



Master Thesis Strategy Economics

The Relationship between Religious Involvement, Earnings, and Mental Health in Self-Employment

Empirical Evidence from Indonesia

Abstract

This paper examines the relationship between religious involvement, earnings, and mental health among Indonesian self-employed individuals. First, it investigates the association between belonging to a religion and self-employment and to what extent this relationship depends on active involvement using logistic regression analysis. Second, it analyzes to what extent the relationship between earnings, mental health, and self-employment is moderated by belonging to a religion and active engagement in religion using OLS. Empirical analysis of the Indonesian Family Life Survey (IFLS) year 2014 indicates that adhering to Christianity and Hinduism can positively increase the likelihood of being self-employed, whereas, for Islam, the relationship is negatively associated. Nevertheless, when it interacts with active religious involvement, the relationship between Islam and self-employment becomes positive. In contrast, for Hinduism, it becomes negative. Further, the results show that adhering to a religion does not significantly moderate the relationship between self-employment on the one hand and earnings and mental health on the other hand.

Name: Sisilia Hanamaria

Student Number: 543588

Supervisor: Dr. C.A. Rietveld

Second Assessor: S. Ramezani M.Sc.

Table of Contents

I. Introduction	2
II. Literature Review and Development of Hypotheses	6
2.1 Self-employment	6
2.2 Self-employment in Developing Economies	7
2.3 Self-employment and Religion	8
2.2.1 Islam	11
2.2.2 Christianity	11
2.2.3 Hinduism	12
2.2.4 Synthesis	12
2.4 Religious Involvement and Earnings and Mental Health in Self-Employment	12
2.4.1 Earnings and Religious Involvement of Self-employed Individuals	12
2.4.2 Mental health and Religious Involvement of Self-employed Individuals	14
III. Data and Methodology	17
3.1 Data	17
3.2 Measures	18
3.2.1 Dependent Variables	18
3.2.2 Independent Variables	19
3.2.3 Control Variables	19
3.3 Methodology	22
IV. Results	26
4.1 Descriptive Statistics	26
4.2 Regression Results	30
4.2.1 Hypotheses 1,2, and 3	30
4.2.2 Hypotheses 4 and 5	33
V. Discussion	37
5.1 Self-employment and Religion	37
5.2 Earnings and Religious Involvement of Self-employed Individuals	38
5.3 Mental Health and Religious Involvement of Self-employed Individuals	39
VI. Conclusion, Policy Recommendation, and Limitation	41
6.1 Conclusion	41
6.2 Limitations and Recommendations for Future Research	42
References	44
Appendix	59

I. Introduction

Self-employment is commonly perceived positively in developed countries. It can improve a country's economic growth by impacting occupation, social welfare, and innovation (Acs et al., 2008). In these countries, self-employed individuals often exploit perceived opportunities to begin a new business. Thus, self-employment is perceived as a desirable option. In contrast, in developing countries, individuals choose self-employment as their last option to avoid unemployment. This so-called necessity entrepreneurship is widespread in the informal sector (Wennekers et al., 2005). Nevertheless, self-employment still plays a vital role in developing nations. It gives individuals access to income sources and increases higher-wage employment opportunities (Fields, 2019). Self-employment also is an essential employment resource: more than 50% of the total labor force in developing countries is self-employed. Indonesia is one of the developing countries with a significant share of self-employment, about 51% of the total labor force is self-employed (World Bank, 2021). Accordingly, it is worthwhile to investigate determinants of self-employment, particularly in developing countries such as Indonesia.

Previous studies have examined how religious beliefs can encourage self-employment. The first branch of literature analyses how religion affects the preference of self-employment over paid employment, and the second branch examines how religion affects decision-making in self-employment (Dodd & Seaman, 1998; Balog et al., 2014; Dodd & Gotsis 2007). Audretsch et al. (2013) discuss the first branch, and they find that religious adherence can motivate individuals' entrepreneurial decisions by supporting or inhibiting particular behavior. At the same time, Indonesia is also known for being a very religious country. A recent survey from Pew Research Center in 2019 reveals that 96% of Indonesians believe that religion and faith in God are fundamental for daily life (Tamir et al., 2020). Further, a survey from RAND in 2014 reveals that only 77 out of the 31,662 responding Indonesians do not adhere to a religion. Those belonging to a religion belong to six religions: Islam, Catholic, Protestant, Hinduism, Buddhism, and Konghucu, with Islam as a religion with the most followers in Indonesia. Hence, it implies that religions, especially Islam, are likely to play a role as a determinant of self-employment in Indonesia.

Tomes (1985) claims that religion can influence individuals' economic behavior, including their earnings. The reason is that some religions stimulate values like integrity and obedience that can lead to higher earnings. Meng & Sentance (1984) add that religion could affect earnings through individuals' adherence and religious practice. Current studies mainly discuss how religious beliefs can encourage new venture creation (Dodd & Seaman, 1998) and increase start-up rates (Carswell & Rolland, 2004). However, these prevailing studies still lack convincing evidence regarding self-employed financial performance. Moreover, the relationship between religiosity and self-employment earnings is still unidentified since the studies are still limited, particularly in developing countries (Balog et al., 2014). Thus, it is worthwhile to examine the relationship between religious involvement in particular religions and self-employed earnings in developing countries like Indonesia.

Religion also can determine individuals' mental health as self-employed individuals may undergo depression and stress within entrepreneurial processes due to the uncertainty they have to endure (McDougall et al., 1994). Consequently, it is more likely to worsen their psychological well-being, like mental health. Besides, the worst mental health can also be affected by a poor level of education. Empirical findings suggest that individuals with low education usually experience depression more frequently than those with higher education (Bjelland et al., 2008). Further, they mostly work in the informal sector, as many Indonesian self-employed individuals also do. Thus, we can expect that there are many self-employed individuals with depression symptoms in Indonesia. Studies show that adherence to a particular religion is one way to cope with stress and depression. Moreover, self-employed people who occupy a solid coping mechanism, which their religion establishes, may be adequately ready to deal with depression (Balog et al., 2014). This buffering effect may be particularly salient in Indonesia, a relatively more religious country than other countries. Religious institutions may also provide assurance and safety (Tamir et al., 2020) against the economic inequality and extensive uncertainties present in multiple sectors in Indonesia.

This paper aims to examine whether religious involvement can influence entrepreneurial choice. First, I analyze adherence to the three religions with the most followers in Indonesia, Islam, Christianity, and Hinduism. This objective translates to the following first research question:

Is religious involvement associated with self-employment in Indonesia?

Moreover, the second research question addressed in this study is whether religious involvement improves earnings and mental health in self-employment:

Does religious involvement moderate the returns to the self-employment of earnings and mental health in Indonesia?

To answer both questions, I compare self-employed individuals with paid employment. This paper will use Indonesian individual-level datasets from 2014 to conduct the research. This study will close a gap in self-employment research and contribute to the existing literature as follows. First, it offers knowledge regarding religion as a determinant of self-employment and self-employed earnings and mental health in developing countries, which no earlier study has done before. Moreover, previous studies show that studies regarding Indonesian self-employment versus paid employment, in general, are still limited. The only study explicitly related to this issue is Kwon & Sohn (2017), who examined the relationship between job satisfaction and self-employed. So, this study also contributes to our knowledge about self-employment in Indonesia. Second, it provides insights regarding the informal economy, a specific feature that only occurs in developing countries and is missed in developed countries' research. Further, it analyzes and understands Indonesian self-employment characteristics and conditions mainly focused on the informal economy. Knowing the lens of Indonesian self-employment allows the government to develop more relevant public policies, particularly related to improving their earnings and maintaining their mental health.

This research shows that, first, belonging to Islam, Christianity, and Hinduism can significantly affect self-employment decisions. A positive relationship is found for belonging to Christianity and Hinduism, whereas belonging to Islam does not positively correlate with self-employment. Second, this research investigates the relationship between active religious involvement and self-employment. The results indicate that the more frequently Muslims are involved in Islam activities, the higher the probability of being self-employed. Similarly, active religious involvement in Hinduism also shows a significant result, however, with different effects. The more frequently Hindus are involved in religious activities, the lower the probability of them being self-employed. On the other hand, we do not find a significant result regarding the relationship between active religious involvement in Christianity and being self-employed. Lastly, we do not find significant results for how adhering to a religion moderates

the relationship between earnings and self-employment, and between mental health and self-employment.

This paper proceeds by presenting information on the existing literature on self-employment, religion, earnings, and mental health in section two. The focus is mainly on religion as a determinant for self-employment and its relationship with self-employed earnings and mental health. In this section, hypotheses are derived—subsequently, section three highlights the data and methodology part. Section four provides the empirical results. Finally, sections five and six will discuss the findings, conclusions, and limitations of this study.

II. Literature Review and Development of Hypotheses

2.1 Self-employment

Several studies have investigated self-employment from an economic perspective. For instance, Acs (2006) explains that entrepreneurial activity positively affects economic growth in the developed countries. It is because individuals in those countries move from being paid employment to self-employed for opportunity reasons. In contrast, countries with the early or middle stage of economic growth indicate a negative correlation between entrepreneurship and economic growth because individuals tend to switch from necessity entrepreneurship to paid employment (Parker, 2009; Thurik et al., 2008). In addition, self-employment also can reduce unemployment rates as higher self-employment rates will positively affect the entrepreneurial activity and reduce unemployment (Thurik et al., 2008).

Furthermore, previous studies have also expanded self-employment analyses towards various non-economic factors to understand the connections between these ever-existing societal aspects and other societal factors. These previous studies have investigated self-employment and its relation with culture (Hayton et al., 2002; Licht, 2010), religion and social class (Audretsch et al., 2013), human values (Licht, 2010), individual traits, like job satisfaction (Kwon & Sohn, 2017), and fulfillment and well-being (Wiklund et al., 2019). Observing that self-employment can be analyzed on various levels, this research will focus on the individual level. It will analyze how religion and its involvement can influence and motivate individuals' entrepreneurial decisions and economic behavior, such as being self-employed instead of being a paid employment.

Several previous studies have examined the relationship between religious involvement and self-employment. First, they concluded that belonging to a particular religion links to self-employment. The relationships will vary depending on what religions and various types of channels the authors discuss (Audretsch et al., 2013; Hill et al., 2015). Secondly, some studies have found that religious adherence, denoted by individuals' involvement in religious activities, can also be related to self-employment (Parboteeah et al., 2015). However, religiosity is more complex than that because it is not always indicated by strong belief or active religious involvement. Moreover, since all Indonesians belong to a particular religion (Strauss et al., 2016), observing the relationship between belonging to a religion and self-

employment will not provide adequate results. Thus, this research will include the interaction between belonging to a religion and active involvement in a particular religion. This active involvement can affect the strength of the relationship between belonging to a religion and self-employment (Rietveld & Hoogendoorn, 2021). Furthermore, religiosity is one of the essential features of culture since it can influence individuals' mental well-being, economic behavior, and decision-making (Zelekha et al., 2014; Bram & Gabbard, 2001; Koenig & Larson 2001). Therefore, this research will also examine how religious involvement can moderate the relationship between earnings, mental health, and self-employment since no study has examined it before.

The research will be conducted in a developing country: Indonesia. The results may differ from the existing literature that mainly discusses developed countries since the problems in developing economies are more complicated. One of the reasons is because most self-employed individuals engage in the informal economy. Therefore, to answer research questions, the following section aims to analyze the self-employment lens in developing countries, including Indonesia (Section 2.2). After that, the studies on religion and self-employment, explicitly belonging to a religion and active involvement, are highlighted (Section 2.3). Finally, this section will analyze how religious involvement can moderate the relationship between self-employed earnings and mental health (Section 2.4). Hypotheses will be derived in order to integrate the current study into the existing literature.

2.2 Self-employment in Developing Economies

Self-employment is not identical to entrepreneurship. However, it can be used as a proxy for entrepreneurship (Parker, 2009). The principal idea of entrepreneurship is creating new ventures as they can provide more opportunities to generate prospective goods and services (Shane & Venkatraman, 2000). Parker (2009) argues that self-employed individuals and independent business owners can be involved in entrepreneurship. They usually run an enterprise on their account or with at least one employee and obtain the payment from the goods and services they generate (ILO, 2018).

In developing countries, self-employment is a crucial employment source. Meanwhile, paid employment is regularly perceived as exceptions instead of norms (Gindling & Newhouse, 2012). Yamada (1996) argues that, in developing countries, self-employment primarily

operates in the informal sector. Furthermore, self-employment is also identified as micro to small-scale individuals' enterprises, ranging from petty trading to personal service workers such as street merchants and hairdressers. Besides individuals' enterprises, another primary driver of self-employment is household enterprises running in agriculture or the non-agriculture sector, where they use family members as their labor force (Cho et al., 2012).

Several studies have investigated self-employment in developing countries. According to Desai (2011), self-employed individuals in developing countries are often driven by necessity motives. They also often operate in the informal sectors. Harris & Todaro (1970) argue that self-employment and informal rates are higher in developing countries because of labor market deformities and redundant laws regarding labor regulations. It implies that individuals become self-employed to avoid unemployment while waiting for more desirable jobs as paid workers. They mention this situation as the 'dual' view. Under this view, young individuals with fewer years of schooling and low wages have a higher chance of being self-employed. Generally, the businesses that they will create are low-skilled and small-scale enterprises. Consequently, the self-employment sector is regularly slack and unproductive.

