



The Innovative Technique of AD/AC and ZP/ZR Appraising of Malaysia's Zakat Fund Practice in The Presence of Covid-19 Pandemic: The Case of Fully, Partially and Non-Privatized State Zakat Institutions

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Abstract

Technology innovation affects both the public and private non-financial sectors, the zakat institution (Islamic social finance) included. The institution uses an online system to communicate with zakat payers and zakat recipients to ensure its effectiveness in terms of collection and distribution. This research focuses on the adoption of a technique known as AD/AC and ZP/ZR, which is mainly utilized by partially and non-privatized State zakat institutions in Malaysia. To this end, three (3) techniques pertaining to appraising the performance of Malaysia's Zakat institutions in managing Zakat funds were established. The analysis also includes the adverse impact of Covid-19 pandemic on the performance of zakat collection of the respective zakat institutions in Malaysia. In this relation, a quantitative approach was adopted using the primary and secondary data collected from JAWHAR and various states' zakat institutions. By utilizing a technique of online data collection and applying the AD/AC as well as ZP/ZR methods, the performance of Malaysia's zakat institutions is appraised. Furthermore, with the help two (2) ratios and eight (8) scenarios the performance of the innovative technique of AD/AC and ZP/ZR for zakat collection and disbursement, efficiency and sustainability of zakat institutions in Malaysia were evaluated. The results show that most zakat institutions, particularly those that deal with zakat payments, have begun to use the technique AD/AC and ZP/ZR within their organizations. The performance of zakat institutions in all states in terms of zakat distribution and disbursement do not have a consistent trend for the period 2016-2020. However, there is still a dearth of technology being used for zakat disbursements and fund reporting. From the observed data, with 2016 being the exception, for each remaining year, a state in Malaysia is ranked as the best technology performer or the most efficient. Selangor - fully privatized state (2017), Pulau Pinang - fully privatized state (2018), Federal Territory - partially privatized state (2019) and Negeri Sembilan-partially privatized state (2020) are the most efficient for the respective year.

The sustainability of each zakat institution in Malaysia in the presence of Covid-19 pandemic was ascertained as well. Interestingly, contrary to the efficiency result, all non-privatized states (Kedah, Sabah and Kelantan) and one partially privatized state (Negeri Sembilan) were sustainable in coping with Covid-19 pandemic, while all fully privatized states (Selangor and Pulau Pinang) were not. Overall, it was conjectured that the technique AD/AC as well as ZP/ZR would help to improve the operations of zakat institutions to become more efficient and successful in distributing zakat fund to the poor. However, as zakat collecting and distribution involved millions of records, its management is still debatable by all parties.

Keywords: Zakat funds, Zakat institutions, Efficiency, Sustainability, Covid-19 pandemic

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Introduction

The use of artificial intelligence (machine touch) and the tendency toward virtual delivery of opportunities and knowledge have undeniably supplanted human-to-human communication in the modern day. However, incorrect and insufficient use of technology could prevent gains in effectiveness and efficiency. One of the Islamic pillars, zakat, is used to redistribute wealth in accordance with Shariah principles by planning the collection of public funds from eligible zakat payers and channeling them to eligible beneficiaries. An investigation on how zakat funds are being managed to alleviate poverty in Malaysia has been undertaken by Saad and Abdullah (2015), Ibrahim (2016), Zainal *et al.* (2016), and Wahid and Ali (2018), among others. The authors have highlighted few pertinent issues pertaining to zakat management. The most intriguing issue is the biggest amount of zakat expenditure that goes to the poor and needy. That being said, none of them have touched on how zakat funds are managed in Malaysia in an environment where there exists an intermingling crisis of health and economy that has affected both the lives and livelihood of the population including that of zakat payers and recipients. The Covid-19 pandemic, combined with the triggering consequences, has in turn severely affected the source and disbursement of zakat funds of zakat institutions in Malaysia. In view of this, the paper attempts at addressing this and other related issues pertaining to zakat funds management in Malaysia in the presence of Covid-19 pandemic. To begin, in Malaysia, even though there is no zakat law in Malaysia that made the zakat payment as mandatory, the collection system is internationally recognized to be systematic, and, to a larger extent, effective. Given the fact that the number of Muslims represents more

than sixty percent of the population, much more can be done to improve zakat management in Malaysia, especially with respect to the unusual and adverse impact of Covid-19 pandemic.

In this relation, recently, the pandemic issue has received public attention to a degree that the management of zakat funds in Malaysia is at stake, hence that gives rise to contentious debate. The debate is centred on the following questions: First, in the presence of Covid-19 pandemic, is Zakat fund being judiciously disbursed to assist the Asnaf (recipients) and Non-Asnaf (non-recipients) who are massively affected by the pandemic? Second, are people who have lost jobs or got their pay reduced, and thus contributed to an increased number of Asnaf (recipients), being tenderly looked after by the Zakat institutions? Third, in the presence of such pandemic, are people with zakat-able income continued to adhere to the religious obligation of paying zakat? These are the questions that the present study attempts to address and analyse using data published by the government and non-government agencies. Having said that, this paper is organized as follows. First, after a brief introduction to the paper, a literature review follows. Next, there is a research methodology before a data analysis is undertaken. Finally, a conclusion of the paper is offered.

Literature Review

Malaysia, a country that is made up of 14 states, wherein the zakat management can be segregated into three (3) groups. The first group, classified as fully privatized states, consists of Selangor, Pulau Pinang and Sarawak where the management of zakat collection and distribution is no longer under the State Islamic Religious Council (SIRC) Jurisdiction. The second group, called partially privatized states, comprises of Kuala Lumpur Federal Territory, Negeri Sembilan, Melaka and Pahang where the states privatized the zakat collection, while the SIRCs handle the distribution process. The remaining states in Malaysia, namely Kedah, Perlis, Sabah, Kelantan, Perak, Terengganu and Johor, are the states that fall under the third group, designated as non-privatized states. These states neither privatized their zakat collection nor distribution where SIRC is totally in charge of the zakat management. We note in passing that privatization of zakat management means that the process of transfer of SIRC services or assets to the private sector in order to improve its quality, efficiency and performance.

