Journal of Islamic Monetary Economics and Finance, Vol. 8, No.1 (2022), pp. 25 - 48
p-ISSN: 2460-6146, e-ISSN: 2460-6618

RELIGIOSITY AND SAVING BEHAVIOR: A PRELIMINARY INVESTIGATION AMONG MUSLIM STUDENTS IN INDONESIA

Coky Fauzi Alfi[1] and Sharifah Norzehan Syed Yusuf[2]

[1] State Polytechnic of Sriwijaya, Indonesia, coky.fauzi.alfi@polsri.ac.id
[2] Universiti Teknologi MARA, Malaysia, shari893@uitm.edu.my

ABSTRACT

This study examines the relationship between religiosity, saving intention, and saving behavior among Muslim university students in Palembang, Indonesia. A quantitative research approach is employed for this study. We gather data from a total of 103 respondents aged between 18 and 22 years and apply the partial least square path modelling (PLS-PM) technique. We find religiosity to be significantly related to saving intention and behavior. In addition, saving intention and saving behavior are significantly and directly related. Meanwhile, according to Cohen's convention, the effect size of the association between religiosity and saving intention and behavior is small.

Keywords: Religiosity, Saving intention, Saving behavior.
JEL classification: Z120; G410.

Article history:
Received : December 2, 2021
Revised : January 6, 2022
Accepted : February 27, 2022
Available online : February 28, 2022

https://doi.org/10.21098/jimf.v8i1.1440

I. INTRODUCTION

Saving is critical in all facets of the economy, from the government to the individual. In the long term, saving contributes to economic stability and financial independence. At the national level, the government uses the saving rate as an indication of financial health and economic wellbeing of a country. Meanwhile, at the individual level, a saving culture must be instilled in children and adolescents, particularly university students, to achieve financial independence. A country with a high saving rate usually has a strong saving culture. Germany, for example, is known as a nation with a strong saving culture, with a saving rate of 26.2 per cent of GDP in 2020, according to the World Bank. Germans have a habit of saving more money. Typically, ten per cent of their disposable income is set aside (Ertle, 2018). They are also averse of debt, making them to prefer cash to credit cards (Doochin, 2019).

By contrast, the United States has a far lower saving rate at 18.2 per cent of GDP in 2020, according to the World Bank. Americans also have a poor saving culture compared to Germans. They save only 5.5 per cent of their disposable income and stop saving when their income ceases to grow (Ertle, 2018; Thompson, 2016). Americans believe that taking on debt is the right thing to do, especially when purchasing houses, cars, and furniture (Ertle, 2018; Thompson, 2016).

In Indonesia, the saving culture among its citizens is still low. This is evidenced by a survey from Snapcart (2020) on 5,592 Indonesians from various socio-economic and demographic backgrounds to better understand their current saving habits. Only 6% of Indonesian surveyed could save more than half of their monthly income. Approximately 21% of the Indonesians surveyed are unable to make any savings, and 33% save less than one-tenth of their income. Of those who can save regularly, 52% of them keep their cash at home, while another 41% save it in their bank account. The survey results also corroborate the finding by the Indonesia Central Bureau of Statistics for 2013 that the marginal propensity to save tends to decline. On the other hand, the marginal propensity to consume tends to rise (Financial Services Authority, 2014). In other words, Indonesians prefer to spend rather than save.

The saving behavior of households or individuals has been a subject of research for decades (e.g., Duesenberry, 1949; Fisher, 1930; Friend & Kravis, 1957; Hicks, 1950; Keynes, 1936; Pigou, 1951; Vickrey, 1947). It has been studied from three perspectives: economic, sociological, and psychological (Gutter et al., 2012). From the economic perspective, the theoretical foundations of saving behaviour are the Permanent Income Hypothesis (Friedman, 1957) and the Life-Cycle Theory (Ando & Modigliani, 1963). The Permanent Income Hypothesis (PIH) posits that changes in permanent income, rather than temporary income, influence household consumption patterns. As permanent income rises, so will the level of consumption. The PIH also applies to saving habits, stating that households will save more (Friedman, 1957). Furthermore, the Life-Cycle Theory (LCT) suggests that the saving-consumption pattern follows a life cycle. When a person is young, productive, and has a steady income, he spends as well as saves his income for the future. Then, having no steady income when he is old, he would accordingly adjust his spending habits (Hassan & Lawrence, 2007; Jean, 2008; Kyoung Tae, Sherman, & Samuel Cheng-Chung, 2014). In addition to these economic theories,

saving behavior can also be explained using Social Cognitive Theory (Bandura, 1977). According to Bandura, people tend to imitate the behavior of the society they live with rather than attempt to create new habits for themselves. Accordingly, a person's saving habits tend to emulate the social behavior of his surroundings. One typical example is that, as children grow, they tend to imitate their parents' spending behavior (Agnew, Maras, & Moon, 2018; Nga & Yeoh, 2015).

In the 1990s, the Theory of Planned Behavior (Ajzen, 1991) emerged as a model for studying saving behavior. Ajzen's model identifies saving as a psychological process influenced by factors such as self-efficacy and risk tolerance (Gutter et al., 2012; Satsios & Hadjidakis, 2018). According to the Theory of Planned Behavior, individuals with high levels of self-efficacy and risk-taking will save more (e.g., Danes & Haberman, 2007; DeVaney, Anong, & Whirl, 2007; Lown, Kim, Gutter, & Hunt, 2015; Tokunaga, 1993; Wang, Lu, & Malhotra, 2011).

In recent years, culture has also been considered as a factor that explains saving, in addition to the aforementioned economic, sociological and psychological factors (Fernández, 2011; Fuchs-Schündeln, Masella, & Paule-Paludkiewicz, 2020; Gatina, 2012; Guiso, Sapienza, & Zingales, 2006; Shoham & Malul, 2013). It is general viewed that cultural factors such as ethnicity (e.g., Hamin, Tung, Baumann, & Hoadley, 2018), religion (e.g., Köbrich León, 2013; Yayeh, 2014), and language (e.g., Chen, 2013) influence individuals' and households' saving habits. Hamin et al. (2018) survey 755 adults in Australia, Canada and China, where they are grouped into four groups based on their ethnic background and generation of immigration, Chinese in Mainland China, first and second-generation Chinese immigrants in Australia or Canada, and Caucasians in Australia or Canada. According to their findings, ethnic background, and generational immigration significantly impact the relationship between income and savings. Yayeh (2014) researches 384 Orthodox Christian, Muslim, and Protestant households. He finds that people who go to church or mosque at least once a week tend to save less money than people who go at most, once a month. Meanwhile, Köbrich León (2013) discovers significant differences in saving rates and the amount saved between religious and non-religious individuals. In addition, attendance at religious congregations at churches regularly positively impacts saving decisions. Then, Chen (2013) finds that speakers who frequently use a language with a future reference, such as 'will' or 'are going to', are more likely to save.

This study performs a preliminary investigation on saving among Muslim students. It focuses on Muslim students for two main reasons. First, most Muslims base their decisions on religious teachings and apply them as motivation and inspiration to perform good deeds such as saving their income rather than wasteful spending. It should provide an excellent opportunity to investigate whether their religiosity influences their saving behavior. Second, students have plenty of time to build their habit of saving, even though they have little money to save. Furthermore, they will need to save money or know-how to use saving instruments as later they will find a job, take out debts, or pay off bills.

Previous research has noted that religiosity plays a significant role in determining household saving behavior (Köbrich León, 2013; Yayeh, 2014). However, using the frequency of worship in churches or mosques is insufficient for determining religiosity, thus leaving room for further investigation. In this study,

we develop a structural model and apply the partial least square path modelling (PLS-PM) to assess the relationship between religiosity and saving behavior. The PLS-PM is a full-featured variance-based estimator capable of estimating linear, non-linear, recursive, and non-recursive structural models and can generate estimates for small sample sizes (Benitez, Henseler, Castillo, & Schuberth, 2020). The study uses a sample of 103 students from Raden Fatah State Islamic University in Palembang, aged between 18 and 22 years. The religious knowledge that they have would serve as a significant differentiator for comparison with previous similar studies (e.g., Ismail et al., 2018; Mei Teh, Palil, Mohd Zain, & Mamat, 2019; Priyo Nugroho, Hidayat, & Kusuma, 2017; Satsios & Hadjidakis, 2017).

The present study contributes to the literature that examines the impact of religion on saving behavior. This study has the potential to provide preliminary findings on the relationship between religiosity, saving intention, and saving behavior. More understanding of the findings can aid in the improvement of programmes centred on saving activities, such as programmes on micro-savings or retirement savings plans. These programmes could encourage positive financial behaviors among pious Muslims. In the long run, successful programmes could increase domestic savings and improve the saving culture in Indonesia.