Besides the dual view, Montes-Rojas (2010) also found in his study regarding self-employment in Argentina that individuals would likely become self-employed due to survival strategy reasons, particularly during an economic recession. Like other developing countries, most self-employed individuals in Indonesia operate businesses independently and, mostly, in the informal economy. According to the National Labor Force Survey (2019), about 95% of Indonesian self-employed people are employed in the informal economy. Similarly, roughly 65% of employees with earnings in the bottom 20% engage in the informal economy (Pritadrajati, 2021). Further, these self-employed individuals have low educational accomplishments; thus, their productivity is likely to be low. Consequently, they have lower average earnings than paid workers. Subsequently, self-employed individuals in the informal economy are also excluded from employment regulations and benefits than individuals working in the formal economy (Chen, 2012; Maloney, 2004).

2.3 Self-employment and Religion

Religious faiths are an integral part of many individuals' daily lives globally. Religions provide moral principles and play a role in developing general ideas (Geertz, 1993; Iannaccone, 1998)

and determining people's decision-making process (Weaver & Agle, 2002). Religious faiths have also become an essential social institution since they are socially integrated into society. Further, they can impact individuals' behavior in the economy for an extended period (Norris & Inglehart, 2011), including employment and business manners, by its norms and moral teachings (Parboteeah et al., 2009 & 2015). According to Audretsch et al. (2013), religion can motivate individuals' in becoming self-employed by supporting or inhibiting particular behavior. For instance, a particular religion's role model promotes entrepreneurship; thus, there is a high possibility that its followers will choose self-employment. However, a particular religion also can hinder entrepreneurial decisions, for example, by inhibiting capital collection.

Several studies show that there are three main ways that religion can affect entrepreneurial activity. The first one is through social capital. Previous studies argue that being religious and adhering to a particular religious group is the cause of social capital. It can provide individuals networking advantages and help them generate social connections (Hoogendoorn et al., 2016; Balog et al., 2014). Davidsson & Honig (2003) define social capital as individuals' capacity to establish connections and private channels and reap benefits. Specifically, adhering to religions may improve entrepreneurial activities by improving assurance and ensuring assistance (Dodd & Gotsis, 2007). In addition, Nwanko et al. (2012) show that when individuals are actively involved in religious activities, such as frequently attending church, they will more likely be exposed to networking opportunities. These opportunities are crucial to improving the entrepreneurial manner. Hence, social capital can positively impact entrepreneurial activities (Hoogendoorn et al., 2016; Balog et al., 2014).

The second is through institutions. Parboteeah et al. (2015) divide the institutional systems into three aspects: cognitive, normative, and regulatory. Audretsch et al. (2013) explain that cognitive aspects comprise shared beliefs and perceptions while normative aspects can explain the link between religion and self-employment, referring to individuals' social norms, purposes, and beliefs (Kostova, 1999). Both of these aspects can influence individuals' entrepreneurial intention through their shared beliefs and social norms dimensions. Meanwhile, Busenitz et al. (2000) argue that regulatory aspects consist of government policies and laws that can affect entrepreneurial activity. These three aspects can impact the relationship between religion and self-employment. Unlike the regulatory aspects that can

influence self-employment choice in a given country, cognitive and normative aspects vary across religions in the same country. Hence, these variations can lead to differences in occupational choices, such as being self-employed (Audretsch et al., 2013). Finally, the third one is through values. Hoogendoorn et al. (2016) show that values negatively affect the relationship between religion and entrepreneurial activities. Further, Rietveld & Hoogendoorn (2021) find that values can weaken the relationship between them.

Previous studies have examined how belonging to a particular religion can affect individuals' decisions for becoming self-employed (Balog et al., 2014; Dodd & Gotsis, 2007). However, there are various studies whose results oppose each other. For instance, Hoogendoorn et al. (2016) find that belonging does not affect individuals' choice to create new ventures. Instead, the authors suggest that only believing in God and not belonging to a particular religion can increase business rates. Thus, although religions associate with self-employment, Dana (2009) indicates that the results will vary as various religions regard self-employment separately.

Furthermore, belonging to a religion incorporates embracing a specific religion and aspects such as religious involvement (Lehrer, 2004). Rietveld & Hoogendoorn (2021) argue that it is reasonable to differentiate between assertive and weak belonging to a religion based on their involvement in religious activities: prayer and frequent presence at a worship house. Moreover, Woodrum (1985) finds that religious involvement can encourage self-employment orientation between Japanese-Americans' earliest generation. Supporting this notion, Dougherty et al. (2013) argue that religious involvement is essential for religion and self-employment analysis since it touches upon the essential religion's construct. The authors discover that entrepreneurs, particularly American entrepreneurs, are more devout to their religions as they pray more frequently than non-entrepreneurs.

Therefore, this research will expand the analysis to answer the first research questions, including the interaction between religion and its involvement. It aims to analyze that when individuals belong to a particular religion and are involved frequently in religious activities, they will more likely engage in self-employment activities. Here, this research develops hypotheses connecting three particular religions in Indonesia and self-employment in the subsequent subsections.

2.2.1 Islam

Audretsch et al. (2013) find that adherents to Islam promote self-employment activities. The reason is that the Quran, the Muslims' scripture, encourages self-employment in two ways. First, the Quran teaches Sharia laws that discuss entrepreneurial activity dimensions, such as risk-sharing, risk-taking incentives, and business innovation (Audretsch et al., 2013; Ramadani et al., 2015). Second, Hassan & Hippler (2014) argue that the Quran inspires Muslims to earn wealth to contribute to themselves and society. Self-employment is an economic activity that contributes to society's economic necessities. Thus, being self-employed is equal to accomplishing their religious responsibilities.

Moreover, Audretsch et al. (2013) state that Islam has more substantial normative aspects than other religions like Hinduism. Hassan & Hippler (2014) continues that religion and economic activities are connected as these economic activities should follow the Islamic ethical norms. One of the examples of a desirable economic activity according to Islamic rules is entrepreneurial activities. Thus, the more frequent Muslim individuals involve in Islamic practices, the higher possibility they choose self-employed instead of choosing paid workers.

2.2.2 Christianity

Christianity encompasses two crucial streams, which are Catholicism and Protestantism. Those two streams are somewhat different; however, Audretsch et al. (2013) suggest that both distribute a large portion of their normative aspects. The authors illustrate that both Catholics and Protestants have the same Christianity remarks: individualism and present performance. Several studies show that Christianity can promote self-employment activities (Hill et al., 2015; Audretsch et al., 2007). Further, Percy (2010) displays that the Old and New Testaments approve of entrepreneurial behavior, a hard-work mindset (Dodd & Seaman, 1998). Specifically, for Protestantism, Weber (1930) argues that Protestant teachings have formed a work ethic mindset to promote capitalism. Additionally, Parboteeah et al. (2015) note that the more frequent Christians are involved in religious activity, the more likely they are exposed to entrepreneurship morals and values through interaction within individuals. Therefore, Christianity can encourage self-employment activity through supporting individualism and a hard work mindset.

2.2.3 Hinduism

Audretsch et al. (2013) find that Hinduism individuals are less likely to be self-employed. It is because this religion teaches the hierarchy system, or also known as caste. The caste system is a highly rigid structure of social class classification. It divides society into higher and lower castes. Further, Lewis & Lewis (2009) argue that this system is based on a robust culture of collective decision-making. Consequently, it provides Hindus pressure to choose employment types based on their origin caste that may hinder them from engaging in self-employment activities. For instance, lower-caste individuals are forced to accept that being self-employed is inappropriate because it is socially intolerable for them to establish new enterprises (Audretsch et al., 2013). Moreover, the more Hindus are involved in religious activities, the more likely they will be exposed to Hinduism teachings such as Karma. This teaching strands Hindus who want to alter their destiny and present conditions (Dana, 2000; Tripathi, 1992).

2.2.4 Synthesis

Based on the argumentation in sections 2.2.1, 2.2.2, and 2.2.3, we hypothesize:

Hypothesis 1: *There is a positive relationship between adhering to Islam (compared to adhering to Hinduism) and the likelihood of being self-employed (compared to being a wage worker).*

Hypothesis 2: *There is a positive relationship between adhering to Christianity (compared to adhering to Hinduism) and the likelihood of being self-employed (compared to being a wage worker).*

Hypothesis 3: *There is a negative relationship between adhering to Hinduism (compared to adhering to Islam and Christianity) and the likelihood of being self-employed (compared to being a wage worker).*

2.4 Religious Involvement and Earnings and Mental Health in Self-Employment

2.4.1 Earnings and Religious Involvement of Self-employed Individuals

Previous research has investigated the relationship between self-employed and earnings, and most research focuses on developed countries. Firstly, Taylor (1996) analyzes three significant factors that can influence individuals to become self-employed: freedom, higher earnings,

and avoiding unemployment. Using the British Household Panel Study in 1991, the author discovers that individuals are attracted to become self-employed due to the freedom that self-employment offers and higher expected earnings corresponding to paid workers. In contrast, Hamilton (2000) conducted a study to investigate the difference between self-employed and paid workers' earnings using US survey panel data in 1984. He finds that self-employed individuals have lower starting earnings, and the increase is lower than paid workers. Additionally, the findings are similar to what Taylor (1996) found that being a boss is the major attraction of becoming self-employed. Thus, self-employed individuals are willing to reduce their earnings in order to gain these non-economic benefits.

Furthermore, Rees & Shah (1986) argue that visible human capital features, such as years of schooling, can determine someone's earnings. The authors suggest that individuals with higher years of schooling will become more knowledgeable than individuals with few years of schooling. In line with that, Hessels et al. (2020) use human capital theory in their self-employment earnings study. This theory incorporates a collection of expertise, skills, and traits that develop the capability to generate economic benefit. Thus, individuals with excellent human capital will be more likely to have high monetary gains. Besides, the authors show that another essential component of human capital, health, can also determine earnings. The authors presume the positive correlation between health and earnings as the effect is more robust for self-employed individuals than paid workers. The reasons are because self-employed individuals can more comfortably adjust their production enterprises than paid workers to generate the highest earnings (Van Praag et al., 2013).

Besides human capital features, belonging to a particular religion and involvement in religious activities can determine individuals' earnings (Steen, 2004). Steen (2004) uses the family setting to describe the relationship between religion and earnings. He finds that being religious and frequently involved in religious activities can improve someone's earnings. The results show that both men who grew in religious traditions, particularly Jews and Catholics, will have high earnings. However, in developing countries' literature, the discussion that analyzes this specific relationship is still limited. The only study explicitly related to this issue is Bhaumik & Chakrabarty's (2006) analysis. They investigate the castes' role and religion in determining individuals' earnings. Using individual-level data from India in 1987-1999, the authors find that higher castes indicate a higher social class; thus, they favor higher earnings

than lower castes. Further, the authors also find that Hindus, on average, have higher earnings than Muslims (the minority group).

Based on previous studies above, it can be concluded that self-employed individuals have lower starting earnings, and their increase in earnings is lower than that for paid workers. Besides, they are willing to reduce their earnings to gain non-economic compensations, including becoming a manager or boss (Hamilton, 2000; Taylor, 1996; Van Praag & Versloot, 2008). However, this paper expects that the relationship between self-employment and earnings would be less negative for those adhering to a religion. The reasons are because religions can be seen as a crucial cultural aspect. Thus, adhering to a particular religion may influence individuals' decision-making and behavior in living life, including obtaining high monetary returns (Meng & Sentance, 1984). Furthermore, Brenner & Kiefer (1981) suggest that employees, including self-employed individuals, use adhering to religion as a signal to obtain higher earnings. Therefore, the hypothesis is formulated as follows:

Hypothesis 4: *Adherence to religion moderates the relationship between self-employed and earning, such that it is less negative for individuals adhering to a religion*

2.4.2 Mental health and Religious Involvement of Self-employed Individuals

According to WHO (2018), mental health is one of the necessary health elements. WHO defines mental health as a "nature of well-being in which each person recognizes their capabilities, is able to manage daily tensions, serves fruitfully, and contributes to the community." When individuals cannot manage their stress, they often experience anxiety, despair, and depression. This condition is known as a mental health disorder. Consequently, this disorder can undermine individuals' everyday functioning and decrease their well-being (Stephan, 2018). Thus, because of its importance in human's daily lives, mental health is studied in several fields such as psychology and public health. Moreover, there is growing recognition regarding mental health research in other disciplines, including self-employment.

Stephan (2018) suggests that studies on self-employment and mental health can be managed from psychology, business and economics, and professional health viewpoints. Despite the different emphasis in each viewpoint, these three observe paid workers as the opening point and underline the work conditions in self-employment. Empirical evidence shows various

results regarding whether self-employed individuals encounter more or less depression than paid workers. Furthermore, Stephan (2018) indicates that self-employment has a more intense working environment than paid workers since self-employed individuals experience immense uncertainty and obligations. Besides, the self-employed would face more extreme time constraints and more prolonged working times.