To understand the way zakat is managed in Malaysia, a snapshot of it is deliberated. The total zakat collection in Malaysia, which is made up of the total contribution of all 14 states mentioned above, has increased quite significantly from RM408.43 million (USD96.51 million) in 2003 to RM1.20 billion (USD 0.28 billion) in 2009 (Saad & Abdullah, 2015). The recent figures (Table 5) have revealed that the collection from seven (7) states alone, has further increased to more than RM2.33 billion (USD 0.55 billion) (JAWHAR, 2021). However, zakat funds management has always been subject to public scrutiny. This is especially true when it comes to zakat collection and its disbursement. For example, Saad and Abdullah (2015) have shown that for many years (1994, 1995 and 2005), the amount of zakat

disbursed in Selangor had far exceeded the amount collected. However, such trend has changed dramatically for three (3) consecutive years (2010, 2011 and 2012) from deficit to surplus (Zainal et al. 2016). The most recent figures (2016-20) have shown a mixed proportion between collection and disbursement of zakat funds in Malaysia (JAWHAR, 2021).

The persistence in the gap between zakat collection and distribution in Malaysia could be due to several factors. According to Abdul Rahman, Alias and Najib (2012, p. 40), one of the main reasons given by zakat institutions in explaining the gap was the practice of zakat payers paying zakat at the end of the year. As much as 50 percent of zakat fund was paid in the final weeks of a year. Understaffing is another factor reported by zakat managers affecting the task of distributing zakat funds. Tables 6 exhibits the amount of zakat collected, amount of zakat disbursed, number of recipients, and number of zakat payers for seven (7) out of 14 states in Malaysia in 2020. It is worthy of noting that year 2000 was the year when Covid-19 pandemic started to spread worldwide, Malaysia included. The amount collected in 2020 from seven (7) states in Malaysia was RM2.333 billion (USD0.55 billion), while the total number of zakat payers for the same year was 765,028. However, making a judgement from the figures alone is not appropriate, let alone precise, as the pandemic has yet to show its ugly face to the extent of affecting the committed Muslims to fulfil their obligation as Zakat payers.

As such, one has to make an in-depth analysis to gauge the adverse impact of the pandemic on zakat institutions' collection and disbursement of zakat funds. On another note, a plain comparison with its counterpart, namely tax, reveals that the amount collected from zakat payers could be considered "peanuts". Specifically, while zakat collection was RM2.333 billion (USD0.55 billion) in 2020, tax collection was RM147.05 billion (USD34.75 billion) (direct tax) for the same year, making the former contribution less than 2% to the national coffer as compared to the latter.

On the distribution side, historically, in Malaysia, particularly in the northern states, the system shows that the voluntary mode does not treat the needy equitably. Apart from the religious establishment like mosques and religious schools, it benefits primarily those with connections, tending to bypass the truly deserving ones, the likes of destitute, unemployed, and handicapped (Saad & Abdullah, 2015). Against this backdrop, there was a "mission" to recentralize or re-institutionalize the administration of zakat. The proponents of obligatory mode argue that this will augment the funds available for distribution and prevent their disbursement on the basis of personal ties. According to them, the Prophet (PBUH) himself made zakat obligatory and also the currently dominant voluntary mode was made possible after the Prophet's death. To a large extent, the mission was accomplished whereby in all states in Malaysia zakat institutions have been fully institutionalized and operationalized (Saad & Abdullah, 2015). The distribution side is becoming more important if unanticipated episode happens and affecting Muslim community. To give an example, the Covid-19

pandemic that has caught everyone, zakat institutions included, by surprise eventually tends to create a situation where the poor are becoming poorer and the vulnerable income earners descending into one of the Asnaf (recipients). In view of this, a study to investigate this unexpected phenomenon must be undertaken to unfold the severity of the problem. This study attempts to meet this end.

Next, on the issue of the efficiency of zakat institution in Malaysia accomplishing its mission to alleviate poverty, Wahab and Abdul Rahman (2011) showed that the fully privatized zakat institutions were efficient, while the partially privatized zakat institutions were not. On the contrary, another study by Ishak and Maamor (2013), also on zakat efficiency, has shown that the management system of zakat in the states that have not privatized neither zakat collection nor distribution is more efficient than the other states. Overall, most studies that have examined the efficiency of zakat institutions in Malaysia have found a positive impact on poverty reduction. But more studies need to be conducted using different methods to verify whether this positive or negative impact still holds, particularly in the presence of Covid-19 pandemic. Lastly, as far as studies on sustainability of zakat institution are concerned, to the best of our knowledge, none had been conducted thus far. Perhaps, this study is the first of its kind.

In summary, the studies on the practice of zakat distribution and collection, efficiency and sustainability of zakat institutions were carried out notably to examine whether zakat had fulfilled the objective of ensuring the lives of Asnaf (recipients) are safeguarded at least to a minimum level of quality living.

That is to say, Zakat is meant to cater for the recipients' Daruriyyat (basic necessities) and Hajiyyat (comfort needs). If the recipients have not achieved such level of quality life, then the goal of making Zakat as obligatory, as prescribed in the Syariah (Islamic law) has yet to be accomplished, as the true meaning of Zakat practice has not been realized. The unanticipated occurrence of Covid-19 pandemic requires Zakat institutions to be more alert, sensitive, and versatile to the extent that they should be more Asnaf (recipients)-centred or Asnaf (recipients) friendly in the way they operate.

In this study, an attempt is made to extend the analysis of Wahab and Abdul Rahman (2011), Saad and Abdullah (2015) and, Zainal et al. (2016) on the practice of Zakat distribution and collection, and measurement of efficiency in several states in Malaysia. At the same time, the study incorporates the recently unprecedented occurrence of Covid-19 pandemic to the analysis. Also, a newly crafted method to measure the sustainability of Zakat institutions in the presence of Covid-19 pandemic is formulated. The inclusion of the pandemic's effect to the analysis merely because it affects the lives and livelihood of the world population. According to United Nations Report (2020), more than one billion slum dwellers world-wide are severely at risk from the effects of Covid-19. They are mainly suffering from a lack of adequate housing, no running water at home, shared toilets, little or no waste management systems, overcrowded public transport, not enough food on table and

limited access to formal health care facilities. In Malaysia, the pandemic has created a situation where people have lost jobs, income has been significantly reduced and health facilities are not well prepared for such an abrupt emergence of Covid-19. In order to curb the pandemic from spreading uncontrollably, particularly if human movements across districts and states are not restricted, the government has imposed a combination of recovery, partial and total lockdowns (or control order) beginning March 2020 to March 2021, as shown in Table 1.

