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Does Religiosity and Trust Affect Financing Activities? Evidence from Indonesia

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ABSTRACT

Islam religiosity and trust are inextricable linked since Islamic teachings promote trustworthy behaviour. Existing literature has shown that perceived trustworthiness of a party has positive impacts on the business-to-business relationship, especially in financing relationships. So far, however, there has been limited discussion on the role of religiosity and trust to support financing activities in the Islamic context. Empirical paper number 1 examines the impact of Islam religiosity on financing availability and non-performing financing in both Islamic and conventional banks. I contribute to the literature by using more suitable Islam religiosity proxies at province level, namely Islamic school, Islamic seminary school, mosque, Hajj application, and halal certificate and by finding that Islamic and conventional banks in stronger Islam religiosity areas provide more financing and have less non-performing financing. Empirical paper number 2 explores the magnitude of values-based trust vis-à-vis competence-based trust on financing availability in the context of Islamic culture, an issue that has limited discussion in current literature. I find that values-based trust plays stronger role than competence-based trust in Islamic culture. Finally, existing literature on trust and bank lending has not taken into account the characteristics of financing products in their studies. The third empirical paper discusses the role of trust on financing availability in three different Islamic financing products, i.e., *Murabaha*, *Ijara*, and Profit-loss sharing. I find that values-based trust is more important than competence-based trust in *Ijara*, but competence-based trust plays stronger role than values-based trust in both *Murabaha* and Profit-loss sharing.

Keywords: Trust, Religiosity, Collectivistic, Culture, Islamic bank, Conventional bank, Financing

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2SLS	: Two-Stage Least Squares
ATM	: Automated Teller Machine
BPS	: Biro Pusat Statistik (Central Bureau of Statistics)
CER	: Corporate environmental responsibility
EFA	: Exploratory Factor Analysis
FRACGLM	: Fractional Response Generalized Linear Models
GDP	: Gross domestic product
IV’s	: Instrumental variables
KMO	: Kaiser-Meyer-Olkin
NPF	: Non-performing financing
NPL	: Non-performing loan
OECD	: The Organisation for Economic Co-operation and Development
OIC	: Organisation of Islamic Cooperation
OLS	: Ordinary Least Squares
PCF	: Principal Component Factor
PLS	: Profit-loss sharing
R&D	: Research and Development
ROA	: Return on Assets
SMEs	: Small and Medium-sized Enterprises
WVS	: World Values Survey

APPENDIX

Chapter 1: Introduction

1. Background

Religiosity and trust are two aspects that have an intimate relationship. There are at least three reasons that connect trust and religiosity. First, Hosmer (1995) provides a strong connection between trust and ethics; he argues that the definition of trust in organizational theory and the concept of good society in moral philosophy have the common component of "willing cooperation" and "ultimate benefit" and these concepts are building blocks of religions. Interestingly, not only is the concept of "good society" at the heart of Western moral philosophy (Hosmer, 1995) but it is also a core aspect of Islamic culture (Ali, Al-Aali and Al-Owaihan, 2013). St. Augustine (426AD) (as quoted by Hosmer, 1995, p.396) states that

> "Honesty, truthfulness, and temperance are not enough; we also have to have some degree of compassion and kindness toward others to form a truly "good" society. That compassion and kindness is best expressed in the Golden Rule, which is not limited to the Judeo-Christian tradition but is part of almost all of the world's religions. Reciprocity—"Do unto others as you would have them do unto you"—and compassion together build a sense of community. The principle, then, can be expressed as "Never take any action that is not kind, and that does not build a sense of community, a sense of all of us working together for a commonly accepted goal."

The source of ethical principles is not solely exclusive to Judeo-Christian tradition. "Do unto others as you would have them do unto you" is similar to "love thy neighbor as thyself" (Hofstede, Hofstede and Minkov, 2010) and this value is very relevant in Islam as Prophet Muhammad said, "Whoever believes in Allah and the Last Day, should not hurt his neighbour and whoever believes in Allah and the Last Day, should serve his guest generously and whoever believes in Allah and the Last Day, should speak what is good or keep silent." (*Hadits* narrated by Bukhari, book 78 *Hadits* 163). Therefore, it is not surprising that literature in Islamic business ethics points out that Muslim people need to emulate the virtues of Prophet Muhammad, such as benevolence, integrity, openness, and knowledgeable in business-to-business relationships (Abuznaid, 2009; Ali, Al-Aali and Al-Owaihan, 2013; Beekun and Badawi, 2005; Ishak and Osman, 2016; Uddin, 2003).

Second, the intersection between religiosity and trust could be explained by social capital framework (Fukuyama, 2001), who defined social capital as “an instantiated informal norm that promotes cooperation between two or more individuals” (p.7). Interestingly, Fukuyama (2001) argues that trust is a result of social capital but does not constitute social capital itself. Fukuyama (2001) also mentions that religion is one of the sources of social capital. He said (p.16) that “social capital more often than not is produced by hierarchical sources of authority, which lay down norms and expect obedience to them for totally a rational reason.” Interestingly, the norms produced by religion can be transmitted from one generation to the next through a process of socialization that involves habit rather than reason. One of the most important economic functions of social capital is to reduce transaction cost (Fukuyama, 2001), which can be achieved by loosening the contracts, hierarchies, and bureaucratic rules. Thus, Fukuyama (2001) concludes that it is possible to conduct economic activities without social capital; however, this will increase the cost of monitoring, negotiation, litigating and enforcing formal agreement/contracts.

Third, Barney and Hansen (1994) argue that the sources of strong form trust, i.e., the form of trust that does not derive from the structure of an exchange and is independent whether or not there is a governance mechanism, are from beliefs and values held by individuals. Those beliefs are shaped by religion, which informs the behaviour of individuals, as it creates and describes moral values (Abeng, 1997; Hofstede, Hofstede and Minkov, 2010).

Against this background I explore the role of trust and Islam religiosity on financing activities. Since Weber’s seminal book (Weber, 1930), there has been increasing interest in the studies that explore the impact of religion and/or religiosity on economic growth (e.g., Barro and McCleary 2003; Basedau et al. 2018; Grier 1997), on entrepreneurship (e.g., Balog et al.

2014; Dana 2009; Drakopoulou Dodd and Seaman 1998; Woodrum 1985), and on bank lending activity (e.g., Chen et al. 2016; He and Hu 2016). However, the discussion that focuses on Islam and financing activities remains very much limited (e.g., Al-Azzam et al. 2012; Baele et al. 2014).

1.1 Religiosity and Business Relationships

Beliefs in hell and heaven, which inspire positive attitudes towards economic activities, are found to be positively associated with economic growth (Barro and McCleary, 2003). Furthermore, it has been found that different religious traditions affect economic growth differently: Muslim share of the population is negatively associated with economic growth (Barro and McCleary, 2003); and economic growth is found to be positively associated with the growth rate of Protestant adherents (Grier, 1997). However, such results seem to be questionable. As pointed out by their recent survey of the literature, Basedau et al. (2018) conclude that existing empirical research on religion (and religiosity) and socioeconomic development faces methodological challenges in measuring the ethic of hard work by simply using the share of a population's religion as a proxy.

But, how can religiosity inform economic behaviour? In the context of entrepreneurship and religion (and religiosity), co-religionists may enjoy the benefits of the network, such as co-religion financing, employment preference, information preference, and supply preference (Dana, 2009). One example of the in-group/loyalty is the prioritization of community interest over individual profit, as in the Mennonite community in Paraguay (Dana and Dana, 2007). Religious teachings, e.g., mutual help and solidarity, help the community to survive in the harsh environment of Chaco (Dana and Dana, 2007). In the US, Japanese immigrants' religious participation and familial religiosity are positively associated with both self-employment and annual income (Woodrum, 1985). Balog et al. (2014), by surveying the literature, found that religion does not influence the firm creation (Drakopoulou Dodd and Seaman, 1998) but African Pentecostal churches do influence the firm creation (Nwankwo, Gbadamosi and Ojo, 2012) as well as students' religiosity (Noble et al., 2007). The impact of religiosity on lending outcomes has been also examined by the banking literature, such as the corporate borrowers located in higher level of religiosity are charged lower interest rates, have fewer covenant restrictions, and obtain larger loan sizes (He and Hu, 2016) and religiosity is negatively associated with loan spread but positively associated with facility amount (Chen et al., 2016).

However, there is limited discussion that focuses on Islam religiosity and financing (the word "financing" is more suitable in the context of Islamic banks) outcomes. For example, religiosity, measured as the frequency of five-time prayers of the members in a loan-group, is negatively associated with late repayment (Al-Azzam et al., 2012).

1.2. Collectivistic Aspect of Islamic Religion and Culture

Literature on trust and culture has shown the role of trust in supporting/constraining business-to-business relationships in collectivistic vis-à-vis individualistic society. These two cultures produce distinctly different normative orientations towards establishing and maintaining relationships (Cannon et al., 2010). Collectivistic society is characterized by closed group orientation where the interests of the group prevail, ties between individuals are strong, high interdependence between the members of the group is established, sharing material (e.g., loan money, giving) resources to maintain social relationships is very common, and a person's misbehaviour is a disgrace to the family/clan (Cannon et al., 2010; Hofstede, Hofstede and Minkov, 2010; Hui and Triandis, 1986; Triandis, 1996; Triandis et al., 1986). In contrast, individualistic culture represents open group society, where people consider themselves independent of others and the interests of the individual prevail over the interests of the group (Cannon et al., 2010; Hofstede, Hofstede and Minkov, 2010; Triandis, 1996).

Huff and Kelley (2003) conducted a survey of mid-level managers from large banks in Japan, Korea, Hong Kong, Taiwan, China, Malaysia and the US to examine whether culture influences the tendency of individuals and organizations to trust or not. They found that external trust, i.e., the extent to which organizational members have a collectively held trust orientation towards a partner firm (Zaheer et al. 1998, p.142), tends to be higher in the US than in Asian nations. At the same time, the propensity to distrust is higher in Asian nations than in the US. These results support the notion that individuals from collectivistic cultures have stronger in-group bias (Huff and Kelley, 2003). Existing literature also shows that the effect of trust on cooperation and commitment is higher in collectivistic countries than in individualistic countries (Hewett and Bearden, 2001; Williams, Han and Qualls, 1998). Studies that examine the buyer-seller relationship in different cultures found that within a collectivistic culture, the effect of the buyer firm's trust of the supplier firm is greater than the effect of the performance of the supplier, i.e., delivery, product/service, and price/cost (Cannon et al., 2010). Another study that focuses on the relationship between expatriate and Russian staff in Russia reported that Western partners appear to prefer to conduct their business based on high monitoring (low-trust) while Russian partners show a preference for conducting business based on interpersonal skill (high-trust) (Ayios, 2003). Moreover, in China, interpersonal trust needs to be built first before conducting business, as the default norm in business relationships is "distrust" (De Cremer, 2015). The source of the "distrust" is a lack of *guanxi*: people only build automatic trust within a narrow network (De Cremer, 2015).

The literature has also shown the studies that examine culture, Islam and business. The majority of the Muslim countries score low on the individualism index (Hofstede, Hofstede and Minkov, 2010) since the collectivistic characteristics are embedded in Islamic culture (Greif, 1994; Wilson, 2006) as shown by current business practices in many Muslim countries (Abeng, 1997; Ali et al., 1997; Forster and Fenwick, 2015; Graafland, Mazereeuw and Yahia, 2006; Lalonde, 2013; Richardson, 2014; Richardson and Rammal, 2018). For instance, in the 11th century, Maghribi traders (part of the Muslim world) show collectivistic characteristics such as: 1) they belong to the same *Umma* (mother/nation) so that there was an understanding that the people had mutual responsibility among the members of the same society; and 2) they emphasize on sharing information and collective punishment, i.e., the reputation of a dishonest trader spreads quickly within the society (Greif, 1994). Islam is also believed to influence the current practice of business in Morocco and evidence suggests that people in Morocco view organization as a family (Forster and Fenwick, 2015). Therefore, personal values of fraternity, solidarity, believing in people, trust and honesty, are salient values in business/management (Forster and Fenwick 2015). Moreover, family plays an important role in shaping trustworthy behaviour (Forster and Fenwick, 2015). It might be argued that the importance of family in life and business is in line with Quran 66:6 “O you who have believed, protect yourselves and your families from a Fire.” Also, a study in Quebec, Canada, confirms that Arab culture elements (which have roots in Islam) such as the importance of groups, have a significant influence on the enterprise creation processes of Arab immigrant entrepreneurs (Lalonde, 2013). Thus, it is not surprising that strong interpersonal relationship and solidarity that is manifested by helping and caring for each other, can be found during the firm creation processes (Lalonde, 2013). Moreover, interest of the community prevails, as shown by the refusal to increase pressure on a competitor (Lalonde, 2013). A study in North Malaysia, reports the importance of the concept of *tawhid* (unity) (the fact that God is the sole creator of the universe and people are equal partners or that each person is brother and sister to the others (Rice 1999, p.347)), for the internationalization process of small medium-sized enterprises (SMEs) (Richardson, 2014). It has been documented that because the idea of brotherhood, which is derived from the *tawhid* concept, the negotiation with religious business partners becomes less complex, the bond between representatives is stronger, and Islam helps to alleviate any cultural gap in international business (Richardson, 2014). These findings support the notion that being Muslim is belonging to the same *Umma*. Another study in Malaysia also confirms the importance of brotherhood ideas in Islam (Richardson and

Rammal, 2018). The feeling of belonging to the same *Umma* increases the bond between the business actors, strengthens the personal relationships and trust, and reduces any conflict by finding solutions based on religious guidance (Richardson and Rammal, 2018). A study on Muslim entrepreneurs in the Netherlands examines the impact of the Islam religiosity level of the entrepreneur on business-society relationships (Graafland, Mazereeuw and Yahia, 2006). They found that the values derived from Islamic teachings are positively associated with socially responsible business conduct. Interestingly, Muslim entrepreneurs in the Netherlands have a higher concern for supporting social projects in local communities than non-Muslim entrepreneurs, possibly because of the strong Islamic teaching of solidarity, *zakat* (Islamic tax), and benevolence, e.g., giving *infaq*/charitable acts to those less fortunate (Graafland, Mazereeuw and Yahia, 2006). Moreover, a survey of managers from private, government, and mixed organizations in Kuwait reported that both Kuwaitis and Arab expatriates have a higher tendency towards collectivism possibly because Islamic teachings and Arab culture emphasize family orientation and group solidarity (Ali et al., 1997). In Saudi Arabia, strong relationships and trust need to be built first before a contract can be executed between Saudis and unknown representatives (Hofstede, Hofstede and Minkov, 2010; Rice, 2004). Not only that, Saudis also need to rely on partners known to be trustworthy when building business-to-business relationships with new and unknown business actors (Hofstede, Hofstede and Minkov, 2010). Besides, Tanri Abeng, a successful Muslim business leader from Indonesia, shares ethical preferences of business that have derived from *Quran* and *Sunna*, e.g., productive work, honesty and justice (Abeng, 1997). Moreover, he emphasizes the benevolence aspect, such as giving *infaq* (voluntary charitable act), and the condemnation of hoarding, and service-motive, i.e., “In all business activities, Muslim should intend, according to the Quran, to provide a needed service to his/her own community and the humanity at large.” (Abeng, 1997).

Despite studies about Islam and business practices around the world having shown that a collectivistic culture is embedded in Islamic culture, a study that focuses on the role of trust in

Islamic culture is lacking. Furthermore, there is a limited discussion in the literature on trust and culture that considers the magnitude of values-based trust vis-à-vis competence-based trust.

1.3. Trust and Business Relationships

Researchers have shown an increased interest in the studies that examine the impact of trust on informal financing activity. For instance, in Ghana, tomato farmers rely on non-bank sources of finance such as *susu* (savings collectors with daily repayment), other farmers, wealthier people (with profit sharing schemes), agro-chemicals suppliers (with repayment at harvesting time), and traders (Lyon, 2000). In such a context, trust is developed based on several mechanisms: (1) network of working relationships (a long-standing trading relationship increases the possibility to explore the reputation and loyalty of another party); (2) customer friendship (gift giving, visiting each other, and attending weddings or funerals nurtures the relationship between the parties); (3) pre-existing network (trust is developed based on a pre-existing network such as family, ethnic group, local communities, and churches); and (4) intermediaries in the transference process (trust can be developed based on a third party who acts as guarantor, such as Church elders (Lyon, 2000)). In Russia, credit card suppliers rely on trust to reduce uncertainty by: (1) observing the visual impression given by the applicant and using informal recommendations; and (2) exploiting customers' networks to increase cardholders' accountability (Guseva and Rona-Tas, 2001). Lazzeretti et al. (2004) explore the relationship between *impannatori* and subcontractors in Italy. They indicate that *impannatoris*' relationships with subcontractors are based on trust; information, reputation, and creditworthiness are built based on the relationship. This relationship reduces asymmetric information and increases the efficiency of the capital allocation (Lazzeretti et al., 2004). In the context of the diamond market, credit sales are very important in this business (Richman, 2017). However, given that diamonds can easily to be stolen and sold on the black market, a public court would have difficulty in enforcing the credit contract. Therefore, the merchant will rely on trust that is characterized by information on the reputation of the broker or buyer (Richman, 2017). The mechanism of reputation works effectively because cheating is less attractive than cooperation. Interestingly, collective punishment, i.e., all merchants will refuse to have business with a merchant who cheated in the past, is not only applied to the individual-specific but also the family-specific context (Richman, 2017). Thus, cheating is a disgrace to the family/clan. With regard to the contract to cut diamonds, it is usually held in an informal way. The cutter is usually a member of ultra-Orthodox Jewish community and this community tries to ensure that members involved in the diamond industry fulfil their contractual obligations (Richman, 2017).

However, trust has also been found relevant in banking (Harhoff and Körting, 1998; Hernández-Cánovas and Martínez-Solano, 2010; Hirsch, Nitzl and Schoen, 2018; Howorth and Moro, 2006, 2012; Kautonen et al., 2020; Lehmann and Neuberger, 2001; Moro and Fink, 2013; Nguyen, Le and Freeman, 2006; Palazuelos, Crespo and Del Corte, 2018).

In fact, the literature on trust and bank lending was inspired by the work from Fama (1985), who argues that small businesses prefer to borrow money from banks since placing a debt directly into the market is very costly compared with a bank loan. A bank loan is categorized as an "inside debt" which provides the possibility for lenders to gain information that is not available to the public. Since then, studies on small business and bank lending have emphasized the importance of relationship lending (Berger and Udell, 1995; Petersen and Rajan, 1994). For example, studies have shown that the duration of the relationship is negatively (positively) associated with the percentage of the trade credit paid late (credit availability from the banks) (Petersen and Rajan, 1994). The duration of the relationship is a proxy for the amount of private information that the lender has. In addition, the number of banks from which a firm borrows is positively associated with cost of debt (Petersen and Rajan, 1994), possibly because having multiple banking relationships is a signal of a firm's quality, i.e., a lower quality firm needs to find other bank(s) as a single bank cannot provide the amount of money requested by the firm (Petersen and Rajan, 1994). Interestingly enough, the relationship duration has no effect on cost of debt (Petersen and Rajan, 1994). A possible explanation is that the study by Petersen and Rajan (1994) did not take into account the type of lending product (Berger and Udell, 1995). The type of lending product arguably could affect the relationship between the duration of the relationship and cost of debt, since each lending product has different characteristics. Therefore, Berger and Udell (1995) examined the impact of relationship duration on cost of debt (but only along the lines of credit lending product) and found that relationship duration is negative and significant.

The above-quoted research suggests the important role of social ties in financing activity and more recent research has started to cover this area, suggesting that social interaction, like trust between bank managers and firm managers, needs to be taken into account together with transactional variables (e.g., relationship duration, multiple bank relationship) to explain the determinants of lending outcomes, e.g., credit availability, collateralization, and cost of debt (Lehmann and Neuberger, 2001). One of the reasons to take into account the importance of personal characteristics of small business managers when providing bank lending is explained by Ferrary (2003), as he said "It is also necessary to understand the borrower's personality. Evaluation of his motivations and his entrepreneurial competencies is needed to anticipate the probabilities of a project's success" (Ferrary 2003, p.676). Arguably, the success of the project/business will have a significant impact on the success in loan repayment. Interestingly, studies have shown that mutual trust is negatively associated with collateral requirement and cost of debt in lines of credit (Harhoff and Körting, 1998). In the same vein, a stable relationship as a proxy for trust is negatively associated with loan pricing (Lehmann and Neuberger, 2001), while a high flow of information from the borrower to the bank will increase the probability of loan approval (Lehmann and Neuberger, 2001). Another interesting finding comes from Hernández-Cánovas and Martínez-Solano (2010): trust is positive and significant to predict the probability of the loan renewal of short-term credit. Furthermore, their study has shown that trust is negatively associated with cost of debt (Hernández-Cánovas and Martínez-Solano, 2010). The decision to trust is also influenced by perceived trustworthiness of banks' managers in their borrowers which, in turn, negatively affects the cost of debt of overdraft (short-term credit) (Howorth and Moro, 2012) but is positively associated with credit availability (Moro and Fink, 2013). Interestingly, duration of relationship is positively associated with cost of debt (Howorth and Moro, 2012) and supports the "hold-up" problem framework, i.e., the bank has monopoly power to charge high interest rates (Sharpe, 1990). The competence dimension of trust positively influences loan officers' willingness to grant credit in the case of audited SMEs but both loan officers' perceived SMEs' competence and honesty are positively associated with credit granting (Palazuelos, Crespo and Del Corte, 2018). Actually, both dimensions of interorganizational trust, i.e., habitualization (benevolence) and institutionalization (integrity), positively influence the quality of credit negotiations (Hirsch, Nitzl and Schoen, 2018). Furthermore, there is a strong positive impact of habitualization on the perception of the reliability of the hard information and negative association between habitualization and the perception of hard information when evaluating SME's creditworthiness (Hirsch, Nitzl and Schoen, 2018). Finally, both perceived trustworthiness and information accuracy are positive and significant to credit access. However, the impact of interaction of perceived trustworthiness and information accuracy on credit access is negative and significant, which suggests that perceived trustworthiness has a stronger effect when the information accuracy is low (Kautonen et al., 2020). So far, however there is limited discussion about trust and financing relationships in Islamic banks, and studies in trust and bank lending, both empirical and theoretical, have not taken into account the role of trust in different banks' financing (lending) products.

2. Objectives

This PhD thesis examines the role of religiosity and trust in financing relationships in Indonesia. There are three objectives:

a. Weber argues that in order to relieve religious anxiety (who will be saved, who will be damned), people need to do hard work in the world or "the calling" (*beruf*). Past research based on US Christian found that corporate borrowers located in higher levels of religiosity (measured as the number of adherents in a county divided by the population in a county) are charged lower interest rate, have fewer covenants restrictions, and obtain larger loan size (He and Hu, 2016). In cross-countries studies, Chen et al. (2016) use three items from the World Values Survey to capture religiosity, i.e., member of a religion, religious importance, and religious services. They documented that religiosity is negatively associated with loan spread but positively with facility amount. However, according to Weber (1930), the concept of inner-worldly asceticism that stimulates work ethics is absent in Islam. Also according to Weber, Islam encourages people to pursue land expansion or inner-worldly heroes (warriors) but not inner-worldly asceticism (see Turner 1974). Thus, it is not clear what the relationship is between Islam religiosity and financing activities. Empirical paper number 1 addresses this area by exploring the impact of Islam religiosity at province level on the financing activities, i.e., total amount of financing and non-performing loans in both Islamic and conventional banks in Indonesia. This paper is motivated by the limited discussion about Islam religiosity and financing activities and the conflicting evidence of the impact of Islam on socioeconomic development. I take into account the uniqueness of Islam in a country: Indonesia. The religiosity level of an area is captured by the number of religious actors, such as Islamic school, Islamic seminary school (*pondok pesantren*), mosque, and religious practices such as the number of Hajj applications and certified halal products.

b. Empirical paper number 2 examines the role of trust in supporting business-to-business relationships in the Islamic culture by exploring specifically the financing relationships between banks and their small business customers. The financing relationship is used as the focus of this study. Doney et al. (1998) in their conceptual paper mentioned that trust can be built on benevolence/intention and transference processes in a collectivistic society. Despite collectivistic society being embedded in Islamic culture (see Greif 1994), the discussion of the role of trust in business-to-business relationships in Islamic culture is very limited. Not only that, the discussion about the magnitude of values-based trust vis-à-vis competence-based trust in trust and culture literature also remains limited.

c. The third empirical paper explores the role of trust in supporting financing activities in specific financing products in Islamic banks, i.e., *Murabaha*, *Ijara* and profit-loss sharing (PLS). Interestingly, even though the role of trust in lending relationships has been modelled theoretically (Howorth and Moro, 2006) and there is empirical evidence on its role in credit availability (Hernández-Cánovas and Martínez-Solano, 2010; Moro and Fink, 2013), interest rate (Howorth and Moro, 2012), and collateralization (Harhoff and Körting, 1998; Moro, Lucas and Kodwani, 2012), little is known about the role of trust in different financing products.

3. Thesis Structure

This thesis takes the form of a series of chapters formatted as papers for publication. The first one has been submitted to *Business Ethics Quarterly* and is under review. The second paper has been submitted to the *British Journal of Management*. I received feedback from the journal in October granting a Revise and Resubmit (deadline for the resubmission is February 2021). The third paper will be submitted quite soon to *Global Finance Journal*.

The second chapter discusses the link between Islamic teachings, ethics and trust from the perspective of the theological aspects of Islam. It also gives the initial insight of the role of religiosity and trust in business-to-business relationships in Indonesia (Chapter 2).

Chapter 3 (empirical paper number 1) discusses the role of Islam religiosity and its relationship with financing activities in both Islamic and conventional banks. The focus of Chapter 3 is on the impact of Islam religiosity at province level on financing activities, i.e., the total amount of financing and non-performing financing (NPF). Islam religiosity at province level is measured by five proxies: the number of Islamic schools, Hajj applications, Islamic seminary schools, mosques and halal certificates. The paper: "Does Religiosity Affect Financing Activity? Evidence from Indonesia" by Wijaya, Moro, and Belghitar, has been submitted to *Business Ethics Quarterly*.

Chapter 4 (empirical paper number 2) examines the role of trust in supporting business-to-business relationships in Islamic culture. This chapter takes into account financing relationships between Islamic and conventional bank managers with firm managers. Perceived trustworthiness of the firm managers is measured based on two trustworthiness dimensions: values-based trust (integrity and benevolence) and competence-based trust (ability). The paper: "Trust in Islamic Business-to-Business Relationships. Evidence from Indonesia" by Wijaya, Moro, and Belghitar, has been submitted to the *British Journal of Management* (current status is revision).

Chapter 5 (empirical paper number 3) explores the role of trust in different financing products offered by Islamic banks: PLS (*Mudharaba* or *Musharaka*) and non-PLS (*Murabaha* and *Ijara*). Consistent with Chapter 3, perceived trustworthiness of the firm managers is measured based on two trustworthiness dimensions: values-based trust (integrity and benevolence) and competence-based trust (ability). The paper: "Islamic Financing products and Trust in Firm Managers" by Wijaya, I.F., Moro, A., and Belghitar, Y. is under preparation to be submitted to *Global Finance Journal*.

Chapter 6, a general discussion, highlights the findings and provides a short discussion on implications. Chapter 7, the conclusion, lists the key findings of the empirical papers and their theoretical contribution, and provides guidance for future research.

4. Academic Conferences

Table 1 shows the information related to conference submissions. In addition, the conceptual framework as part of empirical paper number 3 (Chapter 5) won the poster competition in the Cranfield Doctoral Network Annual Event 2018, 17 September 2018 (shown below).

Table 1. Submission to academic conferences

No	Chapter	Empirical Paper	Title	Conferences	Date
1	4	2	Trust and Credit Availability: A Comparative Study in Islamic and Conventional Banks	LAPE-FINEST Spring workshop, Bank performance and Financial Stability, University of Limoges, France	5 June 2018
2	5	3	Trust and Financing Availability in Different Financing Products	Young Finance Scholars Conference, Sussex University, UK	13-14 June 2018
3	5	3	Trust and Financing Availability in Different Financing Products	Brunel Finance Conference, Brunel University, UK	8 July 2018
4	4	2	Trust and Credit Availability: A Comparative Study in Islamic and Conventional Banks	Financial Management Association annual meeting conference, New York, USA (online/virtual)	20-23 October 2020

Prize Winner for the Poster Competition


Cranfield University

Cranfield Doctoral Network Annual Event 2018

17 September 2018

Prize Winner
for the Poster competition

awarded to

Ibrahim Wijaya

Professor Tom Stephenson,
Pro-Vice Chancellor
Research and Innovation,
Cranfield University

Chapter 2 – Research Underpinning: Why Religiosity and Trust might be Relevant in Accessing Credit in Indonesia

This PhD thesis explores the area that is at the intersection of trust, religion, ethics and culture in the Islamic context. This quite long opening chapter explains the rationale behind the general research question, which is *"Do religiosity and trust affect financing activities in Indonesia?"* It is apparent that a good number of different actors play an important role in this research. Thus, it is mandatory to introduce them one by one and the scope, so that the reader can properly appreciate their role in the research question.

The first main actor that I want to introduce is the ethical teaching in Islam. I start by explaining the Islamic teaching and how it informs the basic ethical background in Indonesia. Moreover, in order to properly appreciate the extensiveness of the role of such teaching and how it affects people's behaviour, I discuss how the teaching has been disseminated during the last century by exploring the major players in teaching Islam in Indonesia and how they have shaped the way in which Islam is taught. In so doing I will challenge some of the arguments put forward by Weber (1930) about the differences between Indonesian Islam ethics and Protestant ethics, by showing that there are more similarities than originally expected. Having provided the reader with, I hope, a clear picture of Islamic teachings and the religious actors that shape Indonesian Islam, I will present some empirical evidence to support my general argument about the role that trust (i.e., the second actor but can still be considered the major character of this work) can play in the financing of small firms in Indonesia. In so doing I will also rely on some interviews that have been undertaken in spring 2018. Thus, I will conclude the chapter by summing up the arguments and by justifying the research question.

1. Islamic Teaching

Islamic teaching, ethics, and trust are inextricably linked. Eggen (2011) shows the concept of trust and ethics in the *Quran*. The *Quran* discusses the concept of ethics in three parts: the ethical nature of God (divine ethics) which consists of the beautiful names of God (*asmaul husna*), e.g., *Ar-Rahman* (The Beneficient), *Al-'Aleem* (The All-Knowing), *Ar-Raoof* (The Most Kind), *Al-Barr* (The Source of All Goodness), and many more (there are 99 of them); the attitude of man and woman towards God and to act in certain ways; and social ethics, i.e., regulation in the form of specific commands and prohibition (Izutsu, as cited by Eggen, 2011).

One of the most important attitudes for a man or woman towards God is "trust in God" or *tawakkul*. Not only is this important because trust is a prerequisite for faith, as mentioned in Quran 5:23 "If you are true believers, put your trust in God", but also there are so many verses that mention the intimate relationship between faith and trust in God "Let the believers put their trust in God" (Quran 5:11; Quran 9:51; Quran 14:11; Quran 58:10; and Quran 64:13) (Eggen, 2011). The strong repetitive verses in the *Quran* on the human being to trust God are grounded on the moral ontology of God being trustworthy "put your trust in God: God is enough to trust" (Quran 33:3) (Eggen, 2011). Therefore, it is also not surprising that one of the most salient attitudes in social ethics is a man or woman being trustworthy or "*amana*" to both God and human beings (see Quran 4:58, Quran 23:8, and Quran 70:32) (Eggen, 2011). *Amana* has a root meaning trust as the opposite of betrayal and safety as opposite of fear (Eggen, 2011). Furthermore, Eggen (2011) concludes that the notion of *amana* in the *Quran* has three aspects: (1) *Amana* as obligatory matters "Believers, do not betray God and the Messenger, or knowingly betray what is entrusted to you" (Quran 8:27); (2) *Amana* as deposits "God commands you to return things entrusted to you to their rightful owners and if you judge between people, to do so with justice: God's instructions to you are excellent, for He hears and sees everything (Quran 4:58) (see also Rice 1999; Uddin 2003); and (3) *Amana* as trustworthiness (honesty and integrity) "Father, hire him: a strong, trustworthy man is the best to hire" (Quran 28:26). Moreover, the main antithesis of trust according to Eggen (2011) is betrayal (*khiyana*) which has meaning in the reduction of faithfulness or the neglecting or failing in *amana*, or when someone entrusted with something is not sincere. Arguably, the meaning of *amana* in the *Quran* is in line with the meaning of trust in Western literature, such as "Expectancy held by an individual or a group that the word, promise, verbal, or written statement of another individual or group can be relied upon" (Rotter, 1967). Moreover, the concept of *tawakkul* has a root meaning "relying on someone else for your affairs", while the lexical meaning of the verb *wakala* is "leaving something to someone, that someone is taking responsibility for something" (Eggen, 2011). The arguments presented above suggest that the Islamic teachings of *tawakkul* and *amana* are very relevant in supporting business-to-business relationships, especially in reducing the transaction cost, as business-to-business relationships without trust will make the cost for monitoring and contract enforcement very high (Chiles and McMackin, 1996; Dyer and Chu, 2003; Fukuyama, 2001).

Over and above the *amana* and *tawakkul* concepts, the *Quran* and *Sunnah* also provide guidance on behaving in ethical manners, which are also relevant in business-to-business relationships. As mentioned by Ali et al. (2013, p.469) "Islamic ethics refers to specified rules that govern individuals and organizational conduct and seek to insure generosity, openness, and accountability in behaviour and actions, while safeguarding societal interests." The concept of *amana* and ethical manners overlap, as to behave in ethical manners will make a person trustworthy (Ali, Al-Aali and Al-Owaihan, 2013; Hosmer, 1995). Interestingly, both Islamic ethics and trust have a similar objective, to create a good society (Hosmer, 1995).

Literature on Islamic business ethics have shown many verses from the *Quran* and *Sunnah* that support social ethics such as: 1) honesty[1] (Abeng, 1997; Ishak and Osman, 2016; Uddin, 2003); 2) responsibility that represents completion of task (Ishak and Osman, 2016; Rice, 1999; Uddin, 2003); 3) knowledgeable (*itqan*), as knowledge is an important element in getting a job done in a perfect manner[2] (Ishak and Osman, 2016); 4) good intention[3] (Ishak and Osman, 2016); 5) transparency in relationships so that defects have to be disclosed (Rice, 1999; Uddin, 2003); 6) fairness in contract negotiation (Rice, 1999); 7) unity or cooperation (Rice, 1999); 8) integrity: "The partner who uses another's property in trust should be an *amin*, a trustworthy person. Because of his integrity, honesty, sincerity, and faith in God, neither does he 'devour' his partner's property by 'false' or 'illegal' means nor does he substitute his partner's superior possessions with something inferior" (Beekun and Badawi, 2005, p.136); and 9) *ihsan* (benevolence) (Ali, Al-Aali and Al-Owaihan, 2013). Interestingly, the Islamic ethical dimensions and/or trustworthiness dimensions in Islam are in line with the trustworthiness dimension in Western literature, such as ability, benevolence and integrity (Mayer et al. 1995; Nooteboom et al. 1997).

It should be noted that Islam not only considers business activity to be an acceptable pursuit but also a dignified activity as Prophet Muhammad was a successful and trustworthy merchant (Abeng, 1997; Uddin, 2003). In Islam, Prophet Muhammad becomes the excellent model and perfect example of character in every aspect of life, including business (Beekun, 2012). For detailed reasons see Table 2. Furthermore, Beekun (2012) identifies seven core virtues of Prophet Muhammad: truthfulness and integrity, trustworthiness, justice, benevolence

[1] "Woe to those who deal in fraud'' (Quran 83:1), "And observe the weight with equity and do not make the balance deficient" (Quran 55:9).
[2] "[…] And follow not that of which you have not the knowledge; surely the hearing and the sight and the heart, all of these, shall be questioned about that" (Quran 17:36).
[3] "The reward of deeds depends upon the intentions and every person will get the reward according to what he has intended. So whoever emigrated for worldly benefits or for a woman to marry, his emigration was what he emigrated for" (*Hadits* narrated by Bukhari).

(*ihsan*), humility, kindness, and patience. He (p) also practised these core virtues tangibly, such as Prophet Muhammad is a very trustworthy person and people named him *al-ameen* (the trustworthy), as He (p) never cheats people and His enemies never accuse Him of lying, hence one of his enemies entrusted properties to Prophet Muhammad (Beekun, 2012).

Table 2. The Reasons for the emulation of Prophet Muhammad

No	Quran and Sunnah
1	Quran (68:4): "And You (Muhammad) stand as an exalted standard of character
2	Quran (33:21): "There has certainly been for you in the Messenger of Allah an excellent pattern for anyone whose hope is in Allah and the Last Day and [who] remembers Allah often."
3	Prophet Muhammad has a mission to improve the moral character of the people, as He (p) said "I was not sent except to perfect moral characters" (Al-Albani, 1985, compiler Hadits)

Source: Beekun (2012)

2. Religious Actors and Religious Teaching in Indonesia

As mentioned by Fukuyama (2001), religion, in our case Islam, shapes trust. However, who can deliver Islam religious teaching to instil trustworthy behaviour into society, especially if the State is a non-theocratic one? Religious teachings, including ethical and trust teachings could be delivered to society through religious actors and organizations (Basedau, Gobien and Prediger, 2018). Priest (*ulama*) groups, faith-based organizations and religious networks can all reinforce religious teachings and promote new religious ideas (Basedau, Gobien and Prediger, 2018). In the context of Indonesia, mosques, Islamic schools and Islamic seminary schools are important actors to deliver religious teachings. In addition, a big Muslim organization such as Muhammadiyah also plays an important role in shaping Islam and economic behaviour in Indonesia.

Indonesia is an interesting (and yet unique) setting in which to explore the role of religiosity and trust in financing activities. As mentioned by Noland (2005, p.1220), thanks to the past four decades of development, Indonesia, as the world's largest Muslim country, has grown economically far more rapidly than the world average. This fact is in contrast to other studies that have shown that the Muslim share of the population is negatively associated with economic growth (Barro and McCleary, 2003) and Islam is the religion that least supports attitudes towards economic growth (Guiso, Sapienza and Zingales, 2003).

Since Max Weber's book (Weber, 1930), there has been a growing interest in examining the relationship between religion and economic behaviour, including in Indonesia. Weber's argument that the absence of inner-worldly asceticism of Islam, i.e., the ethic of hard work and thrift (Turner, 1974), might be true in the context of Indonesian Islam but only up to 1920 (Geertz, 1956; Palmier, 1954).

However, since 1910, both rural and urban *santri*, i.e., a religiously sophisticated people, started to be influenced by reformist ideologies from the Middle East (Geertz, 1956). *Santri* tries to justify new social and economic ethics and purify Islamic tradition from mysticism values. An important media to support the purification process was Hajj (Geertz, 1956). By doing the pilgrimage of Hajj, *santri* can increase their knowledge about Islam. Not only that, the increasing interest to do the very costly Hajj trip shapes the economic behaviour of *santri*, such as "*gemi*" (obsessive thrift, a value which has been neglected by *abangan*), to work hard, and to avoid ceremonial and festival expenditure such as *selametan* (Geertz, 1956) (for the Muslim *abangan* group, i.e., the group that integrates Hinduism, Buddhism, and Islam, this is an important communal feast[4]). Around 1920 a large-scale movement on "back to the Quran", a religious reform which was initiated by urban *santri* who had returned from Hajj (Geertz, 1956), started to gain momentum. The religious reform was characterized by *selametan* that need to be changed into simple prayer, contributing to Muslim organization, and *zakat*.

[4] We can find *selametan* on almost every occasion which has ritual significance for the Javanese, such as pregnancy, birth, circumcision, marriage, and death; Eid and the Prophet Muhammad's birthday; to prevent illness, theft, witchcraft; begin a new enterprise, moving home; and to pacify village guardian spirits. During the *selametan*, food will be served, words will be chanted, and the neighbours will be invited (Geertz, 1956).

In the same period, Muhammadiyah, as a modernist urban group of reformist Muslims established by Ahmad Dahlan in 1912, took part in the introduction of the suggested reformation-modernization process within Indonesian Islam (Sukidi, 2006). Dahlan, very much concerned about the poverty and backwardness of the people (Fuad, 2004), thought that education and health programmes mirroring those of Christian missionaries were the potential solutions to improve the Muslim condition and to promote the religious ideas of Islam (Fuad, 2004). In 1918, Dahlan started to open Western-style (modern) schools and five years later he also opened the first clinic (Fuad, 2004). The role of Muhammadiyah in shaping Islamic teaching in Indonesia grew through time so that today it plays an important role in the education and health sectors. Indeed, since the government can only fulfil 40% of the demand for education and health, Muhammadiyah provides many schools and also offers university education. It also runs hundreds of hospitals all around the country (Fuad, 2002). The strategies of Muhammadiyah to introduce Islam were divided into three groups (Abdullah, 1994): (1) introduce Islam straightforwardly to the ignorant Muslims; (2) develop knowledge of Islam to the general majority of Muslims, via introducing both *Ibadat* and *Muamalat* aspects with high practical business examples such as keeping promises, honesty, debt repayment, thrifty behaviour and hard work; and (3) consolidate knowledge of the devout Muslims, encouraging them to pay *zakat* under the value of "the success should help the poor". Strategies 2 and 3 are in fact indistinguishable. In fact, Muslims need to pay *zakat* only if they have wealth over 87.48 grams of gold (*Nisab*) over a period of 354 days (the number of days in a lunar year–*hawl*). Consequently, only those who have worked hard and shown thrift can pay *zakat*. The social ethic to work hard (productive work) is in line with Quran 62:10 "And when the service of prayer is over, spread out in the land, and look for the bounty of God and remember God a great deal that you may prosper" (Abeng, 1997; Kuran, 1997). The social ethics of the circulation of wealth and income redistribution, i.e., wealth should be shared with those less fortunate, is one of the applications of Quran 9:103 (Abeng, 1997; Rice, 1999). The consequent important role of hard work and its link to the Muslim religion partially mirrors the logic of the Protestant ethic, in contrast with what Weber argued.

Moreover, the role of benevolence between Muslims is stressed by Abdullah's (1994) ethnographic study. Moneylenders tended to exploit the borrowers (Abdullah, 1994). Muslim successful businessmen (which were usually "Haji", i.e., a person who has performed the pilgrim of Hajj and back to Indonesia), were willing to challenge moneylenders and support small borrowers by providing finance and helping less fortunate businessmen so that they would not be exploited by moneylenders. These Haji usually did not chase repayment from the borrowers when they were facing difficulties. There were strong values held by these Haji, that religion not only covers spiritual but also worldly affairs as well. These Haji also believed that if religious practices only focus on the spiritual aspect, it will make Islam underdeveloped (Abdullah, 1994). Again, the values held by these Indonesian Muslim businessmen or Haji, are in contrast to Max Weber's characterization of Islam (Sukidi, 2006; Turner, 1974).

Weber argued that asceticism to relieve religious anxiety in Islam was blocked by two social groups: (1) the warrior group which was the carrier of Islam; and (2) the *sufi* group which develops a mystical religiosity. The warrior group reinterpreted the quest of salvation to the quest of land, while *sufi* mysticism introduced magic to Islam and watered down its monotheism. Weber also views Islam as a religion that has no double-edged predestination concept but predetermination (Sukidi, 2006). Consequently, the ethic of hard work or inner-worldly asceticism was absent in Islam. In fact, evidence suggests that Weber's view does not apply to Indonesian Islam. Sukidi (2006) argues that Muhammadiyah is a type of Muslim puritan, and share several similarities with Calvinism: first, both Calvinist and Muslim puritans always call to go "back to the scripture" (Bible or Quran); second, similarly to Calvinism, i.e., there are no religious intermediaries in the divine relationship between humans and God, believers in Islam have direct responsibility to Allah; third, Calvinism rejects all magical-sacramental means in the quest for salvation. Muhammadiyah also opposes *bid'a* (innovation in *ibadah*), *takhayyul* and *khurofat* (superstition) because all these magical elements are anti-rational. Therefore, these elements should be excluded from the practice of Islam (see Geertz (1956) for examples of *selametan* in Indonesia); fourth, Muhammadiyah promotes rational independent thinking as opposed to *taqlid* (uncritical acceptance of clerical authority); finally fifth, both Calvinism and Muhammadiyah have adopted a stance of inner-worldly asceticism, i.e., the tendency to work hard in the world as opposed to withdraw from the world (Sukidi, 2006). The founder of Muhammadiyah, Ahmad Dahlan was an entrepreneur (manufacturer of batik fabric) and also a preacher. He promoted and practised the virtue of hard work tangibly (Sukidi, 2006). Dahlan is also recognized as an honest, diligent, helpful, and exceptionally clever man. The Dutch official, Rinkes, regarded Dahlan as a prototype of the Indonesian epitome of the Calvinist ethic (Peacock 1978 as cited by Sukidi 2006).

All in all, there is a connection between Islamic ethics and trustworthy teachings, religious actors, religious practice and the behaviour of people in business and economic activities in the case of Indonesia.

3. Financing Relationship and Trust. Some Preliminary Empirical Evidence to Support the Research Question

So far, I have explored the theological concept that connect trust, Islamic ethics and Islamic teachings which mainly derives from *Quran* and *Sunnah*. The religious ideas that shape the trustworthy and ethical behaviour of people are delivered by religious actors, e.g., faith-based organizations, Islamic schools, Islamic seminary schools and mosques, and are influenced by religious practice, e.g., Hajj. In Indonesia, Muhammadiyah has a core role in shaping the behaviour of the people and in promoting the values of Islam that are similar to Calvinism.

But, are the cultural, religious and ethical aspects in any way informing the relationship between entrepreneurs and banks? With regard to the financing activity in Indonesia, personal relationships and trust are expected to play an important role in supporting financing relationships, especially in the context of small businesses and banks (I use the term financing as the term lending is only suitable for conventional banks). There are at least five possible reasons: (1) small businesses prefer to choose a bank for financing and are willing to provide access for the bank managers to gather information (inside debt), since placing a debt or asking for financing directly from the market is very costly compared to bank financing (Fama, 1985); (2) Indonesia is a Muslim country with a salient collectivistic culture, e.g., strong interdependence and de-emphasized individualism (Geertz, 1956) and a low individualistic index score (Hofstede, Hofstede and Minkov, 2010; Triandis et al., 1986). In the collectivistic society (Cannon et al., 2010; Hofstede, Hofstede and Minkov, 2010; Hui and Triandis, 1986; Triandis, 1996; Triandis et al., 1986), trust is built based on the intention of another party (benevolence or *ihsan*) (Doney, Cannon and Mullen, 1998). In addition, in collectivistic society, a party often relies on a known trustworthy party to provide information about an unknown potential business partner (transference process) (Doney, Cannon and Mullen, 1998; Hofstede, Hofstede and Minkov, 2010; Lyon, 2000; Nguyen, Le and Freeman, 2006); (3) objective evaluation based on facts and figures is not enough to support financing decisions, since the success of the business is influenced by motivation and the personal characteristics of the small business managers (Ferrary, 2003). The success of the business will affect the success in the repayment of the financing; (4) the facts and figures provided by the small business in Indonesia are not reliable enough to support the decision making[5]; and (5) business parties in Indonesia need to rely on strong personal relationships and trust, since one of the mechanisms that can allow dealing with low levels of trust, i.e., institution/law, is weak (Bohnet, Herrmann and Zeckhauser, 2010; Hainsworth, 2007; Juwana, 2006; Levinson, 2001; Rademakers, 1998). The weak rule of law was caused by the Soeharto regime that led Indonesia for 32 years. During this era, i.e., "Orde Baru (New Order)", corruption, collusion, and nepotism became a chronic problem so that lack of accountability, transparency, democratic institutions and free press was endemic (Robertson-Snape, 1999). Consequently, the court's decision became "unpredictable" as it is a function of money and politics (Juwana, 2006; Levinson, 2001). In a such context, the contract breaker in a business-to-business relationship may not be punished (Bohnet, Herrmann and Zeckhauser, 2010). Therefore, business parties need to find partners that have strong form trust (hard core trustworthy partners), as stated by Barney and Hansen (1994, p.179)

> "In strong form trust, trust emerges in the face of significant exchange vulnerabilities, independent of whether or not elaborate social and economic governance mechanisms exist, because opportunistic behavior would violate values, principles, and standards of behavior that have been internalized by parties to an exchange."

