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Islamic financial inclusion determinants in Indonesia: an ANP approach

Mohammad Mahbubi Ali
International Institute of Advanced Islamic Studies Malaysia, Kuala Lumpur, Malaysia and Tazkia Institute, Bogor, Indonesia

Abrista Devi
Ibn Khaldun University, Bogor, Indonesia

Hafas Furqani
Universitas Islam Negeri Ar-Raniry, Banda Aceh, Indonesia, and

Hamzah Hamzah
Pakuan University, Bogor, Indonesia

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Abstract

Purpose – This study aims to uncover the determinants of Islamic financial inclusion in Indonesia.

Design/methodology/approach – This study uses the analytic network process (ANP) to gather expert opinions and responses from academics, regulators and practitioners.

Findings – The ANP analysis discovered that the level of Islamic financial inclusion in Indonesia is influenced by two main drivers: the supply and the demand. The demand factors for Islamic financial inclusion, ranked based on their level of significance, are as follows: financial literacy (0.27), religious commitment (0.22), socioeconomic factor (0.19) and social influence (0.17), respectively. From the supply side, primary catalysts for Islamic financial inclusion based on their level of importance are human capital (0.32), product and services (0.24), infrastructure (0.18) and policies and regulation (0.17), respectively.

Research limitations/implications – The present study does not include the Islamic insurance sector in its determinant framework of Islamic financial inclusion in Indonesia.

Practical implications – This study serves as a reference for regulators in formulating appropriate policy strategies to strengthen the Islamic financial inclusion in Indonesia.

Originality/value – This study is a pioneer attempt to identify distinctive factors that influence the level of Islamic financial inclusion in Indonesia by analyzing expert opinions from diverse groups of Islamic finance stakeholders.

Keywords Indonesia, Islamic finance, Financial inclusion, Demand factors, Supply factors

Paper type Research paper

1. Background

Financial inclusion has, since the past two decades, been a global agenda and a renewed concern for many governments and central banks worldwide. The Sustainable Development Goals of the United Nations Development Program, for instance, put financial access as an

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essential enabler for development. A recent study showed that more than 50 countries have already set their formal targets and strategies in the quest for financial inclusion (Demirgüç-Kunt *et al.*, 2015).

Literature review shows a strong link between financial inclusion, inclusive growth and poverty reduction (World Bank, 2014; Beck *et al.*, 2000; Levine, 2005; Demirgüç-Kunt *et al.*, 2008). There is strong evidence that shows an increase in financial inclusion facilitates the lower segment of society in improving their economic situation (Aportela, 1999; Ashraf *et al.*, 2011; Dupas and Robinson, 2013). A high level of financial inclusion also contributes to greater stability in the banking sector (Ahamed and Mallick, 2019) and ensures a more equitable economy (Ahmed and Salleh, 2016). In contrast, a lack of financial access reinforces the poverty trap because of the paucity of opportunities to save during surplus or to borrow in times of hardship (Mohieldin *et al.*, 2011).

As a business entity established within the ambit of the *Shariah* principles, Islamic finance is often viewed as a potential sector that contributes positively to solving problems related to financial inclusion. The 2017 Global Findex Database estimated that about 6% of unbanked adults in developing countries do not have a banking account because of religious reasons (Demirgüç-Kunt *et al.*, 2018). Islamic finance could, therefore, enhance the people's access to various financial services while complying with a set of ethical values (Dusuki *et al.*, 2012). The International Monetary Fund (2018) also acknowledged that Islamic finance promotes economic well-being, establishing socio-economic justice, and equitable distribution of income and financial stability. For example, Zakat institutions could assist Zakat recipients in improving their financial situation and fulfilling their needs (Salleh, 2015).