Table 1. Malaysia Total, Partial and Recovery Movement Control Orders (MCO)

Phase	Date
Total Movement Control Order (TMCO : 18 March 2020 – 3 May 2020)	
Phase 1	18 March 2020 – 31 March 2020
Phase 2	1 April 2020 – 14 April 2020
Phase 3	15 April 2020 – 28 April 2020
Phase 4	29 April 2020 – 3 May 2020
Partial Movement Control Order (PMCO : 4 May 2020 – 9 June 2020)	
Phase 1	4 May 2020 – 12 May 2020
Phase 2	13 May 2020 – 9 June 2020
Recovery Movement Control Order (RMCO : 10 June 2020 – 31 March 2021)	
Phase 1	10 June 2020 – 31 August 2020
Phase 2	1 September 2020 – 31 December 2020
Phase 3	1 January 2021 – 31 March 2021

Source: Adapted: https://en.wikipedia.org/wiki/Malaysian_movement_control_order

Apart from that, the government has also taken several health (i.e, vaccination), economic and financial stimulus measures to ensure that the most affected groups of society like B-40, M-40 and a group of people closely associated with the so-called “vulnerable” can continue to survive in this very challenging time. For example, the Prihatin Special Grant (GKP) which involves a total of RM5.1 billion (USD1.21 billion) had been channelled to almost one million small and medium enterprises (SMEs) since the COVID-19 pandemic hit the country. The government hopes that this would help alleviate their burden, especially those who were particularly affected by the implementation of the Total Movement Control Order (TMCO-total lockdown). In addition, under the Supplementary Strategic Program to Empower the People and Economy (PEMERKASA Plus), the government had raised the GKP for SMEs and micro-enterprises to RM1500 (USD354.90), which has benefitted almost one million eligible enterprises. To complement the measures taken by the government, Zakat institutions of all states in Malaysia have also done their part to relieve the burden and hardships of the Asnaf (recipients), notably the poor and needy.

Given this scenario, it would be stimulating for a study to be conducted to gauge the impact of Covid-19 pandemic on Zakat institutions in Malaysia. Hence, this gives rise to the following objectives of the study.

1. To appraise the practice of Zakat collection and disbursement of seven (7) states in Malaysia for the past five (5) years (2016-20);
2. To appraise the efficiency of Zakat collection and distribution in seven (7) selected states in Malaysia; and,

To appraise the sustainability of Zakat funds in Malaysia by incorporating the impact of Covid-19 pandemic on the total number of Zakat Asnaf (recipients), Zakat payers and Zakat institutions in Malaysia.

Methodology

Data used in this study are secondary in nature. They are compiled from the Department of Waqaf, Hajj and Zakat, Malaysia (JAWHAR), non-Zakat institutions as well as websites of various Zakat institutions of the selected states in Malaysia. As not all states in Malaysia published data that are in tandem with the objectives of the study, we ended up having only seven (7) out of 14 states that made up Malaysia. The data set of the seven (7) selected states, classified into three (3) groups (fully-, partially- and non-privatized), that fulfilled the study objectives in turn is used for the analysis. We reiterate that the states of Selangor and Pulau Pinang belong to the first group, while Kuala Lumpur Federal Territory and Negeri Sembilan are part of the second group.

Finally, Kedah, Sabah and Kelantan are affiliated to the third group. It is also worthy of mention that the data were collected for the period 2016–2020, a period that includes the presence of Covid-19 pandemic. All data are arranged in a manner that suits the three (3) objectives of the study.

Data Analysis

To address the first two (2) study objectives, and for data analysis purpose, the following two (2) proposed criteria and four (4) scenarios are formulated. First, we take a look at the two criteria. The two (2) criteria that must be closely observed are: First, the ratio of Amount of Zakat Distributed (AD) to Amount of Zakat Collected (AC) or AD/AC ratio. A positive value smaller than one ($AD/AC < 1$) implies that the amount of Zakat disbursed (AD) is less than the amount of Zakat collected (AC). This is tantamount to saying that Zakat fund is in surplus or Zakat surplus (ZS) for brevity. The opposite is true if the ratio is greater than 1 ($AD/AC > 1$) or Zakat deficit (ZD). As shown in Table 5, in the year 2020, with Pulau Pinang ($AD/AC = 1.010$) being the only exception, the ratio in other states in Malaysia was less than 1 ($AD/AC < 1$). In fact, it was also the case at the national level where the ratio was 0.866. Specifically, in the latter case ($AD/AC < 1$), it can infer that either the amount of Zakat collected was not disbursed fully or the Zakat institutions retained a portion of the Zakat funds. Second, the ratio of Zakat Payers (ZP) to Zakat Recipients (ZR) or ZP/ZR ratio. A positive value greater than 1 ($ZP/ZR > 1$) suggests that the number of Zakat payers is larger than Zakat recipients or payer surplus (PS), while a positive value smaller than one ($ZP/ZR < 1$) suggests the case of

payer deficit (PD). In the first case, it could be conjecture that: 1) more people with Zakatable income are paying Zakat; 2) some of the Asnaf (recipients) have managed to survive without having to rely on Zakat assistance; and, 3) a combination of the two conjectures. As evident from Table 5, in year 2020, while the ratio for other states and national level was greater than 1, in the state of Sabah the ratio was 0.827. Now, the two (2) ratios are put together and the intuitive meaning, which is translated into scenario, will be advanced. There are four (4) scenarios that emerge from it. The detail is as follow.