Additionally, self-employed individuals have higher independence, such as job authority, than paid workers. This independence allows them to have autonomy over task organization. Thus, this high independence may result in job stressors exposure, such as more stressful working conditions (Häusser et al., 2010). Nevertheless, Stephan & Roesler (2010) find a contrasting argument. They argue that high independence in terms of job authority will encounter less stress in the long period for the self-employed. The reasons are because they become more resilient to stress and depression (Baron et al., 2016). Furthermore, professional health and psychological research studies also address the importance of social support systems in the working environment. For example, Luchman & Gonzalez-Morales (2013) argue that a support system from directors and co-workers can boost individuals' mental health. However, it is infrequently present among self-employed individuals since they have fewer co-workers than paid workers. Therefore, these self-employed individuals often feel alone, which can damage their mental health (Stephan, 2018).

Empirical evidence shows that self-employed individuals are more likely to experience stress and depression than paid workers (Stephan, 2018). It is because self-employed individuals generally encounter uncertainty and stress (Balog et al., 2014). However, this paper expects that the relationship between self-employment and mental health would be less negative for those adhering to a religion. The reasons are because belonging to religion and involvement in religious activities can be used as a coping strategy to improve negative emotions, such as depression and stress (Koenig & Larson, 2001; Levin, 2010). Additionally, Individuals who belong to a religion and actively engage in religious participation will have better mental health while experiencing depressing life situations (Thomas & Barbato, 2020; Balog et al., 2014). Among all religions, Thomas & Barbato (2020) claim that Muslims have higher rates of religious coping than Christians. In line with that, Loewenthal et al. (2001) also find that Muslims are the most efficient in religious coping for depression than other religions, such as Christian, Hindus, and Jews. Furthermore, Pargament et al. (2000) claim that religiosity as a

coping mechanism can result in positive or negative consequences, depending on the particular conditions. The authors suggest that individuals with positive religious coping will feel safe and protected in connection with God (Pargament et al., 1998). In contrast, individuals with negative religious coping will experience a burden by belonging to a particular religion since they perceive a negative reassessment of God's strength (Pargament et al., 2000).

However, most findings have investigated this specific relationship using data from developed countries. Thus, there is limited evidence regarding how religious involvement can influence the mental health of self-employed individuals in developing countries. One thing for sure, empirical findings state that the mental health state in developing countries such as Indonesia greatly depends on socio-demographic factors. For instance, individuals who live in urban regions will worsen their mental health more than those who live in rural ones (Purba & Fitriana, 2019). Therefore, this research will analyze whether religiosity can become an effective coping mechanism to solve this issue. We propose the hypothesis as follows:

Hypothesis 5: *Adherence to religion moderates the relationship between self-employed and mental health, such that it is less negative for individuals adhering to a religion*

III. Data and Methodology

3.1 Data

The primary data source to analyze the relationship between religious involvement, earnings, and mental health in self-employment is the fifth wave of the Indonesian Family Life Survey (IFLS) in 2014. The IFLS is an ongoing longitudinal socioeconomic and health survey coordinated by the RAND Corporation (Witoelar et al., 2009). According to Strauss et al. (2016), there are few options for nationally representative surveys in developing countries, and the IFLS is one of the few options of longitudinal surveys that are accessible for such a country (i.e., Indonesia). Further, this complete survey covers five waves (1993-2014). This research uses the most recent year of the IFLS Survey, IFLS from the fifth wave (IFLS5). This research merely uses one wave because the IFLS survey is conducted every seven years. Thus, it is not suitable for conducting panel data analysis. Additionally, this research does not attempt to explain policy intervention or relationships across different periods. Instead, it aims to estimate the relationship between religion, earnings, and mental health of self-employed respondents at a specific point in time. Furthermore, since this paper aims to analyze working-age individuals working as self-employed and paid workers, the sample is limited to individuals aged 18-65 years old.

The IFLS aims to measure the social conditions of individuals in the Indonesian population. Thus, it gathers an abundance of individual and household levels data, incorporates various economic and non-economic indicators. The examples of these various indicators are gender, marital status, pregnancy, religion, education, employment status, consumption, income, assets, health condition, and well-being (Strauss et al., 2016). This paper's observational unit is the individual. Therefore, it draws on gathering information from books 3A and 3B (individual adult information). The IFLS separates each section into different datasets. Hence, we have to merge several datasets into one to obtain the required combinations of variables. After merging and dropping several individuals due to missing values for the variables employed in the models, the final sample comprises 18,290 individuals.

3.2 Measures

3.2.1 Dependent Variables

This paper will use *Self-employment* as a dependent variable to answer the first research question. The IFLS divides employment into eight classifications: (1) self-employed, (2) self-employed with unpaid family / temporary workers, (3) self-employed with permanent workers, (4) government worker, (5) private worker, (6) unpaid family worker, (7) casual worker in agriculture, and (8) casual worker not in agriculture. Classifications 1-3 are categorized as self-employed in this paper, while categories 4, 5, 7, and 8 are categorized as paid workers. Furthermore, we exclude category six (unpaid family worker) because we only look at self-employment and paid workers. Thus, self-employment is our first dependent variable, formed as a binary variable that takes value 1 if a respondent is self-employed and 0 if a respondent is a paid worker.

The dependent variables to answer the second research question are *logEarnings* and *Mental health*. For earnings, this variable indicates an individuals' total salary/wage during the last year (including all benefits). For self-employed individuals, earnings are based on last year's reported net profit. This variable's unit is in millions of rupiah (Indonesia's currency). To avoid problems of skewness, we take the logarithm of earnings. For mental health, we use the indicator from the Center for Epidemiological Studies-Depression (CES-D) scale. The CES-D scale is accurate and reliable in estimating depression symptoms (Fahmi et al., 2019). This scale consists of ten questions: eight questions capture adverse feelings, and the other two questions capture confident feelings¹. The CES-D score ranges between 0 and 30. Higher scores indicate that individuals experience more depression symptoms. This research estimated Cronbach's alpha for the CES-D score to examine the CES-D score's reliability and consistency. The higher the alpha is, the higher the reliability and validity of the scale. The result shows that Cronbach's alpha is 0.721. Previous studies suggest that there is no measure for "good" alpha; however, alpha above 0.65 is acceptable (Björgvinsson, 2013). Thus, our CES-D scale has displayed sufficient reliability and has good internal consistency.

¹ The details regarding the questions and their scoring of the CES-D Scale can be found in Appendix 1.

3.2.2 Independent Variables

The independent variables to examine the first research question are measures for belonging to a religion and active involvement in religion. In the sample, there are only a few individuals that report not belonging to a religion. Therefore, we focus on adherents to the three main religions in Indonesia only. Three religions are included (Islam, Christianity, and Hinduism) in the analysis, and belonging to each religion is measured with a binary dummy. Thus, for the dummy variable *Islam*, it takes the value of one if the respondent is Muslim and zero if not. Accordingly, the dummies for *Christianity* and *Hinduism* take value one if the respondent is Christian or Hindu, respectively, and zero if not.

Further, we will use *Religious participation* as a proxy of active involvement in religion. In IFLS, all respondents were asked for religious participation according to their religions. This question has a four-point scale, where one is never or does not participate, two is for sometimes, three is for often, and four is for always. In this paper, I combined several religious participation variables into one variable. This combined variable takes the respective value from the four-point scale for each religion. This scale indicates the frequency of religious activities. Hence, the higher an individual scores on this variable, the more active this person is involved in his religion.

The independent variables to examine the second research question are the earlier described *Self-employment* variable in combination with belonging to a religion and the measures for active involvement in a religion (proxied by *Religious participation*); these two variables will act as the moderator.

3.2.3 Control Variables

This research chooses control variables based on their incorporation in previous studies. These control variables consist of socio-demographic factors that affect dependent and independent variables in the models. First, we control for gender because previous literature shows that males are more likely to become self-employed (Verheul et al., 2006). Additionally, females are more likely to belong to a particular religion (Loewenthal et al., 2002). They are also more prone to be more religious than males (Wallace, 1997). In terms of earnings, Gunderson (2006) argues that there is a significant wage difference between males and

females, where males are more likely to earn more than females. For mental health, Rahmi (2018) provides evidence that females often have a dual role: as a career woman and a mother. Consequently, they face more difficulty in achieving an excellent work-life balance. This can worsen their mental health. Thus, *Male* is a binary variable with value one for males and value zero for females.

Second, we control for age as the correlation between age and self-employment is inverted U-shaped (Lévesque & Minniti, 2006). Additionally, Argue et al. (1999) point out a link between age and religiosity. The relationship between those two is positively correlated, and it is a non-linear correlation. Previous literature also finds that earnings increases are more accelerated among younger individuals, specifically for male employees. Further, earnings are more likely to decline as age increases (Lewis, 1989). For mental health, increasing age can deteriorate someone's mental health (Roberts et al., 1997; Keyes & Westerhof, 2012). Nevertheless, the effects vary depending on the conditions the previous literature controls for. Therefore, we control for both *Age* (in years) and *Age square* in the model.

Third, previous studies also show that marital status can determine individuals' decision to become self-employed (Steen, 2004). The literature argues that having a husband or wife raises the possibility of being self-employed (Lin et al., 2000). Besides, there is a correlation between marital status and religious participation (Wolfinger & Wilcox, 2008). Perry (2015) shows that belonging to a particular religion can increase the likelihood of marriage. Previous evidence also finds that married individuals have higher earnings than non-married individuals (Pollmann-Schult, 2011). Further, married individuals experience longer lives and satisfaction than singles, as indicated by greater life prosperity. Consequently, they have better mental health conditions (Waite & Gallagher, 2001; Lucas et al., 2003). Therefore, we control for *Marital status* with six categories: (1) = not married, (2) = married, (3) = separated, (4) = divorced, (5) = widowed, and (6) = cohabitate.

Additionally, empirical research shows that levels of education can determine self-employment, and there is a correlation between education and religiosity (Robinson & Sexton, 1994; Glaeser & Sacerdote, 2008). Block et al. (2013) provide evidence that more educated individuals have a higher probability of becoming self-employed. Meanwhile, in terms of religion, Glaeser & Sacerdote (2008) suggest a negative correlation between higher

levels of education and religiosity. In terms of earnings, Baum (2014) argues that more educated individuals will perform better than less educated individuals. Since these educated individuals have higher productivity than non-educated ones, that results in higher earnings. For mental health, previous research shows contrasting results on how education correlates to mental health. Chevalier & Feinstein (2006) suggest that higher education can lessen the risk of having bad mental health. In contrast, Marmot et al. (1991) claim that higher educated individuals would have more diverse and challenging work resulting in higher stress levels and worse mental health in the long term. Thus, we control for the *Education level* with four categories: (1) = elementary school, (2) = middle school, (3) = high school, (4) = university.

Subsequently, we include the number of family members or family size in the model. Empirical research shows a correlation between the size of a family and being self-employed (Rosenzweig & Stark, 1989). The authors claim that a large family size increases the possibility of taking risks. At the same time, self-employment is identical to taking risks. Additionally, Hout & Rosen (1999) show that employment opportunities vary depending on the family size of an individual. Meanwhile, Adsera (2006) identifies a positive correlation between the number of family members and active engagement in religion. For earnings, empirical research shows that the effects of having children are different for men and women. Hundley (2000) displays that men will obtain high earnings when the family size becomes larger. In contrast, women face negative returns. In terms of mental health, most literature agrees that the addition of family members, such as having more children, will diminish the parents' happiness (Myrskylä & Margolis, 2014). Therefore, we control the *Household size*, as a continuous variable, in the model as a proxy for family size. The IFLS describes this variable as the number of family members that live in one's household and still live in this household during this wave of observation.

Lastly, we control for individuals who live in urban areas. Faggio & Silva (2014) observe that self-employment, such as new venture creation, is more likely to occur in urban areas. In contrast, in rural areas, there is a negative and weak correlation with self-employment. Nonetheless, Haapanen & Tervo (2009) discover that self-employed individuals living in rural areas had a lower likelihood of leaving entrepreneurship in the early years than those living in urban regions. Further, Carleton et al. (2008) discovered that individuals in urban areas participate more actively in religious activities since religion is a defense strategy to overcome

stress. Meanwhile, in terms of earnings and mental health, Jamison & Van der Gaag (1987) show that individuals living in urban areas will have better access to education and better job market opportunities with competitive salaries. Thus, they will be more likely to have higher earnings than individuals living in rural areas. For mental health, empirical research provides mixed results. Probst et al. (2006) find that the number of people suffering from depression is higher in rural populations than in urban ones, probably due to various population features. However, individuals living in rural areas have already suffered from poor physical health and experienced restricted regular activities. Okkels et al. (2018) claim that individuals who live in urban areas also have higher stress levels. Nevertheless, they have better access to mental health services to help them overcome the mental disorder. Thus, we control for *Urban* in the model. This variable takes value one if a respondent lives in an urban area and 0 if the respondent lives in a rural area.

3.3 Methodology

This paper will use logit models to empirically analyze the first research question, specifically the impact of adhering to religion on the choice of self-employment. The reason is that the dependent variable (*Self-employment*) in this model is binary. Thus, we should estimate the results using non-linear models for binary data, and this thesis therefore uses logistic regression analysis. There are two models that this thesis analyzes; first, this thesis observes the association between belonging to a religion and self-employment. Second, this thesis examines to what extent the relationships in the first model depend on active participation. It follows the base specification below to test H1, H2, and H3:

SelfEmployment_i

$$= \alpha + \beta_1 Christianity_i + \beta_2 Hinduism_i + \beta_3 Christianity_i \times ReligiousParticipation_i + \beta_4 Hinduism_i \times ReligiousParticipation_i + \beta_5 ReligiousParticipation_i + \sum_k \beta_k X_{ik} + e_i$$

Where *i* denotes an individual and X_{ik} is the matrix of control variables:

SelfEmployment = A binary variable that takes value 1 if a respondent is self-employed and 0 if a respondent is a paid worker.

