DOES ZAKAT MATTER FOR HUMAN DEVELOPMENT? AN EMPIRICAL EVIDENCE FROM INDONESIA

I.K. Balyanda AKMAL
Postgraduate Student in Economics, Faculty of Economics and Business, Universitas Syiah Kuala, Indonesia
balyanda@gmail.com

M. Shabri Abd. MAJID
Senior Lecturer, Faculty of Economics and Business, Universitas Syiah Kuala, Indonesia
Corresponding author
mshabri@unsyiah.ac.id

Eddy GUNAWAN
Senior Lecturer, Faculty of Economics and Business, Universitas Syiah Kuala, Indonesia
egunawan@unsyiah.ac.id

Abstract
This study aims to empirically measure and analyze the contribution zakat to human development and, consequently towards the achievement of the Sustainability Development Goals (SDGs) program in Indonesia. Specifically, this study intends to measure the differences in the Human Development Index (HDI) of zakat recipients before and after receiving zakat and measure the effect of zakat on the HDI and its components. The response to these issues, the study estimates the value of the Human Development Index (HDI) at a minor level; the individual and household levels. 100 recipients of zakat (mustahik) from the three programs of zakat distribution by the zakat institution of Aceh Province, Indonesia (Baitul Mal Aceh - BMA) were selected as the sample of the study using a combination of purposive and proportionate stratified random samplings. These zakat programs include zakat for cancer and thalassemia patients, zakat for one family one undergraduate scholarship, and zakat for buying working capital for the poor families. The paired t-test is adopted to assess the differences in HDI of zakat recipients before and after receiving zakat, while the multiple linear regression is used to measure the effect of zakat on the HDI and its components. The study found that, after receiving zakat, the HDI of zakat recipients is higher than before. Zakat is also recorded to have a significant positive effect on the HDI, while the family size affected negatively the HDI and the types of zakat and profession of zakat recipients have an insignificant effect on the HDI. These findings suggest the positive role of zakat in improving human development and it could be used as one of the instruments to accelerate the achievement of the SDGs agenda in Indonesia.
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1. Introduction

Human development can be defined as a multi-dimensional concept that is enlarging people's choices. It believed that this theory would be strengthening the capability of human life physically, mentally, and spiritually in which led to a decent living. Although this may be true, the individual choices will always be varied and unlimited. Therefore, the United Nations Development Program (UNDP) introduced the Human Development Index (HDI) concept in 1990 to measure the level of human welfare. Moreover, this concept focuses on three essentials of people's choices as it components that lead to longevity, access the knowledge, and secure the resources to reach a decent standard of living. Based on this, the concept of human development can also be determined as the concept of human welfare.

Conceptually, the HDI offered as an alternative and more comprehensive way of measuring the success of human development, especially in efforts to improve the prosperity and the quality of human life as a whole. According to Klugman (2011), the concept of the HDI was a result of dissatisfaction with Gross Domestic Product (GDP) per capita to be a standard measurement of human welfare and economic development. This skepticism occurs

based on the omission of the poor population growth that led to a large discrepancy regarding income inequality.

There have also been skeptical arguments assuming that measuring human well-being altogether through the traditional GDP estimation may not be an accurate method (Sampath, 2014). In the same way, Stiglitz (2010) asserts that the GDP can create a disparity within the average and median income in which one can increase, while the other decreases. Furthermore, this economic behavior results in several problems such as unemployment, poverty, and inequality. Therefore, the concept that introduced by Ul Haq (1995) expected to enhance the quality of human life that was not only elaborating on the commodities and wealth but also reflected the expanding of human choices widely.

From the above, the previous concept explained by UNDP acts closely to the theory of welfare in the Islamic perception, which is also known as *maqashid shari'a* (objectives of *shari'a*), the rules or the doctrines established by the *shari'a*, which aim to *maṣlaḥa* (public welfare and interest) for humankind (Ibn' Ashour, 2006). Moreover, Al-Ghazali (1993) added that *maqashid shari'a* strengthens the identification of human welfare, which includes religion (*ad-din*), life (*an-nafs*), intellect (*al-'aql*), posterity (*an-nasl*), and wealth (*al-mal*).

Following this idea, Islam designated *zakat* as one of five pillars that essential for every Muslim to obeyed and obligated. *Zakat* also interprets as one of the most prominent concepts which have a strong correlation to human development. For example, poverty alleviation, an equal income distribution, and harmony creation in a society, which further organizes into sustainable development goals (SDGs)? To put it in another way, the perception of human welfare in Islam also considered being the major implication of the *maqashid shari'a*.

In the Islamic context, a Muslim whose property and wealth have reached a minimum level (*nisab*) set by the Holy Qur'an, he/she should pay 2.5% *zakat*. Considering Indonesia as the largest Muslim populous country in the world, thus *zakat* has great potentials to promote the welfare of the poor. As reported by the Bogor Institute of Agriculture and BAZNAS, the potential of *zakat* in Indonesia reached IDR217 trillion in 2010 and IDR286 in 2015. This is in line with the prediction of Kahf (1989) where Muslim countries, including Indonesia, their potential yield of *zakat* revenue could reach 2% of the national GDP. Although the realization of *zakat* collection was still very low compared to the existing potential, *zakat* is significant in the midst of the poor Indonesian economy.

Unlike other 33 provinces in Indonesia, Aceh is the only province that has been granted by the central government of Indonesia to implement Islamic law in all aspects of life. Thus, the potential for *zakat* in the province, as the case of our study, is larger as compared to other provinces in Indonesia. The joint study by the Research and Publishing Center, Research Institute and Community Service of the Ar-Raniry State Islamic University and Baitul Mal Aceh reported that the potential *zakat* in the province reached IDR1.3 trillion in 2016 (Majid, 2017).