II. RELATED LITERATURE AND THEORIES

2.1. Religiosity

"Religiosity" has been defined and approached differently across academic disciplines (Holdcroft, 2006; Lee & Kuang, 2020). For examples, religiosity in theological studies is regarded as a belief system (Adeyemo & Adeleye, 2008; Barnes, 2011; Groome & Corso, 1999), while in psychological studies it reflects a cognition, emotion, or behavioral element (Bergin, 1983; Ntalianis & Darr, 2005). Meanwhile, sociological studies view it as personal and social practices (Berger, Davie, & Fokas, 2008; Johnstone, 2016). As described by Adeyemo & Adeleye (2008), "religiosity includes having or showing belief in and reverence for God or a deity, as well as participation in activities about that faith, such as attending services or worship regularly and participating in other social activities with one's religious community". Meanwhile, Vergilius Ferm, as cited in Ntalianis & Darr (2005), defines religiosity as "a set of behaviors or meanings which are connected to the actions of a religious person". Then, from a sociological study standpoint, Johnstone (2016) summarises religiosity as, "the intensity and consistency of a person's practise of their religion, and a person strongly committed to a religious system is concerned about himself or herself, first of all, but concerned about others in the group as well" (p. 96). The various definitions explained by researchers show that there is no shared definition of 'religiosity', and it depends on how it is interpreted in their fields of study. A broad definition is chosen for the present study because it has been used in previous behavioral study literature. This definition acknowledges religiosity from two perspectives, i.e. the degree of belief in religious values and the daily practices of faith (Agarwala, Mishra, & Singh, 2019; Delener, 1990; Hardius, 2016; Johnson, Jang, Larson, & De Li, 2001; Nooh et al., 2014; Worthington et al., 2003).

Measurement of religiosity is arduous as a person's attendance at a church or mosque does not reflect their religiosity. Religiosity is a multifaceted concept with multiple dimensions. However, a large body of research has been dedicated to measuring religiosity (e.g., Allport & Ross, 1967; Altemeyer & Hunsberger, 1992; Batson, Schoenrade, & Ventis, 1993; Francis & Stubbs, 1987; Lenski, 1961; Stark & Glock, 1968). Among the many existing measurement methods, two are the most influential and are often used as references by many scholars when establishing their religious constructs (Tjahjono, 2014). Allport & Ross (1967) establish a measurement method known as the Religious Orientation Scale, while Stark & Glock (1968) develop a measurement instrument called the Dimensions of Religiosity Scale. The Religious Orientation Scale distinguishes two poles of subjective religion, namely, *"the extrinsically motivated person who uses his religion and the intrinsically motivated person who lives his religion"* (Allport & Ross, 1967, p. 434). Meanwhile, the Dimensions of Religiosity Scale provides *"a set of core dimensions of religiousness: belief, practice, knowledge, experience, and consequences"* (Stark & Glock, 1968, p. 14).

Although these two measurement scales have been used in many religious research, they fall short of addressing aspects of religiosity in all religions. The foundation for developing the concept is from the Western worldview (Mahudin, Noor, Dzulkifli, & Janon, 2016). Hence, the established measurement scale has been adapted to measure the religiosity of each religion. For example, numerous modifications have been made to produce new variants scales to measure Muslim religiosity, for instance, the Islamic Doctrinal Orthodoxy Scale (Ji & Ibrahim, 2007a), the Islamic Religiosity Scale (Tiliouine, Cummins, & Davern, 2009), and the Five Dimensions of Muslim Religiosity Scale (El-Menouar, 2014). Meanwhile, several scholars have developed their religious measurement scales for Muslims, for example, the Psychological Measure of Islamic Religiousness (Abu Raiya, Pargament, Mahoney, & Stein, 2008) and The Muslim Daily Religiosity Assessment Scale (Olufadi, 2017).

The present study uses the Islamic Doctrinal Orthodoxy Scale (Ji & Ibrahim, 2007a) to measure religiosity. It has demographic similarities to the sample data from Indonesian Muslim students studying Islamic studies at the Islamic Public University. In addition, this scale has also been used for other studies with sample data from Indonesia (e.g., Ji & Ibrahim, 2007b; Ji, Ibrahim, & Kim, 2009) and also from various other countries (e.g. Abou-Youssef, Kortam, Abou-Aish, & El-Bassiouny, 2011; Abou-Youssef, Kortam, Abou-Aish, & El-Bassiouny, 2015; Abu-Raiya & Ayten, 2019; Mahomed & Laher, 2015). The Islamic Doctrinal Orthodoxy Scale comprises four dimensions: Doctrinal Orthodoxy, Intrinsic Religiosity, Extrinsic Religiosity, and Quest Religiosity. The Doctrinal Orthodoxy dimension includes eight items that assess an individual's commitment to and belief in religious doctrines. The Intrinsic Religiosity dimension comprises nine items to assess an individual's motivation to practice their religion. The Extrinsic Religiosity dimension comprises 11 measurement items that assess people's motivation to practice their religion. The Quest Religiosity dimension has 12 items that measure religious doubts. For the Intrinsic and Extrinsic Religiosity dimension, this study adapts Allport and Ross' Religious Orientation Scale (1967), whereas the Quest Religiosity dimension adapts Batson's Religious Life Inventory (1993).

2.2. Saving Intention and Saving Behavior

Intentions are motivating factors that can influence specific behaviors; the stronger the intention, the more likely the behaviors will be carried out (Ajzen, 1991; Satsios, Karamanis, Galanou, & Sotiropoulos, 2020). According to Ryan & Deci (2020), who develop the Theory of Self-Determination, motivation can be divided into two types: intrinsic motivation and extrinsic motivation. Intrinsic motivation refers to a personal interest, whereas extrinsic motivation is based on other than self-interest. Keynes (1936, p. 95) once described eight motivations for saving in the context of the intention to save:

1) *"To build up a reserve against unforeseen contingencies."*
2) *"To provide for an anticipated future relationship between the income and the needs of the individual."*
3) *"To enjoy interest and appreciation."*
4) *"To enjoy a gradually increasing expenditure."*
5) *"To enjoy a sense of independence and the power to do things, though without a clear idea or definite intention of a specific action."*
6) *"To secure a masse de manoeuvre to carry out speculative or business projects."*
7) *"To bequeath a fortune."*
8) *"To satisfy pure miserliness, i.e., unreasonable but insistent inhibitions against acts of expenditure as such."*

From the above, numbers 3, 4, 5, 7, and 8 are intrinsic motivations, while numbers 1, 2, and 6 are extrinsic motivations. The eight motivations mentioned by Keynes indicate the extent to which people are willing to save, and the effort put into that behavior.

The definition of saving by Muslims and Westerners is different. Based on the Western literature and the Theory of Consumption, saving is simply the difference between income and current consumption (Browning & Lusardi, 1996). However, for Muslims, savings are defined as income minus expenditures on consumption and include spending for Allah's sake, such as paying *zakah*, giving *sadaqah*, and contributing to *waqf* (Abdullah & Abd. Majid, 2001). Muslims save not only to meet their obligations, but they too save for the hereafter, which they spend on their family and donate to mandatory and voluntary charitable activities for the sake of Allah (Kasri & Kassim, 2009). *Zakah*, *sadaqah*, and *waqf* are Muslim terms to fulfil these obligations. Thus, a Muslim's saving behavior incorporates its philanthropic intention: to save for the afterlife, not only to fulfil worldly needs. However, Muslims have been taught how to be frugal and not to spend wastefully, because the Qur'an instructs Muslims to *"not spend everything so that you become blameworthy and destitute"* (Qur'an 17:29), and the Prophet exemplified this by *"selling the dates of the garden of Bani An-Nadir and storing for his family so much food as would cover their needs for a whole year"* (Sahih al-Bukhari 5357).

2.3. Theoretical Framework and Hypothesis Development

For this study, the Theory of Planned Behavior by Ajzen (1991) serves as a basis for building a model of saving intention. This theory has been widely used in behavioral studies to investigate intricacies of human social behavior, including the analysis of saving behavior. The theory is built around three key components:

attitude, subjective norms, and perceived behavioral control, which drive the intend to behave and result in a specific behavior (Ajzen, 1991). Individuals' attitudes about specific behaviors are influenced by their judgments. While a subjective norm combines an individual's belief and motivation to act on that conviction, perceived behavioral control refers to an individual's belief in their capability to achieve a certain behavior (Ajzen, 1991).

