

# TOWARDS THE DEVELOPMENT OF FINANCIAL INCLUSION INDEX USING ISLAMIC FINANCE APPROACH: MALAYSIA'S SETTING

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**Abstract:** *The aims of the study are to examine data availability and develop a conceptual framework for the computation of an integrated Islamic finance-based index of financial inclusion in Malaysia. In determining the level of financial inclusion, systematic indicators are inconclusive particularly on its measurement based on Islamic finance. This study employs a self-administered questionnaire and secondary data from two important institutions in Malaysia which administer zakat and waqf. It is found that, although the wealth distribution indicators i.e., zakat and waqf are available for the index's data source, the data that could be used to rate financial inclusion using Islamic finance approach are still incomplete and limited. It is hoped that the findings on data availability and suggested conceptual framework would be useful for the development of Islamic finance-based index of financial inclusion.*

**Keywords:** Islamic finance, financial inclusion, index, *zakat*, *waqf*, wealth distribution.

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## 1. Introduction

The focus of financial inclusion is both to boost a country's economic growth and to alleviate poverty and minimize the gap between the have and the have-not within a country. Malaysian Financial Sector Blue Print (FSBP) 2011-2020 mentions that pursuing the financial inclusion agenda means all members of society can participate in the formal financial system. This will continue to be an essential aspect of Malaysia's inclusive growth effort. Access to finance will enable public, including the low-income and rural population, to have the chance to undertake financial transactions, produce income, generate assets and shield themselves financially against unforeseen situations, thus allowing them to gain advantage from economic development. This will, in turn, contribute to balanced and sustainable economic growth and development (Bank Negara Malaysia, 2011). These become the important roadmap of financial inclusion framework in Malaysia which is to create 'an inclusive financial system that best serves all members of society, including the underserved, to have access to and usage of quality, affordable essential financial services to satisfy their needs towards shared prosperity' (Bank Negara Malaysia, 2015).

Iqbal & Mirakhor (2013) states that conventional finance is less successful in driving financial inclusion since its financial instruments do not deeply target the disadvantaged group. Though there is a microfinance instrument, its efficiency is constrained by the profit

motive and the rejection of the microfinance institutions to tolerate higher risks (Elrahman & Saaid (2014). This leads to Alternative to this is

As the effect of this, those who are extremely poor are usually left behind. However, to achieve the real objective of financial inclusion, not only the role be played by the conventional financial services providers, but also by the Islamic financial system through its various instruments which deemed to be more comprehensive. The concept of financial inclusion is not a strange concept to Islamic finance because Islam itself emphasizes inclusion, equality and justice (Iqbal & Mirakhor, 2013). It is believed that only through the integration of the Shariah-based instrument, the level of access to finance can be improved. It can be said that the Islamic financial system has a more comprehensive framework in addressing financial inclusion, especially involving those 'unbankable' individuals.

Except for Ben Naceur et al. (2015) and Zulkhibri (2016), it is worth noted that although the discussion on the role of Islamic finance in financial inclusion is largely mentioned in the previous studies, those discussions are rather normative than positive. These studies are very much lacking in terms of empirical evidence to support their arguments. In this regard, it could be suggested that the evidence on how Islamic finance deals with financial inclusion remains unclear.

The little empirical research on the impact of Islamic finance towards access to finance may be partially explained by the issue of financial inclusion measurement. Empirically examining the link between the two is particularly challenging given a uniform measure of financial inclusion using the Islamic finance approach does not exist.

The present study is timely in providing a picture of the need for Islamic finance-based financial inclusion measurement through wealth distribution pillar i.e., *zakat*<sup>1</sup> and *waqf*<sup>2</sup>, and further proposing the development of the index.

The next section provides a review of literature on the subject matters. The methodology and results are presented in the following sections, respectively. The discussion and conclusion are presented in the last section.

## 2. Literature Review

### 2.1 Financial Inclusion in Malaysia

With approximately 2.5 billion people still excluded from financial services [Consultative Group to Assist the Poor (CGAP), 2009], this field of research has attracted many researchers

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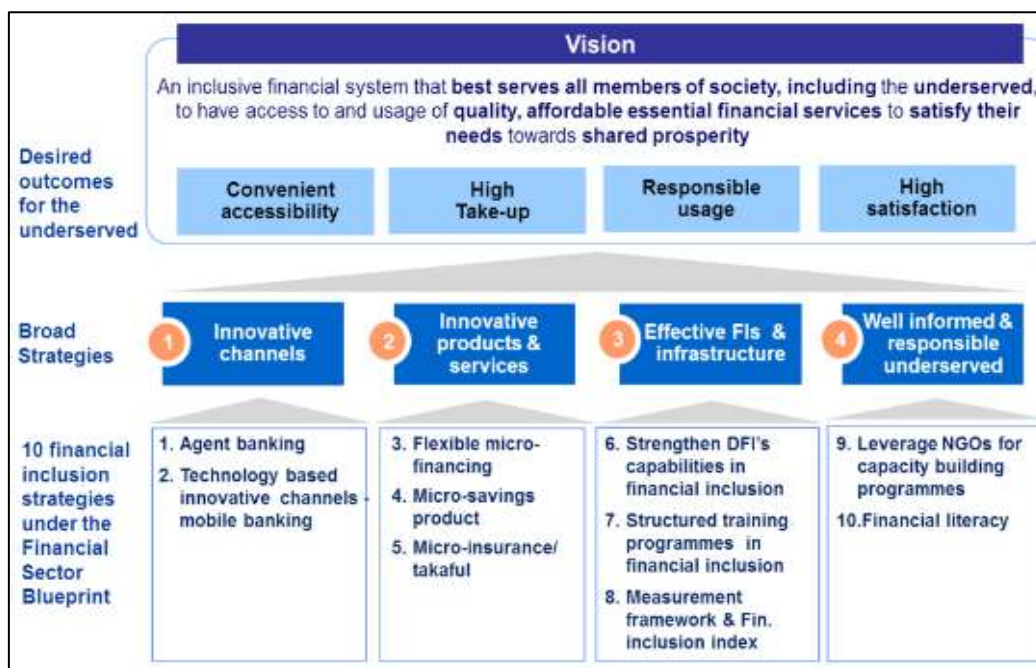
<sup>1</sup> *Zakat*, or almsgiving, is one of the five pillars of Islam, along with prayer, fasting, pilgrimage and belief in Allah and His Messenger. The literal meaning of *zakat* is 'to cleanse' or 'purification'. In the Islamic faith, *zakat* means purifying your wealth for the will of Allah SWT; to acknowledge that everything we own belongs to Allah SWT and to work towards the betterment of the Muslim ummah. According to Islamic regulations, *zakat* is 2.5% of one year's total cumulative wealth. This amount is then distributed to the poor.