Christianity = A binary variable that takes value 1 if a respondent is Christian and 0 if a respondent is not a Christian

<i>Hinduism</i>	= A binary variable that takes value 1 if a respondent is Hindu and 0 if a respondent is not a Hindu
<i>ReligiousParticipation</i>	= The frequency of attending religious activities. It consists of four-point scale: 1 = never or does not participate; 2 = sometimes; 3 = often; 4 = always
<i>e</i>	= The error term

Importantly, belonging to Islam is the reference category in this model. There are two interactions included in the model for testing H1, H2, and H3. The first interaction is $Christianity_i \times ReligiousParticipation_i$. This specific interaction represents the interaction between a Christian respondent and his frequency of participating in religious activities in the past 12 months. This thesis describes this interaction as adhering to Christianity. Subsequently, the second interaction is $Hinduism_i \times ReligiousParticipation_i$. This second interaction represents the interaction between a Hindu respondent and his frequency of participating in religious activities in the past 12 months. This thesis describes the second interaction as adhering to Hinduism. With belonging to Islam as a reference category in the model, the variable $ReligiousParticipation_i$ captures engagement in religious activities of individuals belonging to Islam.

Meanwhile, this paper uses OLS regression to analyze the second research question because the dependent variables to answer this research question are continuous. There are three models that this thesis analyzes; first, this thesis examines the relationship between self-employment and the dependent variables. Second, it analyzes to what extent the relationship is moderated by belonging to a religion. Finally, it explores to what extent the results in the second model are driven by active engagement in religion. Here is the proposed econometric specification to test H4 and H5:

$$\begin{aligned}
logEarnings_i &= \alpha + \beta_1 SelfEmployment_i + \beta_2 Christianity_i + \beta_3 Hinduism_i \\
&+ \beta_4 SelfEmployment_i \times Christianity_i \\
&+ \beta_5 SelfEmployment_i \times Hinduism_i + \beta_6 ReligiousParticipation_i \\
&+ \beta_7 SelfEmployment_i \times Christianity_i \times ReligiousParticipation_i \\
&+ \beta_8 SelfEmployment_i \times Hinduism_i \times ReligiousParticipation_i \\
&+ \sum_k \beta_k X_{ik} + e_i
\end{aligned}$$

$$\begin{aligned}
MentalHealth_i &= \alpha + \beta_1 SelfEmployment_i + \beta_2 Christianity_i + \beta_3 Hinduism_i \\
&+ \beta_4 SelfEmployment_i \times Christianity_i \\
&+ \beta_5 SelfEmployment_i \times Hinduism_i + \beta_6 ReligiousParticipation_i \\
&+ \beta_7 SelfEmployment_i \times Christianity_i \times ReligiousParticipation_i \\
&+ \beta_8 SelfEmployment_i \times Hinduism_i \times ReligiousParticipation_i \\
&+ \sum_k \beta_k X_{ik} + e_i
\end{aligned}$$

Where i denotes each individual and X_{ik} is the matrix of control variables.

<i>logEarnings</i>	= The logarithm of an individual's total salary/wage during the last year (including all benefits) or individuals' net profit during the last year (for self-employed)
<i>MentalHealth</i>	= An individual's mental health score
<i>SelfEmployment</i>	= A binary variable that takes value 1 if a respondent is self-employed and 0 if a respondent is a paid worker.
<i>Christianity</i>	= A binary variable that takes value 1 if a respondent is Christian and 0 if a respondent is not a Christian
<i>Hinduism</i>	= A binary variable that takes value 1 if a respondent is Hindu and 0 if a respondent is not a Hindu
<i>ReligiousParticipation</i>	= The frequency of attending religious activities. It consists of four-point scale: 1 = never or does not participate; 2 = sometimes; 3 = often; 4 = always
<i>e</i>	= The error term

Again, in these models, belonging to Islam acts as the reference category. There are two-way interactions included in the model for testing H4 and H5. The first interaction is $SelfEmployment_i \times Christianity_i$. This specific interaction represents a self-employed individual whose religion is Christianity. Subsequently, the second interaction is $SelfEmployment_i \times Hinduism_i$. This specific interaction represents a self-employed individual whose religion is Hinduism. The other interactions are three-way interactions. The first interaction is $SelfEmployment_i \times Christianity_i \times ReligiousParticipation_i$. This

specific interaction captures the extent that a Christian self-employed person actively engages in his religion. The second interaction is $SelfEmployment_i \times Hinduism_i \times ReligiousParticipation_i$. This second interaction captures the extent that a Hindu self-employed person engages actively in his religion.

Three percentage levels are adopted throughout the models to estimate significance: 1%, 5%, and 10% significance levels. The following section will describe descriptive statistics of all variables included in this thesis, the results for the full models, and, finally, the analysis of moderating effects.

IV. Results

4.1 Descriptive Statistics

Table 1 presents sample descriptive statistics to overview the variables and analyze self-employed individuals' and paid workers' differences. First, from the total observations (18,290), self-employment accounts for 40.61% (7,428 observations) of the observations, and paid workers for 59.39% (10,862 observations). Table 1 also depicts the means of variables and their standard deviations (in parentheses). Besides the descriptive statistics, this thesis also included variance inflation factor (VIF) of all variables included in the first model of Table 2. The results can be seen in Appendix 2. This VIF aims to identify multicollinearity in the regression model since it recognizes the correlation and correlation strength between independent variables. The multicollinearity problem occurs where VIF values are larger than 5. Then, coefficients are estimated poorly, and p-values are not reliable (Frost, n.d). Our VIF results of all dependent and independent variables (without interaction) show a mean VIF value of 1.23. Thus, it implies that there are no severe multicollinearity problems in our regression.

Table 1. Descriptive statistics of the analysis sample

	Full Sample (N = 18,290)	Self-employed (N = 7,428)	Paid Workers (N = 10,862)	<i>p</i> -value
<i>Adherence to religion</i>				
Islam (0/1)	0.898 (0.302)	0.894 (0.308)	0.902 (0.298)	0.090
Christianity (0/1)	0.050 (0.217)	0.054 (0.226)	0.047 (0.211)	0.022
Hinduism (0/1)	0.052 (0.222)	0.052 (0.223)	0.052 (0.222)	0.948
Religiously active (1-4)	2.582 (1.220)	2.696 (1.210)	2.504 (1.221)	<0.001
<i>Category 1: never participate</i>	0.293 (0.455)	0.258 (0.438)	0.318 (0.466)	<0.001
<i>Category 2: sometimes</i>	0.160 (0.367)	0.155 (0.362)	0.164 (0.370)	0.131
<i>Category 3: often</i>	0.217 (0.412)	0.219 (0.414)	0.216 (0.411)	0.617
<i>Category 4: always</i>	0.329 (0.470)	0.368 (0.482)	0.303 (0.460)	<0.001
Earnings (logarithm) (million rupiahs)	15.434 (3.256)	15.083 (3.526)	15.675 (3.033)	<0.001
Mental health (0-30)	6.352 (4.806)	6.191 (4.850)	6.462 (4.774)	<0.001
<i>Control variables</i>				
Male (0/1)	0.595 (0.491)	0.564 (0.496)	0.616 (0.486)	<0.001
Age (18-65) (years)	37.535 (11.310)	41.228 (11.233)	35.009 (10.650)	<0.001
<i>Marital status (1-6)</i>				
<i>Category 1: not married</i>	1.976 (0.669)	2.103 (0.694)	1.889 (0.637)	<0.001
<i>Category 2: married</i>	0.139 (0.346)	0.055 (0.228)	0.196 (0.397)	<0.001
<i>Category 3: separated</i>	0.816 (0.388)	0.885 (0.319)	0.768 (0.422)	<0.001
<i>Category 4: divorced</i>	0.004 (0.060)	0.004 (0.061)	0.003 (0.058)	0.685
<i>Category 5: widowed</i>	0.015 (0.122)	0.015 (0.121)	0.015 (0.122)	0.973
<i>Category 6: cohabitate</i>	0.027 (0.162)	0.041 (0.199)	0.017 (0.129)	<0.001
<i>Category 6: cohabitate</i>	0.000 (0.015)	0.000 (0.012)	0.000 (0.017)	0.525
<i>Education level (1-4)</i>				
<i>Category 1: elementary</i>	2.367 (1.090)	2.071 (1.030)	2.570 (1.084)	<0.001
<i>Category 2: junior high</i>	0.306 (0.461)	0.404 (0.491)	0.239 (0.426)	<0.001
<i>Category 3: senior high</i>	0.192 (0.394)	0.212 (0.409)	0.178 (0.383)	<0.001
<i>Category 4: university</i>	0.330 (0.470)	0.291 (0.454)	0.357 (0.479)	<0.001
<i>Category 4: university</i>	0.172 (0.377)	0.092 (0.290)	0.226 (0.418)	<0.001
Household size	5.681 (2.892)	5.872 (2.760)	5.550 (2.972)	<0.001
Urban (0/1)	0.615 (0.487)	0.518 (0.500)	0.681 (0.466)	<0.001

Notes: Mean values are reported and standard deviations (SD) are given in parentheses. The *p*-value indicates test results for differences in the means between self-employed individuals and paid workers. The chi-squared test was used to compare the differences.

This study presents several observations regarding the general descriptive statistics represented in Table 1. First, regarding adhering to a religion, 89.8% of the total respondents are Muslim, 5% are Christian, and 5.2% are Hindu. Second, regarding the frequency of attending a religious activity, the observation shows that the highest percentage is “always” as 32.9% of total respondents responded that they always participate in religious activity. In contrast, the lowest share is “sometimes” as there are merely 16% of total respondents acknowledging that they rarely engage themselves in religious activities. Third, regarding earnings, the average earnings of the whole sample are 15.434 million rupiahs. Fourth, the mean mental health score of the whole sample is 6.352. IFLS5 used the CESD 10 scale to distinguish depression symptoms. The scale ranges from 0 to 30. Individuals whose score is ten or higher indicate a depression symptom (Fahmi et al., 2019; Andresen et al., 1994). Since the average mental health score of the whole sample is 6.352, it indicates that the average person in the sample does not suffer from depression.

Meanwhile, regarding the control variables, first, in terms of gender, 59.5% of the total respondents are male. Second, the average age of the whole sample is 37.535 years old. Third, in terms of marital status, 81.6% of the total respondents are married. In comparison, only 13.9% of the total responders are not married. When analyzing the education level, the highest share for the highest education level is senior high school; 33% of total respondents are senior high graduates. The second highest is elementary school, as 30.6% of total respondents are elementary graduates. Only 17.2% of total respondents have university level as their highest education level. It indicates that the whole sample has a low education level, on average. Additionally, the average household size of total respondents is 5.681, indicating a relatively high number. Lastly, 61.5% of the total respondents live in urban areas.

Moreover, Table 1 can provide essential distinctions among the subsamples (self-employed compared to paid workers). The Chi-square test was used to compare the mean of a particular variable between self-employed individuals and paid workers. Moreover, this thesis uses the chi-square test because it is more suitable to estimate the relationship between two categorical variables (Ugoni & Walker, 1995). We observe some notable differences. Regarding the religion sample, 89.4% of self-employed respondents are Muslim, whereas the percentage of paid workers who are Muslim is higher, 90.2%. For Christianity, 5.4% of Christian respondents are self-employed, and 4.7% of them are paid workers. For Hinduism,

the share percentage of the whole sample who are self-employed and paid workers are the same, which is 5.2%. In terms of religious participation, self-employed respondents are relatively frequently involved in religious activities, as 36.8% are religiously active. In contrast, paid workers participate relatively less frequently in religious activities, as 31.8% of them are not religiously active. For earnings, the average earnings of paid workers are higher than self-employed, with 15.675 million rupiahs compared to 15.083 million rupiahs. For mental health, the mental health state of self-employed respondents is better since the average mental health score is lower (6.191) than that of paid workers (6.462).

The following observation is regarding the differences between self-employed and paid workers in control variables. Interestingly, the engagement of males in self-employment is lower (56.4%) than their engagement in paid work (61.6%). Further, self-employed individuals, on average, are older with a mean of 41.228 years old, in contrast to paid workers, who averaged 35.009 years old. In terms of marital status, self-employed respondents are relatively often married, as 88.5% of them are married. In comparison, 76.8% of paid workers are married. However, not being married is significantly higher for paid workers, with 19.6% of paid workers not married, whereas only 5.5% of self-employed respondents are not married.

For the education level, paid workers are more educated as 22.6% of the paid workers have a university degree as their education level. In contrast, only 9.2% of self-employed respondents are university graduates. Further, there is also a large percentage of self-employed respondents with elementary as their highest education level, 40.4%. Meanwhile, only 23.9% of paid workers are elementary school educated. From the results, it can be indicated that, on average, paid workers are more educated than self-employed in this sample. Another interesting point is that the self-employed have, on average, a bigger family size, with an average of 5.872 people. This number is even higher than the average of total respondents, 5.681. Additionally, a paid workers' family size is on average 5.550. Finally, only 51.8% of self-employed people live in urban areas, whereas 68.1% of paid workers live in cities.