Scenario 1. If $AD/AC < 1$ (=ZS) and $ZP/ZR > 1$ (=PS), then Zakat funds of the states concerned are manageable. As such, there is no cause for concern. This being the case because the number of people with Zakatable income is higher than the number of Asnaf (recipients), hence that has contributed to surplus of Zakat funds.

Scenario 2. If $AD/AC < 1$ (=ZS) and $ZP/ZR < 1$ (=PD), then Zakat funds of the states concerned are manageable but there is cause for concern. In this scenario, although Zakat funds are in surplus, the number of people with Zakat-able income is less than the number of Asnaf.

Scenario 3. If $AD/AC > 1$ (=ZD) and $ZP/ZR > 1$ (=PS), then Zakat funds of the states concerned are not in good shape or unsound but there is no cause for concern. In this scenario, there is a high chance that the Zakat deficit can eventually be nullified as the number of Zakat payers is higher than the number of Asnaf.

Scenario 4. If $AD/AC > 1$ (=ZD) and $ZP/ZR < 1$ (=PD), then Zakat funds of the states concerned are at stake. Indeed, there is an absolute cause for concern. This being the case because Zakat funds of the states are not only depleting but also not well-replenished. This is due to lesser number of people with Zakatable income in comparison with the number of Asnaf. In this particular case, Covid-19 pandemic may have shown its ugly face.

In addition, the above-mentioned two (2) formulated ratios can also be applied to appraise the efficiency of Zakat institutions of all states. Specifically, if any of the states registered the smallest ratio of AD/AC and the largest ratio of ZP/ZR , it can be said that the state concerned is the best performer or most efficient in Zakat management. Perhaps, for this to be perfectly true and acceptable, an explicit qualifier has to be advanced. In particular, such inference is legit, if all what is due for the Asnaf (recipients), in terms of monetary and non-monetary assistances, had been satisfied or granted by the Zakat institution of the states concerned. Based on this criterion, in 2020, the state of Negeri Sembilan was the best performer with AD/AC ratio and ZP/ZR ratio of 0.749 and 2.387, respectively.

Next, the data are analysed on yearly basis. Table 2 shows the results of the two (2) ratios and four (4) scenarios for seven (7) states in Malaysia for the year 2016. Using the criteria and scenarios, the practice of Zakat collection and distribution, and efficiency of Zakat institutions in the states can now be put into context. As the ratios suggest, the states of Sabah and Kedah (non-privatized states), which registered ratios of AD/AC greater than one, and

ZP/ZR less than one, fall under Scenario 4. That is to say, Zakat institutions of the states concerned are at stake, and hence there is an absolute cause for concern. This is because Zakat funds of the states are not only depleting but also not well-replenished, notably owing to lesser number of people with Zakatable income in comparison with number of Asnaf (recipients). Next, the state of Federal Territory (partially privatized state) falls under Scenario 2 with both AD/AC and ZP/ZR of less than one, whereas other states which recorded AD/AC and ZP/ZR greater than one fall under Scenario 3. Finally, in 2016, none of the states could be regarded as the best performer as there was not any state that relatively registered the smallest AD/AC and largest ZP/ZR ratios.

Table 2. Amount of Zakat Collected and Distributed, and no of Payers and Recipients (2016)

State	AMOUNT COLLECTED (AC) (RM/USD)	AMOUNT DISTRIBUTED (AD) (RM/USD)	(AD/AC) RATIO	ZAKAT PAYERS (ZP)	ZAKAT RECIPIENTS (ZR)	(ZP/ZR) RATIO
Kedah	131,714,335 (31,163,611)	162,732,368 (7,373,310)	1.235	88,557	164,300	0.539
Kelantan	154,364,000 (36,522,522)	173,148,849 (40,967,017)	1.121	60,128	59,344	1.013
Negeri Sembilan	100,412,122 (23,757,508)	102,867,136 (24,338,364)	1.024	60,775	51,371	1.183
Pulau Pinang	92,132,722 (21,798,602)	100,962,507 (23,887,729)	1.096	68,257	35,699	1.912
Selangor	651,497,065 (154,144,205)	697,494,013 (165,027,083)	1.071	310,757	44,293	7.016
Sabah	54,540,636 (12,904,314)	64,957,773 (15,369,009)	1.191	51,697	87,870	0.588
Federal Territory	580,690,160 (137,391,291)	444,719,832 (105,220,712)	0.766	175,309	196,191	0.894
National (Average)	1,765,354,040 (417,682,765)	1,746,882,478 (413,312,394)	0.990	815,480	639,068	1.276

Source: JAWHAR - http://baitulmal.jawhar.gov.my/zkt_statistik. Data for Selangor: <https://drive.google.com/file/d/1P-BxByt8sRapNK3FMM9fVIfygCeqE6LG/view>

Now, like Table 2, the same analysis will be performed for year 2017, as shown in Table 3. As the ratios suggest, unlike 2016, in 2017 the state of Sabah registered a ratio of AD/AC and ZP/ZR less than one, hence falls under Scenario 2. Intuitively, Zakat institution in Sabah is manageable but there is cause for concern. In this scenario, although Zakat fund is in surplus, the number of people with Zakatable income is less than the number of Asnaf (recipients). In other words, Zakat fund of the state is not only depleting, but also not well-

replenished, owing to lesser number of people with Zakatable income in comparison with number of Asnaf (recipients). Next, the states of Pulau Pinang and Kelantan fall under Scenario 3 with both AD/AC and ZP/ZR greater than one, while other states that recorded AD/AC less than one and ZP/ZR greater than one fall under Scenario 1. Finally, in 2017, Selangor (fully privatized state) is the best performer or most efficient as the state registered the smallest AD/AC (0.841) and largest ZP/ZR (6.794) ratios.