<sup>2</sup> Literally *waqf* means to stop, contain, or to preserve. In shari'ah, a *waqf* is a voluntary, permanent, irrevocable dedication of a portion of one's wealth – in cash or kind- to Allah. Once a *waqf*, it never gets gifted, inherited, or sold. It belongs to Allah and the corpus of the *waqf* always remains intact. The benefit of the *waqf* may be utilized for shari'ah compliant purpose.

around the world (see, for example, US- (Jacobson, 1995; Caskey, 1997; Hogarth & O'Donnell, 1999; Lee, 2002; Aizcorbe, Kennickell, & Moore, 2003). UK- (Budd & Campbell, 1998; Whyley, McCormick, & Kempson, 1998; Kempson & Whyley, 1998; Rowlingson, Whyley, & Warren, 1999; Kempson et al., 2000; Hayton, 2001; Devlin, 2005). Scandinavia- (Hohnen, 2007). Canada- (Buckland & Simpson, 2008). Australia- (Chant Link and Associates, 2004; Howell & Wilson, 2005). Despite that, Carbo, Gardener, & Molyneux (2007) conclude that many areas of financial exclusion in the developed world have similarities to those in the developing world. The discussions on financial exclusion are now shifting to promote financial inclusion (see for example Beck, Demirguc-Kunt, & Martinez Peria, 2008; Beck, Demirguc-Kunt, et al., 2007; Sarma & Pais, 2011).

Malaysia particularly has taken this matter seriously as financial inclusion acts as an engine to contribute for balanced as well as sustainable economic growth and development. In 2009, in transforming Malaysia into a high-income economy, supported by sustainable growth, the New Economic Model (NEM) is introduced by the Malaysian Government. Inclusiveness, alongside high income and sustainability, is one of the important desired outcomes of this vision. The participation of the bottom 40% of the households based on income stratification in the overall economic and financial sector growth is seen as key in achieving economic prosperity as well as sustaining social cohesion (Bank Negara Malaysia, 2016).

The prime function of Bank Negara Malaysia in promoting a sound, progressive and inclusive financial sector is expressed in the Central Bank of Malaysia Act 2009 to further reinforced Bank Negara Malaysia's strategic focus on driving financial inclusion policies. In fulfilling the financial inclusion mandate, a holistic framework has been articulated within BNM's Financial Sector Blueprint (FSBP) 2011-2020 to improve the overall well-being of communities on the aspects of convenient accessibility, high take-up, responsible usage and high satisfaction of financial services (see Figure 1).



Source: Bank Negara Malaysia (BNM)

**Figure 1: Holistic Financial Inclusion Framework for 2011-2020**

The vision of the financial inclusion framework is to create an inclusive financial system that best serves all members of society, particularly the underserved, to have access to and usage of quality, affordable essential financial services to satisfy their needs towards greater shared prosperity. The attainments of the vision are measured through the desired outcomes for customers, namely convenient accessibility, high take-up, responsible usage and high satisfaction of financial services.

The FSBP has acknowledged ten main action plans based on the strategic outcomes via innovative channels and products and services, empowerment of the disfavoured group with financial knowledge and strengthening the financial institutions and infrastructure. The implementation of these action plans is currently being carried out and are at various stages of completion.

At the international level, BNM has become a strong advocate for the financial inclusiveness agenda. This can be proved by the meaningful contributions and active participation in the Alliance for Financial Inclusion (AFI) and ASEAN Working Committee on Financial Inclusion (WC-FINC). On top of that, BNM has collaborated with the Irving Fisher Committee on Central Bank Statistics, AFI, Organisation for Economic Co-operation and Development (OECD) and World Bank for capacity building programmes, organised for global policymakers on financial inclusion. BNM also has partnered with Asian Banking School in developing leadership and technical training to micro finance practitioners in the region<sup>3</sup>.

With regard to the measurement of financial inclusion, BNM has developed an index of financial inclusion (IFI) to measure the effectiveness of formal financial institutions in delivering financial products and services to all members of society. This is an essential mechanism to trace down the progress of initiatives and estimating the impact of policies to have greater access to the financial sector. A nationwide IFI also provides a comprehensive view of the development of an inclusive financial system, further enhancing the transformation efforts made by the government (Abd Rahman, 2013).

The index takes into account the experiences and methodologies developed for the computation of well-known development indexes such as the human development index, the multi-dimensional poverty index and the gender inequality index and work undertaken by the Alliance for Financial Inclusion (AFI), with several new elements. Using the 'core set' of indicators formulated by the AFI financial inclusion data working group (FIDWG), BNM constructed the financial inclusion key performance indicators by defining four dimensions of financial inclusion for Malaysia (see Table 1). The index rates the level of financial inclusion, measuring the extent to which the general population has access to financial services by examining access and usage of formal financial intermediaries as well as the quality of financial services. The strengths and weaknesses of each dimension could also be analysed through the sub-indexes underlying the overall IFI (Abd Rahman, 2013).