4.2 Regression Results

4.2.1 Hypotheses 1,2, and 3

This thesis presents the regression results in this section. We start by focussing on the first research questions about whether religious involvement is associated with self-employment in Indonesia. The results for testing Hypotheses 1, 2, and 3 are depicted in Table 2.

Table 2. Logit regression results with Self-employment as a dependent variable

	(1)	(2)
Islam	Reference	Reference
Christianity	0.301*** (0.076)	0.586*** (0.215)
Hinduism	0.053 (0.073)	0.603** (0.258)
Islam x Religious participation		Reference
Christianity x Religious participation		-0.101 (0.063)
Hinduism x Religious participation		-0.186** (0.079)
Religious participation		0.059*** (0.014)
Male	-0.319*** (0.035)	-0.321*** (0.035)
Age	0.058*** (0.011)	0.056*** (0.011)
Age x Age	-0.000 (0.000)	-0.000 (0.000)
Marital status cat. 1 (not married)	Reference	Reference
Marital status cat. 2 (married)	0.714*** (0.066)	0.713*** (0.066)
Marital status cat. 3 (separated)	0.433 (0.273)	0.417 (0.273)
Marital status cat. 4 (divorced)	0.275* (0.146)	0.282* (0.146)
Marital status cat. 5 (widowed)	0.657*** (0.123)	0.646*** (0.123)
Marital status cat. 6 (cohabitate)	-0.441 (1.211)	-0.455 (1.210)
Education level cat. 1 (elementary)	Reference	Reference
Education level cat. 2 (junior high)	0.045 (0.047)	0.040 (0.047)
Education level cat. 3 (senior high)	-0.163*** (0.043)	-0.164*** (0.043)
Education level cat. 4 (university)	-0.972*** (0.055)	-0.980*** (0.055)
Household size	0.026*** (0.006)	0.026*** (0.006)
Urban	-0.604*** (0.034)	-0.602*** (0.034)
Constant	-2.293*** (0.203)	-2.387*** (0.205)
Observations	18,290	18,290

Notes: Standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Model 1 in Table 2 concerns the association between belonging to a religion and self-employment. Model 2 captures to what extent this relationship depends on active participation. However, in logistic regression, the coefficient cannot be interpreted directly. Thus, we estimate the marginal effect to observe the magnitude of the influence of the independent variable on the dependent variable. The complete calculation of the marginal effects is available in Appendix 3.

Model 1 shows that belonging to Christianity (compared to Islam) is positively associated with being self-employed, *ceteris paribus*. Further, this result is statistically significant at the 1% significance level. Meanwhile, belonging to Hinduism (compared to Islam) is also positively associated with self-employment, *ceteris paribus*. Nevertheless, this result is statistically not significant at any significance level.

In the second model, we can observe to what extent the relationships between belonging to a religion and self-employment as observed in Model 1 depend on active participation. First, for Muslim respondents, the interaction result between Islam and religious participation is omitted because it is the reference category. However, we can estimate the effect from the religious participation variable. The results show that the more actively a Muslim individual engages in his religion, the more likely this person becomes self-employed, *ceteris paribus*, and it is statistically significant at the 1% significance level.

Second, for Christian respondents, the results of belonging to Christianity are the same as the first model. The result is positively correlated with being self-employed, *ceteris paribus*, and statistically significant at the 1% significance level. Moreover, the interaction between Christianity and religious participation also shows that the more actively a Christian engages in his religion, the less likely this person becomes self-employed, *ceteris paribus*. However, this interaction term is not statistically significant at any significance level.

Finally, the second model shows that belonging to Hinduism is positively correlated with being self-employed, *ceteris paribus*. This result is statistically significant at the 5% significance level. In contrast, in the first model, the result for this relationship is not significant. Nevertheless, regarding the interaction between Hinduism and religious participation, the results show that the more actively a Hindu respondent engages in his religion, the less likely this person becomes self-employed, *ceteris paribus*, and it is statistically significant at the 5% significance

level. Thus, the effect for the binary variable Hinduism only holds for religiously inactive Hindus. We can also compare the religions by observing the marginal effects. The result of the marginal effects based on model 2 can be seen in Appendix 3. The average marginal effect of belonging to a religion is 0.039 lower when the respondents are Hindus instead of Muslims. However, the results show that the pairwise differences are not significant.

Overall, several important details can be concluded from the logistic regression results. First, the first hypothesis that claims a positive relationship between adhering to Islam (compared to Hinduism) is not fully accepted. The results show that belonging to Hinduism is positively associated with being self-employed, where we expect that the relationship should be negative. However, when we observe to what extent this relationship depends on active participation, the results show that the more actively a Muslim individual engages in his religion, the more likely this person becomes self-employed. The opposite is true for Hinduism. Hence, the results in Model 2 are in line with the first hypothesis.

Additionally, the second hypothesis claims a positive relationship between adhering to Christianity (compared to Hinduism). We found that belonging to Christianity is positively associated with being self-employed compared to belonging to Islam. However, when we estimate whether the effect of Christianity is higher than Hinduism, the results are not significant. Thus, it is inconclusive that the effect sizes are different. Furthermore, when we observe to what extent this relationship depends on active participation, the interaction between Christianity and its religious participation is not significant. At the same time, the interaction term is negative and significant for Hinduism. Therefore, we partially accept the second hypothesis that claims that adhering to Christianity is positively associated with self-employment compared to Hinduism.

Lastly, the third hypothesis claims a negative relationship between adhering to Hinduism (compared to Islam and Christianity). We found that belonging to Hinduism is positively but insignificantly associated with being self-employed compared to belonging to Islam. Moreover, we found that the effects of belonging to Christianity and belonging to Hinduism cannot be statistically distinguished. These results are not in line with the third hypothesis. Furthermore, when we observe to what extent this relationship depends on active participation, the interaction between Hinduism and religious participation is negative and

significant. With the effect of religious participation being positive for Muslims and insignificant for Christians, we thus find partial evidence for hypothesis 3 when considering the religiously most active individuals.

4.2.2 Hypotheses 4 and 5

Tables 3 and 4 show the results of the OLS regression analyses. Three models are displayed in these tables. The first model contains information regarding the relationship between self-employment, belonging to a religion, and earnings/mental health. The second model analyzes to what extent the relationship is moderated by belonging to a religion. Finally, the third model explores to what extent the results in the second model are driven by active engagement in religion.

The relationship between self-employment and earnings shows consistency across the three models: It is always negative and significant at the 1% significance level. Besides, Hindus seem to earn significantly more than those belonging to Islam. In the second model, the variable of belonging to religion does not significantly moderate the relationship between self-employment and earnings since all results are not significant at any significance level. Further, in the third model, the moderator variable, religious participation, is negatively and significantly associated with self-employment at the 5% significance level. However, the three-way interactions are all insignificant. Hence, we do not find supporting evidence for Hypothesis 4 since adherence to religion does not significantly moderate the relationship between self-employment and earnings. Further, we do not observe that the relationships are less negative for individuals adhering to a religion.

Table 3. OLS regression results with Earnings as the dependent variable.

	(1)	(2)	(3)
Self-employment	-0.444*** (0.051)	-0.429*** (0.054)	-0.537*** (0.126)
Islam	Reference	Reference	Reference
Christianity	0.029 (0.115)	0.159 (0.144)	-0.046 (0.412)
Hindu	0.460*** (0.089)	0.468*** (0.101)	-0.223 (0.318)
Self-employment x Islam		Reference	Reference
Self-employment x Christianity		-0.294 (0.235)	-0.467 (0.717)
Self-employment x Hindu		-0.021 (0.189)	0.222 (0.726)
Religious participation			-0.055** (0.025)
Self-employment x Islam x Religious participation			Reference
Self-employment x Christianity x Religious participation			0.040 (0.204)
Self-employment x Hindu x Religious participation			-0.082 (0.220)
Male	0.599*** (0.050)	0.600*** (0.050)	0.606*** (0.050)
Age	0.166*** (0.017)	0.166*** (0.017)	0.168*** (0.017)
Age x Age	-0.002*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)
Marital status cat. 1 (not married)	Reference	Reference	Reference
Marital status cat. 2 (married)	0.468*** (0.089)	0.471*** (0.089)	0.473*** (0.089)
Marital status cat. 3 (separated)	0.465 (0.388)	0.462 (0.389)	0.473 (0.389)
Marital status cat. 4 (divorced)	0.284 (0.235)	0.289 (0.235)	0.291 (0.236)
Marital status cat. 5 (widowed)	0.036 (0.193)	0.042 (0.194)	0.049 (0.194)
Marital status cat. 6 (cohabitate)	-0.237 (0.441)	-0.231 (0.440)	-0.223 (0.460)
Education level cat. 1 (elementary)	Reference	Reference	Reference
Education level cat. 2 (junior high)	0.442*** (0.071)	0.444*** (0.071)	0.446*** (0.071)
Education level cat. 3 (senior high)	0.759*** (0.066)	0.759*** (0.066)	0.759*** (0.066)
Education level cat. 4 (university)	1.257*** (0.074)	1.255*** (0.075)	1.262*** (0.075)
Household size	-0.021*** (0.008)	-0.021*** (0.008)	-0.021*** (0.008)
Urban	0.405*** (0.051)	0.404*** (0.051)	0.401*** (0.051)
Constant	10.860*** (0.311)	10.856*** (0.310)	10.943*** (0.314)
Observations	18,290	18,290	18,290
R-squared	0.055	0.055	0.056

Notes: Standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

In Table 4, the dependent variable is mental health. The relationship between self-employment and mental health is negative, but it is not significant at any significance level in the three models. Meanwhile, in all models, the relationship between belonging to Hinduism and self-employment is positive and significant at the 1% and 10% significance levels. In the second model, we find a significant interaction between self-employment and Christianity. Moreover, the interaction term shows a positive sign and significant at the 10% significance level. Finally, in the third model, there are no significant interaction effects at any significance level.

Hence, we do not find supporting evidence for Hypothesis 5 since adherence to religion does not significantly moderate the relationship between self-employment and mental health. Further, we do not observe that the relationships are less negative for individuals adhering to a religion.

Table 4. OLS regression results with Mental Health as the dependent variable.

	(1)	(2)	(3)
Self-employment	-0.004 (0.077)	-0.054 (0.080)	-0.000 (0.179)
Islam	Reference	Reference	Reference
Christianity	0.002 (0.157)	-0.228 (0.205)	0.014 (0.536)
Hindu	0.606*** (0.164)	0.406* (0.212)	1.959*** (0.742)
Self-employment x Islam		Reference	Reference
Self-employment x Christianity		0.522* (0.317)	0.797 (0.893)
Self-employment x Hindu		0.490 (0.334)	0.852 (1.153)
Religious participation			0.002 (0.040)
Self-employment x Islam x Religious participation			Reference
Self-employment x Christianity x Religious participation			-0.077 (0.263)
Self-employment x Hindu x Religious participation			-0.131 (0.357)
Male	-0.152** (0.076)	-0.151** (0.076)	-0.166** (0.076)
Age	-0.110*** (0.023)	-0.110*** (0.023)	-0.112*** (0.023)
Age x Age	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)
Marital status cat. 1 (not married)	Reference	Reference	Reference
Marital status cat. 2 (married)	-0.690*** (0.128)	-0.692*** (0.128)	-0.680*** (0.128)
Marital status cat. 3 (separated)	0.072 (0.644)	0.091 (0.646)	0.093 (0.645)
Marital status cat. 4 (divorced)	0.872** (0.387)	0.867** (0.388)	0.864** (0.388)
Marital status cat. 5 (widowed)	-0.098 (0.285)	-0.101 (0.285)	-0.089 (0.285)
Marital status cat. 6 (cohabitate)	-1.555 (1.416)	-1.588 (1.403)	-1.575 (1.460)
Education level cat. 1 (elementary)	Reference	Reference	Reference
Education level cat. 2 (junior high)	-0.514*** (0.107)	-0.518*** (0.107)	-0.513*** (0.107)
Education level cat. 3 (senior high)	-0.745*** (0.097)	-0.745*** (0.097)	-0.737*** (0.097)
Education level cat. 4 (university)	-1.195*** (0.110)	-1.188*** (0.110)	-1.177*** (0.111)
Household size	0.060*** (0.012)	0.060*** (0.012)	0.059*** (0.012)
Urban	0.199*** (0.075)	0.203*** (0.075)	0.204*** (0.076)
Constant	10.195*** (0.419)	10.218*** (0.419)	10.236*** (0.425)
Observations	18,290	18,290	18,290
R-squared	0.030	0.031	0.031

Notes: Standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

V. Discussion

5.1 Self-employment and Religion

Previous literature shows that belonging to a particular religion and individuals' involvement in religious activities can affect the likelihood of becoming self-employed. Further, the relationships will vary depending on what religions are analyzed (Audretsch et al., 2013; Hill et al., 2015; Parboteeah et al., 2015). Based on these findings, we predicted and found that indeed there is a link between adhering to a particular religion and the likelihood of being self-employed (compared to being a wage worker).

