

ZAKAT AND EDUCATION FOR POVERTY ALLEVIATION AND INCOME INEQUALITY REDUCTION: A CASE STUDY OF WEST JAVA, INDONESIA

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Abstract

This study attempts to investigate the role of zakat for poverty alleviation and income inequality reduction based on the educational background of the zakat beneficiaries in three different regions including Bogor, Depok and Sukabumi Indonesia by using CIBEST model, Gini coefficient and Atkinson index. It takes the case study of 1309 households zakat recipients managed by the national zakat board (BAZNAS) in each city and regency under consideration. This study suggests that the existences of zakat distribution programs after one year appear to have better effect in terms of poverty alleviation and income inequality reduction on the household heads who attend formal and informal schools as compared to the household heads who never attain such educational backgrounds.

Keywords: Zakat, Education, Poverty, Income Inequality

INTRODUCTION

The role of zakat for poverty alleviation and income inequality reduction is reflected through many Quarnic verses including the *Quran* 9: 60 and 59: 7. Pramanik (1993) argues that zakat is an effective tool to overcome the dual problem of poverty and income inequality in a country. To him, the significance of zakat should not be treated merely as one of the five pillars in Islam, but must also be examined in relation to its social and economic consequences.

In the context of Indonesia, the development of zakat at the state level started since the launch of Zakat Management Act No. 38/1999 that administers zakat management in the country. As the continuation of this Act, the national zakat board or *BadanAmil Zakat Nasional* (BAZNAS) was established as the national coordinating zakat institution based on Presidential Decree No 8/2001 dated January 17, 2001. After 12 years in operation, Zakat Management Act No 38/1999 was changed to Zakat Management Act No 23/2011. There are some such fundamental alterations in this new legislation as, strengthening the position of BAZNAS in the government structure, encouraging integration system between government and private zakat institutions and many more.

The current zakat distribution program has been empirically successful in promoting economic welfare. For instance, Indonesia Zakat and Development Report (2012) shows zakat is able to reduce the poverty incidence of zakat beneficiaries (*mustahik*) by 21.11 percent in the year 2011. Beik (2013) also shows that zakat distribution programs can significantly reduce poverty and income inequality among zakat beneficiaries in Jakarta, Indonesia.

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Besides zakat, many studies also show the important role of education in relation with poverty and income inequality. For instance, Pramanik (1998) suggests that the higher level of formal and informal education, the bigger is the opportunity to reduce poverty in the long run as better-educated parents are expected to have more educated children. Duryea and Pages (2002) also suggest that education is crucial in order to achieve sustainable productivity growth and to reduce poverty levels in the country. With education, the quality of people in terms of knowledge and skills can be improved. As a matter of fact, human capital investment should be primarily in the form of education both formal and informal methods (Blanchard, 2009) as it is more substantial in contributing the total factor productivity than such other conventional factors as labour, capital and technology (Pramanik, 1998).

This study hence attempts to analyze the role of zakat for poverty alleviation and income inequality reduction based on the educational background of zakat beneficiaries. The paper comprises five sections including introduction as the first section. Section 2 presents literature review followed by methodology in section 3. Section 4 presents the results and analysis while section 5 concludes and provides some recommendations.

LITERATURE REVIEW

Basic Concept of Poverty

The World Bank defines poverty as an “unacceptable human deprivation in terms of economic opportunity, education, health and nutrition as well as lack of empowerment and security”. In the context of Indonesia, the Statistics Central Board (*Badan Pusat Statistik* or abbreviated as BPS) employs basic needs fulfillment ability to measure poverty. By using this approach, poverty is defined as an economic incapability to sustain food and non-food basic needs that are measured from the expenditure side. The non-food basic needs include clothes, housing, education and health service. According to Statistics Central Board (2014), the poverty line in Indonesia consists of two components namely, Food Poverty Line (FPL) and Non-Food Poverty Line (NFPL) separately for urban and rural regions. The former refers to the daily minimum requirement of 2,100 kcal per capita per day, while the latter refers to the minimum requirement for household necessities for clothing, education, health and other basic individual needs. Hence, a person whose monthly spending is under the poverty line is identified as poor. However, poverty is actually a multidimensional concept in the sense that there is no definition that can provide a comprehensive view on poverty.

Sen (1980) defines poverty as “the lack of what needs to live within a society”. He argues that poverty is caused by the lack of capabilities. He further argues that other factors such as age, gender, income, inheritance and family lineage also determine the level of capability reached by every individual. Shirazi (1994), Pramanik (1993, 1998) and Narayan (2000) are of the opinion that poverty is a state when individuals do not have enough resources to satisfy their basic needs in order to attain rationally comfortable life in very broad dimensions comprising economic, social, psychological and spiritual. They argue that it is difficult to comprehend poverty from income alone. Similarly, one of the most prominent Islamic scholars, Imam Al-Ghazali (1980) delineates poverty as the inability to sustain one’s need. Not being able to fulfill what is not needed, according to him, is not considered as poverty. He further classifies poverty into two major categories namely, poverty with the relation to material and spiritual needs.

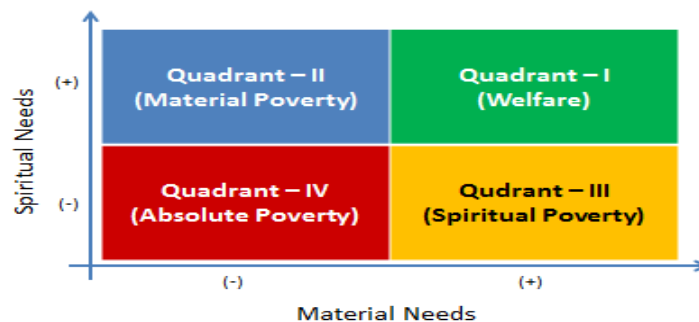
While conceptualizing the multidimensional poverty including material and spiritual aspects, Beik and Arsyianti (2015) develop the Center for Islamic Economics and Business Studies (abbreviated as CIBEST) model to capture both elements. They define material poverty

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as the incapability to meet the material basic needs such as foods, clothes and shelter. This type of needs must be measured through the accurate process of analysis and survey based on the condition of society. The major cause of material poverty is the income inadequacy to meet those needs.

