Are Ziswaf Expenditures and Depression Symptoms Correlated? Evidence from Indonesia

Hafizh Fadillah[1], **Akbar Dzidan Ar'rabani**[1]

[1]Padjadjaran University

ABSTRACT

This research investigates the relationship between ziswaf expenditure and depression symptoms using the IFLS5 data. Depression was assessed using the 10-item Center for Epidemiologic Studies-Depression Scale Revised (CESD-R-10). The scores were converted into logit form using the Rasch model. This study finds a statistically significant negative correlation between ziswaf expenditure and the presence of severe depression symptoms using the OLS-multiple linear regression. A higher level of ziswaf expenditure was associated with lower scores in depression symptoms among muslim in Indonesia.

Keywords: *Ziswaf, Zakat, Mental Health, Depression Symptoms*

INTRODUCTION

Currently, the World Health Organization (WHO) considers mental health to be a highly significant issue, asserting that mental health is an essential part of an individual's overall health and well-being. WHO emphasizes that the battle against mental health issues must continue and that they are included as one of the key aspects of the Sustainable Development Goals (SDGs). A study commissioned by WHO (2010) from Majalah Teratai Jiwa (2012) revealed more than 150 million people suffer from depression at any given time, and nearly one million people commit suicide every year.

WHO (2022) reported that suicide was the fourth leading cause of death among individuals aged 15-29. Another significant fact is that individuals with severe mental health conditions often experience premature mortality, with their lives shortened by up to two decades. The initial year of the Covid-19 pandemic saw a more than 25% increase in cases of depression and anxiety, resulting in an additional 1 billion people living with mental health disorders. Studies have shown that individuals with mental health conditions frequently face human rights violations, e.g., discrimination, stigma, or bullying, which can exacerbate their mental health conditions (Corrigan & Watson, 2002; Earnshaw et al., 2018; and Tanaka et al., 2018). Recent research by WHO (2023a), shows that approximately 280 million people worldwide experience symptoms of depression, and over 700,000 people die by suicide each year because of depression.

The prevalence of mental disorders has drawn the attention of academics and policymakers, highlighting the fact that mental health problems have become a substantial burden for the international community, particularly in developing countries (Desjarlais et al., 1995). Consequently, the international community has begun to give greater consideration to the global mental disorders pandemic. A study conducted using the WHO World Mental Health Survey (WMH) to assess the global burden of mental disorders concluded that such disorders are common in all participating countries, whether industrialized or developing, and often exacerbate conditions in many nations (Kessler et al., 2011).

Indonesia, as a developing country, has witnessed a growing concern regarding mental health issues over the past few decades. According to Our World in Data (2019) mental health disorders in Indonesia are categorized into various types, e.g., anxiety disorders, depressive disorders, bipolar disorder, schizophrenia, and eating disorders. The Basic Health Research conducted in 2018, stated that the prevalence of schizophrenia in Indonesia was found to be 7 per 1000 individuals surveyed. This marks a significant increase compared to the 2013 figure of 1.7 per 1000 individuals. Furthermore, in 2013, there were 12 million people, or 6.1% of the population under 15 years of age, experiencing mental and emotional health disorders, which increased in 2018 to 20 million people, or 9.8% of the population (Ministry of Health of the Republic of Indonesia, 2018). It is indeed poignant to note that over the last decade, there has been a noticeable rise in the number of individuals grappling with mental health issues.

The Indonesia-National Adolescent Mental Survey (I-NAMHS) – a study by the UGM Center for Reproductive Health Studies, the University of Queensland (UQ) in Australia, and the Johns Hopkins University Bloomberg School of Public Health in the United States – revealed that 34.9% or 16.1 million teenagers aged 10-17 years had experienced mental health issues categorized as 'People with Mental Health Disorders' (ODMK), while 5.5% or 2.54 million teenagers of the same age had experienced mental health issues classified as 'People with Mental Disorders' (ODGJ) within the past 12 months. According to existing literature, these figures are alarmingly high (Center for Reproductive Health, University of Queensland, and Johns Bloomberg Hopkins School of Public Health., 2022).

One of the issues related to mental health is the presence of depression.

According to IHME (2019), the number of people experiencing depressive symptoms in Indonesia continues to rise each year, affecting both men and women. IHME (2019) & WHO (2023b) also reports that the number of women displaying symptoms of depression surpasses that of men with similar symptoms. Basic Health Research (2018) as cited in Rokom (2021) shows that more than 12 million people or 4.5% from the population aged over 15 years are experiencing depression. Moreover, other research reveals that Indonesia has a prevalence rate of moderate to severe depressive symptoms at 21.8% among its population, a figure even higher than the global prevalence of depressive symptoms, which stands at 12.1%. This research further indicates that women experience more depressive symptoms than men, with 22.3% of women and 21.4% of men surveyed reporting moderate to severe depression (Peltzer & Pengpid, 2018). This shows that there are high numbers of people experiencing depression in Indonesia.