First, we do not find a positive relationship between adhering to Islam (compared to adhering to Hinduism) and the likelihood of being self-employed (contrary hypothesis 1). The reasons are because belonging to Hinduism is positively correlated with being self-employed. It turned out to be important to consider the extent to which individuals actively engage in the religion they belong to. Despite the insignificant results of belonging to Islam, we find that the more frequently a Muslim is involved in Islam activities, the higher probability of being self-employed. This result is following evidence from Audretsch et al. (2013). The authors argue that adherents to Islam promote self-employment activities since Quran teaches Sharia laws that discuss entrepreneurship aspects, like risk-taking. Moreover, one of the most important Muslim scripture (Hadith) encourages its followers to be involved in entrepreneurial activities, such as trading. The Hadith claims that there are 90% doors of sustenance by doing trading. Thus, all Muslims should engage in this particular activity since it aligns with what Prophet Muhammad commanded (Hulaimi et al., 2016). Therefore, overall, we found partial evidence for the first hypothesis.

Moreover, we found that belonging to Christianity is positively correlated with being self-employed (compared to belonging to Islam). This result follows evidence from Audretsch et al. (2013), who suggest that Christianity has several essential features that can motivate individuals to engage in self-employment, such as individualism and a hard-work mindset. Specifically, the hard-work mindset resulting in seeking economic gain by engaging in self-employment (Nunziata & Rocco, 2011). However, the interaction between Christianity and its religious participation is not significant. The reason could be that even though Protestantism and Catholicism are encompassed under Christianity, previous literature differentiates these

two religions into two separate variables since they differ on some essential perspectives (Nunziata & Rocco; Minns & Rizov, 2005). The inclusion of both Protestants and Catholicism into our variable *Christianity* may therefore lie behind the insignificant results of the interaction between Christianity and religious participation. However, our second hypothesis was about a positive relationship between adhering to Christianity, compared adhering to Hinduism, and self-employment. We partially accept the second hypothesis because the effect sizes for Christianity and Hinduism cannot be statistically distinguished in Model 2.

Regarding the third hypothesis, we only found a negative relationship between adhering to Hinduism (compared to Islam and Christianity) for the religiously most active individuals. Model 2 implies that the more religiously active an individual belongs to Hinduism, the less likely it is to engage in self-employment. The possible reasons behind this are provided in the discussion of the third hypothesis. Clearly, the results are in accordance with findings from Audretsch et al. (2013): Hinduism individuals who actively participate in religious activities have a low probability of being self-employed since they are more aware of the rigid hierarchy system and its consequences.

5.2 Earnings and Religious Involvement of Self-employed Individuals

The literature regarding the relationship between religious involvement and self-employment earnings is limited, particularly in developing countries. Despite the limited previous literature, this research found results that are in accordance with previous literature. First, we found a negative relationship between self-employment and earnings. Second, we also found that belonging to a particular religion and being involved in religious activities can determine someone's earnings (Tomes, 1985; Permani, 2011). However, adhering to a religion does not appear to moderate the relationship between earnings and self-employment significantly.

These insignificant results may result from the fact that our sample comes from Indonesia, a developing country. Based on previous literature, self-employment in developing countries is categorized as necessity entrepreneurship, where many self-employed individuals perform work in the informal sector (Acs & Virgil, 2010; Desai, 2011). Similarly, Indonesia has a great size informal sector; however, most workers favor working in the formal sector. Hence, the informal sector regularly accommodates workers driven out of the formal sector (Sohn, 2015).

These workers have distinct characteristics, such as having few years of schooling and being low-skilled. Consequently, the self-employment sector is regularly unproductive and generates low earnings (Margolis, 2014). Therefore, to improve their earnings and make them less negative, frequently attending religious participation may not be optimal, despite that there may be beneficial effects, as described in the literature review.

5.3 Mental Health and Religious Involvement of Self-employed Individuals

Another discussion is regarding to what extent adhering to religion can affect the self-employed mental health. We only found that belonging to a particular religion can improve individual mental health, particularly individuals who belong to Hinduism (Thomas & Barbato, 2020). Additionally, our results show that belonging to a religion and frequent involvement in religious participation does not necessarily lead to improvements in mental health.

The reasons may be that self-employed mental health can be affected by institutional restrictions, such as regulative restrictions (Wiklund et al., 2019). At the same time, Indonesia is well-known as a country with an inferior rank in the World Bank's ease of doing business (Akhlas, 2019). Based on the report, Indonesia scores 67.96 out of 100. The number has increased by 1.42 points since the previous year; however, the increase is lower than last year when the score increased by 2.25 points to 66.54. The ease of doing business in Indonesia worsens because several significant indicators have fallen. For example, Indonesia has a lower rank in construction permission and contract enforcement (Ministry of Investment, 2019). At the same time, those two are essential institutional features for entrepreneurship (Fogel, 2006). The previous explanation indicates that institutional constraints exist in Indonesia, and they can change occupational decision-making, including willingness to seek attractive business opportunities (Bradley & Klein, 2016; Wood et al., 2016). Therefore, institutional restrictions on these opportunities may be harmful to self-employed mental health.

Moreover, self-employed mental health also can be affected by geographical location (Abreu et al., 2019). This thesis already controlled whether a respondent lives in urban or rural areas to account for the inequality between these two regions. However, previous literature shows that Indonesia has vast heterogeneity in economic and social outcomes. Even areas that are both categorized as urban may have different economic activities. As a result, the opportunity to open a new business and have a job also differs from one region to another (Hill et al.,

2008). For instance, Java and Bali dominate Indonesia's economy. Therefore, living in these two regions offers a more optimal combination of ease of conducting business and life's quality (Jakarta Post, 2017) than living in other regions that do not dominate Indonesia's economy. Additionally, living in such regions can improve someone's mental health state. Hence, problems such as institutional restrictions and inequality between regions cannot be solved solely by frequent involvement in religious participation.

VI. Conclusion, Policy Recommendation, and Limitation

6.1 Conclusion

This section starts by answering the first research question, whether religious involvement is associated with self-employment in Indonesia. This paper finds such a relationship between adhering to a particular religion and the likelihood of being self-employed (compared to being a wage worker), and that it varies depending on the religion considered. The first finding is that we do not find a positive relationship between belonging to Islam (compared to Hinduism) and the likelihood of being self-employed since belonging to Hinduism shows a positive effect. However, we find that the more frequently a Muslim is involved in Islam activities, the higher probability of being self-employed. Second, we find that belonging to Christianity is positively associated with being self-employed. Nevertheless, we do not find a significant result between active involvement in Christianity and self-employment. Third, we found only the religiously most active individuals in Hinduism (compared to Islam and Christianity) that negatively affect self-employment.

The second research question addressed in this thesis concerned the possible moderating role of religion in explaining the returns to self-employment in terms of earnings and mental health. The empirical results show that adhering to a religion does not significantly moderate the relationship between earnings and self-employment. The reasons are that the self-employment sector in Indonesia is regularly unproductive and generates low earnings. Therefore, to improve their earnings and make them less negative, frequently attending religious participation may not be optimal, despite having beneficial effects. Several recommendations can be proposed to the Indonesian government to help the self-employed boost their earnings, such as improving earning opportunities and enhancing training arrangements for paid employment. Such training aims to provide skills for self-employed individuals to occupy current job openings (Fields, 2019). This has become a crucial point for the Indonesian government since they usually rely on religion, and they believe that participating in religious activities can improve self-employed earnings.

Regarding mental health, we only found that belonging to a particular religion can improve individual mental health, particularly for individuals who belong to Hinduism (Thomas & Barbato, 2020). Additionally, our results show that belonging to a religion and frequent

involvement in religious activities do not necessarily lead to improvements in mental health. Therefore, to improve the self-employed mental health, being religious by frequently attending religious participation may not be optimal, despite several advantages. Nevertheless, this can become a policy recommendation for the Indonesian government to improve the institutional system and provide some interventions, such as conditional cash transfers and asset promotion programs, to eradicate inequality between regions since these interventions are essential for mental health (Lund et al., 2011). Further, mental health interventions are commonly correlated with enhancement in economic outcomes.

6.2 Limitations and Recommendations for Future Research

By focusing on the Indonesian context, this study contributes to the limited number of self-employment studies in developing countries. However, several limitations remain, and suggestions for future research can be made. The first limitation is that our study has a small sample size. Consequently, we find many relationships in our models that are not significant. Thus, the recommendation for future research is to have a larger sample size since a higher sample size gives lower standard errors, and relationships that are currently insignificant in our model may become significant when the sample size gets larger. The second limitation is that we used a dataset from 2014. This may impact our findings' present-day validity because external shocks, such as a global pandemic, may have tremendously impacted labor markets, mental health, and earnings. Hence, further research should also consider advances in information technology as the global pandemic has taken advantage of technological advances. Most business owners in Indonesia take advantage of using the internet to enlarge their customer base and restrict direct contact. Thus, digitization has changed the appearance of new enterprises since most of them are swiftly changing their services to online setups. Consequently, it will also change people's decision to become self-employed.

Furthermore, a different method can be used to explain mental health. Previous literature that employs the same data set, the Indonesian Family Life Survey (IFLS), uses overdispersed Poisson models instead of OLS regressions since CES-D scores in IFLS follow a positive but right-skewed distribution (Tampubolon & Hanandita, 2014). Besides, the authors claim that the Poisson model is more robust than linear least-squares regression; thus, it is more preferable to be implemented. Additionally, this thesis does not consider psychological

information that can affect occupational choices, such as locus of control and individual risk aversion (McClelland, 1965). Hence, it leads to omitted variable bias. Additionally, Audretsch et al. (2013) argue that most self-employment studies have this limitation; thus, future research should use a richer dataset to provide more insights.

Moreover, further research should consider cultural factors because people's behavior in choosing jobs is also determined by the culture in which there are elements of beliefs and human values, which are also elements of religion. Finally, as Audretsch et al. (2013) also suggest, future research can look into whether the relationship between religion and self-employment is geographically concentrated or whether they exist when people move to other places. Thus, future research can broaden the scope of the current debate on the role of religion and social class in self-employment by examining these critical issues and relating them to other elements of entrepreneurial behaviour.

References

Abreu, M., Oner, O., Brouwer, A., & van Leeuwen, E. (2019). Well-being effects of self-employment: A spatial inquiry. *Journal of Business Venturing*, 34(4), 589-607.

Acs, Z. (2006). How is entrepreneurship good for economic growth?. *Innovations: Technology, Governance, Globalization*, 1(1), 97-107.

Acs, Z. J., Desai, S., & Hessels, J. (2008). Entrepreneurship, economic development and institutions. *Small Business Economics*, 31(3), 219-234.

Acs, Z. J., & Virgill, N. (2010). Entrepreneurship in developing countries. In *Handbook of Entrepreneurship Research* (pp. 485-515). Springer, New York, NY.

Adsera, A. (2006). Religion and changes in family-size norms in developed countries. *Review of Religious Research*, 271-286.

Akhlas, A. W. (2019). Indonesia remains at 73rd in World Bank's Ease of Doing Business rankings. *The Jakarta Post*. Retrieved from: <https://www.thejakartapost.com/news/2019/10/24/indonesia-remains-at-73rd-in-world-banks-ease-of-doing-business-rankings.html>

Andresen, E. M., Malmgren, J. A., Carter, W. B., & Patrick, D. L. (1994). Screening for depression in well older adults: Evaluation of a short form of the CES-D. *American Journal of Preventive Medicine*, 10(2), 77-84.

Argue, A., Johnson, D. R., & White, L. K. (1999). Age and religiosity: Evidence from a three-wave panel analysis. *Journal for the Scientific Study of Religion*, 423-435.

Audretsch, D. B. (2007). *The entrepreneurial society*. Oxford University Press on Demand.

Audretsch, D. B., Boente, W., & Tamvada, J. P. (2013). Religion, social class, and entrepreneurial choice. *Journal of Business Venturing*, 28(6), 774-789.

Balog, A. M., Baker, L. T., & Walker, A. G. (2014). Religiosity and spirituality in entrepreneurship: a review and research agenda. *Journal of Management, Spirituality & Religion*, 11(2), 159-186.

Baron, R. A., Franklin, R. J., & Hmieleski, K. M. (2016). Why entrepreneurs often experience low, not high, levels of stress: The joint effects of selection and psychological capital. *Journal of Management*, 42(3), 742-768.

Baum, S. (2014). Higher education earnings premium: Value, variation, and trends. *Urban Institute*.

Bhaumik, S. K., & Chakrabarty, M. (2006). *Earnings Inequality in India: Has the Rise of Caste and Religion Based Politics in India Had an Impact?* (No. 2008). Institute of Labor Economics (IZA).

Bjelland, I., Krokstad, S., Mykletun, A., Dahl, A. A., Tell, G. S., & Tambs, K. (2008). Does a higher educational level protect against anxiety and depression? The HUNT study. *Social Science & Medicine*, 66(6), 1334-1345.

Björgvinsson, T., Kertz, S. J., Bigda-Peyton, J. S., McCoy, K. L., & Aderka, I. M. (2013). Psychometric properties of the CES-D-10 in a psychiatric sample. *Assessment*, 20(4), 429-436.

Block, J. H., Hoogerheide, L., & Thurik, R. (2013). Education and entrepreneurial choice: An instrumental variables analysis. *International Small Business Journal*, 31(1), 23-33.