On the other hand, spiritual poverty is defined as the inability of people to fulfill the minimum spiritual needs including obligatory as well as recommended worship such as prayer, fasting and paying zakat. This kind of poverty is caused by internal and external factors. The internal factors comprise the influence from self's lust and worldly desire, the lack of understanding on Islam and the domination of evil characters within self, such as laziness, bad temper and many more. The external factors include wrong family support, bad impact from external environment such as secularism, religious liberalism, atheism and many more, unsupported government policy and other external factors.

Figure 2.1
The CIBEST Quadrant



Sumber : Adapted from Beik and Arsyianti (2015)

They further identify four types of household conditions namely, welfare, material poverty, spiritual poverty and absolute poverty as seen on Figure 1. According to the figure, the horizontal axis represents material needs, while vertical axis exhibits spiritual needs. The positive sign refers to the sufficient condition of material as well as spiritual needs, while conversely the negative sign indicates the lack of both aspects.

Concept of Income Inequality

Like poverty, income inequality is also a multifaceted concept in the sense that no single idea is enough. The Oxford Dictionary of Economics (2003) defines inequality as “the state of not being equal”, while New Zealand Social Report (2008) defines income inequality as “the extent of disparity between high income and low income households”.

While some economists¹ opine that income inequality is not bad in general as everyone in the society can still be better off, some argue that income inequality may harm the economy. As the example of latter's argument, Berg and Ostry (2011) find the negative relationship between income inequality with growth sustainability. The higher the income inequality, the less sustainable is the growth. They argue that extreme income inequality is detrimental to a country's economic prospects in the long run. There are several means of how income inequality can affect growth sustainability including credit market imperfections, political economy and political instability.

¹ For example Posner (2007) stated “Income inequality is not bad in general when it does not involve any reduction in the incomes of a substantial fraction of the population” (Retrieved from http://www.becker-posnerblog.com/2007/10/globalization_a.html). Similar argument is also presented by Feldstein (1999).

From the Islamic point of view, similar with poverty, inequality is actually a natural phenomenon. For instance, in the *Quran* 6: 65, Allah SWT says, “*And it is He who has made you successors upon the earth and has raised some of you above others in degrees that He may try you through what He has given you. Indeed, your Lord is swift in penalty; but indeed, He is Forgiving and Merciful.*”

According to Iqbal (1986) and Hasan (2006), the aforementioned verse basically describe natural inequality. He argues that it would be unjust if people were equal in terms of their incomes due to the varying capabilities and roles on the production. Nevertheless, what Islam discourages is the excessive and intense income inequality in the society. Zulkifli et al (2008) is also of the opinion that extreme inequality is discouraged in Islam.

Zakat, Poverty and Income Inequality

There have been numerous empirical studies on the importance of zakat distribution, by using both qualitative and quantitative approaches. With regard to the quantitative studies that measure the role of zakat for poverty alleviation and income inequality reduction from micro level, there have been numbers of researches study about this topic. For instance, Jehle (1994) takes the case of Pakistan from 1987 to 1988 by using AKS (Atkinson Kolm and Sen) index of inequality. He finds that zakat generally can reduce income inequality by sharing resources from middle class segment to the less well-off group. Similarly, Shirazi (1996) studies the role of zakat in Pakistan from 1990-1991 by employing FGT (Foster, Greer and Thorbecke) index as the tool of analysis. He suggests that the voluntary zakat transfers can reduce poverty gap from 11.2 percent to 8 percent. By taking the case of Malaysia, Patmawati (2006) shows that based on Lorenz curve and Gini coefficient result, zakat can reduce income gap among the society and the Atkinson index reveals that zakat can give positive effect on income loss.

In the context of Indonesia, there have been several quantitative studies that analyze about this theme. Beik (2013) uses the same analytic tools with Patmawati (2006). By taking the case of Jakarta city, he finds that zakat distribution program is able to lower the poverty incidence by 16.79 percent and reduce income inequality by 0.57 percentage points. Anriani (2010), Purnamasari (2010), and Tsani and Beik (2015) also reveal similar findings. By using CIBEST index, Beik and Pratama (2015) shows that after completing the program, 63.7 percent of household are able to fulfill their material and spiritual needs. This is indicated through the decrease of the material, spiritual, and absolute poverty index and the increase of welfare index.

Despite number of studies as explained above, there still exists literature gap from another dimension. For instance, there is lack of studies that analyze the role of zakat based on the educational background of zakat beneficiaries. Therefore, this study is a humble attempt in bridging this gap.

METHODS

This study observes 1,309 respondents that are obtained through survey from January to April 2017. As mentioned earlier, it takes the case of BAZNAS in three different cities and regencies in West Java including Bogor, Depok and Sukabumi. The poverty analysis employs the Center of Islamic Business and Economic Studies (CIBEST) model with several alterations in order to obtain a more holistic result as it reveals material and spiritual aspects. The income inequality is measured by using Deciles method, Gini coefficient and Atkinson Index.

In terms of poverty analysis, this research examines two sets of data. First data set comprises pre-zakat household income and the second data set includes post-zakat household

income. The pre-zakat household income data is obtained from BAZNAS in each regency before the respondents participate zakat distribution programs while the post-zakat income data is acquired using questionnaires one year after they join zakat distribution programs. In terms of spirituality before and one year after zakat distribution programs, it is obtained through questionnaire. The CIBEST quadrant is used to derive index of each area in the quadrant including welfare index, material poverty index, spiritual poverty index and absolute poverty index. In our study, we change the term “welfare” with “*falah*”. Mathematically, the *falah* index is formulized as follows.

$$F = \frac{f}{N} \quad (1)$$

Where:

F = *Falah* Index that lies from 0 to 1

f = The number of prosperous households of zakat payers

N = The number of observations

Secondly, the material poverty index is formulized as follows.

$$Mp = \frac{NM_p}{N} \quad (2)$$

Where:

Mp = Material Poverty Index that lies from 0 to 1

NM_p = The number of materially poor but spiritually rich households. They fall under material poverty line, but their spiritual Likert scale at least equals to 3.

