could be defined as diverting funds and other resources from consumption and investing them as productive assets that provide either usufruct or revenues for future individual and group consumption. Therefore, Waqf is an operation that combines saving with investment. Waqf consists of certain resources of

consumption and simultaneously develops them as productive assets that increase the accumulation of capital in the economy, thereby increasing future services and income outputs.

In Malaysia, SIRC of every state manages its own Waqf department by Majlis Agama Islam Negeri or SIRCs. The provision of Section 9 Administrative Enactment of Islamic law (1959) empowered the SIRCs as the sole administer (Waaqif) of the Waqf properties. A unit or department in Baitul Mal office manages Waqf. As the single trustee of the Waqf funds, SIRCs are responsible in managing all the activities and transactions for the development, collecting the funds, investing and distributing revenues from the funds, and determining the beneficiaries of the excess revenue. By comparing Waqf position in Malaysia with other countries, the institutional position of our Waqf is more static. The stability is yet to fulfill a broad government and constitution of the Waqf properties. With many challenges, turbulences, deficits and misconception, Waqf in Malaysia needs to promote an efficient level of governance in its management. The institution of Waqf is founded to keep a property in perpetual existence, thereby making its income available for designated beneficiaries. This establishment has existed from the very beginning of Islam and has always acted as an important societal and economic characteristic.

Among the challenges are the ownership of Waqf properties, justification of Waqf types, financial limitations, physical development onto Waqf properties, knowledge in managing Waqf development, and difficulties in standardizing the value of Waqf lands. In the management side, the institutions of Waqf face imbalance organizational structure, from which Waqf departments only operated with limited staff and knowledge in financing Waqf properties (Nik Hassan, 1999). The traditional methods of managing Waqf property and public-state Waqf administration model applied in SIRCs of each state must be revised. The public Waqf institution creates an avenue to corporatize its activities and allow more revenues from Waqf property.

This paper focuses on the application of data envelopment analysis (DEA) measurement on Waqf efficiency that covers the internal information of every SIRC Waqf department in Malaysia. This measurement comprises states of Johor, Kedah, Kelantan, Melaka, Negeri Sembilan, Pahang,

Perak, Perlis, Penang, Sabah, Sarawak, Selangor, and Terengganu. As the sole trustee for the Waqf fund and investment of each state, SIRCs are responsible in managing all the assets efficiently, as expected by the people. Therefore, every Waqf fund must be known by SIRCs and recorded under the management of SIRCs. This paper aims to investigate the efficiency of the administration and management of Waqf organization in Malaysia by an evaluation based on cross-national level among each SIRC measured using DEA.

LITERATURE REVIEW

The DEA scores ranges from zero to one. These scores denote the efficiency level of the organization performance. This approach is convenient as it assesses the multiple input and output variables of these entities by not requiring congruity and an a priori relationship. Therefore, this method is considered a popular management tool in many application areas (Akçay, Ertek, & Büyüközkan, 2012). According to the authors, DEA is a widely used benchmarking tool in evaluating performances and efficiency. To date, Malmquist total factor productivity (TFP) index is used as a dominant tool in examining TFP index in multiple input and output models and in numerous fields, such as agriculture, manufacturing, and banking and finance (Arjomandi, Valadkhani & O'Brien, 2014). As first introduced by Caves, Christensen and Diewert (1982), this Malmquist TFP index later merged with Farrell's (1957) efficiency theory to provide a renowned Malmquist TFP index with technical and efficiency changes. Following this study, Färe, Grosskopf, Norris and Zhang (1994) further decomposed efficiency change into pure efficiency change (PECH) and scale efficiency change (SECH).

Kao and Hwang (2014) exhibited the development in Malmquist TFP index study by using TFP change index in a two-stage DEA process. This paper considers the operations of individual periods to develop a multi-period two-stage DEA model, thereby enabling the measurement of the overall and period efficiencies simultaneously, with the former expressed as a weighted average of the latter. Given that the efficiency of a two-stage system in a period is the product of the two process efficiencies, the overall efficiency of a decision-making unit (DMU) in a specified period of time

can be decomposed into the process efficiency of each period. Based on this decomposition, the sources of inefficiency in DMU can be identified. The efficiencies measured from the model can also be used to calculate a common-weight global Malmquist productivity index (MPI) between the two periods, such that the overall MPI is the product of the two MPIs processes. The author used the non-life insurance industry to demonstrate the model suggested in the article.