Islam, as a religion and a center of civilization, had addressed the matter of mental health through Maqashid Syariah (Hifz al-Nafs or soul preservation) long before the issue of mental health gained prominence (Hudiawan, 2020). Sutisna et al. (2021) explain that the term Maqashid Syariah was initially introduced by Imam at-Turmudzi al-Hakim in 320 Hijriah, signifying an attempt to decipher the secrets, wisdom, aims, and objectives of Islamic sharia. Hence, Islam has encouraged individuals to safeguard their mental health by emphasizing the Maqashid Syariah principle of Hifz al-Nafs to achieve the goals of Islamic law.

There exists a close relationship between individual health, particularly mental health and the islamic practice namely ZISWAF (Zakat, Infaq, Sadaqah, Waqf) (Daradjat, 1993). This suggests that ziswaf can contribute to the well-being of

muzakki's mental health. This viewpoint aligns with QS. At-Taubah 9:103, which states, "with zakat you cleanse and purify them." Additionally, one aspect of ziswaf, namely zakat, is obligatory, while other aspects are sunnah (recommended). The mandate to give zakat has been ordained by Allah SWT as the fourth pillar of Islam and is reiterated in the Quran through QS. Al-Baqarah 2:43:

وَأَقِيمُوا ٱلصَّلَوٰةَ وَءَاتُوا ٱلزَّكَوٰةَ وَٱرْكَعُوا مَعَ ٱلرَّٰكِعِينَ

Meaning: "Establish the prayers, pay the zakat, and bow with those who bow in worship." Furthermore, the Prophet Muhammad SAW instructed us to give alms, as narrated in HR. Tirmizi, which states, "Alms will not diminish wealth."

In Indonesia, zakat, infaq, sadaqah, waqf (ZISWAF) are supported by 140 national, provincial, and district/city zakat amil bodies. According to BAZNAS (2023), Indonesia has significant potential in ziswaf, particularly zakat, with an annual value of Rp. 327 trillion. However, despite this substantial potential, Indonesia still faces challenges in collecting ziswaf.
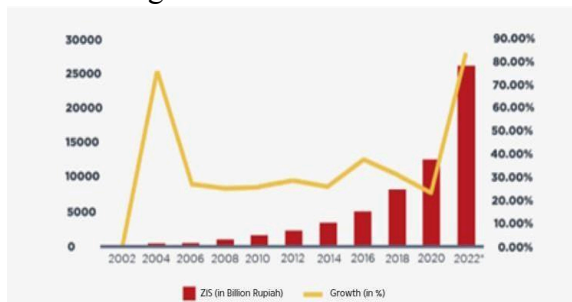

Figure. 1. Trend of Zakat Fund Collection 2002 - 2022

Source: BAZNAS (2023)

This is evident in Figure. 1., revealing a considerable gap of zakat collection compared to its potential (periode 2002-2022). This gap indicates that some Indonesian individuals are not aware of their obligation to pay zakat every year. Additionally, BAZNAS highlights various issues related to the collection, management, and distribution of ziswaf (BAZNAS, 2023).

The positive aspect is that the collection of ziswaf funds, especially zakat, has been increasing annually, even though there remains a significant gap compared to its potential (BAZNAS, 2023). Nevertheless, this data contrasts with the trend in mental health in Indonesia, which also exhibits yearly increases. In theory, ziswaf, particularly zakat, should contribute to the treatment and maintenance of the mental health of muzakki (those who pay zakat). This naturally leads to the question: "How is zakat related to the mental health of muzakki?" This question warrants immediate investigation. Therefore, researchers have initiated a quantitative study to explore the relationship between ziswaf expenditure and depression symptoms.

METHODOLOGY

Data

We used the Indonesian Family Life Survey (IFLS) data, a longitudinal data in Indonesia conducted by Rand Corporation. The IFLS sample can represent 83 percent of the Indonesian population from 13 provinces in the first wave (1993) survey (Strauss et al., 2016). The IFLS covers multiple topics namely education, health, labour, household economy, social participation, etc. The survey collected data at individual, household, and community level.

We used the latest IFLS data, the fifth wave in 2014. In 2014, IFLS consisted of about 16,000 households and 50,000 individuals. For the sample research, we included individuals that were older than 15 years old and a muslim. After data cleaning, the sample size for this research is 27,423 individuals.

Main Variables

For Zakat context, we utilized the KS (Consumption) section in IFLS. The question is: "What were the total expenditures by all household members for [...] during the past year, namely since the month of [...] last year?". The question is related to expenditures for ritual ceremonies, charities and gifts that includes zakat, alms, and like, so this question in the IFLS is the closest approach to measure ziswaf expenditure.