Table 3. Amount of Zakat Collected and Distributed, and no of Payers and Recipients (2017)

State	AMOUNT COLLECTED (AC) (RM/USD)	AMOUNT DISTRIBUTED (AD) (RM/USD)	(AD/AC) RATIO	ZAKAT PAYERS (ZP)	ZAKAT RECIPIENTS (ZR)	(ZP/ZR) RATIO
Kedah	160,925,101 (38074878)	152,039,740 (35972602)	0.944	103,446	50,715	2.040
Kelantan	170,944,848 (40445551)	185,027,240 (43777444)	1.082	60,407	59,075	1.023
Negeri Sembilan	120,021,457 (28397076)	115,307,859 (27281839)	0.961	62,673	49,454	1.267
Pulau Pinang	96,639,699 (22864952)	99,782,721 (23608591)	1.032	68,776	42,192	1.630
Selangor	733,461,400 (173536967)	616,526,812 (145870243)	0.841	308,929	45,471	6.794
Sabah	78,962,384 (18682500)	62,747,937 (14846161)	0.795	48,731	73,456	0.663
Federal Territory	612,671,451 (144958065)	502,022,102 (118778429)	0.819	167,843	108,629	1.545
National (Average)	1,973,626,340 (466959992)	1,733,454,411 (410135313)	0.878	820,805	428,992	1.913

Source: JAWHAR - http://baitulmal.jawhar.gov.my/zkt_statistik. Data for Selangor: <https://drive.google.com/file/d/1P-BxByt8sRapNK3FMM9fVIfygCeqE6LG/view>

Next, Table 4 depicts the results of the two ratios for 2018. As evident from the results, the state of Sabah registered a ratio of AD/AC and ZP/ZR less than one, hence falls under Scenario 2. It requires no interpretation and inference as it is similar to what it was in Tables 2 and 3. Meanwhile, the states of Kedah, Kelantan and Selangor fall under scenario 3 because the ratios of AD/AC and ZP/ZR are greater than one. Other states are categorized into Scenario 1. As for the best performer state, it goes to Pulau Pinang (fully privatized state) with AD/AC=0.880 and ZP/ZR=1.500.

Table 4. Amount of Zakat Collected and Distributed, and no of Payers and Recipients (2018)

State	AMOUNT COLLECTED (AC) (RM/USD)	AMOUNT DISTRIBUTED (AD) (RM/USD)	(AD/AC) RATIO	Zakat Payers (ZP)	Zakat Recipients (ZR)	(ZP/ZR) Ratio
Kedah	173,955,752 (41157930)	178,463,803 (42224535)	1.026	106,119	61,656	1.721
Kelantan	174,521,661 (41256920)	181,936,430 (43009772)	1.042	62,102	52,969	1.172
Negeri Sembilan	131,116,487 (30995937)	127,748,585 (30199765)	0.974	65,025	43,188	1.506
Pulau Pinang	114,826,389 (27144958)	101,010,171 (23878804)	0.880	68,989	45,990	1.500
Selangor	793,700,000 (187630680)	829,878,020 (196183163)	1.046	314,585	50,947	6.175
Sabah	70,093,331 (16570063)	68,268,316 (16138629)	0.974	45,969	87,258	0.527
Federal Territory	648,292,284 (153256295)	550,231,376 (130074697)	0.848	182,042	125,558	1.450
National (Average)	2,106,505,904 (497977995)	2,037,536,701 (481673676)	0.967	844,831	467,566	1.807

Source: Source: JAWHAR - http://baitulmal.jawhar.gov.my/zkt_statistik. Data for Selangor: <https://drive.google.com/file/d/1P-BxByt8sRapNK3FMM9fVIfygCeqE6LG/view>

Table 5 that shows results of the two ratios for 2019. From the table it can be inferred that the state of Sabah, which continues to register AD/AC and ZP/ZR ratios of less than one, is classified in Scenario 2. Kelantan and Selangor fall under Scenario 3 because the two ratios are greater than one, while other states are categorized into Scenario 1. As for the best performer, it goes to Federal Territory with AD/AC=0.656 and ZP/ZR=1.801.

Table 5. Amount of Zakat Collected and Distributed, and no of Payers and Recipients (2019)

State	AMOUNT COLLECTED (AC) (RM/USD)	AMOUNT DISTRIBUTED (AD) (RM/USD)	(AD/AC) RATIO	ZAKAT PAYERS (ZP)	ZAKAT RECIPIENTS (ZR)	(ZP/ZR) RATIO
Kedah	195,855,205 (46300170)	192,622,521 (45535963)	0.983	110,905	71,233	1.557
Kelantan	186,656,585 (44125616)	189,017,291 (44683687)	1.013	68,049	66,116	1.029
Negeri Sembilan	136,585,948 (32288918)	123,406,206 (29173227)	0.904	67,377	36,922	1.824
Pulau Pinang	116,366,280 (27508988)	111,384,871 (26331383)	0.957	70,659	39,095	1.807
Selangor	855,100,000 (202145640)	868,263,524 (205257497)	1.015	329,303	61,767	5.331
Sabah	79,224,553 (18728684)	71,621,952 (16931429)	0.904	58,548	85,711	0.683
Federal Territory	678,591,675 (160419071)	445,352,346 (105281294)	0.656	196,241	108,922	1.801
National (Average)	2,248,380,246 (531517087)	2,001,668,711 (473194483)	0.890	901,082	469,766	1.918

Source: JAWHAR - http://baitulmal.jawhar.gov.my/zkt_statistik. Data for Selangor: <https://drive.google.com/file/d/1P-BxByt8sRapNK3FMM9fVIfygCeqE6LG/view>

Finally, Table 6 exhibits results of the two ratios for 2020. Again, for four years in a row the state of Sabah continues to register ratios of AD/AC and ZP/ZR less than one, qualifying it to be classified into Scenario 2. Pulau Pinang falls under Scenario 3 because the two ratios are greater than one. Other states are classified into Scenario 1. Lastly, Negeri Sembilan (partially privatized) with AD/AC=0.749 and ZP/ZR=2.837 was the best performer or the most efficient in managing Zakat fund for 2020.