Realizing the great potentials of *zakat* to the economic development throughout the Muslim countries, studies focusing on the role of *zakat* as part of Islamic economic and financial institutions have recently been increasing. For example, Kahf and Yafai (2015) analyze the difference between the *zakat* system and the modern social security system that is practiced today. Shirazi (1996) describes the conditions of education, health, poverty and their relationships to *zakat* without showing quantitatively the impact of the distribution of *zakat* on the level of education, health, and poverty in Pakistan. Sudarlan (2015), in his research on the contribution of HDI in poverty alleviation, explains that per capita income and education had a positive influence on poverty reduction, although health has not been able to positively influence poverty reduction. However, Sudarlan (2015) fails to link the contribution of *zakat* to the HDI. More specifically, Suprayitno et al. (2017) examined the effect of *zakat* on economic activity and human development. In their research, Suprayitno et al. (2017) focuses only on the distribution of *zakat* on education and the empowerment of human resources but ignores the components of human health development. Finally, Beik and Arsyanti (2016) and Nurzaman (2016), respectively examined the effectiveness of the distribution of productive *zakat* on welfare and HDI of the poor. Former study finds productive *zakat* has improved the welfare of the poor, while later study finds the insignificant effect of *zakat* on HDI of the poor.

These previous studies have generally focused its analysis more on the potential of *zakat* and its relationship with various other economic problems, but there are still few studies explore *zakat* as an instrument that plays a role in human development. The contribution of *zakat* to human development has also not been studied from all aspects of HDI (i.e., income, education, and health), and they have only focused on certain HDI components. As a result, these previous studies have failed to provide comprehensive empirical evidence about the role of *zakat* in promoting human development. In addition, studies on the role of productive *zakat* on welfare and HDI found mixed findings.

This is what drives this present study to fill up the gap of previous studies, aiming at comprehensively examine the effects of *zakat* on all components of HDI, including aspects of income, health, and education in the province of Aceh, Indonesia. More specifically, this study intends to empirically examine more deeply the influence of the distribution of *zakat* on sectors directly related to human development through the programs of the utilization and distribution of *zakat*. The findings of this study are hoped to be a guide in determining the strategic distribution of *zakat* that is more effective in improving human development.

The rest of the study is structured in the following manner. Section 2 highlights the potency of *zakat* in human development and reviews relevant selected previous studies, followed by the research methods in Section 3. Meanwhile, findings and discussion are provided in Section 4. Finally, Section 5 concludes the study.

2. Literature Review

2.1. The Dynamic Potential of *Zakat*

In its basic principle, *zakat* described as a mandatory, obligation, and absolute order for every Muslim (*muzakki*) to pay 2.5% of their wealth to assist the needy (*Mustahik*). It is one of the fundamental pillars of Islam which closely related to the economic and financial system. Even though *zakat* was only a religion instrumental for the Muslim community concerning human welfare, it has tremendous potential not only for its followers but also for humanity in broader perception. Consequently, it is not surprising to witness *zakat* performances in several practices, such as State primary sources of income or alternative funding for the assistance of social and economic factors. Nevertheless, there was research stated that *zakat* has excellent potential as the source of income, funding assistance, and alternative solution for many economic activities shaped by social processes (Majid, 2017).

In the beginning, the issues concerning *zakat* at a macro level only considered as unaccustomed discussions. However, the world's attention on this subject gradually changes over time, including in Indonesia. It also becomes a new issue and popular topic for the practitioners, researchers, academicians, and many other parties, particularly after the findings concerning the enormous potential of *zakat*. In Indonesia, Firdaus et al. (2012) estimated the potential of *zakat* to reach IDR217 trillion, equivalent to 3.4% of Indonesia's total GDP in 2010. Kahf (1989) also revealed that the potential of *zakat* in several Muslim countries, as well as Indonesia, could reach 2% of the total GDP.

In addition to this, the promising contribution of *zakat* is not limited at these levels of the framework alone. Although Stirk (2015) claims that there is no accurate or reliable data for the global financial estimation of *zakat* collection, still, there is countless empirical evidence through numerous studies conducted by many experts or institutions. Stirk (2015) even figured that the previous evaluation of *zakat* collected across the world has varied enormously – ranged from US$200 billion to US$1 trillion annually. Using the calculation of *zakat* as a percentage of GDP at the number of *zakat* received among some countries in the Organization of Islamic Cooperation (OIC), Shaikh (2016) states that it had reached US$187 million. Then, BAZNAS (2017) also provides the information regarding *zakat* acquisition led by state authorities over IDR3.6 trillion in 2015, which included *infaq* and *shadaqah* (voluntary donations), and 63% of it, designated as *zakat* (obligatory donation).

However, based on numerous data collected, it can be argued that despite *zakat* has enormous potential, it does not guarantee the collection of *zakat* would also be higher. This claim supported by the data shown in Table 1, which provides information about *zakat* collection in Indonesia in the years 2002 to 2019 that did not even reach 1% of the total it's

potential, although its accumulation has, on average, increased by 36.24% over the period. Majid (2017) explains that this situation occurs due to several factors such as cultures, regulations, motivations, and lack of understandings regarding *zakat* obligation, which is directly and significantly affecting *muzakki*'s decision to pay *zakat*.

Table 1. Trends of *Zakat*, *Infaq* and Shadaqah (ZIS) Collection in Indonesia, 2002 – 2016

Year	Total of ZIS (IDR Billion)	Growth (%)
2002	68.39	-
2003	85.28	24.70
2004	150.09	76.00
2005	295.52	96.90
2006	371.17	26.28
2007	740.00	98.30
2008	920.00	24.32
2009	1,200.00	30.43
2010	1,500.00	25.00
2011	1,729.00	15.27
2012	2,212.00	27.94
2013	2,639.00	19.30
2014	3,300.00	25.05
2015	3,653.37	10.71
2016	5,017.29	37.34
2017	6,224.37	24.06
2018	8,100.00	30.13
2019	10,070.00	24.31
Mean		**36.24**

Source: Pusat Kajian Strategis – Badan Amil *Zakat* Nasional - Puskas BAZNAS (2017).

2.2. *Zakat* and Human Development

The current realization of the collection of *zakat* funds remains yet insignificant compared to its potential. However, it is also essential toward the understanding of how researchers and practitioners decide to develop the current *zakat* practice upon the focus and organization of joint work. This effort can be seen through *zakat* utilization and distribution programs conducted by *zakat* management institutions such as BAZNAS, Baitul Mal, and other organizations starting to unveil a substantial return on the economy of poor (*Mustahik*). The findings gradually show its impact on poverty alleviation, income distribution, improving the quality of education, and many other socio-economic arrangements, which regularly classified into two types of *zakat* distribution schemes, i.e., consumptive and productive.

