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# Conceptualizing Financial Risk and Investment Diversification towards the Efficiency of Waqf Institutions in Malaysia

## Mengkonsepsikan Risiko Kewangan dan Kepelbagaian Pelaburan terhadap Kecekapan Institusi Wakaf di Malaysia

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ABSTRACT

*This study aims to conceptualize on how financial risks i.e., liquidity and credit risk, and investment diversification relate to waqf institution's efficiency in Malaysia. Past studies were reviewed to identify the relevant theories and empirical evidence relating to efficiency, liquidity risk, credit risk and investment diversification. Conceptually, it is found that the inefficiency of waqf institutions in managing its waqf property is mainly due to the exposure of liquidity and credit risk. However, investment diversification strategies allow waqf institutions to generate higher potential returns and subsequently enhance its financial resources. Thus, diverse investment portfolio could moderate the impact of liquidity and credit risk on the efficiency of waqf institutions. In fact, waqf institution's efficiency has been rarely examined in studies due to its unique operation and the absence of accurate measurement. This research proposes a framework that is the first to link the efficiency of the waqf institution with financial risk, and investment diversification as a moderator. This could be an impetus for future empirical research. Indeed, the framework has indirectly emphasized the importance of risk management for waqf institutions.*

*Keywords: Credit risk; efficiency; liquidity risk; investment diversification; waqf*

ABSTRAK

*Kajian ini bertujuan untuk mengkonsepsikan bagaimana risiko kewangan iaitu risiko kecairan dan kredit serta kepelbagaian pelaburan berkaitan dengan kecekapan institusi wakaf di Malaysia. Penelitian terhadap kajian lepas telah dilaksanakan untuk mengenal pasti teori dan bukti empirikal yang berkaitan dengan kecekapan, risiko kecairan, risiko kredit dan kepelbagaian pelaburan. Secara konsepnya, pendedahan risiko kecairan dan kredit merupakan punca utama yang menyebabkan ketidakcekapan institusi wakaf dalam menguruskan harta wakaf. Walau bagaimanapun, strategi kepelbagaian pelaburan membolehkan institusi wakaf menghasilkan potensi pulangan yang lebih tinggi dan seterusnya meningkatkan sumber kewangannya. Oleh itu, kepelbagaian portfolio pelaburan dapat mengurangkan kesan risiko kecairan dan kredit terhadap kecekapan institusi wakaf. Malah, kajian mengenai kecekapan institusi wakaf amat jarang kerana pengoperasiannya yang unik dan ketiadaan pengukuran yang tepat. Setakat pengetahuan penyelidik, kerangka kerja yang dicadangkan ini adalah yang pertama menghubungkan kecekapan institusi wakaf dengan risiko kewangan dan kepelbagaian pelaburan sebagai penyederhana. Ini boleh menjadi dorongan untuk penyelidikan secara empirikal pada masa hadapan. Sesungguhnya, kerangka tersebut secara tidak langsung telah menekankan kepentingan pengurusan risiko bagi institusi wakaf.*

*Kata kunci: Risiko kredit; kecekapan; risiko kecairan; kepelbagaian pelaburan; wakaf*

## INTRODUCTION

*Waqf* is one of the wealth distribution mechanisms in Islam that provide basic needs to the needy and improve the socio-economic condition of the community and the country (Zakaria et al. 2013). In Malaysia, *waqf* acts as a poverty eradication mechanism and a catalyst to socio-economic improvement through the development of commercial projects and social projects. The

advancement of *waqf* in Malaysia is evidenced by immense reservations of *waqf* property, as a result of the contribution of 14,356 lots covering 30,888.89 hectares (Abdullah 2016).

However, the development of *waqf* lands only makes up a small portion of the total land area that was pledged for *waqf* in Malaysia. The *waqf* property development statistics in Malaysia show that 34 percent (11,844.44 hectares) of *waqf* land remain idle and undeveloped, while only 12 percent (3,600 hectares) have been developed (Ismail Omar 2020; Mat Yusop 2019). The low development of *waqf* land in Malaysia was caused by various factors as highlighted by Shahrina et al. (2019). However, the main hindrance of *waqf* land development was the inadequacy of fund (Sanep and Nur Diana 2011). Accordingly, Romli (2018) and Abdullah (2020) were also agreed that insufficient cash *waqf* funds lead to the failure of *waqf* development projects. In fact, the total cash *waqf* fund collection from March 2012 until December 2019 was approximately RM12,831,812.67 (Yayasan Wakaf Malaysia 2019). This amount is significantly far from reaching the estimated of RM80 billion to succeed and further strengthen the potential of *waqf* development throughout Malaysia (Shaharuddin 2020; Thaker 2018). The State Islamic Religious Council (SIRC) which plays a role as a *waqf* institution was struggling with insufficient cash funds to develop *waqf* projects (excerpt from the Yayasan Wakaf Malaysia official Facebook, 2019). Siti Razifah and Marhanum (2018) emphasize that proper management is essential to ensure efficient and effective cash *waqf* management. However, *waqf* institutions in Malaysia face various obstacles which lead to the inefficient cash *waqf* management (Siti Razifah and Marhanum, 2018), and squeeze the *waqf* property development agenda in the country (Aznan and Syahnaz, 2015). In the meantime, the management of *waqf* faces financial uncertainty (risk), which cause their inability to perform their functions as expected (Ahmad and Muhamed, 2011). According to Rozalinda (2012), *waqf* management is exposed to financial risks due to the existence of potential loss on *waqf* property expansion efforts. Indeed, Malaysian *waqf* institutions is currently facing continuous increase in rent arrears on *waqf* assets. For instance, the amount of *waqf* rental arrears in 2014 were approximately RM10 million (National Audit Department, 2014). Chowdhury et al. (2011) and Ab Fatah et al. (2017) stated that low income, unproductivity, and delays in earning income from *waqf* assets had resulted in *waqf* institutions not being able to cover their operating costs effectively. Kuncorowati et al. (2018) found that *waqf* institution who incur operating costs in excess of 10% of the funds generated from *waqf* property expansion are categorized as high risk. In addition, *waqf* institutions are also exposed to the risk of insufficient funds (Kuncorowati et al. 2018). Furthermore, the financial shortage is exacerbated when bank financing cannot be obtained due to some conflicts involving *waqf* land ownership (excerpt from the Yayasan Wakaf Malaysia official Facebook, 2019). If this situation persists, the achievement of *waqf* institution objectives will be disrupted. Therefore, improvements should be carried out to overcome the obstacles of *waqf* property development. One of the strategies is adopting the wide range of investments used in *waqf* to generate more competitive returns and subsequently mitigate the financial risk faced by *waqf* institutions (Drake & Fabozzi, 2010). Consequently, the returns from investment obtained could have a positive impact on the performance of institutional management competencies (Bhatia & Thakur 2018). In fact, Siti Razifah and Marhanum (2018) emphasize that *waqf* investment activities need to be improved in improving the efficiency of *waqf* institutions.