Table 6. Amount of Zakat Collected and Distributed, and no of Payers and Recipients (2020)

State	AMOUNT COLLECTED (AC) (RM/USD)	AMOUNT DISTRIBUTED (AD) (RM/USD)	(AD/AC) RATIO	ZAKAT PAYERS (ZP)	ZAKAT RECIPIENTS (ZR)	(ZP/ZR) RATIO
Kedah	207,269,740 (48998566)	195,698,217 (46263058)	0.944	117,964	63,286	1.865
Kelantan	193,343,225 (45706338)	185,584,047 (43872068)	0.960	81,623	57,535	1.419
Negeri Sembilan	152,592,010 (36072751)	114,237,224 (27005679)	0.749	71,572	25,228	2.837
Pulau Pinang	125,315,045 (29624476)	126,581,574 (29923884)	1.010	75,088	62,866	1.194
Selangor	913,000,000 (215833200)	867,200,000 (205006080)	0.950	331,100	211,257	1.567
Sabah	90,953,144 (21501323)	88,575,346 (20939211)	0.974	72,894	88,104	0.827
Federal Territory	746,911,704 (176569926)	526,470,916 (124457724)	0.705	217,883	215,449	1.011
National (Average)	2,429,384,868 (574306582)	2,104,347,324 (497467707)	0.866	968,124	723,725	1.338

Source: JAWHAR - http://baitulmal.jawhar.gov.my/zkt_statistik Data for Selangor: <https://drive.google.com/file/d/1P-BxByt8sRapNK3FMM9fVIfygCeqE6LG/view>

For ease of reference, a summary of Zakat management results for the practice of Zakat collection and distribution, and efficiency that were derived from the two (2) ratios and four (4) scenarios of selected states in Malaysia for 2016-20 are shown in Table 7. As evident from the table, states that are categorized into fully and partially privatized seem to have been efficient in managing Zakat funds for the period 2016-20.

Table 7. Summary of Zakat Management Based on Zakat Collection and Distribution, and Efficiency of Selected States in Malaysia (2016-20)

State	2016				2017				2018				2019				2020			
	S 1	S 2	S 3	S 4	S 1	S 2	S 3	S 4	S 1	S 2	S 3	S 4	S 1	S 2	S 3	S 4	S 1	S 2	S 3	S 4
Kedah				Δ	Δ						Δ		Δ				Δ			
Kelantan			Δ				Δ				Δ				Δ		Δ			
Negeri Sembilan			Δ		Δ				Δ				Δ				Δ			
Pulau Pinang			Δ				Δ		Δ				Δ							Δ
Selangor			Δ		Δ						Δ				Δ		Δ			
Sabah				Δ		Δ				Δ				Δ				Δ		
Federal Territory	Δ				Δ				Δ				Δ				Δ			
National (Average)	Δ				Δ				Δ					Δ			Δ			
<i>Efficiency / Best Performer</i>	None				Selangor				Pulau Pinang				Federal Territory				Negeri Sembilan			

KEY: S1=Scenario 1 S2=Scenario 2 S3=Scenario 3 S4=Scenario 4

Until now, the first two (2) objectives of the study, namely to appraise the practice of Zakat collection and disbursement of seven (7) states in Malaysia for a period of five (5) years (2016-20), and to appraise the efficiency of Zakat institutions of seven (7) selected states in Malaysia have been performed. Henceforth, only the third study objective remains to be addressed, which to reiterate, is to appraise the sustainability of Zakat funds of Zakat institutions in Malaysia by incorporating the impact of Covid-19 pandemic on the total number of Zakat Asnaf (recipients) and Zakat payers. To this end, we have included two more restrictions to complete the analysis. They are: First, the percentage change in the number of Zakat payers for 2019 and 2020. This restriction is imposed because, theoretically, in the presence of Covid-19 pandemic the number of Muslims with Zakatable income may have decreased. Second, it is also appended in this study the percentage change in the number of Zakat Asnaf (recipients) for 2019 and 2020. This restriction is imposed because, hypothetically, in the presence of Covid-19 pandemic, the number of Muslims who rely on Zakat to survive may have increased. As a caveat, the years 2019 and 2020 are chosen because the pandemic was expected to show its ugly face in 2020.

As such, for comparison and analysis's sake, the two years are used; the year before (2019) and during (2020) pandemic had developed. Next, to appraise the sustainability of Zakat institutions, the ratio of AD/AC is reapplied and collaborated with the percentage change in Zakat payers (%ΔZP) and Zakat recipients (%ΔZR) for 2019 and 2020. It is noted in passing that the year 2018 is included because without it the percentage change in ZP and

ZR for 2019 could not be performed. From such collaboration the following scenarios are derived.

Scenario 5. If $AD/AC < 1$ (=ZS) and $\% \Delta ZP > \% \Delta ZR$, then Zakat funds of the states concerned are manageable and sustainable. As such, there is no cause for concern. Covid-19 pandemic did not affect the sustainability of Zakat institutions concerned. This being the case because the percentage change in ZP greater than percentage change in ZR, hence contributing to surplus of Zakat fund.

Scenario 6. If $AD/AC < 1$ (=ZS) and $\% \Delta ZP < \% \Delta ZR$, then Zakat funds of the states concerned are manageable but untenable. Covid-19 pandemic did affect the sustainability of Zakat institutions concerned. There is cause for concern. In this scenario, although Zakat fund is in surplus, the percentage change in ZP smaller than percentage change in ZR.

Scenario 7. If $AD/AC > 1$ (=ZD) and $\% \Delta ZP > \% \Delta ZR$, then Zakat funds of the states concerned are commendable but not in good shape or unsound. Covid-19 pandemic did affect the sustainability of Zakat institutions concerned. However, there is no cause for concern. In this scenario, there is a high chance that Zakat deficit, in due course, be nullified mainly by virtue of the percentage change in ZP greater than percentage change in ZR.

Scenario 8. If $AD/AC > 1$ (=ZD) and $\% \Delta ZP < \% \Delta ZR$, then Zakat funds of the states concerned are at stake and unworthy. Covid-19 pandemic did significantly affect the sustainability of Zakat institutions concerned. Indeed, it is an absolute cause for concern. This being the case because Zakat funds of the states are not only depleting but also not well-replenished. This is due to the fact that the percentage change in ZP smaller than percentage change in ZR.