Generally, *zakat* consumptive nature, limited only to cover *mustahik* daily needs, such as foods, clothes, health, and so on. However, this scheme is less helpful in the long term, assuming the support provided will be soon run out. Therefore, the distribution must be effectively utilized and avoiding the overly used for simply consumptive usage that can lead to the ineffective of *zakat* applications and systems. Meanwhile, the assistance of *zakat* productive is also supposed to increase the wealth of the poor through generating economic, education, and social security. In other words, this method considered capable of producing new *zakat* payers (*muzakki)*, which means this kind of distribution plot holds a critical responsibility toward the development of *mustahik* welfare.

Important to realize, these two methods are trying to make the *zakat* distribution more flexible. This innovation purposes to improve *zakat* roles for greater use and attempt to lead the results according to its fundamental objective, the concept of maqashid sharia, which improving the quality of human life. Therefore, the utilization of the *zakat* fund following those methods gradually led the advantages to the growth of the economic and social security of the *muzakki* over time, particularly for the poorest or most vulnerable category.

It can be seen in Table 2, which explains the example comparison regarding the distribution sectors of *zakat* by BAZNAS in the years 2015 and 2016. Overall, the total amount of *zakat* distribution increased from IDR2,251 trillion in 2015 to IDR2,694 trillion in 2016. To put it in more detail, the concentration toward the economic sector slightly increases from 15.01% in 2015 to 18.30 % in 2016. On the other hand, the health and social sectors suggested the reduction of *zakat* allocation in 2016. Correspondingly, the education sector

hints to hold the most prominent part of all *zakat* allocating funds, which significant boost from 2015 by 20.35% to 31.28% in 2016. These facts might indicate that the distribution of *zakat* on each Human Development Index (HDI) component positively affects human welfare.

Table 2. Distribution of *Zakat* by Sector in Indonesia (IDR Billion)

Sector	2015	%	2016	%
Economy	338.03	15.01	493.07	18.30
Education	458.19	20.35	842.98	31.28
Dakwah (Islamic Preaching)	334.74	14.87	418.45	15.53
Health	191.41	8.50	226.00	8.39
Social	929.23	41.27	714.26	26.51
Total	**2,251.63**	**100.00**	**2,694.78**	**100.00**

Source: Pusat Kajian Strategis – Badan Amil *Zakat* Nasional – Puskas BAZNAS (2017).

It also believed the concept of *zakat* has a close affiliation to the UNDP through the SDGs program. This program started to display a global agenda of sustainable development from 2015 to 2030. The SDGs program committed facing overcoming several development problems in 193 member countries all over the world, including Indonesia. It also in line with the basic principles of *zakat* concerning human welfare, in addition to the 17 priority goals and targets to achieve. As a result, this program considered affiliated with the concept of *maqashid shari'a* in the Islamic economic perspective, as previously explained.

Numerous advanced studies discussed how to establish the concept of *zakat* to fulfill the basic need of societies. Although the findings vary depending on the captivating area of study to each contributor, the result still shows the significant role of *zakat* in all of the human development sectors related. For example, Shirazi (1996) investigated the relationship between *zakat* distribution and poverty alleviation using the Foster, Greer, and Thorbecke – FGT's (2010) index. However, in this research, Shirazi only provided a brief review of *zakat* distribution effects on education and health areas, which supports the poverty reduction.

There has also been empirical evidence covering the enormous impact of *zakat* distribution, which creates the bridge to the success of the SDGs program. This achievement explicated by many studies conducted with various methods and approaches. For example, Suprayitno et al. (2017) discovered that *zakat* could direct impact on the economic activity of *mustahik*. Not to mention, it also can be used as an essential instrument to increase the quality of human development in the form of *mustahik* welfare. Similarly, Stirk (2015) revealed the crucial role of *zakat* in dealing with the poverty level. The result shows it level is generally higher in most of the countries resided by large Muslim populations, especially those located in Africa and South-East Asia.

In more organized methods, Kusuma and Sukmana (2010) segregated the classifications of *zakat* based on the Islamic point of view concerning distributional schemes toward the socio-economic framework. Therefore, the order divides into three stages as pre-production distribution, post-production distribution, and redistribution itself. In those events, they found two critical issues concerning income inequality. First, the equitable distribution of *zakat* to the poor and needy could appear to be an audible opportunity for economic growth. Second, the power of *zakat* has a positive impact on succeeding in dealing with income inequalities that arise by the increasing of *mustahik* purchasing power parity (PPP).

These findings also corroborated to the classical economic theory of Keynes regarding the impact of *zakat* distribution toward the marginal propensity to consume (MPC). In more detail, Yusoff (2010) stated that *zakat* possesses the ability to raise the consumption of the poor following the MPC of the *zakat* payers (*muzakki*) is lower compared to the *zakat* recipients (*mustahik*). For the same reason, Metwally (1983) found the ability of *zakat* to increase the aggregate consumption of *mustahik*. Consequently, the PPP of the *mustahik*, which is used to measure the standard of living increases. In addition to this, Yusoff (2011) also suggested for Muslim countries to give priority to distribute *zakat* toward the education sector as the most effective development strategy. This idea emerges in effect to build up the quality of human resources expected to achieve sustainable economic development.

Zakat, which is supposed to be an obligation for every Muslim, holds the role of being a new economic power toward the world's economy. Noor dan Pickup (2017) revealed that

zakat has now converted to be the largest source of wealth and funds in the world distributed to the poor in the socio-economic aspect. Moreover, *zakat* also transforms to be a significant concern of many organizations engaged in human development, such as UNDP, due to its extraordinary potential. Therefore, the subject concerning *zakat* is no longer an unfamiliar issue discussed only in the Muslim countries internally, but also has presented as global anxieties.

Supported by empirical evidence, Beik and Arsyanti (2016) and also Nurzaman (2016) explained that the funds sourced from *zakat* distribution could directly affect the HDI of *mustahik*. Despite that, the findings consider ineffective due to its particular focus on the distribution of productive *zakat* only. Consequently, future studies need to extend a longer time to get a satisfactory result in their studies.