N = The number of observations

Thirdly, the spiritual poverty index is formulized as follows.

$$Sp = \frac{NS_p}{N} \quad (3)$$

Where:

Sp = Spiritual Poverty Index that lies from 0 to 1

NS_p = The number of materially rich but spiritually poor households. They fall above material poverty line, but their spiritual Likert scale is less than 3.

N = The number of observations

Lastly, the absolute poverty index is formulized as follows.

$$Ap = \frac{NA_p}{N} \quad (4)$$

Where:

Ap = Absolute Poverty Index that lies from 0 to 1

NA_p = The number of materially and spiritually poor households. They fall under material poverty line and their spiritual Likert scale is less than 3.

N = The number of observations

The number of NM_p , NS_p , and NA_p are simply determined by counting the number of households living in each quadrant. Those numbers can be valued when the standard of materially and spiritually poor are established. Accordingly, the standard of material line is derived from the minimum standard of material needs that has to be fulfilled by the household. The formula of this standard is as follows.

$$MS = \sum_{i=1}^N P_i M_i \tag{5}$$

Where:

MS = Poverty line income (in terms of local currency)

P_i = Price of goods and services i (in terms of local currency)

M_i = Minimum amounts of goods and services needed

In terms of income poverty line in five aforementioned areas under consideration, this study employs *nishab* standard of zakat of income as material standard. The *nishab* standard of zakat of income is the monetary value of 524 kg rice based on Regulation of Indonesian Minister of Religious Affair Number 52/2014. According to Presidential Instruction Number 5/2015, the government-purchasing price of each kg equals to IDR7300. Therefore, the material standard according to *nishab* is obtained by multiplying 524kg of rice with the aforesaid government-purchasing price of each kg that equals to IDR3825200 or USD283.29. A household is classified as materially poor if its income is less than the value of MS . Otherwise, they are categorized as rich.

In terms of the indicators of spiritual needs, the spirituality model of CIBEST is opted over other models because of several considerations. First, the simplicity of the CIBEST model makes this model is applicable for large sample size. Second, although it needs several extensions, the indicators of spirituality in the CIBEST model have strong foundation according to the *Quran* and *hadith*. Third, the model has been also adopted as national policy by BAZNAS and hence the validity of the model has been solved.

The spiritual indicators of the CIBEST model are measured using Likert scale by evaluating the performance of household's worship and external factors including prayer, fasting, zakat and charity spending, household environment and government policy environment. The scale lies between 1 to 5 representing ascending performances in order. In other words, the higher scale represents the better spirituality.

For instance, if a household always performs obligatory and recommended prayer, fasting and pay zakat and charity, they are scored 5. On the other hand, if they never perform them and block other to perform those worships, they get 1. Similarly, if the household and policy environments are conducive for the family members to perform worship, they are scored. The standard of spiritual poverty line equals to 3 showing the family only performs the obligatory worships or minimum performance of worships.

Nevertheless, despite its simplicity, the spirituality index in the CIBEST model is confined on the mere three out of five pillars of Islam and the supporting environment of family and government. In the current study, the spiritual indicators are modified by adding some such other variables as the way of household members perform prayer (congregational or individual basis), the habit of reading *Quran* and the endeavor for acquiring Islamic knowledge as well as attending religious gathering or ceremonies. Besides that, the indicators also include one's foundation of Islamic creed, i.e. *aqidah*. The adjustments are expected to be able to capture spiritual condition of the household in more comprehensive way. The indicators of spirituality are presented in the following Table 3.1.

Table 3.1
Spiritual Indicators

Variables	Likert Scale	Spiritual
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	1	2	3	4	5	Standar d
Belief	Disbelieve in Allah and blocking others to believe	Disbelieve in Allah	Believe in Allah	Believe in Allah and have positive thought over Him	Believe in Allah, have positive thought over Him and encouraging others to believe	Average score for spiritually poor household is equal to 3 (SS = 3)
Obligatory Prayer	Blocking others to pray	Against the concept of obligatory prayer	Performing obligatory prayer but not on regular basis	Always performing obligatory prayer	Performing obligatory prayer and encouraging others to pray	
Recommended Prayer	Blocking others to pray	Against the concept of recommended prayer	Not performing recommended prayer	Performing recommended prayer but not on regular basis	Always performing recommended prayer	
Congregational Prayer	Blocking others to pray	Against the concept of recommended prayer	Not performing prayer in congregation	Performing prayer in congregation but not on regular basis	Always Performing prayer in congregation	
Obligatory Fasting	Blocking others to undertake fasting	Against the concept of fasting	Not fully performing obligatory fasting	Performing only obligatory fasting	Performing obligatory fasting and encouraging others to undertake fasting	
Recommended Fasting	Blocking others to undertake fasting	Against the concept of fasting	Not performing recommended fasting	Performing recommended fasting but not on regular basis	Always performing recommended fasting	
Zakat and Infak	Blocking others to pay zakat and infak	Against the concept of zakat and infak	Not paying infak at least once in a year	Paying zakat <i>al-fitr</i> and zakat <i>al-maal</i>	Paying zakat <i>al-fitr</i> , zakat <i>al-maal</i> , and infak	
Reciting Al-Quran	Blocking others to recite Al-Quran	Never recite Al-Quran	Recite Al-Quran but not on daily basis	Recite Al-Quran in daily basis less than 1 juz	Recite Al-Quran in daily basis at least 1 juz	
Acquiring Islamic Knowledge	Blocking others to Islamic Knowledge	Never acquire Islamic knowledge	Seldom acquire Islamic knowledge	Often acquire Islamic knowledge	Acquire Islamic knowledge in regular basis	