Therefore, this study proposes a conceptual framework for the efficiency of *waqf* institutions by considering the influence of financial risk. Moreover, the role of investment diversification as a moderator that helps resolve conflicts between financial risk and efficiency is also addressed. Studies involving the efficiency of *waqf* institutions already exist although limited. However, to our knowledge, the factors that influence the efficiency of *waqf* institutions from the perspective of financial risk are still absent. The present study becomes increasingly significant when the role of investment diversification in explaining the influence of financial risk on the efficiency of *waqf* institutions is explored. The conceptual framework built in this study is expected to raise awareness of the importance of considering the risk aspects in institutional operations. This situation is in line with the need for the implementation of risk management in the public sector as outlined by the Malaysian Administrative Modernization and Management Planning Unit. The ability of *waqf* institutions in managing the financial risks is critical in improving the efficiency of *waqf* asset management in Malaysia. An efficient *waqf* institution can expand its charitable services more

effectively and strategically. It can revitalize the potential of *waqf* assets, resulting in greater benefits to the public.

## ISSUES OF WAQF MANAGEMENT IN MALAYSIA

The function of *waqf* is not only limited to religious matters (Rusydiana & Al-Farisi, 2016); *waqf* has been proven to help boost the economy, as it did in Egypt, Turkey, Saudi Arabia, Kuwait, Sudan, the United Kingdom, the United States, and Singapore (Putung et al. 2013; Mohd Ali et al. 2016). In Malaysia, *waqf* funds have been used to develop various projects in both economic and social based on six project categories namely religion, education, health, agriculture (food industry, livestock and plantation), housing, commercial and services (Yayasan Wakaf Malaysia, 2016). Table 1 shows a list of successful *waqf* development projects in Malaysia.

TABLE 1. *Waqf* Development Projects in Malaysia

| State | Project | Type of project |
|---|---|---|
| Selangor | UME Ehsan Residence di Seksyen 30 Shah Alam | Housing |
| | UME Teratai Avenue di Meru, Klang. | |
| | UME Gemersik di Taman Meru Makmur, Meru Klang. | |
| | UME Idaman di Taman Desa Kencana, Meru Klang dan | |
| | UME Impian di Taman Desa Kencana, Meru Klang | |
| | Lot 3681 (GM 248) dan Lot 3734 (GM 249) Batu 8, Lorong Hj Abdullah, Jalan Kebun, Klang | Housing |
| | Shop lots in Bandar Bukit, Puchong and Bukit Jelutong, Shah Alam | Commercial & Services |
| Negeri Sembilan | Hotel Klana Beach Resort & Baitul Hilal, Port Dickson | Commercial & Services |
| | Kompleks Al-Sa'adah | Religion |
| | *Waqf* mart and *waqf* bazaar | Commercial & Services |
| Malacca | Al-Ehsan flats | Housing |
| | Hotel Pantai Puteri | Commercial & Services |
| Johor | Petronas Petrol Station and Trade Center at Jalan Tan Swee Hoe, Batu Pahat | Commercial & Services |
| | Caltex Petrol Station in Taman Pelangi, Johor Bahru | Commercial & Services |
| | MAIJ Hemodialysis Center | Health |
| Pulau Pinang | Development of Seetee Aisah *Waqf* Estate | Housing |
| | Kapitan Keling *Waqf* and Malay Enclave | Commercial & Services |
| | Wakaf Majoodsaw, Jalan Macalister, Georgetown | Commercial & Services |
| Perlis | HTF Hemodialysis Service | Health |
| Perak | Seri Warisan Hotel | Commercial & Services |
| | *Waqf* Business Space Building | Commercial & Services |
| Kelantan | Mualaf Centre Renovation | Commercial & Services |
| Terengganu | Akademik Kulinari Terengganu | Religion |
| | Hotel Grand Puteri | Commercial & Services |
| | MAIDAM Hemodialysis Centre | Health |
| Sabah | *Waqf* Bazaar | Commercial & Services |
| | Mosque Bazaar | Commercial & Services |
| Sarawak | Medan Hamidah Kuching | Commercial & Services |
| Wilayah Persekutuan Kuala Lumpur | Menara Imarah *Waqf* MAIWP | Commercial & Services |
| | Community *Waqf* Bazaar | Commercial & Services |

*Source*: JAWHAR (2014); Putung et al. (2013); Ab. Rahman (2009); Shahrina et al. (2019); Yayasan Waqaf Malaysia (2016)

Overall, the number of *waqf* development projects for all categories were 116 projects. Development projects are dominated by commercial and service categories which record 49 projects across the states. It then followed by 35 development projects through the religious category, 14 development projects through education, 13 development projects through housing, 3 development projects through health, and 2 development projects through agriculture. The summary of *waqf* projects across states in Malaysia is depicted in Table 2.