Interestingly, strong form trust does not emerge from the structure of an exchange but from values and principles that derive from personal beliefs and values (Barney and Hansen, 1994). Arguably, personal beliefs and values are shaped by religious teachings as religion creates and describes moral values (Abeng, 1997; Hofstede, Hofstede and Minkov, 2010).

During the interaction between bank managers and small business managers, trust violation and distrust could emerge. Thus, trust building and trust violation are dynamic

[5] I conducted a simple survey focusing on the accounting issue in 135 small business enterprises in Surakarta, Indonesia in 2007. I found that: (1) 63.6% of the enterprises did not have a business entity, i.e., the revenues and expenses from the business activities were mixed with private activities; (2) 66.01% and 60.71% of the enterprises did not have revenues and account receivable records, respectively; and (3) 74.11% of the sample had no liabilities record.

concepts and the decline of trust might emerge gradually or even because of a single violation event (Lewicki and Bunker 1996). Sitkin and Roth (1993) distinguish trust violation from distrust. Trust violation is related to the unmet expectations about a specific task. Furthermore, there are two causes of trust violation; they are an isolated event or a person's behaviour in a specific context. Distrust of other party occurs when an individual is not sharing key cultural values with the trustor; in other words, there is a generalized value incongruity between the parties. Sitkin and Roth's (1993) concept works effectively in the Indonesian financing context since (1) in financing activities, communication plays a pivotal role (thus, bank managers might obtain an explanation of the cause of the problem before making a judgement regarding the behaviour of the borrowers that violates the trust or causes distrust); and (2) there is a strong paternalistic or "*bapakism*" culture in Indonesia (*bapak*=father) (Rademakers 1998, p.1010) as he states

> "This deeply rooted paternalism involves a high degree of centralization of power and authority in families, but also in firms and even on the state level. Thus, for the inter-firm exchange of goods and information, personal arrangements with the *bapak* are likely to be far more relevant than contracts, formal rules, or procedures."

Furthermore, Rademakers (1998) finds that a supplier who cheated on the *Jamu* manufacturer by putting stones in with herbs, has been punished by not receiving orders from the *Jamu* manufacturer any more. However, after some time the relationship was continued again because the *Jamu* manufacturer believes that the supplier needs to be helped to earn a living. This is the manifestation of the relationship between *bapak* (father) and *anak* (son).

In order to provide a preliminary insight on the role of trust in financing relationships between small business managers and bank managers, I conducted phone interviews with 16 bank managers from several provinces in Indonesia, focusing on three main themes: trust building process, trust violation, and distrust. I preferred exploring the trust violation and distrust as these themes give more detailed examples of trustworthiness evaluation from the perspective of the bank managers. Table 3 shows the interviewees' characteristics.

Table 3. Characteristics of the interviewees

No	Type of Bank	Role of Interviewee	City	Province
1	Islamic large bank	Regional (provincial) manager	Balikpapan	East Kalimantan
2	Islamic large bank**	Branch manager	Surakarta	Central Java
3	Islamic large bank	Branch manager	Kudus	Central Java
4	Islamic large bank	Bank officer	Surakarta	Central Java
5	Islamic large bank*	Loan manager	Malang	East Java
6	Islamic rural bank	Director	Klaten	Central Java
7	Conventional large bank	Bank officer	Klaten	Central Java
8	Islamic large bank	Deputy general manager	Jakarta	DKI Jakarta
9	Islamic large bank	Regional (provincial) manager	Denpasar	Bali
10	Islamic rural bank (2 interviewees)	Director and Business manager	Bekasi Bekasi	West Java West Java
11	Islamic large bank	Bank manager	Sragen	Central Java
12	Conventional large bank*	Bank manager	Ngadiluwih	East Java
13	Conventional large bank*	Branch manager	Flores	Nusa Tenggara Timur
14	Islamic large bank*	Branch manager	Semarang	Central Java
15	Islamic large bank	Branch manager	Samarinda	East Kalimantan

*interview with comprehensive notes (no voice recording)
**interviewee asked to be interviewed in English

3.1 The Interview

In order to perform the initial evaluation on the quality of the borrowers, bank managers use data and facts from external sources, such as the history of credit from the Central Bank of Indonesia and electricity bills (to assess the repayment capacity) of the small business managers (enterprises). Moreover, bank managers also look at the savings (current) account to assess the performance of the business. One Islamic rural bank director stated,

> *"What we want, the main thing, the main thing, frankly speaking, is a credit history. If the credit history is good, we will proceed to the next step. In our bank, if the credit history is not so good, we hardly proceed to the next step."*

One Islamic bank regional manager also stated that payment history and the condition of the business are two initial aspects in evaluating the quality of the entrepreneur. In fact, savings or current accounts might reflect the sales volumes of the entrepreneurs. A better flow of information might be obtained by the bank managers if the small business managers were to use as many of the services as possible that are provided by the bank (Petersen and Rajan, 1994). However, the business condition needs to be checked as well to examine the entrepreneur's challenges.

Following the initial evaluation, bank managers need to gather soft information from third parties such as neighbours, suppliers, buyers, associations of the entrepreneur, and existing customers who have a good relationship with entrepreneur. Interestingly, one interviewee from the conventional bank explained he needs to gather information about entrepreneurs from at least five of their neighbours. He is interested in exploring the benevolence (*ihsan*) of small business managers towards their neighbours. Typically, bank managers need to gather information from more than one neighbour in order to avoid a mixture of fact, falsehood, suspicion, and gossip that might be gathered from a disgruntled neighbour (Lipartito, 2013). In addition, to optimize the information gathering, one conventional bank manager stated:

> *"I can hang out in the "warung" (small café) near the borrower's house. I can dig information from the café's owner and the neighbour. Otherwise, if I have an existing customer near the applicant's house, I can visit him/her, chit-chat with him/her then I can ask about the borrower."*

The *warung* is a great place to dig for a neighbour's comments on the entrepreneur. The development of trust based on the transference process is salient in the collectivistic society, in which relationships are based on solidarity and interdependence (Doney, Cannon and Mullen, 1998; Geertz, 1956; Lyon, 2000). In the same vein, a trustor in high uncertainty avoidance cultures also forms trust based on transference (Doney, Cannon and Mullen, 1998). In fact, bank managers in Vietnam use this strategy to support the lending decision (Nguyen et al., 2006). Finally, the bank managers are also concerned with the daily lives of the borrower. Thus, one Islamic bank manager argued she needs to visit the entrepreneur's house to meet and talk with his/her family members in order to better understand the character of the borrower. All in all, interview evidence confirms the importance of information from third parties (gossip) as shown by Howorth and Moro (2006).

With regard to the interaction between the small business manager and his/her supplier or buyer, bank managers, both in Islamic or conventional banks, would like to know not only the payment performance of the borrower to his supplier but also the delivery performance from the entrepreneur to his buyer. In fact, since the *Murabaha* mode of finance is operated based on an instalment sale basis (the Islamic bank is the seller and the entrepreneur is the buyer), one Islamic bank manager mentioned that he needs to confirm to the borrower's supplier when the transaction is executed using a *wakala* scheme, i.e., the small business is appointed by Islamic bank to buy the goods by him/herself but he/she needs to report that procurement to the Islamic bank manager[6]. In a PLS financing scheme[7], one Islamic rural bank director explained that he wants to know the credibility of the person or organization who give the project to the entrepreneur since he is only willing to give a PLS finance scheme based on the project.

Seemingly, both Islamic and conventional bank managers are interested in the negative reputation of the entrepreneur when gathering information from third parties. One conventional bank manager explained how he tries to find out about any late payment by the entrepreneur from his informal society group, e.g., *arisan* (rotating saving and credit association) and *kumpulan RT*[8]. One Islamic bank manager who gave financing based on a PLS financing

[6] The underlying transaction in *Murabaha* is a sale by instalment with mark-up profit (Abedifar, Molyneux and Tarazi, 2013): the Islamic bank buy the goods requested by the firm and then sell the goods to the firm with payment by instalment so that business customers are asked to pay to Islamic banks the original price of the goods plus the additional (trade) margin asked by Islamic banks. However, unlike loan in conventional banks, the mark-up (margin) is agreed in advance and cannot be repriced during the financing period.

[7] The PLS financing scheme works based on the partnership: Islamic banks (*shahibul maal*) will invest money in an entrepreneur's business/project. Any loss of the business should be borne/shared by Islamic banks unless the loss is caused by the negligence or violation of the contract by the firm customer (*mudharib*). In fact, the proportion of profit or loss also needs to be determined in advance (Soufani, Cole and O'sullivan, 2015)

[8] The men in the same neighbourhood gather once in a month to discuss the neighbourhood issues and at the same time they collect money from the members that can be used to give loans to any members of the neighbourhood (similar to rotating saving and credit associations). In this case, the information related to reputation of people, especially about repayment and commitment, can be easily obtained.

scheme to the entrepreneur (a housing developer) also tried to find out if there were any challenges in the previous project that had been completed by the entrepreneur. Another Islamic bank manager stressed the importance of the association as he stated:

> *"Does the applicant join the association or not? If he joined, what kind of role has he? Then I also need to check with the association. Is there any negative reputation or positive ones? and how about his/her contribution to the association."*

This is in line with Earle and Siegrist (2006) who found that negative information might undermine the subsequent information of another party. Moreover, negative events such as lies from one party are not only more salient than positive events but also have a greater impact on trust than positive events (Slovic, 1993). Interestingly, people also tend to see bad news as more credible than good news (Slovic, 1993). Moreover, the role in the association represents the benevolence aspect of the entrepreneur which could lead to the decision to trust (Howorth and Moro, 2006)

Another important aspect in evaluating trustworthiness is the interview process with the applicant. One Islamic bank regional manager confirms that assessment of trustworthiness might be derived from the way entrepreneurs speak and also from the detail in providing information. In fact, during the interview with the entrepreneur, bank managers assess their honesty. Our interviewees suggest they like to match the data in the financing application with what the small business managers tell them. In fact, one Islamic bank manager pointed out he also needs to check the condition of the business on the spot after the interview. Contrary to this, bank managers in Italy rely more on the information from third parties than information gathered from the interview (Carnevali, 1996).

All in all, the two first messages from the interviews are: (1) bank managers in Indonesia rely on several mechanisms to build trust, i.e., trustworthy known partner (transference process), the interview process, the informal and formal activities of the customer in the neighborhood and association of the entrepreneur, and the relationship between the customer and its supplier and buyer; and (2) bank managers are interested in exploring any negative reputation of the customer.

Turning our attention to trust violation and distrust, one Islamic bank branch manager explained he started by making a note of simple things, such as the small business manager arriving on time or not to the meeting and the way the applicant was dressed. The impression given by these small things can cause trust violation. However, if the small business manager shows his/her dishonesty by stating/showing differently from what he/she wrote on the financing application, it also causes distrust. Moreover, if the entrepreneur exaggerates his/her business performance, it causes distrust as well. As one Islamic bank manager put it:

> *"We usually match what the entrepreneur said during the interview with the real business performance. For example, during the interview, the customer stated that he/she has daily revenues Rp 5 million, but after we checked on the spot, the values of raw material are less than half of what he said. So, there is something wrong with his/her character."*

There is also evidence that moral hazard (e.g., side streaming: the entrepreneur uses the money for a different purpose or take on a higher risk project) causes a distrust. Thus, to quote one Islamic bank manager:

> *"When we see side streaming, indicating that the applicant does not use the funds in accordance with the application, it warns us to start distrusting the entrepreneur."*

Furthermore, he stated that visiting the small business manager's place after he/she had obtained the money from the bank is an important activity to detect side streaming and moral hazard. A conventional bank officer also confirmed this issue, as he pointed out that banks give money based on the entrepreneur's need. Thus, he begins to distrust the entrepreneur when there is evidence of side streaming (moral hazard). Since side streaming emerges after the loan has been accepted, bank managers might increase their vigilance on the borrower. In addition, distrust could also be caused by giving inaccurate information about other entrepreneurs' financing sources and amount.

The assessment of any monthly payment problems needs to be conducted before identifying the emergence of trust violation or distrust. Thus, when there is a problem with repayment, banks might try to gather further information from the entrepreneur. This is because small business operations are frequently disturbed by isolated events. As one Islamic bank officer explained, a borrower might pay his/her debt behind schedule because of illness or he/she might simply be out of town. These reasons could be accepted by the banks and do not cause distrust. Furthermore, one conventional bank manager suggested a non-performing loan might not cause distrust if the borrower is in a difficult situation, but still pays his loan to the best of his ability. This is in line with Lewis and Weigert (1985, p.969) who stated "An adequate conceptual analysis of trust begins by recognizing its multi-faceted character. It has distinct cognitive, emotional and behavioural dimensions which are merged into a unitary social experience" and the culture of "*bapakism*" or paternalism in Indonesia (Rademakers, 1998). In the same vein, an Islamic bank manager who found there was a repayment problem might explore further the roots of that problem; they would then provide some solutions, such as taking over the financing from other banks or provide tips to improve the sales volumes.

Interviewees also confirmed that distrust might emerge when the entrepreneurs have the ability to pay the financing, but they intentionally default on their financing or pay behind schedule. In fact, there is evidence that payment behind schedule is a big problem for an Islamic bank. Thus, to quote one Islamic bank manager:

"The worst thing is to pay the financing behind schedule. Especially when the lateness is over a month; this is a strong warning for the bank. There is something wrong. Distrust emerges."

The impact of late payment over one month is huge[9]. One Islamic bank regional manager stated:

"When the payment is late, for over a month, sometimes we will not give any tolerance. We might say to the borrower, please pay all of your financing on the due date, and do not continue to ask for financing from us again."

The third message of the interview results is that during the relationship between bank manager and entrepreneur, trust violation and distrust might emerge. However, bank managers need to find the root of the problem before making the judgement of distrust.

4. Overarching Question

In the first part of this chapter, I have shown the Islamic ethics that are grounded on the *Quran* and *Sunnah*, encourage trustworthy behaviour (*amana*). The Islamic ethics and trust can be delivered by religious actors and be shaped by religious practices. People who live in areas with a stronger religiosity level will try to conform to the norms, values, and principles promoted by religious actors and shaped by religious practices. Moreover, one of the biggest Islam organizations in the country, *Muhammadiyah* (religious actor), actively promotes values that mirror Calvinism.

In the second part, I have discussed that business-to-business in Indonesia is characterized by strong personal relationships between the actors and trust. More specifically, in the context of small business managers and bank managers, bank managers are interested

[9] In Islamic banks, the depositor will get returns but not interest from the money that is being deposited in Islamic banks. The returns are calculated based on the performance of Islamic banks in managing the fund. Thus, there is a withdrawal risk in Islamic banks (Khan and Ahmed 2001).

on the reputation of the customers and the trustworthy behaviour of small business managers will influence the success of the relationship. The emerging overarching question for this thesis is: "*Do religiosity and trust affect financing activities in Indonesia?"*

Chapter 3:

Introducing the Role of Religiosity in Financing Decisions in Indonesia

Islam has been viewed as a religion that is not conducive to supporting economic growth because it is associated with a weak rule of law (Guiso, Sapienza and Zingales, 2003). In the same vein, Max Weber (1930) also views Islam as a religion that is not supportive of capitalism because: (1) inner-worldly asceticism is absent in Islam so that the ethical concept of hard work (*beruf* – that also means vocation) cannot be found in Islam; (2) the quest for salvation has been translated into the quest for land expansion instead of the quest for busines success; (3) the concept of double-edged predestination (those who will be elected as opposed to those who will be damned) is unavailable in Islam as it in fact relies on predetermination that, in turn, cannot shape the strong virtue of hard work to be found in Protestants; and (4) *sufi* mysticism introduces magic to Islam and waters down its monotheism (Sukidi, 2006; Turner, 1974). These four factors, by constraining the development of capitalism, limit the possibility of economic development; besides, research also argues that the underdevelopment of Islam depends on education. Lewis (1993) as cited by Kuran (1997) argues that the education system in Islam emphasizes knowledge acquisition but not knowledge discovery and expansion; scientific methods, such as experiment and observation, are absent. This approach supports an attitude towards life that tends to be backward looking and not supportive of development in general and economic development specifically. Empirical evidence on this point is given by research that shows the negative association between Muslim share of the population and economic growth (Barro and McCleary, 2003) and by works that find that Muslim-majority countries are appreciably poorer than the world's economically advanced countries (Kuran, 2018). Interestingly enough, irrespective of such arguments, Indonesia, which is the largest

Muslim country in the world with around 210 million active Muslims, has grown far more rapidly than the world average during the past four decades (Noland, 2005).

Moving from the apparent clash between general research on Islam that argues its lack of support for economic development and the evidence from Indonesia that it is enjoying a stable and high economic growth, this empirical chapter explores the impact of religiosity on financing activities in Indonesia. Not only does the present work contribute to the limited discussion on the impact of religion and/or religiosity on financing activities (e.g., Al-Azzam et al. 2012; Baele et al. 2014) but, by relying on a more specific religiosity-level measurement (namely religious actors and religious practices at the provincial level to capture the norms, values, principles held by the people living in those provinces), it also allows for a more detailed analysis of the role of Islamic culture in accessing financial resources. In fact, Basedau et al. (2018, p.1110) mention that empirical studies examining the impact of religion and/or religiosity on socioeconomic development face methodological challenges, i.e., unclear conceptualizations and incorrect operationalization of the variables measuring religious dimensions.

The rationale of this first empirical chapter is that religious teaching, by including the teaching of being trustworthy, not to misappropriate others' assets/money, and to behave in an ethical manner, are arguably in line with what the bank managers expect from their customers and thus, increases the confidence that those who follow Islamic teaching are likely to put extra effort in repaying their debt. Besides, the religious teachings are delivered by religious actors which, in turn, shape the behaviour of the people. The same applies to religious practices. Thus, the expectation is that, contrary to the argument by Max Weber (1930) or Guiso et al. (2003), a greater role of Islamic teachings in everyday life can be conducive to lower defaults in repayments and to a greater access to finance. The joint effects of these two forces can, therefore, support economic development.

Does Religiosity Affect Financing Activity? Evidence from Indonesia

Abstract

This study examines the role of religiosity at province level in Indonesia on the financing activities in both Islamic and conventional banks. Our study uses five different measures of religiosity namely: Islamic schools, Hajj applications, Islamic seminary schools, mosques, and certified halal products at province level. The results show that Islamic and conventional banks in stronger religiosity area provide more financing. However, the impact of religiosity is less pronounced for non-performing financing. The results are still qualitatively valid after taking into account the issues of omitted variables, i.e., unobservable beliefs, ideas, and attitude, and reverse causality between religiosity and total amount of financing at province level.

Keywords: *Islamic bank, Conventional bank, Financing, Non-performing finance, Religiosity*

1. Introduction

In his seminal work, Weber points out that Calvinist predestination implies that no one knows whether they were among the elect or the damned and their actions cannot change God's will (Weber, 1930). However, those who are elect, will follow God's teaching so that it is possible to infer they are the elect because of the way they behave. Simplifying Weber's reasoning, those who succeed in terms of accumulation of wealth as the result of a methodical approach of God's teaching and an ethically driven hard-working behaviour, are those who are among the elect. At the same time, Weber explains that Islam does not recognize predestination but predetermination (Sukidi, 2006): because everything has been decided in advance by God, including the economy/wealth of humans. This suggests that Muslim people have no option but to accept God's will. Thus, without the concept of predestination, Islam cannot shape the same strong positive attitude to activities and success that we can find in Calvinism. The result is that the ethical role of hard work as a part of *Beruf* (that in German means both calling/vocation and job) that may be found in Calvinist theology, is absent in Islamic theology.

Irrespective of Weber's view on Islam as a religion not being compatible with the spirit of capitalism (Turner, 1974), the extant empirical research shows a mixed evidence about the relationship between Islam and economic growth (see among others, Barro & McCleary, 2003; Guiso, Sapienza, & Zingales, 2003; Kuran, 1997; Noland, 2005; Pryor, 2007). For instance, Barro and McCleary (2003) show that the share of Muslim population is negatively associated with the economic growth. In a similar vein, Guiso et al. (2003) argue that Islam, among other denominations, provides the least support to attitudes that are conducive of economic growth. Other study finds that the proportion of Muslims in the population has no impact on the economic growth in developing countries (Pryor, 2007). In contrast, Noland (2005) shows that the share of Muslim population in a country is positively associated with the total factor productivity. However, very little research has been performed so far about the relationship between Islam and access to finance.

In what follows we contend that there are at least four main reasons why Islamic beliefs may affect financing. First, Muslim people are asked to emulate the Prophet Muhammad's virtues that are focused on "Speak the truth when you talk, keep a promise when you make it, when you are trusted with something fulfil your trust". Thus, Islam strongly recommends behaving properly and, in the context of financing relationship, to reimburse the financial resources firms have been entrusted of. Some research has shown that religious people are more trustworthy (Tan and Vogel, 2008) and that trustworthy behaviour pays as suggested by research on the role of trust in credit access in conventional banks (Howorth and Moro 2006; Moro and Fink 2013, Howorth and Moro 2012). Second, the religious traditions of Islam emphasize prudence: religious people are less likely to engage in high risk activities (Miller and Hoffmann, 1995). Indeed, Abedifar et al. (2013) find that Islamic banks which operate in countries with more than 90% Muslim population, have a lower credit risk than their counterparts because clients of Islamic banks are more risk averse. Similar evidence is also reported in non-Muslim context: firms headquartered in religious areas enjoy lower cost of debt and greater access to financing facilities (He and Hu, 2016). Third, followers of Islam are more likely to repay their financing contract because they will try to conform to the strict ethical and moral rules brought forward by Islamic teaching, such as not to misappropriate other people's property (Al-Azzam, Carter Hill and Sarangi, 2012; Baele, Farooq and Ongena, 2014). Moreover, it could be argued that subscribers to Islamic teaching are more concerned about the social stigma associated to defaulting finance repayment than non-religious people. Empirical evidence shows that Islam religiosity, measured as the frequency of five-time prayers of the members in a loan-group, is negatively associated with the late repayment (Al-Azzam, Carter Hill and Sarangi, 2012). Evidence provided by cross country studies suggests that religiosity is negatively associated with the default rate/the probability of bankruptcy (Chen et al., 2016). Fourth, Islamic beliefs encourage Muslim people to conduct business in a way that reduces the risk to the providers of finance, by following principles like being trustworthy (Beekun and Badawi 2005), being competent (Uddin, 2003), performing necessary investigations and verifications before taking action (Uddin, 2003), implementing team work (Rice, 1999), taking individual responsibility (Rice, 1999), fulfilling obligations, being honest/truthful, keeping the word/promise (Abuznaid, 2009; Ishak and Osman, 2016; Rice, 1999; Uddin, 2003), caring for the environment (Rice, 1999) and being benevolent (Ali, Al-Aali and Al-Owaihan, 2013). Empirical evidence shows that firms with strict religious orientation (Islamic banks) in Middle East and North Africa (MENA) region are less likely to manage earnings and adopt more conservative accounting policies (Abdelsalam et al., 2016). Evidence from the non-Muslim context shows that firms located in highly religious areas are less likely to have accounting restatement, accounting irregularities, and earning manipulation (e.g., Grullon, Kanatas, & Weston, 2010; McGuire, Omer, & Sharp, 2012). Managers in this highly religious area try to avoid costs or penalties associated with rejecting the standards, values, or beliefs that are considered acceptable or appropriate (Sunstein, 1996). All in all, we might expect that religious people/firms have lower credit risk which matches what Islamic and conventional banks look for in their clients.

Past research tends to look at the role of Islam by exploring it at multiple-country-level (countries where Islam is the major religion if not the official religion). In fact, this approach can produce misleading results for at least two reasons. First, different countries have different cultures, different institutions, different economic development, etc. before any differences in religiosity. Actually, even if a country does have quite common culture, customs, etc., it can have very different levels of religiosity in different areas and it is very difficult to control for these differences in multi country studies. Second, as mentioned by Pryor (2007), different schools of Muslim jurisprudence provide different interpretation of Islamic doctrines and often they do not agree on specific issues. These differences tend to exist at country level while cross-country analysis assumes that the interpretation is homogeneous at country level. All in all, it is easier to isolate the role of Islam in a one-country study to greatly reduce the confounding role of additional variables such as national culture (Hofstede, Hofstede and Minkov, 2010), or differences in terms of interpretation of the rules.

The purpose of this research is to use Indonesian data at provincial level (33 provinces) for the period 2013-2018 to explore the impact of the intensity of Islam religiosity on the total amount of financing provided, and on the percentage of non-performing finance (we used the more general term finance and NPF for non-performing finance). We use aggregated data at province level. Our findings suggest that religion in Indonesia, namely Islam, shapes positive attitudes that support the financing activity regardless of the type of the bank (conventional and Islamic). Interestingly, we also find similar patterns when we split our samples into large banks and small banks. At the same time, our evidence suggests a more marginal role of Islamic religiosity on non-performing finance.

Our study makes several contributions: (1) we provide a new perspective on conducting research on the emerging theme, religion and economic activity (see Iannaccone, 1998), by taking into account the uniqueness of Islam in a country; (2) we extend previous research by focusing on the impact of Islam on bank financing activities in a single country to untangle the conflicting result of the impact of Islam on economic activities; and (3) we extend previous research by comparing the role of religiosity in both Islamic and conventional banks activities. The rest of the paper is organized as follows: the next section discusses the literature review and provides testable hypotheses. Data and methodology are presented in the third section. The fourth section is data analysis followed by conclusion.

2. Literature Review and Hypothesis Development

Religion can shape the attitudes toward economic activities. Weber (1930) shows that the protestant ethic of English Puritanism not only allows for the acquisition of goods, but it also is lawful and in line with the God's will as long as the wealth is not accumulated for the wealth's sake, it is not used to gain a *rentier* position or its accumulation's purpose is not just for enjoyment of life (Weber, 1930). Empirical research provides support to Weber's arguments: the economic growth is positively associated to the growth rate of Protestant adherents (Grier, 1997); Christian tradition is more positively associated with attitudes that are conducive to economic growth than other beliefs (Guiso, Sapienza and Zingales, 2003); and beliefs in hell and heaven, which could inspire positive attitudes towards economic activities, are positively associated with economic growth (Barro and McCleary, 2003).

What about the role of Islam? Kuran (1997) reports three contrasting views about the impact of Islamic beliefs on economic development. The first view is the "economic irrelevant thesis". This approach argues that Islamic beliefs do not play any role in the economic development. The empirical evidence to support this argument is mainly linked to the fact that

Muslim population share has no significant impact on GDP growth or unemployment rate (Pryor, 2007). The second view - the “economic advantage” - is based on the verses in *Quran* that try to encourage effort and enrichment. This approach argues that Islamic teaching provides guidelines about financial regulations, contracting guidelines, distributional instruments, and behavioural norms that support economic growth. The evidence provided to support this theory is the economic growth during the 7th century in regions under Muslim rule. Finally, there is the “economic disadvantage” theory that argues that Islamic teaching is static and does not change so therefore generates the ossification of Muslim knowledge. Lewis (1993) as cited by Kuran (1997) argues that the education system in Islam emphasized knowledge acquisition but not knowledge discovery and expansion. The scientific method, such as experiment and observation, is absent. Lewis (1993) as cited by Kuran (1997) acknowledges that the freedom of innovation (the gate of *ijtihad*) typical of early Islam, when scholars, jurists and theologians were free to perform *ijtihad* to resolve the issues that have not been resolved in the scripture, stopped somewhere in between 9th and 11th centuries compromising the development of knowledge.

In fact, empirical research finds mixed results of the impact of Islam on economic growth so that no final answer has been given to which one of the three above discussed views better describes the role of Islam in economy. Muslim population share is found to be negatively associated with the economic growth (Barro and McCleary, 2003) and Islam is found to be negatively associated with attitudes that are conducive of economic growth (Guiso, Sapienza and Zingales, 2003). In contrast, Noland's (2005) work on cross countries data, finds that Islamic beliefs are not inimical to growth. Furthermore, regressions run on three groups of sub-national data, i.e., India, Malaysia and Ghana suggest that Muslim population share is positively associated with growth in Ghana but negatively associated with growth in Malaysia and no association in India (Noland, 2005). The share of Muslims is found to have no impact on the economic growth in developing countries (Pryor, 2007). The mixed results suggest the specific role that Islam can have in different socio-political contexts and the importance to explore the role of Islam at a country level.

As far as the role of the religiosity and financing is concerned, there are four main reasons why religiosity in general and Islam specifically may support financing activities, especially in dealing with the most important risk in banking activities, i.e., credit risk. The first argument is related to the role of religiosity on risk preferences. Individuals have different preferences in terms of risk-taking behaviour (Miller and Hoffmann, 1995) and religiosity affects such preference because of Malinowski's (1925) argument: “Religiosity is related to the desire to control those things that cannot be controlled given the level of technological sophistication of society (e.g., weather and disease), and it is also a way of dealing with fear and death” (Miller and Hoffmann, p.65). Thus, Miller & Hoffmann (1995) argue that religious people are less likely to take part in excessive risk. Empirical evidence suggests that the frequency of attending religious services and the respondents’ perception of how important religion is in their life are negatively associated to the amount of money gambled in Las Vegas (Diaz, 2000). Similarly, Jewish merchants in Alsace, who used to act as middlemen in the livestock distribution before the mid-twentieth century, were religious, thrifty, but also keen to avoid excessive risk, meaning they avoided conducting business outside their expertise, and they did not hold animals more than 15 days to cut capital invested and expenses (Dana, 2006). In India, groups with strong religious beliefs are found to be negatively associated with the cost of debt, i.e., the interest rate offered by the lenders (Li et al., 2019). Hilary & Hui (2009) find that firms located in more religious US states tend to have low risk exposure (variance in equity returns and ROA), less investment in R&D activity (high risk investment) but enjoy high profitability. Similarly, companies headquartered in US states with higher (Christian tradition) religiosity levels are found to be charged lower spreads and offered larger loan amounts (He and Hu, 2016), suggesting they are perceived as a low risk group. Recently, in a study on risk taking by US hedge fund managers, Gao et al. (2017) show that religiosity, measured as the religious beliefs of a country's population where hedge funds are headquartered, affects the level of riskiness of hedge fund managers' portfolios. They found that hedge fund managers in religious countries took fewer risks with their investments than those where religiosity was less of a factor. As far as risk in Islam is concerned, the religious teaching forbids activities such as gambling and games of chances (*maysir*) and undertaking excessive risky contracts (*gharar*) (Pryor, 2007). Thus, we contend that people who live in Islam-religious area may refrain from engaging in high risk projects, in line with the bank's preferences. Indirect supporting evidence is provided by Abedifar et al. (2013) who found that Islamic banks that are located in the countries with more than 90% Muslim population, have lower credit risk compared to conventional banks.

The second argument is related to the intention to repay the loan. Based on cross countries study, Chen et al. (2016) found that religiosity is negatively associated with the default rate/the probability of bankruptcy. Interestingly, in Pakistan, the same borrower is less likely to default on Islamic financing products than on the traditional financing products obtained from the same bank (Baele, Farooq and Ongena, 2014). In the same vein, religiosity, measured as the frequency of five-time prayers of the members in a loan-group, is negatively associated with the late repayment (Al-Azzam, Carter Hill and Sarangi, 2012). The reason for such behaviour can be explained by the fact that default is seen as a form misappropriation of other people's property, something that cannot be tolerated in Islam (Baele, Farooq and Ongena, 2014). Furthermore, the Prophet Muhammad said "the best among you are those best in paying off debt" (Al-Azzam, Carter Hill and Sarangi, 2012). Thus, bankers are more confident when they provide financing to people who will try their best to repay their financing contract even in the most difficult situation.

The third argument is based on the behaviour of firms which are located in high religiosity areas since they are found to show high ethical attitudes. Du et al. (2014) find a positive relationship between diffusion of Buddhism, measured by the distance between monasteries with the company address, and corporate environmental responsibility (CER). Buddhist teaching, may prevent people from environmental exploitation. Similarly, McGuire et al. (2012) find that companies located in high religiosity areas are negatively associated with accounting irregularities and accounting restatement. Lower earning manipulation was also reported for companies located in higher religiosity areas (more churches and more adherents) (Grullon et al. 2010). The logic is that those who operate in more religious areas are more prone to being aligned with the norms, and try to avoid misbehaviour that can trigger sanctions and penalties from society, as well as avoiding the implied negative label associated to such an unaccepted behaviour. High ethical attitudes such as trustworthiness (Beekun and Badawi 2005), benevolence (Ali, Al-Aali and Al-Owaihan, 2013), competency (Uddin, 2003), investigation and verification before action (Uddin, 2003), team work (Rice, 1999), individual responsibility (Rice, 1999), fulfilling obligations, honesty/truthfulness, keeping the word/promise (Abuznaid, 2009; Ishak and Osman, 2016; Rice, 1999; Uddin, 2003), and care for the environment (Rice, 1999) conform to Islamic teaching. These attitudes are markedly appreciated by banks and thus, can arguably support the financing decisions in both Islamic and conventional banks. Evidence from the Islamic context can be found in MENA region where firms with strict religious orientation (Islamic banks) follow more conservative accounting policy for recognizing loan loss provisions (LLPs): the increase in both current and future NPL will increase current LLPs and Islamic banks less likely to manipulate their income numbers (Abdelsalam et al., 2016).

The fourth argument is based on findings that suggest that religious people are perceived as trustworthy by bankers, facilitating credit access to this group of people.

Experimental studies provide support for this notion. For example, a proposer's decision to trust improves along with the religiosity of the responder (Tan and Vogel, 2008). Interestingly, literature in bank lending and trust shows that the higher the banker's trust is in their borrowers the more credit is available (e.g., Hernández-Cánovas & Martínez-Solano, 2010; Moro & Fink, 2013; Palazuelos, Crespo, & Del Corte, 2017) and the lower the interest rate charged (Howorth and Moro, 2012). This literature supports the view that trustworthy borrower will not exploit the monitoring problem faced by the banker. Trust is also believed to reduce the effort to enforce the contract and monitoring the trustee (Chiles and McMackin, 1996). Muslim people are asked to emulate Prophet Muhammad's virtues that are focused on "Speak the truth when you talk, keep a promise when you make it, when you are trusted with something fulfil your trust". Prophet Muhammad practiced these virtues tangibly. He (p) is a very trustworthy person and people named him *al-ameen* (the trustworthy), as He (p) never cheats people and His enemies never accuse Him for lying (Beekun 2012). All these characteristics are believed to lower the credit risk in financing activities as well.

All in all, we might expect that bankers highly appreciate people practicing Islam, and firms which are located in Islamic areas may access more financing because: (1) Islamic religious teaching is in line with what the bankers look for in customer (low risk); (2) Islamic religious teaching encourages people not to default on their financing; (3) firms located in an area of high Islamic religiosity will be more risk-averse and should be less prone to default. Thus, we propose the following hypothesis:

H1: Islamic and conventional banks in areas with strong Islamic religiosity provide more financing

In addition, if Islam stimulates a lower risk-taking behaviour, banks should benefit from it by incurring in fewer non-performing finance. Thus, we propose the following hypothesis:

H2: Islamic and conventional banks in areas with strong Islamic religiosity have fewer non-performing finance

Finally, since Islamic banks can have a strong alignment to the approach of doing business with more religious people, it is easier for religious people to deal with Islamic banks. In other words, there can be a self-selection process so that religious people can select themselves in Islamic banks. However, if this is the case, since religious people are lower risk, Islamic banks can benefit from a lower amount of non-performing finance and should be able to provide more finance. Thus, we propose the following hypothesis:

H3a: The impact of religiosity on the total amount of financing is stronger in Islamic banks than their conventional counterparts.

H3b: The impact of religiosity on the reduction in number of non-performing finance is stronger in Islamic banks than their conventional counterparts.

3. Variables Description and Methodology

Indonesia is the country with the biggest Muslim population in the world. Based on the 2010 census conducted by Central Agency on Statistics of Indonesia (BPS), 87.18% (207 million) of the population are Muslim and followed by Protestant (6.96%), Catholics (2.91%), Hindu (1.69%), Buddhist (0.72%) and Khonghucu (0.05%). Moreover, Islam in Indonesia has shown growth in the past (Table 1). However, as we will discuss later, there is heterogeneity in terms of Islamic presence in different provinces.

Table 1. The progress of religiosity indicators in Indonesia

No	Religiosity Proxies	Average growth (Year to Year)	Remark
1	Mosques and *Mushalla*	n/a	Around 260 thousand mosques and 297 thousand *mushalla* (small praying place), have been registered under ministry of religious affair per January 2020 (simas.kemenag.go.id).
2	Muslim fashion consumption	18.2% (2014 to 2017)	US$ 12.67 billion in 2014 to US$ 20 billion in 2017 (ikm.kemenperin.go.id).
3	The number of students in the Islamic primary schools	2.6% (2008 to 2017)	Students in the Islamic primary school has increased significantly from 2.91 million in 2008 to 3.68 million in 2017. Students in the general primary school has slightly decrease with average year to year decline 0.4% (BPS).
4	Hajj waiting list	n/a	Per January 2020, the waiting list in each province varies range from 10 to 30 years (haji.kemenag.go.id).
5	The amount of *Zakat*, *Infaq*, *Shadaqah*	33.7% (2008 to 2017)	The amount of *zakat*, *infaq*, *shadaqah* also extremely increased from IDR 920 Billion in 2008 to IDR 6224 Billion in 2017 (baznaz.go.id).
6	Islamic large banks assets (national data)	26.2% (2009 to 2018)	the growth of Islamic large bank outperforms the growth of conventional large banks; average year to year growth from 2009 to 2018 in conventional large banks is 13.4% (Financial Service Authority).
7	Islamic small banks assets (national data)	22.2% (2009 to 2018)	the growth of Islamic small bank outperforms the growth of conventional small banks; average year to year growth from 2009 to 2018 in conventional small banks is 15.4% (Financial Service Authority).
8	Islamic seminary school		25,758 Islamic seminary schools in 2009 to 27,719 in 2018 (Ministry of Religious Affair)

Sources: Author's compilation

Interestingly, the significant growth of religiosity indicators has also been followed by the improvement in ease of doing business index (The World Bank, 2018), reduction in the corruption as measured by the perception index score (Transparency International, 2018), and improvement of entrepreneurship indicators such as government support, physical infrastructure, entrepreneurship education, and entrepreneurship finance (GEM, 2018).

McKinsey predicted that Indonesia will be ranked 7th in 2030 as an economic power in the world (Oberman et al., 2012).

3.1. Dependent Variable

We measure the access to credit in each province by using the credit provided by the banking system as the total amount of financing in both Islamic banks and conventional banks at the provincial level in Indonesia. In order to reduce heteroscedasticity issues, we rely on the natural log of the total amount of financing. We explore the impact of religiosity on the quality of the financing provided by banks by using the ratio of non-performing finance (NPF) divided by the total amount of financing in both Islamic banks and conventional banks. This metric is common in the financial industry as a measure of a bank's riskiness. The data used are provided by Financial Service Authority of Indonesia. We accessed information for 33 Indonesian provinces from 2013 to 2018.

3.2. Religiosity Measurement and Controls

Existing studies try to measure religiosity in several ways. In past studies, religiosity level was captured by using the ratio of the number of adherents to a religion out of the population of a county (He & Hu, 2016; Hilary & Hui, 2009), the distance between firms and religious "infrastructure" such as Buddhist monasteries (Du et al., 2014), the number of churches, mosques, temples at province level (Wang and Lin, 2014), and the gap between the number of *Fajr* prayers and *Maghrib* prayers in the mosque (Wijaya, 2019). An alternative way is a direct approach (Ahmad, Rahman, Seman, & Ali (2008) for the Islamic context and Allport & Ross, (1967)) that measures the religiosity at personal level (by surveying them). For instance, Allport & Ross (1967) divided people's religious orientation into two groups; i.e. intrinsic (the person lives their religion actively) and extrinsic (person uses religion as a means to their own end). Ahmad et al., (2008) divided the religiosity measurement into three groups *Sharia*, *akhlaq* (behaviour), and faith. This measurement is comprehensive since a Muslim person's faith (cognitive/beliefs) and *akhlaq* (behaviour) may not be aligned. However, this approach is quite complex to follow because the data access (surveys, etc.) is limited.

In line with Basedau, Gobien, & Prediger (2018), we rely on five religiosity proxies based on the province level data namely, the natural log of the number of Islamic schools (sum of Islamic primary school, Islamic junior high school, and Islamic senior high school), the natural log of number of mosques, natural log of the number of Islamic seminary schools, natural log of the number of halal certified product, and natural log of the number of people who had applied for the pilgrimage of Hajj.

Islamic school are religious organizations whose target is to disseminate the religious ideas and moral/ethics of Islam, such as doctrines, norms, and values. Thus, they may shape the behaviour towards economy and banking activities. Areas with more Islamic schools face a greater dissemination of Islamic teaching. In fact, alongside general subjects, students in the Islamic school will be taught Arabic language, History of Islam, *Aqidah*/*Akhlaq*, *Quran* and *Sunna*, and *Fiqh*. This implies that we should expect that in areas with more Islamic schools to have a large proportion of the current population to be willing to conform to the Islamic teachings in business situations. In such a context, any mis-behaviour in the financing contract will be perceived as an attitude that does not conform to Islamic teachings and it will be socially sanctioned with stigma and exclusion and/or marginalization from the business and social life. Thus, banks can have greater trust in regular repayment of the finance provided. Moreover, we could argue that individuals who put their children in Islamic school are expected to follow the Islamic guidance regarding the prudence principle, suggesting that these individuals are expected to be more risk averse (see Miller, 2000). In other words, people living in the area with more Islamic schools are expected to select low risk projects which are in line with the banker's preference. The data on the number of Islamic schools are obtained from the Central Agency on Statistics of Indonesia (BPS).

Hajj (annual pilgrimage to the holy city of Mecca) is a form of religious practice to Muslims. Using the number of the people who go for Hajj at province level may not capture the religiosity level properly since the Saudi government decides the annual quota for each country. Thus, we use the number of applications made for Hajj in each province. The logic of this proxy is linked to the fact that Hajj is one the five pillars in Islam: Muslims should perform Hajj at least once during their life time. Given that Hajj can be financially expensive, Muslims need to work hard (or do extra work) to finance the trip. The fact that people need to work hard for Hajj could shape their relationship with financing institutions (see also Geertz (1956) for the explanation that Hajj is one of the mechanisms in introducing modernization of Islam in Indonesia). These people are expected to have high ethical attitudes in conducting their business and in their daily work as it does not make sense to perform Hajj by using money obtained from unethical business activities or work. In addition, not only do people who try to do Hajj have awareness of overall Islamic teachings but they also try to tailor their attitudes toward Islamic principles, including not defaulting in financing contract and avoiding to misuse money/properties that belong to others. The data about Hajj applications are obtained from the ministry of religious affairs.

Mosques could promote religious ideas. In addition, according to the social capital theory (Fukuyama, 2001; Karaçuka, 2018) attending prayer in mosques can help the development of a network and support the establishment of trust. Existing studies document that trust is positively associated with more credit available to the borrower (Howorth and Moro, 2006; Moro and Fink, 2013). This is because trust could reduce the monitoring efforts which is costly to both Islamic and conventional banks. Moreover, Islamic teaching disseminated during prayer in the mosque, stresses not to default on financing contract and not to misuse others' money/properties. Therefore, mosques indirectly shape local social norms.

Our variable is based on the number of mosques registered under the Indonesian ministry of religious affairs.

Islamic seminary school (*pesantren*) is a form of religious actor/organization. This actor not only promotes religious ideas but also create religious roles, i.e., *ulama* (preacher). The students can learn religious education, general education, vocational skill, and character development in *pesantren* in Indonesia (Lukens-Bull, 2001). Lukens-Bull (2001) mentions that many *pesantren* provide skill training such as welding, carpentry, sewing, computer and shop-keeping to help the student in the job market. People who send their children to study in Islamic seminary school must have strong religiosity background. These people are very likely to conform to other Islamic teachings including not defaulting on financing contracts and avoiding the misuse of other's money/properties. Thus, parents who send their children to learn *Quran* and *Sunna* and other Islamic teachings in the seminary are considered more risk averse and are expected to select low risk projects in their business activities. These data are obtained from the ministry of religious affair.

Certified halal product is a representation of both religious ideas and religious practice. The certification process at province level is managed by a provincial halal authority. The companies that register their products at provincial level are mainly small and medium enterprises. While the big companies need to certify their products with the national halal authority. These data are obtained from the halal authority of Indonesia under the body of Indonesian Council of Ulama (LPPOM MUI). Muslim need to eat and use halal and *thayyib* (good) food/drink/cosmetics, etc. Consequently, Muslim people who conform to this teaching will also conform to other Islamic teaching, such as obtaining money from halal sources, not misusing other's money/properties and obtaining money by conducting business/work that is in line with high ethical principles.

Drawing from previous literature, we employ three groups of control variables: province level economics and democracy, firm factors, and banking factors (Chen et al., 2016; Delis, Hasan and Ongena, 2019; He and Hu, 2016). We also add the discount rate decided by Central Bank of Indonesia as a control variable (national level data). We control for bank characteristics using a dummy bank type (Islamic vs conventional banks). To measure the intensity of business activity, we rely on the number micro-small manufacturing enterprises at province level to represent micro-small manufacturing enterprises in Indonesia. To control for province-level economic factors, we include the natural log of real regional GDP per capita, the ratio of the working and economically active population, the ratio of total population to square km in each province, the foreign direct investment, and domestic investment both at province level. Following Delis et al. (2019), we also use democracy index at province level. The score of this index consists of three main groups: civil liberty, political rights, and institution of democracy.

3.3. Methodology

We use the same methodology with Hilary and Hui (2009) to present our main results. The basic specifications are estimated using ordinary pooled least square regression by entering one variable at a time to control for possible collinearity of the measures of religiosity[10]. However, our specifications can suffer from endogeneity because of omitted variables and reverse causality.

As far as the omitted variable is concerned, our research may suffer because of unobserved beliefs, ideas, and attitudes that affect religiosity. Thus, we select 3 instrumental variables related to natural disasters at province level: the number of natural disasters lagged by 1 year, the number of death and injured people in natural disasters lagged by 1 year, and the number of houses being destroyed and damaged by natural disasters lagged by 1 year. Our

[10] One of the limitations in our study is we do not take into account the issue of heterogeneity in our data.

point is that a natural disaster may act as shocks that increases the people's religiosity and affects the opinion about religion in those that are not religious since natural disasters challenge people's opinion about science's reliability. In such a context, people tend to look to religion as something that can help them to deal with the psychological consequences of the disaster as well as helping find closure to deaths. Therefore, in the immediate aftermath of a calamitous event we might expect a stronger demand of "religious services" (school and mosque) and more Hajj applications. Thus, we expect that an increase in the amount of "religious services" as well as the number Hajj applications registered in the area after the shock. At the same time, we do not expect any impact from these shocks on the amount of finance provided by the banks or in the non-performing finance.