Bradley, S. W., & Klein, P. (2016). Institutions, economic freedom, and entrepreneurship: The contribution of management scholarship. *Academy of Management Perspectives*, 30(3), 211-221.

Bram, A. D., & Gabbard, G. O. (2001). Potential space and reflective functioning: Towards conceptual clarification and preliminary clinical implications. *The International Journal of Psychoanalysis*, 82(4), 685-699.

Brenner, R., & Kiefer, N. M. (1981). The economics of the diaspora: discrimination and occupational structure. *Economic Development and Cultural Change*, 29(3), 517-534.

Busenitz, L. W., Gomez, C., & Spencer, J. W. (2000). Country institutional profiles: Unlocking entrepreneurial phenomena. *Academy of Management Journal*, 43(5), 994-1003.

Carleton, R. A., Esparza, P., Thaxter, P. J., & Grant, K. E. (2008). Stress, religious coping resources, and depressive symptoms in an urban adolescent sample. *Journal for the Scientific Study of Religion*, 47(1), 113-121.

Carswell, P., & Rolland, D. (2004). The role of religion in entrepreneurship participation and perception. *International Journal of Entrepreneurship and Small Business*, 1(3-4), 280-286.

Chen, M. A. (2012). *The Informal Economy: Definitions, Theories and Policies* (Vol. 1, No. 26, pp. 90141-4). WIEGO working Paper.

Chevalier, A., & Feinstein, L. (2006). Sheepskin or Prozac: The causal effect of education on mental health.

Cho, Y., Margolis, D., Newhouse, D., & Robalino, D. (2012). Labor markets in low and middle income countries: trends and implications for social protection and labor policies. *Social Protection and Labor Discussion Paper*, 1207.

Dana, L. P. (2000). Creating entrepreneurs in India. *Journal of Small Business Management*, 38(1), 86.

Dana, L. P. (2009). Religion as an explanatory variable for entrepreneurship. *The International Journal of Entrepreneurship and Innovation*, 10(2), 87-99.

Davidsson, P., & Honig, B. (2003). The role of social and human capital among nascent entrepreneurs. *Journal of Business Venturing*, *18*(3), 301-331.

Desai, S. (2011). Measuring entrepreneurship in developing countries. In *Entrepreneurship and Economic Development* (pp. 94-107). Palgrave Macmillan, London.

Dodd, S. D., & Gotsis, G. (2007). The interrelationships between entrepreneurship and religion. *The International Journal of Entrepreneurship and Innovation*, *8*(2), 93-104.

Dodd, S. D., & Seaman, P. T. (1998). Religion and enterprise: An introductory exploration. *Entrepreneurship Theory and Practice*, *23*(1), 71-86.

Dougherty, K. D., Griebel, J., Neubert, M. J., & Park, J. Z. (2013). A religious profile of American entrepreneurs. *Journal for the Scientific Study of Religion*, *52*(2), 401-409.

Faggio, G., & Silva, O. (2014). Self-employment and entrepreneurship in urban and rural labour markets. *Journal of Urban Economics*, *84*, 67-85.

Fahmi, M., Panjaitan, N. A., Habibie, I., Siregar, A. Y., Amarullah, G., & Sunjaya, D. K. (2019). Does your neighborhood protect you from being depressed? A study on social trust and depression in Indonesia. *BMC Public Health*, *19*(1), 1-8.

Fields, G. (2019). Self-employment and poverty in developing countries. Retrieved from: <https://wol.iza.org/articles/self-employment-and-poverty-in-developing-countries/long#:~:text=They%20are%20overwhelmingly%20concentrated%20in,earn%20enough%20to%20escape%20poverty.&text=Some%20poor%20people%20prefer%20self,is%20worse%20than%20wage%20employment>.

Fogel, K., Hawk, A., Morck, R., & Yeung, B. (2006). Institutional obstacles to entrepreneurship. *Oxford Handbook of Entrepreneurship*.

Frost, Jim. (n.d). Multicollinearity in Regression Analysis: Problems, Detection, and Solutions. Retrieved from June 21, 2021, <https://statisticsbyjim.com/regression/multicollinearity-in-regression-analysis/#:~:text=Multicollinearity%20occurs%20when%20independent%20variables,model%20and%20interpret%20the%20results.>

Geertz, C. (1993) Religion as a cultural system. In: *The interpretation of cultures: Selected essays* (pp. 87-125). New York: Basic Books.

Gindling, T. H., & Newhouse, D. (2012). *Self-employment in the developing world*. The World Bank.

Glaeser, E. L., & Sacerdote, B. I. (2008). Education and religion. *Journal of Human Capital*, 2(2), 188-215.

Gunderson, M. (2006). Male-female wage differentials: how can that be?. *Canadian Journal of Economics/Revue Canadienne D'économique*, 39(1), 1-21.

Haapanen, M., & Tervo, H. (2009). Self-employment duration in urban and rural locations. *Applied Economics*, 41(19), 2449-2461.

Hamilton, B. H. (2000). Does entrepreneurship pay? An empirical analysis of the returns to self-employment. *Journal of Political Economy*, 108(3), 604-631.

Harris, J. R., & Todaro, M. P. (1970). Migration, unemployment and development: a two-sector analysis. *The American Economic Review*, 60(1), 126-142.

Hassan, M. K., & Hippler III, W. J. (2014). Entrepreneurship and Islam: an overview. *Econ Journal Watch*, 11(2), 170-179.

Häusser, J. A., Mojzisch, A., Niesel, M., & Schulz-Hardt, S. (2010). Ten years on: A review of recent research on the Job Demand–Control (-Support) model and psychological well-being. *Work & Stress, 24*(1), 1-35.

Hayton, J. C., George, G., & Zahra, S. A. (2002). National culture and entrepreneurship: A review of behavioral research. *Entrepreneurship Theory and Practice, 26*(4), 33-52.

Hessels, J., Rietveld, C. A., & Van Der Zwan, P. (2020). The relation between health and earnings in self-employment. *Frontiers in Psychology, 11*(801).

Hill, N. J., Perkins, S., & White, J. (2015). The influence of religion on becoming an entrepreneur in the United States. *Academy of Entrepreneurship Journal, 21*(2), 15.

Hill, H., Resosudarmo, B. P., & Vidyattama, Y. (2008). Indonesia's changing economic geography. *Bulletin of Indonesian Economic Studies, 44*(3), 407-435.

Hoogendoorn, B., Rietveld, C. A., & van Stel, A. (2016). Belonging, believing, bonding, and behaving: the relationship between religion and business ownership at the country level. *Journal of Evolutionary Economics, 26*(3), 519-550.

Hout, M., & Rosen, H. S. (1999). *Self-employment, family background, and race* (No. w7344). National Bureau of Economic Research.

Hulaimi, A., Sahri, S., & Huzaini, M. (2016). Etika Bisnis Islam Pedagang Sapi dan Dampaknya Terhadap Kesejahteraan Pedagang di Kecamatan Masbagik Kabupaten Lombok Timur. *IQTISHADIA: Jurnal Ekonomi dan Perbankan Syariah, 3*(2), 344-364.

Hundley, G. (2000). Male/female earnings differences in self-employment: The effects of marriage, children, and the household division of labor. *ILR Review, 54*(1), 95-114.

Iannaccone, L. R. (1998). Introduction to the Economics of Religion. *Journal of Economic Literature, 36*(3), 1465-1495.

ILO. (2018). Paid employment vs vulnerable employment: A brief study of employment patterns by status in employment. Retrieved from: https://ilo.org/wcmsp5/groups/public/---dgreports/---stat/documents/publication/wcms_631497.pdf

Jakarta Post. (2017). East Java top in ease of doing business. Retrieved from: <https://www.thejakartapost.com/news/2017/11/22/east-java-top-in-ease-of-doing-business.html>

Jamison, D. T., & Van der Gaag, J. (1987). Education and earnings in the People's Republic of China. *Economics of Education Review*, 6(2), 161-166.

Keyes, C. L., & Westerhof, G. J. (2012). Chronological and subjective age differences in flourishing mental health and major depressive episode. *Aging & Mental Health*, 16(1), 67-74.

Koenig, H. G., & Larson, D. B. (2001). Religion and mental health: Evidence for an association. *International Review of Psychiatry*, 13(2), 67-78.

Kostova, T. (1999). Transnational transfer of strategic organizational practices: A contextual perspective. *Academy of Management Review*, 24(2), 308-324.

Kwon, I., & Sohn, K. (2017). Job dissatisfaction of the self-employed in Indonesia. *Small Business Economics*, 49(1), 233-249.

Lehrer, E. L. (2004). Religion as a determinant of economic and demographic behavior in the United States. *Population and Development Review*, 30(4), 707-726.

Levesque, M., & Minniti, M. (2006). The effect of aging on entrepreneurial behavior. *Journal of Business Venturing*, 21(2), 177-194.

Levin, J. (2010). Religion and mental health: Theory and research. *International Journal of Applied Psychoanalytic Studies*, 7(2), 102-115.

Lewis, W. C. (1989). On the relationship between age, earnings, and the net discount rate. *Journal of Forensic Economics*, 2(3), 69-77.

Lewis, J., & Lewis, B. (2009). *Bali's silent crisis: desire, tragedy, and transition*. Lexington Books.

Lin, Z., Picot, G., & Compton, J. (2000). The entry and exit dynamics of self-employment in Canada. *Small Business Economics*, 15(2), 105-125.

Loewenthal, K. M., Cinnirella, M., Evdoka, G., & Murphy, P. (2001). Faith conquers all? Beliefs about the role of religious factors in coping with depression among different cultural-religious groups in the UK. *British Journal of Medical Psychology*, 74(3), 293-303.

Loewenthal, K. M., MacLeod, A. K., & Cinnirella, M. (2002). Are women more religious than men? Gender differences in religious activity among different religious groups in the UK. *Personality and Individual Differences*, 32(1), 133-139.

Licht, A. N. (2010). Entrepreneurial motivations, culture, and the law. In *Entrepreneurship and Culture* (pp. 11-40). Springer, Berlin, Heidelberg.

Lucas, R. E., Clark, A. E., Georgellis, Y., & Diener, E. (2003). Reexamining adaptation and the set point model of happiness: reactions to changes in marital status. *Journal of Personality and Social Psychology*, 84(3), 527.

Luchman, J. N., & González-Morales, M. G. (2013). Demands, control, and support: a meta-analytic review of work characteristics interrelationships. *Journal of Occupational Health Psychology*, 18(1), 37.

Lund, C., De Silva, M., Plagerson, S., Cooper, S., Chisholm, D., Das, J., ... & Patel, V. (2011). Poverty and mental disorders: breaking the cycle in low-income and middle-income countries. *The Lancet*, 378(9801), 1502-1514.

Maloney, W. F. (2004). Informality revisited. *World Development*, 32(7), 1159-1178.

Margolis, D. N. (2014). By choice and by necessity: Entrepreneurship and self-employment in the developing world. *The European Journal of Development Research*, 26(4), 419-436.

Marmot, M. G., Stansfeld, S., Patel, C., North, F., Head, J., White, I., ... & Smith, G. D. (1991). Health inequalities among British civil servants: the Whitehall II study. *The Lancet*, 337(8754), 1387-1393.

McClelland, D. C. (1965). N achievement and entrepreneurship: A longitudinal study. *Journal of personality and Social Psychology*, 1(4), 389.

McDougall, P. P., Oviatt, B. M., Shrader, R. C., & Simon, M. (1994). Heartware International Corporation: An Entrepreneur's Roller Coaster Ride Part B. *Entrepreneurship Theory and Practice*, 18(2), 129-135.

Meng, R., & Sentance, J. (1984). Religion and the determination of earnings: Further results. *Canadian Journal of Economics*, 481-488.

Ministry of Investment. (2019). *3 Important Facts about the Ease of Doing Business Indonesia*. Retrieved from: <https://www3.investindonesia.go.id/en/article-investment/detail/3-important-facts-about-the-ease-of-doing-business-indonesia>

Minns, C., & Rizov, M. (2005). The spirit of capitalism? Ethnicity, religion, and self-employment in early 20th century Canada. *Explorations in Economic History*, 42(2), 259-281.

Montes-Rojas, G. V. (2010). Confronting neoclassical myths about self-employment in Latin America. *Review of Radical Political Economics*, 42(1), 50-65.

Myrskylä, M., & Margolis, R. (2014). Happiness: Before and after the kids. *Demography*, 51(5), 1843-1866.

Norris, P., & Inglehart, R. (2011). *Sacred and secular: Religion and politics worldwide*. Cambridge University Press.

Nunziata, L., & Rocco, L. (2011). The implications of cultural background on labour market choices: The case of religion and entrepreneurship. *Institute for the Study of Labor Discussion Paper series*, 6114.

Nwankwo, S., Gbadamosi, A., & Ojo, S. (2012). Religion, spirituality and entrepreneurship. *Society and Business Review*, 7(2), 149.

Okkels, N., Kristiansen, C. B., Munk-Jørgensen, P., & Sartorius, N. (2018). Urban mental health: challenges and perspectives. *Current Opinion in Psychiatry*, 31(3), 258-264.

Parboteeah, K. P., Hoegl, M., & Cullen, J. (2009). Religious dimensions and work obligation: A country institutional profile model. *Human Relations*, 62(1), 119-148.