The Islamic financial market in Indonesia has over the past three decades evolved and developed exponentially, emerging as an important jurisdiction in the global Islamic financial industry, standing at fourth place in 2018 after Malaysia, Bahrain and the United Arab Emirates (Islamic Cooperation for the Development of the Private Sector, 2019). The Indonesian government has also made significant efforts and progress in enhancing financial inclusion. The National Strategy for Financial Inclusion was outlined in 2012 to achieve a financial system that is accessible by all layers of the community. In 2014, Indonesia's Financial Services Authority (FSA) also issued POJK [1] No. 19 regarding branchless banking to strengthen financial inclusion. On September 27, 2016, Bank Indonesia also introduced a new regulation on Digital Financial Services for financial inclusion.

Nevertheless, financial exclusion remains a significant problem in the country. The World Bank's 2017 Global Index Database discovered that only 48.9% of Indonesian adults have access to finance, leaving more than half (51.1%) of them excluded from financial services – without an account at any financial institutions or access to a mobile wallet (World Bank, 2017). A 2016 survey by FSA found that the Islamic financial inclusion index stood at 11.1%, which means that out of 100 Indonesian, only 11 persons are benefitting from Islamic financial products and services (FSA, 2017). The Asian Development Bank (2016) revealed that financial inclusion in Indonesia is relatively low compared to some other countries in the region, such as Malaysia and Thailand.

This signifies the importance of policymakers to design more appropriate strategies for financial inclusion, therefore enabling a larger segment of society to benefit from financial products and services. Financial inclusion would ensure inclusive growth where the gap between the rich and the poor is less pronounced, and people would actively participate in wealth processes of various economic activities.

Apart from that, a cursory review of the literature finds that most existing studies on the determinants of financial inclusion are within the context of conventional finance, and in other jurisdictions (Demirgüç-Kunt and Klapper, 2013; Allen *et al.*, 2012; Kimutai, 2015; Zins and Weill, 2016; Clamara *et al.*, 2014; Kostov *et al.*, 2015). The present study, therefore, undertakes to fill the gap by examining the determinants of Islamic financial inclusion in Indonesia.

2. Literature review

Many previous studies suggested a significant relationship between financial inclusion and socio-demographic factors, financial literacy, self-efficacy, infrastructure, documents, distance and religiosity (Demirgüç-Kunt *et al.*, 2013; Allen *et al.*, 2012; Kimutai, 2015; Zins and Weill, 2016). The subsection to follow reviews relevant literature on the relationship between financial inclusion and different factors.

2.1 Socioeconomic attributes

Socioeconomic characteristics and attributes are the drivers of financial inclusion (Demirgüç-Kunt *et al.*, 2013; Clamara *et al.*, 2014; Zins and Weill, 2016; Soumaré *et al.*, 2016; Evans, 2016; Abel *et al.*, 2018; Shihadeh, 2018). These include gender, living area, financial literacy, income, annual household spending, education, per-capita income and homeownership. For example, Soumaré *et al.* (2016) found that gender is the most significant catalyst for financial inclusion in Central Africa, while income is the most significant factor of financial inclusion in West Africa. Additionally, females and the poor are less likely to be included in the financial system, while education level enhances financial inclusion in the Middle East, North Africa, Afghanistan and Pakistan (Shihadeh, 2018; Demirgüç-Kunt *et al.*, 2013). Kermani and Afandi (2014) found that age, size, external auditing status and foreign ownership determine most financing obstacles for firms in Organisation of Islamic Cooperation countries. In Indonesia, Pepinsky (2013) identified a positive correlation between access to Islamic financial products and higher family income. This is true because people might get their income through a banking account.