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<sup>3</sup> For more details on the activities and achievements from these collaborations, refer [http://www.bnm.gov.my/index.php?ch=fi&pg=fi\\_ovr&ac=471&lang=en](http://www.bnm.gov.my/index.php?ch=fi&pg=fi_ovr&ac=471&lang=en)

**Table 1: Key performance indicators for measurement of Index of Financial Inclusion (IFI) in Malaysia**

Dimension	Key Performance Indicators
<b>Convenient Accessibility</b>	% of sub-district with at least 2000 population with at least 1 access point
	% of population living in sub-district with at least one access point
<b>Take-Up Rate</b>	% of adult population with deposit accounts
	% of adult population with financing accounts
	% of adult population with life insurance/takaful policies
<b>Responsible Usage</b>	% of customers with active deposits
	% of customers with performing financing accounts
<b>Satisfaction Level</b>	% of customers who are satisfied
	– Overall financial services

Source: Bank Negara Malaysia

Depending on the values of IFI, the results are categorized into the four following categories:

- i.  $0.75 < IFI \leq 1$ : high financial inclusion
- ii.  $0.5 \leq IFI < 0.75$ : above average financial inclusion
- iii.  $0.25 \leq IFI < 0.5$ : moderate financial inclusion
- iv.  $0 \leq IFI < 0.25$ : low financial inclusion

Based on a study done in 2011 by Abd Rahman, Z. (2013), the score of financial inclusion for the general population in Malaysia as measured by the IFI is high, i.e., at 0.77. However, the sub-index of access points is lower as compared to the other dimension. Whereas the level of financial inclusion for the low-income group<sup>4</sup> is reported to have a lower score for IFI i.e., 0.68 compared with the general population in Malaysia. Take-up rate requires specific attention to tackle financial inclusion for this underserved group. In another study, the IFI score for the general population in Malaysia has improved significantly to 0.90 in 2015 from 0.77 in 2011 (Martinez, 2017). Factors contribute to these improvements are increased accessibility to financial access points across the country, more responsible usage of products and higher levels of satisfaction among financial consumers. However, there are still gaps in the utilisation of financial products and services, especially among low-income households (Martinez, 2017).

Nevertheless, as far as the role of Islamic finance towards financial inclusion is concerned, the current measurement framework of IFI is lacking in terms of Islamic finance dimensions which could provide better trace and understanding on the subject matter. With this regard, the computation of financial inclusion index using Islamic finance dimensions is warranted.

## 2.2 Islamic Finance Promotes Financial Inclusion

The main weakness of the conventional perspective of financial inclusion measurement is its failure to acknowledge the concept of wealth redistribution as what had been recommended in Islam. There are also issues in relation to the microfinance industry which has restricted its effectiveness such as the issue of high-interest rates, lack of appropriate product design,

<sup>4</sup> In this scenario, low income is defined as the segment of population that earns less than RM1,000 (\$330) per month.

diversion of the fund and lacking skills of the recipients (Iqbal & Mirakhor, 2012). These issues are coupled with the issue of voluntary self-exclusion by capable Muslims to engage with the financial system based on religious grounds (Ahmed, 2013). As a result, access to the financial system is not comprehensive and importantly, it does not reach those who are extremely poor. These are the issues ignored in discussing the country's financial inclusion and perhaps the reason that the financial inclusion index is low in most emerging markets that are predominantly with Muslim population (Demirgüç-Kunt, Beck, & Honohan, 2008).

Theoretically, the Islamic financial system plays an important role in promoting welfare in the society through its prohibition of *riba* (interest), speculation and gambling (Chapra, 1992). It places equal emphasis on the ethical, moral, social, and religious dimensions, to enhance equality and fairness for the good of society as a whole. With the application of the work ethic, wealth distribution, social and economic justice and the role of the state, the Islamic financial system considers being more welfare-based financial system as compared to its counterpart. In this regard, it can be suggested that an Islamic-based financial system is theoretically better in promoting financial inclusion.

According to Mohieldin, Iqbal, Rostom, & Fu (2012), financial inclusion from the Islamic perspective can be tackled in two ways: first, inclusion through risk-sharing, and second, through the instruments of redistribution. Risk sharing is claimed to be the objective of Islamic finance (Mirakhor, 2010) and as an alternative to conventional financing which targets both financial and social inclusion simultaneously. It involves the sharing-based contracts, where both lender and borrower are entitled to the realized profit or liable for the loss realized according to their shares specified in the contract (Erbas & Mirakhor, 2010).

However, Hasan (2015) argues that risk sharing is not basic to Islam. Islam approves profit-and-loss sharing; sharing of risk is a consequence of that, not its cause. On a different note, Rosly (2012) states that risk-sharing and risk-taking are basically two sides of the same coin; the former encompasses the financing of capital while the latter involves business operations that create cash flows. This has been the true meaning of *al-bay'* that the Quran intends to convey as opposed to *riba*. When economies under financial crisis are looking for an alternative to interest-based debt financing, embracing Islamic risk behaviour in both forms (i.e., risk-taking and sharing) is the pleasing alternative. This is very much consistent with what has been outlined by Halim (2001) who shed light on the type of contracts involved in Islamic finance. The term *al-bay'* comprises of both risk-sharing contracts (i.e., *al-mudharabah* and *al-musharakah*) as well as risk-taking contracts [i.e., *salam sale (bay' al-salam)*, sale on order (*bay' al-istisna*), and leasing (*al-ijarah*)]. Thus, by practicing the true essence of risk-sharing and risk-taking modes of commerce, it could promote better financial inclusiveness as the system emphasizes the widest distribution of risk and reward through the whole society (Kamali, 2002).

On top of that, the concept of redistribution of wealth is based on the concept of a balanced society in Islam that tried to avoid the occurrence of extreme wealth and poverty. Among the redistribution instruments that can be used are *zakat* and *waqf*. These two instruments are a form of wealth transfer and it reaches to the needy, parallel with the Islamic principles of property rights for all.