TABLE 2. Category and Number of Waqf Development Projects

| State | Categories and Number of Development Projects | | | | | | Total of Projects |
|---|---|---|---|---|---|---|---|
| | Religion | Education | Health | Agriculture | Housing | Commercial & Services | |
| Selangor | 3 | 3 | - | - | - | 4 | 10 |
| Malacca | 2 | 2 | - | - | 1 | 3 | 8 |
| Negeri Sembilan | 1 | - | - | - | - | 2 | 3 |
| Johor | 1 | 5 | 2 | 1 | - | 4 | 13 |
| Pulau Pinang | 17 | 3 | - | - | 5 | 6 | 31 |
| Perlis | - | - | - | - | 2 | 2 | 4 |
| Perak | - | - | - | 1 | - | 4 | 5 |
| Pahang | 1 | - | - | - | - | 1 | 2 |
| Kedah | 3 | - | - | - | 2 | 4 | 9 |
| Kelantan | 2 | - | - | - | - | 3 | 5 |
| Terengganu | 3 | 1 | - | - | 1 | 9 | 14 |
| Sabah | - | - | - | - | - | 6 | 6 |
| Sarawak | 2 | - | - | - | - | 1 | 3 |
| Wilayah Persekutuan | - | - | 1 | - | 2 | - | 3 |
| Total | 35 | 14 | 3 | 2 | 13 | 49 | 116 |

*Source*: Yayasan Waqaf Malaysia (2016)

In fact, proper management of *waqf* property would drive the development of the economy and the country. However, many *waqf* land has yet to be used sustainably and optimally even though such land has development potential (Azha et al. 2013; Auditor General's Department of Malaysia, 2014). The distribution of idle waqf land by respective states in Malaysia is shown in Table 3. Kedah recorded the highest percentage of undeveloped waqf land i.e., 99.2 percent, followed by Pahang and Selangor which recorded 97.7 % and 94.1 % respectively. Indeed, insufficient of funds has been the major constraint to the development of *waqf* property (Sanep & Nur Diyana, 2011; Aznan and Syahnaz, 2015; Romli, 2018; Abdullah, 2020). Therefore, the factors that cause this drawback need to be identified.

TABLE 3. Distribution of Idle *Waqf* Land

| State | Overall waqf land area (Hectar) | Developed | | Undeveloped | |
|---|---|---|---|---|---|
| | | Area (Hectar) | (%) | Area (Hectar) | (%) |
| Selangor | 352.67 | 19.71 | 5.9% | 332.96 | 94.1% |
| Melaka | 357.04 | 287.72 | 80.6% | 69.32 | 19.4% |
| Negeri Sembilan | 17.18 | 5.21 | 30.3% | 11.97 | 69.7% |
| Johor | 5,149.10 | - | - | - | - |
| Pulau Pinang | 742.01 | 234.51 | 31.6% | 507.50 | 68.4% |
| Perlis | 83.22 | 10.74 | 12.9% | 72.48 | 87.1% |
| Perak | 20,225.75 | - | - | - | - |

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| | | | | | |
|---|---|---|---|---|---|
| Pahang | 74.60 | 1.74 | 2.3% | 72.86 | 97.7% |
| Kedah | 820.31 | 6.66 | 0.81% | 813.65 | 99.2% |
| Kelantan | 284.92 | 270.52 | 94.9% | 14.40 | 5.1% |
| Terengganu | 484.10 | 388.90 | 80.3% | 95.20 | 19.7% |
| Sabah | 2,130.04 | 2,122.40 | 99.6% | 7.64 | 0.4% |
| Sarawak | 143.68 | 143.68 | 100% | 0.00 | 0.00% |
| Wilayah Perseketuan | 24.27 | 12.93 | 53.3% | 11.34 | 46.7% |

*Source*: Mohamad et al. (2019)

Generally, liquidity risk is a possibility that firms fail to meet their cash obligation within a certain period. For *waqf* institutions, liquidity risk may refer to the shortage of cash to develop *waqf* assets, particularly immovable assets. Romli (2018) argued that insufficient financial resources hinder the expansion of potential *waqf* assets. This claim was supported by several researchers, such as Azha et al. (2013), Ismail et al. (2015), and Mahmood et al. (2017), who emphasized that the lack of financial resources hinders the development of *waqf* land and influences the efficiency of *waqf* institutions. The lack of financial resources faced by *waqf* institutions is because of insufficient liquid assets, such as cash in developing *waqf* assets (Mahmood et al. 2017; JAWHAR, 2017). Most of the *waqf* assets in the country are in the form of fixed (immovable) assets, such as land, and only a small portion is movable assets, such as cash (Sulaiman & Hasan, 2017). For example, of the *waqf* assets in Selangor and Terengganu, 97% and 99.4% are the immovable assets, respectively, and 3% and 0.6% are movable assets, respectively (Table 4).