The above-reviewed studies show the potential role of *zakat* in promoting human development in Muslim countries. *Zakat* provides an alternative source of funds toward the realization of the SDGs agenda. Considering the crucial role of *zakat* in an Islamic economy, thus, it is timely, to analyze the effect of the distribution of *zakat* on the HDI of the individual and households. Moreover, to provide comprehensive empirical findings, our study focuses on the variety of *zakat* distribution schemes provided to the poor by the Baitul Mal Aceh, Indonesia.

3.   Research Method

The population of this study is the poor who are the recipients of various schemes of zakat provided by the Baitul Mal Aceh, Indonesia. This study selects 100 *zakat* recipients as the sample of the study. Based on the report of Baitul Mal Aceh, there were 504 recipients of *zakat* for three different schemes (i.e., *Zakat* for patients of cancer dan thalassemia, scholarship, and working capital from the poor family), as illustrated in Table 3. 100 of them were proportionately selected as the sample of the study following the schemes of *zakat*, thus using the proportionate stratified random sampling technique. Of 100 respondents selected, 10 of them were the recipients of *zakat* for the schemes of cancer and thalassemia, 18 were the recipients of *zakat* for the scholarship, and 77 were the *zakat* recipients for working capital. To gather the data, 100 questionnaires were distributed to them and all were returns and fully filled up by the respondents (100% response rate).

Table 3. Population and Sample of the Study

No.	Scheme of *Zakat*	Population	Sample
1.	*Zakat* for patients of cancer dan thalassemia from the poor family	50	10
2.	*Zakat* for 'one scholarship for one family' of the poor	91	18
3	*Zakat* for providing working capital for the poor family	363	72
	Total	**504**	**100**

The study measures human development using the Human Development Index (HDI) and indices of its components comprise of education, health, and income. Specifically, to determine the level of the HDI, the range of values uses is between "0" to "100". This specified limit patterns the area of variation between upper and lower limits on a particular scale of the HDI levels. Following Anand and Sen (1994), the study measures the HDI using the following formula:

$$HDI = \frac{HI + EI + II}{3} \qquad (1)$$

The Equation (1) suggests that the method to identify the HDI value in this study does not appear to have many changes comparing to the general standard applied by the UNDP and Statistics Indonesia or *Badan Pusat Statistik* (BPS). In this research, the standard formula utilizes to estimate the HDI values are not in the scope of the regional or international level. However, it holds a different approach and a slight modification on the original formula following Nurzaman's (2010) estimation on HDI by obtaining the data at a micro level, household, and individual.

In the same fashion, the estimation requires the HDI data a part of the *zakat* support, and also the data involving *zakat* assistance to compare its level in both situations. However, the

model will form after analyzing each of its components; *HI* (Health index), *EI* (Education index), and *II* (Income index). Hence, the detailed estimations for each HDI component at this level can be assessed as follows:

3.1. Health Index (Life expectancy of Mustahik)

The current life expectancy index or health index (HI) used by UNDP and BPS to estimate HDI levels at the national or international level tend to consider people's condition at birth. Likewise, the standards also applied for more modest areas such as at the provincial and district level. However, in this study, the method will be modified by considering variations in the distribution of the population (Nurzaman, 2010). Consequently, obtaining the HDI data at a lower level, certainly not something impracticable any longer.

Necessarily, an initial follow-up expected to quantify the estimation of HDI is to analyze the *mustahik* life expectancy index, which represented by the head of households. However, the data of *mustahik HI* difficult to be evaluated without standard data uses to compare. Therefore, the international standard of life expectancy for maximum and minimum; *Ex.a,g,(max)* and *Ex.a,g,(min)*, from reliable sources such as UNDP and BPS adopted. As a result, the following processes in the estimation method will appear as:

$$HI(m) = \frac{Ex.a,g,(m) - Ex.a,g,(min)}{Ex.a,g,(max) - Ex.a,g,(min)} \qquad (2)$$

Moreover, the number of family members for each household holds an important part resembling the basis for estimating the average value of *mustahik* household's life expectancy index. Therefore, the formula modified as follows:

$$H\text{-Index (h)} = \sum (HI(m)/n) \qquad (3)$$

3.2. Education Index

The measurement of the education index (*EI*) is not much different compared to national or international standard formula. Moreover, despite each component has its particular approach and different kinds of data as the source, the standard used for the measurement also originated from UNDP and BPS. However, the method to estimate *mustahik* household *EI* in this paper is following Nurzaman (2016) through incorporating informal education as an additional indicator for those who did not attend regular schooling. Also, the average length of study in this form of school will start at the age of 7 following the latest method of BPS in 2014 for a national standard of beginning years for formal education. Eventually, the data obtained then inserted into the following formula:

$$EYS\text{-}Index = \frac{EYS - EYS(min)}{EYS(max) - EYS(min)} \qquad (4)$$

$$MYS\text{-}Index = \frac{MYS - MYS(min)}{MYS(max) - MYS(min)} \qquad (5)$$

Furthermore, the result of both of Expected years of schooling (EYS) and Mean years of schooling (MYS) of the head of *mustahik* households and all of the family members will be the basis to analyze the *EI* value in the formula as follow:

$$E\text{-}Index = \frac{EYSI + MYSI}{2} \qquad (6)$$

3.3. Income Index

According to the previous explanation, the income index (IE) represents a complicated term for a decent standard of living. It is the level of welfare, which is enjoyed by the people as a result of developing in the economy (BPS, 2014). In order to determine the human standard of living through the estimation of IE, the first method will directly use the adjusted

real per capita expenditure. The estimation of the real per capita expenditure measured in a medium of the monthly expenditure and income of each household of *mustahik* following government standard method, which based on 27 commodities, despite having not been able to provide an accurate explanation. However, Nurzaman (2010) offers an alternative approach by simplifying the commodities above to represent all costs for the *mustahik* needs in one month in the area of study.