*Zakat*, as one of the pillars in Islam, is an ordained rule for wealth redistribution that targets the needy, which the results can improve their poverty line. It is not charity but an obligation

for Muslims. It can be defined as a form of flat-rate social security tax earmarked for redistribution of wealth (Erbas & Mirakhor, 2010). Empirically speaking, the evidence on the impact of access to finance via *zakat* so far is substantial. Results revealed that effective *zakat* collection and distribution reduces poverty incidence, reduces the extent of poverty, lessens the severity of poverty, reduce income inequalities (Mohd Ali, Rashid, Johari, & Muhammad, 2015; Bashir, 2018), help both the poor and needy to meet their consumption of basic needs (Abdullah, 2018) as well as could improve educational equity among Muslim urban poor students (Mohd Radzi & Kenayathulla, 2017).

Another instrument, the *waqf*, also seeks to mobilize a large number of financial resources in a way which the contributors endow the stream of income accruing to a property for a charitable purpose in perpetuity (Iqbal & Mirakhor (2013). Access to this instrument is recognized to be a powerful tool for poverty alleviation (Abdul Rahman, R. Muhammad, Ahmed, & Amin, 2016; Shaikh, Ismail, & Mohd Shafiai, 2017). With regard to prior discussion and analysis concerning the impact of *waqf*, among others, Mikail, Ahmad, & Adekunle (2017) notes that apart from *zakat* and micro-takaful, *waqf* provides social securities and socio-economic support to low-income households in societies. Specifically, the strength of *waqf* in the economy has indeed impacted the development of the education system (Mahamood & Ab Rahman, 2015; Mujani et al., 2017; Huq & Khan, 2017) and have great potential to help the poor and needy in meeting their housing needs (Rashid, Mohd Fauzi, & Hasan, 2018) and also access to finance for enterprises (Sahiq et al., 2016).

Therefore, financial inclusion should go beyond conventional, by considering the potential of the Islamic financial instruments in the mission of poverty alleviation and community development. Especially for Muslim countries, where its redistributive instruments are already institutionalized, then the ability of these tools to enhance the access to finance should be considered to create an inclusive financial system. For example, according to a report by (MIFC, 2015), the collection of *zakat* and various Shariah-based microfinance programs offered in Malaysia, Indonesia and Bangladesh have managed to raise the living standards of low-income groups and increase the number of entrepreneurs in these countries, as they helped to increase the involvement of low-income groups in the financial sector. On top of that, it is suggested that *awqaf*, *qard-al-hassan*, *sadaqa*, and *zakah*, can play a role in bringing more than 40 million people, who are financially excluded for religious reasons, into the formal financial system (Zulkhibri, 2016).

### 3.0 Methodology

For data collection, this study uses a mixed-method approach, i.e., questionnaire and secondary data instrument. The survey instrument for data source identification for measurement of integrated Islamic finance-based financial inclusion is modified based on a survey developed for a project by the European Commission (2016)<sup>5</sup>. The questions are open-ended questions grouped under six sections as follows:

- A. Contact details
- B. General information
- C. Data on *Waqf/Zakat* covered in the data source
- D. Obstacles to generate data and constraints for using data

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<sup>5</sup> The purpose of the project is to create a database and develop a model to estimate the occupational exposure for a list of hazardous chemicals in the Member States of the European Union and in the EFTA/EEA countries.

- E. Proposals for improvement
- F. Additional information and comments

In the first stage, self-administered questionnaires are personally distributed to two important staffs at Jabatan Waqaf, *Zakat* dan Haji (JAWHAR) and one staff at Yayasan Waqaf Malaysia (YWM). The respondents are the key person from the respective institutions who directly involved in the data sources. These institutions act as the data resource centre for *waqf* and *zakat* in Malaysia. Prior to the distribution, a pilot test was conducted on five staffs from Islamic financial institutions which the result then translated into some minor changes to the original questionnaire. The results of this survey presented in the next section.

In the second stage, from the information gathered through the questionnaire, data on related indicators for the computation of integrated Islamic finance based financial inclusion index is collected. The data is derived from archival data downloaded from the institutions' websites. The findings of this data collection discussed in the following section.

On top of that, a conceptual framework for integrated Islamic finance-based index of financial inclusion computation is developed based on the data collection. The framework is deliberated in section 4.2 below.

## 4.0 Results

This section presents the results of the data on Islamic finance dimensions as well as the development of an integrated Islamic finance-based index of financial inclusion.

### 4.1 Data on Islamic finance dimensions

This sub-section presents the results of the data collected from the questionnaire and secondary data. For the survey, the results are presented in Table 2 below.

**Table 2: Data source identification for the development of integrated Islamic finance based financial inclusion index in Malaysia**

Authority / Company / Organization	Jabatan Waqaf, Zakat dan Haji (JAWHAR)	Yayasan Wakaf Malaysia (YWM)
<b>B. General information</b>		
The name/title of the data source	Statistik <i>Zakat</i>	Laporan Tahunan YWM
The originator/owner of the data source (institution/authority etc.)	States' Islamic Religious Council	YWM
The owner of the data in the data source	States' Islamic Religious Council	YWM
The legal background of the data collection	-	-
The reason(s) that the data is collected	Regular compliance monitoring	Regular compliance monitoring
The time period of data collection	5 years (2014 to 2018)	7 years (2011 to 2017)
Language(s) is (are) covered in the data source	Malay	Malay
Geographical area(s) is (are) covered in the data source	Every 14 states of Malaysia	National/macro data
Fees for using the data source	No fee	No fee
Constraints (others than user fees) for	No	No