As far as the reverse causality in concerned, the total amount of financing might generate economic growth that may affect the resources that schools, mosques and seminars can access, thus influencing their quality and their number that, in turn, can increase the diffusion of religious ideas (see Barro & McCleary, 2003). In order to control for this possibility, we follow Hilary and Hui (2009) and re-estimate our model via 2SLS by selecting the natural logarithm of Islamic schools lagged 3 years and the natural logarithm of Islamic seminary schools lagged 3 years as instrumental variables.

3.4. Descriptive Statistics and Correlation

Table 2 shows the descriptive statistics of the variables, Table 3 shows the correlation of the variables, and Table 4 shows the mean of religiosity at province level in Indonesia. The statistics show that Jawa Timur has the highest number of Islamic schools and Hajj applications and Jawa Barat has the highest number of mosques and Islamic seminary schools, and certified halal products. Relatively low number of Islamic schools, Hajj applications, certified halal products, Islamic seminary schools and mosques are found in Bali, Papua, Papua Barat, Nusa

Tenggara Timur, and Sulawesi Utara. These 5 provinces have less than 50% Muslim population based on 2010 census (BPS).

With regard to the correlation of the variables, in line with our expectation, Islamic school, Hajj application, Islamic seminary school, mosque, and halal certified product show positive association with total amount of financing but negative association with NPF.

Table 2. Descriptive statistics

Remarks	Variable	Obs	Mean	Std. Dev.	Min	Max
Per capita gross regional domestic product at current market prices by Province	GDP	725	50524.72	40835.6	12379.02	248305.9
Foreign direct investment realization by Province (million US$)	Foreign Inv	725	942.2909	1335.425	2	7124.9
Domestic direct investment realization by Province (billion rupiahs)	Domestic Inv	725	6816.948	10187.94	3.6	49097.4
Democracy Index by province level. These include civil liberties, political rights, and institutions of democracy	Democracy Index	725	71.41106	6.620856	52.61	85.58
Percentage of working to economically active by Province	Employment	725	94.76073	1.913711	89.88306	98.63445
Population density per sq.km by province	Population density	725	798.7241	2732.347	9	15764
Percentage of micro and small manufacturing enterprises at Province level to total micro and small manufacturing enterprises in Indonesia	Enterprises	725	0.032038	0.0542729	0.0004151	0.2808421
Policy rate of Central Bank of Indonesia	Discount rate	725	6.183393	1.123975	4.56	7.54
Percentage Muslim population at province level to total population at province level	Muslim population share	725	0.789377	0.2589576	0.0905083	0.9819407
Sum of Islamic primary school, Islamic junior high school and Islamic senior high school at province level	Islamic school	725	1617.796	2634.772	79	12886
Hajj application by province	Hajj	725	17291.3	26748.74	1190	133421
Islamic seminary school (pesantren) by province	Islamic seminary	725	867.509	1865.414	5	9167
The number of mosques registered under Ministry of Religious Affair at province level	Mosque	369	7013.967	12080.31	146	50082
The number of halal certifications at province level	Halal	339	597.4779	1177.743	12	6402
Total amount of financing at province level	Total amount of financing	725	3.73E+07	1.96E+08	526.048	2.62E+09
Percentage non-performing finance to total amount of financing at province level (NPF)	Non-performing financing	723	0.064932	0.0980354	0.0007854	1

Table 3. Correlation coefficients

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	*Ln (Financing)*	1																
2	NPF	-0.536***	1															
3	*Ln (GDP)*	0.0449	0.00218	1														
4	*Ln (Foreign Inv)*	0.243***	-0.0466	0.510***	1													
5	*Ln (Domestic Inv)*	0.267***	-0.126*	0.349***	0.535***	1												
6	*Democracy index*	-0.00148	-0.123*	0.153**	-0.109*	-0.0226	1											
7	*Employment*	-0.153**	0.110*	-0.299***	-0.377***	-0.273***	0.0756	1										
8	*Population density*	0.135*	-0.0165	0.554***	0.333***	0.307***	0.249***	-0.183***	1									
9	*Enterprises*	0.289***	-0.0943	-0.133*	0.383***	0.480***	-0.180***	-0.0554	0.0288	1								
10	*Dummy bank type*	-0.434***	0.187***	0.0269	0.0254	0.0279	-0.0125	-0.00913	0.0171	0.0252	1							
11	*Discount rate*	-0.0169	-0.0151	-0.0685	-0.0543	-0.0600	-0.135*	0.00620	-0.00160	0.00504	1.49e-08	1						
12	*Muslim share*	0.113*	-0.121*	-0.0943	-0.139*	0.406***	-0.0160	-0.174**	0.0504	0.225***	0.0242	0	1					
13	*Ln (Islamic school)*	0.316***	-0.155**	-0.139*	0.404***	0.644***	-0.269***	-0.300***	0.0719	0.709***	0.0282	-0.0149	0.516***	1				
14	*Ln (Seminary)*	0.316***	-0.133*	-0.119*	0.392***	0.653***	-0.171**	-0.274***	0.0181	0.703***	0.0488	-0.0570	0.502***	0.866***	1			
15	*Ln (Hajj)*	0.329***	-0.122*	0.0403	0.466***	0.689***	-0.215***	-0.287***	0.224***	0.730***	0.0535	-0.0650	0.555***	0.930***	0.903***	1		
16	*Ln (Mosque)*	0.266***	-0.150**	-0.124*	0.243***	0.592***	-0.0876	-0.266***	-0.0508	0.680***	0.0309	-0.0839	0.623***	0.813***	0.757***	0.813***	1	
17	*Ln (Halal)*	0.363***	-0.214***	0.171**	0.421***	0.605***	0.0226	-0.384***	0.208***	0.593***	0.0309	0	0.474***	0.656***	0.743***	0.735***	0.683***	1

*** p<0.01, ** p<0.05, * p<0.1

Note: natural logarithm of total amount of financing at province level (Ln (Financing)), non-performing financing to total amount of financing at province level (NPF), natural logarithm per capita gross regional domestic product at current market prices by province (Ln (GDP)), natural logarithm foreign direct investment realization by province (Ln (Foreign Inv)), natural logarithm domestic direct investment realization by province (Ln (Domestic Inv)), Democracy Index by province level (Democracy index), Percentage of working to economically active by province (Employment), Population density per sq.km by province (Population density), Percentage of micro and small manufacturing enterprises at province level to total micro and small manufacturing enterprises in Indonesia (Enterprises), Dummy bank type, 1 if Islamic Banks, otherwise 0 (Dummy bank type), Policy rate of Central Bank of Indonesia (Discount rate), Percentage Muslim population at province level to total population at province level (Muslim share), natural logarithm of sum of Islamic primary school, Islamic junior high school and Islamic senior high school at province level (Ln (Islamic school)), natural logarithm of Hajj application by province (Ln (Hajj)), natural logarithm of the number of Islamic seminary schools (pesantren) by province (Ln (Seminary)), natural logarithm of the number of mosques registered under Ministry of Religious Affair at province level (Ln (Mosque)), natural logarithm of the number of halal certifications at province level (Ln (Halal)).

Table 4. Muslim population share and Religiosity Proxies at Province level (at means)

Province	Muslim share (%) 2010 Census	Mosque 2016-2018	Islamic Seminary 2013-2018	Islamic School 2013-2018	Hajj Application 2013-2018	Halal 2016-2018
Aceh	0.9819407	4040	1096	1265	13066	95
Bali	0.1337128	245	81	134	2035	199
Banten	0.9467293	4128	3576	2344	24765	1174
Bengkulu	0.9729312	2852	56	272	4053	125
DI Yogyakarta	0.9194902	7767	279	326	8643	713
DKI Jakarta	0.8535572	1991	109	805	21480	518
Gorontalo	0.9781111	2076	25	205	1652	80
Jambi	0.9540563	2561	195	856	8371	327
Jawa Barat	0.9700342	47983	8236	7841	89499	6402
Jawa Tengah	0.967442	41386	4055	6364	85772	1123
Jawa Timur	0.9636211	38221	5123	12423	105000	1692
Kalimantan Barat	0.5922039	3467	231	854	6066	242
Kalimantan Selatan	0.966699	2566	222	1008	12540	145
Kalimantan Tengah	0.7430601	1957	76	506	3771	28
Kalimantan Timur	0.8538089	2654	149	332	7438	389
Kepulauan Bangka Belitung	0.8900471	861	48	101	2461	178
Kepulauan Riau	0.793372	1686	47	158	2798	658
Maluku	0.5061147	722	13	312	1922	56
Maluku Utara	0.7428183	974	16	332	2604	0
Nusa Tenggara Barat	0.9646843	3440	592	2140	15346	513
Nusa Tenggara Timur	0.0905083	778	26	290	1818	0
Papua	0.1588547	166	20	96	2770	12
Papua Barat	0.3840315	150	35	90	1544	0
Riau	0.8798393	5836	198	1307	11567	479
Sulawesi Barat	0.8265949	2129	74	411	3989	47
Sulawesi Selatan	0.8962214	10337	268	1822	23860	337
Sulawesi Tengah	0.7772114	2325	91	635	4226	134
Sulawesi Tenggara	0.9523154	1674	83	502	5076	178
Sulawesi Utara	0.3090374	800	19	192	1294	104
Sumatera Barat	0.9742135	3958	217	758	10095	427
Sumatera Selatan	0.9689355	6642	324	1184	14644	163
Sumatera Utara	0.6608917	9223	167	2395	16059	328
Lampung	0.9548365	3714	642	1747	15092	293

Table 5. NPF and financing in Islamic and conventional banks (from 2013 to 2018) at province level (at means)

Province	NPF Large Conventional Bank	NPF Small Conventional Bank	NPF Large Islamic bank	NPF Small Islamic Banks	Financing Large Conventional Bank (IDR Million)	Financing Small Conventional Bank (IDR Million)	Financing Large Islamic bank (IDR Million)	Financing Small Islamic Banks (IDR Million)
Aceh	0.031	0.09	0.036	0.106	29,200,000	142,000	8,420,000	123,000
Bali	0.019	0.045	0.026	0.199	63,000,000	8,410,000	1,760,000	5,323
Banten	0.019	0.065	0.032	0.135	108,000,000	2,070,000	6,750,000	582,000
Bengkulu	0.018	0.078	0.036	0.379	15,100,000	46,767	916,000	112,000
DI Yogyakarta	0.02	0.047	0.015	0.064	29,200,000	3,760,000	2,890,000	324,000
DKI Jakarta	0.022	0.064	0.035	0.189	2,060,000,000	1,330,000	101,000,000	16,653
Gorontalo*	0.033	0.194	0.065	.	9,520,000	25,530	304,000	.
Jambi*	0.024	0.111	0.048	.	29,800,000	566,000	2,260,000	.
Jawa Barat	0.03	0.073	0.045	0.068	349,000,000	11,100,000	28,200,000	2,060,000
Jawa Tengah	0.025	0.06	0.027	0.07	227,000,000	18,000,000	14,500,000	698,000
Jawa Timur	0.023	0.061	0.034	0.066	389,000,000	8,450,000	21,300,000	1,140,000
Kalimantan Barat*	0.018	0.08	0.018	.	40,800,000	591,000	3,390,000	.
Kalimantan Selatan	0.026	0.122	0.049	0.163	41,800,000	327,000	3,670,000	19,893
Kalimantan Tengah	0.011	0.044	0.043	0.04	20,500,000	260,000	878,000	7,556
Kalimantan Timur	0.056	0.116	0.055	0.115	67,900,000	238,000	4,410,000	2,223
Kepulauan Bangka Belitung	0.027	0.071	0.025	0.148	9,990,000	70,687	410,000	328,000
Kepulauan Riau	0.02	0.037	0.015	0.105	32,600,000	3,970,000	3,030,000	101,000
Maluku*	0.018	0.004	0.051	.	8,400,000	1,210,000	125,000	.
Maluku Utara	0.019	0.036	0.023	0.039	6,300,000	49,512	226,000	27,593
Nusa Tenggara Barat	0.015	0.107	0.036	0.043	28,200,000	916,000	2,980,000	198,000
Nusa Tenggara Timur	0.018	0.049	0.031	.	21,200,000	412,000	212,000	.
Papua	0.04	0.02	0.045	0.734	23,000,000	805,000	530,000	835
Papua Barat*	0.041	0.048	0.036	.	9,140,000	391,000	160,000	.
Riau	0.032	0.13	0.041	0.096	56,900,000	871,000	4,310,000	50,032
Sulawesi Barat	0.022	0.026	0.073	0.659	5,440,000	14,913	226,000	896
Sulawesi Selatan	0.031	0.018	0.032	0.139	98,200,000	1,520,000	5,630,000	115,000
Sulawesi Tengah*	0.022	0.012	0.029	.	22,100,000	1,750,000	1,080,000	.
Sulawesi Tenggara*	0.024	0.126	0.042	.	17,500,000	177,000	883,000	.
Sulawesi Utara*	0.031	0.1	0.058	.	30,300,000	790,000	469,000	.
Sumatera Barat	0.025	0.079	0.033	0.094	42,500,000	1,080,000	3,700,000	141,000
Sumatera Selatan	0.033	0.109	0.056	0.043	67,900,000	937,000	4,790,000	11,940
Sumatera Utara	0.025	0.075	0.069	0.064	185,000,000	898,000	8,980,000	95,321
Lampung	0.022	0.013	0.041	0.032	43,500,000	7,420,000	2,390,000	292,000

**Provinces with no small Islamic banks.*

In addition, based on 2010 census, the highest Muslim population share could be found in Aceh (98.2%) while the lowest Muslim population share could be found in Nusa Tenggara Timur (9.1%). Table 5 shows the bank related variables at province level.

Kalimantan Tengah, a province where 74.3% of the population is Muslim, performs very well in term of non-performing finance (NPFs) in large conventional banks (1.1%) but not in the case of large Islamic banks (4.3%). Maluku, which has 51% Muslim population, has the lowest NPF in small conventional banks (0.4%) and followed by Sulawesi Tengah (1.2%), a province with 77.7% Muslim population share population. Interestingly, large Islamic banks in the Yogyakarta province, where the Muhammadiyah was founded, together with Kepulauan Riau, have a lower non-performing finance than its counterparts (1.5% vs 2%). The lowest NPF in Islamic small banks could be found in Lampung (3.2%) followed by Kalimantan Tengah (4%). DKI Jakarta, as a capital city of Indonesia, outperforms other provinces with regard to total amount of financing and deposit. The highest amount of financing in large Islamic banks (outside DKI Jakarta) is found in Jawa Barat, Jawa Timur dan Jawa Tengah respectively. Outside of the Jawa islands (the densest islands in Indonesia), the highest amount of financing in large Islamic banks (outside DKI Jakarta) could be found in Sumatera Utara dan Aceh. It should be noted that, small Islamic banks were not established yet in 9 Provinces, such as Gorontalo, Jambi, Kalimantan Barat, Maluku, Papua Barat, Riau, Sulawesi Tengah, Sulawesi Tenggara, and Sulawesi Utara.

Tables 6 shows the control variables at province level. Jawa Barat has the highest population density, while Yogyakarta, where Muhammadiyah was founded, has the highest democracy index. The highest employment ratio (percentage of the working people divided by the total people in the working age) could be found in Bali, the most popular tourist destination in Indonesia. Jawa Barat again has the highest amount of foreign direct investment, and Jawa Timur has the highest amount of domestic investment.

Table 6. Control variables at province level (2013-2018) (at means)

Province	Population Density (per square km)	Democracy Index	Employment (%)	Foreign Invetsment (US$ Million)	Domestic Investment (IDR Billion)	Real Regional GDP per capita (IDR Thousand)	Enterprises (%)
Aceh	87.16667	71.168	91.739	62.567	2858.002	26927.08	0.022
Bali	722.5	78.05	98.256	608.967	1185.259	44138.77	0.03
Banten	1249.5	72.102	90.853	2847.283	11500.95	40978.92	0.025
Bengkulu	95	70.357	96.076	65.533	1136.619	28011.82	0.005
DI Yogyakarta	1180.833	81.378	96.712	53.5	1454.161	28682.06	0.024
DKI Jakarta	15397	80.31	92.693	3928.467	24609.22	202000	0.013
Gorontalo	101.5	73.632	95.989	21.917	996.918	26137.02	0.006
Jambi	68.5	69.66	95.682	72.183	2835.89	48385.02	0.007
Jawa Barat	1329.333	68.473	91.4	5935.483	27505.78	33825.05	0.135
Jawa Tengah	1033.167	69.627	94.934	1259.017	18836.2	30895.37	0.234
Jawa Timur	814.8333	70.433	95.806	2105.55	38863.32	45594.6	0.194
Kalimantan Barat	32.83333	75.842	95.661	773.8	6829.038	32035.27	0.012
Kalimantan Selatan	103.6667	73.152	95.483	391.117	5349.361	35462.85	0.018
Kalimantan Tengah	16.5	73.128	96.025	682.317	4732.386	42611.67	0.006
Kalimantan Timur	25.83333	74.587	92.618	1479.133	13718.7	158000	0.006
Kepulauan Bangka Belitung	84.5	75.493	95.815	92.033	1549.506	44994.47	0.004
Kepulauan Riau	243.8333	72.252	93.251	621.683	1222.459	103000	0.005
Maluku	36.33333	72.668	91.008	78.483	359.067	20882.59	0.009
Maluku Utara	36.83333	68.263	95.124	266.8	792.522	24023.05	0.004
Nusa Tenggara Barat	262	66.667	95.381	426.9	2141.625	21344.13	0.027
Nusa Tenggara Timur	106	76.823	96.688	65.417	1244.512	15425.23	0.031
Papua	10	60.863	96.541	1457.067	608.737	51107.65	0.003
Papua Barat	9	61.287	93.707	225.383	98.025	73763.14	0.001
Riau	73.83333	70.915	93.379	1048.483	8170.807	106000	0.01
Sulawesi Barat	77.16667	70.088	97.086	12.917	1061.249	26496.37	0.006
Sulawesi Selatan	183.1667	69.767	94.685	446.583	3944.304	41781.26	0.029
Sulawesi Tengah	47	72.135	96.25	1208.783	2194.891	39035.08	0.015
Sulawesi Tenggara	66.33333	67.69	96.06	355.867	1845.534	36775.35	0.016
Sulawesi Utara	174.8333	77.72	92.737	235.617	1883.056	39302.95	0.012
Sumatera Barat	124.5	62.755	93.894	119.183	1712.248	36012.88	0.022
Sumatera Selatan	88.33333	75.647	95.199	1207.2	7939.498	42569.47	0.017
Sumatera Utara	192	65.935	93.936	1073.6	6416.636	42877.54	0.029
Lampung	235.5	67.063	95.23	133.267	5214.099	32765.68	0.024

Interestingly, 23% of micro and small manufacturing enterprises in Indonesia could be found in Jawa Tengah.

4. Main Results and Robustness Checks

4.1. Religiosity, Total Amount of Financing, and Non-Performing Finance (NPF)

Table 7 shows the impact of religiosity on the total amount of (the natural log of) financing in banks (both Islamic and conventional banks). Since the specification suffers from multicollinearity, we decided to regress the religiosity proxies one by one. Model 1 includes all of the control variables, such as economic factors, firm factor, and dummy type of bank, i.e., 1 if Islamic bank, otherwise 0. *Ln (GDP)* is negative and not significant while both *ln (Foreign Inv)* and *ln (Domestic Inv)* are positive at 5% level: the investment may stimulate the economic activities at province level that, in turn, increase the amount of financing. *Democracy index* and *Population density* are not significant while *Employment* is negatively associated with total amount of financing. One possible explanation is business move to capital-intensive strategy (use a more sophisticated technology or machinery) and this capitalization strategy could be backed by the banks. However, this strategy increases the unemployment rate. *Enterprises*, a proxy for the intensity of the economic activity is also positively associated to the amount of finance provided by financial institution while Central bank discount rate is not.

In Model 2 we add Muslim population share as a variable of interest (see Barro and McCleary 2003; Noland 2005; Pryor 2007). Interestingly, it is not significant. Arguably, Muslim population share cannot clearly capture the attitudes towards economic activities (see Basedau et al., 2018). Moreover, there is a chasm between those who define themselves as belonging to a religion and those who practice it. Thus, we might find non-practicing Muslims whose "weak" beliefs (faith) are not necessarily in line with their behaviour (*akhlaq*). *Ln (Islamic school)* is included in model 3 and it is positive and significant at the 1% level, suggesting that both Islamic and conventional banks, in areas with strong religiosity, provide more financing. Model 4 enters the Hajj applications as a metric to measure the intensity of religiosity in the area: the variable is positive and significant. The same applies to the Seminary variable in regression 5 and to the log of the number of halal products (regressions 7). At the same time, the number of mosques is not significant. Overall, the results suggest an important association between Islam and banks' decision to provide credit in an area, and provide support to hypothesis number 1.

Table 7. OLS Regression: The impact of religiosity on total amount of financing (in both Islamic and conventional banks)

VARIABLES	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Ln (GDP)	-0.235	-0.229	0.166	-0.0310	0.0904	-0.208	-0.620
	(0.224)	(0.224)	(0.252)	(0.230)	(0.232)	(0.333)	(0.391)
Ln (Foreign Inv)	0.178**	0.201***	0.137*	0.153**	0.149**	0.175	0.229*
	(0.0729)	(0.0740)	(0.0751)	(0.0732)	(0.0732)	(0.117)	(0.123)
Ln (Domestic Inv)	0.122**	0.0947	-0.0315	-0.0404	-0.0628	0.124	0.0333
	(0.0578)	(0.0652)	(0.0758)	(0.0743)	(0.0727)	(0.0968)	(0.114)
Democracy index	0.0160	0.0173	0.0287*	0.0308*	0.0203	0.0101	0.00174
	(0.0158)	(0.0161)	(0.0166)	(0.0165)	(0.0157)	(0.0222)	(0.0246)
Employment	-0.135***	-0.123***	-0.0731	-0.0832*	-0.0493	-0.115*	-0.0251
	(0.0483)	(0.0475)	(0.0493)	(0.0483)	(0.0501)	(0.0681)	(0.0732)
Population density	8.46e-05	8.33e-05	6.44e-05	4.55e-05	9.27e-05	9.61e-05	9.76e-05
	(6.18e-05)	(6.19e-05)	(6.21e-05)	(6.32e-05)	(6.16e-05)	(8.88e-05)	(8.83e-05)
Enterprises	11.00***	10.87***	7.499***	6.071***	5.894***	9.245***	3.741
	(1.638)	(1.638)	(1.842)	(1.977)	(1.775)	(3.095)	(2.855)
Dummy bank type	-2.485***	-2.491***	-2.493***	-2.517***	-2.516***	-2.581***	-2.576***
	(0.173)	(0.173)	(0.171)	(0.171)	(0.171)	(0.246)	(0.256)
Discount rate	-0.115	-0.122	-0.0234	-0.0527	-0.143	-0.0402	-0.258
	(0.251)	(0.251)	(0.250)	(0.248)	(0.247)	(0.347)	(0.362)
Muslim share		0.352					
		(0.378)					
Ln (Islamic school)			0.444***				
			(0.136)				
Ln (Hajj)				0.536***			
				(0.140)			
Ln (Seminary)					0.413***		
					(0.0853)		
Ln (Mosque)						0.185	
						(0.144)	
Ln (Halal)							0.602***
							(0.143)
Constant	27.97***	26.56***	15.13**	16.28***	15.90***	24.43***	20.95**
	(5.672)	(5.649)	(6.550)	(6.150)	(6.019)	(7.906)	(8.271)
Dummy Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	725	725	725	725	725	369	339
R-squared	0.320	0.321	0.330	0.332	0.336	0.336	0.356

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Note: The dependent variable is the natural logarithm of total amount of financing at province level. The independent variables are Percentage Muslim population at province level to total population at province level (Muslim share), natural logarithm of sum of Islamic primary school, Islamic junior high school and Islamic senior high school at province level (Ln (Islamic school)), natural logarithm of Hajj application by province (Ln (Hajj)), natural logarithm of the number of Islamic seminary schools (pesantren) by province (Ln (Seminary)), natural logarithm of the number of mosques registered under Ministry of Religious Affair at province level (Ln (Mosque)), natural logarithm of the number of halal certifications at province level (Ln (Halal)). The controls are natural logarithm per capita gross regional domestic product at current market prices by province (Ln (GDP)), natural logarithm foreign direct investment realization by province (Ln (Foreign Inv)), natural logarithm domestic direct investment realization by province (Ln (Domestic Inv)), Democracy Index by province level (Democracy index), Percentage of working to economically active by province (Employment), Population density per sq.km by province (Population density), Percentage of micro and small manufacturing enterprises at province level to total micro and small manufacturing enterprises in Indonesia (Enterprises), Dummy bank type, 1 if Islamic Banks, otherwise 0 (Dummy bank type), Policy rate of Central Bank of Indonesia (Discount rate). OLS= ordinary least square.

Table 8. OLS Regression: The impact of religiosity on NPF (in both Islamic and conventional banks)

Variables	Model 8	Model 9	Model 10	Model 11	Model 12	Model 13	Model 14
Ln (GDP)	0.0159**	0.0156**	0.00347	0.0137**	0.0141**	0.0107	0.0131
	(0.00628)	(0.00626)	(0.00923)	(0.00683)	(0.00666)	(0.00882)	(0.0122)
Ln (Foreign Inv)	-0.00374	-0.00515	-0.00248	-0.00348	-0.00359	-0.000126	0.00116
	(0.00376)	(0.00326)	(0.00417)	(0.00382)	(0.00379)	(0.00730)	(0.00794)
Ln (Domestic Inv)	0.000906	0.00256	0.00567	0.00262	0.00190	-0.000673	-0.00446
	(0.00309)	(0.00320)	(0.00398)	(0.00407)	(0.00354)	(0.00583)	(0.00836)
Democracy index	-0.00166*	-0.00174*	-0.00205**	-0.00181*	-0.00168*	-0.00297**	-0.00306*
	(0.000873)	(0.000919)	(0.00101)	(0.000951)	(0.000880)	(0.00141)	(0.00157)
Employment	0.00429*	0.00358*	0.00237	0.00375*	0.00383*	0.00878**	0.00420
	(0.00233)	(0.00185)	(0.00177)	(0.00208)	(0.00220)	(0.00361)	(0.00258)
Population density	1.05e-06	1.13e-06	1.68e-06	1.47e-06	1.01e-06	1.19e-06	2.12e-06
	(1.25e-06)	(1.26e-06)	(1.31e-06)	(1.37e-06)	(1.25e-06)	(1.72e-06)	(1.64e-06)
Enterprises	-0.106**	-0.0981**	0.00301	-0.0541	-0.0788*	-0.170*	0.0552
	(0.0500)	(0.0469)	(0.0513)	(0.0516)	(0.0477)	(0.0872)	(0.129)
Dummy bank type	0.0363***	0.0366***	0.0365***	0.0366***	0.0364***	0.0429***	0.0467***
	(0.00774)	(0.00791)	(0.00777)	(0.00788)	(0.00780)	(0.0132)	(0.0137)
Discount rate	-0.0156	-0.0152	-0.0184	-0.0163	-0.0155	-0.00835	-0.0118
	(0.0140)	(0.0139)	(0.0142)	(0.0140)	(0.0140)	(0.0182)	(0.0194)
Muslim share		-0.0216					
		(0.0228)					
Ln (Islamic school)			-0.0138*				
			(0.00801)				
Ln (Hajj)				-0.00568			
				(0.00661)			
Ln (Seminary)					-0.00224		
					(0.00287)		
Ln (Mosque)						-0.00238	
						(0.00775)	
Ln (Halal)							-0.0190*
							(0.00976)
Constant	-0.306	-0.221	0.0931	-0.183	-0.241	-0.607**	-0.0679
	(0.217)	(0.175)	(0.215)	(0.200)	(0.209)	(0.287)	(0.269)
Dummy Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	723	723	723	723	723	369	339
R-squared	0.061	0.063	0.068	0.062	0.061	0.074	0.107

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: The dependent variable is the non-performing financing to total amount of financing at province level. The independent variables are Percentage Muslim population at province level to total population at province level (Muslim share), natural logarithm of sum of Islamic primary school, Islamic junior high school and Islamic senior high school at province level (Ln (Islamic school)), natural logarithm of Hajj application by province (Ln (Hajj)), natural logarithm of the number of Islamic seminary schools (pesantren) by province (Ln (Seminary)), natural logarithm of the number of mosques registered under Ministry of Religious Affair at province level (Ln (Mosque)), natural logarithm of the number of halal certifications at province level (Ln (Halal)). The controls are natural logarithm per capita gross regional domestic product at current market prices by province (Ln (GDP)), natural logarithm foreign direct investment realization by province (Ln (Foreign Inv)), natural logarithm domestic direct investment realization by province (Ln (Domestic Inv)), Democracy Index by province level (Democracy index), Percentage of working to economically active by province (Employment), Population density per sq.km by province (Population density), Percentage of micro and small manufacturing enterprises at province level to total micro and small manufacturing enterprises in Indonesia (Enterprises), Dummy bank type, 1 if Islamic Banks, otherwise 0 (Dummy bank type), Policy rate of Central Bank of Indonesia (Discount rate). OLS= ordinary least square.

In order to explore the determinants of non-performing finance in both Islamic and conventional banks, we run again pooled OLS regression but using the non-performing finance to total financing (NPF) as our dependent variable. Table 8 shows the results of the impact of religiosity on NPF.

Model 8 presents the controls. The only variables that affect the non-performing finance are the GDP, Democracy index (marginally), employment (marginally), and the number of enterprises. GDP is positively associated with NPF possibly because banks in richer province provide a more aggressive financing that could increases the default rate. Enterprises represent the number of micro and small business at province level. The negative association between this variable and NPF could be explained by the fact that micro and small business provide basic needs that are needed by the people irrespective of the economic condition. Furthermore, micro and small business rely on local resources which may not be so influenced by the global economy condition. NPF is higher in the high employment areas possibly because medium-large companies in these areas are not in their best performance. Democracy index is negatively associated with NPF. This result is in line with Delis et al. (2019) who found that democracy is negatively associated with the cost of debt since a higher democracy index implies greater information for banks, which in turn can take proper financing decision and reduce the NPF. At a variance with the previous set of regressions, only two of the variables that try to catch the intensity of Islam are significant, i.e., the number of Islamic schools in the area (negative relation and $p<.10$) and the number of certified halal products in the area (negative relation and $p<.10$). Our results provide a weak support to hypothesis 2. In addition, the results are at variance with existing empirical studies (e.g., Al-Azzam et al., 2012; Baele et al., 2014; Chen et al., 2016).

4.2. Religiosity, Total Amount of Financing, and Non-Performing Finance (NPF) in Different Types of Banks

The regressions in table 7 and 8 show the dummy variable that captures bank type is always significant. This evidence suggest that it is important to explore further the role of religiosity in different types of banks. Thus, we decided to re-estimate OLS regressions by the type of financing: Islamic financing and conventional bank financing. Table 9 reports the results based on Islamic banks financing. Model 16 explores the role of the share of Muslim population: the variable is positive and significant in line with our previous result. The same applies to the number of Islamic schools (model 17 - positive and significant at $p<.01$), Hajj applications (Model 18 - positive and significant at $p<.01$), seminaries (Model 19 - positive and significant at $p<.01$), mosques (Model 20 - positive and significant at $p<.10$) and certified halal products (Model 21 - positive and significant at $p<.01$).

Table 10 reports the results based on conventional banks financing. The effect of religiosity seems to be somewhat less pronounced: the share of Muslim population is not significant, neither is the number of mosques. At the same time, *ln (Islamic school), ln (Hajj), ln (Seminary), ln (Halal)* are positively related to amount of finance (significance between $p<.10$ and $p<.05$). Overall, our evidence provides some support to hypothesis 3 even if the role of religion in the case of conventional banks is greater than expected. However, our results are similar with existing literature (e.g., Chen et al., 2016; He & Hu, 2016).

Table 9. OLS Regression: The impact of religiosity on total amount of financing in Islamic Banks

Variables	Model 15	Model 16	Model 17	Model 18	Model 19	Model 20	Model 21
Ln (GDP)	-0.650*	-0.601*	-0.118	-0.369	-0.237	-0.642	-1.185*
	(0.349)	(0.347)	(0.379)	(0.355)	(0.352)	(0.528)	(0.618)
Ln (Foreign Inv)	-0.000866	0.104	-0.0547	-0.0318	-0.0334	0.0135	0.0360
	(0.106)	(0.106)	(0.110)	(0.106)	(0.106)	(0.179)	(0.192)
Ln (Domestic Inv)	0.201**	0.0893	0.00305	0.00526	-0.000315	0.186	0.196
	(0.0833)	(0.0892)	(0.103)	(0.101)	(0.0991)	(0.133)	(0.179)
Democracy index	0.0198	0.0225	0.0356	0.0357	0.0205	0.0147	0.00787
	(0.0242)	(0.0240)	(0.0254)	(0.0250)	(0.0238)	(0.0334)	(0.0362)
Employment	-0.235***	-0.173***	-0.151**	-0.164**	-0.125*	-0.189*	-0.0814
	(0.0726)	(0.0659)	(0.0703)	(0.0693)	(0.0742)	(0.102)	(0.113)
Population density	8.45e-05	7.90e-05	5.87e-05	3.70e-05	9.42e-05	0.000112	9.81e-05
	(9.53e-05)	(9.54e-05)	(9.57e-05)	(9.73e-05)	(9.50e-05)	(0.000139)	(0.000139)
Enterprises	10.17***	9.487***	5.679**	4.142	4.348*	6.024	0.574
	(2.440)	(2.433)	(2.725)	(2.886)	(2.500)	(4.616)	(4.052)
Discount rate	-0.0971	-0.128	0.0281	-0.00847	-0.122	0.00259	-0.243
	(0.375)	(0.371)	(0.374)	(0.370)	(0.369)	(0.513)	(0.526)
Muslim share		1.585***					
		(0.554)					
Ln (Islamic school)			0.575***				
			(0.194)				
Ln (Hajj)				0.663***			
				(0.190)			
Ln (Seminary)					0.471***		
					(0.102)		
Ln (Mosque)						0.374*	
						(0.208)	
Ln (Halal)							0.763***
							(0.214)
Constant	39.54***	32.11***	22.37**	24.11***	24.30***	32.05***	28.28**
	(8.223)	(7.751)	(9.069)	(8.449)	(8.494)	(11.34)	(12.49)
Dummy Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	335	335	335	335	335	171	159
R-squared	0.170	0.187	0.190	0.191	0.195	0.212	0.254

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: The dependent variable is the natural logarithm of total amount of financing at province level. The independent variables are Percentage Muslim population at province level to total population at province level (Muslim share), natural logarithm of sum of Islamic primary school, Islamic junior high school and Islamic senior high school at province level (Ln (Islamic school)), natural logarithm of Hajj application by province (Ln (Hajj)), natural logarithm of the number of Islamic seminary schools (pesantren) by province (Ln (Seminary)), natural logarithm of the number of mosques registered under Ministry of Religious Affair at province level (Ln (Mosque)), natural logarithm of the number of halal certifications at province level (Ln (Halal)). The controls are natural logarithm per capita gross regional domestic product at current market prices by province (Ln (GDP)), natural logarithm foreign direct investment realization by province (Ln (Foreign Inv)), natural logarithm domestic direct investment realization by province (Ln (Domestic Inv)), Democracy Index by province level (Democracy index), Percentage of working to economically active by province (Employment), Population density per sq.km by province (Population density), Percentage of micro and small manufacturing enterprises at province level to total micro and small manufacturing enterprises in Indonesia (Enterprises), Policy rate of Central Bank of Indonesia (Discount rate). OLS= ordinary least square.

Table 10. OLS Regression: The impact of religiosity on total amount of finance in conventional banks

Variables	Model 22	Model 23	Model 24	Model 25	Model 26	Model 27	Model 28
Ln (GDP)	0.146	0.144	0.427	0.284	0.387	0.158	-0.0537
	(0.301)	(0.301)	(0.345)	(0.308)	(0.314)	(0.446)	(0.502)
Ln (Foreign Inv)	0.321***	0.280***	0.292***	0.302***	0.297***	0.313**	0.386**
	(0.0968)	(0.102)	(0.0982)	(0.0969)	(0.0966)	(0.153)	(0.158)
Ln (Domestic Inv)	0.0476	0.101	-0.0619	-0.0753	-0.107	0.0869	-0.105
	(0.0847)	(0.0948)	(0.107)	(0.105)	(0.104)	(0.142)	(0.161)
Democracy index	0.0165	0.0130	0.0258	0.0286	0.0223	0.0104	-0.00352
	(0.0217)	(0.0219)	(0.0224)	(0.0225)	(0.0217)	(0.0307)	(0.0336)
Employment	-0.0471	-0.0658	-0.00495	-0.0119	0.0159	-0.0493	0.0207
	(0.0695)	(0.0710)	(0.0738)	(0.0715)	(0.0734)	(0.106)	(0.108)
Population density	8.79e-05	9.05e-05*	7.33e-05	5.82e-05	9.43e-05*	8.40e-05	9.80e-05
	(5.48e-05)	(5.48e-05)	(5.54e-05)	(5.67e-05)	(5.45e-05)	(7.87e-05)	(7.80e-05)
Enterprises	12.01***	12.23***	9.469***	8.260**	7.799**	12.30**	7.045
	(2.818)	(2.822)	(3.203)	(3.404)	(3.260)	(5.088)	(5.076)
Discount rate	-0.123	-0.110	-0.0608	-0.0827	-0.150	-0.0761	-0.269
	(0.337)	(0.337)	(0.338)	(0.336)	(0.335)	(0.470)	(0.494)
Muslim share		-0.659					
		(0.530)					
Ln (Islamic school)			0.317*				
			(0.192)				
Ln (Hajj)				0.401*			
				(0.206)			
Ln (Seminary)					0.338**		
					(0.134)		
Ln (Mosque)						-0.00315	
						(0.200)	
Ln (Halal)							0.427**
							(0.211)
Constant	15.33*	17.61**	6.385	7.031	6.267	15.35	12.04
	(8.374)	(8.566)	(9.952)	(9.369)	(9.062)	(12.79)	(12.55)
Dummy Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	390	390	390	390	390	198	180
R-squared	0.205	0.208	0.210	0.213	0.218	0.197	0.216

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: The dependent variable is the natural logarithm of total amount of financing at province level. The independent variables are Percentage Muslim population at province level to total population at province level (Muslim share), natural logarithm of sum of Islamic primary school, Islamic junior high school and Islamic senior high school at province level (Ln (Islamic school)), natural logarithm of Hajj application by province (Ln (Hajj)), natural logarithm of the number of Islamic seminary schools (pesantren) by province (Ln (Seminary)), natural logarithm of the number of mosques registered under Ministry of Religious Affair at province level (Ln (Mosque)), natural logarithm of the number of halal certifications at province level (Ln (Halal)). The controls are natural logarithm per capita gross regional domestic product at current market prices by province (Ln (GDP)), natural logarithm foreign direct investment realization by province (Ln (Foreign Inv)), natural logarithm domestic direct investment realization by province (Ln (Domestic Inv)), Democracy Index by province level (Democracy index), Percentage of working to economically active by province (Employment), Population density per sq.km by province (Population density), Percentage of micro and small manufacturing enterprises at province level to total micro and small manufacturing enterprises in Indonesia (Enterprises), Policy rate of Central Bank of Indonesia (Discount rate). OLS= ordinary least square.

4.3. Religiosity and non-performing finance in different types of banks

Table 11 shows the impact of religiosity on the non-performing finance in Islamic Banks (both large and small) or NPF. In model 30, share of Muslim population is negative and not significant. The same applies to, *ln (Hajj),* and *ln (Seminary),* and *ln (Mosque)* in model 32, 33, and 34. At the same time *ln (Islamic school)* is negatively and significantly related to the NPF ($p<0.1$) as well as certified halal products ($p<0.05$). All in all, the weak evidence we found in the regressions that include all the banks is confirmed when we look at Islamic banks. The evidence in Islamic banks is in line with existing studies (e.g., Al-Azzam et al., 2012; Baele et al., 2014; Chen et al., 2016).

Table 12 shows the impact of religiosity on NPF in conventional banks. The share of Muslim population (model 37) is significant (at $p<.05$) but in contrast with the hypothesis: it is (at province level) positively related to NPF in conventional banks. This result seems to support the "economic disadvantage thesis" of Islam. However, further examination needs to be conducted since the share of Muslim population is not the best variable to capture attitude toward economic activities (Basedau et al., 2018). Interestingly, none of the religiosity proxies are significant in predicting NPF in conventional banks (model 38 to 42). Thus, we might argue that the result in model 36 could be affected by the "weak" Muslim.

Table 11. OLS Regression in Islamic banks: The impact of religiosity on NPF

Variables	Model 29	Model 30	Model 31	Model 32	Model 33	Model 34	Model 35
Ln (GDP)	0.0235*	0.0213	-0.00429	0.0191	0.0212	0.0138	0.0206
	(0.0130)	(0.0130)	(0.0189)	(0.0145)	(0.0141)	(0.0192)	(0.0222)
Ln (Foreign Inv)	-0.00357	-0.00837	-0.000788	-0.00308	-0.00338	0.00114	0.00361
	(0.00789)	(0.00681)	(0.00869)	(0.00802)	(0.00793)	(0.0150)	(0.0160)
Ln (Domestic Inv)	-0.00282	0.00229	0.00755	0.000223	-0.00169	-0.00818	-0.0194
	(0.00677)	(0.00699)	(0.00859)	(0.00890)	(0.00769)	(0.0129)	(0.0168)
Democracy index	-0.00405**	-0.00417**	-0.00487**	-0.00429**	-0.00405**	-0.00678**	-0.00680**
	(0.00184)	(0.00185)	(0.00206)	(0.00197)	(0.00184)	(0.00297)	(0.00290)
Employment	0.0111**	0.00823**	0.00670*	0.0100**	0.0105**	0.0170**	0.00575
	(0.00488)	(0.00361)	(0.00357)	(0.00423)	(0.00462)	(0.00737)	(0.00598)
Population density	4.39e-06*	4.64e-06*	5.74e-06**	5.12e-06*	4.33e-06*	4.92e-06	7.00e-06**
	(2.51e-06)	(2.50e-06)	(2.61e-06)	(2.74e-06)	(2.50e-06)	(3.56e-06)	(3.37e-06)
Enterprises	-0.167	-0.136	0.0677	-0.0739	-0.135	-0.240	0.261
	(0.102)	(0.0951)	(0.0980)	(0.0993)	(0.0973)	(0.183)	(0.256)
Discount rate	-0.0339	-0.0325	-0.0404	-0.0352	-0.0337	-0.0299	-0.0393
	(0.0292)	(0.0287)	(0.0294)	(0.0292)	(0.0292)	(0.0369)	(0.0371)
Muslim share		-0.0722					
		(0.0487)					
Ln (Islamic school)			-0.0300*				
			(0.0160)				
Ln (Hajj)				-0.0103			
				(0.0137)			
Ln (Seminary)					-0.00264		
					(0.00557)		
Ln (Mosque)						-0.00594	
						(0.0154)	
Ln (Halal)							-0.0395**
							(0.0180)
Constant	-0.695	-0.354	0.204	-0.456	-0.610	-0.899	0.387
	(0.463)	(0.356)	(0.437)	(0.415)	(0.444)	(0.617)	(0.682)
Dummy Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	334	334	334	334	334	171	159
R-squared	0.065	0.077	0.084	0.067	0.066	0.109	0.191

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: The dependent variable is the non-performing financing to total amount of financing at province level. The independent variables are Percentage Muslim population at province level to total population at province level (Muslim share), natural logarithm of sum of Islamic primary school, Islamic junior high school and Islamic senior high school at province level (Ln (Islamic school)), natural logarithm of Hajj application by province (Ln (Hajj)), natural logarithm of the number of Islamic seminary schools (pesantren) by province (Ln (Seminary)), natural logarithm of the number of mosques registered under Ministry of Religious Affair at province level (Ln (Mosque)), natural logarithm of the number of halal certifications at province level (Ln (Halal)). The controls are natural logarithm per capita gross regional domestic product at current market prices by province (Ln (GDP)), natural logarithm foreign direct investment realization by province (Ln (Foreign Inv)), natural logarithm domestic direct investment realization by province (Ln (Domestic Inv)), Democracy Index by province level (Democracy index), Percentage of working to economically active by province (Employment), Population density per sq.km by province (Population density), Percentage of micro and small manufacturing enterprises at province level to total micro and small manufacturing enterprises in Indonesia (Enterprises), Policy rate of Central Bank of Indonesia (Discount rate). OLS= ordinary least square.

Table 12. OLS Regression: The impact of religiosity on NPF in conventional banks

Variables	Model 36	Model 37	Model 38	Model 39	Model 40	Model 41	Model 42
Ln (GDP)	0.0114**	0.0114**	0.0122**	0.0111**	0.0110**	0.0140**	0.00433
	(0.00485)	(0.00485)	(0.00572)	(0.00496)	(0.00547)	(0.00674)	(0.00843)
Ln (Foreign Inv)	-0.00411**	-0.00284	-0.00419**	-0.00407**	-0.00407**	-0.00163	-0.000933
	(0.00184)	(0.00187)	(0.00181)	(0.00179)	(0.00168)	(0.00325)	(0.00340)
Ln (Domestic Inv)	0.00418***	0.00258*	0.00389**	0.00447**	0.00444**	0.00457**	0.00747***
	(0.00136)	(0.00150)	(0.00178)	(0.00176)	(0.00181)	(0.00213)	(0.00256)
Democracy index	0.000295	0.000402	0.000320	0.000266	0.000285	0.000244	0.000655
	(0.000333)	(0.000337)	(0.000348)	(0.000354)	(0.000376)	(0.000497)	(0.000559)
Employment	-0.00173*	-0.00117	-0.00162	-0.00181*	-0.00184	0.00122	0.00153
	(0.000987)	(0.00108)	(0.00111)	(0.00106)	(0.00127)	(0.00168)	(0.00178)
Population density	-2.13e-06***	-2.20e-06***	-2.17e-06***	-2.06e-06***	-2.14e-06**	-2.48e-06**	-2.38e-06**
	(7.12e-07)	(7.13e-07)	(7.43e-07)	(7.87e-07)	(9.45e-07)	(9.88e-07)	(1.04e-06)
Enterprises	-0.0388	-0.0459	-0.0456	-0.0298	-0.0317	-0.0763	-0.114
	(0.0343)	(0.0348)	(0.0439)	(0.0510)	(0.0565)	(0.0765)	(0.0758)
Discount rate	0.000515	4.10e-05	0.000673	0.000421	0.000564	0.00964	0.0113
	(0.00590)	(0.00587)	(0.00596)	(0.00595)	(0.00582)	(0.00971)	(0.0102)
Muslim share		0.0198**					
		(0.00853)					
Ln (Islamic school)			0.000844				
			(0.00326)				
Ln (Hajj)				-0.000973			
				(0.00375)			
Ln (Seminary)					-0.000573		
					(0.00233)		
Ln (Mosque)						0.00142	
						(0.00298)	
Ln (Halal)							0.000886
							(0.00351)
Constant	0.0584	-0.00842	0.0348	0.0784	0.0737	-0.321	-0.306
	(0.120)	(0.127)	(0.159)	(0.149)	(0.157)	(0.198)	(0.190)
Dummy Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	389	389	389	389	389	198	180
R-squared	0.065	0.077	0.065	0.065	0.065	0.053	0.060

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: The dependent variable is the non-performing financing to total amount of financing at province level. The independent variables are Percentage Muslim population at province level to total population at province level (Muslim share), natural logarithm of sum of Islamic primary school, Islamic junior high school and Islamic senior high school at province level (Ln (Islamic school)), natural logarithm of Hajj application by province (Ln (Hajj)), natural logarithm of the number of Islamic seminary schools (pesantren) by province (Ln (Seminary)), natural logarithm of the number of mosques registered under Ministry of Religious Affair at province level (Ln (Mosque)), natural logarithm of the number of halal certifications at province level (Ln (Halal)). The controls are natural logarithm per capita gross regional domestic product at current market prices by province (Ln (GDP)), natural logarithm foreign direct investment realization by province (Ln (Foreign Inv)), natural logarithm domestic direct investment realization by province (Ln (Domestic Inv)), Democracy Index by province level (Democracy index), Percentage of working to economically active by province (Employment), Population density per sq.km by province (Population density), Percentage of micro and small manufacturing enterprises at province level to total micro and small manufacturing enterprises in Indonesia (Enterprises), , Policy rate of Central Bank of Indonesia (Discount rate). OLS= ordinary least square.