Moreover, for additional methods, UNDP is also adjusting the purchasing power parity (PPP) at the household level expenditure into a unit of international dollars. PPP is one of the popular analysis metrics on macro-economic, which also has a role as the primary indicator to determine the value of the income index (II). This method also frequently applied by many countries to adjust the gross domestic product (GDP) on an international scale. Therefore, the formula will appear as follow:

PPP(Xmh) = Annual households expenditure x (Indonesia GDP deflator/US GDP deflator)(7)

In this model, we assume that the PPP metrics have adjusted to the household level. Moreover, both of the X(min) and X(max) are PPP per year at the international level set by UNDP, which are the minimum at the US \$100 and the maximum at the US \$40,000. Next, in order to obtain the *II* value, the result of PPP (*Xij*) will be embedded into the following formula:

$$\textit{I-index} = \frac{Ln\ Xij - Ln\ X\ (min)}{Ln\ X\ (max) - Ln\ X\ (min)} \tag{8}$$

To put it simply, to estimate the HDI value of mustahik households will be directed by combining the three of its components into the Equation (1), as explained. Meanwhile, obtaining the value of HDI before and after receiving *zakat*, the method utilized through paired t-test. Hence, the result of the estimation could decide whether the distribution of *zakat* has a positive result or not.

Apart from the number of *zakat* distribution, other independent variables of family size, *zakat* scheme, and type of profession of the *zakat* recipients were included in the analysis. Thus, to analyze the impact of *zakat* distribution on HDI, the following multiple linear regression model is estimated.

$$HDI = \alpha + \lambda_1 ZK + \lambda_2 FS + \lambda_3 ZS + \lambda_4 PT + \varepsilon \tag{9}$$

To have a greater picture of the effect of *zakat* on human development, the study estimates the effect of *zakat* on all dimensions of human development, comprising health, education, and income. Thus, the following equations are proposed to measure the effect of *zakat* on the development of health, education, and income of the poor (*zakat* recipients).

$$HI = \alpha + \lambda_1 ZK + \lambda_2 FS + \lambda_3 ZS + \lambda_4 PT + \varepsilon \tag{10}$$
$$EI = \alpha + \lambda_1 ZK + \lambda_2 FS + \lambda_3 ZS + \lambda_4 PT + \varepsilon \tag{11}$$
$$II = \alpha + \lambda_1 ZK + \lambda_2 FS + \lambda_3 ZS + \lambda_4 PT + \varepsilon \tag{12}$$

where HDI is the human development index, ZK is the total of *zakat* distribution, FS is the family size, ZS is the *zakat* scheme, PT is the profession type, HI is the health index, EI is the education index, II is the income index, α is the constant term, λ_i are the estimated coefficients of each independent variables, and ε is the error term.

Prior to estimate the proposed model, the classical assumption tests of normality, multicollinearity, and heteroscedasticity are firstly performed to ensure the validity and accuracy of the data to provide robust findings.

4.   **Findings and Discussion**

As mentioned earlier, 100 *zakat* recipients of several programs of *zakat* utilization at the Baitul Mal Aceh, Indonesia were selected as the sample of the study. In particular, there are three major welfare programs systematically analyzed, namely: *zakat* for cancer and

thalassemia patients, *zakat* for one family one undergraduate scholarship, and *zakat* for buying working capital for the poor families. Even though each of these programs has originated from different sectors, it has a strong correlation to the human development components of health, education, and income.

The respondent's characteristics in these programs are illustrated in Table 4, which represents the data of an independent variable as the basis for estimating the value of the HDI at the *mustahik* level. Generally, the data in the table shows the personal information of *mustahik*, such as age, number of a family member, educational level, and average income after *zakat*.

Furthermore, the health index as one of the HDI components is measured considering age and family size, which is one of the HDI components. The data shows that the age of 10 *mustahik* is over 55 years old, while 21 respondents between 46 to 55 years old. In contrast, 39 of them are between 36 to 45 years old, and 30 remaining respondents are under 35 years old. With this in mind, the data suggest that the majority of *mustahik* are still of productive age. Therefore, the *zakat* distribution for the group of *mustahik* believes to be a devastating way to increase the HDI-value.

Table 4. The Characteristic of Respondents

Characteristic	Frequency	Percentage
Age:		
< 35	31	30
36-45	39	39
Family Size:		
0	0	0
1-3	28	28
4-5	68	68
> 6	4	4
Educational Level:		
Elementary school	5	5
Junior high school	21	21
Senior high school	71	71
Bachelor degree	3	3
Monthly Income:		
< 1.000.000	7	7
1.000.000-2.000.000	65	65
>2.000.000	28	28
Total	**100**	**100**

Another variable that considered to affects the HDI-value is the family size. Furthermore, out of 100 respondents, 65 of them have 4 to 5 family members, and 29 respondents had the size of family members between 1 to 3 people while the rest of the respondents have 6 people or more in their family. The study found that all of the 100 respondents surveyed had attended school and completed an elementary school. In more detail, 71 *mustahik* successfully completed senior-high-school, while the remaining 21 people completed junior high school, and the other three reaching up to college as the highest level of all.

The information above indicates that there were no illiterate respondents without any educational background. Moreover, the majority of respondents managed to fulfill the twelve years of a compulsory education program. This program is launched by the Ministry of Education and Culture of the Republic of Indonesia, which consists of six years at the elementary level, and three years each at junior and senior high school levels.

The findings also show that about 65% of respondents as the majority of *mustahik* to earn IDR1-2 million income after receiving *zakat*, 28% have a monthly income above IDR2 million, and the rest 7% was only earning under IDR1 million. According to the BPS (2019), the majority of *mustahik* monthly income supposes to meet the regional and provincial minimum wage standards after receiving the *zakat*.

Table 5, in turn, reports the changes in *mustahik* HDI and its components before and after receiving *zakat*. In other words, this table reports the effectiveness of *zakat* on improving HDI and its components.