Religious gathering attendance	Blocking others to attend religious gathering	Never attend religious gathering	Seldom attend religious gathering	Often attend religious gathering	Attend religious in regular basis
Household Environment	Forbid <i>ibaadah</i>	Against implementation of <i>ibaadah</i>	Consider <i>ibaadah</i> private matter for household member	Support execution of <i>ibaadah</i>	Creating environment which obligates execution of <i>ibaadah</i> . Creating environment which obligates execution of <i>ibaadah</i>
Government Policy Environment	Forbid <i>ibaadah</i>	Against implementation of <i>ibaadah</i>	Consider <i>ibaadah</i> private matter	Support execution of <i>ibaadah</i>	Creating environment which obligates execution of <i>ibaadah</i>

Source: Beik and Arsyianti (2015) with some extensions

To support the additional spiritual indicators, this study employs verses in the *Quran* and *hadith*. For instance, the inclusion of Islamic creed (*aqidah*) is based on six pillars of faith and Islamic teaching practice in daily life supporting the *hadith* stating that poverty may lead to disbelief. The *Quran* 112: 1-4, 31: 22 and 33 are among verses that indicate the crucial aspect of believing Allah SWT. In terms of the way of household members in performing prayer whether in congregational (*jama'ah*) or individual basis, it is in accordance to the *Quran* 2: 43. Rasulullah (s.a.w) also said, "It is better to join another person and pray than to pray alone and it is more superior in the company of two men and the bigger congregation the more liked it is by Allah." (narrated by Abu Dawud, book of KitabusSolah, *hadith* no. 554).

The indicator of reading *Al-Quran* is in line with some *Quranic* verses that show the significance of the Holy Book and therefore Muslim should learn, read and implements its contents in all aspects of their life. For example, in the *Quran* 2: 2, Allah SWT says, "This is the Book about which there is no doubt, a guidance for those conscious of Allah." People who conscious of Allah SWT are those who have *taqwa*, piety, righteousness, fear and love of Allah and those who take great care to avoid His displeasure. The important position of *Al-Quran* in the Muslim's life as a guidance can also be found in the *Quran* 29: 45, 38: 1, 50: 1, 56: 77-80 and 85: 21.

In terms of the endeavor for acquiring Islamic knowledge as well as attending religious gathering, this is based on the important role of knowledge in the religion. Islam encourages people to have knowledge as Allah SWT states, "...Allah will raise those who have believed among you and those who were given knowledge by degrees." (*Quran* 58: 11). This verse shows the importance of the knowledge acquirement process. People are encouraged to obtain useful knowledge particularly the one that can generate better understanding on Islam. There are also many verses that indicate the role of knowledge for Muslim such as the *Quran* 3: 18, 20: 114 and 39: 9. Following the CIBEST model, spiritual standard that separates spiritually poor households and spiritually rich households is determined to be equal to 3 (vide Table 1). Mathematically, it can be written as follows.

$$SS = 3 \quad (6)$$

Where:

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SS = Standard for spiritual poverty

The general spiritual condition of households in one country can be formulated as follows.

$$SA = \sum_{k=1}^N \frac{SHk}{N} \quad (7)$$

Where:

SA = Average score of spiritual condition of the observed households

SHk = Actual condition of household *k*

N = The number of households in the sample

If the value of spiritual average ranking of the household is more than its standard ($SA > SS$), then generally speaking, spiritual condition of population in one place is in good condition. In other words, they are spiritually rich. Similarly, if the value of spiritual average of the household is less than or equal to its standard ($SA \leq SS$), the residents of that place are spiritually poor.

Another important aspect is related on the calculation of *SHk*. It is obtained from the score of all variables observed in the household. Therefore, equation (8) below provides the formula to compute *SHk*.

$$SHav = \sum_{h=1}^{TNH} \frac{AS_1 + AS_2 + \dots + AS_{TNH}}{TNH} \quad (8)$$

Where:

SHav = Average score of actual spiritual condition of one household

ASh = Actual spiritual score of the household member *h*

TNH = Total number of household member

As for *ASi*, the formula is as follows.

$$ASi = \frac{FS + OPS + RPS + CPS + OFS + RFS + ZS + AS + KS + IGS + HS + GS}{12} \quad 9)$$

Where:

ASi = Actual spiritual score of household member *i*

OPS = Obligatory prayer score

RPS = Recommended prayer score

CPS = Congregational prayer score

OFS = Obligatory fasting score

RFS = Recommended fasting score

ZS = Zakat and infaq score

AS = Reading Al-Quran score

KS = Acquiring Islamic knowledge score

IGS = Islamic gathering attendance score

HS = Household environment score

GS = Government policy environment score

Determination of the number of households in each CIBEST quadrant is based on combination of results of material standard (*MS*) value and spiritual standard (*SS*) value. There

are four probabilities of combination between MS and SS results, namely, both rich and high spirituality, high spirituality but poor, rich but low spirituality, and both poor and low spirituality (vide Table 3.2).

Table 3.2
Combination of SS and MS Values

Results	≤MS Value	>MS Value
>SS Value	High Spirituality but Poor (Quadrant II)	Rich and High Spirituality (Quadrant I)
≤SS Value	Poor and Low Spirituality (Quadrant III)	Rich but Low Spirituality (Quadrant IV)

Source: Beik and Arsyianti (2015)

When the number of household in each quadrant is known, the calculation of all indices becomes easier. Combining all values of *falah* index, material poverty index, spiritual poverty index and absolute poverty index, we will get total values of those indices to be equal to 1. This is called as the generalized CIBEST model.

$$CIBESTModel = 1 = F + Mp + Sp + Ap \tag{10}$$

According to equation (10), total summation of all indices must be equal to one. These indices could be utilized in mapping the population, in which quadrant that most of the population lives. It will assist the government to design policy strategy that can be effectively executed.