2.2 Financial literacy

Financial literacy is an essential factor for financial inclusion (Kostov *et al.*, 2015; Chikalipah, 2017; Grandolini, 2015; Abel *et al.*, 2018). Low financial literacy is the main obstacle for financial inclusion in developing countries (Grandolini, 2015), South Africa (Kostov *et al.*, 2015) and Sub-Saharan Africa (Chikalipah, 2017). Many people are mostly aware of Islamic banking products but are unaware of their functions (Rammal and Zurbruegg, 2007). Thus, efforts to ensure financial competence and literacy regarding Islamic finance are imperative to improve financial inclusion (Shinkafi *et al.*, 2019; Khattak, 2010). A 2016 survey by FSA cited that Indonesia's Islamic financial literacy index stood at 8.1%, which means that out of 100 Indonesian, only eight people have sufficient knowledge and information on Islamic financial services. Kimutai (2015) proposed some indicators to measure financial literacy, namely, regular information updates, attendance of seminars, workshops and use of mass media.

2.3 Religiosity factor

Many literatures concluded that faith and ethnicity affect financial literacy and financial decisions (Guiso *et al.*, 2002; Barro and Mitchell, 2004; Gerrans *et al.*, 2009; Khan and Khanna, 2010; Demirgüç-Kunt and Klapper, 2012a, 2012b; Echchabi, 2012; Naceur *et al.*, 2017; Zulkhibri, 2016; Hassan *et al.*, 2018). More specifically, religiosity does indeed influence the acceptance of Islamic banking and financial services (Amin and Aman, 2016; Jaffar and Musa, 2016; Maryam *et al.*, 2019), and especially in Muslim-majority countries (Zulkhibri, 2016 and Hassan *et al.*, 2018). There is also a study which concludes that stronger religious beliefs correlate positively with good economic attitudes (Guiso *et al.*, 2002). Many verses in the Qur'an encourage Muslims to put their best effort to attain perfection in their lives. For example, a Qur'anic verse in chapter al-Nahl (90) states: "Indeed, Allah orders justice, good conduct (*ihsan*), charity among relatives, and forbids immorality, bad conduct, and oppression." *Ihsan*, in this verse, signifies perfection.

2.4 Social influence

The Social Learning Theory underpinning financial inclusion theory postulates that individual behavioral patterns can be affected by other people's behaviors through a process of differential support (Bandura, 1997). An individual can accept or reject certain decisions because of demand or influence by society (Ajzen, 1991). This theory further explains that skillful and knowledgeable individuals are highly influential and have a strong motivational effect on the general population. Many works of literature confirm that one's acceptance to and participation in Islamic banking are influenced by his surrounding references, parents, relatives, friends and community (Echchabi and Azouzi, 2015; Amin and Aman, 2016; Reni and Ahmad, 2016; Saleem, 2016; Maryam *et al.*, 2019).

2.5 Infrastructure readiness

Lack of supporting infrastructure is a significant barrier to financial access in rural area (Allen *et al.*, 2012; Kimutai, 2015; Zins and Weill, 2016). Lack of infrastructure would lead to other problems, such as high cost, distance barriers and a lack of suitable financial products. Therefore, providing adequate infrastructure is vital to improving financial access, and hence, financial inclusion. Indicators to measure infrastructure readiness include location, distance, branding (Kimutai (2015), ATM penetration (Allen *et al.*, 2012) and mobile banking (Zins and Weill, 2016). For instance, Abel *et al.* (2018) found a negative correlation between distance and financial inclusion. The greater the distance between the people and financial centers, the smaller number of people will be financially included. This rings true for Islamic financial inclusion in Indonesia, especially in the eastern part of the country, where it is estimated that one branch of Islamic financial institution (IFI) has to serve up to 100,000 people (Umar, 2017).

2.6 Human capital

As an institution established within the ambit of *Shariah*, the Islamic financial industry is a specialized industry, which requires a specific set of competencies and skills, such as *Shariah* understanding and financial knowledge. Skilled staff will ensure that Islamic banking products and services are efficient without compromising *Shariah* principles. Inadequate knowledge and lack of expertise of the human capital, for instance, will affect the quality of Islamic financial products in terms of its *Shariah*-compliance and level of efficiency (Izhar, 2012). Li *et al.* (2016) and Zhou *et al.* (2018) confirmed the influence of employees' education on financial inclusion. Thus, Wang and Liu (2016) included labor force training as an input to measure human capital.