Furthermore, only several studies have employed the Theory of Planned Behavior to study the relationship between religiosity, saving intention, and saving behavior. There are two approaches to analysing the role of religiosity in this relationship. First, religiosity has been examined directly with saving behavior, for instance, as in Priyo Nugroho's research (2017). His research replaces perceived behavioral control with two new variables, i.e., self-efficacy and religiosity. Self-efficacy is directly connected to saving intention, and religiosity is directly related to saving behavior.

On the other hand, religiosity has been investigated indirectly with saving behavior, for example, as in Satsios's study (2020). His research assumes that an individual's belief is directly tied to her religiosity. Therefore, it can be treated as a subjective norm mediated by saving intention to connect with saving behavior. The present study combines these two approaches into a proposed model, directly connecting religiosity with saving behavior and indirectly connecting it with saving intention. This would allow more examination of the role of religiosity in saving behavior. The proposed model below (Figure 1) is developed:

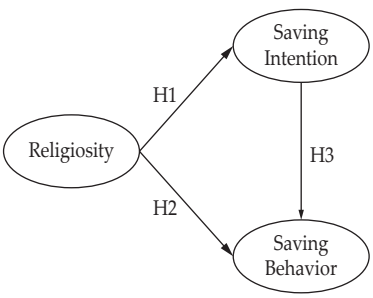

Figure 1.
The Proposed Model

Religiosity and Saving Intention. Very few previous studies (Satsios et al., 2020; Wijaya, Hakim, Saputro, & Mulyadi, 2019) have examined the relationship between religiosity and saving intention or motivation. Wijaya et al. (2019) discover a significant relationship between religiosity and motivation for saving money in Baitul Maal wat Tamwil (BMT). Along a similar line, Satsios et al. (2020), examining the saving behavior of Pomaks in Bulgaria, find that religiosity or "subjective norms had a significant positive direct effect on intentions towards saving" (p. 114). Likewise, several studies have also found an association between religiosity and various intentions, such as the intention to invest (Ati, Umi, Erika, & Suherman, 2021) the intention to open a bank account (Fauzi, Budiyanto, & Suhermin, 2020; Juma, Twaha Kigongo, Musa, & Irene, 2019), and the intention to purchase

financial products (Newaz, Fam, & Sharma, 2016), while others have found the opposite, e.g., the intention to pay through digital payments (Syafira, Ratnasari, & Ismail, 2020). The relationship between religiosity and saving intention is still worth investigating due to its dearth in past literature. The following hypothesis about the relationship between religiosity and saving intention is developed.

Hypothesis 1: Religiosity has a positive direct effect on saving intention.

Religiosity and Saving behavior. Previous studies have found a correlation between religiosity and saving behavior (Ismail et al., 2018; Mei Teh et al., 2019; Priyo Nugroho et al., 2017; Satsios & Hadjidakis, 2017). Ismail et al. (2018) identify three factors influencing Malaysian employees' saving behavior: service quality, religious belief, and knowledge, and discover that religious belief was significantly related to saving behavior. Mei Teh et al. (2019) investigate individual characteristics, socialisation, cognitive ability, religious faith, and self-efficacy in predicting private savings in the Malay community. They discover that religious faith significantly predicts an individual's saving of money. Priyo Nugroho et al. (2017) extend the Theory of Planned Behavior by including the variables of religiosity and self-efficacy in their analysis of customers who used the products and services of an Islamic bank. They discover that religious factors increase the use of Islamic banks significantly. Satsios & Hadjidakis (2017) investigate the effects of religiosity and self-mastery on saving behavior in Pomak households in Thrace, and religiosity is found to be a significant predictor of saving habits. By contrast, Kassim, et al. (2019) discover that religiosity is not significantly correlated to saving behavior after conducting a study to evaluate the causes that affect saving behavior among Muslim employees in Malaysia. Based on these, the following hypothesis about the relationship between religiosity and saving behavior is presented:

Hypothesis 2: Religiosity has a positive direct effect on saving behavior.

Saving Intention and Saving Behavior. Previous research has found that saving intention can influence saving behavior (e.g., Satsios & Hadjidakis, 2018; Widjaja, Arifin, & Setini, 2020; Widyastuti, Suhud, & Sumiati, 2016). Satsios & Hadjidakis (2018) define factors influencing Pomak households' saving behavior in Greece. They identify that saving intention has a significant positive direct effect on saving behavior. Meanwhile, Widjaja et al. (2020) investigate the relationship between financial literacy and subjective norms and the impact on savings behavior, mediated by saving intention and attitude toward saving. They demonstrate that saving intention influences saving behavior positively. Widyastuti et al. (2016) investigate the effect of attitude, subjective norm, and financial literacy on saving intention and behavior among teacher students at a public university in Jakarta, Indonesia. They discover that saving intention has a significant influence on saving behavior. Sadili (2019), on the other hand, uses the Theory of Planned Behavior model to investigate the effects of factors on saving intentions and their implications for students' saving behavior at the Indonesia University of Education. He discovers no significant relationship between saving intention and saving behavior in students. In the light of these studies, we state the following hypothesis about the relationship between saving intention and saving behaviour:

Hypothesis 3: Saving intention has a positive direct effect on saving behavior.

III. METHODOLOGY

3.1. Sampling and Data Collection Procedure

The present study employs Cohen's power tables to estimate the minimum sample size for the PLS-PM analysis, as the 10-times rule is not a valid criterion for assessing sample size (Hair, 2017; Kock & Hadaya, 2018; Marcoulides & Chin, 2013). The 10-times rule is only applicable if certain conditions are met, such as high measurement item reliability and large effect sizes (Peng & Lai, 2012). Besides, previous studies have demonstrated it to result in incorrect estimates (Goodhue, Lewis, & Thompson, 2007). We should note that four issues must be recognised when using Cohen's power tables for PLS-PM analysis: effect size, statistical power, significance level, and several predictors (Benitez et al., 2020). The significance of predictors' effects is measured by effect size, whereas statistical power is the probability of correctly rejecting the false null hypothesis. The significance level is the probability of incorrectly rejecting the true null hypothesis, and the number of predictors is the number of independent variables. Cohen (2013) proposes interpreting effect sizes of 0.02, 0.15, and 0.35 as small, medium, and large, respectively. A value of 0.8 or greater indicates appropriate statistical power, whereas 0.05 indicates an acceptable level of significance in social and behavioral science research (Hair, 2017). The structural model in this study has two predictors as independent variables, namely religiosity and saving intention. Then, Cohen's power tables suggest a minimum sample size of 43 observations, with the assumption of 0.15 medium effect size, the statistical power of 0.8, and the significance level of 0.05. Based on the results of the power analyses for this study, a sample size of 103 is sufficient to detect the effect size of predictors.

The present study is conducted at an Islamic public university in Palembang, Indonesia. Students from Raden Fatah State Islamic University took part in this study. Data were collected using a purposive sampling technique via a Google form survey in June 2021. The sample is restricted to currently enrolled university students, Muslims, and those between ages of 18 and 22. For two weeks, students were texted via student WhatsApp groups to request their participation in a Google form survey; approximately 300 students received these messages. Only 103 surveys were analysed after outliers were removed. The results may not be generalisable to the entire student population, but they are a fair representation of students from various backgrounds.

3.2. Measurement

Before field studies, a questionnaire survey was pre-tested and refined. The questions are in English and then are carefully translated into Indonesian to ensure accuracy and consistency. The survey's goal is to ensure privacy, anonymity, and confidentiality while collecting information in aggregated form. All respondents provided informed consent after receiving detailed information and a study description. Before agreeing to participate, respondents were made aware that their participation in the study was entirely voluntary and unrewarded. The respondents have agreed with the terms and conditions when they decide to fill out the questionnaire. A Google form survey was developed containing all the questions and statements. It took about 5 to 7 minutes to complete the survey. The

three scales: religiosity, saving intention, and saving behavior, including a set of demographic questions, were given to respondents.

Five questions were asked to determine the respondents' demographics. Further, the religiosity scale was measured using seventeen statements adapted from the Islamic Doctrinal Orthodoxy Scale that dealt with intrinsic and extrinsic religiosity (IR and ER) (Ji & Ibrahim, 2007a). Meanwhile, the saving intention scale was measured using six statements related to intrinsic and extrinsic intention (II and EI) adapted from Furnham (1999) and Tuvesson & Yu (2011). The saving behavior scale was then assessed using four statements adapted from Ismail et al. (2018), Furnham (1999), and Tuvesson & Yu (2011). All statements were graded on a five-point Likert scale ranging from '1 = Not at all true of me' to '5 = Totally true of me'.