4.4. Further Analysis in Islamic and Conventional Banks: Large vs Small Banks Sub-samples

In order to gain deeper understanding about the role of religiosity on the financing activity, we re-estimate our regressions by using different samples according to the size and the type of bank. Appendix 1 shows the impact of religiosity on the total amount of financing in large Islamic banks while Appendix 2 shows the impact of religiosity on the total amount of financing in large conventional banks. Models 45-49 show that all the religiosity proxies are positive and significant ($p<0.01$, except halal at $p<0.05$) which are consistent with the results of the corresponding regression in Table 9. The share of Muslim population is also positively associated with the total amount of financing (model 44). When we look at the large conventional banks; Islamic schools, Hajj applications, Seminary schools, and certified halal products (model 52, 53, 54, and 56) are positive and significant, but with improvement in significance level to 0.01 with respect to corresponding regression in Table 9 (model 24, 25, 26 and 28). Interestingly, mosques, which have no influence on the total amount of financing in previous regression (model 27 - Table 10), turn out to be positive and significant at $p<0.01$ level. The results provide support to Hypothesis 1: both large Islamic and conventional banks provide more financing in areas where religiosity is more intense.

Appendix 3 shows the impact of religiosity on total amount of financing in small Islamic banks while Appendix 4 shows the impact of religiosity on total amount of financing in small conventional banks. The share of Muslim population is positive and significant at 0.01 (Model 58). The same applies to *ln (Hajj)*, *ln (Seminary)* and *ln (*halal*)* which are positively associated with the total amount of financing at the 1% level. *Ln (Islamic school)* is also positive and significant at the 10% level. With regard to the small conventional banks sub-sample in model 65 (Appendix 4), the share of Muslim population is negatively associated with total amount of financing, again this result could be driven by the “weak” Muslim, since, in line with previous regression in Table 10, *ln (Islamic school)*, *ln (Hajj)*, *ln (Seminary)*, and *ln (*halal*)* are positive and significant at the 10%, % 5, and 1% levels respectively (model 66, 67, 68, and 70). All in all, the analysis shows that religiosity is positively associated with total amount of financing in both Islamic and conventional small banks, providing further support hypothesis number 1.

In the main regression, we find mixed evidences on the impact of religiosity on NPF. Appendix 5 shows the impact of religiosity on NPF in large Islamic Banks while Appendix 6 reports the impact of religiosity on NPF in large conventional Banks. Surprisingly, in the large Islamic banks sample (Appendix 5), there is no significant effect of religiosity on NPF. In Appendix 6, Model 79 shows that Muslim population share is negative and significant ($p<0.05$). Interestingly, in previous conventional banks regression, none of religiosity proxies were significant (see Table 12). However, religiosity impacts on NPF in the case of large conventional banks: *ln (Islamic school),* is negative and significant at the 1% level (model 80); and *ln (Mosque),* is negative and significant at the 5% level (model 83). Appendix 7 shows the impact of religiosity on NPF in small Islamic Banks, while Appendix 8 shows the impact of religiosity on NPF in small conventional Banks. The share of Muslim population is negatively associated with NPF in small Islamic banks (model 86). The same applies to *ln (Islamic school)* (model 87 – negative and significant at the 1% level) and *ln (Hajj)* (model 88 – negative and significant at the 10% level). Thus, the impact of religiosity on NPF is more pronounced when we look only at the small Islamic bank sub-sample, as religiosity is only marginally significant in the Islamic banks sample (see Table 11). Turning our attention to small conventional banks (Appendix 8), the share of Muslim population is positively associated with NPF, which is again possibly driven by "weak" Muslim. All in all, we find support for hypothesis 3 but only in the case of small Islamic banks, as we can find that religiosity plays no role on NPF in the case of small conventional banks.

In summary we found that banks, irrespective of their size and type, provide more financing in stronger religiosity areas. At the same time, the role of religiosity on NPF depends on the type and sizes of the banks as we can find that only large conventional banks and small Islamic banks have fewer NPF in stronger religiosity areas.

4.5. Robustness Check

As far as the robustness check is concerned, we tried to change our dependent variable, i.e., the natural logarithm of total amount of financing at province level, to the natural logarithm of the ratio: total amount of financing at province level divided by the number of banks at province level. The regression results in full sample show nothing change (untabulated).

Our model may be subjected to endogeneity problems as our main explanatory variables could suffer from reverse causality and omitted variables. Our regressions can suffer from reverse causality since financing activity may affect the religiosity level by increasing the amount of resources that religious actors can access so that, in turn, they can increase their activity in terms of religious diffusion in the area. Following Hilary & Hui (2009) we select *ln* Islamic school lagged 3 years and *ln* Islamic seminary school lagged 3 years and then we run a 2SLS regressions. With regard to the impact of religiosity on total amount of financing, the results are qualitatively in line with those reported in Tables 7, 9, 10 (Appendix 9).

Secondly, we cannot rule out that our IVs do not adequately capture religiosity so our regression may suffer from omitted variable bias. In order to explore this potential issue further, we use the following instruments: *ln* natural disaster events lagged 1 year, *ln* death and injury toll in natural disasters lagged 1 year, and *ln* destroyed and damaged house total in natural disasters lagged 1 year at province level. We argue that natural disasters may act as external shock that influences the religiosity level of the people, since soon after a natural disaster, people tend to turn to religion to help deal with the psychological shock of the disaster, to give closure to deaths, or to cope with the adverse situation they are facing. This implies that in the immediate aftermath we might expect a stronger demand of “religious service” (more schools and more mosques) and more Hajj applications. All in all, we follow Malinowski's (1925) argument that religiosity is related to the desire to control those things that cannot be controlled given the level of technological sophistication of society (e.g., weather and disease), and is also a way of dealing with fear and death. With regard to the impact of religiosity on total amount financing, the results of instrumented regressions are qualitatively similar to those in Tables 7, 9, 10 (Appendix 10). All in all, our robustness checks provide general further support to our original results.

5. Conclusion

Prior studies report that religiosity can have a direct impact on the cost of debt, loan facilities, and default rate. We document that both Islamic and conventional banks in areas with degrees of religiosity provide more financing, irrespective of their sizes. We find that both conventional and Islamic banks located in Muslim religious areas have lower NPF, but the result is only marginally significant.

Our results suggest that people (firms) try to align with the social norms of the area where they live. Muslim religiosity norms push for risk-averse behaviour, high ethical manners, trustworthiness, and to avoid defaulting on commitments. All of these elements are crucial in bank financing activities: both Islamic and conventional bankers prefer to deal with customers that are risk averse. To reduce moral hazards, bankers also look for trustworthy borrowers. Thus, customers with high ethical tendencies are preferred since they are more reliable in repaying back their debts. Interestingly enough, even people that are not very religious can align their behaviour to those that are more religious in order to avoid social marginalization and social blaming when they live in religious areas. All in all, banks that operate in areas with a stronger religiosity face low moral hazards have customers that are more likely aligned with values and doctrines of the religion, especially Islam and because of this they are more likely to provide credit.

Interestingly, we document that the impact of religiosity on financing activities is marginally stronger in Islamic banks compared to their conventional counterparts. However, in the large bank sub-sample, religiosity plays stronger role in conventional banks especially in the case of NPF. Moreover, we also document that large Islamic banks and small Islamic banks in strong religious areas provide more financing. We obtained similar results in the context of large conventional banks and small conventional banks. We also report that none of our main explanatory variables are significant in NPF models for large Islamic bank specifications. However, religiosity is negatively associated with NPF for small Islamic banks group. Lastly, we document that religiosity is negatively associated with NPF in large conventional banks while the effect is insignificant in the case of small conventional banks. Overall, we find that the impact of religiosity depends largely on the size and the type of the bank.

This research contributes to past research by expanding the knowledge of religiosity and bank financing. So far, very little research has been performed on whether Islamic beliefs can stimulate the provision of finance by mitigating the perceived risk incurred by banks in financing activities. Our evidence suggests that banks expand credit to religious areas. Second, we use alternative measures of religiosity. We argue that the share of Muslim population (a quite common measure in past research) does not necessarily catch the religiosity in a country. For instance, in countries such as Saudi Arabia and Algeria may have very similar percentage of Muslim population but the role that religion plays in everyday life (and thus in economy and finance) is very different. Our results suggest that the share of Muslim population only marginally captures the attitudes toward the economic activities of the religious Muslim in itself since the level of one's religiosity is varied: there are "weak" Muslim, that is people whose belief is not in line with their behaviour (*akhlaq*) as well as very strong ones that shape their behaviour according to Islam's rules.

Our research has also some limitations. We use aggregated data at province level, and this can compromise our ability to take into consideration aspects that are specific to each bank (e.g. the amount of assets of a bank, the number of branches, the staff, etc.). It could be interesting to expand the analysis at bank level in order to have a more detailed understanding of how religiosity can affect a bank's behaviour according their characteristics.

Notwithstanding the limitations of the dataset and context, this research indicates that Islamic beliefs play an important role in financing relationships and in economic development than has heretofore been acknowledged.

Appendix 1. The impact of religiosity on total amount of financing but only in large Islamic Banks

VARIABLES	Model 43	Model 44	Model 45	Model 46	Model 47	Model 48	Model 49
Ln (GDP)	0.133	0.137	0.852***	0.509***	0.532***	0.496***	0.149
	(0.152)	(0.119)	(0.150)	(0.103)	(0.123)	(0.162)	(0.225)
Ln (Foreign Inv)	0.130***	0.225***	0.0554	0.0774**	0.0980***	0.175**	-0.0519
	(0.0457)	(0.0430)	(0.0434)	(0.0366)	(0.0375)	(0.0814)	(0.256)
Ln (Domestic Inv)	0.359***	0.237***	0.0789	0.0251	0.0885*	0.185***	0.340***
	(0.0427)	(0.0458)	(0.0517)	(0.0421)	(0.0495)	(0.0607)	(0.120)
Democracy index	0.00252	0.0105	0.0264**	0.0355***	0.0130	-0.00918	-0.0202
	(0.0114)	(0.00993)	(0.0104)	(0.00784)	(0.00862)	(0.0141)	(0.0430)
Employment	-0.114***	-0.0712**	-0.00616	-0.0185	0.0119	-0.00507	-0.0311
	(0.0348)	(0.0329)	(0.0322)	(0.0266)	(0.0232)	(0.0566)	(0.129)
Population density	0.000169***	0.000164***	0.000132***	8.87e-05***	0.000183***	0.000193***	0.000173***
	(1.45e-05)	(1.28e-05)	(1.41e-05)	(1.25e-05)	(1.01e-05)	(3.26e-05)	(4.92e-05)
Enterprises	7.048***	6.529***	0.553	-3.127***	-1.023	-0.512	3.150
	(1.085)	(1.036)	(0.880)	(0.826)	(1.027)	(1.533)	(3.737)
Discount rate	0.193	0.163	0.351**	0.302***	0.158	0.272	
	(0.172)	(0.162)	(0.140)	(0.105)	(0.135)	(0.224)	
Muslim share		1.518***					
		(0.262)					
Ln (Islamic school)			0.812***				
			(0.0833)				
Ln (Hajj)				1.090***			
				(0.0682)			
Ln (Seminary)					0.619***		
					(0.0551)		
Ln (Mosque)						0.628***	
						(0.0911)	
Ln (Halal)							0.470**
							(0.186)
Constant	18.85***	13.60***	-4.039	-3.686	1.465	1.411	12.45
	(4.398)	(4.281)	(4.464)	(3.180)	(2.882)	(6.774)	(14.56)
Dummy Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	195	195	195	195	195	99	90
R-squared	0.729	0.776	0.830	0.886	0.852	0.801	0.756

Robust Standard errors in parentheses

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Note: The dependent variable is the natural logarithm of total amount of financing at province level. The independent variables are Percentage Muslim population at province level to total population at province level (Muslim share), natural logarithm of sum of Islamic primary school, Islamic junior high school and Islamic senior high school at province level (Ln (Islamic school)), natural logarithm of Hajj application by province (Ln (Hajj)), natural logarithm of the number of Islamic seminary schools (pesantren) by province (Ln (Seminary)), natural logarithm of the number of mosques registered under Ministry of Religious Affair at province level (Ln (Mosque)), natural logarithm of the number of halal certifications at province level (Ln (Halal)). The controls are natural logarithm per capita gross regional domestic product at current market prices by province (Ln (GDP)), natural logarithm foreign direct investment realization by province (Ln (Foreign Inv)), natural logarithm domestic direct investment realization by province (Ln (Domestic Inv)), Democracy Index by province level (Democracy index), Percentage of working to economically active by province (Employment), Population density per sq.km by province (Population density), Percentage of micro and small manufacturing enterprises at province level to total micro and small manufacturing enterprises in Indonesia (Enterprises), Policy rate of Central Bank of Indonesia (Discount rate). OLS= ordinary least square.

Appendix 2. The impact of religiosity on total amount of finance but only in large conventional banks.

VARIABLES	Model 50	Model 51	Model 52	Model 53	Model 54	Model 55	Model 56
Ln (GDP)	0.123	0.122	0.451***	0.263***	0.272***	0.198**	0.0752
	(0.0751)	(0.0762)	(0.0842)	(0.0742)	(0.0823)	(0.0923)	(0.0914)
Ln (Foreign Inv)	0.193***	0.179***	0.159***	0.174***	0.178***	0.227***	0.237***
	(0.0273)	(0.0284)	(0.0285)	(0.0266)	(0.0269)	(0.0448)	(0.0420)
Ln (Domestic Inv)	0.179***	0.198***	0.0514	0.0542	0.0831**	0.153***	0.123***
	(0.0281)	(0.0294)	(0.0349)	(0.0332)	(0.0355)	(0.0379)	(0.0352)
Democracy index	0.00540	0.00419	0.0163**	0.0177***	0.00899	-0.00562	-0.0151*
	(0.00638)	(0.00646)	(0.00649)	(0.00612)	(0.00650)	(0.00896)	(0.00813)
Employment	-0.0626***	-0.0691***	-0.0133	-0.0268	-0.0235	-0.0123	-0.0108
	(0.0177)	(0.0176)	(0.0190)	(0.0195)	(0.0198)	(0.0265)	(0.0286)
Population density	0.000194***	0.000195***	0.000177***	0.000164***	0.000198***	0.000199***	0.000194***
	(8.86e-06)	(8.88e-06)	(8.81e-06)	(8.95e-06)	(7.69e-06)	(1.42e-05)	(9.56e-06)
Enterprises	7.782***	7.861***	4.822***	3.977***	5.179***	5.490***	5.075***
	(0.886)	(0.891)	(0.786)	(0.843)	(0.765)	(1.472)	(1.136)
Discount rate	-0.0483	-0.0438	0.0240	-0.00755	-0.0653	0.0643	-0.0990
	(0.108)	(0.108)	(0.0943)	(0.0914)	(0.0995)	(0.131)	(0.124)
Muslim share		-0.230					
		(0.154)					
Ln (Islamic school)			0.370***				
			(0.0565)				
Ln (Hajj)				0.408***			
				(0.0593)			
Ln (Seminary)					0.209***		
					(0.0400)		
Ln (Mosque)						0.172***	
						(0.0640)	
Ln (Halal)							0.217***
							(0.0430)
Constant	19.16***	19.96***	8.734***	10.74***	13.56***	12.52***	15.70***
	(2.319)	(2.328)	(2.557)	(2.548)	(2.602)	(3.378)	(3.318)
Dummy Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	195	195	195	195	195	99	90
R-squared	0.848	0.850	0.880	0.881	0.869	0.877	0.892

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: The dependent variable is the natural logarithm of total amount of financing at province level. The independent variables are Percentage Muslim population at province level to total population at province level (Muslim share), natural logarithm of sum of Islamic primary school, Islamic junior high school and Islamic senior high school at province level (Ln (Islamic school)), natural logarithm of Hajj application by province (Ln (Hajj)), natural logarithm of the number of Islamic seminary schools (pesantren) by province (Ln (Seminary)), natural logarithm of the number of mosques registered under Ministry of Religious Affair at province level (Ln (Mosque)), natural logarithm of the number of halal certifications at province level (Ln (Halal)). The controls are natural logarithm per capita gross regional domestic product at current market prices by province (Ln (GDP)), natural logarithm foreign direct investment realization by province (Ln (Foreign Inv)), natural logarithm domestic direct investment realization by province (Ln (Domestic Inv)), Democracy Index by province level (Democracy index), Percentage of working to economically active by province (Employment), Population density per sq.km by province (Population density), Percentage of micro and small manufacturing enterprises at province level to total micro and small manufacturing enterprises in Indonesia (Enterprises), Policy rate of Central Bank of Indonesia (Discount rate). OLS= ordinary least square.

Appendix 3. The impact of religiosity on total amount of financing but only in small Islamic Banks.

VARIABLES	Model 57	Model 58	Model 59	Model 60	Model 61	Model 62	Model 63
Ln (GDP)	-1.463***	-1.189***	-1.060***	-1.013***	-0.839**	-1.921***	-1.934***
	(0.350)	(0.337)	(0.372)	(0.354)	(0.364)	(0.490)	(0.450)
Ln (Foreign Inv)	-0.158	0.101	-0.197	-0.190	-0.190	-0.191	-0.166
	(0.145)	(0.147)	(0.145)	(0.137)	(0.144)	(0.237)	(0.195)
Ln (Domestic Inv)	0.0475	-0.101	-0.0900	-0.158	-0.132	0.194	0.108
	(0.117)	(0.107)	(0.140)	(0.134)	(0.113)	(0.196)	(0.172)
Democracy index	0.0476*	0.0279	0.0568**	0.0556**	0.0309	0.0630*	0.0137
	(0.0265)	(0.0223)	(0.0254)	(0.0250)	(0.0263)	(0.0372)	(0.0244)
Employment	-0.483***	-0.258***	-0.415***	-0.364***	-0.306***	-0.471***	-0.167
	(0.0774)	(0.0748)	(0.0833)	(0.0820)	(0.0940)	(0.117)	(0.103)
Population density	2.82e-05	1.72e-05	1.06e-05	-2.77e-05	4.04e-05	7.23e-05	4.32e-05
	(4.09e-05)	(4.05e-05)	(3.93e-05)	(4.35e-05)	(4.03e-05)	(6.82e-05)	(5.22e-05)
Enterprises	16.91***	14.32***	13.79***	9.597***	9.956***	14.53***	3.060
	(2.807)	(2.676)	(3.042)	(3.428)	(3.026)	(4.653)	(3.101)
Discount rate	-0.516	-0.563	-0.414	-0.366	-0.515	-0.219	-0.402
	(0.392)	(0.355)	(0.391)	(0.387)	(0.382)	(0.523)	(0.413)
Muslim share		3.554***					
		(0.597)					
Ln (Islamic school)			0.407*				
			(0.222)				
Ln (Hajj)				0.808***			
				(0.250)			
Ln (Seminary)					0.541***		
					(0.133)		
Ln (Mosque)						0.225	
						(0.218)	
Ln (Halal)							1.140***
							(0.146)
Constant	72.01***	46.20***	58.74***	49.12***	48.58***	70.32***	42.58***
	(8.409)	(8.935)	(10.54)	(10.72)	(10.51)	(12.44)	(12.63)
Dummy Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	140	140	140	140	140	72	69
R-squared	0.518	0.589	0.532	0.551	0.553	0.585	0.751

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: The dependent variable is the natural logarithm of total amount of financing at province level. The independent variables are Percentage Muslim population at province level to total population at province level (Muslim share), natural logarithm of sum of Islamic primary school, Islamic junior high school and Islamic senior high school at province level (Ln (Islamic school)), natural logarithm of Hajj application by province (Ln (Hajj)), natural logarithm of the number of Islamic seminary schools (pesantren) by province (Ln (Seminary)), natural logarithm of the number of mosques registered under Ministry of Religious Affair at province level (Ln (Mosque)), natural logarithm of the number of halal certifications at province level (Ln (Halal)). The controls are natural logarithm per capita gross regional domestic product at current market prices by province (Ln (GDP)), natural logarithm foreign direct investment realization by province (Ln (Foreign Inv)), natural logarithm domestic direct investment realization by province (Ln (Domestic Inv)), Democracy Index by province level (Democracy index), Percentage of working to economically active by province (Employment), Population density per sq.km by province (Population density), Percentage of micro and small manufacturing enterprises at province level to total micro and small manufacturing enterprises in Indonesia (Enterprises), Policy rate of Central Bank of Indonesia (Discount rate). OLS= ordinary least square.

Appendix 4. The impact of religiosity on total amount of finance but only in small conventional banks

VARIABLES	Model 64	Model 65	Model 66	Model 67	Model 68	Model 69	Model 70
Ln (GDP)	0.168	0.166	0.403*	0.305	0.502**	0.117	-0.183
	(0.216)	(0.224)	(0.242)	(0.224)	(0.235)	(0.327)	(0.274)
Ln (Foreign Inv)	0.449***	0.381***	0.425***	0.430***	0.416***	0.398***	0.535***
	(0.0823)	(0.0819)	(0.0858)	(0.0844)	(0.0836)	(0.147)	(0.143)
Ln (Domestic Inv)	-0.0839	0.00377	-0.175*	-0.205**	-0.298***	0.0205	-0.333***
	(0.0748)	(0.0845)	(0.0993)	(0.102)	(0.0956)	(0.165)	(0.120)
Democracy index	0.0275	0.0218	0.0353*	0.0395**	0.0355*	0.0265	0.00806
	(0.0190)	(0.0193)	(0.0192)	(0.0199)	(0.0182)	(0.0306)	(0.0281)
Employment	-0.0317	-0.0625	0.00344	0.00293	0.0554	-0.0863	0.0523
	(0.0492)	(0.0450)	(0.0530)	(0.0553)	(0.0669)	(0.0820)	(0.0926)
Population density	-1.81e-05	-1.39e-05	-3.03e-05	-4.73e-05	-9.31e-06	-3.10e-05	2.21e-06
	(2.87e-05)	(2.89e-05)	(2.82e-05)	(3.02e-05)	(2.75e-05)	(4.69e-05)	(3.46e-05)
Enterprises	16.23***	16.60***	14.11***	12.54***	10.42***	19.12***	9.015***
	(1.484)	(1.461)	(1.753)	(1.947)	(1.908)	(2.926)	(2.680)
Discount rate	-0.197	-0.176	-0.146	-0.158	-0.235	-0.216	-0.439
	(0.281)	(0.275)	(0.276)	(0.275)	(0.265)	(0.379)	(0.361)
Muslim share		-1.087***					
		(0.370)					
Ln (Islamic school)			0.265*				
			(0.153)				
Ln (Hajj)				0.395**			
				(0.176)			
Ln (Seminary)					0.467***		
					(0.122)		
Ln (Mosque)						-0.178	
						(0.211)	
Ln (Halal)							0.637***
							(0.146)
Constant	11.49*	15.25**	4.036	3.325	-1.023	18.18*	8.366
	(6.515)	(6.000)	(7.267)	(7.707)	(8.569)	(10.73)	(10.79)
Dummy Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	195	195	195	195	195	99	90
R-squared	0.499	0.517	0.507	0.515	0.55	0.471	0.570

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

Note: The dependent variable is the natural logarithm of total amount of financing at province level. The independent variables are Percentage Muslim population at province level to total population at province level (Muslim share), natural logarithm of sum of Islamic primary school, Islamic junior high school and Islamic senior high school at province level (Ln (Islamic school)), natural logarithm of Hajj application by province (Ln (Hajj)), natural logarithm of the number of Islamic seminary schools (pesantren) by province (Ln (Seminary)), natural logarithm of the number of mosques registered under Ministry of Religious Affair at province level (Ln (Mosque)), natural logarithm of the number of halal certifications at province level (Ln (Halal)). The controls are natural logarithm per capita gross regional domestic product at current market prices by province (Ln (GDP)), natural logarithm foreign direct investment realization by province (Ln (Foreign Inv)), natural logarithm domestic direct investment realization by province (Ln (Domestic Inv)), Democracy Index by province level (Democracy index), Percentage of working to economically active by province (Employment), Population density per sq.km by province (Population density), Percentage of micro and small manufacturing enterprises at province level to total micro and small manufacturing enterprises in Indonesia (Enterprises), Policy rate of Central Bank of Indonesia (Discount rate). OLS= ordinary least square.

Appendix 5. The impact of religiosity on NPF in large Islamic Banks.

VARIABLES	Model 71	Model 72	Model 73	Model 74	Model 75	Model 76	Model 77
Ln (GDP)	0.00270	0.00269	0.00506	0.00251	0.000851	0.00453	0.0269
	(0.00317)	(0.00318)	(0.00399)	(0.00340)	(0.00378)	(0.00442)	(0.168)
Ln (Foreign Inv)	-0.00326	-0.00371	-0.00350	-0.00323	-0.00307	0.00124	0.108*
	(0.00268)	(0.00282)	(0.00276)	(0.00271)	(0.00273)	(0.00192)	(0.0608)
Ln (Domestic Inv)	0.00395***	0.00452***	0.00303**	0.00412***	0.00514***	0.00426***	0.157*
	(0.00135)	(0.00157)	(0.00143)	(0.00149)	(0.00141)	(0.00161)	(0.0854)
Democracy index	-0.000443	-0.000480	-0.000364	-0.000460	-0.000487*	-0.000353	-0.0134
	(0.000306)	(0.000307)	(0.000303)	(0.000299)	(0.000293)	(0.000327)	(0.0106)
Employment	0.000102	-0.000101	0.000456	5.28e-05	-0.000382	0.000913	0.0655
	(0.00111)	(0.00110)	(0.00122)	(0.00121)	(0.00130)	(0.00117)	(0.0426)
Population density	-4.90e-07	-4.62e-07	-6.13e-07	-4.49e-07	-5.39e-07	-1.23e-06**	-2.23e-05
	(4.54e-07)	(4.56e-07)	(4.32e-07)	(4.45e-07)	(4.70e-07)	(5.57e-07)	(1.74e-05)
Enterprises	-0.0643**	-0.0618**	-0.0856***	-0.0591*	-0.0320	-0.0409	-2.162
	(0.0255)	(0.0256)	(0.0298)	(0.0355)	(0.0321)	(0.0468)	(1.464)
Discount rate	0.00300	0.00314	0.00352	0.00294	0.00321	0.0154***	0.437**
	(0.00534)	(0.00541)	(0.00547)	(0.00542)	(0.00537)	(0.00566)	(0.167)
Muslim share		-0.00714					
		(0.00774)					
Ln (Islamic school)			0.00266				
			(0.00260)				
Ln (Hajj)				-0.000557			
				(0.00295)			
Ln (Seminary)					-0.00260		
					(0.00185)		
Ln (Mosque)						-0.00221	
						(0.00196)	
Ln (Halal)							-0.0557
							(0.0796)
Constant	-0.00523	0.0195	-0.0803	0.00629	0.0643	-0.184	-13.04***
	(0.124)	(0.126)	(0.155)	(0.151)	(0.154)	(0.135)	(4.896)
Dummy Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	195	195	195	195	195	99	90
R-squared	0.153	0.156	0.156	0.153	0.160	0.199	0.272

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

Note: The dependent variable is the non-performing financing to total amount of financing at province level. The independent variables are Percentage Muslim population at province level to total population at province level (Muslim share), natural logarithm of sum of Islamic primary school, Islamic junior high school and Islamic senior high school at province level (Ln (Islamic school)), natural logarithm of Hajj application by province (Ln (Hajj)), natural logarithm of the number of Islamic seminary schools (pesantren) by province (Ln (Seminary)), natural logarithm of the number of mosques registered under Ministry of Religious Affair at province level (Ln (Mosque)), natural logarithm of the number of halal certifications at province level (Ln (Halal)). The controls are natural logarithm per capita gross regional domestic product at current market prices by province (Ln (GDP)), natural logarithm foreign direct investment realization by province (Ln (Foreign Inv)), natural logarithm domestic direct investment realization by province (Ln (Domestic Inv)), Democracy Index by province level (Democracy index), Percentage of working to economically active by province (Employment), Population density per sq.km by province (Population density), Percentage of micro and small manufacturing enterprises at province level to total micro and small manufacturing enterprises in Indonesia (Enterprises), Policy rate of Central Bank of Indonesia (Discount rate). OLS= ordinary least square.

Appendix 6. The impact of religiosity on NPF in large conventional banks

VARIABLES	Model 78	Model 79	Model 80	Model 81	Model 82	Model 83	Model 84
Ln (GDP)	0.0118***	0.0118***	0.00886***	0.0114***	0.0112***	0.0143***	0.472***
	(0.00222)	(0.00218)	(0.00225)	(0.00224)	(0.00228)	(0.00325)	(0.104)
Ln (Foreign Inv)	-0.00127**	-0.00166***	-0.000961*	-0.00121**	-0.00120**	-0.000173	0.0182
	(0.000574)	(0.000578)	(0.000579)	(0.000580)	(0.000584)	(0.000738)	(0.0280)
Ln (Domestic Inv)	0.000311	0.000820	0.00146**	0.000693	0.000731	0.000950	0.0154
	(0.000471)	(0.000527)	(0.000600)	(0.000542)	(0.000529)	(0.000625)	(0.0369)
Democracy index	-0.000174	-0.000207	-0.000271**	-0.000211	-0.000189	-3.65e-05	-0.00322
	(0.000134)	(0.000135)	(0.000132)	(0.000144)	(0.000134)	(0.000166)	(0.00594)
Employment	-0.000922**	-0.00110***	-0.00137***	-0.00103**	-0.00109**	-0.000228	0.0125
	(0.000440)	(0.000415)	(0.000418)	(0.000431)	(0.000439)	(0.000485)	(0.0157)
Population density	-1.40e-06***	-1.38e-06***	-1.25e-06***	-1.31e-06***	-1.42e-06***	-1.83e-06***	-5.20e-05***
	(2.77e-07)	(2.79e-07)	(2.73e-07)	(2.90e-07)	(2.78e-07)	(4.19e-07)	(1.13e-05)
Enterprises	0.0158	0.0179	0.0424***	0.0274**	0.0272**	0.0504***	0.841
	(0.0113)	(0.0110)	(0.0126)	(0.0131)	(0.0118)	(0.0185)	(0.592)
Discount rate	6.86e-05	0.000192	-0.000582	-5.62e-05	0.000143	0.00710***	0.257***
	(0.00178)	(0.00181)	(0.00188)	(0.00183)	(0.00179)	(0.00253)	(0.0916)
Muslim share		-0.00632**					
		(0.00300)					
Ln (Islamic school)			-0.00333***				
			(0.00118)				
Ln (Hajj)				-0.00125			
				(0.00102)			
Ln (Seminary)					-0.000917		
					(0.000570)		
Ln (Mosque)						-0.00204**	
						(0.00101)	
Ln (Halal)							0.00973
							(0.0627)
Constant	0.00140	0.0233	0.0953*	0.0272	0.0260	-0.134**	-11.45***
	(0.0480)	(0.0489)	(0.0525)	(0.0511)	(0.0505)	(0.0532)	(1.752)
Dummy Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	195	195	195	195	195	99	90
R-squared	0.337	0.354	0.372	0.341	0.342	0.425	0.365

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: The dependent variable is the non-performing financing to total amount of financing at province level. The independent variables are Percentage Muslim population at province level to total population at province level (Muslim share), natural logarithm of sum of Islamic primary school, Islamic junior high school and Islamic senior high school at province level (Ln (Islamic school)), natural logarithm of Hajj application by province (Ln (Hajj)), natural logarithm of the number of Islamic seminary schools (pesantren) by province (Ln (Seminary)), natural logarithm of the number of mosques registered under Ministry of Religious Affair at province level (Ln (Mosque)), natural logarithm of the number of halal certifications at province level (Ln (Halal)). The controls are natural logarithm per capita gross regional domestic product at current market prices by province (Ln (GDP)), natural logarithm foreign direct investment realization by province (Ln (Foreign Inv)), natural logarithm domestic direct investment realization by province (Ln (Domestic Inv)), Democracy Index by province level (Democracy index), Percentage of working to economically active by province (Employment), Population density per sq.km by province (Population density), Percentage of micro and small manufacturing enterprises at province level to total micro and small manufacturing enterprises in Indonesia (Enterprises), Policy rate of Central Bank of Indonesia (Discount rate). OLS= ordinary least square.

Appendix 7. The impact of religiosity on NPF in small Islamic Banks.

VARIABLES	Model 85	Model 86	Model 87	Model 88	Model 89	Model 90	Model 91
Ln (GDP)	0.0623*	0.0361	-0.0183	0.0231	0.0411	0.0425	-0.0313
	(0.0323)	(0.0293)	(0.0416)	(0.0413)	(0.0436)	(0.0508)	(0.259)
Ln (Foreign Inv)	-0.00825	-0.0339**	-0.000601	-0.00527	-0.00710	-0.0113	0.00543
	(0.0167)	(0.0142)	(0.0171)	(0.0163)	(0.0166)	(0.0290)	(0.0958)
Ln (Domestic Inv)	-0.0212	-0.00678	0.00635	-0.00340	-0.0152	-0.0409	-0.289***
	(0.0163)	(0.0147)	(0.0188)	(0.0205)	(0.0179)	(0.0309)	(0.102)
Democracy index	-0.00917**	-0.00732**	-0.0111***	-0.00984***	-0.00860**	-0.0155***	-0.0281
	(0.00381)	(0.00321)	(0.00370)	(0.00373)	(0.00388)	(0.00560)	(0.0179)
Employment	0.0239**	0.00181	0.0101	0.0137	0.0180	0.0195	-0.0582
	(0.0106)	(0.00671)	(0.00751)	(0.00848)	(0.0119)	(0.0150)	(0.0828)
Population density	9.22e-06*	1.04e-05**	1.28e-05***	1.40e-05**	8.80e-06*	1.06e-05	9.10e-05***
	(4.80e-06)	(4.30e-06)	(4.87e-06)	(5.48e-06)	(4.66e-06)	(8.27e-06)	(2.77e-05)
Enterprises	-0.204	0.0556	0.427*	0.427	0.0302	0.185	2.329
	(0.251)	(0.224)	(0.229)	(0.287)	(0.330)	(0.452)	(2.398)
Discount rate	-0.0837	-0.0797	-0.105*	-0.0965*	-0.0837	-0.124*	-0.609**
	(0.0587)	(0.0516)	(0.0556)	(0.0569)	(0.0587)	(0.0663)	(0.289)
Muslim share		-0.346***					
		(0.129)					
Ln (Islamic school)			-0.0818***				
			(0.0280)				
Ln (Hajj)				-0.0700*			
				(0.0365)			
Ln (Seminary)					-0.0183		
					(0.0199)		
Ln (Mosque)						-0.0356	
						(0.0313)	
Ln (Halal)							-0.237
							(0.142)
Constant	-1.424	1.118	1.258	0.550	-0.636	0.349	12.65
	(1.127)	(0.829)	(1.001)	(1.152)	(1.399)	(1.763)	(9.301)
Dummy Year	Yes	Yes	Yes	Yes	Yes	Yes	No
Observations	139	139	139	139	139	72	69
R-squared	0.222	0.306	0.293	0.253	0.227	0.377	0.381

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: The dependent variable is the non-performing financing to total amount of financing at province level. The independent variables are Percentage Muslim population at province level to total population at province level (Muslim share), natural logarithm of sum of Islamic primary school, Islamic junior high school and Islamic senior high school at province level (Ln (Islamic school)), natural logarithm of Hajj application by province (Ln (Hajj)), natural logarithm of the number of Islamic seminary schools (pesantren) by province (Ln (Seminary)), natural logarithm of the number of mosques registered under Ministry of Religious Affair at province level (Ln (Mosque)), natural logarithm of the number of halal certifications at province level (Ln (Halal)). The controls are natural logarithm per capita gross regional domestic product at current market prices by province (Ln (GDP)), natural logarithm foreign direct investment realization by province (Ln (Foreign Inv)), natural logarithm domestic direct investment realization by province (Ln (Domestic Inv)), Democracy Index by province level (Democracy index), Percentage of working to economically active by province (Employment), Population density per sq.km by province (Population density), Percentage of micro and small manufacturing enterprises at province level to total micro and small manufacturing enterprises in Indonesia (Enterprises), Policy rate of Central Bank of Indonesia (Discount rate). OLS= ordinary least square.

Appendix 8. The impact of religiosity on NPF in small conventional banks

VARIABLES	Model 92	Model 93	Model 94	Model 95	Model 96	Model 97	Model 98
Ln (GDP)	0.0116	0.0112	0.0158**	0.0113	0.0114	0.0137	-0.00658
	(0.00703)	(0.00687)	(0.00796)	(0.00723)	(0.00760)	(0.00945)	(0.00993)
Ln (Foreign Inv)	-0.00707**	-0.00409	-0.00750**	-0.00703**	-0.00705**	-0.00309	-0.00202
	(0.00324)	(0.00321)	(0.00320)	(0.00317)	(0.00319)	(0.00544)	(0.00552)
Ln (Domestic Inv)	0.00801***	0.00436*	0.00633**	0.00825***	0.00813***	0.00819**	0.0143***
	(0.00238)	(0.00261)	(0.00300)	(0.00295)	(0.00291)	(0.00398)	(0.00410)
Democracy index	0.000753	0.00100*	0.000899	0.000729	0.000749	0.000525	0.00139
	(0.000542)	(0.000542)	(0.000557)	(0.000580)	(0.000539)	(0.000851)	(0.000858)
Employment	-0.00250	-0.00124	-0.00186	-0.00257	-0.00255	0.00267	0.00309
	(0.00160)	(0.00172)	(0.00177)	(0.00174)	(0.00189)	(0.00279)	(0.00281)
Population density	-2.89e-06***	-3.04e-06***	-3.11e-06***	-2.83e-06***	-2.89e-06***	-3.13e-06***	-3.03e-06**
	(8.13e-07)	(8.25e-07)	(8.43e-07)	(9.75e-07)	(8.18e-07)	(1.18e-06)	(1.31e-06)
Enterprises	-0.0921**	-0.109**	-0.131**	-0.0846	-0.0887	-0.203*	-0.257**
	(0.0461)	(0.0463)	(0.0629)	(0.0768)	(0.0652)	(0.114)	(0.0993)
Discount rate	0.00140	0.000102	0.00228	0.00133	0.00143	0.0122	0.0154
	(0.00967)	(0.00947)	(0.00977)	(0.00983)	(0.00967)	(0.0158)	(0.0155)
Muslim share		0.0457***					
		(0.0132)					
Ln (Islamic school)			0.00489				
			(0.00505)				
Ln (Hajj)				-0.000799			
				(0.00612)			
Ln (Seminary)					-0.000272		
					(0.00366)		
Ln (Mosque)						0.00488	
						(0.00557)	
Ln (Halal)							0.00267
							(0.00546)
Constant	0.106	-0.0433	-0.0300	0.122	0.113	-0.508	-0.442
	(0.194)	(0.200)	(0.248)	(0.247)	(0.237)	(0.336)	(0.305)
Dummy Year	Yes	Yes	Yes	Yes	Yes	Yes	No
Observations	194	194	194	194	194	99	90
R-squared	0.133	0.180	0.137	0.133	0.133	0.122	0.161

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: The dependent variable is the non-performing financing to total amount of financing at province level. The independent variables are Percentage Muslim population at province level to total population at province level (Muslim share), natural logarithm of sum of Islamic primary school, Islamic junior high school and Islamic senior high school at province level (Ln (Islamic school)), natural logarithm of Hajj application by province (Ln (Hajj)), natural logarithm of the number of Islamic seminary schools (pesantren) by province (Ln (Seminary)), natural logarithm of the number of mosques registered under Ministry of Religious Affair at province level (Ln (Mosque)), natural logarithm of the number of halal certifications at province level (Ln (Halal)). The controls are natural logarithm per capita gross regional domestic product at current market prices by province (Ln (GDP)), natural logarithm foreign direct investment realization by province (Ln (Foreign Inv)), natural logarithm domestic direct investment realization by province (Ln (Domestic Inv)), Democracy Index by province level (Democracy index), Percentage of working to economically active by province (Employment), Population density per sq.km by province (Population density), Percentage of micro and small manufacturing enterprises at province level to total micro and small manufacturing enterprises in Indonesia (Enterprises), Policy rate of Central Bank of Indonesia (Discount rate). OLS= ordinary least square.

Appendix 9. Robustness check on reverse causality: 2SLS Regression the impact of religiosity on total amount of financing

	Full Sample Corresponding Table 6 Model 3	Corresponding Table 6 Model 5	Islamic Banks sub-sample Corresponding Table 8 Model 17	Corresponding Table 8 Model 19	Conventional Banks sub-sample Corresponding Table 9 Model 24	Corresponding Table 9 Model 26
Ln (GDP)	0.133	0.0864	-0.151	-0.249	0.395	0.386
	(0.244)	(0.227)	(0.367)	(0.343)	(0.335)	(0.309)
Ln (Foreign Inv)	0.135*	0.146**	-0.0585	-0.0357	0.291***	0.293***
	(0.0746)	(0.0730)	(0.110)	(0.106)	(0.0974)	(0.0957)
Ln (Domestic Inv)	-0.0136	-0.0486	0.0185	0.0132	-0.0407	-0.0899
	(0.0723)	(0.0706)	(0.0990)	(0.0964)	(0.103)	(0.102)
Democracy index	0.0239*	0.0191	0.0286	0.0185	0.0227	0.0216
	(0.0143)	(0.0139)	(0.0216)	(0.0206)	(0.0193)	(0.0190)
Employment	-0.0741	-0.0500	-0.150**	-0.126*	-0.00866	0.0134
	(0.0486)	(0.0500)	(0.0687)	(0.0738)	(0.0728)	(0.0726)
Population density	0.0000690	0.0000922	0.0000656	0.0000951	0.0000758	0.0000924*
	(0.0000607)	(0.0000605)	(0.0000931)	(0.0000929)	(0.0000536)	(0.0000530)
Enterprises	7.608***	6.003***	5.694**	4.493*	9.670***	7.942**
	(1.839)	(1.810)	(2.709)	(2.542)	(3.188)	(3.269)
Dummy bank type	-2.494***	-2.516***				
	(0.171)	(0.170)				
Discount rate	-0.0635	-0.0953	-0.0758	-0.108	-0.0480	-0.0769
	(0.0806)	(0.0810)	(0.118)	(0.119)	(0.110)	(0.110)
Ln (Islamic school)	0.415***		0.555***		0.280	
	(0.132)		(0.187)		(0.187)	
Ln (Seminary)		0.399***		0.454***		0.320**
		(0.0899)		(0.110)		(0.137)
_cons	16.11***	15.76***	23.57***	24.47***	7.237	6.079
	(6.021)	(5.764)	(8.193)	(8.143)	(9.180)	(8.535)
N	725	725	335	335	390	390

*** p<0.01, ** p<0.05, * p<0.1

Note: The dependent variable is the natural logarithm of total amount of financing at province level. The instrumental variables are *ln* Islamic school lagged 3 years and *ln* Islamic seminary school lagged 3 years. The instrumented variables are natural logarithm of sum of Islamic primary school, Islamic junior high school and Islamic senior high school at province level (Ln (Islamic school)) and natural logarithm of the number of Islamic seminary schools (*pesantren*) by province (Ln (Seminary)). The controls are natural logarithm per capita gross regional domestic product at current market prices by province (Ln (GDP)), natural logarithm foreign direct investment realization by province (Ln (Foreign Inv)), natural logarithm domestic direct investment realization by province (Ln (Domestic Inv)), Democracy Index by province level (Democracy index), Percentage of working to economically active by province (Employment), Population density per sq.km by province (Population density), Percentage of micro and small manufacturing enterprises at province level to total micro and small manufacturing enterprises in Indonesia (Enterprises), Policy rate of Central Bank of Indonesia (Discount rate), and Dummy bank type, 1 if Islamic Banks, otherwise 0 (Dummy bank type).

Appendix 10 (correspond to Table 6). Robustness check on omitted variables bias: 2SLS Regression the impact of religiosity on total amount of financing in full sample.

	Corr. Table 6 Model 3	Corr. Table 6 Model 4	Corr. Table 6 Model 5	Corr. Table 6 Model 6	Corr. Table 6 Model 7
Ln (GDP)	0.583	0.1000	0.446	-0.244	-0.640
	(0.474)	(0.283)	(0.389)	(0.384)	(0.421)
Ln (Foreign Inv)	0.0668	0.117	0.0986	0.176	0.193
	(0.0913)	(0.0779)	(0.0812)	(0.135)	(0.135)
Ln (Domestic Inv)	-0.203	-0.167	-0.256	0.134	-0.108
	(0.177)	(0.143)	(0.173)	(0.184)	(0.282)
Democracy index	0.0351**	0.0410**	0.0215	0.0127	-0.0126
	(0.0177)	(0.0184)	(0.0149)	(0.0250)	(0.0342)
Employment	0.00894	-0.0388	0.0521	-0.0929	0.102
	(0.0789)	(0.0588)	(0.0860)	(0.0924)	(0.171)
Population density	0.0000549	0.0000173	0.000105	0.0000833	0.0000971
	(0.0000683)	(0.0000740)	(0.0000661)	(0.000108)	(0.000109)
Enterprises	3.128	2.171	0.576	8.729	-3.316
	(4.016)	(4.003)	(4.558)	(5.716)	(10.04)
Dummy bank type	-2.497***	-2.534***	-2.543***	-2.508***	-2.528***
	(0.178)	(0.178)	(0.179)	(0.254)	(0.273)
Discount rate	-0.0543	-0.0227	-0.131	-0.104	-0.128
	(0.0835)	(0.0859)	(0.0865)	(0.216)	(0.233)
Ln (Islamic school)	0.974**				
	(0.481)				
Ln (Hajj)		0.965**			
		(0.419)			
Ln (Seminary)			0.851**		
			(0.360)		
Ln (Mosque)				0.194	
				(0.414)	
Ln (Halal)					1.277
					(0.971)
_cons	0.942	7.197	2.003	22.71*	7.210
	(13.59)	(9.876)	(11.70)	(12.21)	(17.50)
N	671	671	671	333	306

*** p<0.01, ** p<0.05, * p<0.1

Note: The dependent variable is the natural logarithm of total amount of financing at province level. The instrumental variables are *ln* natural disaster events lagged 1 year, *ln* death and injury toll in natural disasters lagged 1 year, and *ln* destroyed and damaged house total in natural disasters lagged 1 year at province level. The instrumented variables are Percentage Muslim population at province level to total population at province level (Muslim share), natural logarithm of sum of Islamic primary school, Islamic junior high school and Islamic senior high school at province level (Ln (Islamic school)), natural logarithm of Hajj application by province (Ln (Hajj)), natural logarithm of the number of Islamic seminary schools (pesantren) by province (Ln (Seminary)), natural logarithm of the number of mosques registered under Ministry of Religious Affair at province level (Ln (Mosque)), natural logarithm of the number of halal certifications at province level (Ln (Halal)). The controls are natural logarithm per capita gross regional domestic product at current market prices by province (Ln (GDP)), natural logarithm foreign direct investment realization by province (Ln (Foreign Inv)), natural logarithm domestic direct investment realization by province (Ln (Domestic Inv)), Democracy Index by province level (Democracy index), Percentage of working to economically active by province (Employment), Population density per sq.km by province (Population density), Percentage of micro and small manufacturing enterprises at province level to total micro and small manufacturing enterprises in Indonesia (Enterprises), Policy rate of Central Bank of Indonesia (Discount rate), and Dummy bank type, 1 if Islamic Banks, otherwise 0 (Dummy bank type).