The total annual expenditure for ziswaf is divided by the household size (total household members) so we can get per capita expenditure for ziswaf. Furthermore, for simplicity, we transformed the unit of ziswaf expenditure from rupiah into logarithmic form.

For depression symptoms we used the KP (mental health) section, it was measured by the response to the following question: "Now we would like to ask some questions about how you feel in the past week.". Participants respond to positive feelings, like "I was happy" or "I felt hopeful about the future" or negative feelings, such as "I was bothered by things that usually don't bother me" or "I felt lonely". Participants indicated the intensity of their depressive symptoms using a four-level ordinal scale with a specific range, such as rarely or none (≤1 day), some days (1-2 days) occasionally (3-4 days), and most of the time (5-7 days). IFLS already uses a standardized depression scale called CESD-R. Depression symptoms were measured using 10 CESD-R questions from The Center for Epidemiologic Studies. According to Radolff (1977) the CES-D scale was created to be employed in research focused on investigating the prevalence of depressive symptoms within the broader population.

The raw data from the CESD-R 10 questionnaire in IFLS has output that is not linear in nature, we employ the Rasch Model to transform the output of the CESD-R 10 questionnaire. With this approach, the original CESD-R 10 questionnaire ordinal values can be transformed into more suitable logit values (Boone et al., 2013 and Fahmi et al., 2019). Rasch Model also overcomes several challenges in data, such as detecting misfit, overcome missing values from the data, generate linear measurements, and this ensures the formation of a precise estimation result (Wright and Mok, 2004).

Methods

In this study, we utilized the multiple linear regression analysis with Ordinary Least Square estimator. Multiple regression analysis is better suited for ceteris paribus analysis because it enables us to explicitly account for numerous other factors that influence the dependent variable (Wooldridge, 2012). As stated before, the model also included factors that might influence depression outcomes, namely education level, marital status, employment status, general health conditions, presence of chronic disease, age, sex, household size, and residential area, besides ziswaf expenditure as our variable of interest.

RESULT

Summary Statistic

Table 1 shows the characteristics of the sample. The ziswaf per capita expenditure ranged from 0 to 500,000,000 rupiah with the average of 464,754 rupiah. In the logarithmic form the ziswaf per capita expenditure ranged from 0 to 20,03 with the mean of 11,73. Using the rasch model, depression symptoms scores of respondents are ranged between -3.5 and 2.01, where individuals without depression symptoms tended to have scores nearing -3.5, while those with such symptoms typically had scores approaching 2.01.

Other variables of the sample including the socioeconomic and sociodemographic also shown in Table 1. The average educational level is 8.7 years, equivalent to junior high school level. The youngest respondents are 15 years old and the oldest are 94 years old with the mean value of 37 years old. About 53.4% respondents were female, 72.8% were married, 58.4% were working, 9.1% were having a chronic disease, and 59.4 households resided in urban areas while the rest were in rural areas.

Table. 1. Summary Statistic of Research Sample using IFLS5 Data

Variable	Mean or Percent (%)	Std. Dev.	Min	Max
Depression score	-1.2	0.9	-3.5	2.01
Per capita ziswaf expenditure (rupiah)	464,754	3,409,305	0	5.00E+08
Per capita ziswaf expenditure (log)	13.05	1.27	6.8	21.03
Age (years)	37.19	14.86	15	94
Education (years of schooling)	8.78	4.28	0	16
Education level				
Not going to school	5.07%			
Elementary school	30.49%			
High school	52.47%			
University	11.97%			
Sex (male = 1, female = 0)	46.62%			
Marital status (married = 1, not married = 0)	72.81%			
Employment status (working = 1, not working = 0)	58.42%			
General health condition				
Unhealthy	1.10%			
Somewhat unhealthy	19.79%			
Somewhat healthy	59.63%			
Healthy	19.48%			
Chronic conditions (yes = 1, no = 0)	9.07%			
Residential area (urban = 1, rural = 0)	59.40%			
Household size	4.21	1.87	1	17

Regression Results

Using the Ordinary Least Squares (OLS) regression analysis, we discovered a statistically significant negative correlation between ziswaf expenditure and the presence of severe depression symptoms both in first model and second model after added some control variables.

Specifically, as shown in Table 2, a higher 10% in ziswaf expenditure was linked to lower 0.003 scores in depression symptoms. This finding is consistent with Ahwal et al. (2016) that the closer individuals to religious activities such as pay for zakat can be favorable for their mental health outcomes.