Parboteeah, K. P., Walter, S. G., & Block, J. H. (2015). When does Christian religion matter for entrepreneurial activity? The contingent effect of a country's investments into knowledge. *Journal of Business Ethics*, 130(2), 447-465.

Pargament, K. I., Smith, B. W., Koenig, H. G., & Perez, L. (1998). Patterns of positive and negative religious coping with major life stressors. *Journal for the Scientific Study of Religion*, 710-724.

Pargament, K. I., Koenig, H. G., & Perez, L. M. (2000). The many methods of religious coping: Development and initial validation of the RCOPE. *Journal of Clinical Psychology*, 56(4), 519-543.

- Parker, S. C. (2009). *The economics of entrepreneurship*. Cambridge University Press.
- Percy, A. G. (2010). *Entrepreneurship in the Catholic tradition*. Lexington Books.
- Permani, R. (2011). The presence of religious organisations, religious attendance and earnings: Evidence from Indonesia. *The Journal of Socio-Economics*, 40(3), 247-258.
- Perry, S. L. (2015). A match made in heaven? Religion-based marriage decisions, marital quality, and the moderating effects of spouse's religious commitment. *Social Indicators Research*, 123(1), 203-225.
- Pollmann-Schult, M. (2011). Marriage and earnings: why do married men earn more than single men?. *European Sociological Review*, 27(2), 147-163.
- Probst, J. C., Laditka, S. B., Moore, C. G., Harun, N., Powell, M. P., & Baxley, E. G. (2006). Rural-urban differences in depression prevalence: implications for family medicine. *Family Medicine Kansas City*, 38(9), 653.
- Pritadrajati, D. S., Kusuma, A. C., & Saxena, S. C. (2021). Scarred for life: Lasting consequences of unemployment and informal self-employment: An empirical evidence from Indonesia. *Economic Analysis and Policy*, 70, 206-219.
- Purba, F. D., & Fitriana, T. S. (2019). Sociodemographic determinants of self-reporting mental health problems in Indonesian urban population. *Psychological Research on Urban Society*, 2(1), 59-64.
- Rahmi, A. (2018). Urgensi Konseling Karir Dalam Menyikapi Problematika Kesehatan Mental Pada Wanita Karir. *Journal of Gender Studies*, 1(2), 48-62.
- Ramadani, V., Dana, L. P., Ratten, V., & Tahiri, S. (2015). The context of Islamic entrepreneurship and business: Concept, principles and perspectives. *International Journal of Business and Globalisation*, 15(3), 244-261.

Rees, H., & Shah, A. (1986). An empirical analysis of self-employment in the UK. *Journal of Applied Econometrics*, 1(1), 95-108.

Roberts, R. E., Kaplan, G. A., Shema, S. J., & Strawbridge, W. J. (1997). Does Growing Old Increase the Risk for Depression?. *American Journal of Psychiatry*, 154(10), 1384-1390.

Robinson, P. B., & Sexton, E. A. (1994). The effect of education and experience on self-employment success. *Journal of Business Venturing*, 9(2), 141-156.

Rosenzweig, M. R., & Stark, O. (1989). Consumption smoothing, migration, and marriage: Evidence from rural India. *Journal of Political Economy*, 97(4), 905-926.

Rietveld, C. A., & Hoogendoorn, B. (2021). The mediating role of values in the relationship between religion and entrepreneurship. *Small Business Economics*, 1-27.

Shane, S., & Venkatraman, S. (2000). The promise of entrepreneurship and economic growth. *Small Business Economics*, 13, 27-55.

Sohn, K. (2015). Gender discrimination in earnings in Indonesia: A fuller picture. *Bulletin of Indonesian Economic Studies*, 51(1), 95-121.

Steen, T. P. (2004). The relationship between religion and earnings: recent evidence from the NLS Youth Cohort. *International Journal of Social Economics*.

Stephan, U. (2018). Entrepreneurs' mental health and well-being: A review and research agenda. *Academy of Management Perspectives*, 32(3), 290-322.

Stephan, U., & Roesler, U. (2010). Health of entrepreneurs versus employees in a national representative sample. *Journal of Occupational and Organizational Psychology*, 83(3), 717-738.

Strauss, J., Witoelar, F., Sikoki, B., & Wattie, A. M. (2016). User's guide for the Indonesia family life survey.

Tamir, C., Connaughton, A., & Salazar, A.M. (2020). The global God divide. Retrieved from: <https://www.pewresearch.org/global/2020/07/20/the-global-god-divide/>

Tampubolon, G., & Hanandita, W. (2014). Poverty and mental health in Indonesia. *Social Science & Medicine*, 106, 20-27.

Taylor, M. P. (1996). Earnings, independence or unemployment: why become self-employed?. *Oxford Bulletin of Economics and Statistics*, 58(2), 253-266.

Thomas, J., & Barbato, M. (2020). Positive religious coping and mental health among Christians and Muslims in response to the COVID-19 pandemic. *Religions*, 11(10), 498.

Thurik, A. R., Carree, M. A., Van Stel, A., & Audretsch, D. B. (2008). Does self-employment reduce unemployment?. *Journal of Business Venturing*, 23(6), 673-686.

Tomes, N. (1985). Religion and the earnings function. *The American Economic Review*, 75(2), 245-250.

Tripathi, D. (1992). Indian business houses and entrepreneurship: A note on research trends. *The Journal of Entrepreneurship*, 1(1), 75-97.

Ugoni, A., & Walker, B. F. (1995). The Chi square test: an introduction. *COMSIG review*, 4(3), 61.

Van Praag, C. M., & Versloot, P. H. (2008). The Economic Benefits and Costs of Entrepreneurship: A Review of the Research. *Foundations and Trends in Entrepreneurship*, 4(2), 65–154.

Van Praag, M., van Witteloostuijn, A., & van der Sluis, J. (2013). The higher returns to formal education for entrepreneurs versus employees. *Small Business Economics*, 40(2), 375-396.

Verheul, I., Stel, A. V., & Thurik, R. (2006). Explaining female and male entrepreneurship at the country level. *Entrepreneurship and Regional Development*, 18(2), 151-183.

Waite, L. J., & Gallagher, M. (2001). *The case for marriage: Why married people are happier, healthier, and better off financially*. Crown Publishing Group (NY).

Wallace, R. A. (1997). The mosaic of research on religion: Where are the women? 1995 presidential address. *Journal for the Scientific Study of Religion*, 36(1), 1-12.

Weaver, G. R., & Agle, B. R. (2002). Religiosity and ethical behavior in organizations: A symbolic interactionist perspective. *Academy of Management Review*, 27(1), 77-97.

Weber, M. (1930). *The Protestant ethic and the spirit of capitalism*, tr. Talcott Parsons. New York: Scribner's.

Wennekers, S., Van Wennekers, A., Thurik, R., & Reynolds, P. (2005). Nascent entrepreneurship and the level of economic development. *Small Business Economics*, 24(3), 293-309.

WHO. (2018). Mental Health Strengthening Our Response. Retrieved from: <https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response>

Wiklund, J., Nikolaev, B., Shir, N., Foo, M. D., & Bradley, S. (2019). Entrepreneurship and well-being: Past, present, and future. *Journal of Business Venturing*, 34(4), 579-588.

Witoelar, F., Strauss, J., & Sikoki, B. (2009). Socioeconomic success and health in later life: evidence from the Indonesia family life survey.

Wolfinger, N. H., & Wilcox, W. B. (2008). Happily ever after? Religion, marital status, gender and relationship quality in urban families. *Social Forces*, 86(3), 1311-1337.

Wood, M. S., Bylund, P., & Bradley, S. (2016). The influence of tax and regulatory policies on entrepreneurs' opportunity evaluation decisions. *Management Decision*, 54(5), 1160-1182.

Woodrum, E. (1985). Religion and economics among Japanese Americans: A Weberian study. *Social Forces*, 64(1), 191-204.

World Bank. (2021). Indonesia - Self-employed; Total (% Of Total Employed). Retrieved from:[https://tradingeconomics.com/indonesia/self-employed-total-percent-of-total-employed-wb-data.html#:~:text=Self%2Demployed%2C%20total%20\(%25%20of,compiled%20from%20officially%20recognized%20sources](https://tradingeconomics.com/indonesia/self-employed-total-percent-of-total-employed-wb-data.html#:~:text=Self%2Demployed%2C%20total%20(%25%20of,compiled%20from%20officially%20recognized%20sources).

Yamada, G. (1996). Urban informal employment and self-employment in developing countries: theory and evidence. *Economic Development and Cultural Change*, 44(2), 289-314.

Zelekha, Y., Avnimelech, G., & Sharabi, E. (2014). Religious institutions and entrepreneurship. *Small Business Economics*, 42(4), 747-767.

Appendix

Appendix 1. CES-D scale scoring

No.	KPTYPE	In the past week, how often did it happen?			
		Rarely/none	Some days	Occasionally	Most of the time
		(≤ 1 day)	(1-2 days)	(3-4 days)	(5-7 days)
A.	I was bothered by things that usually don't bother me	0	1	2	3
B.	I had trouble concentrating in what I was doing	0	1	2	3
C.	I felt depressed	0	1	2	3
D.	I felt everything I did was an effort	0	1	2	3
E.	I felt hopeful about the future	3	2	1	0
F.	I felt fearful	0	1	2	3
G.	My sleep was restless	0	1	2	3
H.	I was happy	3	2	1	0
I.	I felt lonely	0	1	2	3
J.	I could not get going	0	1	2	3

Appendix 2. VIF of all variables in the sample

Variable	VIF	1/VIF
Christianity	1.03	0.966531
Hindu	1.02	0.976685
Religious participation	1.07	0.930354
Earnings (logarithm)	1.05	0.953235
Mental health	1.03	0.969051
Male	1.11	0.898737
Age	1.54	0.647800
Marital status cat. 2 (married)	1.63	0.615122
Marital status cat. 3 (separated)	1.04	0.961945
Marital status cat. 4 (divorced)	1.17	0.855858
Marital status cat. 5 (widowed)	1.46	0.686721
Marital status cat. 6 (cohabitate)	1.00	0.996895
Education level cat. 2 (junior high)	1.43	0.701665
Education level cat. 3 (senior high)	1.68	0.594215
Education level cat. 4 (junior high)	1.51	0.662892
Household size	1.03	0.969882
Urban	1.08	0.926241
Mean VIF	1.23	

Notes: Islam, marital status cat. 1 (not married), and an education level cat. 1 (elementary school) are omitted because these variables are reference categories.

Appendix 3. Marginal effects results with Self-employment as a dependent variable

	(1)	(2)
Islam	Reference	Reference
Christianity	0.064*** (0.016)	0.069*** (0.018)
Hindu	0.011 (0.015)	0.025 (0.018)
Religious participation		0.009*** (0.003)
Male	-0.067*** (0.007)	-0.068*** (0.007)
Age	0.009*** (0.000)	0.008*** (0.000)
Marital status cat. 1 (not married)	Reference	Reference
Marital status cat. 2 (married)	0.145*** (0.013)	0.144*** (0.013)
Marital status cat. 3 (separated)	0.085 (0.056)	0.081 (0.056)
Marital status cat. 4 (divorced)	0.053* (0.029)	0.054* (0.029)
Marital status cat. 5 (widowed)	0.132*** (0.026)	0.130*** (0.026)
Marital status cat. 6 (cohabitate)	-0.074 (0.182)	-0.076 (0.181)
Education level cat. 1 (elementary)	Reference	Reference
Education level cat. 2 (junior high)	0.010 (0.010)	0.009 (0.010)
Education level cat. 3 (senior high)	-0.036*** (0.009)	-0.036*** (0.009)
Education level cat. 4 (university)	-0.197*** (0.011)	-0.198*** (0.011)
Household size	0.005*** (0.001)	0.005*** (0.001)
Urban	-0.130*** (0.007)	-0.129*** (0.007)
Observations	18,290	18,290

Notes: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.10.

The results of marginal effects above are based on the logit regression analysis of model 1 and model 2 in Table 2. However, marginal effects analysis omits the results of the interaction between discrete and continuous variables. Thus, we run the pairwise comparisons of average marginal effects analysis to estimate and observe the marginal effects of the interaction between discrete and continuous variables, particularly the interaction between belonging to a religion and its active religious participation.

Pairwise comparisons of average marginal effects

	Contrast dy / dx	Delta-method Standard Error	Unadjusted (95% Confidence Interval)	
Religion				
2 vs 1	-0.021	0.014	-0.048	0.006
3 vs 1	-0.039	0.017	-0.073	-0.006
3 vs 2	-0.018	0.021	-0.060	0.024

Notes: 1= Islam (reference category), 2=Christianity, and 3=Hindu

The results of pairwise comparisons of average marginal effects above are based on the interaction between belonging to a religion and its active religious participation. These results are also based on model 2 in Table 2 logistic regression analysis. It can be seen that, first, the average marginal effect of belonging to a religion is 0.021 lower when the respondents are Christian instead of Muslim. Second, the average marginal effect of belonging to a religion is 0.039 lower when the respondents are Hindu instead of Muslim. Third, the average marginal effect of belonging to a religion is 0.018 lower when the respondents are Hindu instead of Christian. However, all results show that they are not significant.