Chapter 4:
Trust and Islam in Financing Relationship

The first empirical paper shows that religiosity level is positively associated with the total amount of finance but negatively associated with NPF in those areas. Religious actors such as Islamic schools, Islamic seminary schools and mosques promote Islamic ethics which are beneficial to business-to-business relationships. Religious practices such as Hajj and consuming halal food could also shape the behaviour of the people in their financing and business activities.

Being trustworthy to both God and humans is one of the important ethical behaviours in Islam, as mentioned in Quran 8:27 “Believers, do not betray God and the Messenger, or knowingly betray what is entrusted to you”, Quran 4:58 “God commands you to return things entrusted to you to their rightful owners and if you judge between people, to do so with justice: God’s instructions to you are excellent, for He hears and sees everything”, and Quran 28:26 “Father, hire him: a strong, trustworthy man is the best to hire” (Eggen, 2011). These teachings are relevant in supporting business-to-business relationships. However, business-to-business transactions can still be performed without trust and in highly competitive environments but only by increasing the monitoring and contract enforcement cost (Chiles and McMackin, 1996; Dyer and Chu, 2003; Fukuyama, 1995). This implies that the next step of the analysis is to explore the role of trust in supporting business-to-business relationships generally in Islamic culture.

The connection between religiosity and trust can be explained by: (1) the fact that religious people are considered to be trustworthy (Tan and Vogel, 2008) as proved by the experimental study where the sender will send more money to the recipient with a high religiosity level (Tan and Vogel, 2008). In the same vein, experiments also show that more religious people are trusted more by people across different level of religiosity (Chuah et al., 2016). Moreover, empirical evidence shows that students from Islamic schools (*Madrasa*) in Bangladesh trust others more than non-*Madrasa* students (Asadullah, 2016), suggesting that *Madrasa* (and implicitly the religious teaching delivered there) promote trusting behaviour. One possible explanation is that the *Madrasa* curriculum, which emphasizes altruism and charitable behaviour, could shape the attitude of students. In addition, daily prayer and learning the *Quran* could also influence the trusting behaviour of the students; and a second is that there is an intersection between trust and ethics (Hosmer, 1995). Hosmer (1995) defines trust as "the expectation by one person, group, or firm of ethically justifiable behavior […] on the part of the other person, group, or firm in a joint endeavor or economic exchange (p.399). Literature on Islamic business ethics has shown that a party involved in a business needs to show honesty, integrity, benevolence, be knowledgeable, and show openness and fairness in contracts and negotiations (Abuznaid 2009; Ali et al. 2013; Beekun and Badawi 2005; Ishak and Osman 2016; Rice 1999; Uddin 2003). Interestingly, these teachings, commands and prohibitions can be found in *Quran* and *Sunnah* but they are also in line with the trustworthiness dimension proposed in Western literature (Das and Teng, 2001; Hosmer, 1995; Nooteboom, Berger and Noorderhaven, 1997).

In order to examine the role of trust in business-to-business relationships, I conducted a study in Indonesia, a country that has experienced a significant growth in Islam religiosity, e.g., the significant growth of *zakat*, Muslim fashion consumption, Islamic banks' assets, Islamic schools and mosques (see Table 1. The progress of Religiosity Indicators in Indonesia, Chapter 3 of this thesis). Indonesia and many other Muslim countries score low in the individualism index (Hofstede, Hofstede and Minkov, 2010; Hui and Triandis, 1986). Moreover, Muslim business actors around the world show the importance of family and group solidarity (*Umma*) in their socioeconomic activities (Abeng, 1997; Ali et al., 1997; Forster and Fenwick, 2015; Graafland, Mazereeuw and Yahia, 2006; Lalonde, 2013; Richardson, 2014;

Richardson and Rammal, 2018). In the context of Indonesia, historical evidence shows that the ethical preferences of *abangan* (a typology of society in Java that mixes Islam, Hinduism and Buddhism) are inter-familial dependence and de-emphasizing individualism (Geertz, 1956), which indirectly implies a strong trust in a narrow radius (Van Hoorn, 2015). Trustors of collectivistic society are more likely to form trust via a transference process (a reliance on a known trustworthy partner) and are more interested in exploiting the partner's benevolence (*ihsan*) than in that partner's capability (competency) (Doney, Cannon and Mullen, 1998). Because few studies in trust and culture explore the magnitude of values-based trust (benevolence-integrity) vis-à-vis competence-based trust (ability), I would like to examine the relative strength of the impact of values-based trust vis-à-vis competence-based trust on financing availability in Indonesia, the biggest Muslim country in the world.

Trust in Islamic Business-to-Business Relationships. Evidence from Indonesia[11]

Abstract

We explore the role of trust in Islamic culture in business-to-business relationship by exploring the link between bank managers' trust in business customers and their financing decision. In line with our expectations based on the fact that Islamic culture is characterized by a collectivistic approach, weak rule of law, and clan-based social structure, we find that value-based trust is more important than competence-based trust. Moreover, we find that these results are amplified in the case of small organizations. These results support the argument that business relationships in Islamic culture ground more on principles, values, norms that a partner bring into the relationship than in its business skills. Our results are robust to endogeneity and multilevel issues.

Keywords: *Trust, Islam, Islamic Finance, Religion, Ethical and Moral Values*

1. Introduction

Trust is an important element in business relationships and past research has stressed both its positive functional roles (Barney and Hansen, 1994; Bromiley and Cummings, 1995; Dyer and Chu, 2003; Zaheer, McEvily and Perrone, 1998; Zand, 1972) and the dysfunctional ones (Villena, Choi and Revilla, 2019; Zahra, Yavuz and Ucbasaran, 2006). However, trust does not develop in a vacuum and the cultural context influences it by affecting one's behaviour (Hofstede, Hofstede and Minkov, 2010). Thus, research has begun to examine the link between trust and its cultural antecedents, as well as the role of culture in supporting/constraining the development of trust (Cannon et al., 2010; Doney, Cannon and Mullen, 1998; Hewett and Bearden, 2001; Huff and Kelley, 2003; Williams, Han and Qualls, 1998; Zaheer and Zaheer, 2006) also in quite peculiar contexts, such as the post-Soviet business environment and China. Ayios (2003) shows that Western partners appear to prefer to conduct their business based on high monitoring (low trust) while Russian partners show a preference for conducting business based on interpersonal skills (high trust). Moreover, in China, interpersonal trust need to be

[11] The paper presented in this chapter contains all the additional robustness tests. The version in the appendix is the shorter version (with robustness test tables omitted) submitted to BJM. In fact, the word limitation required by BJM did not allow for the submission of the complete version.

built first before conducting business, as the default norm in business relationships is "distrust" (De Cremer, 2015). The source of the "distrust" is *guanxi*, where people only build automatic trust within a narrow network (De Cremer, 2015). However, very little research has covered, so far, the impact of Islamic culture on trust development and value systems, irrespective of the peculiarities that characterize the Islamic world and differences between the Western and Islamic worlds. In addition, there are 1.8 billion Muslims in the world and, according to the Pew Research Center, in 2060, the number of Muslims will have grown to around 3 billion, almost the same as the number of Christians in 2060. This implies that interactions in general, and business interactions in particular, will dramatically increase in the near future and a proper understanding of similarities and differences in trust building and development will allow the facilitation of high quality business relationships. Besides, a better understanding will also avoid issues linked to cultural colonization.

By drawing on Hosmer (1995), who argues that there is an intersection between trust and moral philosophy so that trust is a building block in shaping a "good society", our work aims to expand existing research on trust and culture by exploring trust in the Islamic world. St. Augustine (426AD) explains that honesty, temperance, and truthfulness need to be combined with some degree of compassion and kindness to achieve a "good society" where trust can develop (Hosmer, 1995, p.396). However, these golden rules are not exclusive of the Judeo-Christian tradition, since they can easily be found in Islamic culture (Ali, Al-Aali and Al-Owaihan, 2013). Thus, it is not surprising that there are no major conflicting positions regarding trustworthiness in Western and Islamic cultures (Beekun and Badawi, 2005; Butler and Cantrell, 1984; Das and Teng, 2001; Ishak and Osman, 2016; Mayer, Davis and Schoorman, 1995; Nooteboom, Berger and Noorderhaven, 1997; Rice, 1999). However, arguing *sic et simpliciter* that trust can play the same role in Islamic and Western worlds is an oversimplification. This is because, socioeconomic conditions in today's Muslim countries are quite different compared to those of developed countries. Muslim countries share similar characteristics with emerging economies such as corruption, bribery, lack of infrastructure (Hoskisson et al., 2000), and weak rule of law[12] (see Guiso et al., 2003; North et al., 2013; World Bank). Moreover, they score relatively low on "most people can be trusted" compared to protestant European societies as reported by World Values Survey (WVS) (Inglehart, 2007). This implies that in the Islamic world it may be difficult to establish reliable connections in order to develop trust-based relationships (Lewicki and Bunker 1996). All in all, it is not clear whether trust can play a constructive role in business relationships in today's Muslim countries.

In this study, we explore the trust relationship between bank credit officers and small business owners in Indonesia, the country with the biggest Muslim population in the world and characterized by a well-established mixed financial system with both Islamic and Western style banks. The business-to-business relationship mentioned above represents an excellent context to explore the role of trust for three different reasons. First, credit officers are subject to high levels of information asymmetry that exposes them to small business owners' possible opportunistic behaviour (Chiles and McMackin, 1996; Dyer and Chu, 2003) in the form of moral hazard and adverse selection. In order to deal with these issues, credit officers face the trade-off between increasing control (incurring additional costs) and exploiting trust (and keeping costs low). Second, credit officers have to assess the ability of a firm's management to deal with the challenges (Das and Teng, 2001), and as such trust in owners' management skills and capabilities facilitates the financing decision process. Third, the risk incurred by the banks in lending to firms is very high (loss of both income and principal). Banks can use tools to hedge risk (e.g., covenants, collateral) but they generate additional costs. Besides, the possibility of recovering the funds by executing covenants or by repossessing assets depends

[12] Rule of law captures "perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence." (Kaufmann et al., 2009, p.6).

on third parties (i.e., the judicial system). All in all, a financing relationship boils down to the question: Does the bank credit officer trust the firm's owner?

Our evidence suggests that both ability (competence-based trust) and benevolence-integrity (value-based trust) work in tandem in facilitating the business relationship in the Islamic culture. However, in support of our argument about the link between Islamic culture and trust, we find that value-based trust (benevolence and integrity) has a more important role than competence-based trust (ability) and this is at variance with respect to evidence in the Western world and in particular the Anglo-Saxon one. Thus, our evidence suggests that managerial decisions in the Islamic culture are strongly affected by the values that the partner can bring to the relationship.

2. Literature Review and Conceptual Framework

Research points out the role of trust as a source of competitive advantage (Barney and Hansen, 1994), its capability to reduce transaction cost and the bias in forecasts (Bromiley and Cummings, 1995), its role in problem solving (Zand, 1972), its stimulus to cooperative behaviours and the role it has in promoting relationship commitment between exchange partners (Morgan and Hunt, 1994). Trust is also found to be positively associated with long-term orientation in buyer-seller relationships (Ganesan, 1994) and to increase information sharing. Moreover, interorganizational trust (but not interpersonal trust) reduces the cost of negotiation and also reduces conflicts (Zaheer et al. 1998). In a similar vein, Howorth and Moro (2006, 2012) and Moro and Fink (2013) show that perceived trustworthiness in another party can also increase credit availability and reduce the cost of debt. All in all, the extant research suggests that trust can play an important role in business relationships when individuals have to deal with uncertainty about others' behaviour since it may reduce unmanageable complexity (Lewis and Weigert, 1985). However, trust may also have a dysfunctional role in the business relationship. For instance, Zahra et al. (2006) show potential negative effects of excessive trust in every stage of business creation, such as bias in opportunities searching, lack of objectivity, reduced feedback on proposed ideas, and loose controls. Moreover, by drawing from the law of diminishing return, Villena et al. (2019) document that trust may improve efficiency but only up to a certain point, since excessive trust can trigger a lack of objectivity and opportunistic behaviour.

But what is trust? Scholars have offered various definitions based on two approaches: behavioural and psychological (Lewicki, Tomlinson, & Gillespie, 2006). Proponents of the behavioural approach (Deutsch, 1958) argue that when an individual has high confidence that their trust will be fulfilled by the counterpart, the probability to engage in trusting behaviour increases. The second approach is grounded on the psychological tradition, which emphasizes cognitive and affective processes (Colquitt, Scott, & LePine, 2007; Lewis & Weigert, 1985; Mayer et al., 1995), suggesting that trust is based on the beliefs and judgement about whether the counterpart will behave in a trustworthy manner (Colquitt et al., 2007; Lewicki et al., 2006; Mayer et al., 1995). Thus, trust may be defined as "the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party" (Mayer et al., 1995, p.712). However, Lewis and Weigert (1985) argue that trust has a multi-faceted character covering also the emotional dimensions, since the affective aspect (the emotional bond among the parties involved in the relationship) complements the cognitive one

Mayer et al.'s (1995) quoted definition of trust has two primary components: the intention to accept vulnerability (Colquitt, Scott, & LePine, 2007); and the perception of others' trustworthiness, i.e., ability, benevolence and integrity. Ability is "skills, competencies and characteristics that enable a party to have influence within some specific domain"; benevolence is defined as "the extent to which a trustee is believed to want to do good for the trustor, aside from an egocentric profit motive"; integrity is the "trustor's perception that the trustee adheres to a set of principles that the trustor finds acceptable" (Mayer et al., 1995). An additional trustworthiness dimension is openness, i.e., providing honest detail and complete information based on facts (Butler, 1991; Butler & Cantrell, 1984; Mishra & Mishra, 1994). Hosmer (1995) expands the ethical dimension of trust: "the expectation by one person, group, or firm of ethically justifiable behavior […] on the part of the other person, group, or firm in a joint endeavor or economic exchange" (p.399). He also argues that the components of trust as suggested by Butler and Cantrell (1984), i.e. integrity, competence, consistency, loyalty and openness, are the representation of moral values, and important ingredients for achieving a "good society". Since religion plays an important role in creating and delineating moral values (Hofstede, Hofstede and Minkov, 2010) it is possible to draw a link between religious teaching and trust which we are going to explain.

2.1. Trust Culture

Culture can influence antecedents, development, and outcomes of trust (Cannon et al., 2010; Doney, Cannon and Mullen, 1998; Huff and Kelley, 2003) by influencing one's behaviour (Hofstede, Hofstede and Minkov, 2010). In addition, different societies have different radius of trust, i.e., "the width of the circle of people among whom a certain trust level exists" (Van Hoorn, 2015, p.269) and, together with formal institutions, they influence the ability of a particular society to form organizations (Fukuyama, 1995). For example, trust among non-kin is relatively weak in China and some parts of Italy, and this is argued to hamper the establishment of large and professionally managed corporations (Fukuyama, 1995).

Grounding on Hofstede et al.'s (2010) cultural taxonomy, existing studies focus on exploring the role of trust in the context of individualistic societies (cultures with loose ties between individuals and where the interests of the individual prevails over the interests of the group) as opposed to collectivistic societies (cultures where the interests of the group prevail, ties between individuals are strong, and where more weight is given to norms than attitudes as determinants of social behaviour) (Hofstede, Hofstede and Minkov, 2010; Triandis, 1996). Doney et al. (1998) suggest that collectivistic societies mainly use prediction (Rempel et al. 1985), intentionality and benevolence (Mayer et al., 1995) so that trust is based on 1) ethical/moral vision ("value-shared" approach – similar to Barney and Hansen's (1994 p.179) strong form trust[13]), and 2) transference process, (the reliance on trustworthy third parties as proof sources so that trust tends to be limited to people with closer ties). Consequently, collectivistic culture relies on a "narrow radius of trust" (Van Hoorn, 2015) where the level of trust inside the radius is very solid; this is the type of trust that is found in clans. Moreover, the weak rule of law that creates uncertainty in economic activities (see Gambetta (1988) for the Sicily case; Varese (2001) for the Russia case) reinforces actors' trust towards group members and reduces trust towards outer-group members. In contrast, the trust building process in individualistic societies relies on the capability-assessment process (Mayer et al., 1995) and the calculative process (Lewicki and Bunker 1996) so that in these societies trust evolution tends to rely more on factual information ("competence-based" approach). Such an approach allows for a greater radius of trust (Fukuyama, 1995; Van Hoorn, 2015) in the sense that it allows the expansion of the trust to a larger group of people but at a more superficial level. Thus, in individualistic societies the trusting relationships among business partners tend to rely on weaker forms of trust, such as knowledge-based trust (Lewicki and Bunker 1996). It is therefore apparent that trust formation and development are different in different societies so that in collectivistic countries value-based trust plays a key role in trust formation while in the individualistic ones a similar role is played by ability (Hewett & Bearden, 2001; Williams et al., 1998).

[13] "In strong form trust, trust emerges in the face of significant exchange vulnerabilities, independent of whether or not elaborate social and economic governance mechanisms exist… Strong form trust does not emerge from the structure of an exchange, but rather, reflects the values, principles, and standards that partners bring to an exchange".

2.2. Trust and Islam

Collectivistic culture is embedded in Islam where religious beliefs are reinforced through communally shared understanding of the members of the society. This differentiates Islam from, for instance, Protestantism which stresses that religious living is an individual domain (McCleary, 2008). Historical evidence is provided by research on 11th century Maghribi traders (part of the Islamic world), a collectivist society which emphasized an intensive communication network, collective punishment (i.e., reputation of a dishonest trader spread quickly throughout the society), and mutual responsibility among the member of the same society (*Umma*) (Greif, 1994). Ten centuries forward and Soutar (2010) finds that British people who convert to Islam are interested in its collectivist features, such as brotherhood, solidarity, and mutual friendship, which they feel are absent in an individualistic society. Hofstede et al. (2010, p.89-90), by exploring business relationships between new (unknown) Swedish representatives and Saudis, explain the need for business relationships to be conducted via an intermediary known and trusted by the Saudis. This suggests that in collectivistic society "the personal relationship prevails over the task and should be established first" (Hofstede et al., 2010, p.123). Thus, it is no surprise that the individualism index of Muslim countries is lower than in the US and European countries (Hofstede, Hofstede and Minkov, 2010). As a consequence, it can be expected that the trust building process in Islamic culture relies on value-shared logic that implies: 1) the trustor needs to learn the intention/motive/benevolence of the person to be trusted; and 2) the trustor relies on trustworthy sources exploiting the transference process (Doney, Cannon and Mullen, 1998). However, it is not possible to derive from this argument *sic et simpliciter* that trust plays an important role in business relationships in Muslim countries since different forces are in action.

On the one hand, the role of ethical principles is not solely exclusive to the Judeo-Christian tradition (St. Augustine, 426AD). The principle "Do unto others as you would have them do unto you" is similar to "love thy neighbor as thyself" (Hofstede, Hofstede and Minkov, 2010) and this value is very relevant in Islam. Besides, Islam ethics try to ensure benevolence/openness, and accountability in an individual's behaviour/action while safeguarding social interests, i.e., to prevent any harm to a community (Ali, Al-Aali and Al-Owaihan, 2013), suggesting that ethics not only reinforce trust but also strengthen cooperation among actors in exchange transactions (Ali, Al-Aali and Al-Owaihan, 2013). Moreover, Islamic teaching emphasizes the importance of trustworthy behaviour (Abuznaid 2009; Beekun and Badawi 2005; Eggen 2011; Ishak and Osman 2016; Rice 1999; Uddin 2003), as elaborated in the Western literature, even if based on values encouraged by Islam and based on *Quran* and *Sunna*. Actually, Mayer et al.'s (1995) concept of benevolence, which partially overlaps with openness and sharing weaknesses and important information (Butler and Cantrell, 1984; Mishra and Mishra, 1994; Rempel, Holmes and Zanna, 1985), as well as Nooteboom et al.'s (1997) similar concept of habitualization, mirror the Islamic *ihsan*: "an act which benefits persons other than those from whom the act proceeds without any obligation" or good intention (Beekun and Badawi 2005; Ishak and Osman 2016). Also, openness matches Islam's encouragement of people to be honest and disclose defects in the goods in a business transaction (Ishak and Osman, 2016; Rice, 1999; Uddin, 2003). In addition, the research on trust discusses the important role of ethical and moral values (Butler and Cantrell 1984; Das and Teng 2001; Hosmer 1995), which are the basis of both Mayer et al.'s (1995) concept of integrity and Nooteboom et al.'s (1997) concept of institutionalization. Similarly, Islam stresses that "The partner who uses another's property in trust should be an *amin*, a trustworthy person. Because of his integrity, honesty, sincerity, and faith in God, neither does he 'devour' his partner's property by 'false' or 'illegal' means nor does he substitute his partner's superior possessions with something inferior" (Beekun and Badawi, 2005, p.136).

On the other hand, WVS data show that in Muslim countries only 28% of the people state that “most people can be trusted”, far below Protestant Europe societies (46%) (Inglehart, 2007). Moreover, 57 countries in the Organisation of Islamic Cooperation (OIC) have a much lower income per capita compared to the Organisation for Economic Co-operation and Development (OECD) countries (Kuran, 2018), sharing similar characteristics with emerging economies such as corruption, bribery, opportunism, and lack of infrastructure (Hoskisson et al., 2000). Furthermore, as suggested by World Governance Indicator-World Bank, the rule of law in Islamic societies[14] is far below OECD countries, while a stronger rule of law exists in countries with a religious heritage rooted in Protestantism, Asian ethnic religions, Catholicism, or Hinduism (North, Orman and Gwin, 2013). Also, people belonging to the Islamic denomination show the weakest willingness in not breaking legal rules (cheating on taxes) compared to other denominations (Guiso, Sapienza and Zingales, 2003). In fact, a region’s inherited institutions (*waqf*[15]) influence the high tolerance in law breaking (Kuran, 2013), and the inefficient legal system, which hampers the enforcement of private contracts (Kuran, 1995). In such a complex context, belonging to a group with whom one has developed strong relationships based on reciprocal knowledge, reputation, repeated interaction and trust, may be an alternative effective approach to compensate for a weak rule of law (Bohnet, Herrmann and Zeckhauser, 2010).

The consequence is that a collectivistic culture, compounded by corruption, bribery, opportunism, and lack of infrastructure, increases the role of value-based trust (i.e., benevolence and integrity in Mayer et al.'s (1995) words) at the expense of competence-based trust (i.e., ability in Mayer et al.'s (1995) words), since value-based is more resilient than

[14] Based on Inglehart’s (2007) cross cultural map - Morocco, Algeria, Egypt, Iran, Indonesia, Jordan, Saudi Arabia, Turkey, Bangladesh and Pakistan

[15] Kuran (2013) provides a detailed explanation about *Waqf*. *Waqf* is a distinctly Islamic form of trust in which the income could be used to provide a social service in perpetuity. He argues that *Waqf* has been proposed by the elites to shelter assets from rulers, i.e., the government cannot confiscate the asset. In addition, the founders/families can receive a fee as a return for managing the assets. Interestingly, by the early 19th century, depending on the region of the Middle East, 15 to 50% of all real estate belonged to a *waqf* endowment. In the Middle East, the urban services were practically all provided by *waqf* while in the West they were provided by corporations.

competence-based trust (Latusek and Cook, 2012). Besides, the latter can also be difficult to build because of the poor and unreliable quality of accessible evidence.

Summing up, collectivistic societies rely on trust that leverages benevolence-integrity, while individualistic societies are expected to exploit the ability dimension of trust. Since benevolence-integrity's assessment relies on less tangible factors than ability, actors in a collectivistic society have a narrower radius of trust; however, trust is expected to be strong and resilient, since it exploits a common, stable and reliable set of values. Besides, collectivistic culture is embedded in Islamic culture and the core of Islamic teaching about relationships is grounded on benevolence-integrity. Furthermore, the weak rule of law in Muslim countries reinforces the role of in-group value-based trust. Based on the discussion, we propose the following proposition:

> *In Islamic culture, the trustor is more likely to rely on value-based trust (benevolence-integrity) than competence-based trust (ability).*

3. Context, Data, and Methodology

3.1 The Context Under Investigation

In order to test our proposition, we focus our attention on the trust that the bank credit officer has in their clients when deciding on giving credit. There are different reasons that make such a context an effective setting.

First, banks face high levels of information asymmetry in dealing with their customers. The information asymmetry opens up the possibility that a firm's owner can act opportunistically (Dyer and Chu, 2003) diverting money from the original purpose in order to maximize their own return. In addition, information asymmetry implies the risk that a firm's owner can shirk, or cheat on the bank, by running away from the responsibility agreed with the banks. In these scenarios, the bank's credit officer could rely on stricter controls (such as setting up complex covenants, etc.) and trust. Needless to say the former approach is expensive both upfront and during the business relationship (Stiglitz and Weiss, 1981) while trust may reduce perceived risk in the relationship (Das and Teng, 2001) and reduce transaction cost by eliminating the need for formal contract enforcement (Barney and Hansen, 1994).

Second, bank credit officers have to assess the ability of firm owners to deal with challenges (Das and Teng, 2001), such as intensified rivalry, new entrants, changes in regulation, fluctuation in demand, optimization of the use of limited resources. In fact, the credit officer is typically only partially an expert in the business the firm is in and this limits their ability to properly assess the firm. Again, they can improve a firm's assessment by allocating greater effort and time (access more data, perform additional analysis) but such activities are time-consuming and expensive (Stiglitz and Weiss, 1981). Trust and, more specifically, the perceived ability of the firm's management, may reduce cost by limiting ex-ante the effort as well as ex-post monitoring (Dyer and Chu, 2003) and reduce the perceived risk (Das and Teng 2001; Nooteboom et al. 1997).

Third, the Islamic world has developed a financing system that takes into consideration the religious teaching of Islam, such as the fact that Islam forbids charging interest and that finance may have additional religion-linked covenants. This implies that the effect of cultural and religious dimensions on trust is further amplified in the finance realm, so that such a context allows for an even more detailed analysis of the role of trust in Islam. Besides, this implies that it is also important to compare the role of trust in Islamic and non-Islamic financial institutions. In fact, Islamic banks can rely more on the value-based trust because of the logic of the strong links at "clan" level.

All in all, the bank-firm context implies risks and rewards when it turns to rely on trust (Howorth and Moro, 2006) and such a trade-off makes the context suitable for investigating the role of trust in business relationships. In addition, by performing the analysis in a country with both Islamic and Western style financial systems, it is possible to appreciate the real role of trust in the Islamic context.

We focus on Indonesia since it is the biggest Muslim country in the world with over 207 million quite active Muslims[16] and a context that is facing the growing role of religious actors (e.g., mosques, Islamic seminary schools, and Islamic schools) as well as religious practice (e.g., Hajj, *zakat*, and wearing Muslim fashion) that suggests the increasing importance of religious ideas including the norms, values, and principles of Islam.

3.2 Data Collection

Our research is based on 55 banks in Indonesia; the banks were selected from greater Surakarta (Central Java province), greater Yogyakarta (Daerah Istimewa Yogyakarta province) and several other provinces. The survey was conducted between July and September 2018. The research team also obtained the support of the Chairman of the Financial Services Authority of greater Surakarta and the Chairman of banks associations in greater Surakarta and greater Yogyakarta to increase bank participation after which the research team contacted the banks.

The respondents are bank credit officers with active relationships with firm owners. Each respondent was asked to fill in a questionnaire based on his/her relationship with three to five firm owners of micro or small businesses (according to Law 20/2008 of the Republic of Indonesia)[17], selecting them among the first 3-5 firms from the alphabetical list of the customers they look after.

Before data collection, we performed content evaluations on the survey by asking for feedback from an experienced bank manager and a risk analyst of a bank in Indonesia and two survey experts. We also performed back translation to ensure there was no loss in the meaning

[16] 87% of the total population in Indonesia based on the 2010 national census by BPS-Central Bureau of Statistics Indonesia. In addition, as recently as January 2020, there are more than 500,000 Mosques in Indonesia registered under the Ministry of Religious Affairs and in between 2008-2017, the average number of students in Islamic primary schools grew by 2.6% year on year (BPS) that combined with 28,000+ Islamic seminary schools.

[17] Enterprises who have annual turnover less than around USD 176,000 are categorized as micro or small businesses

when translating the questionnaire from English to the Indonesian language. Finally, we performed a field test by visiting 15 banks and testing the questionnaire with them. Based on the field test, we dropped one question related to late payment and made some minor modifications.

The core components of the survey are the items that measure the bank credit officers' trust in the firm owners. Our research relies on 10 items inspired by previous studies (Howorth & Moro, 2012; Mayer & Davis, 1999; Moro & Fink, 2013; Spreitzer & Mishra, 1999) and one new item measured using a Likert scale, 1=strongly disagree to 5=strongly agree. We used dummy financing approval as well as the percentage of the amount approved compared to the amount applied for as dependent variables. We used a questionnaire also to collect primary data regarding demographic profiles and trust propensity of the respondents, characteristics of the banks, characteristics of the firms, relationships between banks and firm owners, trustworthiness evaluation from the bank managers, and financing decisions.

3.3 Methodology

Exploratory factor analysis (EFA) is used to reduce the trustworthiness items into latent constructs. The objective of EFA is to explain the correlations among variables without an underlying structure caused by latent variables (Fabrigar et al., 1999). Then, we entered the constructs as core independent variables. We use Probit regressions since our dependent variable is dichotomous. For the percentage of the financing approved, we performed Tobit regression (Amore and Murtinu, 2019).

In order to reduce the problem of common method bias, we guaranteed the anonymity of the respondents, anonymity of banks in which they work, and the anonymity of the firm owners with whom the respondents have relationships. In fact, the respondents did not need to mention their name, their bank's name or their firm owner's name in our survey. We also performed four others procedural remedies and one statistical remedy against common method bias. Details of the remedies undertaken against common method bias (Podsakoff et al., 2003; Podsakoff, MacKenzie and Podsakoff, 2012) are reported in the Appendix 1.

In our model, endogeneity may occur as a result of omitted variables as our model could not capture the unobservable beliefs and ideas of the firm owner. For example: (1) a belief that misusing the financing will be punished by the God in the hereafter could shape the action and behaviour of the firm owner; and (2) The feeling of embarrassment or fear of social sanctions in the society and business community when misappropriating the financing could also shape the behaviour and action of the firm owner. In order to mitigate the bias in our model, the iv-probit regression was applied. The evaluation of a firm owner's trustworthiness is instrumented by three variables, namely firm owner's engagement in religious activities, firm owner's engagement in community activities, and firm owner's engagement in business association activities. Religious people might have high integrity (see Baele et al., 2014). In the same vein, when firm owners are active in the community it might show that they have high levels of benevolence/care towards other people. In addition, being an active member of the community might reflect on the competencies of the firm owner.

4. Data Descriptive and Factor Analysis

The dataset contains 1,687 observations: 960 are from small (rural) banks while the rest (727 observations) are from large banks. The range of the relationship duration is between less than a year and 25 years (mean 3.45 years, median 3 years). On average, each firm tends to concentrate their banking relationship with two banks. The mean time to process financing application is 5.4 days with the fastest decision in 1 day and the longest one in 30 days. The mean age of the firms is 16.60 years. Female borrowers account for 24.48% of total borrowers. Table 1 shows the descriptive statistics.

__Table 1. Descriptive statistics__

Variables' remarks	Variable	Obs	Mean	Std. Dev.	Min	Max
Trust propensity score of the bank managers (factor) obtained from the principal component factor (PCF)	Trust_propensity	1687	5.80e-09	1	-5.247367	1.535406
Age of the banker	Banker_age	1687	34.97095	7.145728	20	60
Dummy variable, 1 if the debtor is a female, otherwise 0	Firm_manager_gender	1687	0.244813	0.430104	0	1
Dummy variable, 1 if the bank is a small (rural) bank, otherwise 0	Bank_size	1687	0.569058	0.495355	0	1
Dummy variable, 1 if the bank is an Islamic bank, otherwise 0	Bank_orientation	1687	0.434491	0. 495838	0	1
The age of the firm	Firm_age	1687	16.5981	15.27225	0	70
Duration to process the application	Day_process	1687	5.414345	4.235321	1	30
Dummy variable, 1 if the firm manager uses another product(s) from the bank, otherwise 0	Multiple_products	1687	0.713693	0.452169	0	1
The number of bank(s) from which the debtor borrows	Multiple_banks	1687	1.232958	1.38314	0	10
The duration of the relationship between banks and debtor	Length_ relationship	1687	3.447095	3.004215	0	25
Benevolence and integrity (factor) score obtained from PCF	Value-Based Trust	1687	-9.48e-11	1	-5.067719	2.241163
Ability (factor) score obtained from PCF	Competence-Based Trust	1687	-1.43e-09	1	-5.44337	2.045385
Dummy variable, 1 if the financing application is granted, otherwise 0	Financing_decision	1687	0.924718	0.263923	0	1
Percentage amount approved compared to amount applied for	Financing_proportion	1687	82.52777	26.98106	0	100

Mayer et al.'s (1995) model suggests that trust is also a function of a personal predisposition: some people are naturally more prone to trust others irrespective of the perceived ability, benevolence and integrity. In order to control for personal predisposition to trust, we use three items which we asked bank managers to evaluate: “Most people can be counted on to do what they say they will do” (reverse score), “One should be very cautious with strangers”, and “These days, you must be alert or someone is likely to take advantage of you”.

We use 11 items to measure the trustworthiness of the firm owners. The highest average score is the ability dimension “The firm owner has very good knowledge of the current market in which they operate” (4.00) and the lowest average score is the benevolence dimension “The firm owner shares sensitive or important information with me” (3.48). EFA was employed to reduce larger data into smaller sets of latent constructs. Table 2 illustrates the factor analysis results.

In line with Moro and Fink (2013), our study split trust in two factors, namely ability and benevolence-integrity. This approach follows Tinsley's (1996) idea that ability and benevolence-integrity are different and should be explored separately. Besides, it also allows us to explore the expected different roles played by ability (trust based on facts and linked to individualistic dimensions of the culture) and benevolence-integrity (trust based on shared values and linked to collectivistic dimensions of the culture). Value-based aspect of trust (benevolence and integrity) load in one factor and Bartlett test of sphericity is significant ($p<0.01$) with a KMO score of 0.92. All of the items show communalities between 0.41 and 0.69 and this is acceptable (Costello and Osborne, 2005). The amount of variance explained by the factor is 58.01% with the Cronbach's alpha score at 0.8932. Also, competence-based trust (ability) items load in one factor. The Bartlett test of sphericity is significant ($p<0.01$) with a KMO score of 0.675 with communalities between 0.60 and 0.79. The amount of variance explained by the factor is 71.68% with the Cronbach's alpha score at 0.7937.

Table 3 shows the correlation coefficients of the full sample. Value-based trust (benevolence and integrity) shows the expected positive correlation with both dependent variables, i.e., financing approval and percentage of the requested amount that has been approved (0.467 and 0.503). Also, ability shows the expected positive correlation with both dependent variables and they are, as expected, slightly smaller (0.447 and 0.484). All in all, correlation coefficients offer initial insights into our research proposition, i.e., trust could facilitate business relationships in Islamic culture: both value-based trust and competence-based trust work in tandem but with a marginal prevalence of the value component of trust. However, the relative strength of these variables to financing approval and financing proportion need to be explored in further analysis.

__Table 2a. Trustworthiness variables: factor analysis of value-based trust__

The firm manager…	Var.	Factor1	Uniqueness	Mean	Std. Deviation	Obs.
Is consistent in his words and behaviour	INTEGRITY 1	0.8323	0.3072	3.826912	0.6963122	1687
Is completely honest with me	INTEGRITY 2	0.8099	0.3440	3.745702	0.796607	1687
Tries hard to be fair in dealings with others (suppliers, buyers, partners, etc.)	INTEGRITY 3	0.7794	0.3925	3.829283	0.6428886	1687
Will do the best to pay on schedule even in a short cash situation	BENEVOLENCE 1	0.7764	0.3972	3.881446	0.7266693	1687
Really looks out for what is important to me or my bank	BENEVOLENCE 2	0.7483	0.4400	3.833432	0.6679382	1687
Would acknowledge their own mistakes	BENEVOLENCE 3	0.6614	0.5625	3.822762	0.7289985	1687
Shares information in detail (based on data and fact)	BENEVOLENCE 4	0.8191	0.3290	3.661529	0.6963122	1687
Shares sensitive or important information with me	BENEVOLENCE 5	0.6431	0.5865	3.477771	0.8080689	1687

__Table 2b. Trustworthiness variables: factor analysis of competence-based trust__

The borrower…	Var.	Factor1	Uniqueness	Mean	Std. Deviation	Obs.
Is able to identify the needed resources (for business purposes)	ABILITY 1	0.8747	0.2350	3.945465	0.600999	1687
Has very good knowledge of the current market in which they operate	ABILITY 2	0.8861	0.2149	4.002371	0.6064063	1687
Is known to be successful at the things they try to do	ABILITY 3	0.7747	0.3999	3.732662	0.6984266	1687

Trustworthiness of the firm managers is measured by Likert scale, 1=strongly disagree to 5=strongly agree

Table 3. Correlation coefficients

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Trust_propensity	1													
2	Banker_age	-0.0101	1												
3	Firm_manager_gender	0.0342	-0.0619*	1											
4	Bank_size	-0.120***	0.102***	0.0222	1										
5	Bank_orientation	-0.0624*	0.173***	0.00710	-0.177***	1									
6	Firm_age	-0.00778	0.0634**	-0.00975	0.000535	0.0475	1								
7	Day_process	-0.00815	-0.0120	-0.0248	-0.154***	-0.0123	0.0421	1							
8	Multiple_products	0.0448	0.0156	0.0160	-0.0480*	-0.143***	0.0132	0.0419	1						
9	Multiple_banks	-0.00460	0.120***	-0.0770**	0.0981***	0.135***	-0.0286	0.0367	-0.0280	1					
10	Length_ relationship	-0.0315	0.126***	-0.0148	0.0491*	-0.100***	0.185***	0.0155	0.186***	-0.0148	1				
11	Value-Based Trust	0.0953***	0.0155	0.0396	-0.142***	0.0846***	0.0384	-0.0252	0.206***	-0.113***	0.141***	1			
12	Competence-Based Trust	0.0985***	0.0468	0.00870	-0.165***	0.0598*	0.0721**	0.0125	0.199***	-0.0328	0.112***	0.726***	1		
13	Financing_decision	0.0425	0.0633**	0.0109	0.00576	0.0416	0.0433	0.00351	0.142***	-0.0852***	0.129***	0.467***	0.447***	1	
14	Financing_proportion	0.0660**	0.0221	0.0324	-0.0516*	0.0615*	0.0436	-0.0291	0.143***	-0.106***	0.161***	0.503***	0.484***	0.873***	1

*** p<0.01, ** p<0.05, * p<0.1

Trust propensity score of the bank managers (factor) obtained from PCF (Trust_propensity), Age of the banker (Banker_age), Dummy variable, 1 if the debtor is a female, otherwise 0 (Firm_manager_gender), Dummy variable, 1 if the bank is a small (rural) bank, otherwise 0 (Bank_size), Dummy variable, 1 if the bank is an Islamic bank, otherwise 0 (Bank_orientation), The age of the firm (Firm_age), Duration to process the application (Day_process), Dummy variable, 1 if the firm manager uses another product(s) from the bank, otherwise 0 (Multiple_products), The number of bank(s) from which the debtor borrows (Multiple_banks), The duration of the relationship between banks and debtor (Length_relationship), Benevolence and integrity (factor) score obtained from PCF (Value-Based Trust), Ability (factor) score obtained from PCF (Competence-Based Trust), Dummy variable, 1 if the financing application is granted, otherwise 0 (Financing_decision), Percentage amount approved compared to amount applied for (Financing_proportion).

5. Analysis

5.1 Financing Approval Regression

Table 4 shows the results of Probit regressions on two sets of variables. The dummy dependent variable measures the financing decision, i.e., approval (1) as opposed to rejection (0).

Model 1 incorporates the set of variables that measure demographics, trust propensity of the respondents, firm factors, bank factors, and transactional variables. This model has no multicollinearity problems and has McFadden's Adj R^2 0.07 with the number of cases correctly predicted at 92.47%. Interestingly, a general predisposition to trust others is positive but marginally significant. Variable bank type is positive and significant at $p<0.01$, suggesting that Islamic banks are more likely to approve the financing application. We also find a significant coefficient for the variable and multiple banks ($p<0.01$). The same applies to relationship duration ($p<0.01$) and multiple products, ($p<0.01$): the more intense the relationship, the greater the probability to be successful with the financing application ($p<0.01$). This result is in line with Gulati (1995) who finds that repeated interaction has a positive effect on the outcome of the relationship. In addition, the use of multiple products and concentration of borrowing not only increases the flow of information to the bank managers but also increases the exclusivity of that information.

In the second regression (model 2) we add the variables value-based trust and competence-based trust. This specification has McFadden's Adj R^2 0.357, suggesting that the trust components explain the additional 28.7% of the total variance. The number of cases correctly predicted is 93.78% and the specification does not suffer from multicollinearity problems. Interestingly, value-based trust and competence-based trust work in tandem in supporting financing decisions by bank managers. Marginal effect analysis shows that the relative strength of these variables is in line with our prediction: one-point increase in the benevolence-integrity will improve the probability of financing being approved by 4.1%, while a one-point increase in the ability will improve the probability of financing being approved by 3.5%. Similarly, one standard deviation increase in variable benevolence-integrity and ability improves the probability of the financing being granted by 46.4% and 40.1% respectively. Interestingly, one standard deviation increase in the duration of the relationship improves the probability of the financing being granted by only 24%, suggesting that the economic impact of trust is two times higher than the impact of the duration of the relationship. The results support the point that in Islamic culture the level of trust relies more on benevolence and integrity and is in line with previous studies that show that in collectivistic societies, trust provides greater impact on the outcomes of relationships (Cannon et al., 2010; Hewett & Bearden, 2001; Williams et al., 1998).

The inclusion of trust variables has some minor effects on the significance level of the controls: trust propensity is not significant; bank size turns out to be significant at the 1% level; a small (rural) bank is more likely to provide finance than a large bank; multiple products are not significant any more, suggesting that once trust is established, additional sources of information from the use of multiple products by firm managers become less important.

We also attempt alternative specifications (alternative combinations of variables). For instance, when we drop transactional variables (duration of relationship, relationship with multiple banks, the use of multiple products from the bank, and the day(s) to process the financing application) in model 2, both value-based trust and competence-based trust show a positive and significant coefficient (at the 1% level). Moreover, we also obtain the same results when we drop bank's related variables (size of the banks and banks orientation) or firm's related variables (gender of the firm owner and firm age) or respondent's related variables (trust propensity and age of the respondent).

Table 4. Probit Regression: The dependent variable is dummy financing approval

VARIABLES	Probit Model 1	Probit Model 2
Trust_propensity	0.0899*	0.0378
	(0.0479)	(0.0633)
Banker_age	0.0114	0.00810
	(0.00732)	(0.00847)
Firm_manager_gender	0.0494	-0.0197
	(0.115)	(0.139)
Bank_size	0.131	0.444***
	(0.102)	(0.127)
Bank_orientation	0.313***	0.298**
	(0.106)	(0.132)
Firm_age	0.00214	-0.00124
	(0.00329)	(0.00383)
Day_process	-0.00210	-0.00480
	(0.0110)	(0.0125)
Multiple_products	0.448***	0.0669
	(0.101)	(0.128)
Multiple_banks	-0.117***	-0.0676*
	(0.0316)	(0.0401)
Length_relationship	0.108***	0.0797***
	(0.0239)	(0.0287)
Value-Based Trust		**0.464*** **
		(0.0744)
Competence-Based Trust		**0.401*** **
		(0.0756)
Constant	0.388	1.110***
	(0.272)	(0.327)
Observations	1,687	1,687

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Dependent variable: Dummy variable, 1 if the financing application is granted, otherwise 0 (Financing_decision). Independent variables: Benevolence and integrity (factor) score obtained from PCF (Value-Based Trust), Ability (factor) score obtained from PCF (Competence-Based Trust). Controls: Trust propensity score of the bank managers (factor) obtained from PCF (Trust_propensity), Age of the banker (Banker_age), Dummy variable, 1 if the debtor is a female, otherwise 0 (Firm_manager_gender), Dummy variable, 1 if the bank is a small (rural) bank, otherwise 0 (Bank_size), Dummy variable, 1 if the bank is an Islamic bank, otherwise 0 (Bank_orientation), The age of the firm (Firm_age), Duration to process the application (Day_process), Dummy variable, 1 if the firm manager uses another product(s) from the bank, otherwise 0 (Multiple_products), The number of bank(s) from which the debtor borrows (Multiple_banks), The duration of the relationship between banks and debtor (Length_relationship).

5.2. Percentage Amount Approved Regression

We also explore the impact of value-based trust and competence-based trust on the percentage of amount approved with respect to the amount the firm applied for (financing proportion). Since the dependent variable is continuous but constrained between 0% and 100%, we estimate the model using Tobit regression (Model 3). Table 5 shows the regression results.

In model 3, the specification does not suffer from multicollinearity problems. As far as the heteroscedasticity problem is concerned, we follow Amore and Murtinu (2019) bootstrapping standard errors. In model 3, there are no major changes in control variables. The new regression confirms previous results: we find a positive and significant coefficient for both value-based trust and competence-based trust ($p<0.01$): the more the bank credit officer trusts the firm's owner, the greater the proportion of the loan approved. Again, these results indicate that value-based trust and competence-based trust work in tandem to support the proportion of finance obtained. Also, marginal effects analysis confirms that benevolence-integrity has a stronger impact than ability.

All in all, given the results obtained by looking at models 2 and 3, it is possible to argue that in Islamic culture, values-based trust, i.e., a "strong form of trust" (Barney and Hansen, 1994), has a greater role than ability-based trust.

Table 5. Tobit Regression with percentage amount approved compared to amount applied for as a dependent variable.

VARIABLES	Tobit Model 3
Trust_propensity	1.420*
	(0.862)
Banker_age	-0.123
	(0.120)
Firm_manager_gender	-0.609
	(1.950)
Bank_size	0.876
	(1.818)
Bank_orientation	3.005*
	(1.726)
Firm_age	0.00107
	(0.0587)
Day_process	-0.322
	(0.253)
Multiple_products	-1.057
	(1.831)
Multiple_banks	-2.600***
	(0.777)
Length_relationship	1.623***
	(0.329)
Value-Based Trust	**10.77*** **
	(1.208)
Competence-Based Trust	**9.675*** **
	(1.187)
Constant	96.13***
	(5.032)
Observations	1,687

Bootstrap standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Dependent variable: Percentage amount approved compared to amount applied for (Financing_proportion). Independent variables: Benevolence and integrity (factor) score obtained from PCF (Value-Based Trust), Ability (factor) score obtained from PCF (Competence-Based Trust). Controls: Trust propensity score of the bank managers (factor) obtained from PCF (Trust_propensity), Age of the banker (Banker_age), Dummy variable, 1 if the debtor is a female, otherwise 0 (Firm_manager_gender), Dummy variable, 1 if the bank is a small (rural) bank, otherwise 0 (Bank_size), Dummy variable, 1 if the bank is an Islamic bank, otherwise 0 (Bank_orientation), The age of the firm (Firm_age), Duration to process the application (Day_process), Dummy variable, 1 if the firm manager uses another product(s) from the bank, otherwise 0 (Multiple_products), The number of bank(s) from which the debtor borrows (Multiple_banks), The duration of the relationship between banks and debtor (Length_relationship)

5.3. Robustness Check on the Entire Datasets

In order to verify further our results, we performed a set of robustness checks. It can be argued that our regressions suffer from endogeneity because of omitted variables. In order to verify whether this is the case, we perform an instrumental Probit regression. We focus our attention, in terms of endogeneity, on the value-based trust dimension for two reasons: 1) it emerges as the more relevant one; 2) as discussed in the framework development, this is also the dimension we consider more relevant. In order to perturbate our variable of interest we use three instruments (IVs), namely the firm owner's engagement in religious activities, community activities, and business association activities. These variables are expected to perturbate the credit officer's perceived value-based trust in the firm's owner since 1) religious people are expected to follow stricter ethical and moral rules; 2) people that engage in community activity are expected to care more for others and thus be less likely to act in a way detrimental to the counterpart; and 3) as far as people involved in the business association activities are concerned, there can be a greater interest in avoiding misbehaviour since such a behaviour can have a huge negative impact on them because of their visibility. The correlation of these variables with value-based trust is 0.4818, 0.5054, and 0.4887 respectively. At the same time, these variables are not expected to affect the bank's decision to provide financing and in fact the correlation of these IVs with the financing decision is 0.2658, 0.2368, and 0.2630 respectively. Table 6 shows the iv-Probit results: no major difference emerges and, more importantly, no major change in the instrumented variable emerges. The evidence provides further support to our basic results. All in all, it is safe to argue that a banker's trust in the firm owner is positively associated with the financing approval.