Table 5. The Changes of HDI Value and Its Components before and after *Zakat*

Variables	Before *Zakat*		After *Zakat*		Changes
	Value	Index	Value	Index	%
Health index (HI)	24	24	0,25	25	1,74
Education Index (EI)	64	64	0,70	70	8,90
Income index (II)	55	55	0,75	75	26,53
Human development index (HDI)	46	46	0,57	57	19,38

As illustrated in Table 5, the *mustahik* HDI level increased by 19.38 percent after receiving *zakat* from the level of 46 to 57. These results indicate that the value of *mustahik* HDI has improved comparing before *zakat* distribution. Notwithstanding, the level of HDI still much lower compared to the national level of Indonesia HDI in 2015, which was at 68. Nevertheless, the HDI growth suggests that the *zakat* might have a significant influence on the HDI improvement and also on the success of the SDGs program.

Table 5 also suggests that the imbalance between HDI components causes the trifling on the level of *mustahik* HDI. Furthermore, the value of average life expectancy, which refers to the health index estimation after *zakat*, found at 0.24. This result suggests that the average life expectancy of babies born in that year was around 24 percent and has probabilities of surviving until the age of 24 years. Similarly, Murniati and Beik (2014) found its rate at 0.34, which also indicates the average life expectancy index in the year is 34 percent. They can survive to live until 34 years old. However, according to empirical data, and supported by the census conducted by BPS (2019), the average life expectancy could reach over 75 years old. In this case, the estimation of the life expectancy index seems to be unsuitable for the essential measurement of human welfare toward the health sector.

Table 6. Paired t-Test Before and After *Zakat*

HDI Changes		Paired Differences					t-value	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Difference (5%)			
					Lower	Upper		
Pair 1	HDI after-before	0.109	0.073	0.007	0.095	0.124	14.903	0.000
Pair 2	HI after-before	0.004	0.003	0.000	0.003	0.004	13.713	0.000
Pair 3	EI after-before	0.063	0.074	0.007	0.048	0.077	8.501	0.000
Pair 4	II after-before	0.199	0.138	0.014	0.171	0.226	14.366	0.000

Furthermore, the effectiveness of *zakat* on the HDI of *zakat* recipients after and before receiving *zakat* based on the paired t-test is reported in Table 6. The mean of HDI-value before and after *zakat* was equal to 0.109. This condition indicates that there is a positive tendency for HDI-value growth. Moreover, the table shows the sig < 0.05, suggesting that there are differences in *mustahik* HDI before and after receiving *zakat*. This result indicates that the *mustahik* HDI level after *zakat* distribution is higher compared before receiving it. The significant effect of *zakat* on HDI and its components is also illustrated in Table 7. Therefore, the distribution of *zakat* funds to *mustahik* has improved their HDI level and its components, health, education, and income indices.

Table 7. The Effects of *Zakat* on HDI and its Components

Variables	HDI	HI	EI	II
Constant	-1.0770[***]	-0.7248[***]	-0.9943[***]	-1.5086[***]
	(-4.3214)	(-2.9617)	(-2.7318)	(-3.5950)
Zakat	0.1131[***]	0.0914[***]	0.1170[***]	0.1312[***]
	(7.5270)	(6.1949)	(5.5328)	(5.1828)
Family size	-0.0292[***]	-0.1015[***]	-0.0208[**]	0.0337[***]
	(-4.7285)	(-16.705)	(-2.3077)	(3.2425)
Zakat Scheme	0.0186	0.0023	0.0029	0.0488[**]
	(1.5686)	(0.2030)	(0.1677)	(2.4315)
Work Type	-0.0079	-0.0204[***]	-0.0129	0.0111
	(-1.4758)	(-3.8606)	(-1.6494)	(1.2314)
R^2	0.6139	0.8758	0.4349	0.2905
Adjusted R^2	0.5976	0.8705	0.4111	0.2606
Durbin-Watson	1.5610	1.4065	1.5687	1.6856
F-Statistic	37.779[***]	167.489[***]	18.284[***]	9.726[***]

Note: [***] and [***] indicate the 1% 5% levels of significance.

The findings of our study are also corroborated by previous studies conducted by Murniati and Beik (2014), which states that the *zakat* plays a decisive role in increasing the *mustahik* HDI level. In more detail, they found that the value of *mustahik* HDI increased by 4.1% from levels 47 to 49, even though the status of the HDI level did not change significantly. Still, these findings become evidence that *zakat* has perfect control over the HDI level enhancement. Puskas BAZNAS (2017) also found that the distribution of *zakat* toward education and health sectors showing positive effects. Similarly, De La Torre and Moreno (2013) confirmed the outcomes of this analysis regarding the HDI improvements. Correspondingly, it found that the oil and gas revenue sharing carried out by the Mexican government was effective in boosting the income of the deprived people in the area of research. Finally, Syechalad et al. (2013) also explained that government expenditure in health and education sectors held an essential role in increasing the HDI level. Therefore, advancing the concentration in these sectors, which led to human welfare improvement, should have remains the priority in *zakat* distribution.

As discussed earlier, a multiple linear regression analysis is performed to specify the accurate analysis of the *zakat* effect toward the HDI and the SDGs agenda success. However, it must first meet the classical assumption, as a requirement to verify the validity of the data used for the test. The study found that the p-value of the Jarque-Bera test, including R-square and Chi-Square on the Breusch-Pagan-Godfrey test was less than 0.05. At the same time, the value of the centered VIF recording between 10 and 0.1, which means all of the tests have met the assumption requirement for its validity.

Moreover, the analysis explicates the value of F-calculate > F-table with the significance of each dependent variable < 0.05 (Table 7). In this case, the simultaneous test procedures confirm the *zakat* distribution with significant results and positive effects toward the family size, types of *zakat* distributed, and *mustahik* professions. Besides, the result of this study also supported by Nurzaman (2016) and Murniati and Beik (2014), which obtained an identical conclusion on the distribution of *zakat*, which had a positive and significant effect on HDI along with the other three components.

Soares et al. (2007) supported through conditional cash transfer programs given to the family members of poor households in Brazil regarding education and health sectors. The assistance granted in the form of aid to maintain the school attendance for the children between 6-15 years old and routine health check-ups for pregnant women and the children up to six years old in needy families. This research explained the positive results of the program on the consumption expenditure of the poor, especially for food consumption, which indirectly influences the improvement of health quality. Furthermore, with the assistance provided to the education of children from low-income families, the dropout rate has diminished; in other words, the education level of the children of poor households has risen. Additional findings regarding the research are that the provision of allowance in both sectors helped to break the cycle of poverty that has occurred between generations in several households in Brazil, particularly the houses that exist below the poverty line.