TABLE 4. Total Fixed Assets (Immovable Assets) and Movable Assets

| State | Immovable Assets | | Movable Assets | |
|---|---|---|---|---|
| | Total (MYR) | Percentage (%) | Total (MYR) | Percentage (%) |
| Selangor | 134 mil | 97 | 5 mil | 3 |
| Terengganu | 92.37 mil | 99.4 | 0.54 mil | 0.6 |

*Source*: Abu Bakar Yang, (2014); Auditor General's Department of Malaysia, (2014); Zulkiflee et al., (2015)

According to Zakaria et al. (2013), the percentage of accumulated cash assets is small because it depends on the contribution of cash *waqf* from the public. Therefore, the amount of cash funds raised in most states in Malaysia is still insufficient to develop large-scale or high-impact *waqf* projects (Sulaiman & Hassan 2016; Mahmood et al. 2017). Puad et al. (2014) agreed that insufficient liquid assets caused *waqf* assets to be underdeveloped and many planned development projects to be unimplemented. Similar issues were raised by Abdullaah and Asharaf (2008), Sanep and Nur Diana (2011), Sulaiman (2012), Hassan et al. (2013), Aznan and Syahnaz (2015), and Kamal and Seman (2017). Kuncorowati et al. (2018) considered insufficient funds to develop idle *waqf* land as high risk and become exacerbated when fail to obtain bank financing due to some conflicts involving *waqf* land ownership. In summary, saying that the liquidity risk faced by *waqf* institutions hinders the development of *waqf* land and in turn affects the efficiency of the *waqf* institutions is not an exaggeration.

Moreover, *waqf* institutions are likely to face credit risk. Credit risk in the perspective of the present study refers to the possibility of the tenant to fail in paying the rent on time. In other words, the tenant fails to fulfill contractual obligations to *waqf* institutions (MAIS, 2016). The failure of tenants to pay rental arrears on *waqf* properties has led to an increase in the total amount of arrears in nine states, reaching nearly RM10 million in 2014, as shown in Table 5. The amount of rent arrears has increased from RM6.5 million in 2012 to RM9.29 million in 2014 (Auditor General's Department 2014). As a result, *waqf* income is insufficient to cover operating costs because *waqf* institutions generate low and unproductive income and suffer from a delay in earning *waqf* income (Ab Fatah et al. 2017). In addition, high operating costs also inhibit *waqf* property development activities (Kuncorowati

et al. 2018). Therefore, the credit risk arising from failure to obtain rental income from *waqf* assets could adversely affect the financial resources of *waqf* institutions because income cannot be generated, which in turn, may result in the inefficient management of *waqf* institutions.

TABLE 5. Rental Arrears

| State | Rental Category | Rental Arrears (MYR) | | |
|---|---|---|---|---|
| | | 2012 | 2013 | 2014 |
| Johor | Flat | 1.58 mil | 1.63 mil | 1.76 mil |
| | Shop office | | | |
| Kedah | Paddy field land | - | - | 1.05 mil |
| | Building/residence | | | |
| Malacca | Business premise | - | - | 420,083 |
| Perak | Shophouse | 274,979 | 269,391 | 368,657 |
| | Terrace house | | | |
| | House | | | |
| Pahang | House | - | - | 13,197 |
| | Shop lot | | | |
| Terengganu | Building/residence | 370,000 | 490,000 | 510,000 |
| | Land | | | |
| Pulau Pinang | Mosque | 3.90 mil | 4.22 mil | 4.56 mil |
| | Flat | | | |
| Selangor | Land | 140,000 | 170,000 | 340,010 |
| | Building/premise | | | |
| Total | | 6.50 mil | 7.03 mil | 9.29 mil |

*Source*: State Islamic Religious Council (MAIN); Auditor General's Department of Malaysia, (2014)

However, financial risk namely liquidity and credit risk that are gripping *waqf* institutions may be moderated by the investment diversification of assets to generate more competitive returns. Drake and Fabozzi (2010) stated that investment diversification with different investment assets produces more competitive returns and leads to a lower moderation of the overall risk. In particular, investment diversification may reduce liquidity risk (Cucinelli 2013; Ha et al. 2015) and credit risk (Chen & Kao 2011). Consequently, the return on investment generated is believed to have a positive impact on institutional management efficiency (Choe et al. 2013; Choi & Min 2017; Bhatia & Thakur 2018). Diversified investments can boost financial resources and add value to strengthen the performance of existing institutional management competencies (Sulaiman & Hassan 2016). Sulaiman and Hassan (2016) emphasized that the Harvard endowment and Yale endowment have successfully used investment diversification approaches to increase financial resources and provide value to strengthen the performance of existing institutional management competencies. The diversification of investments is expected to create an investment dimension that moderates the impact of liquidity and credit risks faced by *waqf* institutions and in turn improves the efficiency performance of *waqf* institutions. In fact, Siti Razifah and Marhanum (2018) emphasize the investment aspect in enhancing the efficiency of waqf institutions. Thus, the efficiency of *waqf* asset management in line with the development success of *waqf* land in Malaysia is directly enhanced (Isamail et al. 2015).

## LITERATURE REVIEW

### ECONOMIC EFFICIENCY CONCEPT

The economic efficiency concept can be explained from the basic concept of the production frontier, which comes from the microeconomic theory of the firm (Cummins & Weiss 2000). Economic efficiency theory states that firms should organize their output to attain the lowest possible cost per unit produced. From another perspective, economic efficiency relates to the way existing resources are allocated. The production frontier is used to define

the relationship between an input and an output. The frontier also depicts the maximum output that can be produced from each level of input. It reflects the current state of technology in the industry (Coelli et al. 2005). A simple production process begins with one output and one input. Firms are operating on the production frontier are technically efficient, whereas firms that operate at a point beneath the production frontier are not technically efficient. Such a firm can become technically efficient by moving toward the frontier. Thus, technical efficiency can be defined as the ability of a firm to produce maximum output at a certain level of input (Coelli et al. 2005). Technical efficiency scores take a value between 0 and 1. A score of 1 reflects full efficiency, and operations are on the production frontier. In contrast, a score below 1 indicates operations beyond the frontier and an inefficient production unit. The difference between 1 and the score measures technical inefficiency.