Authority / Company / Organization	Jabatan Waqaf, Zakat dan Haji (JAWHAR)	Yayasan Wakaf Malaysia (YWM)
using the data source?		
C. Data on <i>Waqf/Zakat</i> covered in the data source		
Number of indicators/variables of <i>zakat/waqf</i> are covered in the data source	Two	Two
Indicator(s)/variable(s) is (are) used for <i>zakat/waqf</i> measurement	i. Collection of <i>zakat</i> ii. Distribution of <i>zakat</i>	i. Collection of cash <i>waqf</i> ii. Distribution of cash <i>waqf</i>
The (legal) criteria used for indicators/variables included in the data source.	No	No
D. Obstacles to generate data and constraints for using data		
Main obstacles to generate data at state and national level AND to make this data available to all stakeholders like employers, employees, academician, researchers or national and Malaysian authorities	Data is incomplete for several years because the data is from the state's Islamic Religious Council (SIRC), which has authority for not giving out the information to the institution.	-
Opinion on possible obstacles to overcome the obstacles.	-	-
Reasons for constraints using the data source.	The confidentiality of the data is at risk, and SIRC does not want any misinterpretation of the data to reflect negatively towards them.	-
E. Proposals for improvement		
Data that is not collected but should be collected in Malaysia or worldwide.	-	-
Ideal data format (data structure) for information collection.	-	-
F. Additional information and comments		
Comments or information about the data source that is considered relevant and not yet covered in the questions.	-	-

In summary, the findings show that there are two main data available for both *zakat* and *waqf* to compute the suggested index. The variables are the collection and distribution of *zakat* and cash *waqf*. The data is reported on an annual basis which represents state-level data for *zakat* and national level data for *waqf*.

Next, general descriptive statistics of the variables are presented in Table 3 and Table 4 respectively. The data extracted from the data source provided by JAWHAR and YWM. In addition, the descriptive summary for *zakat* and cash *waqf* variables is also presented in bar charts for ease of comparison. Figure 2 and Figure 3 overleaf presents the *zakat* and cash *waqf* indicators for comparison purpose. Overall, data for *zakat* is mostly incomplete for the year 2017 and 2018 while data on cash *waqf* is available in cumulative basis for each year from 2011 up to 2017.

**Table 3 Statistic of *zakat* collection and distribution in Malaysia**

<b>Zakat Collection</b>					
<b>State</b>	<b>Year</b>				
	<b>2014 (RM)</b>	<b>2015 (RM)</b>	<b>2016 (RM)</b>	<b>2017 (RM)</b>	<b>2018 (RM)</b>
Johor	212,809,088.64	239,931,006.61	250,436,479.20	260,671,607.01	N/A
Kedah	128,400,303.04	133,954,548.76	140,448,128.00	170,030,088.00	183,556,548
Kelantan	133,321,295.88	161,908,949.42	162,678,760.00	N/A	183,034,916
Melaka	58,280,964.15	65,968,448.90	70,537,675.73	85,598,531.92	N/A
Negeri Sembilan	88,200,428.43	95,247,317.97	104,760,388.36	N/A	N/A
Pahang	109,325,106.94	118,082,517.70	122,248,982.33	133,655,623.03	N/A
Pulau Pinang	87,935,987.80	92,844,818.96	96,781,464.11	101,454,432.72	N/A
Perak	114,588,531.29	132,584,966.22	151,181,069.12	N/A	176,246,175.19
Perlis	162,327,654.00	N/A	N/A	N/A	N/A
Selangor	582,120,473.00	627,225,101.00	673,736,282.00	757,112,779.00	793,679,701.00
Terengganu	120,116,379.60	126,639,148.45	133,360,064.38	N/A	160,371,554.62
Sabah	52,829,145.28	61,795,695.17	63,704,056.64	N/A	61,949,418.33
Sarawak	67,319,511.00	68,573,996.00	72,082,740.00	N/A	N/A
Wilayah Persekutuan	540,795,062.34	565,830,672.18	589,296,523.84	623,892,877.06	N/A
<b>Total</b>	<b>2,458,369,931.39</b>	<b>2,490,587,187.34</b>	<b>2,631,252,613.71</b>	<b>2,132,415,938.74</b>	<b>1,558,838,313.12</b>

<b>Zakat Distribution</b>					
<b>State</b>	<b>Year</b>				
	<b>2014 (RM)</b>	<b>2015 (RM)</b>	<b>2016 (RM)</b>	<b>2017 (RM)</b>	<b>2018 (RM)</b>
Johor	191,443,569.34	244,238,743.65	296,999,713.65	293,178,449.62	N/A
Kedah	110,840,195.47	144,955,284.85	162,732,368.00	N/A	178,463,803.20
Kelantan	151,230,993.87	196,744,773.04	173,148,849.00	N/A	181,936,430.62

### **Zakat Distribution**

<b>State</b>	<b>Year</b>				
	<b>2014 (RM)</b>	<b>2015 (RM)</b>	<b>2016 (RM)</b>	<b>2017 (RM)</b>	<b>2018 (RM)</b>
Melaka	57,200,588.16	71,964,251.44	75,367,964.80	N/A	87,073,849.00
Negeri Sembilan	97,785,893.00	96,935,984.93	102,867,136.92	N/A	N/A
Pahang	109,052,421.09	113,421,941.00	134,066,490.00	N/A	N/A
Pulau Pinang	80,098,947.00	101,329,498.13	100,962,507.09	N/A	N/A
Perak	130,316,694.70	164,264,513.67	143,832,214.00	N/A	171,489,516.00
Perlis	104,453,705.00	123,570,316.00	N/A	N/A	N/A
Selangor	595,114,122.00	676,251,478.00	697,494,013.00	N/A	829,878,020.00
Terengganu	79,195,981.72	122,041,037.35	165,894,689.77	N/A	163,138,683.29
Sabah	64,959,240.44	72,904,222.68	64,957,773.60	N/A	68,268,316.44
Sarawak	40,506,983.00	44,984,662.00	48,363,149.00	N/A	N/A
Wilayah Persekutuan	419,225,908.00	608,724,857.00	444,719,832.00	N/A	N/A
<b>Total</b>	<b>2,231,425,242.79</b>	<b>2,782,331,563.74</b>	<b>2,611,406,700.83</b>	<b>293,178,449.62</b>	<b>1,680,248,618.55</b>