2.7 Product and services

Financial inclusion refers to an effort to make financial products and services accessible and affordable to all segments of society (Demirgüç-Kunt, 2018). It is, therefore, imperative for IFIs to offer products and services that are inexpensive and tailor-made to the client's needs, encompassing greater collateral flexibility, and outlining more straightforward documentation requirements. Allen *et al.* (2012) cited the cost of products and services as significant factors for financial inclusion. Purba and Purwanti (2016) and Beck *et al.* (2008) considered product design and sophisticated documentation requirements as two critical barriers to financial inclusion. Besides, The Global Findex Survey (World Bank, 2017) quoted cost and complicated documentation (10%) as among the essential reasons why people are unbanked (20%).

2.8 Policies and regulation

The role of governmental regulation in financial inclusion is undeniable. Strict regulation might impede the financial inclusion agenda. For example, regulation on capital adequacy and supervisory rules may restrict the attractiveness of small deposits, loans and other financial products. The strict requirement for opening branches and ATMs would also limit financial inclusion in remote areas (Morgan *et al.*, 2018). Asadov and Mogilevskii (2018) observed that government failure to understand market evolution leads to a reluctance to adopt new technology-based financial products in Tajikistan.

Despite the various studies on the determinants of financial inclusion in both Islamic and conventional literature, most of them were carried out in other jurisdictions, looking from the perspectives of clients, or using secondary data. To the best of the authors' knowledge, none of the studies had endeavored to uncover the determinants of Islamic financial inclusion in Indonesia. The present study, therefore, undertakes to fill this gap by examining the determinants of Islamic financial inclusion in Indonesia using the analytic network process (ANP) approach.

3. Research methodology

The present study uses the ANP – a mathematic theory developed by Saaty in 1996 – as a new generation of analytic hierarchy process – to allow one variable to deal systematically with dependence and feedback, which can capture and combine tangible and intangible factors by using ration scale (Saaty, 2005). ANP enables the researchers to examine complex interrelationships among decision levels and attributes. The ANP approach substitutes hierarchies with networks in which the relationship between levels is not easily reflected as higher or lower, dominated or being dominated, directly or indirectly (Lee, 2010). ANP network is constructed based on clusters comprising criteria and alternatives, commonly known as a node.

ANP assumes four relatively simple axioms (Saaty and Vargas, 2006):

(1) A priority or weight, which is an absolute number, belongs to the closed interval [0,1] and is a measure of relative dominance.

(2) Reciprocal. This axiom requires that if PC (EA, EB) is a paired comparison of Elements A and B with respect to their parent, Element C, representing how many times more the Element A possesses a property than element B does, then PC (EB, EA) = 1/PC (EA, EB). For instance, if A is four times larger than B, then B is one-fourth as large as A.

(3) Homogeneity exists, which is the motivation for the Saaty 1–9 evaluation scale whereby the upper limit of 9 on that scale is because of the requirement of homogeneity to maintain the stability of the eigenvector to perturbation from consistency, and to the requirement that only a small number of elements should be compared (see Table 2).

(4) A dependence condition is assumed that the system can be decomposed into parts.

3.1 Analytic network process selection

ANP is selected in this study to discover the determinants of Islamic financial inclusion because it can provide a general framework for the decision-making process, which does not require any assumption on the independency variables in the higher level from variables in the lower level, and on the independent variables within the same level (Ascarya and Yumanita, 2006). The identification of financial inclusion determinants is part of the decision-making process, which helps the government decide on the most appropriate strategy for financial inclusion. Saaty and Vargas (2006) submitted that the ANP model does not encounter statistical problems such as multicollinearity, a common problem faced by an econometric model in the same process. The ANP model shares a similar conceptual foundation with traditional composite indicator methods, which also attempt to select indicators across a broad spectrum of economic processes.