3.3. Statistical Analysis

The present study analyses the data using JASP (version 0.14.1.0) for descriptive demographic statistics and R-Studio (version 4.0.3) for the PLS-PM analysis via the Composite-Based Structural Equation Modelling (cSEM) package. The PLS-PM technique is used to test the hypotheses, given that the sample size is not large, i.e. less than 250 observations (Mehmetoglu & Venturini, 2021), and the model is not overly complex.

Descriptive statistics are used to generate simple summaries of the sample's characteristics. The summaries provide information on the frequency and percentage of age, gender, source of income, average income, and marital status. They also provide the mean, standard deviation, maximum, minimum, and mode of age.

The PLS-PM technique is used to test the hypotheses relating to the relationships between three latent variables: religiosity (RELIGIOSITY), saving intention (INTENTION), and saving behavior (BEHAVIOR). The method, which is developed by Herman Wold (1975), evolves from the Structural Equation Modeling (SEM) (Benitez et al., 2020; Signore et al., 2019). The PLS-PM analysis is divided into two stages that must be completed in order: the first stage is evaluating the measurement model, and the second stage is the structural model evaluation (Mehmetoglu & Venturini, 2021; Sanchez, 2013).

Assessment of the measurement model. During the first stage, the measurement model must demonstrate construct reliability, construct validity, and absence of multicollinearity. For measurement of construct reliability, Dillon-Goldstein's rho (DG rho) is much better than Cronbach's alpha, and as a rule of thumb, DG rho should be larger than 0.7 and less than 0.93 (Mehmetoglu & Venturini, 2021). Meanwhile, construct validity can be measured when convergent and discriminant validity is stated. The convergent validity is associated with indicator reliability (factor loadings) and average variance extracted (AVE), whereas the discriminant validity is associated with the Fornell-Larcker criterion. The factor loadings are typically greater than 0.7, the AVE is usually at least 0.5, and the Fornell-Larcker criterion is expected to indicate that the AVE of the construct should be greater than its squared correlation (Mehmetoglu & Venturini, 2021).

Assessment of the structural model. The structural model must demonstrate the coefficient of determination (R^2), path coefficients, effect sizes (f^2), multicollinearity, and goodness-of-fit of the entire model in the second stage. There are no hard and fast rules for determining how large R^2 should be, but there are some basic recommendations: 0.19, 0.33, and 0.67 reflect small, moderate, and significant effects, respectively (Mehmetoglu & Venturini, 2021). A t-statistic indicates a statistically significant path coefficient (t-stat.) greater than 1.96 or a p-value less than $\alpha = 0.05$ (Benitez et al., 2020). The effect size measures an effect's amplitude independent construct, whereas the f^2 value of 0.02 is for a small effect, 0.15 is for a medium effect, and 0.35 is for a significant effect (Mehmetoglu & Venturini, 2021). Since the path model estimator in this study was Ordinary Least Squares (OLS), multicollinearity was an issue that should be considered when evaluating a structural model. The Variance Inflation Factors (VIF) values should be less than 2.5 to investigate this issue (Mehmetoglu & Venturini, 2021). The predictive ability of a full PLS-SEM model is referred to as its goodness of fit. To assess the model's performance, the Global Criterion of Goodness of Fit (GoF) and Standardized Root Mean Square Residual (SRMR) are recommended (Benitez et al., 2020; Mehmetoglu & Venturini, 2021). Acceptable GoF values are greater than 0.36 (Mehmetoglu & Venturini, 2021), and SRMR values are less than 0.08 (Benitez et al., 2020).

Bootstrapping. Moreover, to estimate the precision of the PLS parameter estimates, this study uses a resampling procedure known as bootstrapping. The bootstrap replications are set to 499 by default in the cSEM package, but Hair (2017) has recommended 500 samples as a rule of thumb.

IV. RESULTS AND ANALYSIS

4.1. Descriptive Statistics

Table 1 shows a summary of the demographic background of the respondents. The respondents are on average 19.8 (Std. Deviation = 1.12) years old, ranging from 18 to 22. 76.6 per cent of the respondents are female and 23.3 per cent are male. The majority (83.5 per cent) of the sample receive income from their parents, while only 16.5 per cent work for themselves. Eighty-five per cent (85.43 per cent) of the respondents have an average monthly income of less than IDR 1.5 million, 10.64 per cent have income between IDR 1.5 million and IDR 3 million, and 3.88per cent have income more than IDR 3 million. Most of the them (92.2 per cent) are single.

Table 1.
Descriptive Statistics of the Sample (N=103)

Age		Frequency	Percentage
18		17	16.505
19		15	14.563
20		39	37.864
21		27	26.214
22		5	4.854
Mean	19.883		
Median	20		

Table 1.
Descriptive Statistics of the Sample (N=103) (Continued)

Age		Frequency	Percentage
Mode	20		
Std. Deviation	1.123		
Minimum	18		
Maximum	22		
Gender			
Female		79	76.699
Male		24	23.301
Source of Income			
Parental earnings		86	83.495
Personal earnings		17	16.505
Average Income			
Between IDR 1.5 million to IDR 3 million a month		11	10.68
Less than IDR 1.5 million a month		88	85.437
More than IDR 3 million a month		4	3.883
Marital Status			
Married		8	7.767
Single		95	92.233

IDR: Indonesia Rupiah

4.2. Assessment of the Measurement Model

Tables 2 and 3 show the construct reliability, convergent validity, and determinant validity for the measurement model assessment. The three evaluations are based on the model as depicted in Figure 2. The figure clearly shows that the type of measurement is the reflective mode (mode A) because the twelve indicators (IR4, IR5, IR7, IR8, ER8, ER9, EI1, II3, SB1, SB2, SB3, and SB4) are representative of the three latent variables (RELIGIOSITY, INTENTION, and BEHAVIOR).

Construct reliability. The correlation between latent variables and indicators is measured using Dillon-Goldstein's rho (DG rho). It can be used to validate the internal reliability of indicators for each latent variable. The measurement results show acceptable values because they meet the requirements of greater than 0.7 and less than 0.93 (RELIGIOSITY = 0.8938, INTENTION = 0.8103, and BEHAVIOR = 0.8950). The DG rho should not be greater than 0.93 because it indicates that the indicators contain information about the same concept, or in other words, they are redundant.

Convergent validity. It expresses how much the variability of indicators can be explained by a latent variable (Benitez et al., 2020). Convergent validity is indicated by factor loadings and AVE. Table 3 shows that all the factor loadings are greater than 0.7 and are all significant at a 5% level. Likewise, the AVE for each of the three latent variables is greater than 0.5 (RELIGIOSITY = 0.5855, INTENTION = 0.5855, and BEHAVIOR = 0.6811). They show that the latent variables can explain more than half of the variance in a single indicator.

Discriminant validity. The discriminant validity of a given construct indicates how theoretically distinct it is from other constructs. The evaluation of the

discriminant validity associated with the Fornell-Larcker criterion is shown in Table 4. It shows that the AVE of both RELIGIOSITY (0.5855) and INTENTION (0.5855) is greater than their squared correlation (0.06822), showing clearly that these constructs are sufficiently distinct. Likewise, the AVE of both RELIGIOSITY (0.5855) and BEHAVIOR (0.6811) is greater than their squared correlation (0.1352). Since the AVE of both INTENTION (0.5855) and BEHAVIOR (0.6811) is greater than their squared correlation (0.4162), they indicate that the discriminant validity has been reached.

Moreover, all weights show the expected sign, and they are significant at a 5% significance level. Because latent variables are computed as a weighted sum of their indicators (Sanchez, 2013), the indicator of weight is critical. Since all the measurement model assessment results demonstrate that the requirements are acceptable, the structural model can be evaluated further.