Table 6. Robustness check: IV-probit Regression with dependent variable dummy financing approval. Instrumental variables for value-based trust: firm manager is actively engaged in religious activities, business association and community.

VARIABLES	iv-probit regression Model 4
Trust_propensity	0.0306
	(0.0642)
Banker_age	0.00862
	(0.00848)
Firm_manager_gender	-0.0294
	(0.139)
Bank_size	0.443***
	(0.126)
Bank_orientation	0.272*
	(0.140)
Firm_age	-0.000718
	(0.00391)
Day_process	-0.00361
	(0.0126)
Multiple_products	0.0431
	(0.134)
Multiple_banks	-0.0548
	(0.0455)
Length_relationship	0.0762***
	(0.0293)
Value-Based Trust	**0.630****
	(0.280)
Competence-Based Trust	**0.283**
	(0.214)
Constant	1.094***
	(0.328)
Observations	1,687

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Dependent variable: Dummy variable, 1 if the financing application is granted, otherwise 0 (Financing_decision). Independent variables: Benevolence and integrity (factor) score obtained from PCF (Value-Based Trust), Ability (factor) score obtained from PCF (Competence-Based Trust). Controls: Trust propensity score of the bank managers (factor) obtained from PCF (Trust_propensity), Age of the banker (Banker_age), Dummy variable, 1 if the debtor is a female, otherwise 0 (Firm_manager_gender), Dummy variable, 1 if the bank is a small (rural) bank, otherwise 0 (Bank_size), Dummy variable, 1 if the bank is an Islamic bank, otherwise 0 (Bank_orientation), The age of the firm (Firm_age), Duration to process the application (Day_process), Dummy variable, 1 if the firm manager uses another product(s) from the bank, otherwise 0 (Multiple_products), The number of bank(s) from which the debtor borrows (Multiple_banks), The duration of the relationship between banks and debtor (Length_relationship)

It could be argued that our analysis involves different levels of data since we have: 1) the bank, 2) the bank credit officer who is working in the certain bank, and 3) the firm. In fact, observations in the same group (credit officer-firm owner) are correlated because they share common cluster-level random effects (Williams, 2017). In addition, there are credit officers' level variables, i.e., their age which may represent their experience and the accumulation of social capital (Ferrary, 2003) and trust propensity (Mayer et al., 1995). However, because of the anonymity issue regarding the bank's name, we can only track the ID number of the bank's credit officers. In order to take into consideration these aspects, we performed a mixed effect probit regression since random effects may occur in our multilevel dataset at bank manager level. The results are presented in Table 7.

There are 1,687 observations within 481 bank managers in our sample. The minimum observation per group is 1 and the maximum observations is 5. The mixed effect regression provides results qualitatively identical to those obtained from the original Probit regression. Besides, the likelihood ratio test of multilevel vs. Probit regression (chibar2 (01) = 49.58) is significant.

Table 7. Meprobit Regression: The dependent variable is dummy financing approval

VARIABLES	Mixed effect probit regression Model 5
Trust_propensity	0.0670
	(0.132)
Banker_age	0.0131
	(0.0181)
Firm_manager_gender	-0.145
	(0.226)
Bank_size	0.887***
	(0.302)
Bank_orientation	0.497*
	(0.289)
Firm_age	-0.00620
	(0.00730)
Day_process	0.00955
	(0.0255)
Multiple_products	-0.00431
	(0.218)
Multiple_banks	-0.125*
	(0.0727)
Length_relationship	0.132***
	(0.0506)
Value-Based Trust	**0.978*** **
	(0.196)
Competence-Based Trust	**0.664*** **
	(0.140)
Constant	2.006***
	(0.709)
Observations	1,687
Number of groups	481

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Dependent variable: Dummy variable, 1 if the financing application is granted, otherwise 0 (Financing_decision). Independent variables: Benevolence and integrity (factor) score obtained from PCF (Value-Based Trust), Ability (factor) score obtained from PCF (Competence-Based Trust). Controls: Trust propensity score of the bank managers (factor) obtained from PCF (Trust_propensity), Age of the banker (Banker_age), Dummy variable, 1 if the debtor is a female, otherwise 0 (Firm_manager_gender), Dummy variable, 1 if the bank is a small (rural) bank, otherwise 0 (Bank_size), Dummy variable, 1 if the bank is an Islamic bank, otherwise 0 (Bank_orientation), The age of the firm (Firm_age), Duration to process the application (Day_process), Dummy variable, 1 if the firm manager uses another product(s) from the bank, otherwise 0 (Multiple_products), The number of bank(s) from which the debtor borrows (Multiple_banks), The duration of the relationship between banks and debtor (Length_relationship)

5.4. Further Analysis: The Role of Trust in Different Banks

Given that the variable dummy bank size is positive and significant ($p<0.01$) in model 2, we split our sample into two datasets: large banks and small banks. This level of analysis can also be used to check the sensitivity of our main results to variations in the sample. Table 8 shows the analysis of the split dataset into small banks (models 6 and 7) and large banks (models 8 and 9). Our models do not suffer from multicollinearity problems.

Model 6 has McFadden's Adj R^2 0.501. The number of cases correctly predicted is 94.69%. In small banks, a one-point increase in benevolence-integrity and ability will improve the probability of financing being approved by 4.8% and 2.5% respectively. Model 7 shows that the tobit regression (bootstrapped standard errors) with dependent variable financing proportion generates qualitatively identical results to those in Table 5.

Turning our attention to large banks, model 8 has McFadden's Adj R^2 0.208. The number of cases correctly predicted is 92.85%. Marginal effect analysis shows that a one-point increase in value-based trust and competence-based trust will improve the probability of financing being approved by 3.2% and 4.3% respectively. This result is also confirmed by model 9 (Tobit regression): the regression coefficient of competence-based trust is higher than that of value-based trust. Actually, large banks have more layers of command so they are in a weaker position to pass on the soft information of value-based trust to the next level that can be in charge of taking financing decisions (Cole, Goldberg and White, 2004; Stein, 2002; Williamson, 1967). In contrast, small banks have greater advantage in exploiting the value-based trust of firm managers. This evidence is further supported by comparing small Islamic banks with large conventional banks.

Table 8. Probit and Tobit Regressions in sub-samples: small vs. large banks

	Small Banks		Large Banks	
	Probit	Tobit	Probit	Tobit
VARIABLES	Model 6	Model 7	Model 8	Model 9
Trust_propensity	0.123	1.259	-0.0267	0.417
	(0.0971)	(0.981)	(0.0873)	(1.255)
Banker_age	0.0104	-0.114	0.00787	-0.0364
	(0.0114)	(0.115)	(0.0151)	(0.276)
Firm_manager_gender	-0.0820	0.998	0.0258	-0.914
	(0.225)	(2.351)	(0.192)	(3.468)
Bank_orientation	0.597**	5.092***	0.0640	-0.696
	(0.238)	(1.741)	(0.173)	(3.172)
Firm_age	-0.0117**	-0.128*	0.0120*	0.270**
	(0.00555)	(0.0701)	(0.00630)	(0.111)
Day_process	0.0784*	0.388	-0.0212	-0.723***
	(0.0401)	(0.362)	(0.0132)	(0.245)
Multiple_products	0.162	-0.0106	-0.0455	-2.782
	(0.193)	(2.209)	(0.190)	(4.748)
Multiple_banks	-0.0223	-1.493*	-0.134**	-4.902***
	(0.0644)	(0.882)	(0.0653)	(1.099)
Length_relationship	0.0773*	1.206***	0.0742*	2.280***
	(0.0431)	(0.447)	(0.0412)	(0.591)
Value-Based Trust	**0.755*** **	**13.90*** **	**0.297*** **	**6.150*** **
	(0.127)	**(1.484)**	**(0.105)**	**(2.009)**
Competence-Based Trust	**0.400*** **	**6.971*** **	**0.403*** **	**14.14*** **
	(0.113)	**(1.389)**	**(0.113)**	**(2.073)**
Constant	1.424***	92.55***	1.241**	96.75***
	(0.487)	(4.761)	(0.543)	(10.04)
Observations	960	960	727	727

Standard errors (Table 6, 8) and bootstrap standard errors (Table 7,9) in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Dependent variable (models 6 and 8): Dummy variable, 1 if the financing application is granted, otherwise 0 (Financing_decision). Dependent variable (models 7 and 9): Percentage amount approved compared to amount applied for (Financing_proportion). Independent variables: Benevolence and integrity (factor) score obtained from PCF (Value-Based Trust), Ability (factor) score obtained from PCF (Competence-Based Trust). Controls: Trust propensity score of the bank managers (factor) obtained from PCF (Trust_propensity), Age of the banker (Banker_age), Dummy variable, 1 if the debtor is a female, otherwise 0 (Firm_manager_gender), Dummy variable, 1 if the bank is a small (rural) bank, otherwise 0 (Bank_size), Dummy variable, 1 if the bank is an Islamic bank, otherwise 0 (Bank_orientation), The age of the firm (Firm_age), Duration to process the application (Day_process), Dummy variable, 1 if the firm manager uses another product(s) from the bank, otherwise 0 (Multiple_products), The number of bank(s) from which the debtor borrows (Multiple_banks), The duration of the relationship between banks and debtor (Length_relationship).

Table 9 shows the impact of value-based trust and competence-based trust on financing approval and financing proportion in small Islamic banks (models 10 and 11) and large conventional banks (models 12 and 13). These specifications do not suffer from multicollinearity problems. In models 10 and 12 (Probit regression), the McFadden's Adj R^2 are 0.519 and 0.022 respectively. The number of cases correctly predicted are 96.8% and 92.01% respectively.

Table 9. Probit and Tobit regressions in small Islamic vs. large conventional banks

	Small Islamic Banks		Large Conventional Banks	
	Probit	Tobit	Probit	Tobit
VARIABLES	Model 10	Model 11	Model 12	Model 13
Trust_propensity	-0.136	-1.352	-0.0821	-0.146
	(0.406)	(2.092)	(0.145)	(1.865)
Banker_age	-0.00432	-0.307	-0.0114	-1.005*
	(0.0364)	(0.208)	(0.0226)	(0.550)
Firm_manager_gender	1.650	1.492	-0.00774	-0.141
	(1.019)	(3.047)	(0.259)	(5.605)
Firm_age	-0.0271	-0.245***	0.0177*	0.264
	(0.0175)	(0.0918)	(0.00998)	(0.178)
Day_process	0.0477	-0.317	-0.0102	-1.132***
	(0.108)	(0.622)	(0.0188)	(0.280)
Multiple_products	-0.937	-2.961	0.272	2.289
	(0.671)	(2.850)	(0.280)	(6.928)
Multiple_banks	0.0244	-1.057	-0.132	-4.905***
	(0.133)	(0.899)	(0.0848)	(1.670)
Length_relationship	0.905***	1.669***	0.0285	3.016***
	(0.344)	(0.516)	(0.0453)	(0.827)
Value-Based Trust	**1.821*** **	**9.823*** **	**0.314** **	**5.887***
	(0.608)	**(2.451)**	**(0.153)**	**(3.540)**
Competence-Based Trust	**0.246**	**4.367** **	**0.0615**	**8.980** **
	(0.287)	**(1.981)**	**(0.160)**	**(4.376)**
Constant	3.055*	107.2***	1.549**	125.2***
	(1.750)	(7.540)	(0.762)	(19.91)
Observations	344	344	338	338

Standard errors (Table 10,12) and bootstrap standard errors (Table 11,13) in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Dependent variable (models 10 and 12): Dummy variable, 1 if the financing application is granted, otherwise 0 (Financing_decision). Dependent variable (models 10,11,12,13): Percentage amount approved compared to amount applied for (Financing_proportion). Independent variables: Benevolence and integrity (factor) score obtained from PCF (Value-Based Trust), Ability (factor) score obtained from PCF (Competence-Based Trust). Controls: Trust propensity score of the bank managers (factor) obtained from PCF (Trust_propensity), Age of the banker (Banker_age), Dummy variable, 1 if the debtor is a female, otherwise 0 (Firm_manager_gender), Dummy variable, 1 if the bank is a small (rural) bank, otherwise 0 (Bank_size), Dummy variable, 1 if the bank is an Islamic bank, otherwise 0 (Bank_orientation), The age of the firm (Firm_age), Duration to process the application (Day_process), Dummy variable, 1 if the firm manager uses another product(s) from the bank, otherwise 0 (Multiple_products), The number of bank(s) from which the debtor borrows (Multiple_banks), The duration of the relationship between banks and debtor (Length_relationship).

Both Islamic small banks and large conventional banks rely on value-based trust to support financing approval (significant at $p<0.01$ and $p<0.05$ respectively). However, in the case of financing proportion (model 13), large conventional banks rely more on competence-based trust ($p<0.05$) than on value-based trust ($p<0.1$) while in small Islamic banks (model 11), value-based trust ($p<0.01$) has a stronger positive impact on financing proportion than competence-based trust ($p<0.05$).

All in all, our results support the notion that in Islamic culture, the radius of trust is narrow, but the role of value-based trust is very important: actors in Islamic culture are more interested in the principles, values, and ethical/moral standards that business partners can bring into the relationship.

6. Discussion

During the Prophet's time (VII century), the *shahibul maal* (investor) relied on trust, especially when financing businessmen using a profit-loss sharing contract (Chapra, 2000). The businessmen conducted export and import and needed a lot of money for buying goods to be exported and imported and for covering their long, challenging business journeys (Chapra, 2000). Then, in the 11th century, Maghribi traders as part of the Islamic world, also relied on trustworthy behaviour (Greif, 1994). All in all, historically, trust has played a relevant role in the Islamic world. Our analysis shows that things have not changed dramatically and even today, value-based trust and competence-based trust work in tandem in facilitating business relationships in Islamic culture. But, how are those values disseminated? The religious ideas of Islam, including value-based trust, is disseminated by various religious actors such as Islamic schools, Islamic seminary schools, and mosques. Interestingly, empirical evidence shows that students from Islamic schools (*Madrasa*) in Bangladesh, trust others more than non-*Madrasa* students (Asadullah, 2016), suggesting that *Madrasa* promotes trusting behaviour possibly because of the curriculum which emphasizes altruism and charitable behaviour. In addition, daily prayers and learning the *Quran* could also influence the trusting behaviour of the students. More relevant for our argument is the fact that an ethnographic study in Indonesia shows that the promotion of Islamic teachings through preaching relies on real life business examples, such as keeping promises, honesty, debt repayment, thrifty behaviour and hard work (Abdullah, 1994).

Our results support the point about the relevance of value-based trust in Islam because of the related culture. First, similarly to Sicily and Russia (Gambetta, 1988; Varese, 2001), Muslim countries tend to exhibit weak rules of law that could push actors into relying on trust because the contract breaker could not be guaranteed to pay the damage in a business relationship. In this context, the perceived benevolence and integrity of a partner are more important than perceived ability. In other words, an actor is more interested to the principles, values, and norms that a partner can bring into the relationship since they can signal their reliability and willingness to behave according to the agreed terms, as suggested by Barney and Hansen (1994). Second, value-based trust needs time in order to develop and consolidate. This is because value-based trust is relatively more difficult to be assessed compared to competence-based approach. One way to explore the value-based trust of the partner is by exploiting relationships, such as visiting counterpart. Another way to develop value-based trust is to rely on a transference process, when actors try to develop the value-based trust by accessing soft data about the counterpart via trusted third parties such as neighbours, friends, or other business partners. These practices are in line with Doney et al.'s (1998) trust development process in collectivistic society. Third, these situational issues are strengthened by the fact that Islamic teachings promote benevolence and integrity. Relationships without benevolence and integrity can be detrimental to society and the main objective of Islamic ethics and/or Islamic teachings is to provide guidance to the people so that the behaviour and action of the people does not harm society (Ali, Al-Aali and Al-Owaihan, 2013). All in all, in Islamic culture, the radius of trust is narrow, but the level of trust based on benevolence-integrity is deep.

Our finding supports the notion that it is important to establish trust in Islamic culture since it provides a functional role in business-to-business relationships. Both perceived ability and benevolence-integrity work in tandem in the business relationship in Islamic culture, more specifically both of them are positively associated with financing approval and financing proportion. However, actors in Islamic culture put more emphasis on value-based trust that business partners could bring into the relationship (Barney and Hansen, 1994). Our results suggest that understanding the intersection between trust, culture and religious/ethical teachings, may help both bank managers and firm managers to develop and improve their business relationship strategies.

7. Conclusion

Prior research reports that culture can have an impact on trust development and on trust outcomes in the business-to-business relationship. We document that in Islamic culture, trust has a functional role in facilitating business-to-business relationships, more specifically benevolence-integrity (values-shared based trust) works in tandem with ability (competence-based trust) to support the financing relationship between bank managers and firm managers. However, in line with our expectations, in Islamic culture, value-based trust has a stronger positive impact on facilitating the business-to-business relationship than competence-based trust has. Further, evidence shows that smaller organizations that obey the Islamic principles in their day-to-day operations, rely more on value-based trust than competence-based trust since they are more effective in handling soft information. In contrast, managers in large, Western style organizations rely more on competence-based trust. The evidence we have obtained is justified by the fact that 1) trust development in collectivistic society relies more on benevolence than ability (Doney, Cannon and Mullen, 1998) and Islamic culture is mainly collectivistic in that it emphasizes brotherhood and community; 2) collectivistic culture has higher in-group trust but lower outer-group trust (Gambetta, 1988; Meier et al., 2016): trust based on benevolence-integrity needs a deeper relationship which in turn makes the radius of trust narrower; and 3) there is a link between ethics and trust (St. Augustine 426AD; Hosmer 1995) and Islamic ethics/teachings' main objective is to provide guidance to people so that their behaviour and actions do not harm society (Ali, Al-Aali and Al-Owaihan, 2013).

Our findings add to the growing body of literature on trust and culture (Cannon et al., 2010; Doney et al., 1988; Hewett & Bearden, 2001; Williams et al., 1998; Zaheer & Zaheer, 2006). In fact, previous studies on trust and culture have not examined the role of trust which focuses on Islamic culture. Based on Hosmer's (1995) study, we have shown the link between religious teaching from the perspective of Islam and trust, and the importance of considering values based on religion and/or religious teachings in the theory of trust and culture. In fact, religious teaching, by creating and delineating both moral values and values, is a building block of culture (Hofstede, Hofstede and Minkov, 2010) which in turn could affect the behaviour and action of people involved in business/economic activities.

The current study has only examined the relationship between bank credit officers and firm owners in Indonesia. Additional research in other Muslim countries and/or regions should be performed in order to test the generalizability of our findings. In addition, the current study looks at the role of trust cross-sectionally. It would be interesting to expand the research longitudinally, exploring how the role of trust and its link with religion/Islam can evolve through time.

Notwithstanding its limitations, this research provides additional insight into how culture influences the development of trust in business relationships by focusing on the context of Islamic culture and suggesting that theory in trust and culture should take religious teaching into account in order to provide a more complete understanding of business-to-business relationships.

Appendix 1: Remedies undertaken against Common Method Bias (based on Podsakoff et al. 2012).

Remedy and rationale	Implementation
Procedural Remedy	
Protecting respondent anonymity	Respondents do not need to mention their name, their bank's name and their financing applicant's name in our survey.
Reducing item ambiguity	We conducted a field test with banks' officers to identify ambiguous instructions and questions and also sensitive questions. In fact, we have adjusted several questions and instructions and also deleted one question related to applicant's delinquency in the past as it was too sensitive.
Obtain measures of independent variables and dependent variables from different sources	Despite one person should answer both independent variables and dependent variables, the dependent variables do not contain feelings, perceptions, or beliefs. We also performed additional regression by using different dependent variables as a robustness check. The first dependent variable is the decision to grant or reject the financing application. The second dependent variable is the percentage of amount approved compared to the amount applied for by the firm.
Proximal separation between independent variables and dependent variables	The questions related to the evaluation of firm managers' trustworthiness (main independent variable) are separate from the dependent variable questions.
Eliminate common scale properties	Our main independent variable (trustworthiness) is measured by Likert scale from 1 to 5. Our first dependent variable is measured using a dummy (1 if financing application is granted, otherwise 0). Our second dependent variable is measured using number (percentage of amount approved compared to amount applied for).
Statistical Remedy	
Harman's one factor test	When all of the value-based trust items are entered together into the unrotated PCF analysis, they only formed a single factor. This single factor accounted for the majority of the variance (>50%).
Instrumental variable technique	As our data did not pass the Harman's one factor test, we tried to perform iv-probit regression. Endogeneity may occur as a result of omitted variables. We performed iv-probit regression by using three instrumental variables, i.e., firm manager is actively engaged in religious activities, firm manager is actively engaged in community activities, and firm manager is actively engaged in business association activities. The instrumented variable value-based trust is positive and significant (at the 5% level).

Chapter 5
Trust and Islamic Financial Products

I have shown that values-based trust has a stronger role in supporting business-to-business relationships in Islamic culture. This supports the idea that in Islamic culture, a partner is more interested in the values, principles, and norms held by another party.

Today, Islamic banks operate in many countries where Islam is the religion of the majority of the population and where the dominant culture is Islam. Besides, Islamic banks need to obey Islamic principles in their day-to-day operations and, in order to satisfy them, they have developed specific products. Actually, one of the characteristics of Islamic teaching is the prohibition of *riba* (see Quran 30:39 for the first stage of *riba's* revelation, Quran 4:161 the second stage, Quran 3:130-132 the third stage, and Quran 2:275-281 for the fourth stage). There are two types of riba: *al-Nasi'a* and *al-Fadl*. The root meaning of *al-Nasi'a* is to postpone and refers to the "time that is allowed to the borrower to repay the loan in return for the addition or the premium" (Chapra, 1984). The main point of the prohibition of *riba al-Nasi'a* is because the borrower must provide a positive return or "addition" that is known in advance and the waiting time for the repayment of the loan does not by itself justify a positive reward. Chapra (1984) claims that among the Islamic jurists there is consensus, without any exception, that *riba* has the same meaning as the interest. *Riba al-Fadl* means "all excess over what is justified by the counter value" (al-Farabi as cited by Chapra, 1984) and it is related to hand-in-hand purchase. Prophet Muhammad states that "Gold for gold, silver for silver, wheat for wheat, barley for barley, dates for dates, and salt for salt - like for like, equal for equal, and hand-to-hand; if the commodities differ, then you may sell as you wish, provided that the exchange is hand-to-hand." (Hadits narrated by Muslim, vol. 3, p.1211:81). This *hadits* has to understand that business transaction should be fair, just and avoid exploitation of another party (Chapra, 1984). The essence of the prohibition of *riba* is because of the unfairness and injustice. Justice is one of the most important goals of Islam and injustice undermines brotherhood and solidarity, and accentuates conflict, crimes and tension (Chapra, 2000). Justice is also an important ingredient to ensure the well-being of all people, irrespective of whether they are Muslim or non-Muslim, poor or rich, male or female. Consequently, resources that are owned by God and entrusted to humans (including money), need to be utilized in such a manner as to achieve a good society (Chapra, 2000). Because of these reasons, Islamic banks provide financing products based on PLS and fixed income financing, e.g., *Ijara* (operating lease) and *Murabaha* (Instalment sale with fixed mark-up margin).

With regard to the view on interest from other religions, St. Thomas Aquinas mentioned that “To take usury for money is unjust itself, because this is selling what does not exist, and this evidently leads to inequality which is contrary to justice.” Furthermore, St. Thomas Aquinas gives an example about selling something twice: selling wine and selling the use of wine. The same applies to money, as money was invented for the purpose of exchange. Thus, it is unlawful to take payment for the use of money lent (Aquinas, 1920). Moreover, Chapra (2000) shows several verses in the Bible mentioning that Christianity condemns interest, e.g., Exodus 22:25-27, Leviticus 25:36-37, Ezekiel 8:8,13,7, Luke 6:35.

Religion and/or religiosity is strongly embedded in Islamic banks according to which there are at least two moral foundations in religion that could support the commitment of the people to have relationships with Islamic financial institutions: authority/respect and in-group/loyalty (Graham and Haidt, 2010). The Quran has given moral instruction to respect authority figures and to obey rules (see Quran 31:14 for obeying parents, Quran 24:52 for obeying God and His messenger, and Quran 4:59 for obeying human authorities). The Quran also emphasizes the moral obligation of loyalty and self-sacrifice to co-practitioners (see Quran 5:51). The decision to have relationships with Islamic financial institutions, despite their disadvantages (more expensive than conventional banks, lack of branches, etc.) reflects the moral obligation in having cooperation between the same co-practitioners and respecting the *Ulama* who asks the people to avoid interest.

The important role of trust in bank-firm relationships in the Islamic culture context has been explored in the previous chapter. Also, a conceptual framework of the relationship between trust and lending outcomes has been shown by Howorth and Moro (2006). Empirical evidence also shows that mutual trust, i.e., whether there is mutual trust between firm and bank, is negatively associated with collateral requirements and cost of debt in lines of credit (Harhoff and Körting, 1998). A more comprehensive exploration of trust between bank and firm has been performed by Lehmann and Neuberger (2001) who used four proxies to measure trust, i.e., experience in the past, the obligation to the partner, the impression of the stability of the relationship, and the flow of information, and found that trust is negatively associated with loan pricing. In terms of loan approval, high flow of information from the borrower to the bank increases the probability of loan approval (Lehmann and Neuberger, 2001). Trust is also positively and significantly related to the probability of the loan renewal of short-term credit (Hernández-Cánovas and Martínez-Solano, 2010). Moreover, the decision to trust is influenced by the perceived trustworthiness of banks' managers in their borrowers which, in turn, is negatively associated with cost of debt (short-term credit) (Howorth and Moro, 2012) and credit availability (Moro and Fink, 2013), and positively associated with short-term credit granted (Moro and Fink, 2013). Moreover, the competence dimension of trust positively influences loan officers' willingness to grant credit in the case of audited SMEs but the perceived competence and honesty of SMEs by loan officers are positively associated with credit granting (Palazuelos, Crespo and Del Corte, 2018). Interorganizational trust, i.e., habitualization (benevolence) and institutionalization (integrity), are found to be positively influenced by the quality of credit negotiations (Hirsch, Nitzl and Schoen, 2018). Furthermore, there is also a strong positive impact of habitualization on the perception of the reliability of the hard information but a negative association between habitualization and the perception of hard information when evaluating SMEs' creditworthiness (Hirsch, Nitzl and Schoen, 2018). Finally, both perceived trustworthiness and information accuracy are positive and significant for credit access. However, the impact of the interaction of perceived trustworthiness and information accuracy on credit access is negative and significant, which suggests that perceived trustworthiness has a stronger effect when the information accuracy is low (Kautonen et al., 2020).

In fact, very little is known about the impact of trust at financial product level, irrespective of the fact that different financing products follow different financing strategies, which can reflect the different roles of the trust that the bank officer is expected to have in the firm and its management.

Chapter 5 addresses this new area by examining the impact of trust on banking decisions to finance firms using *Murabaha*, vis-à-vis *Ijara* vis-à-vis PLS financing products. Since each financing product in Islamic banks has different characteristics and risks, I explore the role of values-based trust vis-à-vis competence-based trust in supporting financing availability to business customers. Trust and risk are inextricably linked (Das and Teng, 2001). In the situation where the negative outcomes of opportunistic behaviour (moral hazard) outweigh the negative outcomes of incompetency of another party, the perception of the values-based trust will lead to the decision to trust (Das and Teng, 2001, 2004). In contrast, the perception of competence-based trust will lead to the decision to trust when the negative outcomes of lack of skill of another party outweigh the negative outcomes of opportunistic behaviour (Das and Teng, 2001, 2004). Despite there being self-selection, i.e., religious customer chooses Islamic banks in their financing relationship because Islamic banks offer similar values to values held by them, the relative strength of values-based trust vs. competence-based trust in each financing product remains a black box. Furthermore, the results of the study should have practical implications, i.e., by knowing the relative strength of values-based trust vs. competence-based trust, firm managers could smooth their financing access.

Islamic Financing Products and Trust in the Firm Manager

Abstract

Literature in trust and conventional bank lending has shown that trust is positively associated with credit availability. However, existing studies in trust and conventional bank lending have not taken into account the characteristics of the bank's lending products in their research. We examine the magnitude of values-based trust (benevolence-integrity) vis-à-vis competence-based trust (ability) on financing availability in three different financing products in Islamic banks, namely *Murabaha,* Profit-loss sharing (PLS) and *Ijara*. We find that competence-based trust plays a stronger role than values-based trust in *Murabaha* and PLS. In *Ijara*, values-based trust plays a more important role than competence-based trust.

Keywords: *Trust, Islamic banks, Murabaha, Ijara, Profit-loss sharing, Financing availability*

1. Introduction

In bank lending, asymmetry of information can be mitigated by applying closer monitoring. However, the process is not costless (Stiglitz and Weiss, 1981). Besides, the literature has shown that trust can reduce perceived risk in another party (Das and Teng 2001; Nooteboom et al. 1997) and reduce monitoring effort and contract enforcement (Chiles and McMackin, 1996). Thus, it is not surprising that researchers have shown increased interest in exploring the role of trust in bank lending (Hernández-Cánovas and Martínez-Solano, 2010; Hirsch, Nitzl and Schoen, 2018; Howorth and Moro, 2006, 2012; Kautonen et al., 2020; Lehmann and Neuberger, 2001; Moro and Fink, 2013; Nguyen, Le and Freeman, 2006; Palazuelos, Crespo and Del Corte, 2018). However, while the functional role of trust has been discussed in the context of conventional banks and in developed countries, this topic has received little attention in emerging economies and in different types of bank, i.e., Islamic banks. Furthermore, both theoretical and empirical papers on trust and bank lending have not examined the different characteristics of lending products that might influence the relationship between trust and lending outcomes. The aim of this study is to examine the impact of trust on financing availability in Islamic banks by taking into account the different characteristics of financing products in Islamic banks (we use the term "financing" instead of lending, as it is more suitable in the context of Islamic banks).

Islamic banking has developed a large set of financial products that aim to comply with *Quran* teaching, since Islamic teaching does not allow financial institutions to charge interest on the invested money. This implies that Islamic finance's financial products are different from Western ones. Our research focuses on three financing products, namely profit-loss sharing (PLS) product, and two types of fixed income financing (*Murabaha* and *Ijara*) (Kabir, Worthington and Gupta, 2015) since they represent the majority of financing in the Islamic world (see Miah and Suzuki, 2020 for recent data). Besides, it is interesting to focus attention of these products because of their characteristics: in the case of PLS products collateralization is found to be ineffective in mitigating credit risk (Sundararajan and Errico, 2002) so that Islamic banks are not only risking their return but also their capital (Beck, Demirgüç-Kunt and Merrouche, 2013); in the case of *Murabaha*, Islamic banks are subjected to mark-up risk since the margin that has been agreed in advance cannot be changed (Khan and Ahmed 2001) and, in the case of delinquency, the bank will not be able to charge the customer for the extra time they used the funds; finally, in the case of *Ijara* (similar to a lease), the ownership status of the assets remains in the Islamic bank's account so that Islamic banks take on board the entire risk of the decreasing market value of the assets. It is therefore apparent that these financial products bear risks that are not incurred by traditional banks. This also implies that Islamic banks have to find a way to deal with them. In such a context a question arises: can trust mitigate the risk Islamic banks incur?

Literature on the inter-firm relationship mentions that trust, as a subjective construct, affects the level of perceived risk that therefore can be different between the actors. Moreover, trust can depend on the characteristics of a relationship (Das and Teng, 2001). Trust itself is defined as a multidimensional construct. Past research suggests that it depends on benevolence, integrity and ability (Mayer et al. 1995); institutionalization and habitualization (Nooteboom et al. 1997); faith, dependability and predictability (Rempel et al. 1985); goodwill and competence (Das and Teng, 2001) just to quote a few models. However, the multidimensionality of trust can be grouped into two main constructs: values and competence. Interestingly, the perception of value-based trust of the partner is relevant to reduce perceived relational risk (opportunistic behaviour) while competence-based trust is relevant to reduce perceived performance risk (competency in managing business) (Das and Teng, 2001, 2004). A highly perceived level of ability-based as well as value-based trust can be helpful when the bank officer has to take the decision whether to finance a firm or not. Moreover, banks' managers' perception of a firm's management ability to run the firm successfully vis-à-vis their perception of a firm's management values, norms, and principles, can play a different role according to the context and more importantly according to different financing products (Das and Teng, 2001, 2004; Mayer and Davis, 1999). Indeed, previous research has shown that values-based trust has a stronger role than competence-based trust in supporting business-to-business relationships in the Islamic world (Wijaya et al., 2020, Chapter 3, this thesis). However, what about specific financial products?

The World Values Service (WVS) survey shows that in Muslim countries, people tend to have a lower level of trust in other countries (in Islamic countries 28% of people agree that "most people can be trusted", far below 46% of Protestant Europe societies) (Inglehart 2007), suggesting a more marginal role of trust in business and financing relationships in the Islamic context. However, because of the covenants attached to the products and their costs, Islamic banks have customers that are expected to share very similar ethical and moral values with the bank. Such a closeness is clearly greater than that between customers of conventional banks (Baele, Farooq and Ongena, 2014). Thus, it is no surprise that empirical evidence shows that: 1) Islamic banks in stronger Islam religious areas provide more financing and have fewer NPF

(Wijaya et al., 2020, Chapter 3 this thesis); and 2) the same borrower is more likely to default on a conventional loan than on an Islamic financing (Baele, Farooq and Ongena, 2014). The consequence of the shared-value-based self-selection implies that for Islamic banks values-based trust is almost a given. This should suggest that what should matter for the Islamic bank officer, in order to take the financing decision, is ability-based trust that implies a deep assessment of the skill of the management and the quality of the project/business. However, whether competence-based trust plays a stronger role than values-based trust in every financing product in Islamic banks remains a black box.

By looking at different financial products in the context of Islamic banks in Indonesia, we found that in *Murabaha*, competence-based trust plays a stronger role than the role played by values-based trust in supporting the proportion of finance that the applicant obtains. The stronger role of competence-based trust can also be found in PLS. At the same time, results suggest that in *Ijara*, values-based trust is more important than competence-based trust. Despite *Murabaha* and *Ijara* offering fixed income to Islamic banks, values-based trust and competence-based trust play different roles. We argue that this happens because the ownership status of the goods/assets is different. In *Ijara*, the owner of the assets is Islamic banks, which implies that the Islamic banks bear the risk of holding the assets, e.g., the decreasing market values of the assets. While in the context of *Murabaha*, Islamic banks only own the assets for a few moments.

2. Literature Review

2.1.PLS and Non-PLS in Islamic Banks

One of the most important aspects in Islamic banks is risk-sharing, which we can find in both financing products and deposit schemes[18] (Beck, Demirgüç-Kunt and Merrouche, 2013; Soufani, Cole and O'sullivan, 2015). Under the liability and equity section, Islamic banks report deposits and savings schemes using a PLS scheme. Because of the risk-sharing concept, moral hazard and adverse selection problems may be theoretically reduced in Islamic banks (Beck, Demirgüç-Kunt and Merrouche, 2013; Čihák and Hesse, 2010) since they need to provide stable and competitive returns to the depositors and depositors have more incentives to exercise tight oversight over bank management. Literature has examined Islamic banks for asset quality or credit risk (Abedifar, Molyneux and Tarazi, 2013; Beck, Demirgüç-Kunt and Merrouche, 2013; Kabir, Worthington and Gupta, 2015), financial stability (Čihák and Hesse, 2010) and the impact of the Islamic bank's financing products on risk (Alandejani and Asutay, 2017; Grassa, 2012; Warninda, Ekaputra and Rokhim, 2019), and suggests that collateralization is not effective in mitigating credit risk in PLS (Čihák and Hesse, 2010; Sundararajan and Errico, 2002). Actually, in PLS financing schemes, any loss of the business should be borne/shared by Islamic banks unless the loss is caused by the negligence or violation of the contract by the firm customer (*mudharib*) (Beck, Demirgüç-Kunt and Merrouche, 2013; Kettell, 2011). In fact, the proportion of profit or loss also needs to be determined in advance (Soufani, Cole and O'sullivan, 2015). Moreover, PLS contracts make Islamic banks vulnerable to agency problems, as firm managers have disincentives to put in all the effort required (Dar and Presley, 2000). Furthemore, Islamic banks are sleeping partners and are subjected to high

[18] Under the liability and equity section, Islamic banks report deposits/savings from the customer (depositor). Unlike conventional banks, a depositor will receive a return but not interest. Depositors will receive a return based on the performance of Islamic banks in managing the fund. This feature could encourage the depositor to monitor and discipline the banks (Beck, Demirgüç-Kunt and Merrouche, 2013). If depositors are dissatisfied with the return, they could withdraw the fund (Khan and Ahmed 2001). Consequently, Islamic banks face a significant withdrawal risk that should instil a greater discipline in managing funds.

ex-post information asymmetry (Dar and Presley, 2000). Finally, in the event of the liquidation of a firm, the Islamic bank's capital will rank lower than the firm manager's debt (Kabir, Worthington and Gupta, 2015). The consequence is that under PLS contracts, Islamic bankers need to have comprehensive skills, a combination of banker's skills (i.e., assessment of business risk and repayment), and the skills of the entrepreneur (in sizing up and seizing opportunities) (Warde, 1999). However, in reality, Islamic bankers may know very little about the business/project that is executed under PLS financing schemes, so they have to rely on the competency of the firm's managers. This implies that on the one hand a manager's competency plays a pivotal role in supporting the Islamic bank's financing decision and on the other that the Islamic bank manager has to be very good at assessing a firm's management skills and qualities. All in all, PLS contracts are anything but easy to handle and the reduced role of collateral suggests that non-PLS contracts (*Murabaha* and *Ijara*) are less risky than PLS ones (Čihák and Hesse, 2010). Thus it is not surprising that, in practice, Islamic banks tend to prefer to use non-PLS contracts, such as *Murabaha* or *Ijara* (Abedifar et al. 2013; Khan 2010). Recent data show that the proportion of PLS financing contracts in the Middle East, South Asia and South East Asia was around 3.13% (*Mudharaba*) and 9.51% (*Musharaka*) (Warninda, Ekaputra and Rokhim, 2019). The large proportion of financing contracts in Islamic banks is *Murabaha*.

However, even if *Murabaha* is less complex than PLS contracts, *Murabaha* is somewhat more complex than conventional loans (Abedifar, Molyneux and Tarazi, 2013). Indeed, the underlying transaction in *Murabaha* is a sale by instalment with mark-up profit (Abedifar, Molyneux and Tarazi, 2013): the Islamic bank buys the goods[19] requested by the

[19] When Islamic banks hold the goods before selling them to the business customers, Islamic banks may face a loss because of the fluctuation in the price. In order to deal with this risk, in practice, Islamic banks only hold the goods (ownership status) for a very short time. This is also a reason why *Murabaha* is akin to a conventional loan, because Islamic banks almost bear no ownership risk (Baele et al. 2014; Khan 2010; Kuran 1995).

firm and then sells the goods to the firm with payment by instalment[20] so that business customers are asked to pay to Islamic banks the original price of the goods plus the additional (trade) margin asked by Islamic banks. However, unlike loans by conventional banks, the mark-up (margin)[21] is agreed in advance and cannot be repriced during the financing period. This implies that the income for the bank is formally the result of a trade, not the result of a financial transaction. In addition, Islamic banks are prohibited from charging additional charges if the firm is delinquent, so that if the *Murabaha* is forcefully extended the bank is not able to access additional income. Besides, Islamic banks also need to ensure that business managers run their businesses in accordance with Islamic principles, e.g., not serving pork, alcoholic beverages, etc. (Izhar, 2010), increasing the monitoring activity the bank has to perform (and the related costs). All in all, the characteristics of fixed mark-up and complex financing schemes in *Murabaha* may entrap Islamic banks in a low yield situation.

Turning our attention to *Ijara*, accounting standards treat it as an operating lease where Islamic banks act as an owner of the asset and record it on their balance sheet (Abedifar, Molyneux and Tarazi, 2013; Kabir, Worthington and Gupta, 2015). The "true lease" or operating lease grants an advantage to the Islamic bank since the lessor, as owner of a particular property, has the power to easily regain the control and direct ownership of the asset. At the same time, the separation of ownership and control might result in low interest of the lessee to protect the value of the asset and a high consumption of the leased asset, so that the market value of the leased asset can be compromised (Eisfeldt and Rampini, 2009). In addition, the financial adverse effect of any damage of the asset caused by non-negligence of the customer

[20] Alternatively, if *Murabaha* is executed using an agent (*wakalah*) scheme, Islamic banks may appoint the borrowers to buy the goods on behalf of Islamic banks. Afterwards, borrowers need to provide evidence that the procurement has been executed. However, it should be noted that there should be two buying and selling invoices in the *Murabaha* scheme with *wakalah*: (1) from the supplier to Islamic banks; and (2) from Islamic banks (as a seller) to the firm managers.

[21] In order to deal with the fixed mark-up problem, Islamic banks can: (1) convert the contract from a *Murabaha* scheme to a profit/loss sharing financing scheme; (2) have a late charge (*ta'zir*) but this is prohibited to be recognized as part of the Islamic bank's revenue and must be transferred into a charity account (Ariffin, Archer and Karim, 2009); and (3) ask for compensation (*ta'widh*) but the amount should not be mentioned in advance and should be based on the actual expenses.

is borne by the Islamic bank (Kettell, 2011; Sundararajan and Errico, 2002). Also, Islamic banks bear all of the risk related to the asset ownership, including the decreasing market value of the asset because of obsolescence or fluctuating demand, and the cancellation of the lease before the due date. Finally, similarly to *Murabaha*, the rental fee in *Ijara* cannot be changed during the contract (Baele, Farooq and Ongena, 2014) nor can the firm be charged when it is delinquent. However, irrespective of the quoted limitations and risks, leasing is one of the financing approaches that provide the smallest risk to the lessor because of the almost "perfect" collateral against the leased asset, as long as the market value of the assets remain stable (Berger and Black, 2011).

Summing up, because of the characteristics of Islamic financial products it can be argued that in the case of *Murabaha* and PLS financing schemes, banks' customers need to demonstrate a good competency in overcoming business challenges, while in *Ijara*, banks' customers need to show their values and commitment, especially when using/consuming assets. The Islamic bank manager has therefore to assess the competence and values of the customers according to the type of product they sell to those customers. However, both competence and values are the basis of trust so that a bank manager's trust in a firm's management can facilitate access to finance for the customer, as shown in more general terms by previous studies (Hernández-Cánovas and Martínez-Solano, 2010; Kautonen et al., 2020; Moro and Fink, 2013; Palazuelos, Crespo and Del Corte, 2018).

2.2. *Trust*

Opportunistic behaviour could be reduced by applying closer monitoring but it is not costless. Trust is relevant in this situation, since it reduces negotiating, drafting, and monitoring costs (Bromiley and Cummings 1995; Chiles and McMackin 1996; Dyer and Chu 2003; Nooteboom et al. 1997). However, even when there is full commitment, integrity and benevolence of the other party, things may be not successful because of the lack of competency or skill of the other party (Das and Teng, 2004).

We follow the definition of trust by Mayer et al. (1995, p.712) “the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party”, as it is relevant in financing activities. The expectation of a trustor (bankers) to a trustee (business customers) contains a probability that the trustee cannot fulfil the expectations of the trustor. For a banker to trust a customer, not only have they to expect that the business customer will not behave opportunistically (moral hazard) but they also have to expect that the business customer has the competency/skill to get things done and overcome any challenges to the business.

Trust should be considered in terms of two distinct dimensions that are associated with two different antecedents (Tinsley, 1996): values-based trust (benevolence and integrity) and competence-based trust (ability). Ability or competence (Butler and Cantrell 1984; Das and Teng 2001; Mayer et al. 1995) of the partner in managing a business is an important factor in reducing perceived performance risk (Das and Teng, 2001, 2004). Despite the fact that performance risk could be affected by various factors, a lack of competence is a major source (Das and Teng, 2004). Perceived ability plays an important role when, for instance, new competitors enter the market, when there are changes in regulation or fluctuation in demand, etc. since they increase the risk of failure to successfully accomplish a task. In other words, demonstrating skill in overcoming challenges in the business could increase the perceived ability of another party (Mayer and Davis, 1999). Past research suggests that bankers' perceived ability of their borrower reduces the perception of default or late payment (Moro and Fink, 2013).

As far as benevolence and integrity are concerned (Das and Teng 2001; Hosmer 1995; Mayer et al. 1995; Nooteboom et al. 1997), evidence shows that integrity is an important element in the relationship, since without “moral character” or “basic honesty”, other dimensions of trust would be meaningless (Gabarro, 1978 as cited by Butler and Cantrell, 1984); an actor might have high competency/skill in performing tasks, but they may not share similar values and principles with the partner to the point that they can act in a way that may be detrimental to the partner (Das and Teng, 2001). Thus, value-based trust is relevant in reducing perceived relational risk (Das and Teng 2001, 2004; Nooteboom et al. 1997). Past research in bank lending also suggests that integrity and benevolence of the borrowers signal to the bankers that the borrowers are planning to do their best to accomplish their obligation, even in a difficult situation (Moro and Fink, 2013).

The degree of importance of values-based trust vs. competence-based trust is idiosyncratic, both between individuals and to the situation (Mayer and Davis, 1999). In the situation where the negative outcomes of opportunistic behaviour (moral hazard) outweigh the negative outcomes from the incompetency of another party, the perception of the values-based trust will lead to the decision to trust (Das and Teng, 2001, 2004). In contrast, the perception of the competence-based trust will lead to the decision to trust when the negative outcomes from the lack of skill of another party outweigh the negative outcomes of opportunistic behaviour (Das and Teng, 2001, 2004).

Based on this discussion, we propose the following:

Proposition 1: In Murabaha, competence-based trust (ability) has a stronger effect in supporting financing relationships than value-based trust.

Proposition 2: In Ijara, values-based trust (benevolence-integrity) has a stronger effect in supporting financing relationships than competence-based trust.

Proposition 3: In PLS, competence-based trust (ability) has a stronger effect in supporting financing relationships than value-based trust.

3. Data and Methodology

3.1. *Data Collection*

We selected 16 Islamic rural (small) banks in two areas: greater Surakarta and greater Yogyakarta in Indonesia. In addition, we also selected three Islamic large banks with observations in several provinces. In total, we collected 733 observations. Islamic rural (small) banks typically operate in local areas, have no automated teller machine (ATM), and do not offer foreign exchange services to their customers.