In terms of income inequality, the study uses Deciles, Gini coefficient and Atkinson index as the analytical tools. McConnell *et al* (2015) define Gini coefficient as a numerical measure of the overall distribution of income. The value lies between 0 to 1, where 0 exhibits perfect equality and 1 represents perfect inequality. Based on Patmawati (2006), the calculation of Gini coefficient is as follows.

$$G = 1 - \sum (ab)(bd + ac) \tag{11}$$

Where:

G = Gini coefficient

ab = The value based on population division

bd = Percentage of income received by population

ac = Percentage of population

The interpretations of Gini coefficient results are as follows. If the post-zakat Gini coefficient may appear smaller than the pre-zakat Gini coefficient, to suggest the impact of zakat distribution on income inequality reduction.

Another income inequality measurement is Atkinson Index. It is basically based on the social welfare evaluation of income distribution. Patmawati (2006) argued that this index has two major objectives. First, to quantify the differences in inequality between the two distributions to indicate the income distribution of the post-zakat distribution is more equal than the income distribution of the pre-zakat distribution. Second, to measure the degree of welfare

loss of the society due to inequality in the income distribution of the society. This is important so that we can know whether the welfare loss of the society is reduced with the distribution of zakat.

On the other hand, Golan *et al* (2001) argue that this measure has several desirable properties. First, the Atkinson index has a dollar-denominated (currency-denominated) interpretation. Second, the measure for the entire population can be decomposed into within-groups and between-groups welfare measures for subgroup of the population. Third, changing the single parameter that indexes the Atkinson measure changes the weight the welfare index places on relative increases of wealth at the lower end of the income distribution. Fourth, it can be derived axiomatically to be consistent with a welfare maximization model.

The formula of Atkinson index is given below.

$$I = 1 - \frac{Y_{EDE}}{\mu} \quad (12)$$

Where:

I = Atkinson index

Y_{EDE} = Equally distributed equivalent level of income.

μ = Mean income distribution of the population

The interpretation of this Atkinson index is based on its pre and post zakat values. If the value of post-zakat Atkinson index may appear smaller than the value of pre-zakat Atkinson index, it can be concluded that zakat distribution is able to reduce the welfare loss of the society, and vice versa.

RESULTS AND ANALYSIS

Demographic Characteristics

The following Table 3 exhibits demographic characteristics of the respondents in urban and rural areas. In terms of gender, it appears that the current finding is contradicted with the conventional wisdom where male-headed households dominate characteristics of the respondents by approximately two-third and four-fifth in urban and rural areas respectively. In relation with marital status, nearly two-third of the household heads are married in both areas followed by the widowed and single household heads. Based on the age of the head of households in both areas, it is surprising to observe that almost half of the head of households are seniors category (46 to 65 years old), followed by adults (26-45 years old), elderly (more than 65 years old) and juvenile (12-25 years old) categories. The finding suggests that the respondents are mostly at their economically productive age, i.e. between 46 to 65 years old.

In relation with the jobs of household heads, worker in service sector dominates the occupation of household heads in urban area by nearly one-third of the total respondents; followed by entrepreneur (21.6 percent), factory labour (20.2 percent), employee (11.1 percent), housewife (4.6 percent), worker in industry sector (2.3) and farmer (1.3 percent). On the other hand, entrepreneur constitutes the highest portion of occupation of the rural household heads by 26.2 percent; followed by factory labour (21.5 percent), worker in service sector (12.7 percent), farmer (10.8 percent), employee (8.8), housewife (2.5 percent) and worker in industry sector (1.7 percent).

Table 4.1
Respondents' Demographic Characteristics

Demographic Characteristics		Percentage	
		Urban	Rural
Gender	Man	67.4	79.7
	Woman	32.6	20.3
Status	Married	66.8	81.9
	Single	8.2	0.7
	Divorced	25.0	17.4
Age Groups	Juvenile (12 – 25 yo)	5.7	1.0
	Adults (26– 45 yo)	36.8	43.6
	Seniors (46 – 65 yo)	45.0	47.9
	Elderly (> 65 yo)	12.6	7.5
Jobs	Employee	11.1	8.8
	Housewife	4.6	2.5
	Farmer	1.3	10.8
	Entrepreneur	21.6	26.2
	Labor	20.2	21.5
	Industry Sector	2.3	1.7
	Service Sector	29.4	12.7
	Others	95	15.8

The following Table 4.2 exhibits profile of the respondents according to their educational background including formal and informal education. From the table, it is found that majority of household heads in both areas pursue formal education up to elementary school level closely followed by senior and junior high school levels. There are approximately 4 percent of the household heads that hold diploma and bachelor degree certificates, while only less than 1 percent of the respondents hold such other level of formal education as Islamic boarding school (*Pesantren*). However, it is surprising to observe that the household heads who never attend any formal education seems to be higher in the urban area as compared in the rural area. This phenomenon might be linked to the increase in urban poverty due to internal migration from rural to urban.

Table 4.2
Respondents' Profile based on Educational Background of the Household Heads

Demographic Characteristics		Area			
		Urban		Rural	
		Frequency	Percentage	Frequency	Percentage
Formal Education	No Formal Education	20	4.2	13	1.6
	Elementary School	180	37.8	382	46.0
	Junior High School	107	22.5	194	23.3
	Senior High School	147	30.9	205	25.6
	Diploma Degree	7	1.5	10	1.2
	Bachelor Degree	12	2.5	26	3.1
	Others	3	0.6	3	0.2
	Total	476	100.0	833	100.0
Informal Education	Yes	195	41.0	426	53.4
	No	281	59.0	407	46.6
	Total	476	100.0	833	100.0

In terms of informal education, it is interesting to note that there exists opposite evidence
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in both areas. While majority of urban household heads have never undergone any informal education, majority rural household heads have attended such informal education as routine Islamic gathering held near their places. This might reflect two facts. First, the awareness of the household heads in urban area to attend informal education might be lower. Second, the presence of such informal education as routine Islamic gathering in urban neighborhood might not as many as that of rural area.