Table 2.
Assessment of the Measurement Model

Code	Construct/Indicator	Loading	Weight
RELIGIOSITY (1: Not at all true of me; 5: Totally true of me) (Reflective measurement model, Mode A, Independent construct)			
CR = 0.8938 (> 0.7 and < 0.93); AVE = 0.5855 (> 0.5).			
IR4	I read the literature and books about my faith (Ji & Ibrahim, 2007a).	0.726*	0.2016*
IR5	My religious beliefs are what really lie behind my whole approach to life (Ji & Ibrahim, 2007a).	0.7285*	0.2749*
IR7	If not prevented by unavoidable circumstances, I attend the services at the Mosque (Ji & Ibrahim, 2007a).	0.7125*	0.1894*
IR8	If I were to join a Mosque group, I would prefer to join a Koran study group rather than a social fellowship (Ji & Ibrahim, 2007a).	0.8819*	0.2344*
ER8	The mosque is most important as a place to formulate good social relationships (Ji & Ibrahim, 2007a).	0.7131*	0.1792*
ER9	A primary reason for my interest in religion is that my Mosque has congenial social activities (Ji & Ibrahim, 2007a).	0.8132*	0.2262*
INTENTION (1: Not at all true of me; 5: Totally true of me) (Reflective measurement model, Mode A, Independent construct)			
CR = 0.8103 (> 0.7 and < 0.93); AVE = 0.5855 (> 0.5).			
EI1	I believe in putting some money aside for a rainy day (Furnham, 1999).	0.8711*	0.6764*
II3	Saving is a way to reach my goals (Tuvesson & Yu, 2011).	0.7776*	0.5283*
BEHAVIOR (1: Not at all true of me; 5: Totally true of me) (Reflective measurement model, Mode A, Dependent construct)			
CR = 0.8950 (> 0.7 and < 0.93); AVE = 0.6811 (> 0.5).			
SB1	Always save money (Ismail et al., 2018).	0.7771*	0.2319*
SB2	It is important to save (Furnham, 1999).	0.7968*	0.2989*
SB3	Saving every month (Ismail et al., 2018).	0.8462*	0.3245*
SB4	Saving is time consuming (Tuvesson & Yu, 2011).	0.8773*	0.35*

Note: *p < 0.05, one-tailed test, N = 103, Bootstrap = 499 (Default); CR: construct reliability (DG-rho), AVE: average variance extracted, VIF: variance inflation factors

Table 3.
The Fornell-Larcker Matrix

	RELIGIOSITY	INTENTION	BEHAVIOR
RELIGIOSITY	**0.58548377**	0.06824656	0.135432
INTENTION	0.06824656	**0.68172646**	0.4167358
BEHAVIOR	0.13543203	0.41673578	**0.6811071**

N = 103, Bootstrap = 499 (Default)

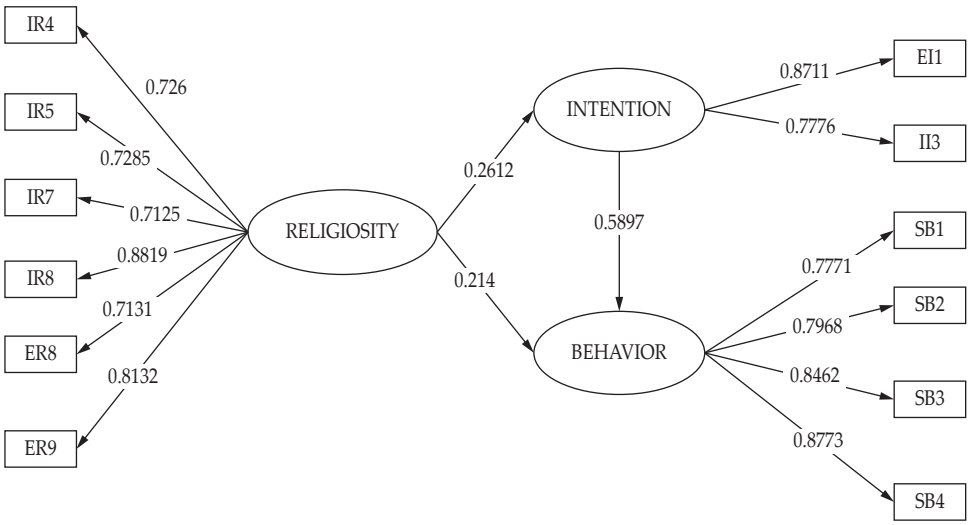

Figure 2.
The Full Model

4.3. Assessment of the Structural Model

Following the evaluation of the measurement model's performance, the structural section is evaluated by examining five quality systems of measurement: path coefficient, coefficient of determination, goodness-of-fit of the entire model, multicollinearity, and effect sizes. Table 4 displays the findings of the measurement.

Table 4.
Assessment of the Structural Model

Path			Coeff.	t-stat.	CI_percentile 95%		
INTENTION	~	RELIGIOSITY	0.2612*	2.993	[0.1213;	0.454	]
BEHAVIOR	~	RELIGIOSITY	0.214*	2.8183	[0.0773;	0.3786	]
BEHAVIOR	~	INTENTION	0.5897*	9.0465	[0.4522;	0.7088	]

Construct	R^2	R^2 adjusted
RELIGIOSITY	N/A	N/A
INTENTION	0.0682	0.059
BEHAVIOR	0.4594	0.4486

Table 4.
Assessment of the Structural Model (Continued)

Path	Coeff.	t-stat.	CI_percentile 95%
Model fit measures		**Value**	**Cut-off**
SRMR		0.0795536	< 0.08
GoF		0.4087829	> 0.36
Variance inflation factors		**Value**	**Cut-off**
Dependent construct: 'BEHAVIOR'			
Independent construct: 'INTENTION'		1.0732	< 2.5
Independent construct: 'RELIGIOSITY'		1.0732	< 2.5
Effect size		**Value**	**Cut-Off**
Dependent construct: 'INTENTION'			
Independent construct: 'RELIGIOSITY'		0.0732	$0.02 < f^2 < 0.15$ (small effect)
Dependent construct: 'BEHAVIOR'			
Independent construct: 'RELIGIOSITY'		0.0789	$0.02 < f^2 < 0.15$ (small effect)
Independent construct: 'INTENTION'		0.5993	> 0.35 (large effect)

Note: *p < 0.05, one-tailed test, N = 103, Bootstrap = 499.

Path coefficient. Path coefficients are used to evaluate the structural model's hypothesised relationships. It is concerned with the significance of the relationship between a predictor variable and an outcome variable. The results show that all the coefficients range from 0.214 to 0.5897 and are statistically significant at a t-statistical level greater than 1.96 and a five per cent significance level. They also have a positive sign, which indicates a positive relationship, meaning that as a predictor increases, so does the outcome. As a result, RELIGIOSITY has a positive and significant direct relationship with INTENTION and BEHAVIOR, while INTENTION has a positive and significant direct relationship with BEHAVIOR.

Coefficient of determination. The R^2 is used to calculate the variation in an outcome variable that can be explained by a set of predictor variables. The results show that the R^2 values for INTENTION and BEHAVIOR are 0.0682 and 0.4594, respectively. That is, RELIGIOSITY can explain 6.82 per cent of the variance in the growth of INTENTION, while RELIGIOSITY and INTENTION can explain 45.94 per cent of the variance in BEHAVIOR. Using the rule of thumb that 0.19, 0.33, and 0.67 represent small, moderate, and large effects, it appears that 0.0682 is a minimal effect, while 0.4594 is a moderate effect.

Goodness-of-fit of the entire model. GoF and SRMR can be used to assess the overall model fit (Benitez et al., 2020; Mehmetoglu & Venturini, 2021; Sanchez, 2013). The GoF is suggested as a threshold of greater than 0.36, while the SRMR is less than 0.08. The results show that GoF = 0.408 and SRMR = 0.079, indicating a good model fit. It implies that the theoretical model is better suited to proving and defining the relationships between RELIGIOSITY, INTENTION, and BEHAVIOR.

Multicollinearity. The structural relationships between RELIGIOSITY, INTENTION, and BEHAVIOR are analogous to any standard statistical model

analysed with linear regression (OLS). Since one of the basic principles of linear regression is the lack of multicollinearity among variables, this assumption also applies to structural measurements. Then, the variance inflation factor (VIF) is used to investigate potential multicollinearity among variables. Unlike linear regression analysis, which suggests limiting VIF to less than 10, the PLS-PM analysis suggests limiting VIF to less than 2.5. The results show that all VIF values are below 2.5 and hence indicate no significant multicollinearity among the variables.

Effect sizes. The effect size is used to determine the impact of one variable on another. One of the most widely mentioned measures for effect size in the PLS-SEM analysis is Cohen's f^2. The f^2 values of 0.02, 0.15, and 0.35 are commonly referred to as small, moderate, and large, respectively. The result shows that the effect size of RELIGIOSITY on INTENTION (0.0732), RELIGIOSITY on BEHAVIOR (0.0789) is small ($0.02 < f^2 < 0.15$), and the effect size of INTENTION on BEHAVIOR (0.5993) are large (> 0.35).

After completing the structural model assessments, all hypotheses are supported by data. Furthermore, all the results could be interpreted as evidence that the theoretical model is reliable and valuable.

4.4. Analysis

Following a thorough examination of the measurement and structural models, it is possible to clearly state that all the three hypotheses are supported, with all the path coefficients being positive and statistically significant (see Table 4). Religiosity has a significantly positive relationship with saving intention and saving behavior. Also, saving intention demonstrates a significant positive and significant relationship with saving behavior. This empirical evidence confirms the findings of previous studies, such as those conducted by Ismail et al. (2018); Mei Teh et al. (2019); Priyo Nugroho et al. (2017); Satsios & Hadjidakis (2017, 2018); Satsios et al. (2020); Widjaja et al. (2020); Widyastuti et al. (2016); and Wijaya et al. (2019).