In order to increase the participation of the respondents, the researcher team contacted the Chairman of the Financial Service Authority in greater Surakarta and the Chairman of the Islamic Banks Association in greater Surakarta and greater Yogyakarta first. Then the researcher team contacted the banks.

Our survey is part of a bigger survey which examined the role of trust in Islamic culture in Indonesia (Wijaya et al., 2020, Chapter 3 of this thesis). The respondents in the current study are Islamic banks' financing officers who have active relationships with firm owners. Each respondent was asked to fill in a questionnaire based on his/her relationship with three to four firm owners of micro or small businesses (according to Law 20/2008 of the Republic of Indonesia), selecting them from among the first 3-4 firms from the alphabetical list of the customers they look after.

Before delivering our questionnaire, we performed a content evaluation by asking for feedback from two experienced bankers in Indonesia and two survey experts. We also performed back translation to ensure there was no loss in the meaning of the translation from English to the Indonesian language. Finally, we conducted field tests by visiting 15 bankers to test the questionnaire and asked for feedback from them. We dropped one question related to late payment and made minor adjustments to the questionnaire as a result.

The core components of the survey are the items that measure the bank financing officers' trust in firm owners. Our research relies on 10 items inspired by previous studies (Howorth and Moro, 2012; Mayer and Davis, 1999; Moro and Fink, 2013; Spreitzer and Mishra, 1999) and one new item, measured using a Likert scale, 1=strongly disagree to 5=strongly agree. We used a questionnaire also to collect primary data regarding the trust propensity of the respondents, characteristics of the firms, relationships between Islamic banks and firm owners, trustworthiness evaluation from the Islamic bankers, and financing decisions.

3.2. *Methodology*

Exploratory factor analysis (EFA) is used to reduce the trustworthiness items into latent constructs. The objective of EFA is to explain the correlations among variables without an underlying structure caused by latent variables (Fabrigar et al., 1999). Then, we entered the constructs as core independent variables. We used tobit regression with bootstrap standard errors since our dependent variable is the percentage of the financing approved compared to the amount applied for (financing proportion) (Amore and Murtinu, 2019). In addition, we also performed fractional probit regression, as the financing proportion is uncensored and ranges from 0% to 100%.

In order to reduce the problem of common method bias, we guaranteed the anonymity of the respondents, of the banks in which they work, and of the firm owners with whom the respondents have relationships. In fact, the respondents did not need to mention their name, their bank's name or their firm owner's name in our survey. We also performed four others procedural remedies against common method bias. The details of the remedies undertaken against common method bias (Podsakoff et al., 2003; Podsakoff, MacKenzie and Podsakoff, 2012) are reported in in the Appendix 1.

Table 1 shows the descriptive statistics in Islamic banks, *Murabaha*, *Ijara*, and PLS. The average age of the firm is 17 years. But in PLS, Islamic banks seem to opt to have relationships with older firms. The average relationship duration is 2.5 years for *Ijara*, 3 years for *Murabaha*, and 3.9 years for PLS. These data support the fact that, since in a PLS financing scheme Islamic banks not only risk their return but also their capital, they decide to provide finance only to those customers that they know very well and have proved to be successful in the past since soft information needs to be gathered for a longer time before Islamic banks decide whether to be involved or not in a PLS financing scheme. Firm managers seem to concentrate their borrowing from two banks.

Table 1. Descriptive statistics in Islamic banks, Murabaha, Ijara and PLS

	Islamic Banks					*Murabaha*				
Variable	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max
Competence-based trust	733	-5.96E-09	1	-4.795941	1.952437	564	0.0079494	1.0221	-4.795941	1.952437
Value-based trust	733	-3.17E-09	1	-4.635373	2.221256	564	0.0283035	1.013445	-3.676024	2.221256
Firm age	733	17.42565	16.21775	1	67	564	17.23404	15.98329	1	67
Borrow from other banks	733	1.446112	1.507323	0	10	564	1.398936	1.438644	0	10
Relationship duration	733	3.103683	2.48166	0	24	564	3.067376	2.517237	0	24
Use other products	733	0.6398363	0.4803755	0	1	564	0.6258865	0.4843227	0	1
Trust propensity	733	1.23E-08	1	-4.49295	1.58141	564	0.028208	0.9754134	-4.49295	1.58141
Financing proportion	733	84.42156	24.78378	0	100	564	84.92553	24.39808	0	100

Table 1. Continued.

	Ijara					PLS				
Variable	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max
Competence-based trust	82	-0.114448	0.9986179	-3.604083	1.952437	87	0.0563366	0.8468714	-3.104628	1.952437
Value-based trust	82	-0.088781	1.028203	-3.249	2.221256	87	-0.099807	0.877102	-4.635373	1.43228
Firm age	82	16.0122	15.87411	1	60	87	20	17.89114	1	63
Borrows from other banks	82	1.231707	1.694572	0	10	87	1.954023	1.66292	0	9
Relationship duration	82	2.439024	1.785383	0	8	87	3.965517	2.598963	0	13
Uses other products	82	0.6829268	0.4681998	0	1	87	0.6896552	0.4653167	0	1
Trust propensity	82	-0.067972	1.046241	-4.49295	1.58141	87	-0.1188	1.108238	-4.49295	1.58141
Financing proportion	82	80.54878	28.42454	0	100	87	84.8046	23.54009	0	100

Benevolence and integrity (factor) score obtained from PCF (Value-based trust), Ability (factor) score obtained from PCF (Competence-based trust), The age of the firm (Firm age), The number of bank(s) from which debtor borrows (Borrows from other banks), The duration of the relationship between banks and debtor (Relationship duration), Dummy variable, 1 if the firm manager uses another product(s) from the bank, otherwise 0 (Uses other products), Trust propensity score of the bank managers (factor) obtained from PCF (Trust propensity, Percentage amount approved compared to amount applied for (Financing proportion).

Mayer et al.'s (1995) model suggests that trust is also a function of a personal predisposition: some people are naturally more prone to trust others, irrespective of their perceived ability, benevolence and integrity. In order to control for personal predisposition to trust, we use three items for bank managers to evaluate: "Most people can be counted on to do what they say they will do" (reverse score), "One should be very cautious with strangers", and "These days, you must be alert or someone is likely to take advantage of you." We use 11 items to measure the perceived trustworthiness of the firm managers. EFA was employed to reduce larger data into smaller sets of latent constructs. Table 2 illustrates the factor analysis results. In line with Moro and Fink (2013) and Wijaya et al. (2020, chapter 3 in this thesis), our study split trust into two factors: competence-based (ability) and values-based (benevolence-integrity). This approach follows Tinsley's (1996) idea that ability and benevolence-integrity are different and should be explored separately. Values-based trust load into one factor and the Bartlett test of sphericity is significant ($p<0.01$) with a Kaiser-Meyer-Olkin (KMO) score of 0.906. All of the items show communalities between 0.38 and 0.7 and this is acceptable (Costello and Osborne, 2005). The amount of variance explained by the factor is 55.95% with the Cronbach's alpha score at 0.8841. Also, competence-based trust (ability) items load into one factor. The Bartlett test of sphericity is significant ($p<0.01$) with a KMO score of 0.686 with communalities between 0.63 and 0.79. The amount of variance explained by the factor is 72.95% with the Cronbach's alpha score at 0.8035.

With regard to correlation analysis (Table 3a, 3b, 3c), firm managers seem to have disadvantages when they have financing with more banks but this is only relevant in *Murabaha* (Petersen and Rajan, 1994). One possible explanation is that having a lot of financing with many banks gives a signal that the firm has low quality since one bank cannot fulfil the amount of money needed by the firm managers (Petersen and Rajan, 1994). Duration of the relationship between bank managers and firm managers provides benefit to the financing outcomes, especially in *Murabaha* and *Ijara* (Petersen and Rajan, 1994). Interestingly, trust has a higher correlation with financing outcomes than relationship duration in *Murabaha* and *Ijara* (Hernández-Cánovas and Martínez-Solano, 2010). Competence-based trust and values-based trust have positive correlation with the dependent variable, financing proportion, in *Murabaha*, *Ijara*, and PLS. However, in order to explore the relative strength of competence-based trust vs. values-based trust in each financing product, further analysis needs to be performed.

Table 2a. Trustworthiness variables: factor analysis of value-based trust

The firm manager…	Var.	Factor1	Uniqueness	Mean	Std. Deviation	Obs.
Is consistent in his words and behaviour	INTEGRITY 1	0.8347	0.3033	3.863574	0.7035793	733
Is completely honest with me	INTEGRITY 2	0.7876	0.3798	3.814461	0.7899356	733
Tries hard to be fair in dealings with others (suppliers, buyers, partners, etc.)	INTEGRITY 3	0.7975	0.364	3.890859	0.6198766	733
Will do his best to pay on schedule even in a shortage of cash situation	BENEVOLENCE 1	0.773	0.4024	3.942701	0.7028372	733
Really looks out for what is important to me or my bank	BENEVOLENCE 2	0.7045	0.5036	3.885402	0.6656828	733
Would acknowledge their own mistakes	BENEVOLENCE 3	0.6162	0.6203	3.717599	0.6740131	733
Shares information in detail (based on data and facts)	BENEVOLENCE 4	0.7915	0.3735	3.854025	0.7293427	733
Shares sensitive or important information with me	BENEVOLENCE 5	0.6501	0.5773	3.537517	0.7754941	733

Table 2b. Trustworthiness variables: factor analysis of competence-based trust

The firm manager…	Var.	Factor1	Uniqueness	Mean	Std. Deviation	Obs.
Is able in identifying the needed resources (for business purposes)	ABILITY 1	0.8805	0.2247	3.9809	0.6092778	733
Has very good knowledge of the current market in which they operate	ABILITY 2	0.8867	0.2138	4.043656	0.5851101	733
Is known to be successful at the things they try to do	ABILITY 3	0.7919	0.3729	3.763984	0.7244455	733

Table 3a. Correlation in Murabaha

		1	2	3	4	5	6	7	8
1	Financing proportion	1							
2	Values-based trust	0.490***	1						
3	Competence-based trust	0.491***	0.727***	1					
4	Firm age	-0.0214	-0.0110	0.0139	1				
5	Uses other products	0.0818	0.200***	0.162***	0.00812	1			
6	Borrows from other banks	-0.151***	-0.210***	-0.107*	0.00258	-0.00975	1		
7	Relationship duration	0.158***	0.122**	0.106*	0.149***	0.185***	-0.0477	1	
8	Trust propensity	0.0977*	0.173***	0.164***	-0.0218	-0.00290	-0.00870	-0.117**	1

Table 3b. Correlation in Ijara

		1	2	3	4	5	6	7	8
1	Financing proportion	1							
2	Values-based trust	0.532***	1						
3	Competence-based trust	0.430***	0.783***	1					
4	Firm age	0.0689	0.0717	0.139	1				
5	Uses other products	0.115	0.244*	0.152	0.133	1			
6	Borrows from other banks	0.0676	-0.0779	0.0527	-0.144	0.0159	1		
7	Relationship duration	0.288**	0.163	0.345**	0.156	0.0800	0.211	1	
8	Trust propensity	0.0849	0.110	0.101	-0.101	0.151	-0.0258	0.0781	1

Table 3c. Correlation in PLS

		1	2	3	4	5	6	7	8
1	Financing proportion	1							
2	Values-based trust	0.335**	1						
3	Competence-based trust	0.318**	0.411***	1					
4	Firm age	0.0194	0.0342	0.129	1				
5	Uses other products	-0.0268	0.208	0.365***	0.0587	1			
6	Borrow from other banks	-0.0484	0.115	0.0225	-0.128	0.147	1		
7	Relationship duration	0.128	0.165	0.112	0.159	-0.0666	-0.0865	1	
8	Trust propensity	-0.0164	0.161	-0.0348	-0.259*	-0.0253	0.194	-0.0470	1

Percentage amount approved compared to amount applied for (Financing proportion), Benevolence and integrity (factor) score obtained from PCF (Value-based trust), Ability (factor) score obtained from PCF (Competence-based trust), The age of the firm (Firm age), Dummy variable, 1 if the firm manager uses another product(s) from the bank, otherwise 0 (Uses other products), The number of bank(s) from which the debtor borrows (Borrows from other banks), The duration of the relationship between banks and the debtor (Relationship duration),), Trust propensity score of the bank managers (factor) obtained from PCF (Trust propensity).

4. Analysis

Financing proportion in Murabaha, Ijara, and PLS

We test our proposition by using tobit regression (bootstrap standard errors because of the reduced dimension of the sample) because we use the financing proportion, i.e., percentage amount approved compared to amount applied for as a dependent variable. Since our financing proportion is uncensored and ranges from 0% to 100% we also perform fractional probit regression with robust standard errors. None of our models has multicollinearity problems. Heteroscedasticity issues are solved by bootstrapping standard errors in tobit regression (Amore and Murtinu, 2019).

Table 4 reports tobit and fractional probit regressions for each financing product. Models 1 and 2 show the impact of values-based trust vs. competence-based trust in the *Murabaha* financing product. The regressions are highly significant and do not present collinearity of heteroscedasticity issues. Interestingly, values-based and competence-based trust work in tandem in supporting the financing proportion. Competence-based trust is positive and significant at the 1% level and plays a marginally stronger role than values-based trust in supporting the financing proportion in *Murabaha*. In fact, the higher coefficient of competence-based trust can be compared to that of value-based trust because they are both multiplied by standardized variables (the two factors). In other words, our evidence supports the fact that, because of the difficulties bank managers face in assessing the quality of the project, they rely on the abilities of the firm's management. Thus, when they trust management skills and abilities (high level of competence-based trust) they provide credit. It is intriguing that trust based on shared values also plays a role, even if marginally less important than competence-based trust. We discuss further the differences between ability and value-based trust later, when we explore the economic impact, by looking at the marginal effects. The results are also confirmed by Model 2 where the impact of competence-based trust ($p<0.01$) on financing proportion is higher than that of values-based trust.

As far as the controls are concerned, relationship duration is positive and significant at 5% and 1% in Models 1 and 2 (Hernández-Cánovas and Martínez-Solano, 2010; Petersen and Rajan, 1994). Multiple banks relationship is negative and significant at 5%. One possible explanation is that having a financing relationship with many banks provides a signal to the Islamic banks that the quality of the firm is low since one bank cannot fulfil the money requested by the firm (Petersen and Rajan, 1994).

Turning our attention to *Ijara*, Model 3 reports tobit regression with bootstrap standard errors. The regression is highly significant and does not present collinearity of heteroscedasticity issues. Interestingly, values-based trust is positive and significant at the 1% level and competence-based trust has no effect on financing proportion in *Ijara*. This finding confirms quite strongly our proposition 2: the risk Islamic bank incurs, linked to the misbehaviour of the firm in using the asset, implies that the bank has to assess the ethical and moral values of the customer. When the customer's values are in line with the bank (high score in terms of value-based trust) the bank perceives that it faces a reduced risk and thus is more prone to providing credit. At the same time, the role of skills and competence is not relevant in the decision process since in the case of a firm's default due to a lack of firm's management skills the bank will be able to recover the investment by taking back control of the asset. Thus, consistent with proposition number 2, Model 4 shows that only values-based trust ($p<0.01$) is relevant in supporting financing proportion in *Ijara*. With regard to controls, relationship duration is also positive and significant in *Ijara* (Hernández-Cánovas and Martínez-Solano, 2010; Petersen and Rajan, 1994).

With regard to a PLS financing scheme, the regressions are highly significant and do not present collinearity of issues. Models 5 and 6 confirm proposition 3 where competence-based trust ($p<0.05$) is more relevant than values-based trust in supporting financing proportion in PLS. Bank managers are very much concerned about the possibility that things “cannot be done”, despite the customer holding strong values, principles, and norms. In such situations, competence-based trust can be helpful since it reduces a bank manager’s perception that the customer might perform badly in the business/project.

Table 4. Tobit and Fractional Probit Regressions in Murabaha, Ijara, and PLS

	Murabaha		*Ijara*		PLS	
	Tobit	Fractional probit	Tobit	Fractional probit	Tobit	Fractional probit
	(1)	(2)	(3)	(4)	(5)	(6)
Values-based trust	8.082***	0.409***	22.01***	1.110***	7.891*	0.386*
	(2.205)	(0.119)	(5.942)	(0.293)	(4.785)	(0.220)
Competence-based trust	10.86***	0.545***	-7.115	-0.271	10.35**	0.600**
	(2.092)	(0.112)	(5.459)	(0.276)	(4.883)	(0.284)
Firm age	0.0000283	-0.00444	-0.107	0.00156	-0.0924	-0.00450
	(0.0821)	(0.00485)	(0.226)	(0.00993)	(0.234)	(0.0112)
Uses other products	-5.086	-0.215	-4.141	-0.220	-10.02	-0.651
	(3.099)	(0.163)	(7.944)	(0.368)	(9.303)	(0.474)
Borrows from other banks	-2.264**	-0.0472	0.764	0.126	-1.525	-0.0336
	(0.974)	(0.0504)	(2.172)	(0.1000)	(2.661)	(0.101)
Relationship duration	1.575**	0.130***	6.502**	0.311**	0.774	0.0400
	(0.654)	(0.0414)	(2.605)	(0.148)	(1.595)	(0.0755)
Trust propensity	1.519	0.113	0.613	0.0586	-3.422	-0.145
	(1.815)	(0.0846)	(4.075)	(0.202)	(4.840)	(0.192)
_cons	96.51***	1.887***	78.37***	1.042***	101.6***	2.317***
	(3.100)	(0.171)	(9.979)	(0.395)	(12.20)	(0.648)
N	564	564	82	82	87	87
Wald chi2 (7)	103.76	126.38	30.2	28.67	0.0000	14.93
Prob > chi2	0.0000	0.0000	0.0000	0.0000	1.0000	0.0369
Pseudo R^2	0.0497	0.1494	0.0479	0.1748	0.4627	0.0832

Bootstrap standard errors in Models 1, 3, 5 and Robust standard errors in Models 2,4,6.
p<0.1 *, p<0.05**, p<0.01***
Dependent variable: Percentage amount approved compared to amount applied for (Financing proportion). Independent variables: Benevolence and integrity (factor) score obtained from PCF (Value-based trust), Ability (factor) score obtained from PCF (Competence-based trust). Controls: The age of the firm (Firm age), Dummy variable, 1 if the firm manager uses another product(s) from the bank, otherwise 0 (Uses other products), The number of bank(s) from which the debtor borrows (Borrows from other banks), The duration of the relationship between banks and debtor (Relationship duration),), Trust propensity score of the bank managers (factor) obtained from PCF (Trust propensity).

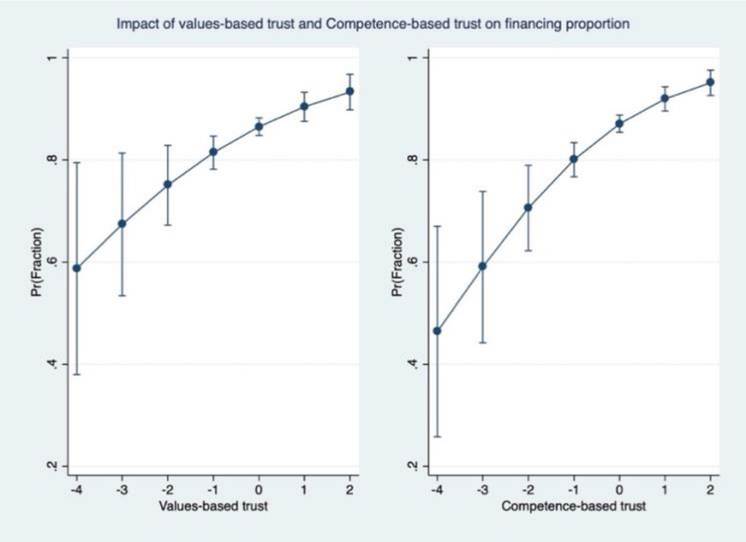
Since both values-based trust and competence-based trust variables are positive and significant in *Murabaha* and PLS, we also perform marginal effect analysis based on fractional probit regression results. In *Murabaha*, a one-point increase in the values-based trust will improve the financing proportion by 4.4%, while a one-point increase in the competence-based trust will improve the financing proportion by 5.9%. Table 5 shows the marginal effect analysis in *Murabaha*. In addition, Figure 1 shows the comparison of marginal effect of values-based trust vs. competence-based trust in *Murabaha*. The slope of competence-based trust is a little steeper than that of values-based trust. We might conclude that both values-based trust and competence-based trust work in tandem to support financing decisions in *Murabaha,* but the impact of values-based trust is marginally more important than competence-based trust. The fact that Islamic banks can be easily trapped in low yield situations in *Murabaha*, makes Islamic banks interested in the values, principles and norms that firm managers can bring into the relationship. In another words, if firm managers have the capability to repay the financing on time but they intentionally defer the payment, it will make Islamic banks worse off. In the same vein, competency of the firm managers plays important role in *Murabaha* since firm managers with low skill in managing and overcoming challenges in business will cause repayment problems for Islamic banks.

Table 5. Marginal effect analysis in Murabaha

	dy/dx	Delta-method Std. Err.	z	P>|z|
Values-based trust	0.0441644	0.0128055	3.45	0.001
Competence-based trust	0.0588786	0.012058	4.88	0.000
Firm age	-0.00048	0.0005275	-0.91	0.363
Uses other products	-0.0232548	0.0175969	-1.32	0.186
Borrows from other banks	-0.005101	0.0054639	-0.93	0.351
Relationship duration	0.0140983	0.004565	3.09	0.002
Trust propensity	0.0122418	0.0091314	1.34	0.180

Independent variables: Benevolence and integrity (factor) score obtained from PCF (Value-based trust), Ability (factor) score obtained from PCF (Competence-based trust). Controls: The age of the firm (Firm age), Dummy variable, 1 if the firm manager uses another product(s) from the bank, otherwise 0 (Uses other products), The number of bank(s) from which debtor borrows (Borrows from other banks), The duration of the relationship between banks and the debtor (Relationship duration), Trust propensity score of the bank managers (factor) obtained from PCF (Trust propensity).

Figure 1. Marginal effect of values-based trust vs. competence-based trust in Murabaha



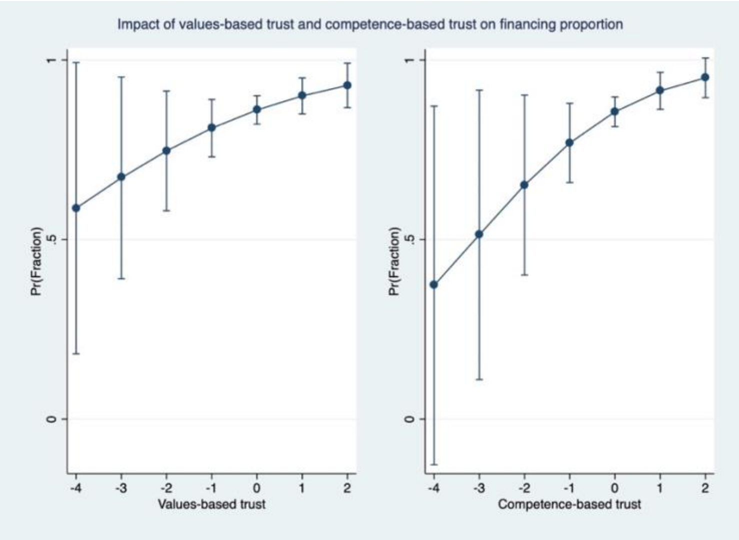
We find a similar pattern in PLS where a one-point increase in the values-based trust and competence-based trust will improve the financing proportion by 4.6% and 7.1% respectively. Table 6 shows the marginal effect analysis in PLS, while Figure 2 shows the comparison of marginal effect of values-based trust vs. competence-based trust in PLS. The slope of competence-based trust is steeper than that of values-based trust. Therefore, we can confirm proposition number 3, i.e., in PLS, competence-based trust has a stronger impact than values-based trust.

Table 6. Marginal effect analysis in PLS

	dy/dx	Delta-method Std. Err.	z	P>|z|
Values-based trust	0.0455373	0.0267111	1.7	0.088
Competence-based trust	0.0707765	0.0335563	2.11	0.035
Firm age	-0.0005313	0.0013014	-0.41	0.683
Uses other products	-0.0768008	0.0552395	-1.39	0.164
Borrows from other banks	-0.0039597	0.0118579	-0.33	0.738
Relationship duration	0.0047227	0.0089181	0.53	0.596
Trust propensity	-0.0170839	0.0223574	-0.76	0.445

Independent variables: Benevolence and integrity (factor) score obtained from PCF (Value-based trust), Ability (factor) score obtained from PCF (Competence-based trust). Controls: The age of the firm (Firm age), Dummy variable, 1 if the firm manager uses another product(s) from the bank, otherwise 0 (Uses other products), The number of bank(s) from which debtor borrows (Borrows from other banks), The duration of the relationship between banks and debtor (Relationship duration), Trust propensity score of the bank managers (factor) obtained from PCF (Trust propensity).

Figure 2. Marginal effect of values-based trust vs. competence-based trust in PLS



5. Discussion

In PLS, Islamic banks not only risk their remuneration but also their capital. When the firm reports low profit in their annual financial report, Islamic banks will receive a lower portion of profit as well. In the worst case, Islamic banks cannot even ask for the invested money back and cannot obtain a return when the firm goes bankrupt or reports a loss, respectively. In fact, because of the structure of Islamic finance, the loss of capital not only compromises Islamic banks' funds but can also trigger a reaction from depositors who, concerned about the monies they have entrusted to the bank, can then decide to withdraw their savings generating a liquidity issue for the bank. Consequently, Islamic banks need to forgo some parts of their income to assure a proper remuneration to the depositor and reassure them about the bank's capability to properly remunerate the funds (Khan and Ahmed 2001). In practice, firm managers and Islamic banks need to have a long relationship first before Islamic banks decide to become involved in a PLS financing scheme. This is in line with the relationship lending concept, in which bankers need to gather soft information throughout the relationship from many sources, (e.g., suppliers and customers of the firm) to support financing decisions (Berger and Udell, 2002). Also, in large Islamic banks, the decision to be involved in a PLS financing scheme usually needs to be approved by upper layer managers. Upper layer managers could rely on the competency of the firm managers, which is represented by facts and figures. All in all, since Islamic banks only become involved in PLS financing schemes with those who have strong values so that shared values are given, they need to examine the competency of the firm managers in a great deal. Competence-based trust will reduce performance risk which, in turn, might provide a proper return for Islamic banks.

In *Murabaha*, moral hazard of the firm managers, e.g., money obtained from the banks and used for other purposes, is implicitly reduced since Islamic banks are involved in the transaction as they need to provide the goods/assets requested by the firm managers (see Shaban et al., 2014). Islamic banks may still be vulnerable, especially when the firm managers have the capability to repay the financing on time, but intentionally defer the repayment. However, banks' managers are more concerned about the firm's management capability to use the products properly than in their possible misbehaviour that can damage the bank. Besides, because of the unique characteristics of *Murabaha*, e.g., mark-up risk and extension to the financing period that could result in Islamic banks being trapped in a low yield situation, Islamic banks have to be focused more on the competency and productivity of the firm managers. It should be pointed out that Islamic banks can ask for *ta'zir* (late charge) when the firm is late in paying the instalment. However, the money obtained from the *ta'zir* is not available to the bank in the sense that it is not a bank income since it has to be put into a charity account and cannot be recognized as part of the Islamic bank's revenue. Clearly, the competency of firm managers in overcoming challenges is important.

Ijara and *Murabaha* offer fixed income to Islamic banks. However, in *Ijara*, the ownership of the assets remains in the Islamic bank's account. When the firm managers do not behave properly (low benevolence and integrity) in using/consuming the assets (misappropriation of Islamic bank's asset), Islamic banks can incur high additional costs linked to increased maintenance/repairing expenses. Besides, they also bear the risk of the decreasing market values of the asset. In such a context it is mandatory for the bank manager to assess the willingness of the firm's manager to behave in a way that will not be detrimental to the bank (benevolence).

6. Conclusion and Future Research

Our study supports previous studies on the functional role of trust in bank lending: the higher the banker's trust in their borrowers the more financing is available to the firm managers. The contribution of this study is the very detailed level of analysis: we show the role of trust in different types of financing products, a level of analysis that has not been addressed by previous literature either in conventional or Islamic bank literature (Harhoff and Körting, 1998; Hernández-Cánovas and Martínez-Solano, 2010; Howorth and Moro, 2006, 2012; Kautonen et al., 2020; Moro and Fink, 2013; Palazuelos, Crespo and Del Corte, 2018).

With regard to the relative role of values-based trust vs. competence-based trust, our results support our opening arguments and suggest that this depends on the financing products. In *Murabaha*, competence-based trust plays a marginally stronger role than values-based trust in financing proportion decisions. In contrast, in *Ijara*, competence-based trust plays a more reduced role than value-based trust in financing proportion decisions. We might draw a conclusion on this issue: despite *Murabaha* and *Ijara* offering a fixed income to Islamic banks (margin and rental fee respectively), the status of the ownership of the assets/goods is different and plays a major role in defining which aspect of trust matters in order to take financing decisions. In *Murabaha*, when the firm managers ask for financing to buy goods/assets, Islamic banks will buy the goods/assets first, then will sell the goods/assets to firm managers on an instalment basis. However, *Murabaha* has been heavily criticized by scholars for its resemblance to conventional loans because the status of ownership only lasts for a few seconds

(Khan 2010). This makes Islamic banks free from risk of holding the goods/products, e.g., the volatility of the market values of the assets. In contrast, in *Ijara*, the owners of the assets are the Islamic banks.

In PLS, competence-based trust plays a stronger role than values-based trust in financing proportion decisions. This could be because the higher the financing proportion, the higher the capital that needs to be invested by Islamic banks into a firm manager's business or project. In PLS, Islamic banks not only risk the return but also the capital and they may know little about the business/project. Consequently, Islamic banks rely more on the competency and productivity of firm managers.

Our study offers a practical implication, especially for firm managers. Previous research has shown that transactional variables such as relationship duration provide a functional role in supporting credit access, especially for small firms. However, our study has documented that the impact of trust is higher than that of relationship duration in each financing product (see also Hernández-Cánovas and Martínez-Solano, 2010). Thus, firm managers need to realize that trust is an important aspect in financing relationships with Islamic banks. In addition, in order to smooth the financing access to Islamic banks, firm managers need to be aware what financing product they are applying. Furthermore, firm managers need to try to show more of their competency in *Murabaha* as well as in PLS, since it could increase the financing proportion.

Future research should seek to understand a more specific issue, what is the role of values-based trust vs. competence-based trust in *Murabaha* but for different financing purposes, i.e., working capital vs. long-term assets. *Murabaha* is the most popular financing product in Islamic banks and it can be used for both short-term and long-term financing. However, *Murabaha* cannot be used as revolving financing, such as a line of credit mechanism. If *Murabaha* were to be applied for financing long-term assets (that are usually executed over a long-term period), we might expect that the mark-up risk will be higher than that of working capital financing. Not only that, Islamic banks will be more difficult to exit from the relationship when involved in a long-term period of financing.

The current study has only examined the relationship between bank managers and firm managers in Indonesia. Additional research in other Muslim countries and/or regions should be performed in order to increase confidence in our findings.

Appendix 1: Remedies undertaken against Common Method Bias (based on Podsakoff et al. 2012).

Remedy and rationale	Implementation
Procedural Remedy	
Protecting respondent anonymity	Respondents do not need to mention their name, their bank's name or their financing applicant's name in our survey.
Reducing item ambiguity	We conducted a field test of banks' officers to find any ambiguous instructions and questions, and also sensitive questions. In fact, we have adjusted several questions and instructions and also deleted one question related to applicant's delinquency in the past as it was regarded as too sensitive.
Obtain measures of independent variables and dependent variables from different sources	Despite one person answering both independent variables and dependent variables, the latter do not contain feelings, perceptions, or beliefs. We also performed additional regression by using different dependent variables as a robustness check (fractional probit regression). The dependent variable is the percentage of the amount approved compared to the amount applied for by the firm.
Proximal separation between independent variables and dependent variables	The questions related to the evaluation of firm managers' trustworthiness (main independent variable) are separate from the dependent variables questions.
Eliminate common scale properties	Our main independent variable (perceived trustworthiness) is measured by using a Likert scale from 1 to 5. Our dependent variable is measured using a number (percentage of amount approved compared to amount applied for).

Chapter 6: Discussion about the Contribution of the Research

This PhD thesis has four major contributions: one methodological, which linked the way in which religiosity is measured, and three empirical which are linked to the results from the three different empirical papers that start by exploring the role of religiosity in accessing credit then move on to explore the role of trust in the Islamic financing world down to the small firm-bank level and to the specific financing product level. This chapter discusses and elaborates on these four major contributions.

Religiosity is different from religion. Religiosity is about the level of commitment of people to religious teachings. However, measuring religiosity is very difficult because it represents an intangible quality that evolves through time. Literature has documented two approaches to measuring Islam religiosity, i.e., from the individual level and from the area level. Measuring Islam religiosity from an individual perspective commonly captures three important dimensions: *akhlaq* (behaviour), faith (belief), and *Sharia* (law) (see Ji and Ibrahim 2007; Wijaya et al. in press). Interestingly, there is the possibility that a person may have a strong *Sharia* and faith understanding but their *akhlaq* (behaviour) may not necessarily be in line with these cognitive aspects: in other words there can be a mismatch between being religious and acting religiously. This chasm implies that using Muslim share of the population (those who declare themselves to be religious) as a proxy for religiosity (those that believe and act accordingly) is not correct (biased) and its use might provide unreliable results. In one of the recent literature reviews, Basedau et al. (2018, p.1110) mention that empirical studies that examine the impact of religion and/or religiosity on socioeconomic development face methodological challenges, i.e., unclear conceptualizations and incorrect operationalization of the variables measuring religious dimensions, as they state:

> "Studies interested in examining how religious ideas about work ethic affect economic growth often use country shares of people with specific religious

> identities rather than measures of particular beliefs on work, which would better reflect the real topic of interest […] The discrepancy between the specific research question and the operationalization of variables occurs within most subthemes of the broader literature on religion and development and is partly due to a lack of appropriate data. Often, data on specific beliefs are simply not available and scholars have to use proxy indicators—such as population shares—with limited validity."

Abou-Youssef et al. (2015, p.789) notice that, in relation to the practice of prayer (*sholat*), there is a lot of variation among Muslims, stating that:

> "The most pious Muslim adheres to praying the five prayers at their specific prescribed times throughout the day and adheres to the principles of Shari'ah and Sunna (the Prophetic traditions). The next level of being pious includes people who adhere to praying the five prayers but sometimes miss one if they are busy (and compensate for it at a different time) and adhere to some aspects of Shari'ah and Sunna. Then comes the third level, which would be the partly observant Muslims; they do not pray on continuous and daily basis, they sometimes pray Friday prayers in the mosque if they are males, they also know about many aspects of Shari'ah and they observe some of them. The final level encompasses those who praying just twice a year, only in the context of major religious events."

Therefore the risk linked to oversimplification in measuring religiosity is clear. Besides, some quite peculiar and inconsistent results of past empirical research, such as the finding that Muslim share of the population is positively associated with economic growth in Ghana but negatively associated with economic growth in Malaysia and no association is found in India (Noland, 2005), can be ascribed to the imprecise methods used to measure religiosity. Besides, if the wrong metric can have such a relevant impact, alternative measurements have to be used. This is the main methodological contribution of this PhD thesis, particularly in the case of the first empirical chapter.

In order to identify a better way to measure religiosity, I explored how it is shaped. Indeed, *Akhlaq*, *Sharia*, and the faith of Muslims are developed, defined and disseminated by the religious actors and/or religious practices, such as Islamic schools, mosques, Islamic seminary schools, Hajj and halal certificates. Thus, the use of variables that catch these dimensions can be more beneficial, in terms of measuring the religiosity of a context, than the simple proportion of the population that declares themselves as being Muslim or belonging to any other religion. This is the reason for inclusion of these dimensions in the first empirical paper that, as a consequence, is able to provide a more precise picture of the real role of religiosity in financing relationships. Besides, an additional important medium to shape the religiosity of a person is the holding of informal religious study classes in people's homes, which is very common in a country such as Indonesia, where women join these routine classes once a week in their place ("*majelis taklim*" or "*pengajian ibu-ibu*")[22]. It would have been interesting to also use this metric since it can provide an even a more detailed signal of the intensity of the religiosity of the population. Unfortunately, data on the number of "*majelis taklim*" or "*pengajian ibu-ibu*" were not available from the Indonesian Ministry of Religious Affairs because there was a debate about whether the group needed to be registered with the Ministry or not.

The evidence obtained by using religiosity-specific measures suggests that commitment of the people to religious teachings is beneficial to banking activities. Interestingly, the results suggest that this applies to both Islamic and conventional banks that are found to provide more financing and have fewer NPF (marginally significant) in the stronger religiosity areas measured using number of Islamic schools, mosques, Hajj applications, Islamic seminary schools, and halal certificates.

[22] *For example, my mother has been hosting "*pengajian ibu-ibu"* since 1994 in her house. Around 60 women from Danukusuman's sub-district of Surakarta city gather together once a week. This religious study class usually begins with chanting *Quran Surah Al-Fatihah* together. After that, the preacher gives a speech (*khutbah*) for around 40 minutes. One of the preachers is Mrs. Hadi Saleh, a 76 year old woman, an ex-attorney, who has been giving the *khutbah* in my mother's house since 1994 once in a week. Interestingly, the general theme of Mrs. Hadi Saleh's *khutbah* is about the ways to go to heaven. Her khutbah always emphasizes "*akhlaq*" or behaviour, such as doing good things and helping others (benevolence), giving charity (*shadaqah*), and reading the *Quran* and doing the prayer (*sholat*). *This is based on my phone interview with my mother in November 2020.

The reason behind banks' decisions to lend more in areas with stronger religiosity can be easily found in the fact that in those areas banks suffer lower losses linked to non-performing finance. But this argument triggers a further question. Why are firms operating in more religious areas less likely to default on their finance? The major argument, also based on past findings, is that religious people are more risk averse (Dana, 2006; Diaz, 2000; He and Hu, 2016; Hilary and Hui, 2009; Miller and Hoffmann, 1995) so that both Islamic and conventional banks prefer to have relationships with these types of customers since they are a lower risk because they prefer to select low risk projects. Indeed, banks face huge information asymmetry when they turn to financing small firms. Such information asymmetry leads to the moral hazard problem, i.e., the possibility that after obtaining the money, the customer will use it for pursuing a higher risk project in order to gain higher returns at the expense of the banks (Stiglitz and Weiss, 1981). Moreover, values, norms and principles that are promoted by religious actors and inherent in religious practice, shape the action and behaviour of the banks' customers, such as not misappropriating the banks' financing. In other words, banks' customers who live in stronger religiosity areas also try to conform to the values, norms and principles promoted by religious actors in order to avoid social sanctions.

This result is relevant to the business implication, especially in developing countries. Recall that developing countries have distinct characteristics when compared with developed countries, such as 1) high cost in obtaining information (Hoskisson et al., 2000), 2) lack of a reliable small business database (Nguyen, Le and Freeman, 2006), 3) small businesses often have no business entity (revenues and expenses from business activities are not separated from private expenses and income), and 4) bookkeeping for micro and small businesses is highly unreliable because of the absence of formal records, since entrepreneurs usually keep all of the business transactions in their head (Mcleod, 1991). In such a context, bank managers can use the religiosity level of the area as a first screening point to differentiate between the quality of the borrowers or to mitigate the adverse selection problems. Furthermore, the religiosity level in an area can also provide a good signal to bank managers that people in that area have a high willingness to obey the principles, norms and values that in turn are beneficial to banking activities, such as high commitment to repaying the financing. Taken together, understanding the religiosity level of the area improves the likelihood of a constructive and successful bank managers/customers relationship. Banks can even use the information related to the religiosity level of the area as an important insight when deciding to expand and/or enter in new areas. Thus, understanding the local religiosity level may improve the success of a bank's financing expansion.

All in all, the first empirical contribution from this thesis is the expansion and improvement of the quality of religious actors, and religious practice shaping the behaviour and action of the people, which, in turn, provides a beneficial impact on the financing activities.

Turning our attention to trust, existing literature has shown that religious people are considered trustworthy individuals (Chuah et al., 2016; Tan and Vogel, 2008). The intersection between trust and religiosity could also be explained by ethics, i.e., the behaviour and actions of the actor should be ethically justifiable (Hosmer, 1995) and one of the sources of trust is religion (Fukuyama, 2001). Religious teachings of Islam promote values that are beneficial to society and relevant in business and economic activities. Performing business and economic activities without considering the ethics promoted by religious teaching, especially benevolence, may harm society (Ali, Al-Aali and Al-Owaihan, 2013). Thus, we might expect that people who align with religious teachings could be considered to be trustworthy, as these people act and behave based on religious values, principles and norms.

Our study focuses on the role of trust in Islamic culture. Islamic culture has at least two important characteristics: it is a collectivistic society; it has a weak rule of law. In such a context, people may be more interested in the values, principles, and norms that partners can bring into a relationship than that of ability, stressing the point that business-to-business relationships without values are meaningless (Gabarro, 1978 as cited by Butler and Cantrell, 1984). In fact, on the one hand values facilitate the development of relationships in a collectivistic context, i.e., a context where the link and the cooperation among people is a building block of the social interaction: when people share values, they can develop such strong and relevant bonds faster. On the other, the difficulties in running any activities in a context with a weak rule of law can be compensated by strong relationships that curb, ex-ante, possible misbehaviour: if any wrongdoing is limited because of shared values and the importance to follow them, there is no need to use formal law, so that a weak rule of law is not a problem any more. The values, principles and norms sources in Islamic culture are shaped by religious teachings. Besides, they become the major drivers in order to develop trusting relationships that, once established, evolve in strong form trust, as stated by Barney and Hansen (1994, p.179)

> "In strong form trust, trust emerges in the face of significant exchange vulnerabilities, independent of whether or not elaborate social and economic governance mechanisms exist, because opportunistic behavior would violate values, principles, and standards of behavior that have been internalized by parties to an exchange."

The consequence of this reasoning is that in business-to-business relationships (and in the financing ones in particular), trust should rely more on the value aspect than the ability of the counterpart. The second empirical paper provides support to this thesis: in Islamic culture, a bank manager (a business actor) is more supportive in the business relationship (provides credit) when the small business manager (and/or business partner) is perceived to have high levels of benevolence-integrity. In fact, competency is also important. However, the contribution of value-based trust (benevolence-integrity) in the granting of credit access is greater than the contribution of ability.

These findings are the second major empirical contribution of this research: in a collectivistic society characterized by a weak rule of law (so that it is difficult to rely on contracts because the contract breaker may not be punished by having to pay the damage), actors rely on benevolence and intention when they want to build trust, as opposed to the assessment of the ability of the counterpart (Doney, Cannon and Mullen, 1998). In such a context a key role is played by interpersonal relationships (Bohnet, Herrmann and Zeckhauser, 2010; Rademakers, 1998).

Given trust's role in business-to-business relationships, the last part of the analysis focuses on the trust function in a very specific context: whether it plays a different role in different financing products in Islamic banks. Thus, Chapter 5 explores the role of trust in Islamic bank's financing products: *Murabaha*, *Ijara* and PLS. The customers who select Islamic banks are religious customers who want to avoid interest and this decision is mainly shaped by the fact that these customers may hold strong values, norms and principles (Baele, Farooq and Ongena, 2014). In fact, there is no economic reason to rely on Islamic financing products that are typically more expensive than similar Western style financing products.

The third empirical research finds that competency of the firm's managers has a more important role in supporting financing proportion decisions in *Murabaha* and PLS, while in *Ijara* values-based trust plays a stronger role than that competence-based trust. Interestingly the role of trust is stronger than that of relationship duration in the context of *Murabaha* and *Ijara*.

The findings provide at least two business implications. First, firm managers need to realize that perceived trustworthiness of the Islamic bank managers could lead to the decision to trust and facilitate a financing relationship. Second, Islamic banks' financing products leverage different aspects of trust and this depends on the characteristics of the products. In PLS, Islamic banks also risk their capital and in such a context both values-based trust and competence-based trust work in tandem to support the financing decision. However, competence-based trust is marginally more relevant, since bank managers' focus is on the success of the project. The same logic applies to *Murabaha*, since highly perceived competency reduces any concern about late payments and the related mark-up risk. Indeed, the underlying transaction of *Murabaha* is the instalment sale; the extension of the period of financing might trap Islamic banks into a low yield situation as Islamic banks cannot charge additional margins. By relying on the competency of the firm managers, Islamic banks can assess the expectation that payment will be on time and firm managers will not ask for an extension of the financing period. In *Ijara*, Islamic banks are in a better position to repossess the asset in the event of default, since the ownership of the asset remains in the Islamic bank's account. However, they have to cover the risk of the fluctuation of the market values of the assets or misuse of those assets. Thus, Islamic banks will be worse off when the firm managers show low integrity and benevolence, especially in consuming and using the assets. Consequently, values-based trust plays a stronger role than competence-based trust in *Ijara*.

The different role of trust linked to the different financing products is the major contribution of the third paper. It shows how pervasive trust is. More importantly, it allows us to appreciate how people leverage different aspects of trust, adjusting the role of competence-based or value-based trust according to the context under investigation. The consequence is that trusting relationships cannot be seen as static. In fact, we have to look at them as highly dynamic types of relationships, where the actors rely on different aspects according to the situation that is assessed.

Chapter 7: General Conclusion

This thesis has investigated the role of the religiosity level of an area and trust in financing activities. In this investigation, the aims were to assess: (1) The impact of religiosity on accessing finance and on NPF in the Islamic world; (2) The role of trust in business-to-business relationships in Islamic culture with key relationship bank managers and small business managers; and (3) The role of trust in different Islamic banks' financing products: *Murabaha*, *Ijara*, and PLS.

The underlying theme of this dissertation is the link between religiosity and trust that is grounded in ethics. Religious teaching encourages people to have ethical attitudes when performing economic and business activities. Economic and business activities without ethics could create harm to society (Ali, Al-Aali and Al-Owaihan, 2013). The ethical dimensions that are encouraged by Islam are in line with the trustworthiness dimensions proposed in Western literature, such as benevolence, integrity and openness. Trust and ethical teachings have the same final objective, i.e., to achieve a "good society" (Hosmer, 1995).

This thesis has shown that: (1) Islamic and conventional banks in stronger religiosity areas provide more financing and have fewer NPF (marginally significant); (2) Bank managers in Islamic culture are more interested in the values, principles and norms that a business customer brings into a relationship; and (3) Trust plays a significant role in financing relationships between Islamic bank managers and firm managers: more specifically competence-based trust plays a stronger role than that values-based trust in *Murabaha* and PLS, while in *Ijara*, the reverse is the case.

These findings suggest that, in general, religiosity and trust play a relevant role in supporting financing activities, especially in developing countries such as Indonesia. The current findings add to the current body of literature at different levels.

First, at the religiosity and financing activities level, this research tries to fill the gap in the lack of research on the impact of religiosity and financing activities which focuses on Islam religiosity. Furthermore, this thesis has taken into account the unique characteristics of Islam in a country, Indonesia, and uses religious actors and religious practices as proxies for religiosity levels.

Second, at the trust and culture level, this work expands past research by exploring the role of trust in different culture dimensions. Indeed, far too little attention has been paid to examine the role of trust in Islamic culture. Furthermore, few studies on trust and culture consider the relative strength of values-based trust vis-à-vis competence-based trust.

Third, at the trust and bank lending level, this PhD thesis is the first attempt to explore the role of trust at the financing products level. Past literature on trust and bank lending, both theoretical and empirical, has not discussed the role of trust in different financing products.