Poverty Analysis

This study, hence, attempts to analyze whether or not educational background of the observed of household heads have different effect in relation with the presence of zakat distribution programs. This study divides educational background of the household heads into two groups namely, formal and informal education. The former comprises seven classifications including the household heads who never attend any formal education, elementary school, junior high school, senior high school, diploma degree (collage), bachelor or above degree (university) and such other formal education as Islamic boarding schools. The latter includes the household heads who receive informal education and who have not got any informal education. Table 5 presents the finding on formal education of household heads while Table 6 shows the finding on informal education of household heads. The figures in the parentheses show the change index after zakat distribution programs in percentage point.

According to Table 5, it appears that household heads with university degree holders have the highest falah index in urban area followed by diploma degree holders, secondary high school, primary high school, elementary school, never goes to schools and others prior to zakat distribution programs. In rural area, it is surprising to observe that household heads with other formal educational background record the highest falah index prior to zakat distribution programs followed by bachelor degree holders, households who never attend formal schools, primary high school, elementary school and secondary high school. In this case, the effect of formal education on the falah level prior to zakat distribution programs only applies in urban area.

Table 4.3
CIBEST Index based on Formal Education Level of Household Heads

Urban	Before				After			
	FI	MPI	SPI	API	FI	MPI	SPI	API
Never goes to school	0.05	0.75	0.00	0.20	0.05 (0.00)	0.85 (+13.33)	0.00 (0.00)	0.10 (-50.00)
Elementary School	0.11	0.65	0.06	0.19	0.15 (+36.36)	0.73 (+12.31)	0.01 (83.33)	0.11 (-42.11)
Primary High School	0.13	0.66	0.04	0.17	0.20 (+53.85)	0.64 (-3.03)	0.02 (-50.00)	0.14 (-17.65)
Secondary High School	0.18	0.65	0.03	0.13	0.22 (+22.22)	0.68 (+4.62)	0.02 (-33.33)	0.08 (-38.46)
Collage	0.43	0.29	0.14	0.14	0.57 (+32.56)	0.29 (0.00)	0.00 (-100.00)	0.14 (0.00)
University	0.50	0.33	0.00	0.17	0.50 (0.00)	0.42 (+27.27)	0.00 (0.00)	0.08 (-52.94)
Others	0.00	0.67	0.00	0.33	0.00 (0.00)	1.00 (+49.25)	0.00 (0.00)	0.00 (-100.00)
Rural	Before				After			

	FI	MPI	SPI	API	FI	MPI	SPI	API
Never goes to school	0.08	0.92	0.00	0.00	0.08 (0.00)	0.92 (0.00)	0.00 (0.00)	0.00 (0.00)
Elementary School	0.05	0.73	0.03	0.19	0.10 (+100.00)	0.82 (+12.33)	0.01 (-66.67)	0.07 (-63.16)
Primary High School	0.05	0.70	0.04	0.22	0.12 (+140.00)	0.80 (+14.29)	0.02 (-50.00)	0.06 (-72.72)
Secondary High School	0.05	0.76	0.02	0.17	0.14 (+180.00)	0.79 (+3.94)	0.01 (-50.00)	0.06 (-64.71)
Collage	0.00	0.60	0.10	0.30	0.10 (+100.00)	0.90 (+50.00)	0.00 (-100.00)	0.00 (-100.00)
University	0.08	0.58	0.04	0.31	0.15 (+87.50)	0.85 (+46.55)	0.00 (-100.00)	0.00 (-100.00)
Others	0.67	0.33	0.00	0.00	0.67 (0.00)	0.33 (0.00)	0.00 (0.00)	0.00 (0.00)

Note: FI: *Falah* Index

MPI: Material Poverty Index

SPI: Spiritual Poverty Index

API: Absolute Poverty Index

Nevertheless, the existences of zakat distribution programs after one year appear to have better effect on the household heads who attend formal schools in both areas as compared to the household heads who never go to formal schools. This is evident from the figures in the parentheses showing greater change in four indices for households with formal education. Our finding suggests that more educated household heads can receive better effect of zakat for material and spiritual poverty reduction.

In terms of informal education as presented in the following Table 6, before zakat distribution programs are conducted the household heads who receive informal education in urban area have higher *falah* and spiritual poverty indices and lesser material and absolute poverty indices as compared to households who have not got any informal educational background. On the other hand, the opposite data is found for the households in rural area where household heads with no informal education background perform better value of indices prior to zakat distribution programs. Our finding suggests that informal education might have more effects on the households in urban as compared in rural area in the absence of zakat distribution programs.

Table 4.4
CIBEST Index based on Informal Education Involvement of Household Heads

Urban	Before				After			
	FI	MPI	SPI	API	FI	MPI	SPI	API
Attend	0.19	0.61	0.07	0.12	0.26 (+36.84)	0.67 (+9.84)	0.02 (-71.43)	0.06 (-50.00)
Not Attend	0.11	0.67	0.02	0.19	0.14 (+27.27)	0.70 (+4.48)	0.01 (-50.00)	0.14 (-26.32)
Rural	Before				After			
	FI	MPI	SPI	API	FI	MPI	SPI	API
Attend	0.04	0.73	0.03	0.20	0.12 (+200.00)	0.82 (+12.33)	0.00 (-100.00)	0.06 (-70.00)
Not Attend	0.07	0.72	0.03	0.18	0.12	0.79	0.02	0.06

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	(+71.43)	(+9.72)	(-33.33)	(-66.67)
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Note: FI: *Falah* Index
 MPI: Material Poverty Index
 SPI: Spiritual Poverty Index
 API: Absolute Poverty Index

However one year after zakat distribution programs, the positive increase in the *falah* index is higher for household heads that have informal education in both urban and rural areas. Similarly, the reduction on spiritual poverty and absolute poverty indices seem to be larger on the household heads with informal educational background. Therefore, this finding concludes that household heads that attend informal education receive better effect of the current zakat distribution programs in reducing the material and spiritual poverty in urban and rural areas as compared with household heads with no informal educational background. Our finding also confirms the positive role of formal and informal education in relation with the material and spiritual poverty alleviation.