Although the relationships between religiosity and saving intention and religiosity and saving behavior are statistically significant, the strength of the relationships is weak. According to Cohen's convention, religiosity has a minor effect on saving intention ($f^2 = 0.0732$) and behavior ($f^2 = 0.0789$), demonstrating weak relationships. There is no empirical data from previous studies that specifically provide the amount of the effect of the relationship between religiosity, saving intention, and behavior. However, empirical evidence from previous studies in the behavioral finance research field that use religiosity as a predictor is available (e.g., Ati et al., 2021; Benk, Budak, Yüzbaşı, & Mohdali, 2016; Lajuni, Bujang, Karia, & Yacob, 2018; Syafira et al., 2020). According to Ati et al. (2021), the effect size of Muslim religiosity on investment intention is small, with $f^2 = 0.059$. Benk et al. (2016) discover that the effect of religiosity on tax compliance elements is very small, with $R^2 = 0.048$ for voluntary tax compliance and $R^2 = 0.044$ for enforced tax compliance. Lajuni et al. (2018) present two pieces of evidence indicating that the direct effects of religiosity on financial distress ($R^2 = 0.150$) and financial behavior ($R^2 = 0.052$) are negligible. Meanwhile, Syafira et al. (2020) discover that the relationship between religiosity and trust in using digital payments is very

weak, with an R^2 of 0.073. From a practical significance standpoint, it is possible to understand the small effect sizes that f^2 or R^2 should be treated more fairly. Because if the phenomena being investigated are well understood, a relatively high f^2 or R^2 may be required, but if the phenomena being studied are relatively new, such as religiosity, a lower f^2 or R^2 should be acceptable (Benitez et al., 2020). After all, at the early stages of a new research field, even a minor effect can provide crucial information (Lind, 2021).

The evidence for the low impact of religiosity on saving behavior also confirms that most respondents have a low saving culture. The fact that the two statements about saving behavior in the questionnaire have relatively low-frequency values adds credence to this conclusion. Only 34.951 per cent of respondents think the statement "*Always save money*" applies to them. Meanwhile, only 36.893 per cent of those polled think the statement "*Saving every month*" applies to them. There are two possible explanations for this. First, most respondents would rather spend than save. And secondly, they save for the afterlife as income, less consumption and spending in Allah's name. As a result, those who are more religious would spend more money in Allah's name than those who are less religious (Umer, 2021). They also believe that if money is entrusted to God's hands, it will be in the right place, and hence saving is not a primary intention in their lives (Kassim et al., 2019; Mei Teh et al., 2019). They have a concern that saving may be morphed into hoarding money. According to Keynes (1936), hoarding money and miserliness are two of the eight reasons for saving money. On the other hand, hoarding money and miserliness are prohibited in Islamic teachings.

In Islam, money should circulate from person to person to control and ease transactions. Therefore, Muslims are urged to spend and are not encouraged to keep their money idle, so that the economy can run smoothly and, in the end, the people's welfare can be created. In this perspective, saving money is regarded as a behavior that causes money to be idle, particularly if done excessively, as in hoarding money. However, Muslims are likewise forbidden from behaving extravagantly with their money. So, if they have spare cash, they are encouraged to spend it in Allah's name on things like *zakah*, *sadaqah*, and *waqf*. In addition, these instruments are frequently employed by Muslims to combat the problem of money hoarding and miserliness.

On the other hand, saving money is also related to human intention, as identified by Keynes (1936), which are individuals' reasons for saving. *To build up a reserve against unforeseen contingencies* (such as sickness, accident, or unemployment) and *to provide for an anticipated future relationship between the income and the needs of the individual* (such as retirement savings or education costs) are the most common reasons individuals have for saving. Meanwhile, *to bequeath a fortune* and *to satisfy pure miserliness* are the most unpopular reasons. The variety of these reasons are tied to an individual's income level, with low, middle, and high income having distinct reasons. Two of the most popular saving intentions belong to low and middle-income people. Meanwhile, people with high incomes are confident that they will be able to overcome financial issues caused by illness, accidents, retirement, and so on; they then focus on saving more money in order to leave a fortune to their children and grandchildren, and they sometimes find it difficult to decide where to spend their money.

V. CONCLUSION AND RECOMMENDATION

5.1. Conclusion

Two types of goodness-of-fit measurements, GoF (0.408) and SRMR (0.079), are performed to ensure the theoretical model being built is credible. The model documents empirical evidence and demonstrates statistical and practical significance in the relationship between religiosity, saving intention, and behavior. From statistical significance tests, religiosity has been shown to have a positive relationship with saving intention and behavior. Further, we also note a positive relationship between saving intention and saving behavior. From a practical significance, while saving intention has been shown to have a strong influence on saving behavior, religiosity has been shown to have a weak influence on both saving intention and saving behavior. The study provides critical information for a more complete understanding of the relationship.

5.2. Recommendation

This preliminary study has some limitations, including the inability to generalize due to the small sample size and the fact that the study only investigates a simple relationship between three latent variables. More samples and variables may be included, and the model can also be used with non-Muslim respondents in future studies. In addition, future research can investigate the causes of religiosity's low impact on saving intentions and behavior, possibly using qualitative methods.

Furthermore, while encouraging saving intention and behavior, authorities and financial institutions may take an individual's religiosity into account. More attention should be paid to the preliminary notion that those who are more religious regard saving as a negative behavior. If these religious people have a strong saving ethic, an increase in their aggregate savings will have a significant macroeconomic impact on the economy.

REFERENCES

Abdullah, N., & Abd. Majid, M. S. (2001). Saving behaviour in Islamic framework: The case of International Islamic University Malaysia (IIUM). *Jurnal Syariah, 9*(2), 61-84.

Abou-Youssef, M., Kortam, W., Abou-Aish, E., & El-Bassiouny, N. (2011). Measuring Islamic-driven buyer behavioral implications: A proposed market-minded religiosity scale. *Journal of American Science, 7*(8), 728-741.

Abou-Youssef, M. M. H., Kortam, W., Abou-Aish, E., & El-Bassiouny, N. (2015). Effects of religiosity on consumer attitudes toward Islamic banking in Egypt. *International Journal of Bank Marketing, 33*(6), 786-807.

Abu-Raiya, H., & Ayten, A. (2019). Religious involvement, interpersonal forgiveness and mental health and well-being among a multinational sample of Muslims. *Journal of Happiness Studies, 21*, 3051-3067. doi:10.1007/s10902-019-00213-8

Abu Raiya, H., Pargament, K. I., Mahoney, A., & Stein, C. (2008). A psychological measure of Islamic religiousness: Development and evidence for reliability and validity. *The International Journal for the Psychology of Religion, 18*(4), 291-315.

Adeyemo, D. A., & Adeleye, A. T. (2008). Emotional intelligence, religiosity and self-efficacy as predictors of psychological well-being among secondary school adolescents in Ogbomoso, Nigeria. *Europe's Journal of Psychology, 4*(1), 1-13. doi:10.5964/ejop.v4i1.423

Agarwala, R., Mishra, P., & Singh, R. (2019). Religiosity and consumer behavior: A summarizing review. *Journal of Management, Spirituality & Religion, 16*(1), 32-54.

Agnew, S., Maras, P., & Moon, A. (2018). Gender differences in financial socialization in the home—An exploratory study. *International Journal of Consumer Studies, 42*(3), 275-282.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*(2), 179-211.

Allport, G. W., & Ross, J. M. (1967). Personal religious orientation and prejudice. *Journal of Personality and Social Psychology, 5*(4), 432-443.

Altemeyer, B., & Hunsberger, B. (1992). Authoritarianism, religious fundamentalism, quest, and prejudice. *The International Journal for the Psychology of Religion, 2*(2), 113-133.

Ando, A., & Modigliani, F. (1963). The "life cycle" hypothesis of saving: Aggregate implications and tests. *The American Economic Review, 53*(1), 55-84.

Ati, S., Umi, W., Erika, T., & Suherman. (2021). The millennials generation's intention to invest: A modified model of the theory of reasoned action. *International Journal of Entrepreneurship, 25*(3), 1-11.

Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice-Hall.

Barnes, M. (2011). Theology of religions. In A. Holder (Ed.), *The Blackwell companion to Christian spirituality*. Chichester: John Wiley & Sons.

Batson, C. D., Schoenrade, P., & Ventis, W. L. (1993). *Religion and the individual: A social-psychological perspective.* New York: Oxford University Press.