In the case of multiple inputs and outputs, the firm must select the combination of input at the minimum cost to produce a given level of output to be efficient. This type of efficiency is called allocative efficiency. Allocative efficiency measures the firm's ability in choosing an optimal input mix with a given set of input prices and output level. According to Sengupta (1995), allocative efficiency can be characterized by a conditional cost minimization model, where the firm minimizes the total cost subject to a production function, which may have increasing, diminishing, and constant return to scale.

Farrell (1957) defined overall efficiency as a multiplicative relationship between technical efficiency and allocative efficiency. According to Murillo-Zamorano (2004), later literature has recognized overall efficiency (which was termed by Farrell) as economic efficiency. Carr et al. (1999) used the concept of economic efficiency in evaluating firm performance and state that economic efficiency was calculated relative to the best practices of efficient frontiers, which consist of the dominant firms in the industry.

## EFFICIENCY STUDIES ON WAQF INSTITUTION

According to Laallam et al. (2020), the *waqf* institution acts as a nonprofit organization (NPO) that has the responsibility of managing the funds and property of the Muslim in Islamic countries. Perhaps, the unique and flexible activities of *waqf* institutions can be linked to NPO activities such as education, health, social and religious. Indeed, the performance of NPOs including *waqf* institutions can be based on efficiency and effectiveness (Hyunsoo and Chang, 2018). Nonetheless, the issue of *waqf* institutions efficiency has become one of the topics of discussion among scholars in recent years. It indicates that *waqf* instruments have become more significant to improve the socio-economy of the ummah. Hasan and Ahmad (2014) discussed the conceptual model of *waqf* collection and distribution efficiency. The proposed model is expected to assess the efficiency of *waqf* collection and distribution which in turn provides a detailed analysis of the operational efficiency of *waqf* institutions. They stated that technical efficiency measurement is an accurate indicator of the best management practices of each *waqf* institution studied. However, their study focuses to conceptualize the functions of collection and distribution of waqf. In contrast to Hasan and Ahmad (2014), Pyeman et al. (2016) conducted empirical study on the efficiency of the *waqf* institution without evaluating the efficiency of collection and distribution of *waqf* individually. Their study analyzes the efficiency of the *waqf* institution, following the *waqf* institution is said to be faced with an unbalanced organizational structure. Their findings show that only one *waqf* institution was efficient, whereas 12 *waqf* institutions were found to be inefficient. In other study, Ibrahim et al. (2017) fill in the literature gap by identifying the efficiency of the *waqf* institution in terms of the revenue that can be generated, namely rental income of waqf property and return on investment. They concluded that the ineffectiveness of the 12 *waqf* institutions was due to management inefficiencies in overseeing the use of their input resources (salary expenses, operating expenses, and fixed assets). Siti Razifah and Marhanum (2018) extend the study in efficiency of *waqf* institutions by considering the association with external factors i.e., the absence of standard laws, in addition to the internal factors (human capital, management strategies and the use of technology).

Various indicators have been developed to measure NPO efficiency including fundraising efficiency, public support and fiscal performance, and program efficiency (Hyunsoo and Chang, 2018). The theory of change is applied in developing performance measurement which divides institutional activities into five categories namely input, activity, output, results and impact. The financial ratios are commonly used to measure each efficiency. Furthermore, it is necessary to

evaluate efficiency and performance across multiple dimensions (fundraising efficiency, public support and fiscal performance, program efficiency) to achieve a comprehensive view of institution performance. Therefore, the frontier efficiency methodologies namely Data Envelopment Analysis (DEA) serves a better alternative. The advantage of DEA as compared to financial ratio analysis, is their ability to summarize firm performance in a single statistic that controls for differences among firms using a sophisticated multidimensional framework (Cummins, 1999). DEA had been applied in other NPO efficiency analysis including hospitals, libraries, universities, arts and cultural centers (Hyunsoo and Chang, 2018). Accordingly, most of the efficiency study of *waqf* institutions also used DEA methodology (Hassan and Ahmad, 2014; Pyeman et al. 2016; Ibrahim et al. 2017). As such, this study proposes the DEA method in calculating the efficiency of *waqf* institutions.

## ANTECEDENT OF EFFICIENCY

### LIQUIDITY RISK, CREDIT RISK AND EFFICIENCY

In line with the theory of money demand (Keynes, 1989), the demand for cash functions is a means of exchanging and preserving money in business transactions, monitoring, and speculative. Adequate liquidity indicates the ability of an institution to meet cash flow requirements without affecting its day-to-day operations or financial condition (Rahman & Hasanul Banna, 2016). However, insufficient liquidity of institutions can lead to liquidity risk, impair productivity, and affect the institution's efficiency (Chen et al. 2018).

Meanwhile, default credit theory (Kenan, 1999) explained that credit problems arising from the failure of borrowers to repay their debt and subsequently affect the financial standing of institutions. McNeil et al. (2005) stated that borrowers who fail to meet obligations timely and under agreed terms could expose institutions to credit risk. This exposure would lower institutions' efficiency, which resulting in losses and waste of resources (Hidrus & Abd Rahman, 2013). Consistently, Khan (2003) reported that 80% of an organization's operational failure is due to credit risk. It indicates that credit risk is a risk factor that affects the performance and future growth of an organization.