The thesis has limitations. The first empirical paper used the aggregate total amount of financing and NPF with province level data. What is now needed is a similar study but by using bank level data in order to capture the distinct characteristics of each bank, such as assets, deposits or equity. It would also be interesting to assess the effect of Islam religiosity on the cost of debt. The survey in the second and third empirical papers was focused on the greater Surakarta and greater Yogyakarta areas of Indonesia. It is recommended that further research be undertaken in other Muslim countries and/or other regions to generalize the findings. In order to capture a more dynamic trust development, a longitudinal study is recommended. Further study on Islamic banks' financing product and trust should examine the role of trust in *Murabaha* but for different purposes, e.g., for buying working capital or long-term assets, as *Murabaha* is the most popular product in Islamic banks.

Notwithstanding its limitations, the present PhD dissertation provides a more fine-grained picture of the role of religion, trust and culture in the Islamic world.

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Appendix I. British Journal of Management version of the manuscript

Trust in Islamic Business-to-Business Relationships. Evidence from Indonesia

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Trust in Islamic Business-to-Business Relationships. Evidence from Indonesia

Abstract

We examine the role of trust within Islamic culture in business to business relationship by exploring the link between bank managers' trust in business customers and their financing decisions. In line with our framework based on the fact that Islamic culture is characterized by a collectivistic approach, weak rule of law, and clan-based social structure, we find that value-based trust is more important than competence-based trust in explaining business relationships. The results support the argument that business relationships in Islamic culture are grounded more on principles, values, norms that a partner bring to the relationship than in the business skills. Our results are robust to endogeneity and multilevel issues.

Keywords: *Trust, Islam, Islamic Finance, Religion, Ethical and Moral Values*

JEL Classification: M10; G21

1. Introduction

Trust is an important element in business relationships and past research has stressed both its positive functional roles (Barney & Hansen, 1994; Bromiley & Cummings, 1995; Dyer & Chu, 2003; Zaheer, McEvily, & Perrone, 1998; Zand, 1972) and the dysfunctional ones (Villena, Choi and Revilla, 2019; Zahra, Yavuz and Ucbasaran, 2006). However, trust does not develop in a vacuum and the cultural context influences it by affecting one's behaviour (Hofstede, Hofstede and Minkov, 2010). Thus, research has begun to examine the link between trust and its cultural antecedents, as well as the role of culture in supporting/constraining the development of trust (Ayios, 2003; Cannon et al., 2010; De Cremer, 2015; Doney, Cannon and Mullen, 1998; Hewett and Bearden, 2001; Huff and Kelley, 2003; Tang, Deng and Moro, 2017; Williams, Han and Qualls, 1998; Zaheer and

Zaheer, 2006). However, very little research has so far covered the impact of Islamic culture and its value system on trust development. In fact, the peculiarities that characterize the Islamic world, and the differences with the western world suggest that trust may play a different role in Islamic setting. In addition, there are 1.8 billion Muslims in the world (Christians are around 2.3 billion in the world) and according to Pew Research Centre the gap between the number of Muslims and Christians will be much smaller by 2060, because Muslim people now are younger and have more children than Christians. This implies that the interactions in general and the business interactions in particular will dramatically increase in the near future, and a proper understanding of similarities and differences in trust building and development will facilitate high-quality business relationship. Besides, a better understanding will also avoid issues linked to cultural colonization.

By drawing on Hosmer (1995) who argues that there is an intersection between trust and moral philosophy so that trust is a building block in shaping a “good society”, our work aims to develop and test a framework that explain the role of trust in the Islamic world. St. Augustine (426AD) explains that honesty, temperance, and truthfulness need to be combined with some degree of compassion and kindness to achieve a “good society” where trust can develop (Hosmer, 1995, p.396). However, these golden rules are not exclusive of the Judeo-Christian tradition, since they can be found in Islamic culture also (Ali, Al-Aali and Al-Owaihan, 2013). Nevertheless, arguing *sic et simpliciter* that trust can play the same role in the Islamic and western world is an over-simplification. In fact, different forces that push in opposite directions are in action. On the one hand, socio-economic conditions in today’s Muslim countries are quite different compared to those of developed countries. Muslim countries share similar characteristics with emerging economies such as corruption, bribery, lack of infrastructure (Hoskisson et al., 2000), weak rule of law[i] (see Guiso et al., 2003; North et al., 2013; World Bank). Moreover, they score relatively low on “most people can be trusted" compared to protestant European societies as reported by World Values Survey-WVS (Inglehart, 2007). This implies that in the Islamic world it may be difficult to establish reliable connections in order to develop trust-based relationship. On the other hand, in a context where the possibility of legally enforcing contracts is greatly diminished (Bohnet, Herrmann and Zeckhauser, 2010), business decisions should leverage other aspects such as personal relationship, repeated interaction, reciprocity (Bohnet, Herrmann and Zeckhauser, 2010) and, ultimately, trust (Doney, Cannon and Mullen, 1998). Moreover, in such a context once trust is established, it can be quite resilient and evolve in identification-based trust (Lewicki and Bunker, 1996) so that future interactions exploit trust to compensate for the lack of information. All in all, it is not clear what the role trust can play in Muslim countries.

We develop a conceptual framework that explains that collectivistic societies rely on the benevolence-integrity components of trust. The difficulty in assessing benevolence-integrity components of trust has an effect on its radius in that collectivistic societies are characterised by a narrower radius of trust. However, in such a context, trust, once established, is expected to be strong and resilient, since it exploits a common, stable and reliable set of values. Interestingly, collectivistic culture is embedded in Islamic culture as a result of the Islamic teaching grounding itself on benevolence-integrity, possibly pushing trust based on perceived benevolence and integrity to play an important role. Also, trust's role is further supported by the weak rule of law in Muslim countries that reinforces the part played by in-group value-based trust.

We test our framework by looking at the role of trust between a bank credit officer and the small business owner in Indonesia. This is an excellent context to test our framework since: 1) credit officers are subject to high level of information asymmetry that exposes them to the possibility of a small business owner's opportunistic behaviour (Chiles and McMackin, 1996; Dyer and Chu, 2003) in the form of moral hazard and adverse selection. In order to deal with these issues, credit officers face the trade-off between increasing control and exploiting trust; 2) credit officers have to assess the ability of the firm to cope with challenges (Das and Teng, 2001), and trust in owners' management skills and capabilities may facilitate the financing decision; 3) the risk incurred by the banks in lending to firms is very high and the tools to hedge it generate additional costs; 4) Indonesia is the country with the biggest Muslim population in the world, characterized by a well-established mixed financial.

Our evidence supports our framework, showing that both ability (competence-based trust) and benevolence-integrity (value-based trust) work in tandem in facilitating the business relationship in Islamic culture. However, in further support to our conceptual framework that explains the link between Islamic (collectivistic) culture and trust, we find that value-based trust (benevolence and integrity) has a more important role than competence-based trust (ability).

2. Literature Review and Conceptual Framework

Research points out the role of trust as a source of competitive advantages (Barney and Hansen, 1994). Besides past research also stresses trust capability to reduce transaction cost and the bias in forecasts (Bromiley and Cummings, 1995), its role in problem solving (Zand, 1972), its support to cooperative behaviours and the role it has in promoting relationship commitment between exchange partners (Morgan and Hunt, 1994). Trust is also found to positively associate with long-term orientation in buyer-seller relationship (Ganesan, 1994) and to increase information sharing. Moreover, interorganizational trust (but not interpersonal trust) reduces the cost of negotiation and also reduces conflicts (Zaheer et al., 1998). In a similar vein, Howorth and Moro (2006, 2012) and Moro and Fink (2013) show that perceived trustworthiness can also increase credit availability and reduce the cost of debt. All in all, the extant research suggests that trust can play an important role in business relationships when individuals have to deal with uncertainty of the behaviour of others since it may reduce unmanageable complexity (Lewis and Weigert, 1985). However, trust may also have a dysfunctional role in the business relationship. For instance, Zahra et al. (2006) show the potential negative effects of excessive trust in different stages of business creation such as bias on opportunities searching, lack of objectivity, reduced feedback on proposed ideas, and loose controls. Moreover, by drawing from the law of diminishing return, Villena et al. (2019) document that trust may improve efficiency but up to a certain point since excessive trust can trigger lack of objectivity and opportunistic behaviour.

But what is trust? Scholars have offered various definition based on two approaches: behavioural (Deutsch, 1958) and psychological (Lewicki, Tomlinson, & Gillespie, 2006). The proponents of behavioural approach argue that when an individual has high confidence that their trust will be fulfilled by the counterpart, the probability of engaging in trusting behaviour increases (Deutsch, 1958). The second approach grounds on the psychological tradition which emphasizes cognitive and affective processes (Colquitt, Scott, & LePine, 2007; Lewis & Weigert, 1985; Mayer et al., 1995), suggesting that trust is based on the beliefs and judgment of whether the counterpart will behave in a trustworthy manner (Colquitt et al., 2007; Lewicki et al., 2006; Mayer et al., 1995). Thus, trust may be defined as "the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the trustor's ability to monitor or control that other party" (Mayer et al., 1995, p.712). However, Lewis and Weigert (1985) argue that trust has multi-faceted characteristics covering also the emotional dimensions since the affective aspect (the emotional bond among the parties involved in the relationship) complements the cognitive one (Lewis and Weigert, 1985).

The quoted Mayer et al's (1995) definition of trust has two primary components: the intention to accept vulnerability (Colquitt, Scott, & LePine, 2007) and the perception of other's trustworthiness, i.e., ability, benevolence, and integrity. Ability is "skills, competencies and characteristics that enable a party to have influence within some specific domain". Benevolence is defined as "the extent to which a trustee is believed to want to do good for the trustor, aside from an egocentric profit motive". Integrity is "trustor's perception that the trustee adheres to a set of principles that the trustor finds acceptable" (Mayer et al., 1995). An additional trustworthiness dimension is openness, i.e., providing honest, detail and complete information based on facts (Butler, 1991; Butler & Cantrell, 1984; Mishra & Mishra, 1994). Hosmer (1995) expands the ethical dimension of trust: "the expectation by one person, group, or firm of ethically justifiable behaviour […] on the part of the other person, group, or firm in a joint endeavour or economic exchange" (Hosmer, 1995, p.399). He also argues that the components of trust as suggested by Butler and Cantrell (1984), i.e. integrity, competence, consistency, loyalty, and openness, are the representation of moral values, important ingredients for achieving a "good society". Since religion plays an important role in creating and delineating moral values (Hofstede, Hofstede and Minkov, 2010) it is possible to draw a link to religious teaching.

2.1. Trust Culture

Culture can influence antecedents, development, and outcomes of trust (Cannon et al., 2010; Doney, Cannon and Mullen, 1998; Huff and Kelley, 2003) by influencing one's behaviour (Hofstede, Hofstede and Minkov, 2010). In addition, different societies have different radiuses of trust, i.e., "the width of the circle of people among whom a certain trust level exists" (Van Hoorn, 2015, p.269) and, together with formal institutions, they influence the ability of a particular society to form organizations (Fukuyama, 1995).

Grounding on Hofstede cultural taxonomy (Hofstede, Hofstede and Minkov, 2010), existing studies focus on exploring the role of trust in the context of individualistic societies (cultures with loose ties between individuals and where the interests of the individual prevails over the interests of a group) as opposed to collectivistic ones (cultures where the interests of the group prevail, ties between individuals are strong, and where more weight is given to norms than attitudes as determinants of social behaviour) (Hofstede, Hofstede and Minkov, 2010; Triandis, 1996). Doney et al. (1998) suggest that collectivistic societies mainly use prediction (Rempel, Holmes and Zanna, 1985), intentionality and benevolence (Mayer et al., 1995) so that trust is based on 1) ethical/moral vision ("value-shared" approach), and 2) transference process, (the reliance on trustworthy third parties so that trust tends to be limited to people with closer ties). Consequently, collectivistic culture relies on "narrow radius of trust" (Van Hoorn, 2015) where the level of trust inside the radius is very solid. In contrast, the trust building process in individualistic societies relies on the capability-assessment process (Mayer et al., 1995) and the calculative process (Lewicki and Bunker, 1996) ("competence-based" approach). Such an approach allows for a greater radius of trust (Fukuyama, 1995; Van Hoorn, 2015): it allows trustor to expand the trust to a larger group of people but at a more superficial level.

2.2. Trust and Islam

Collectivistic culture is embedded in Islam where religious beliefs are reinforced through communally shared understanding of the members of the society. This differentiates Islam from, for instance, Protestantism which stresses that religious living is an individual domain (McCleary, 2008). This aspect is deeply rooted in Islam culture and goes back at least to 11th century Maghribi traders (part of Islamic world) an Islamic collectivist society which emphasized an intensive communication network, collective punishment (i.e. reputation of dishonest trader spread quickly among the society), and mutual responsibility among the members of the same society (*Umma*) (Greif, 1994). Ten centuries later, Soutar (2010) finds that British people who convert to Islam are drawn to the collectivist features of Islam, such as brotherhood, solidarity, and mutual friendship, which they feel are absent in western individualistic societies. Hofstede et al. (2010, p.89-90), by exploring business relationship between new (unknown) Swedish representatives and Saudis, explains that, for the business relationship to be successful, they have to be conducted via an intermediary known and trusted by the Saudis. This suggests that in collectivistic society "the personal relationship prevails over the task and should be established first" (Hofstede et al., 2010, p.123). Thus, it is not a surprise that individualism index of Muslim countries are lower than US and European countries (Hofstede, Hofstede and Minkov, 2010). As a consequence, it can be expected that the trust building process in Islamic culture relies on value shared logic that implies that: 1) the trustor needs to learn the intention/motive/benevolence of the person to be trusted and; 2) the trustor relies on trustworthy sources exploiting the transference process (Doney, Cannon and Mullen, 1998). However, it is not possible to derive from this argument *sic and simpliciter* that trust plays an important role in business relationship in Muslim countries since different forces are in action.

On the one hand, WVS data show that in Muslim countries only 28% of the people state that "most people can be trusted", far below Protestant Europe societies (46%) (Inglehart, 2007). Moreover, the countries of Organization Islamic Cooperation (OIC) share similar characteristics with emerging economies such as corruption, bribery, opportunism, and lack of infrastructure (Hoskisson et al., 2000). Furthermore, the rule of law in Islamic societies[ii] is far below OECD countries and countries with a religious heritage rooted in Protestantism, Asian ethnic religions, Catholicism, or Hinduism (North, Orman and Gwin, 2013). Also, people belonging to Islamic denomination show the weakest willingness to not break legal rule i.e. cheat on taxes (Guiso, Sapienza and Zingales, 2003).

On the other hand, the role of ethical principles is not solely exclusive to Judeo-Christian tradition (St. Augustine, 426AD). The principle "Do unto others as you would have them do unto you" is similar to "love thy neighbour as similar thyself" (Hofstede, Hofstede and Minkov, 2010) and this value is very relevant in Islam. Besides, Islamic ethics tries to ensure benevolence/openness, and accountability in individuals' behaviours/actions while safeguarding social interests, i.e., to prevent of any harm to a community (Ali, Al-Aali and Al-Owaihan, 2013), suggesting that ethics does not only reinforce trust but also strengthen cooperation among actors in exchange transactions (Ali, Al-Aali and Al-Owaihan, 2013). Moreover, Islamic teaching emphasizes the importance of trustworthy behaviour (Abuznaid, 2009; Beekun and Badawi, 2005; Eggen, 2011; Ishak and Osman, 2016; Rice, 1999; Uddin, 2003). Actually, Mayer et al. (1995)'s concept of benevolence that partially overlaps with openness and sharing weaknesses and important information (Butler & Cantrell, 1984; Mishra & Mishra, 1994; Rempel et al., 1985), as well as Nooteboom et al. (1997)'s similar concept of habitualization, mirror the Islamic *ihsan*: "an act which benefits persons other than those from whom the act proceeds without any obligation" or good intention (Beekun and Badawi, 2005; Ishak and Osman, 2016). Also, openness matches Islam's encouragement for people to be honest and disclose defect in the goods during the business transaction (Ishak and Osman, 2016; Rice, 1999; Uddin, 2003). In addition, trust research discusses the important role of ethical and moral values (Butler and Cantrell, 1984; Das and Teng, 2001; Hosmer, 1995) that are the base of both Mayer et al. (1995)'s concept of integrity and Nooteboom et al. (1997)'s concept of institutionalization. Similarly, Islam stresses that "The partner who uses another's property in trust should be an *amin*, a trustworthy person.

The consequence is that collectivistic culture compounded with corruption, bribery, opportunism, and lack of infrastructure, increases the role of value-based trust (i.e., benevolence and integrity in Mayer et al. (1995) words) at the expenses of competence-based one (i.e., ability in Mayer et al. (1995) words) since value-based trust is more resilient than competence-based one (Latusek and Cook, 2012). Likewise, the latter can also be difficult to build because of the poor and unreliable quality of evidence accessible. Thus, in such a complex context, belonging to a group with whom one has developed strong relationship based on trust, may be an alternative effective approach to compensate for a weak rule of law (Bohnet, Herrmann and Zeckhauser, 2010).

Summing up, collectivistic societies rely on trust that leverages benevolence-integrity. Besides, since benevolence-integrity's assessment relies on less tangible factors than ability, actors in collectivistic society have a narrower radius of trust. However, trust is expected to be strong and resilient, since it exploits a common, stable and reliable set of values. In fact, collectivistic culture is embedded in Islamic culture and the core of Islamic teaching about relationships is grounded on benevolence-integrity. Furthermore, the weak rule of law in Muslim countries reinforces the role of in-group value-based trust. Based on the discussion and the derived conceptual framework, we propose a following proposition:

In Islamic culture, a trustor is more likely to rely on value-based trust (benevolence-integrity) than that competence-based trust (ability).

3. Context, Data and Methodology

3.1 The Context Under Investigation

In order to test our proposition, we focus our attention on the trust of the bank credit officer has in their clients when deciding on giving credit. There are different reasons that make such a context an effective setting.

First, banks face high level of information asymmetry in dealing with their customers. The information asymmetry generates the possibility that firm's owner can act opportunistically (Dyer and Chu, 2003) diverting money from the original purpose in order to maximize their own return. In addition, the information asymmetry implies the risk that firm's owner can cheat on the bank. In these scenarios, bank's credit officer has to decide on whether to rely more on stricter controls (complex covenants, etc.) or to rely more on trust. Needless to say the former approach is expensive both upfront and during the business relationship (Stiglitz and Weiss, 1981) while trust may reduce transaction cost (Barney and Hansen, 1994). Second, bank credit officers have to assess the ability of firm owners to deal with the challenges they face (Das and Teng, 2001). Again, they can improve the firm's assessment by allocating greater effort and time but such activities are time consuming and expensive (Stiglitz and Weiss, 1981). Trust and more specifically the perceived ability of the firm's owner, may reduce cost by limiting *ex ante* effort as well as *ex post* monitoring (Dyer and Chu, 2003) and reduce the perceived risk (Das and Teng, 2001; Nooteboom, Berger and Noorderhaven, 1997). Third, the Islamic world has developed a financing system that takes into consideration the religious teaching of Islam. Thus, the impact of Islamic culture and religious aspects on trust may be amplified in the context of the financing. Besides, this implies that it also is important to compare the role of trust in Islamic and non-Islamic financial institutions.

All in all, trust in bank-firm context implies a clear trade-off between risk and reward and so that the context is suitable for the investigation of the role of trust in business relationships (Howorth and Moro, 2006). In addition, by performing the analysis in a country with both Islamic and western style financial system, it is possible to appreciate the real role of trust in the Islamic context.

We focus on Indonesia since it is the biggest Muslim country in the world with over 207 million relatively active Muslims[iii]. Another feature of Indonesia is that it is facing a growing role of religious actors (e.g., Mosque, Islamic seminary school, and Islamic school) as well as religious practice that suggests an increasing importance of religious ideas including norms, values, and principles of Islam.

3.2 Data Collection

Our research is based on a survey circulated in 55 banks in Indonesia. The survey was conducted between July and September 2018. The research team also obtained the support of the chairman of Financial Service Authority and the chairmen of banks association to increase bank participation. Then, the research team contacted the banks.

The respondents are bank credit officers with active relations with firm owners. Each respondent was asked to fill in a questionnaire based on his/her relationship with 3 to 5 owners of micro or small businesses (according to Law 20/2008 of Republic of Indonesia)[iv], selecting the firms among the first 3-5 from the alphabetical list of the customers they look after.

Before data collection, we performed content evaluations on the survey by asking feedback from an experienced credit officers. We also performed back translation to ensure there is no loss in the meaning. Finally, we performed a field test by visiting 15 banks and testing the questionnaire with them.

The core components of the survey are the items that measure the bank credit officer' trust in the firm's owner. Our research relies on 10 items inspired by previous studies (Howorth & Moro, 2012; Mayer & Davis, 1999; Moro & Fink, 2013; Spreitzer & Mishra, 1999) and 1 new item measured using a Likert scale, 1=strongly disagree to 5=strongly agree. We used financing approval as well as the percentage of the amount approved compared to the amount applied for as dependent variables. We also used a questionnaire to collect primary data regarding the demographic profile and trust propensity of the respondents, characteristics of the banks, characteristics of the firms, relationship between banks and firm owners, trustworthiness evaluation from the bank managers, and financing decision.

3.3 Methodology

Exploratory factor analysis (EFA) is used to reduce the trustworthiness items into latent constructs. Then, we entered the constructs as core independent variables. Since the financing approval is a dichotomous variable, we employ Probit regressions. For the percentage of the financing approved, we performed Tobit regressions (Amore and Murtinu, 2019).

In order to reduce the problem of common method bias, we guarantee the anonymity of the respondents, anonymity of banks in which they work, and the anonymity of the firm owners with whom the respondents have relationships. In fact, respondents do not need to mention their name, their bank's name and their firm owner's name in our survey. We also performed four others procedural remedies and one statistical remedy against common method bias (Podsakoff et al., 2003; Podsakoff, MacKenzie and Podsakoff, 2012) (Table I in appendix).

In our model, endogeneity may occur as a result of simultaneity. To address the potential endogeneity between the evaluation of firm owner's trustworthiness and the financing approval, the instrumental regression is applied. The evaluation of the firm owner's trustworthiness is instrumented by three variables, namely the firm's owner engagement in religious activities, the firm's owner engagement in community activities, and the firm's owner engagement in business association activities. Religious people might have high integrity (see Baele et al., 2014). In the same vein, when firm owners are active in the community it might show they have high level of benevolence/care for other people. In addition, being an active member of the community might reflect the competencies of the firm owner.

4. Data Descriptive and Factor Analysis

The dataset contains 1,687 observations: 960 are from small (rural) banks while the rest (727 observations) are from large banks. The range of the relationship duration is between less than a year and 25 years (mean 3.45 years, median 3 years). On average, each firm tends to concentrate the banking relationship with two banks. The mean time to process financing application is 5.4 days with the fastest decision in 1 day and the longest in 30 days. The mean age of the firms is 16.60 years. Female borrowers accounted for 24.48% of total borrowers. Table I shows descriptive statistics.

INSERT TABLE I ABOUT HERE

Mayer et al. (1995) model suggest that trust is also a function of a personal predisposition. In order to control for personal predisposition to trust, we use three items. We ask bank officers to evaluate the statements: “Most people can be counted on to do what they say they will do” (reverse score), “One should be very cautious with strangers”, and “These days, you must be alert or someone is likely to take advantage of you”.

We use 11 items to measure the trustworthiness of the firm owners. The highest average score is the ability dimension “The firm owner has very good knowledge of the current market in which they operate” (4.00) and the lowest average scores is the benevolence dimension “The firm owner shares sensitive or important information with me” (3.48). EFA was employed to reduce larger data into smaller sets of latent constructs. Table II illustrates the factor analysis results.

INSERT TABLE II ABOUT HERE

In line with Moro and Fink (2013), our study splits trust into two factors, namely ability and benevolence-integrity. This approach allows us to explore the expected different role played by ability (trust based on facts and linked to the individualistic dimension of the culture) and benevolence-integrity (trust based on shared values and linked to the collectivistic dimension of the culture). Besides, it also follows Tinsley (1996)'s idea that ability and benevolence-integrity are different. Value-based aspect of trust (benevolence and integrity) load in one factor and Bartlett test of sphericity is significant ($p<0.01$) with KMO score of 0.92. All of the items show communalities between 0.41 and 0.69 and it is acceptable (Costello and Osborne, 2005). The amount of variance explained by the factor is 58.01% with the score of Cronbach alpha being 0.8932. Also, competence-based trust (ability) items load in one factor. The Bartlett test of sphericity is significant ($p<0.01$) with a KMO score of 0.675 with communalities between 0.60 and 0.79. The amount of variance explained by the factor is 71.68% with the score of Cronbach alpha of 0.7937.

Table III shows correlation coefficients in full sample.

INSERT TABLE III ABOUT HERE

Value-based trust (benevolence and integrity) shows the expected positive correlation with both dependent variables, i.e., the financing approval and the percentage of the requested amount that has been approved (0.467 and 0.503). Also, ability shows the expected positive correlation with both dependent variables and they are, as expected, slightly smaller (0.447 and 0.484). All in all, correlation coefficients offer initial insight to our research proposition, i.e., trust could facilitate business relationship in Islamic culture. However, the relative strength of these variables to financing approval and financing proportion need to be explored in further analysis.

5. Analysis

5.1 Financing Approval Regression

Table IV shows the results of Probit regressions. The dummy dependent variable measures the financing decision, i.e., approval (1) as opposed to rejection (0).

INSERT TABLE IV ABOUT HERE

Model 1 incorporates the set of variables that measure demographics, trust propensity of the respondents, firm factors, bank factors, and transactional variables. This model has no multicollinearity problems and has McFadden's Adj R^2 0.07 with the number of cases correctly predicted as 92.47%. Interestingly, the general predisposition to trust others is positive but marginally significant. Variable bank type is positive and significant at the 1% level ($p<0.01$), suggesting that Islamic banks are more likely to approve the financing application. We also find the coefficient for the variable and multiple banks significant ($p<0.01$). The same applies to relationship duration ($p<0.01$) and multiple products, ($p<0.01$): the more intense the relationship, the greater the probability of success of the financing application ($p<0.01$). This result is in line with Gulati (1995) who finds that repeated interaction has a positive effect on the outcome of the relationship. In addition, the use of multiple products, and concentration of borrowing not only does increase the flow of information to the bank officers but also increases the exclusivity of the information.

In the second regression (model 2) we add value-based trust and competence-based trust as variables. This specification has McFadden's Adj R^2 0.357, suggesting that trust component explains the additional 28.7% of the total variance. The number of cases correctly predicted is 93.78% and the specification does not suffer from multicollinearity problems. Interestingly, value-based trust and competence-based trust work in tandem in supporting financing decisions by bank officers. Marginal effect analysis shows that the relative strength of these variables is in line with our prediction: one-point increase in the benevolence-integrity will improve the probability of financing being approved by 4.1%, while a one-point increase in the ability will improve the probability of financing being approved by 3.5%. Similarly, a one standard deviation increase in variable benevolence-integrity and ability improves the probability of the financing being granted by 46.4% and 40.1% respectively. A one standard deviation increase in the duration of the relationship improves the probability of the financing being granted by only 24% suggesting that the economic impact of trust is twice higher than the impact of the duration of the relationship. The results support the point that in Islamic culture the level of trust relies more on benevolence and integrity and is in line with previous studies that show that in collectivistic societies, trust provides greater impact on the outcomes of relationship (Cannon et al., 2010; Hewett & Bearden, 2001; Williams et al., 1998).

The inclusion of trust variables has some minor effects on the significance level of the controls: trust propensity is not significant, bank size turns to be significant at the 1% level: a small (rural) bank is more likely to provide finance than a large bank; multiple products are not significant anymore, suggesting that once trust is established, additional source of information from the use of multiple products by firm officers becomes less important.

We also attempt alternative specifications (alternative combinations of variables).

Interestingly, both value-based trust and competence-based trust always show positive and significant coefficients ($p<0.01$).

5.2. Percentage Amount Approved Regression.

We also explore the impact of value-based trust and competence-based trust on the percentage of amount approved with respect the amount for which the firm applied (financing proportion). Since the dependent variable is continuous but constrained between 0% and 100%, we estimate the model using Tobit regression (Model 3). Table V shows the regression results.

INSERT TABLE V ABOUT HERE

In model 3, the specification does not suffer from multicollinearity problems. As far as the heteroscedasticity problem is concerned, we follow Amore and Murtinu (2019)'s bootstrapping standard errors. In model 3, there are no major changes in control variables. The new regression confirms previous results: we find a positive and significant coefficient for both value-based trust and competence-based trust ($p<0.01$): the more the bank credit officer trusts the firm's owner, the greater the proportion of the loan approved. Again, these results indicate that value-based trust and competence-based trust work in tandem to support the proportion of finance obtained. Again, marginal effects analysis confirms that benevolence-integrity has stronger impact than ability.

All in all, given the results obtained by looking at models 2 and 3, it is possible to argue that in Islamic culture, value-based trust has a greater role than ability-based trust.

5.4. Robustness Check

In order to verify further our results, we perform a set of robustness checks. It can be argued that our regressions suffer from endogeneity. In order to verify whether this is the case, we perform an instrumental Probit regression. Results are not reported here for reason of space The evidence is in line with our original results. All in all, it is safe to argue that banker's trust in the firm owner is positively associated with the financing approval.

It could also be argued that our analysis involves different levels of data since we have: 1) the bank, 2) the bank credit officer who is working in a certain bank, and 3) the firm. In fact, observations in the same group (credit officer-firm owner) are correlated because they share common cluster-level random effects (Williams, 2017). In addition, there are variables at the level of credit officer (i.e. their age), which may represent their experience and the accumulation of social capital (Ferrary, 2003) and trust propensity (Mayer, et al., 1995). However, because of the anonymity issue of the bank's name, we can only track the ID number of the bank's credit officers. In order to take into consideration these aspects, we performed a mixed effect Probit regression since random effects may occur in our multilevel data set at bank manager level. The mixed effect regression (results not reported because of reason of space) provides a result qualitatively identical to that obtained with the original Probit regression.

6. Discussion

During the prophet's time (VII century), the *shahibul maal* (investor) could rely on trust, especially when financing businessmen by using profit-loss sharing contract (Chapra, 2000). The businessmen conducted export and import and needed a lot of money to buy goods to be exported and imported and for covering their long, challenging business journey (Chapra, 2000). Later, in the 11th century, Maghribi traders as a part of Islamic world, also relied on trustworthy behaviour in their business activities (Greif, 1994). All in all, historically, trust played a relevant role in the Islamic world. Our analysis shows that things did not change dramatically and even today, value-based trust and competence-based trust work in tandem in facilitating business relationships in Islamic culture. But, why are these values so pervasive and persistent? The religious ideas of Islam, including value-based trust, are disseminated by various religious actors such as Islamic schools, Islamic seminary schools, and Mosques. Interestingly enough, empirical evidence shows that students from Islamic schools (*Madrasa*) in Bangladesh, trust others more than non-*Madrasa* students (Asadullah, 2016) suggesting that *Madrasa* promotes trusting behaviour, possibly because of the curriculum which emphasizes altruism and charitable behaviour. In addition, daily prayer and learning *Quran* could also influence the trusting behaviour of the students. More relevant for our argument is the fact that an ethnography study in Indonesia shows that the promotion of Islamic teachings through preaching relies on real life business examples such as keeping promises, honesty, debt repayment, thrifty behaviour and hard work (Abdullah, 1994).

Our empirical analysis supports our conceptual framework that stresses the relevance of value-based trust in Islam because of the collectivistic culture. In fact, similar to Sicily and Russia (Gambetta, 1988; Varese, 2001), Muslim countries tend to exhibit weak rule of law that could push actors to rely on trust because the contract breaker could not be forced to pay the damage in the business relationship. In this context, an actor is more interested in the principles, values, and norms that a partner can bring into the relationship since they can signal their reliability and willingness to behave according to the agreed terms as suggested by Barney and Hansen (1994). In addition, value-based trust needs time in order to develop and consolidate. This is because value-based trust is relatively more difficult to assess compared to a competence-based approach. One way to explore the value-based trust of the partner is by exploiting relationships such as visiting counterpart. Another way to develop value-based trust is to rely on the transference process when actors try to develop value-based trust by accessing soft data about the counterpart via trusted third parties such as neighbours, friends, or other business partners. These practices are in line with Doney's et al. (1998) trust development process in collectivistic society. Besides, these situational issues are strengthened by the fact that Islamic teachings promote benevolence and integrity. Relationships, without benevolence and integrity can be detrimental to the society and the main objective of Islamic ethics and/or Islamic teachings is to provide guidance to the people, so that the behaviour and action of the people do no harm to the society (Ali, Al-Aali and Al-Owaihan, 2013). All in all, in Islamic culture, the radius of trust is narrow, but the level of trust based on benevolence-integrity is deep.

Our finding supports the notion that it is important to established trust in Islamic culture since it provides a functional role in business to business relationships. Both perceived ability and benevolence-integrity work in tandem in the business relationship in Islamic culture, more specifically both of them are positively associated with financing approval and financing proportion. However, actors in Islamic culture put more emphasis on the value-based trust that business partners could bring into the relationship (Barney and Hansen, 1994).

7. Conclusion

Prior research reports that culture can have an impact on trust development and on trust outcomes in the business to business relationship. We document that in Islamic culture, trust has a functional role in facilitating business to business relationships, more specifically benevolence-integrity (values-shared based trust) work in tandem with ability (competence-based trust) to support the financing relationship between bank managers and firm managers. However, in line with our conceptual framework, in Islamic culture, value-based trust has a stronger positive impact on facilitating the business to business relationship than competence-based trust has. The evidence we obtain is justified by the fact that 1) trust development in collectivistic society relies more on benevolence than ability (Doney, Cannon and Mullen, 1998) and Islamic culture is mainly a collectivistic one that emphasizes brotherhood and community; 2) collectivistic cultures have higher in-group trust but lower outer-group trust (Gambetta, 1988; Meier et al., 2016); 3) there is a link between ethics and trust (St. Augustine, 426AD; Hosmer, 1995) and main objective of Islamic ethics/teachings is to provide guidance to the people so that their behaviour and actions do not harm the society (Ali, Al-Aali and Al-Owaihan, 2013).

Our findings add to the growing body of literature on trust and culture (Cannon et al., 2010; Doney et al., 1988; Hewett & Bearden, 2001; Williams et al., 1998; Zaheer & Zaheer, 2006). In fact, previous studies in trust and culture have not examined the role of trust focusing on Islamic culture. Based on Hosmer's (1995) study, we have shown the link between religious teaching from the perspective of Islam and trust and the importance of considering values based on religion and/or religious teachings in the theory of trust and culture. In fact, religious teaching, by creating and delineating moral values, is a building block of culture (Hofstede, Hofstede and Minkov, 2010) which in turn could affect the behaviour and action of the people when engaging in business/economic activities.

The current study has only examined the relationship between bank credit officers and firm owners in Indonesia. Additional research in other Muslim countries and regions should be performed in order to test the generalizability of our findings. In addition, this current study looks at the role of trust cross sectionally. It could be interesting to expand the research longitudinally, exploring how the role of trust and its link with religion/Islam can evolve through time.

Notwithstanding its limitation, this research by providing and testing a framework that explains how trust works in Islamic context, offers additional insight into how culture influences the development of trust in business relationships, suggesting that theory in trust and culture should take religious teaching into account in order to provide a more complete understanding of the business to business relationship.

References

Table I Descriptive Statistics

Variable's remark	Variable	Obs	Mean	Std. Dev.	Min	Max
Trust propensity score of the bank managers (factor) obtained from PCF	Trust_propensity	1687	5.80e-09	1	-5.247367	1.535406
Age of the banker	Banker_age	1687	34.97095	7.145728	20	60
Dummy variable, 1 if the debtor is a female, otherwise 0	Firm_manager_gender	1687	0.244813	0.430104	0	1
Dummy variable, 1 if the bank is a small (rural) bank, otherwise 0	Bank_size	1687	0.569058	0.495355	0	1
Dummy variable, 1 if the bank is Islamic bank, otherwise 0	Bank_orientation	1687	0.434491	0. 495838	0	1
The age of the firm	Firm_age	1687	16.5981	15.27225	0	70
Duration to process the application	Day_process	1687	5.414345	4.235321	1	30
Dummy variable, 1 if the firm manager uses another product(s) from the bank, otherwise 0	Multiple_products	1687	0.713693	0.452169	0	1
The number of bank(s) in which debtor borrows	Multiple_banks	1687	1.232958	1.38314	0	10
The duration of the relationship between banks and debtor	Length_relationship	1687	3.447095	3.004215	0	25
Benevolence and integrity (factor) score obtained from PCF	Value-Based Trust	1687	-9.48e-11	1	-5.067719	2.241163
Ability (factor) score obtained from PCF	Competence-Based Trust	1687	-1.43e-09	1	-5.44337	2.045385
Dummy variable, 1 if the financing application is granted, otherwise 0	Financing_decision	1687	0.924718	0.263923	0	1
Percentage amount approved compared to amount applied for	Financing_proportion	1687	82.52777	26.98106	0	100

Table IIa Trustworthiness variables: factor analysis of value-based trust

The firm manager…	Var.	Factor1	Uniquen ess	Mean	Std. Deviation	Obs.
Is consistent in his words and behaviour	INTEGRITY 1	0.8323	0.3072	3.826912	0.6963122	1687
Is completely honest with me	INTEGRITY 2	0.8099	0.3440	3.745702	0.796607	1687
Tries hard to be fair in dealings with others (suppliers, buyers, partners, etc)	INTEGRITY 3	0.7794	0.3925	3.829283	0.6428886	1687
Will do the best to pay on schedule even in the short cash situation	BENEVOLENCE 1	0.7764	0.3972	3.881446	0.7266693	1687
Really looks out for what is important to me or my bank	BENEVOLENCE 2	0.7483	0.4400	3.833432	0.6679382	1687
Would acknowledge their own mistakes	BENEVOLENCE 3	0.6614	0.5625	3.822762	0.7289985	1687
Shares information in detail (based on data and fact)	BENEVOLENCE 4	0.8191	0.3290	3.661529	0.6963122	1687
Shares sensitive or important information with me	BENEVOLENCE 5	0.6431	0.5865	3.477771	0.8080689	1687

Table IIb Trustworthiness variables: factor analysis of competence-based trust

The borrower…	Var.	Factor1	Unique ness	Mean	Std. Deviation	Obs.
Is able in identifying the needed resources (for business purposes)	ABILITY 1	0.8747	0.2350	3.945465	0.600999	1687
Has very good knowledge of the current market in which they operate	ABILITY 2	0.8861	0.2149	4.002371	0.6064063	1687
Is known to be successful at the things they try to do	ABILITY 3	0.7747	0.3999	3.732662	0.6984266	1687

***trustworthiness of the firm managers are measured by Likert scale, 1=strongly disagree to 5=strongly agree**

Table III Correlation coefficients

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	TRUST_PROP_SCORE	1													
2	Banker_Age	-0.0101	1												
3	Dum_debtor_gender_female1	0.0342	-0.0619*	1											
4	Dum_Bank_Size_Small1	-0.120***	0.102***	0.0222	1										
5	Dum_bank_orientation_islamic1	-0.0624*	0.173***	0.00710	-0.177***	1									
6	firm_age	-0.00778	0.0634**	-0.00975	0.000535	0.0475	1								
7	days_toprocess	-0.00815	-0.0120	-0.0248	-0.154***	-0.0123	0.0421	1							
8	Dum_useothr_products	0.0448	0.0156	0.0160	-0.0480*	-0.143***	0.0132	0.0419	1						
9	brrw_othbank	-0.00460	0.120***	-0.0770**	0.0981***	0.135***	-0.0286	0.0367	-0.0280	1					
10	rltnshp_drtn	-0.0315	0.126***	-0.0148	0.0491*	-0.100***	0.185***	0.0155	0.186***	-0.0148	1				
11	Value_based_trust	0.0953***	0.0155	0.0396	-0.142***	0.0846***	0.0384	-0.0252	0.206***	-0.113***	0.141***	1			
12	ability_based_trust	0.0985***	0.0468	0.00870	-0.165***	0.0598*	0.0721**	0.0125	0.199***	-0.0328	0.112***	0.726***	1		
13	dumm_Lend_dec	0.0425	0.0633**	0.0109	0.00576	0.0416	0.0433	0.00351	0.142***	-0.0852***	0.129***	0.467***	0.447***	1	
14	Amount_Approved_2	0.0660**	0.0221	0.0324	-0.0516*	0.0615*	0.0436	-0.0291	0.143***	-0.106***	0.161***	0.503***	0.484***	0.873***	1

*** p<0.01, ** p<0.05, * p<0.1

Trust propensity score of the bank managers (factor) obtained from PCF (Trust_propensity), Age of the banker (Banker_age), Dummy variable, 1 if the debtor is a female, otherwise 0 (Firm_manager_gender), Dummy variable, 1 if the bank is a small (rural) bank, otherwise 0 (Bank_size), Dummy variable, 1 if the bank is Islamic bank, otherwise 0 (Bank_orientation), The age of the firm (Firm_age), Duration to process the application (Day_process), Dummy variable, 1 if the firm manager uses another product(s) from the bank, otherwise 0 (Multiple_products), The number of bank(s) in which debtor borrows (Multiple_banks), The duration of the relationship between banks and debtor (Length_relationship), Benevolence and integrity (factor) score obtained from PCF (Value-Based Trust), Ability (factor) score obtained from PCF (Competence-Based Trust), Dummy variable, 1 if the financing application is granted, otherwise 0 (Financing_decision), Percentage amount approved compared to amount applied for (Financing_proportion).

Table IV Probit Regression: The dependent variable is Dummy financing approval

VARIABLES	Probit Model 1	Probit Model 2
Trust_propensity	0.0899*	0.0378
	(0.0479)	(0.0633)
Banker_age	0.0114	0.00810
	(0.00732)	(0.00847)
Firm_manager_gender	0.0494	-0.0197
	(0.115)	(0.139)
Bank_size	0.131	0.444***
	(0.102)	(0.127)
Bank_orientation	0.313***	0.298**
	(0.106)	(0.132)
Firm_age	0.00214	-0.00124
	(0.00329)	(0.00383)
Day_process	-0.00210	-0.00480
	(0.0110)	(0.0125)
Multiple_products	0.448***	0.0669
	(0.101)	(0.128)
Multiple_banks	-0.117***	-0.0676*
	(0.0316)	(0.0401)
Length_relationship	0.108***	0.0797***
	(0.0239)	(0.0287)
Value-Based Trust		**0.464*** **
		(0.0744)
Competence-Based Trust		**0.401*** **
		(0.0756)
Constant	0.388	1.110***
	(0.272)	(0.327)
Observations	1,687	1,687

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Dependent variable: Dummy variable, 1 if the financing application is granted, otherwise 0 (Financing_decision). Independent variables: Benevolence and integrity (factor) score obtained from PCF (Value-Based Trust), Ability (factor) score obtained from PCF (Competence-Based Trust). Controls: Trust propensity score of the bank managers (factor) obtained from PCF (Trust_propensity), Age of the banker (Banker_age), Dummy variable, 1 if the debtor is a female, otherwise 0 (Firm_manager_gender), Dummy variable, 1 if the bank is a small (rural) bank, otherwise 0 (Bank_size), Dummy variable, 1 if the bank is Islamic bank, otherwise 0 (Bank_orientation), The age of the firm (Firm_age), Duration to process the application (Day_process), Dummy variable, 1 if the firm manager uses another product(s) from the bank, otherwise 0 (Multiple_products), The number of bank(s) in which debtor borrows (Multiple_banks), The duration of the relationship between banks and debtor (Length_relationship)

Table V Tobit regression with percentage amount approved compared to amount applied for as a dependent variable.

VARIABLES	Tobit Model 3
Trust_propensity	1.420*
	(0.862)
Banker_age	-0.123
	(0.120)
Firm_manager_gender	-0.609
	(1.950)
Bank_size	0.876
	(1.818)
Bank_orientation	3.005*
	(1.726)
Firm_age	0.00107
	(0.0587)
Day_process	-0.322
	(0.253)
Multiple_products	-1.057
	(1.831)
Multiple_banks	-2.600***
	(0.777)
Length_relationship	1.623***
	(0.329)
Value-Based Trust	**10.77*** **
	(1.208)
Competence-Based Trust	**9.675*** **
	(1.187)
Constant	96.13***
	(5.032)
Observations	1,687

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Dependent variable: Percentage amount approved compared to amount applied for (Financing_proportion). Independent variables: Benevolence and integrity (factor) score obtained from PCF (Value-Based Trust), Ability (factor) score obtained from PCF (Competence-Based Trust). Controls: Trust propensity score of the bank managers (factor) obtained from PCF (Trust_propensity), Age of the banker (Banker_age), Dummy variable, 1 if the debtor is a female, otherwise 0 (Firm_manager_gender), Dummy variable, 1 if the bank is a small (rural) bank, otherwise 0 (Bank_size), Dummy variable, 1 if the bank is Islamic bank, otherwise 0 (Bank_orientation), The age of the firm (Firm_age), Duration to process the application (Day_process), Dummy variable, 1 if the firm manager uses another product(s) from the bank, otherwise 0 (Multiple_products), The number of bank(s) in which debtor borrows (Multiple_banks), The duration of the relationship between banks and debtor (Length_relationship)

Appendix: Table I Remedies Undertaken against Common Method Bias (based on Podsakoff et al. 2012).

Remedy and rationale	Implementation
Procedural Remedy	
Protecting respondent anonymity	Respondents do not need to mention their name, their bank's name and their financing applicant's name in our survey.
Reducing item ambiguity	We conducted a field test to bank's officers to find out ambiguous instructions and questions and also sensitive questions. In fact, we have adjusted several questions and instructions and also delete one question related to applicant's delinquency in the past as it was too sensitive.
Obtain measures of independent variables and dependent variables from different sources	Despite one person should answer both independent variables and dependent variables, the dependent variables do not contain feeling, perceptions, or beliefs. We also performed additional regression by using different dependent variable as a robustness check. The first dependent variable is the decision to grant or reject the financing application. The second dependent variable is the percentage of amount approved compared to amount applied for by the firm.
Proximal separation between independent variables and dependent variables	The questions related to the evaluation of firm manager's trustworthiness (main independent variable) are separated to the dependent variables' questions.
Eliminate common scale properties	Our main independent variable (trustworthiness) is measured by likert scale from 1 to 5. Our first dependent variable is measured using dummy (1 if financing application is granted, otherwise 0). Our second dependent variable is measured using number (percentage of amount approved compared to amount applied for).
Statistical Remedy	
Harman's one factor test	When all of the value-based trust items entered together into the unrotated principal component factor analysis, they only formed a single factor. This single factor accounted for a majority of the variance (>50%).
Instrumental variable technique	As our data did not pass the Harman's one factor test, we tried to perform iv-probit regression. Endogeneity may occur as a result of omitted variables. We performed iv-probit regression by using three instrumental variables, i.e., firm manager is actively engaged in religious activities, firm manager is actively engaged in community activities, and firm manager is actively engaged in business association activities. The instrumented variable value-based trust is positive and significant (at 5% level).

Notes

[i] Rule of law capturing "perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence." (Kaufmann et al., 2009, p.6).

[ii] Based on Inglehart's (2007) cross cultural map - (Morocco, Algeria, Egypt, Iran, Indonesia, Jordan, Saudi Arabia, Turkey, Bangladesh and Pakistan)

[iii] 87% of the total population in Indonesia based on the 2010 national census by BPS-Central Bureau of Statistics Indonesia. In addition, as recently as January 2020, there are more than 500,000 mosques in Indonesia registered under Ministry of Religious Affair and in between 2008-2017, the average number of students in Islamic primary schools grew by 2.6% year on year (BPS) that combined with also 28,000+ Islamic seminary schools.

[iv] Enterprises who have annual turnover less than around USD 176,000 could be categorized as micro or small business