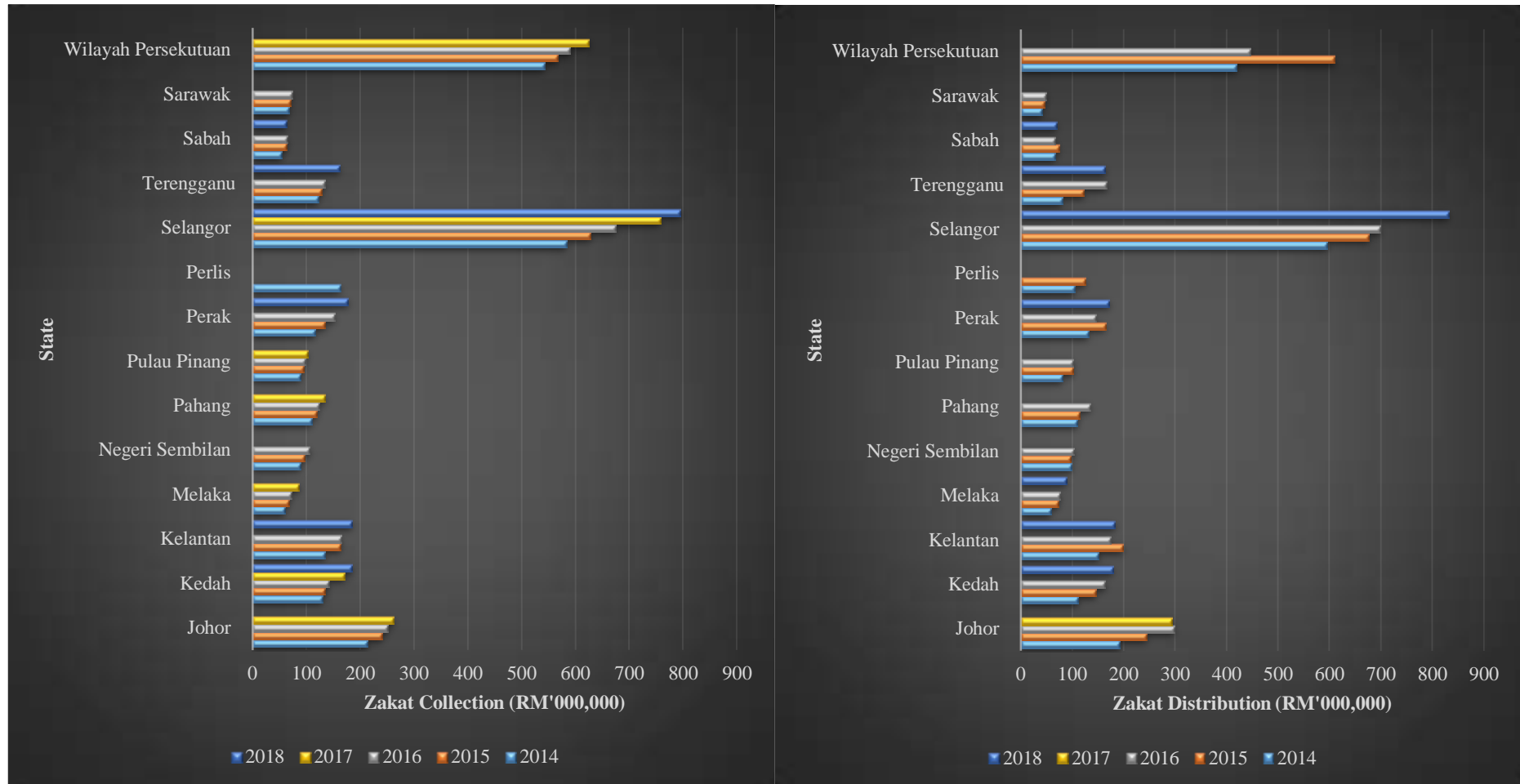


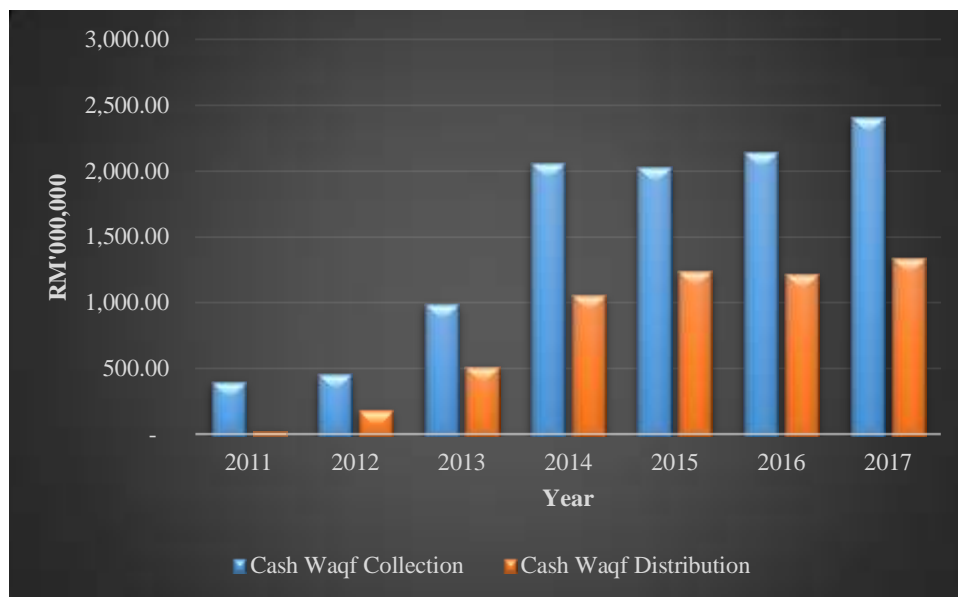
Figure 2 Zakat collection and distribution in Malaysia