Further analysis found that the impact of *zakat* not only related to the HDI but also expected to meet the *maqashid shari'a* criteria, which have more comprehensive viewpoints and does not restrain to these three sectors. Consequently, it is not surprising that the distribution of *zakat* manages to give a positive and significant effect on HDI and its components.

Instead, the family size exposes a negative and also significant effect on the HDI-value, likewise the health and education index. On the contrary, this variable precisely shows the different results on the income index. This circumstance indicates the larger the number of members in the household of *mustahik*, the higher the impact on the HDI impairment. However, the inequalities occur in each HDI components regarding the family size, considered to be a trigger for many socio-economic problems, mainly related to human development, which obliquely causes the negative impression on *mustahik* HDI-value.

According to this occurrence, Kiran and Dhawan (2015) explained that the increase in the number of members in a household, indirectly results in the transfer of income derived from savings; as a result, the ratio of a person's savings or families will continue to decrease in line with the increase of family members. In a few cases, the additional family members who have individual income could not affect the reduction of the savings ratio. On the contrary, it

causes the possibility of savings ratios owned by households that have many members who are much higher than the houses with a few members of the family. However, supported with many empirical findings, Bendig et al. (2009) revealed that most of the research conducted shows that the number of household members drains the savings, the more members in a household withdraw the savings, the tendency that occurs is the loss of savings from the individuals.

In the case of the distribution aspect, the variable of *zakat*-type that utilized shows irrelevant results on HDI-value and its components but not the income index. This outcome occurs because of the *zakat* given in the form of cash, which issued directly on the *mustahik* income but not for the ill-treatment or for the consumption of nutritious foods that affect health improvement. Furthermore, the transferred health funds tend to lead only as a support for *mustahik* families during the treatment period. Additionally, *zakat* utilization in the education sector requires a long period to reveal its capability. Consequently, the distribution of these sectors has not shown significant results, in contrast to the income-related area, which has a direct impact on HDI.

Besides, *zakat* distribution programs in the education sector conducted tend to lead to the formal education system, which progresses and shows the impact in a more prolonged period. In contrast, if *zakat* can distribute in the form of informal education such as training or improving work skills, which is also known as technical and vocational education and training, it will show immediate effects. According to Bagale (2015), such training plays a significant role in creating conditions for sustainable development. Besides, this kind of training and education is also qualified to provide opportunities to train skills and improve careers for students who do not want or incapable of advancing their education at a higher level.

The last variable examined in this study is the type of work. Works for people define as a tool to manifest the potential with various qualities and innovations owned with all their souls. Therefore, it could be interpreted as a method for accessing the product of development to meet their needs appropriately. Furthermore, the World Bank (2013) illustrates how types of work can affect development by creating a positive cycle. However, this study has a different result compared to what the World Bank found. This circumstance explains that *mustahik* current jobs are not feasible enough for them to meet basic human needs. Consequently, the *mustahik* needs to find a better job or to develop their existing works.

5. Conclusion

Zakat is one of the pillars in Islam that contains creed (*shahadah*), prayer (*salat*), fasting, and pilgrimage (hajj). The difference is that *zakat* not only being part of the routine of worship but also has a strong relationship with a social life that is directly related to socio-economic activities. *Zakat* originates of an obligation for every Muslim. It is a huge source of funds which is obtained from *muzakki* and distributed to *mustahik* with the particular provisions. In the economic world, *zakat* incarnate to be a new global phenomenon associated with the concept of human development. Therefore, the research and discussions regarding optimizing its roles, which have enormous potential, drastically increase over the decades, be it from the perspective of *zakat* collection or distribution.

In terms of *zakat* collection, there are not many discussions concerning its immense potential. Despite the fact that the research is limited, but most of the researchers admit that the collection of *zakat* could reach more than 2% of GDP. On top of that, UNDP even states that *zakat* is one of the most substantial sources of funds transfer to the poor and needy existence. Similarly, a large amount of literature and research focus on the discussion in terms of *zakat* distribution also expected to be a demanded topic by economists. Moreover, *zakat* has shown its strength to be an alternative toward human welfare by analyzing its impact on human development. Particularly, *zakat* can cover a number of important issues for the world such as eradicating extreme poverty, ensuring a healthy life, securing the quality of education, and reducing the inequalities, which also included in the 17th priority goals and targets in the SDGs program led by UNDP.

Nevertheless, it is unlikely to avoid criticism regarding SDGs. This is primarily because – the suspicious viewpoint of critics on the target quantities as a weakness, while others argue that these goals represent a critical reflection of the complexity of human life. In addition to

this, the Human Development Index (HDI) introduced by Ul Haq (1990) provides a single-number measure alternative capturing the development in three basic dimensions of human welfare: health, education, and decent living standards. However, there are also cynical arguments attracted regarding the HDI, which is a limited area measurement only to three indicators of human well-being.

Another finding appears to suggest that the imbalance between the levels of HDI and its components among the *mustahik*. This result contradicts the fundamental values of *zakat*, which can reduce socio-economic inequality in society. In contrast, the impartiality of *zakat* distribution through various well-directed and structured programs, expected to show a satisfying result. Hence, the issue concerning the inequality on three components of HDI and also social and economic factors in comprehensive perspectives can be solved.

Finally, in this study, we exposed another form of a solution in meeting the development challenges through the *zakat*, considering its potentials. Furthermore, supported by empirical evidence, *zakat* assumes to be an alternative factor for the socio-economic failures of human society. However, the significant gaps that occur between enormous *zakat* potential and its insignificant amount collected have created the dilemmas on the optimization of *zakat* roles. Correspondingly, its role in increasing the level of HDI, which represents the quality of human life, will be affected. It also will exacerbate the accomplishment of the SDGs program, which has a universal vision for ending poverty, protecting the planet, and ensuring everyone experience harmony and prosperity.

References

Al-Ghazali, A. H. (1993). Al-Mustashfa Fi 'Ulum al-Usul. Beirut: Dar al-Kutub al-Ilmiyah.