There are three important measures of risk-bearing capacity namely cash - meeting immediate needs; equity (unrestricted net assets) - to cover losses or for investment purposes; and operating reserves - short-term equity in NPO environment (Roberts et al. 2016). The same report indicated that more than 10% of NPOs in New York City were insolvent and the main cause was financial constraints. Furthermore, Domanski (2016) revealed that the financial risk was often quoted by NPOs in Poland and declared that the lack of liquidity has a major impact on institutions. Through this experience, it is no exaggeration to conclude that financial risk may affect NPO performance. From a *waqf* perspective, empirical studies linking the financial risks with the *waqf* efficiency or performance are rather limited. However, past studies have proven that *waqf* institutions are also exposed to financial risks. According to Khalid et al. (2019), financial risk in the context of *waqf* refers to the reduction in value or loss of *waqf* assets. In fact, Rozalinda (2012) considers that the reduction in the value of *waqf* property was the major risk faced by *waqf* institutions. In addition, insufficient funds have been also classified as high risk for *waqf* institutions (Kuncorowati et al. 2018). Khalid et al. (2019) acknowledged that financial risk can have a tremendous impact on *waqf* institutions, which subsequently forcing the institutions to reduce expenditure and distribution of *waqf* funds. In long-term, financial risk could potentially disrupt *waqf* management and distort the mission of *waqf* institutions in promoting the third sector economy.

### MODERATING EFFECT OF INVESTMENT DIVERSIFICATION

According to the Portfolio Theory, the diversification of investment can generate an optimal return on investment and reduce risk (Spuchľakova et al. 2015). Brealey et al. (2011) proved the relevance of portfolio theory to explain the impact of risk reduction by optimizing investment diversification with different risk rates. Drake and Fabozzi (2010) confirmed that investment diversification is a strategy applied to reduce risk exposure; combining various investment assets (e.g., stocks, bonds, and mutual funds) into one portfolio group to diversify investment through different assets can generate a higher return on investment and lower risk. Specifically, Lo et al. (2003) and Rarimohan (2001) argued that optimizing liquidity through investment diversification can significantly reduce liquidity risk exposure without affecting investment returns. High

liquidity resulting from a high return on investment has the effect of increasing the size of the liquidity of an organization or institution (Black 2013). Siti Latipah et al. (2012) found that the increase in the return on real estate investment trusts (REITs) over the past 3 years reflects the reduction in liquidity risk in REITs in Malaysia in 2007–2009.

In relation to the management of cash *waqf* investments, the Resolution No. 140 (15/6) of International Fiqh Academy highlighted the necessity to diversify the investments to minimize risk. Accordingly, Abdel Mohsin (2013) emphasizes the need to create an investment framework for waqf institution that could provide cash for the purpose of social and economic activities among Islamic countries. In Cash *Waqf* Fund Investment (CWFI) framework by Abdel Mohsin (2013), she suggested a variety of investment contracts that can be entered into by waqf institutions. These include Murabahah contracts which are categorized as low risk investments, while Mudharabah and Musyarakah contracts as high-risk investments. The diversification of investments under this framework aims to balance between risk and returns of *waqf* institutions. In consideration to preserve the requirements of *waqf* investment in Shariah law, CWFI framework is however suggested a specific percentage needs to be allocated in each investment contract.

In Singapore, musharakah sukuk (bond) investments have been enhanced and highlighted the true value of *waqf* assets in Singapore (Shamsiah 2010). Sukuk investment in Singapore demonstrates the ability to promote liquidity, in which returns could potentially reduce the liquidity risk and be retained for future financing (Musari 2016). Sukuk is also utilized by Awqaf Property Investment Fund to raise funds needed for *waqf* development. Moreover, Mahamood et al. (2009) stated that unit trusts have the potential to become a financial instrument that can be applied as a new form of *waqf* to minimize liquidity risk. In fact, unit trusts are growing and rapidly expanding in Islamic countries in offering diversity in Islamic investment mechanisms.

## METHODOLOGY

Review of past studies were conducted to identify the relevant theories and empirical evidence related to efficiency, liquidity risk, credit risk and investment diversification. As the previous studies related to the efficiency and financial risk of waqf institutions are very limited, review of literature was extended to NPO. The nature of NPO is considered to be closest with the nature of waqf institutions (Laallam et al. 2020), which have three categories of assets namely money, goods and property, and services (Khalid et al. 2019). However, research procedures have been done carefully to ensure that only the basic concepts of the subject matter (i.e., efficiency, financial risk and investment diversification) are applied within the proposed conceptual framework. The measurements of variables in this study namely efficiency, liquidity risk, credit risk and investment diversification are adapted to the nature of waqf institutions by considering the general definition of these variables, including those definitions from non-profit institutions perspective.

## CONCEPTUAL FRAMEWORK FOR *WAQF* INSTITUTION EFFICIENCY

As far as efficiency research is concerned, the relationship between financial risk and efficiency in non-profit organizations has been rarely explored in depth. The role of investment portfolio diversification on the impact of financial risk on the efficiency of nonprofit organizations has also not been explored. Thus, based on the waqf issues and the literature discussed previously, the present study proposes a conceptual framework that associates efficiency, financial risk, and investment portfolio diversification in non-profit organizations (i.e., *waqf* institutions), as depicted in Figure 1.

The conceptual framework has two interdependent stages. In the first stage, the efficiency score of *waqf* institutions is calculated. Data Envelopment Analysis (DEA) can be applied to measures the efficiency scores of *waqf* institutions. In the second stage, the linkage between the external variables and the efficiency of *waqf* institutions is investigated. Tobit regression analysis can be used to examine the relationship, where the efficiency scores from the first stage are treated as dependent variables, whereas liquidity and credit risk as independent variables. The second stage is completed by the identification of the investment diversification as a moderator that affects the relationship between external variables and the efficiency of *waqf* institutions.