Benitez, J., Henseler, J., Castillo, A., & Schuberth, F. (2020). How to perform and report an impactful analysis using partial least squares: Guidelines for confirmatory and explanatory IS research. *Information & Management, 57*(2), 103168. doi:10.1016/j.im.2019.05.003

Benk, S., Budak, T., Yüzbaşı, B., & Mohdali, R. (2016). The impact of religiosity on tax compliance among Turkish self-employed taxpayers. *Religions, 7*(4), 37-46.

Berger, P. L., Davie, G., & Fokas, E. (2008). *Religious America, secular Europe?: A theme and variation*. Farnham: Ashgate Publishing, Ltd.

Bergin, A. E. (1983). Religiosity and mental health: A critical reevaluation and meta-analysis. *Professional Psychology: Research and Practice, 14*(2), 170-184.

Browning, M., & Lusardi, A. (1996). Household saving: Micro theories and micro facts. *Journal of Economic literature, 34*(4), 1797-1855.

Chen, M. K. (2013). The effect of language on economic behavior: Evidence from savings rates, health behaviors, and retirement assets. *American Economic Review, 103*(2), 690-731.

Cohen, J. (2013). *Statistical power analysis for the behavioral sciences*. Burlington: Elsevier Science.

Danes, S. M., & Haberman, H. R. (2007). Teen financial knowledge, self-efficacy, and behavior: A gendered view. *Journal of Financial Counseling and Planning, 18*(2), 48-60.

Delener, N. (1990). The effects of religious factors on perceived risk in durable goods purchase decisions. *The Journal of Consumer Marketing, 7*(3), 27-38.

DeVaney, S. A., Anong, S. T., & Whirl, S. E. (2007). Household savings motives. *Journal of Consumer Affairs, 41*(1), 174–186.

Doochin, D. (2019). The culture of saving money around the world. *Babbel Magazine.* Retrieved from https://www.babbel.com/en/magazine/saving-money-around-the-world

Duesenberry, J. (1949). *Income, saving and the theory of consumer behavior*. Cambridge, MA: Harvard University Press.

El-Menouar, Y. (2014). The five dimensions of Muslim religiosity. Results of an empirical study. *Methods, Data, Analyses, 8*(1), 53-78.

Ertle, J. E. (2018). Saving - ingrained in German culture. *Walled In Berlin.* Retrieved from https://walled-in-berlin.com/j-elke-ertle/saving-ingrained-in-german-culture/

Fauzi, R. U. A., Budiyanto, & Suhermin. (2020). The influence of religiosity, profit loss and sharing and corporate image toward consumer intentions of muamalat bank financing. *Journal of Accounting, Finance and Auditing Studies, 6*(2), 105-123.

Fernández, R. (2011). Does culture matter? *Handbook of Social Economics, 1*, 481-510. doi:10.3386/w16277

Financial Services Authority. (2014). Indonesia Towards Intelligent Finance [Press release]

Fisher, I. (1930). *The theory of interest : As determined by impatience to spend income and opportunity to invest it*. New York : Macmillan.

Francis, L. J., & Stubbs, M. T. (1987). Measuring attitudes towards christianity: From childhood into adulthood. *Personality and Individual Differences, 8*(5), 741-743.

Friedman, M. (1957). *A theory of the consumption function*. Princeton, NJ: Princeton University Press.

Friend, I., & Kravis, I. B. (1957). Consumption patterns and permanent income. *The American Economic Review, 47*(2), 536–555.

Fuchs-Schündeln, N., Masella, P., & Paule-Paludkiewicz, H. (2020). Cultural determinants of household saving behavior. *Journal of Money, Credit and Banking, 52*(5), 1035-1070.

Furnham, A. (1999). Spending and saving attitudes and behaviors questionnaire: PsycTESTS.

Gatina, L. (2012). *The financial behaviour of immigrants to Australia.* College of Business, RMIT University [Ph.D Thesis].

Goodhue, D., Lewis, W., & Thompson, R. (2007). Research note—Statistical power in analyzing interaction effects: Questioning the advantage of PLS with product indicators. *Information Systems Research, 18*(2), 211-227.

Groome, T. H., & Corso, M. J. (1999). *Empowering catechetical leaders*. Washington DC: ERIC.

Guiso, L., Sapienza, P., & Zingales, L. (2006). Does culture affect economic outcomes? *The Journal of Economic Perspectives, 20*(2), 23-48.

Gutter, M. S., Hayhoe, C. R., DeVaney, S. A., Kim, J., Bowen, C. F., Cheang, M., . . . Dorman, R. (2012). Exploring the Relationship of Economic, Sociological, and

Psychological Factors to the Savings Behavior of Low- to Moderate-Income Households. *Family and Consumer Sciences Research Journal, 41*(1), 86-101.

Hair, J. F. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM)* (Second edition. ed.). Thousand Oaks, California: SAGE Publications, Inc.

Hamin, H., Tung, R. L., Baumann, C., & Hoadley, S. (2018). Customers' savings rate and share of wallet: The moderating role of religion and ethnicity/immigrant generation vis-à-vis attitude as mediator. *Journal of Strategic Marketing, 26*(5), 400-416.

Hardius, U. (2016). Islamic religiosity scale, and its applied on the relationship between religiosity and selection of Islamic bank. *Journal of Distribution Science, 14*(2), 23-32.

Hassan, M. K., & Lawrence, S. B. . (2007). Retirement savings of the hip generation: A study of retirement preparation among individuals in their fifties. *Journal of the Southwestern Society of Economists, 34*, 115-129. Retrieved from https://ssrn.com/abstract=3263388.

Hicks, J. R. (1950). *A contribution to the theory of the trade cycle*. London: Oxford University Press.

Holdcroft, B. B. (2006). What is religiosity. *Catholic Education: A Journal of Inquiry and Practice, 10*(1), 89-103.

Ismail, S., Khairuddin, N. S., Alias, N. E., Loon-Koe, W., & Othman, R. (2018). An empirical analysis of saving behavior among Malaysian employees. *International Journal of Academic Research in Business and Social Sciences, 8*(10), 1070-1080.

Jean, L. (2008). Retirement savings adequacy for the baby boom generation. *Journal of Personal Finance, 7*(1), 109-134.

Ji, C., & Ibrahim, Y. (2007a). Islamic doctrinal orthodoxy and religious orientations: Scale development and validation. *The International Journal for the Psychology of Religion, 17*(3), 189-208.

Ji, C., & Ibrahim, Y. (2007b). Islamic religiosity in right-wing authoritarian personality: The case of Indonesian Muslims. *Review of Religious Research, 49*(2), 128-146.

Ji, C., Ibrahim, Y., & Kim, S. D. (2009). Islamic personal religion and moral reasoning in social justice and equality: The evidence from Indonesian college students. *The International Journal for the Psychology of Religion, 19*(4), 259-274.

Johnson, B. R., Jang, S. J., Larson, D. B., & De Li, S. (2001). Does adolescent religious commitment matter? a reexamination of the effects of religiosity on delinquency. *The Journal of Research in Crime and Delinquency, 38*(1), 22-44.

Johnstone, R. L. (2016). *Religion in society : A sociology of religion* (Eighth edition). London, England: Routledge.

Juma, B., Twaha Kigongo, K., Musa, K., & Irene, N. (2019). Determinants of the intention to adopt Islamic banking in a non-Islamic developing country. *ISRA International Journal of Islamic Finance, 11*(2), 166-186.

Kasri, R., & Kassim, S. H. (2009). Empirical determinants of saving in the Islamic banks: Evidence from Indonesia. *Journal of King Abdulaziz University: Islamic Economics, 22*(2), 181-201.

Kassim, A. A. M., Mohamed, J., Jahari, N. A., Nasyikin, N., & Zain, M. (2019). Personal saving behavior among Muslim employees. *International Journal of Academic Research in Business and Social Sciences, 9*(11), 236-253.

Keynes, J. M. (1936). *The general theory of employment, interest and money*. London: London: Macmillan.

Köbrich León, A. (2013). Religion and economic outcomes: Household savings behavior in the USA. *Working Paper Series in Economics No. 268, Leuphana Universität Lüneburg.*

Kock, N., & Hadaya, P. (2018). Minimum sample size estimation in PLS-SEM: The inverse square root and gamma-exponential methods. *Information Systems Journal*, *28*(1), 227-261.

Kyoung Tae, K., Sherman, D. H., & Samuel Cheng-Chung, C. (2014). Consideration of retirement income stages in planning for retirement. *Journal of Personal Finance, 13*(1), 52-64.

Lajuni, N., Bujang, I., Karia, A. A., & Yacob, Y. (2018). Religiosity, financial knowledge, and financial behavior influence on personal financial distress among millennial generation. *Jurnal Manajemen dan Kewirausahaan, 20*(2), 92-98.