**Table 4**  
**cash waqf**  
**and**

Year	Cash Waqf Collection (RM)	Cash Waqf Distribution (RM)
2011	396378.00	20,636
2012	455078.00	182,311
2013	988652.00	510,518
2014	2063157.72	1,058,224
2015	2,033,004.23	1,236,814
2016	2,146,460.00	1,218,078.00
2017	2,406,319.15	1,335,669.00

**Statistic of collection**

**distribution in Malaysia**



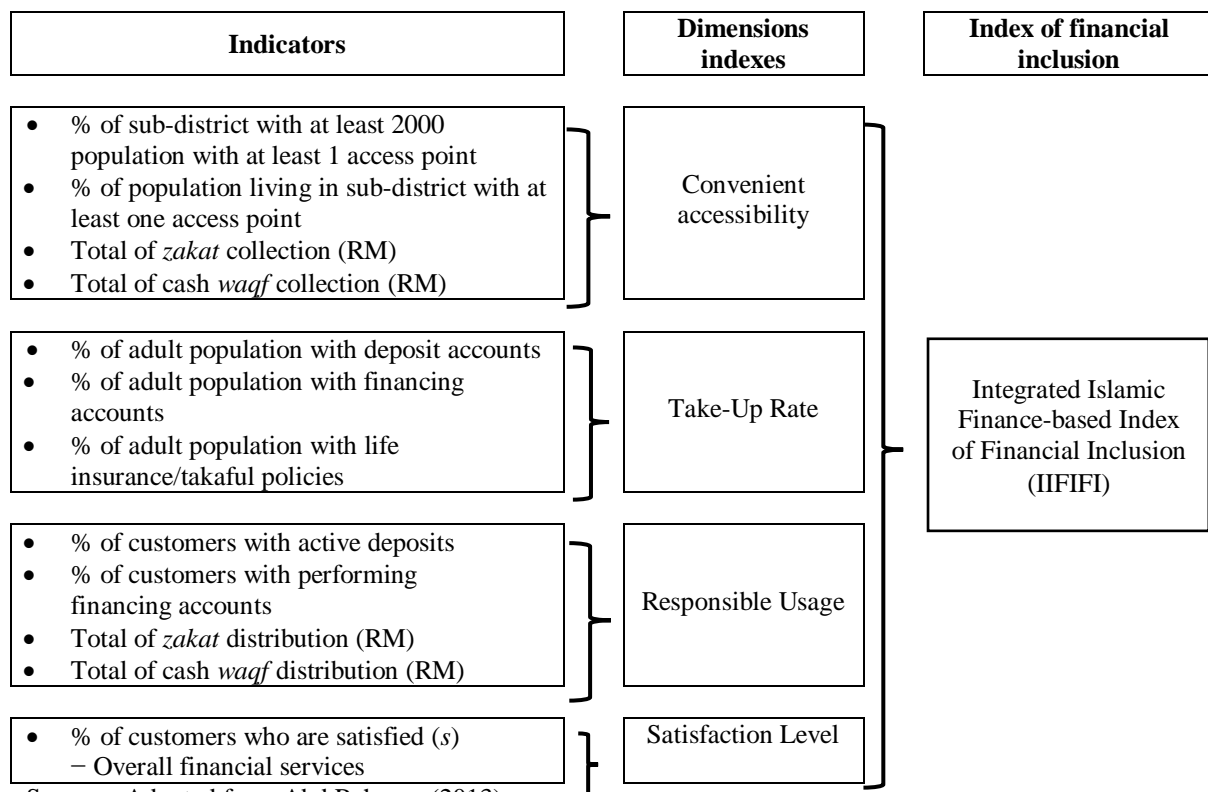
**Figure 3 Cash waqf collection and distribution in Malaysia**

#### **4.2 Conceptual framework of the integrated Islamic finance-based index of financial inclusion**

This sub-section outlines the conceptual framework of integrated Islamic finance-based index of financial inclusion (hereafter referred to as IIFIFI) in Malaysia with reference to studies done by Sarma (2008), Arora (2010) and Prathap (2011) and (Abd Rahman, 2012) in constructing financial inclusion index. This study is a gateway to develop the first IIFIFI

which focuses on one important aspect, i.e., the inclusion of redistribution of wealth indicators through *zakat* and *waqf*.

The conceptual framework for IIFIFI is formulated based on the financial inclusion key performance indicators through the four dimensions of financial inclusion for Malaysia which are developed by BNM (see Figure 4). The index measures the state of financial inclusion, indicating the extent to which the general population has access to financial services by examining access and usage of both formal financial intermediaries and Islamic finance institutions and, to certain extent, the quality of financial services. Specific strengths and shortcomings within each dimension can be observed through the sub-indexes that subtend the complete IIFIFI.



**Figure 4 Conceptual framework for the computation of integrated Islamic finance-based index of financial inclusion (IIFIFI)**

Since an inclusive measurement of IIFIFI should tackle the Islamic finance dimensions, this study suggests a multidimensional approach in constructing the index. Similar to prior studies on financial inclusion computation, this study also employs UNDPs computations of some well-known development indexes such as the Human Development Index (HDI), the Human Poverty Index (HPI), and the Gender-related Development Index (GDI)<sup>6</sup>.

This measurement follows a similar methodology and reasoning (i.e., dynamic concept) as employed by Sarma (2008). Hence, for each dimension, *n* numbers of variables are included:

<sup>6</sup> For more details, see Technical Note in UNDP’s Human Development Reports at [www.undp.org](http://www.undp.org)

$$d_i = x_1, x_2, x_3, \dots, x_n \quad (\text{Eq. 1})$$

where:

$d_i$  = Islamic finance dimension,

$X$  = variable, and

$i$  = individual countries.