Many studies were experimenting on the Malmquist TFP index in organizations or industries, such as the banking performance in Korea by Lee and Kim (2013), and corporate world productivity and industrial changes by Chang, Kuo and Chen (2013). Paradi and Zhu (2013) published an effective survey on performance and productivity study in the business sector, and the findings show that the frequently used tool is the DEA and Malmquist TFP index and the most popular sector is the banking sector. Several studies discussed this instance in relation to the efficiency of banking or financial institutions (Berger, Leusner, & Mingo, 1997a; Berger & Mester, 1997b; Drake, Hall & Simper, 2009; Halkos & Salamouris, 2004; Holod & Lewis, 2011). Although no publication as yet discusses the use of DEA in measuring the efficiency of Waqf institutions, studies refer to the measurement of efficiency used for Islamic banks and Zakat departments. Eventually, this measurement helps to identify the proxies used in measuring the efficiency of Waqf institutions. Abd Wahab and Abdul Rahman (2011) discussed the efficiency measurement of the Zakah collectors board in Malaysia. The study examined the determinants of Zakah collection in Zakah institutions and then measured the efficiency of the organization using technical efficiency (TE), pure technical efficiency (PTE) and scale efficiency (SE).

METHODOLOGY

Total Factor Productivity (TFP) Changes of Waqf Management Efficiency (WME) Index[1]

Efficiency in the constitution is significant and thus needs evaluation, thereby enabling us to distinguish a sound management practice that will be

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1 WME Index has been presented in Invention, Innovation, & Design Exposition (IIDEX) 2015 and successfully registered for Intellectual Property Corporation of Malaysia (MyIPO) under Copyright Act 1987 for literary works.

used in the system. The measurement tells how the system uses its funding, human capital, technology, and information in achieving the objectives of the organization. Measuring various aspects in the performance of the organization requires the transformation of the data into useful 'knowledge' for decision-making process. A firm is said to have realized allocative efficiency when it operates with optimal combination of inputs given input prices. The traditional approaches in measuring allocative efficiency require input prices, which are readily available. This instance explains why empirical studies of allocative efficiency are highly concentrated on certain industries, particularly in banking, because information on input price can be readily obtained from these industries (Badunenko, Fritsch & Stephan, 2008).

DEA needs the input and output information from the internal activities of every SIRC Waqf department in all 13 states of Malaysia. Therefore, all the numerical information in an annual basis has been classified into either input or output. In this analysis, the number of staff (Staff) and the total Waqf funds from the government (WaqfJ) are to be considered the input information. Then, the value of Waqf project (WaqfP) and Waqf collected funds (WaqfC) are categorized as the output information. Input and output information are computed to obtain the efficiency score. When we obtain the panel data of Waqf institutions in Malaysia instead of solely using DEA to measure the efficiency of SIRCs Waqf departments, a Malmquist TFP index can be an alternative. It enables further measurement of the productivity change. TFP measurement then enables the decomposition of the productivity change into technical and technical efficiency changes. The other advantage of Malmquist TFP index allows decomposition of the productivity changes into two components, i.e., technical and efficiency changes other than pure technical and scale changes (Coelli, 1996). Therefore, Malmquist TFP index is enabled to analyze the growth and change of a firm between two periods.

In this analysis, five set of indices are computed in Malmquist TFP index from 2007 to 2012. The examination of Malmquist TFP index of Waqf department efficiency is then used to create the Waqf Management Efficiency (WME) index. Therefore, the objective of this analysis to have changes in technical and efficiency scores; only the efficiency (EFFCH), technical (TECHCH), and total factor productivity changes (TFPCH) are extracted from the set of result. Given that the change is examined within two

periods in a year, a pair of year is set accordingly. DEA TFPCH (Malmquist TFP index) measures are more stochastic than the SFA measures. This event is not surprising, given that the DEA method involves the calculation of a separate frontier in each year, while the SFA method uses all cumulative years of data to estimate the frontiers for all the period of years with allowable "smooth" changes in the frontier by the time trend specification of TECHCH.

In this instance, another divergence is that the stochastic nature of the DEA TFPCH is more because of TC. This instance is basically because of the abovementioned year-to-year flexibility of the DEA method. When all farms face a bad year in terms of rainfall, the DEA method tends to interpret this bad year as technical regress (i.e., Negative TC) while the SFA method interprets it as a decline in technical efficiency (TE). Generally, the two TFPCH patterns are similar, but the DEA results indicate a high TFP growth in general. Therefore, Malmquist TFP index permits TFPCH to be decomposed into components, such as TECHCH, EFFCH and SECH. The WME index can be interpreted as a measure of TFP growth. Each value that is greater than one indicates an improvement in the productivity, in the technology, and efficiency within the two periods. By contrast, a value smaller than one presents deteriorations in the performance over time. The formulas for EFFCH and TECHCH are represented as follows:

$$\text{Efficiency change} = \frac{D_0^{t+1}(X^{t+1}, Y^{t+1})}{D_0^t(X^t, Y^t)}$$

$$\text{Technical change} = \frac{D_0^{t+1}(X^{t+1}, Y^{t+1})\, D_0^t(X^t, Y^t)}{D_0^{t+1}(X^{t+1}, Y^{t+1})\, D_0^{t-1}(X^t, Y^t)}$$

$$\text{Total factor productivity change} = \left[\frac{D_{CRS}^t(X^{t+1}, Y^{t+1})\, D_{CRS}^t(X^t, Y^t)}{D_{CRS}^{t+y}(X^{t+1}, Y^{t+1})\, D_{CRS}^{t-1}(X^t, Y^t)} \right]^{1/2}$$

where,

T   = period (t=1,2,…,T), t+1= the next period of year,
p   = number of SIRC (p=1,…,n),
VRS = Variable Return to Scale,
CRS = Constant Return to Scale, and
X   = the input combination, Y= the output combination.