Income Inequality Analysis

The following Table 7 shows Gini coefficient and Atkinson index before and one year after zakat distribution programs among non-educated-headed households in urban and rural areas. According to the table, it is found that the observed households in urban area appear to reduce the values of Gini coefficient and Atkinson index from 0.420 and 0.527 to 0.349 and 0.359 respectively as evident in column (1) and (2). This indicates that income inequality as well as social welfare loss in urban area can be reduced due to the presence of zakat distribution programs.

On the other hand, the observed households in rural area appear to reduce their Gini coefficient by 0.015 points but increase their Atkinson index by 0.008 points as evident in column (5). This indicates that the presence of zakat distribution programs only improve the income inequality among the observed households but not the social welfare loss.

Table 4.5
Gini Coefficient and Atkinson Index Before and One Year after Joining Zakat Distribution Programs of Households Heads who Never Attend Formal Education

Areas	Income Inequality Measures	Before Zakat Distribution Program (1)	One Year After Zakat Distribution Program (2)	Change Index (3)
Urban	GC	0.420	0.349	-0.071
	AI	0.527	0.359	-0.168
Rural	GC	0.039	0.024	-0.015
	AI	0.382	0.390	0.008
Total	GC	0.243	0.142	-0.101
	AI	0.525	0.388	-0.137

GC: Gini Coefficient
 AI: Atkinson Index

The second group based on their formal educational backgrounds of the household heads is the elementary school holders. The findings are evidenced in the values of Gini coefficient and Atkinson index as presented in the following Table 8. From the table, it is found that Gini

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coefficient and Atkinson index of the observed households in urban area decline by 0.042 and 0.051 respectively as evident in column (3). This shows that income inequality and social welfare loss among zakat recipients can be reduced.

Table 4.6
Gini Coefficient and Atkinson Index Before and One Year after Joining Zakat Distribution Programs of Elementary School Graduates-Headed Households

Areas	Income Inequality Measures	Before Zakat Distribution Program (1)	One Year After Zakat Distribution Program (2)	Change Index (3)
Urban	GC	0.515	0.473	-0.042
	AI	0.679	0.628	-0.051
Rural	GC	0.282	0.404	0.122
	AI	0.250	0.221	-0.029
Total	GC	0.468	0.428	-0.04
	AI	0.625	0.578	-0.047

GC: Gini Coefficient

AI: Atkinson Index

In rural area, it is observed that the value of Gini coefficient increases from 0.282 to 0.404 indicating that the income inequality among the observed respondents are worse off in the presence of zakat distribution programs. This is evident from the figures in column (1) and (2). However, the social welfare loss among zakat recipients can be reduced. This is indicated by the reduction in Atkinson index as evident in column (5).

In total, the values of Gini coefficient and Atkinson index are reduced from 0.468 and 0.625 to 0.428 and 0.587 respectively. This shows that zakat can improve the income inequality and welfare loss among the observed elementary school graduates headed-households in urban and rural areas.

The third group is the households with the head of households are graduated from primary school as presented in the following Table 9. According to the table, the values of Gini coefficient and Atkinson index can only be reduced in urban area. This can be found in column (3). In the presence of zakat distribution programs, the values of Gini coefficient and Atkinson index can be reduced from 0.420 and 0.489 to 0.404 and 0.418 respectively (vide column 1 and 2). This shows that zakat distribution programs have salutary effect in decreasing the income inequality and welfare loss.

In rural area, the income inequality and welfare loss among the observed households cannot be improved. This is indicated by the increase of both values in Gini coefficient and Atkinson index as presented in column (1) and (2). If we compare, zakat distribution programs have better impact in the households in urban as compared to rural area. In total, only the social welfare loss can be improved due to the presence of zakat distribution programs among junior high school graduates headed-households under consideration.

Table 4.7
Gini Coefficient and Atkinson Index Before and One Year after Joining Zakat Distribution Programs of Junior High School Graduates Headed Households

Areas	Income Inequality Measures	Before Zakat Distribution Program (1)	One Year After Zakat Distribution Program (2)	Change Index (3)
Urban	GC	0.420	0.404	-0.016
	AI	0.489	0.418	-0.071
Rural	GC	0.356	0.393	0.037
	AI	0.440	0.472	0.032
Total	GC	0.379	0.395	0.016
	AI	0.459	0.456	-0.003

GC: Gini Coefficient

AI: Atkinson Index

The fourth group of households based on the education of the household heads is the graduates of secondary school. The following table 10 shows the values of Gini coefficient and Atkinson index. It is observed that the negative change of both values applies in the household in urban area while in rural area there exists positive change one year after zakat distribution programs. This indicates that the role of zakat distribution programs on the income inequality and social welfare loss reduction is effective only for the observed senior high school graduates-headed households in urban area.

However, the overall performance shows that zakat distribution programs can improve the income inequality and welfare loss among the aforesaid groups. This is indicated through the negative change of both Gini coefficient and Atkinson index from 0.372 and 0.451 to 0.360 and 0.423 respectively (vide column 1 and 2).