For each variable,  $d_i$  is computed using the Linear Scaling Technique (LST) as follows:

$$d_i = w_i \frac{A_i - m_i}{M_i - m_i} \quad (\text{Eq. 2})$$

where:

$w_i$  = weight attached to the dimension  $i$ ,  $0 \leq w_i \leq 1$

$A_i$  = actual value of dimension  $i$ ,

$m_i$  = minimum value of dimension  $i$ , fixed by some pre-specified rule, and

$M_i$  = maximum value of dimension  $i$ . fixed by some pre-specified rule.

Termed as ‘goalposts’ (UNDP, 2009), the minimum and maximum values are the minimum and maximum value of each variable in different countries.  $m_i$  is the lower limit for dimension  $i$ , given by the observed minimum for dimension  $i$  and  $M_i$  is the upper limit for dimension  $i$ , given by the empirical 94<sup>th</sup> quantile for dimension  $i$ .

Eq. (2) ensures that  $0 \leq d_i \leq w_i$ . A higher value of  $d_i$  indicates higher achievement in dimension  $i$  of the country. If  $n$  dimensions of financial inclusion are considered, then, a country will be represented by a point  $D = (d_1, d_2, d_3, \dots, d_n)$  on the  $n$ -dimensional Cartesian space.

In the  $n$ -dimensional space, the point  $0 = (0, 0, 0, \dots, 0)$  signifies the point indicating the worst situation while the point  $W = (w_1, w_2, \dots, w_n)$  denotes the highest achievement in all dimensions. The cumulative index of financial inclusion, IIFIFI, for a country, is then measured by the normalized inverse Euclidean distance of the point  $D$  from the ideal point  $I = (w_1, w_2, \dots, w_n)$ . Thus, the formula is:

$$\text{IIFIFI} = 1 - \frac{\sqrt{(w_1 - d_1)^2 + (w_2 - d_2)^2 + \dots + (w_n - d_n)^2}}{\sqrt{(w_1^2 + w_2^2 + \dots + w_n^2)}} \quad (\text{Eq. 3})$$

where:

$d$  = inclusion dimension, and

$n$  = number of variable.

In Eq. (3), the numerator of the second component is the Euclidean distance of  $D$  from the ideal point  $W$ , normalizing it by the denominator and subtracting by 1 gives the inverse normalized distance. The normalization is done in order to make the value lie between 0 and 1 and the inverse distance is considered so that a higher value of the IIFIFI corresponds to higher financial inclusion.

As an illustration, if we consider all dimensions to be equally important in measuring the inclusiveness of a financial system, then  $w_i = 1$  for all  $i$ . In this case, the ideal situation will be represented by the point  $I = (1, 1, 1, \dots, 1)$  in the  $n$ -dimensional space and the formula for IIFIFI will be:

$$\text{IIFIFI} = 1 - \frac{\sqrt{(1-d_1)^2 + (1-d_2)^2 + \dots + (1-d_n)^2}}{\sqrt{n}} \quad (\text{Eq. 4})$$

Depending on the value of IIFIFI, countries can be classified into three levels of financial inclusion, namely:

- i.  $0.5 < \text{IIFIFI} \leq 1$  : high Islamic finance based financial inclusion
- ii.  $0.3 \leq \text{IIFIFI} < 0.49$  : medium Islamic finance based financial inclusion
- iii.  $0 \leq \text{IIFIFI} < 0.29$  : low Islamic finance based financial inclusion

The IIFIFI thus can be employed to measure financial inclusion at different point of time and at different levels of economic aggregation (country, state, province, etc).

## 5.0 Discussion and Conclusion

While still far from conclusive, a limited number of studies suggests that the measurement of financial inclusion needs to take into account as many dimensions as possible to represent financial inclusion. Sarma (2008, 2010) argues that one single indicator fails to adequately capture the extent of financial inclusion by giving statistical evidence.

Ideally, one should take into consideration all the dimensions to arrive at a comprehensive picture of the Islamic finance approach of financial inclusiveness across the countries. As evident from the tables and figures, there are four potentials variables which could be used for the development of integrated Islamic finance-based index of financial inclusion focusing on the wealth distribution dimension i.e, the collection and distribution of both *zakat* and cash *waqf*. Overall, the amount of *zakat* and cash *waqf* collection and distribution is increasing from years to years. These would suggest that by incorporating these variables into the measurement of financial inclusion, it could provide a better understanding of the level of financial inclusion in Malaysia. These channels are typically tailored to the low-income group which considered as an underserved market in the mainstream financial system. The increased amount of collection and distribution of *zakat* and cash *waqf* could give an indication of the greater access to finance.

However, as expected, some of the variables are incomplete to provide a better idea and understanding of the level of inclusion when the index is developed. This is due to some constraints on data availability. Since both *zakat* and *waqf* are under the authority of the Islamic Religious Council, the availability of data is limited to the information released by the institution. These findings support the study done by Claessen (2006) which states that there is limited data to measure financial inclusion. This would suggest that, to a certain extent, the indicators of financial inclusion that could explain and track the incidence of financial inclusion based on Islamic finance approach over the time are available but still limited and inconclusive.

As far as the development of the conceptual framework for integrated Islamic finance-based index of financial inclusion is concerned, the computation of sub-indexes could serve as a

valuable guide for policymakers and other stakeholders to identify the strengths and limitations of the respective financial sectors. Thus, proper strategies and actions could be implemented for the areas that need further consideration.

The other Islamic finance indicators, for example, micro *takaful*, *qard al hasan*, and *sadaqah*, are also areas of concern. These are among the instruments of Islamic finance which could complement the index construction hence allowing index comprehensiveness. Nonetheless, these instruments are not as institutionalized as *zakat* and *waqf* where availability of data is more challenging. Therefore, for each dimension of Islamic finance, it is important that the relevant data is available and included in setting up the parameters. In the next step, a systematic effort on index computation needs to be in place in order to efficiently measure the level of financial inclusion using Islamic finance approach.

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