ANALYSIS AND FINDINGS

Evaluation of the productivity changes in the indices of WME best describes how the organization is moving towards betterment or deterioration. Empirical findings report that these changes can be the benchmark for the Waqf department in all SIRCs to be sustainable and efficient in the future. Strategic implication can be identified because the improved Waqf departments can extend the purpose of Waqf system and eradicate poverty in society. Dynamic WME indices will further explain the sets of three periods in a year with the productivity changes related to EFFCH, TECHCH, PECH, SECH, and TFPCH. The score in the WME index that is below 1.000 in value is considered deteriorated in its production activities. Meanwhile, the score that is greater than 1.000 in value is considered productive or dynamic.

Table 1: Descriptive Statistics of the Variables
(Input and Output) and TE Scores

Variable		Mean	Std dev	Min	Max	Observations
TE	Overall	0.753	0.313	0.198	1.000	N= 78
	Between		0.235	0.337	1.000	n=13
	Within		0.215	0.265	1.240	T=6
WaqfJ	Overall	6.758	0.658	5.699	8.366	N= 78
	Between		0.363	6.217	7.545	n=13
	Within		0.556	5.969	8.336	T=6
WaqfP	Overall	6.978	0.616	6.000	8.366	N= 78
	Between		0.288	6.466	7.540	n=13
	Within		0.550	6.189	8.555	T=6
Staff	Overall	1.160	0.246	0.602	1.690	N= 78
	Between		0.252	0.693	1.681	n=13
	Within		0.033	1.069	1.245	T=6
WaqfC	Overall	4.878	2.058	1.556	7.630	N= 78
	Between		2.110	1.556	7.630	n=13
	Within		0.273	4.034	5.828	T=6

Table 1 depicts the descriptive statistics of the variables used in WME index of Waqf SIRCs in Malaysia from 2007 to 2012. The mean, standard deviation, and the minimum and maximum values in the Waqf department of the 13 SIRCs are shown in the prescribed table. From the table, the variables are Waqf collection (WaqfC), Waqf funds from government

(WaqfJ), Waqf projects in value (WaqfP), and the number of Waqf staff in its administration (staff).

From Table 2 in the next page, period of investigation is divided into five groups which are 2007–2008, 2008–2009, 2009–2010, 2010–2011, and 2011–2012. From 2007 to 2008, only SIRC of Kedah and Penang states depict improvement in the TFP index. By coontrast, the other states are deteriorated or stagnant, which is equal to one index. From 2008–2009, several SIRC Waqf department of states, namely, Kelantan, Melaka, Perlis, Penang, Sarawak, and Selangor, show increasing indices. In 2009–2010, SIRCs of Johor, Perak, and Terengganu also depict index improvement. In 2010–2011, mostly all states showed index improvement except for SIRCs in the states of Pahang, Sabah, and Terengganu. From 2011 to 2012, only SIRC of Penang indicated an increased TFP index.

Table 2: WME Index of SIRCs in Technical Changes, Efficiency Changes and Total Factor Productivity (TFP) Changes for 2007-2012