Table. 2. Multiple Linear Regression Result (OLS)

Variables	(1) Depression Score	(2) Depression Score
Per capita ziswaf expenditure (log)	-0.045***	-0.029***
	(-0.004)	(-0.004)
Age (years)		-0.010***
		(0.000)
Education (not going to school as reference)		
Elementary school		-7.51E-05
		(-0.027)
High school		-0.104***
		(-0.028)
University		-0.149***
		(-0.032)
Sex (male = 1, female = 0)		0.009
		(-0.012)
Marital status (married = 1, not married = 0)		-0.152***
		(-0.012)
Employment status (working = 1, not working = 0)		0.028**
		(-0.012)
General health condition (unhealthy as reference)		
Somewhat unhealthy		-0.354***
		(-0.047)
Somewhat healthy		-0.709***
		(-0.046)
Healthy		-0.845***
		(-0.048)
Chronic conditions (yes = 1, no = 0)		0.072***
		(-0.018)
Residential area (urban = 1, rural = 0)		0.031***
		(-0.011)
Household size		0.004
		(-0.003)
Constant	-0.617***	0.339***
	(-0.057)	(-0.08)
Observations	27,423	27,423
R-squared	0.004	0.067

Robust standard errors in parentheses
***$p<0.01$, **$p<0.05$, *$p<0.1$

Other variables also have a significant correlation with the depression symptoms. Educational level has a negative correlation with depression. This shows that individuals with higher levels of education have a smaller level of depression symptoms compared to individuals that do not attend a formal school. Marital status also showed a negative correlation with depression. Being married was associated with a reduced risk of experiencing depression. The younger individuals tended to have a higher likelihood of experiencing depression. An employed individual has a higher level of depression symptoms than the unemployed. Individuals that stayed in urban areas are more likely to have an increase in experiencing depression.

Nevertheless, a lower presence of depression symptoms is shown in individuals with better health conditions and does not have a chronic disease.

This model also indicates that statistically, gender does not have a significant association with depression. It shows that there are no differences of depression symptoms between the male and female. Furthermore, household size also has no correlation with depression.

Discussion

Prior research has shown that engaging in helping behavior like charities, giving, and alms is predictive of positive health outcomes. Study in China shows that there is a positive association between the number of hours dedicated to volunteering and the extent of charitable donations with psychological well-being (Geng et al., 2022). According to Karlan et al., (2019), a significant share of charitable donations is contributed by impulsive donors who respond promptly to feelings of generosity. The acts of giving offer swift and straightforward emotional gratification. This shows that a philanthropy activity can lead to a positive emotion.

Ahwal et al. (2016), asserts that religious activities, such as zakat, have the potential to alleviate symptoms of depression and reduce suicidal thoughts. Saleem et al., (2020) found that islamic religious activities has positive association with mental health. Furthermore, they said that out of 444 studies that analyzed the connection, 60% of them showed that individuals with higher levels of religiosity or spirituality experienced reduced levels of depression and a quicker recovery from depression.

Daradjat (1993) posits that a Muslim's expenditure on zakat is intricately connected to their mental well-being, implying that zakat plays a role in maintaining mental health and mitigating symptoms of depression among Muslims. Furthermore, Allah

SWT, through QS. At- Taubah 9:103, emphasizes that 'with zakat you cleanse and purify them.' Nawawi (2021) interprets the meaning of QS. At- Taubah 9:103 as a means for Muslims to attain and preserve peace of mind through the obligation of paying zakat.

Research Limitations

This research has several limitations. First, although IFLS is a longitudinal data, we only utilize one IFLS wave. Hence, it cannot analyse the change of individuals behavior of ziswaf expenditure and depression symptoms over time. Second, this study only uses a linear regression, thus the result did not indicate a causal inference. Our result is simply demonstrating the observed correlation between the household ziswaf expenditure and depression symptoms. Third, there is a risk that the model may have an aggregation bias, as the IFLS measures ziswaf expenditure at the household level while depression symptoms are measured at the individual level. Last, since currently no validity research, this study did not use a cut-off score of Rasch Model depression score and transforms into dichotomous outcomes to distinguish individuals experiencing depression from those who are not.

CONCLUSION

The objective of this study was to analyze the connection between ziswaf expenditure and depression symptoms. Through the use of IFLS5 data and OLS- multiple linear regression analysis, our findings revealed a negative association between ziswaf expenditure and the presence of severe depression symptoms. This finding suggests that higher contributions to ziswaf may be linked to fewer depression symptoms among Muslims in Indonesia.

Our research highlights the significant role that zakat plays in driving economic prosperity and enhancing mental

well-being in Muslim communities. Having found that higher ziswaf expenditure is associated with a decrease in symptoms of depression is critical to the broader understanding of how zakat can be harnessed as a tool for inclusive and sustainable transformation.

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Hafizh Fadillah

Universitas Padjadjaran

Akbar Dzidan Ar'rabani

Universitas Padjadjaran