Tables 8 and 9 produce the results for the computation of percentage change in Zakat payers ($\% \Delta ZP$) and percentage change in Zakat recipients ($\% \Delta ZR$) for 2019 and 2020, respectively. As mentioned earlier, the years 2019 and 2020 are chosen for measuring the sustainability of Zakat institutions in the presence of Covid-19 pandemic; which showed its full-blown effect in 2020. For ease of reference, the results for the ratio of amount of Zakat distributed (AD) to amount of Zakat collected (AC) for 2019 and 2020 are reproduced and showed in Tables 8 and 9. Perhaps, an example may facilitate readers to comprehend the results emerging from the tables. In 2020, the state of Kedah experienced $\% \Delta ZP = 6.36$ and $\% \Delta ZR = 11.16$, while the ratio of $AD/AC = 0.94$. With this, Kedah falls in Scenario 5, suggesting that Zakat fund of the state is not only manageable but more importantly sustainable.

Table 8. Ratio of Amount of Zakat Distributed (Ad) to Amount of Zakat Collected (Ac), and Percentage Change in *Zakat Payers* in Malaysia (2019 & 2020)

State	2018			2019			2020		
	AD/AC	ZP	% Δ ZP	AD/AC	ZP	% Δ ZP	AD/AC	ZP	% Δ ZP
Kedah	1.03	106,119	-	0.98	110,905	4.51	0.94	117,964	6.36
Kelantan	1.04	62,102	-	1.01	68,049	9.58	0.96	81,623	19.95
Negeri Sembilan	0.97	65,025	-	0.90	67,377	3.56	0.75	71,572	6.23
Pulau Pinang	0.88	68,989	-	0.96	70,659	2.42	1.01	75,088	6.27
Selangor	1.05	314,585	-	1.02	329,303	4.68	0.95	331,100	0.55
Sabah	0.97	45,969	-	0.91	58,548	27.36	0.97	72,894	24.50
Federal Territory	0.85	182,042	-	0.66	196,241	7.80	0.71	217,883	11.03
National (Average)	0.97	844,831	-	0.89	901,082	6.66	0.87	968,124	7.44

Table 9. Ratio of Amount of Zakat Distributed (Ad) to Amount of Zakat Collected (Ac), and Percentage Change in *Zakat Recipients* in Malaysia (2019 & 2020)

STATE	2018			2019			2020		
	AD/AC	ZR	% Δ ZR	AD/AC	ZR	% Δ ZR	AD/AC	ZR	% Δ ZR
KEDAH	1.03	61,656	-	0.98	71,233	15.53	0.94	63,286	(11.16)
KELANTAN	1.04	52,969	-	1.01	66,116	24.82	0.96	57,535	(12.98)
NEGERI SEMBILAN	0.97	43,188	-	0.90	36,922	(14.51)	0.75	25,228	(31.67)
PULAU PINANG	0.88	45,990	-	0.96	39,095	(14.99)	1.01	62,866	60.80
SELANGOR	1.05	50,947	-	1.02	61,767	21.24	0.95	211,257	242.02
SABAH	0.97	87,258	-	0.91	85,711	(1.77)	0.97	88,104	2.79
FEDERAL TERRITORY	0.85	125,558	-	0.66	108,922	(13.25)	0.71	215,449	97.80
NATIONAL (AVERAGE)	0.97	467,566	-	0.89	469,766	0.47	0.87	723,725	54.06

Table 10 summarizes the results of AD/AC ratio, the percentage change in Zakat payers (% Δ ZP) and Zakat recipients (% Δ ZR) for 2019 and 2020, respectively. Using the formulated scenarios, the sustainability of the selected states in Malaysia in managing Zakat funds can be appraised. First, the interest is on year 2020, the year when Covid-19 pandemic spread worldwide. It is evident from Table 10 that four (4) states are not severely affected from the pandemic. The states are all non-privatized states (Kedah, Kelantan and Sabah) and one partially privatized state (Negeri Sembilan) with Zakat surplus, and the percentage change in Zakat payers exceeded the percentage change in Zakat recipient, qualify them to be categorized in Scenario 5. This implies that Zakat funds in the states are well-managed and sustainable. Thus, a two-fold conjecture can be made from the results. First, the pandemic did not affect people with Zakat-able income to resume their obligation to pay Zakat to the respective Zakat institutions. Second, the number of Zakat recipients has shrunk, notwithstanding, one year after the pandemic had developed. The result for remaining states (Pulau Pinang, Selangor and Federal Territory) is a mix of Scenarios 8 and 6. For Pulau Pinang (Scenario 8), it suggests that Zakat fund in the state is at stake and unworthy. On the other hand, Selangor and Federal territory (Scenario 6) the funds are manageable and tenable, but there is cause for concern. In this scenario, although Zakat funds are in surplus, the percentage change in ZP is smaller than percentage change in ZR.

On another note, based on the Scenarios, it is interesting to dissect the impact of the Covid-19 pandemic on Zakat funds sustainability of the seven (7) states under observation. The result produces two obvious and distinguishable impacts. On the one hand, the Zakat institutions of the urbanized states like Federal Territory, Selangor and Pulau Pinang are suffering from the pandemic, while the semi-urbanized states' Zakat institutions like Kedah, Kelantan, Negeri Sembilan and Sabah are not. Indeed, this is quite consistent with what is happening on the ground. It is a well-known fact that most urbanized states' workers sourced their income from informal sector. According to Free Malaysia Today (Aiman, 2020), in Klang Valley alone (an industrial area shared by the states of Selangor and Federal Territory) it is estimated that between 100,000 to 200,000 urban workers, largely self-employed and SMEs, have fallen into urban poverty as a result of Covid-19 pandemic. The data of Zakat recipients for the two states, namely Selangor and Federal territory, as shown in Table 9 tend to substantiate the fact that the cited estimated number actually holds water. As can be seen from the table, while Selangor had seen a dramatic increase in Zakat recipients of 149,490 (from 61767 (2019) to 211,257 (2020)), Federal Territory saw an increase of 106,527 (108,922 (2019) to 215,449 (2020)), making a total increase of 256,017 Zakat recipients, a figure that is very close to one estimated by the Free Malaysia Today.