Lee, J. C., & Kuang, X. (2020). Validation of the Chinese version of the centrality of religiosity scale (CRS): Teacher perspectives. *Religions, 11*(5), 266-285.

Lenski, G. (1961). *The Religious factor: A sociological study of religion's impact on politics, economics, and family life*. New York: Doubleday Garden City.

Lind, G. (2021). *Effect sizes: Statistical, practical and theoretical Significance of empirical findings*. Retrieved from http://moralcompetence.net/pdf/Lind-2021_Effektstaerken%20en.pdf

Lown, J., Kim, J., Gutter, M. S., & Hunt, A. T. (2015). Self-efficacy and savings among middle and low income households. *Journal of Family and Economic Issues*, *36*(4), 491–502.

Mahomed, A., & Laher, S. (2015). The relationship between religious orientation and perceived risk of HIV infection in members of the Muslim community in Johannesburg, South Africa. *New Voices in Psychology, 11*(1), 17-31.

Mahudin, N. D. M., Noor, N. M., Dzulkifli, M. A., & Janon, N. S. (2016). Religiosity among muslims: A scale development and validation study. *Makara Human Behavior Studies in Asia*, *20*(2), 109-120.

Marcoulides, G. A., & Chin, W. W. (2013). You write, but others read: Common methodological misunderstandings in PLS and related methods. In Abdi H., Chin W., Esposito Vinzi V., Russolillo G., Trinchera L. (Eds.), *New perspectives in partial least squares and related methods* (pp. 31-64). New York: Springer.

Mehmetoglu, M, & Venturini, S. (2021). *Structural equation modelling with partial least squares using stata and R*: Boca Raton : Chapman & Hall/CRC.

Mei Teh, G., Palil, M. R., Mohd Zain, N. H., & Mamat, N. H. (2019). Predicting private saving within malay community. *Asian Academy of Management Journal, 24*(Supp.1), 1-17.

Newaz, F. T., Fam, K., & Sharma, R. R. (2016). Muslim religiosity and purchase intention of different categories of Islamic financial products. *Journal of Financial Services Marketing, 21*(2), 141-152.

Nga, K. H., & Yeoh, K. K. (2015). Affective, social and cognitive antecedents of attitude towards money among undergraduate students: A malaysian study. *Pertanika Journal of Social Sciences & Humanities, 23*(Special Issue), 161-179.

Nooh, M. N., Shukor, S. A., Aziz, M. R. A., Khairi, K., & Abdullah, M. (2014). Relationship between religiosity and controversial products and offensive nature of advertising appeals. *Journal of Marketing Management, 2*(2), 113-128.

Ntalianis, F., & Darr, W. (2005). The influence of religiosity and work status on psychological contracts. *International Journal of Organizational Analysis, 13*(1), 89-102.

Olufadi, Y. (2017). Muslim daily religiosity assessment scale (MUDRAS): A New instrument for Muslim religiosity research and practice. *Psychology of Religion and Spirituality, 9*(2), 165-179.

Peng, D. X., & Lai, F. (2012). Using partial least squares in operations management research: A practical guideline and summary of past research. *Journal of Operations Management, 30*(6), 467-480.

Pigou, A. C. (1951). Professor duesenberry on income and savings. *Economic Journal, 61*(December), 883–885.

Priyo Nugroho, A., Hidayat, A., & Kusuma, H. (2017). The influence of religiosity and self-efficacy on the saving behavior of the Islamic banks. *Banks and Bank Systems, 12*(3), 35-47.

Ryan, R. M., & Deci, E. L. (2020). Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions. *Contemporary Educational Psychology, 61*(April), 101860. doi:10.1016/j.cedpsych.2020.101860

Sadili, M. I. (2019). *A prediction model of saving behavior in Indonesia University of Education*. Bandung, Indonesia: Indonesia University of Education [Undergraduate Thesis].

Sanchez, G. (2013). PLS path modeling with R (Trowchez Editions). Berkeley, 383, 2013. https://www.gastonsanchez.com/PLS_Path_Modeling_with_R.pdf

Satsios, N., & Hadjidakis, S. (2017). The effect of religiosity and self mastery on saving behaviour of Pomak households in Thrace. *Journal Sustaibable Development, Culture, Traditions, 1-B*, 17-27.

Satsios, N., & Hadjidakis, S. (2018). Applying the theory of planned behaviour (TPB) in saving behaviour of Pomak households. *International Journal of Financial Research, 9*(2), 122-133.

Satsios, N., Karamanis, K., Galanou, A., & Sotiropoulos, I. (2020). The saving behaviour of Pomaks in Bulgaria: A path analysis approach. *Economic Studies, 29*(3), 105-120.

Shoham, A., & Malul, M. (2013). Cultural attributes, national saving and economic outcomes. *The Journal of Socio-Economics, 47*(December), 180-184.

Signore, F., Catalano, A., De Carlo, E., Madaro, A., & Ingusci, E. (2019). The role of employability in students during academic experience: A preliminary study through PLS-PM technique. *Electronic Journal of Applied Statistical Analysis, 12*(4), 720-747.

Snapcart. (2020). Low savings culture in indonesia – Massive opportunities for financial institutions and startups. Retrieved from https://snapcart.global/low-savings-culture-in-indonesia-massive-opportunities-for-financial-institutions-and-startups/

Stark, R., & Glock, C. Y. (1968). *American piety: The nature of religious commitment* (Vol. 1). Berkeley and Los Angeles: University of California Press.

Syafira, F. N., Ratnasari, R. T., & Ismail, S. (2020). The effect of religiosity and trust on intention to pay in ziswaf collection through digital payments. *JEBIS (Jurnal Ekonomi dan Bisnis Islam), 6*(1), 98-115.

Thompson, D. (2016). Why Americans don't save more money. *The Atlantic.* Retrieved from https://www.theatlantic.com/business/archive/2016/04/why-dont-americans-save-money/478929/

Tiliouine, H., Cummins, R. A., & Davern, M. (2009). Islamic religiosity, subjective well-being, and health. *Mental Health, Religion & Culture, 12*(1), 55-74.

Tjahjono, G. (2014). *Religiosity and the intention to buy luxury goods among young Indonesian Muslims in Jakarta.* Penrith, Australia: University of Western Sydney [Ph.D. Thesis].

Tokunaga, H. (1993). The use and abuse of consumer credit: Application of psychological theory and research. *Journal of Economic Psychology, 14*(2), 285-316.

Tuvesson, J., & Yu, S. (2011). Student saving, does it exist?: A study of students' saving behavior, attitude towards saving and motivation to save. Retrieved from https://www.diva-portal.org/smash/get/diva2:426372/FULLTEXT01.pdf

Umer, H. (2021). A Behavioral model to examine religiosity & generosity. *Current Psychology,* 1-11. doi:10.1007/s12144-021-01491-3

Vickrey, W. (1947). Resource distribution patterns and the classification of families. In Conference on Research in Income and Wealth (Ed.), *Studies in income and wealth* (pp. 266-297). United States: NBER.

Wang, L., Lu, W., & Malhotra, N. K. (2011). Demographics, attitude, personality and credit card features correlate with credit card debt: A view from China. *Journal of Economic Psychology, 32*(1), 179-193.

Widjaja, I., Arifin, A. Z., & Setini, M. (2020). The effects of financial literacy and subjective norms on saving behavior. *Management Science Letters, 10*(15), 3635-3642.

Widyastuti, U., Suhud, U., & Sumiati, A. (2016). The Impact of financial literacy on student teachers' saving intention and saving behaviour. *Mediterranean Journal of Social Sciences, 7*(6), 41-48.

Wijaya, I. F., Hakim, A. R., Saputro, N., & Mulyadi, M. (2019). Religiosity level and saving decisions in Baitul Maal wat Tamwil: The case of Indonesia. *Journal of Islamic Marketing, 11*(6), 1465-1483.

Wold, H. (1975). Path models with latent variables: The NIPALS approach. *Quantitative Sociology International Perspectives on Mathematical and Statistical Modeling* (pp. 307-357): Elsevier.

Worthington, E. L., Wade, N. G., Hight, T. L., Ripley, J. S., McCullough, M. E., Berry, J. W., O'Connor, L. (2003). The religious commitment inventory-10: Development, refinement, and validation of a brief scale for research and counseling. *Journal of Counseling Psychology, 50*(1), 84-96.

Yayeh, F. A. (2014). The impact of religion on household saving behavior: A survey of religious people in west amhara national regional state. *SSRN Electronic Journal,* 1-25. doi:10.2139/ssrn.2518129