YEAR	2007-2008			2008-2009			2009-2010			2010-2011			2011-2012		
FIRM/INDICES (Δ)	EFFΔ	TECΔ	TFPΔ	EFFΔ	TECΔ	TFPΔ	EFFΔ	TECΔ	TFPΔ	EFFΔ	TECΔ	TFPΔ	EFFΔ	TECΔ	TFPΔ
Majlis Agama Islam Negeri Johor	1.587	0.379	0.602	0.843	1.177	0.992	0.747	2.047	1.529	1.932	0.972	1.877	1	1	1
Majlis Agama Islam Kedah	0.994	1.024	1.018	0.942	0.863	0.813	0.963	1	0.963	1.511	2.085	3.150	1	1	1
Majlis Agama Islam & Adat Istiadat Melayu Kelantan	1.693	0.37	0.627	1	1.278	1.278	0.341	1.426	0.486	2.932	1.007	2.953	1	1	1
Majlis Agama Islam Melaka	0.819	1.073	0.879	1.365	0.912	1.245	1	1	1	3.075	0.765	2.352	1	1	1
Perbadanan Wakaf Negeri Sembilan	1	1	1	1	0.916	0.916	1	1	1	1	1.067	1.067	1	1	1
Majlis Ugama Islam & Adat Resam Melayu Pahang	0.974	1.019	0.992	1.026	0.861	0.883	1	0.999	1	2.126	0.446	0.947	1	1	1
Majlis Agama Islam & Adat Melayu Perak	0.84	0.671	0.564	0.922	1.055	0.972	1.255	1.31	1.645	2.73	1.214	3.314	1	1	1
Majlis Agama Islam Perlis	1.209	0.827	1	0.986	1.073	1.057	0.818	1.131	0.926	9.456	0.529	5.007	1	1	1
Majlis Agama Islam Negeri Pulau Pinang	1	1.065	1.065	1	1.191	1.191	1	0.834	0.834	1	4.044	4.044	1	1.042	1.042
Majlis Ugama Islam Sabah	0.957	1.045	1	1.045	0.908	0.949	1	1	1	1	0.977	0.977	1	1	1
Tabung Baitulmal Sarawak	0.54	0.731	0.395	3.039	1.106	3.362	0.61	1.64	1	3.168	0.913	2.892	1	1	1
Perbadanan Wakaf Selangor	1.045	0.957	1	1.017	1.021	1.039	0.948	1.046	0.991	4.88	1.251	6.104	1	1	1
Majlis Agama Islam & Adat Melayu Terengganu	1	0.525	0.525	0.991	1.008	0.999	1.009	1.787	1.803	1	0.777	0.777	1	1	1

Note: EFFΔ=Efficiency change; TECΔ=Technical change; TFPΔ=Total factor productivity change

Figure 1 depicts the frequency of improvement by each state from the calculated indices. The highest frequency to improve productivity is three times in a single one-year period. The result shows that the most improved Waqf department of SIRCs based on its EFFΔ, TECΔ, and TFPΔ values are the SIRC of the states of Penang and Selangor. Following this result, the Waqf departments of Perak and Kelantan depicted seven values greater than one; this value implies that they improve in their productivity and technological values. The states with the smallest number of improved values are Sabah and Negeri Sembilan. Their values in Malmquist TFP index mostly show that they are stagnant, which is equal to one index.
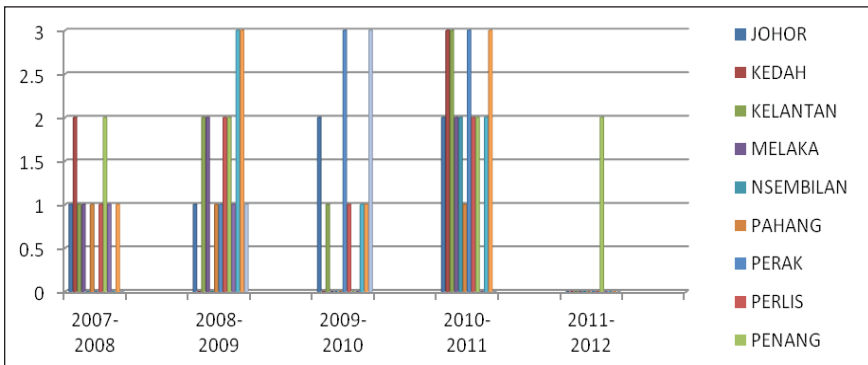

Figure 1: Frequency of Improvement in EFFΔ, TECΔ, and TFPΔ as the Changes Values is Greater than One

CONCLUSION

Modernization of the Waqf institution towards worldwide competition of other modern philanthropic institutions is needed for evaluating Waqf performances. Given efficiency and best management practices in Waqf administration, the Waqf institution will be modernized by offering tools for Waqf benchmarking. In addition to dynamic and stable results, DEA computation affords an index measurement of Malmquist total factor productivity changes. The index of Malmquist TFP DEA generates five different indices to obtain precise technical, efficiency, pure efficiency, scale efficiency, and total factor productivity changes. All of these indices observe each type of detailed efficiency changes whether the changes is improving or deteriorating. Valuation of the productivity changes in the indices of

Malmquist TFP index describes how the organization moves towards the improvement or deterioration otherwise. The empirical findings report that these changes can be the benchmark for the Waqf department in all SIRCs to be sustainable and efficient in the future. Strategic implication can be identified because the improved Waqf departments can extend the purpose of Waqf system and eliminate poverty in society. Given the usage of efficiency scores that have been studied, Malmquist total factor productivity index is beneficial in evaluating the productivity of Waqf Department in SIRCs, whether its productivity deteriorate or improve. The scores will determine the top Waqf department in Malaysia, thereby becoming the benchmark for other Waqf departments. This exercise helps considerably in modernizing Waqf institutions, and finally promotes the betterment of Waqf collection and distribution activities.

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