Table 10 also provides another fascinating result. With Selangor and Federal Territory being the exception, the performance of other states in terms of sustainability in coping with Covid-19 pandemic can be ranked in the following order: best performed state; sustained state; and, poorly performed state. The states included in the first rank are Kedah and Kelantan (shift from Scenario 6 and 8, respectively, to Scenario 5), the second rank states are Sabah and Negeri Sembilan (maintained in Scenario 5), and the third rank state is Pulau Pinang (shift from Scenario 5 to Scenario 8).

With this ranking, but subject to further investigation, it can be conclusively said that while Zakat institutions of the best-performed states are not affected from the pandemic, the poorly performed state is.

Table 10. Summary of Ratio of Amount of Zakat Distributed (Ad) to Amount of Zakat Collected (Ac) and Percentage Change in Zakat Payers and Zakat Recipients in Malaysia (2019 & 2020)

STATE	2019 (BEFORE COVID-19 PANDEMIC)				2020 (ONE YEAR AFTER COVID-19 PANDEMIC)			
	AD/ AC	%Δ ZP	%Δ ZR	SCENARIO	AD/ AC	%Δ ZP	%Δ ZR	SCENARIO
KEDAH	0.98	0.94	15.53	SCENARIO 6	0.94	4.51	(11.16)	SCENARIO 5
KELANTAN	1.01	0.96	24.82	SCENARIO 8	0.96	9.58	(12.98)	SCENARIO 5
NEGERI SEMBILAN	0.90	0.75	(14.51)	SCENARIO 5	0.75	3.56	(31.67)	SCENARIO 5
PULAU PINANG	0.96	1.01	(14.99)	SCENARIO 5	1.01	2.42	60.80	SCENARIO 7
SELANGOR	1.02	0.95	21.24	SCENARIO 7	0.95	4.68	242.02	SCENARIO 6
SABAH	0.91	0.97	(1.77)	SCENARIO 5	0.97	27.36	2.79	SCENARIO 5
FEDERAL TERRITORY	0.66	0.71	(13.25)	SCENARIO 5	0.71	7.80	97.80	SCENARIO 6
MOST SUSTAINABLE (NOT AFFECTED BY COVID-19 PANDEMIC)	-	-	-	-	-	-	-	KEDAH, KELANTAN, NEGERI SEMBILAN AND SABAH

Conclusion

Even though technology has been extensively embraced around the world, only a small number of Malaysian zakat organizations have used mobile technology platforms to connect with the public, including zakat contributors and receivers. In addition to zakat collection, zakat education and awareness are also crucial, and an institution can simply spread information about zakat using technological means. However, the observation demonstrates that Malaysian zakat organizations still do not use mobile applications. In order for the Malaysian Zakat Institution to become more proactive and innovative through the implementation of technology, a lot of work needs to be done to improve the practice and culture. The establishment of a specialized technology department is advised for the zakat institutions in order to build a comprehensive platform for zakat chain management. This platform will be used to manage all phases of zakat, including knowledge sharing, zakat collection, payment, distribution, zakat report, and investment. It is advised that Zakat institutions work with third parties, including as government agencies and financial organizations, to exchange ideas on how to make Zakat more effective for society.

Unlike other authors whose studies appraised the practice of Zakat collection and disbursement, and efficiency of Zakat fund separately, the present study brings the two together and extended it to include the sustainability element into the analysis. In fact, the last two elements of appraising Zakat institutions performance are the main contribution of the study. Before applying the two newly crafted methods to measure the efficiency and sustainability, two ratios and eight scenarios are formulated. Next, utilizing the formulated ratios and scenarios to data compiled from seven (7) selected states in Malaysia, the following findings prevailed. First, the performance of Zakat institutions of all states in terms of Zakat distribution and disbursement do not have a consistent trend for the period 2016-2020. Second, with 2016 being the exception, for the remaining years, one state was ranked as the best performer or the most efficient. Third, based on the formulated ratios, the sustainability of each Zakat institution in the presence of Covid-19 pandemic was ascertained. Specifically, when a dissection of the sustainability of Zakat institution in Malaysia was made, it was found that all non-privatized states and one partially privatized state are sustainable in coping with Covid-19 pandemic. It is worthy of mention that the newly developed method can be applied to measure the performance of Zakat institutions at district, regional and global levels in terms of its efficiency and sustainability. The only constraint of this study is that it cannot measure the practice of Zakat collection and distribution, efficiency and sustainability of Zakat institutions of all states in Malaysia because some of the states did not publish data according to the requirements of the methods developed.

Implications

The newly crafted method can be applied to appraise the performance of Zakat institutions by the innovative technique of AD/AC and ZP/ZR at a district, regional and global levels in

terms of its practice of Zakat collection and distribution, efficiency and sustainability, with or without Covid-19 pandemic presence. The Zakat institutions should educate the people about zakat and technology using both offline and online platforms for better knowledge in technology and simultaneously hire additional professionals to strengthen the use of technology in Zakat administration.

Zakat institutions should also increase their yearly budget and allocation for technology costs, mainly for disseminating the information on zakat collection and disbursement. The Federal government may help the institution in this situation by allocating funding for technology. The creation of a thorough platform for Zakat Chain Management for Zakat institutions may be the subject of future research.

Originality/Value

The study investigates the sustainability of Zakat institutions and relates it to the recent issue of Covid-19 pandemic. Together with two other issues, namely the technique of AD/AC and ZP/ZR of Zakat collection and disbursement, and efficiency, all the three issues are collaborated to measure how Zakat payers and recipients of the seven (7) selected states in Malaysia are coping with the adverse impact of Covid-19 pandemic. Hitherto, there is not any studies that have been undertaken to appraise such an inter-twined issue. Perhaps, this study is the first of its kind.

Research limitations

The only constraint of this study is that it cannot appraise the efficiency and sustainability of Zakat institutions of all 14 states in Malaysia because some of the states did not publish data according to the requirements of the method developed.

Conflict of interest

The authors declare no potential conflict of interest regarding the publication of this work. In addition, the ethical issues including plagiarism, informed consent, misconduct, data fabrication and, or falsification, double publication and, or submission, and redundancy have been completely witnessed by the authors.

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