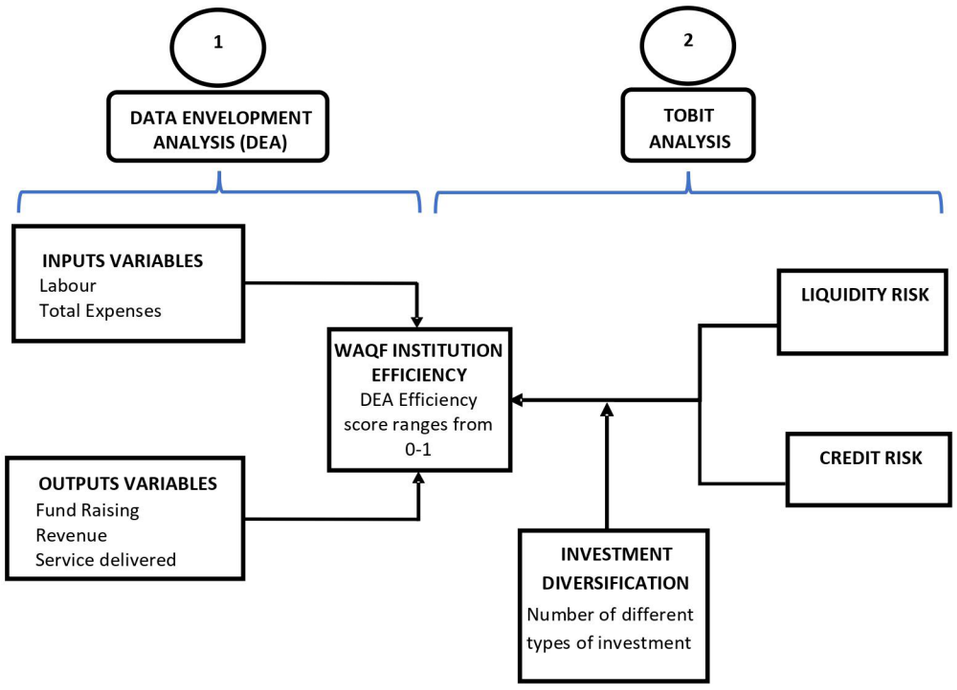


FIGURE 1. Conceptual Framework for *Waqf* Institution Efficiency

The efficiency score obtained using DEA can determine the range of efficiency scores from 0 to 1. The efficiency score is the benchmark for the most efficient *waqf* institutions and a best practice for other *waqf* institutions in assessing their efficiency performance. DEA requires traditional inputs and outputs. Some previous studies have used a production approach with specific input and output specifications. In addition, previous studies have addressed the input and output specifications for *waqf* institutions from banking institutions perspective (Sufian, 2009; Sufian, 2010; Nor Hayati et al. 2010) and *zakat* institutions (Norazlina & Abdul Rahim 2012, 2013, 2015). Hasan and Ahmad (2014) studied the efficiency of *waqf* institutions in Malaysia using the number of staff, the number of bank agents, and the total expenditure as input variables and the output is the total amount of *waqf* contribution. Similarly, Pyeman et al. (2016) measured the efficiency of *waqf* institutions in Malaysia using the number of staff and accumulated *waqf* funds from the government as input variables and the value of the *waqf* project and the total contribution of the *waqf* fund as output variables.

However, the present study suggests the intermediation approach in selecting input and output variables (Hasan and Ahmad 2014). This approach is appropriate because *waqf* institutions are seen as an intermediary between a *waqf* contributor and a *waqf* beneficiary (Ibrahim et al. 2017). This study identifies labor and total expenses as input variables and fundraising, revenue, and services delivered as output variables. The number of employees refers to the total number of staff in each *waqf* institution in Malaysia. Employees are served as an important resource in achieving organizational objectives (Norazlina & Abdul Rahim 2013). The total expenditure is the total management expenditure that has been spent in each *waqf* institution. Raised funds include the amount of funds that have been received from various parties, such as individuals and organizations. The revenue of the institution refers to the income earned from investment income and rental income of *waqf* assets. Services delivered is the value of *waqf* projects, which refers to the cost of completed *waqf* projects. The input and output variables are listed in Tables 6 and 7.

TABLE 6. Input Variables

| Input | Measurement |
|---|---|
| Labour | Number of employees |
| Total expenses | General Management Expenses |

TABLE 7. Output Variables

| Output | Measurement |
|---|---|
| Fund raising | *Waqf* fund collection |
| Revenue | *Waqf* revenue |
| Services delivered | *Waqf* project value |

In the second stage, the Tobit regression analysis is conducted. The efficiency score obtained from the first stage is treated as a dependent variable, whereas the liquidity and credit risk are treated as independent variables, whereas investment diversification as a moderator. The regression analysis is used to determine separately the effect of these variables on efficiency.

## LIQUIDITY RISK

In setting measurements for liquidity risk and credit risk for *waqf* institutions, it is worth to understand that *waqf* institutions like other NPO are not intended to increase the value (in terms of earning/ dividend) of shareholders. Thus, most of the financial ratios used in profit organizations are not suitable to be used to evaluate *waqf* institutions. However, some financial ratios are still applicable but with different formulas. Usually, the financial ratios used for evaluating the NPOs are not subject to optimal theoretical value but rather as a benchmark to compare with the same institution (benchmarking) or for certain periods (trend analysis) (Cashwell, 2019). According to Cashwell (2019), liquidity ratio can be used based on day cash on hand.