Anand, S., & Sen, A. (1994). Human Development Index: Methodology and Measurement. UNDP Human Development Report Office

Bagale, S. (2015). Technical Education and Vocational Training for Sustainable Development. Journal of Training and Development, 1, 15-20.

Beik, I. S. & Arsyanti, L. D. (2016). Measuring Zakat Impact on Poverty and Welfare Using CIBEST Model. Journal of Islamic Monetary Economics and Finance, 1(2), 141-160.

Bendig, M., Giesbert, L., & Steiner, S. (2009). Savings, Credit and Insurance: Household Demand for Formal Financial Services in Rural Ghana, No. 94. GIGA German Institute of Global and Area Studies.

BPS. (2009). Profil Kemiskinan di Indonesia Maret 2019. Jakarta: Berita Resmi Statistik.

BPS. (2015). Indeks Pembangunan Manusia 2014 Metode Baru. Jakarta: Badan Pusat Statistik.

De la Torre, R., & Moreno, H. (2010). Advances in the sub-national measurement of the Human Development Index: The case of Mexico. UNDP-HDRO Occasional Papers, (2010/23).

Firdaus, M., Beik, I. S., Irawan, T. & Juanda, B. (2012). Economic Estimation and Determinations of Zakat Potential in Indonesia. Islamic Research and Training Institute Working Paper Series, No. 1433-07.

Foster, J., Greer, J., & Thorbecke, E. (2010). The Foster–Greer–Thorbecke (FGT) poverty measures: 25 years later. The Journal of Economic Inequality, 8(4), 491-524.

Ibn 'Ashour, M. T. M. (2006). Maqashid asy-Syariah al-Islamiyyah. Qatar: Ministry of Awqaf and Islamic Affairs.

Kahf, M. (1989). Zakat: Unresolved Issues in the Contemporary Fiqh. IIUM Journal of Economics and Management, 2(1), 1-22.

Kiran, T., & Dhawan, S. (2015). The Impact of Family Size on Savings and Consumption Expenditure of Industrial Workers: A Cross-Sectional Study. American Journal of Economics and Business Administration, 7(4), 177.

Klugman, J., Rodríguez, F., & Choi, H. J. (2011). The HDI 2010: New Controversies, Old Critiques. The Journal of Economic Inequality, 9(2), 249-288.

Kusuma, D. B. W., & Sukmana, R. (2010). The Power of Zakah in Poverty Alleviation. Seventh International Conference – The Tawhidi Epistemology: Zakat and Waqf Economy, Bangi 2010.

Majid, M. S. A. (2017). The Motivation of Muzakki to Pay Zakah: Study at the Baitul Mal Aceh. Signifikan: Jurnal Ilmu Ekonomi, 6 (1), 159-176.

Metwally, M.M. (1983). "Fiscal Policy in Islamic Economy", in Ahmed, Z. et al. (eds.). Fiscal Policy and Resource Allocation in Islam. International Centre for Research in Islamic Economics, King Abdul Aziz University, Jeddah, Saudi Arabia, 59-81

Murniati, R., & Beik, I. S. (2014). Pengaruh Zakat Terhadap Indeks Pembangunan Manusia dan Tingkat Kemiskinan Mustahik: Studi Kasus Pendayagunaan BAZNAS Kota Bogor. Jurnal al-Muzara'ah, 2(2), 135-149.

Noor, Z., & Pickup, F. (2017). The Role of Zakat in Supporting the Sustainable Development Goals. Brief, May 2017.

Nurzaman, M. S. (2016). Evaluating the Impact of Productive Based Zakat in the Perspective of Human Development Index: A Comparative Analysis. Kyoto Bulletin of Islamic Area Studies, 9(29), 42-62.

Puskas BAZNAS. (2017). Indonesia Zakat Outlook 2018. BAZNAS Center of Strategic Studies-Books.

Sampath, R. (2014). Toward an Alternative to the GDP: A Critical Analysis of the Commission on the Measurement of Economic Performance and Social Progress. Journal of Social Science for Policy Implications, 2(1), 59-66.

Shaikh, S. A. (2016). Zakat Collectible in OIC Countries for Poverty Alleviation: A Primer on Empirical Estimation. International Journal of Zakat, 1(1), 17–35.

Shirazi, N. S. (1996). System of Zakat in Pakistan: An Appraisal. Islamabad, International Institute of Islamic Economics, International Islamic University.

Soares, F.V., Ribas, R. P., & Osorio, R. Guerreiro (2007). Evaluating the Impact of Brazil's Bolsa Família: Cash Transfer Programmes in Comparative Perspective, No. 1. International Policy Centre for Inclusive Growth.

Stiglitz, J. E. (2010). Amartya Sen, and Jean-Paul Fitoussi. Mismeasuring Our Lives: Why GDP Doesn't Add Up. The Report. New York: New, 2010.

Stirk, C. (2015). An Act of Faith: Humanitarian Financing and Zakat. Global Humanitarian Assistance.

Suprayitno, E., Aslam, M., & Harun, A. (2017). Zakat and SDGs: Impact Zakat on Human Development in the Five States of Malaysia. International Journal of Zakat, 2(1), 61-69.

Syechalad, M., N., Hamzah, A., B., & Mauriza, S., (2013). Analisis Indeks Pembangunan Manusia di Kawasan Barat dan Kawasan Timur Provinsi Aceh. Jurnal Ilmu Ekonomi, 1, 29-43.

Ul Haq, M. (1995). Reflections on Human Development. UK: Oxford University Press.

UNDP. (1990). Human Development Report 1990: Concept and Measurement of Human Development. New York: Oxford University Press.

World Bank. (2013). World Development Report 2013: Jobs. USA: World Bank Group - World Bank Publications.

Yusoff, M. B. (2010). An Analysis of Zakat Expenditure and Real Output: Theory and Evidence. International Journal of Economics, Management and Accounting, 18(2), 139-160.

Yusoff, M. B. (2011). Zakat Expenditure, School Enrollment, and Economic Growth in Malaysia. International Journal of Business and Social Science, 2(6), 175-181.