Table 4.8
Gini Coefficient and Atkinson Index Before and One Year after Joining Zakat Distribution Programs of Secondary High School Graduates Headed Households

Areas	Income Inequality Measures	Before Zakat Distribution Program (1)	One Year After Zakat Distribution Program (2)	Change Index (3)
Urban	GC	0.354	0.328	-0.026
	AI	0.454	0.373	-0.081
Rural	GC	0.375	0.377	0.002
	AI	0.438	0.442	0.004
Total	GC	0.372	0.360	-0.012
	AI	0.451	0.423	-0.028

GC: Gini Coefficient

AI: Atkinson Index

The last group of households based on the household heads' educational background is the graduates from college, university and others. The values of Gini coefficient and Atkinson index are presented in the following Table 11. From column (3), it is observed that the negative change showing the better income inequality and welfare loss condition only applies in the observed household in rural area. This shows that the role of zakat for income inequality reduction has better impact on the households in rural as compared to urban area. In urban area, only the top earner incomes improve their income share, while the bottom groups have smaller

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income contribution. Conversely, the bottom earners in rural area can improve their income portion, while the top earners cannot.

Table 4.9
Gini Coefficient and Atkinson Index Before and One Year after Joining Zakat Distribution Programs of Diploma, University and Other Graduates Headed Households

Areas	Income Inequality Measures	Before Zakat Distribution Program (1)	One Year After Zakat Distribution Program (2)	Change Index (3)
Urban	GC	0.461	0.466	0.005
	AI	0.768	0.781	0.013
Rural	GC	0.496	0.471	-0.025
	AI	0.620	0.560	-0.06
Total	GC	0.502	0.487	-0.015
	AI	0.688	0.667	-0.021

GC: Gini Coefficient

AI: Atkinson Index

Besides formal education, informal education is also important in determining the quality of human capital. This study attempts to analyze the role of zakat distribution programs on the income inequality and social welfare loss reduction based on the informal education background of the household heads.

The first analysis is the households whose heads attend informal education. The following Table 12 exhibits the values of Gini coefficient and Atkinson index. It is found that both values in urban and rural area can be reduced one year after zakat distribution programs as evident in column (3). Gini coefficient is reduced from 0.488 and 0.448 to 0.464 and 0.406 in urban and rural area respectively (vide column 1 and 2). This indicates that income inequality among zakat recipients who attend informal education can be improved. Besides, Atkinson index is also decreased by 0.050 and 0.048 in urban and rural areas respectively (vide column 3) showing that welfare loss among the observed households can be reduced due to the presence of zakat distribution programs. In conclusion, these findings suggest that zakat distribution programs have the ability to reduce income inequality and welfare loss among the observed households.

Table 4.10
Gini Coefficient and Atkinson Index Before and One Year after Joining Zakat Distribution Programs of Headed Households who Attend Informal Education

Areas	Income Inequality Measures	Before Zakat Distribution Program (1)	One Year After Zakat Distribution Program (2)	Change Index (3)
Urban	GC	0.488	0.464	-0.024
	AI	0.697	0.647	-0.05
Rural	GC	0.448	0.406	-0.042
	AI	0.587	0.539	-0.048
Total	GC	0.468	0.4325	-0.0355
	AI	0.628	0.580	-0.048

GC: Gini Coefficient

AI: Atkinson Index

On the other hand, Gini coefficient and Atkinson index of the observed households who do not attend informal education before and one year after zakat distribution programs in urban and rural area are presented in the following Table 13.

It appears that Gini coefficient and Atkinson index can only be reduced in urban area (vide column 3). The values of Gini coefficient and Atkinson index in urban area decline from 0.420 and 0.533 to 0.392 and 0.471 respectively as evident in column (1) and (2). This shows that income inequality and welfare loss among the observed households in urban area can be reduced.

However, it is found that Gini coefficient and Atkinson index in rural area appears bigger in the presence of zakat distribution programs (vide column 1 and 2). This indicates that zakat distribution programs are unable to improve the income inequality and welfare loss among the observed households in rural area.

Table 4.11
Gini Coefficient and Atkinson Index Before and One Year after Joining Zakat Distribution Programs of Headed Households who Do Not Attend Informal Education

Areas	Income Inequality Measures	Before Zakat Distribution Program (1)	One Year After Zakat Distribution Program (2)	Change Index (3)
Urban	GC	0.420	0.392	-0.028
	AI	0.533	0.471	-0.062
Rural	GC	0.369	0.393	0.024
	AI	0.463	0.481	0.018
Total	GC	0.391	0.393	0.002
	AI	0.493	0.477	-0.016

GC: Gini Coefficient

AI: Atkinson Index

CONCLUSIONS AND RECOMMENDATIONS

After examining 1,309 households based on their educational backgrounds, this study suggests that the present zakat distribution programs conducted by BAZNAS can significantly alleviate poverty and reduce income inequality among zakat beneficiaries. Specifically, several findings can be concluded in our study.

First, our study suggests that the existences of zakat distribution programs after one year appear to have better effect in terms of material and spiritual poverty alleviation on the household heads who attend formal schools in both areas as compared to the household heads who never go to formal schools.

Second, it is also found that household heads that attend informal education receive better effect of the current zakat distribution programs in reducing the material and spiritual poverty in urban and rural areas as compared with household heads with no informal educational background. This confirms the positive role of formal and informal education in relation with the material and spiritual poverty alleviation.

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Third, this study finds that the elementary school graduates-headed households in urban and rural area are found to have best performance in terms of income inequality and social welfare reduction one year after zakat distribution programs. In this case, the impact of zakat distribution programs is significant in reducing the income inequality and social welfare loss among the observed household in both areas indicated by the negative changes in the values of Gini coefficient and Atkinson index.

Fourth, this study also shows that the role of zakat distribution programs in terms of income inequality and welfare loss reduction have better impact on the households who attend informal education in both area as compared to the households who do not. This shows that informal education has important role in improving the income inequality condition among zakat recipients.

Based on those conclusions, several recommendations can be drawn. First, BAZNAS should maintain the programs that can improve the knowledge and educational level of its beneficiaries, as education is a long-term human investment that can be the solution for the dual problems of poverty and income inequality. Second, BAZNAS should take education into consideration in the process of recipients' selection so that zakat distribution programs can have better effect to the recipients.

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