Day cash on hand measures the number of days whose expenses can be covered by cash and cash equivalent. This ratio involves the sum of cash and cash equivalent and is divided by total expenses. However, depreciation should be deducted from total expenses. This is because NPOs as well as *waqf* institutions do not require cash outlay. High ratios indicate that institutions have a stronger liquidity position. From a risk perspective, institutions with low liquidity are exposed to high liquidity risk. Generally, a high value of day cash on hand, indicates high liquidity ratio and carries low liquidity risk. Thus, a low liquidity ratio exposes institutions to liquidity risk (Ab-Rahim et al. 2012; Said et al. 2013; Mohamad and Abd Wahab, 2016). Therefore, concerning the similar nature between NPO and *waqf* institution, this study suggests to adopt day cash on hand as measurement for liquidity ratio. Consequently, this study expects a negative relationship between liquidity risk and the efficiency of *waqf* institutions, where high liquidity risk results in low efficiency. Therefore, this study proposes the following hypothesis.

$H_{A1}$: Liquidity risk has a negative impact on the efficiency of *waqf* institutions.

## CREDIT RISK

Institutions exposed to credit risk are likely to have low levels of institutional efficiency (Fiordelisi et al. 2011; Ab-Rahim et al. 2012; Hidrus & Abd Rahman, 2013; Mohamad & Abd Wahab, 2016). Generally, credit risk can be measured through loss ratio, which is the ratio between total amount of unrecoverable debt against total outstanding debt. However, the loss ratio is not applicable for *waqf* institutions as it has no debt or liability as prescribe under Malaysian Financial Reporting Standard 139. Indeed, Malaysian Accounting Standards Board (MASB, 2014), pg. 57 stated that:

"… a mutawalli's obligation may not be a financial liability under MFRS 139. The mutawalli usually has an obligation to provide services or benefits for the betterment of ummah, and not a contractual obligation to deliver cash or another financial asset to another entity".

According to McNeil et al. (2005), borrowers who fail to meet obligations timely and under agreed terms could expose institutions to credit risk. This context is more relevant to define credit risk in the context of *waqf* institution. The *waqf* institution owns a number of rented properties and there are tenants who fail to pay the rent within the stipulated period. Meanwhile, the income earned from this rental is very much needed by the *waqf* institution for management expenses, maintenance of waqf assets, investment and beneficiary benefits (Farhana et al. 2015). Therefore, the measurement of credit risk can be calculated as the variation of ratio between rent arrears of *waqf* assets to total rental income from *waqf* assets. Through this measurement, the credit risk indicates the potential of a significant loss due to increasing debt arrears that institutions have to bear (Obert & Olawale, 2010; Spuchľakova et al. 2015). As the arrears of rental for waqf assets continue to increase (Auditor General's Department, 2014), this study expects a negative relationship between credit risk and the efficiency of *waqf* institutions. Therefore, this study proposes the following hypothesis.

$H_{A2}$: Credit risk has a negative impact on the efficiency of *waqf* institutions.

## INVESTMENT DIVERSIFICATION

Altheebeh (2016) suggested 9 types of investments for *waqf* funds includes investments in real assets (commodities or real estate), securities (equity or

stocks, fixed income (sukuk), savings, and mutual funds), creating productive projects, service projects, agriculture activities and three types of *istibdal*. Mohammed Noor and Awang (2013) stated that some *istibdal* have been implemented in Malaysia. The diversity of investments invested should also consider a certain percentage in each type of investment entered. This percentage depends on the agreement between the parties involves in the investment contract or which has been approved by the State Fatwa Committee Meeting. For example, in the case of *Perbadanan Wakaf Selangor*, 70% of the 50% of revenue earned from the rental of *waqf* property is allocated for investment, while the remaining 30% is used for charitable purposes (Farhana et al. 2015). The investment model from Abdel Mohsin (2013) also proposes a diversification of cash *waqf* investments into high and low risk investment contracts. This model suggests 10% to be invested in musharakah contracts (high risk), 10% in mudharabah (high risk) and 30% in murabahah (low risk). Investment diversification is measured using the total number of investments undertaken by each *waqf* institution. Return generating investments increase financial resources (Brealey et al. 2011) and improve the performance efficiency of firm management (Choi & Min 2017). Thus, based on portfolio theory, investment diversification may create a moderating effect between liquidity risk and credit risk on the efficiency of *waqf* institutions. Therefore, this study proposes the following hypotheses.

$H_{A3}$: Investments diversification moderates the impact of liquidity risk on the efficiency of *waqf* institutions.

$H_{A4}$: Investments diversification moderates the impact of credit risk on the efficiency of *waqf* institutions.

The measurement of variables is defined and summarized in Table 8.

TABLE 8. Variables and Measurements

| Variables | Measurement |
|---|---|
| Efficiency | 0 - 1 |
| Liquidity risk | Day cash on hand |
| Credit risk | Variance of rent arrears of waqf assets to total rental income from waqf assets |
| Investment diversification | Total number of investments |

## CONCLUSION

The suggested conceptual framework is expected to provide an overview of the effect of financial risks on the efficiency of *waqf* institutions. Two financial risks, namely, liquidity and credit risk, are considered detrimental to the efficiency of *waqf* institutions in Malaysia. Moreover, this conceptual framework foresees investment diversification as one of the risk mitigations measures that can be used by *waqf* institutions. The impact of liquidity and credit risk on the efficiency of *waqf* institutions may be minimized using an investment diversification strategy.

However, this strategy needs to be tested empirically to obtain a clear causal relationship and a high degree of reliability among liquidity risk, credit risk, investment diversification, and efficiency of *waqf* institutions. Subsequently, the results of empirical studies can be interpreted as a specific study population. Overall, this model is expected to highlight the role of financial risk management in increasing the potential of *waqf* assets and bring greater benefits to the community and the nation. Thus, *waqf* institutions can extend the aspects of charitable services more efficiently and effectively to the Ummah.

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