As for its primary function, ANP provides decision-making, a feature that allows a manager and stakeholder to arrive at an appropriate decision through expert opinion. Many existing problems in the banking industry cannot be solved through quantitative measures alone. Certain problems require a qualitative approach. There have been various studies that combined the two approaches. For example, Wanke *et al.* (2016a, 2016b) used a two-stage TOPSIS, neural networks approach and integrated multi-criteria decision-making (MCDM) approaches to predict the efficiency of Islamic banks. ANP is part of the analytical tool for MCDM approach. A study by Rusydiana and Devi (2013) applied ANP in their investigation on the challenges facing *Baitul Maal wat Tamwil* in Indonesia.

Besides, the researchers found out that most existing literature on financial inclusion applied the parametric statistical approach, using either primary or secondary data. It is argued that the parametric approach is less accurate in the decision-making process. ANP is an expert-based methodology that helps understand complex issues and offer more objective decision-making. Rezaei *et al.* (2012) claimed that expert-based academic research is a valid alternative methodology to arrive at a more objective finding.

3.2 Data

The ANP model applies primary data through several steps, namely, model decomposition through literature review and focus group discussion (FGD); model quantification via pair-wise questionnaire; and synthesis and analysis. The initial variables were derived from financial inclusion literature, which is used to construct an ANP framework. The draft of the ANP framework was subsequently confirmed via FGD. The FGD respondents in this study are composed of the ten most knowledgeable personalities in the field of Islamic financial inclusion in Indonesia, representing three different groups of experts: practitioners, academics and regulators. Mishra (2016) and Dilshad and Latif (2013) recommended that the number of FGD participants and ANP respondents ranges from 10 to 12 and 6 to 12 participants, respectively.

The respondents from a group of practitioners were selected based on the following criteria:

- The expert has vast experience in the Islamic finance industry in Indonesia and deals directly with the financial inclusion agenda.
- The expert is equipped with in-depth knowledge and understanding of the theory and practice of Islamic financial inclusion.
- The expert from academics and regulators are prolific in publishing their research on financial inclusion and presenting their research findings in both local and international conferences.

Subsequently, the study selected 12 experts from three different clusters: four practitioners, four regulators and four academics to fill in a simplified ANP pair-wise comparison questionnaire. Table 1 depicts the expert respondent profiles in this study.

3.3 Research steps of analytic network process

The ANP process in this research has three steps, namely, model construction, model quantification and result analysis. The steps of the ANP are illustrated in Figure 1.

3.3.1 Model construction. Model construction is the first phase in ANP. In this phase, the researchers conducted an FGD by inviting ten experts from various backgrounds. Based on the inputs from the FGD, the study develops an ANP framework on the determinants of Islamic financial inclusion from both the demand and the supply factors. The demand factors include socio-economic aspects, financial literacy, religious commitment and social influence. The supply factors are infrastructure; products and services; human capital; and policies and regulation. This ANP framework was subsequently validated by an expert who

No.	Name	Institution	Designation
Expert respondents of focus group discussion (FGD)			
1	RR	Lembaga Penjamin Simpanan (LPS)	Lead Specialist, International Affairs
2	ITS	Bogor Agricultural University (IPB)	Lecturer
3	IA	Bank Muamalat Indonesia	Board of Director
4	AS	Bank Indonesia Institute	Researcher
5	ES	Otoritas Jasa Keuangan (OJK)	Deputi Komisioner Pengawas Industri Keuangan Nonbank (IKNB) I Otoritas Jasa Keuangan (OJK)
6	AAA	Bank Indonesia Institute	Senior Researcher
7	EF	Paramadina Islamic Management Institute	Lecturer
8	DA	Bursa Efek Indonesia (BEI)	Market Development Unit, Indonesia Stock Exchange
9	RM	BTPN Syariah	Compliance Head, BTPN Syariah
10	HH	BTPN Syariah	Business Development Head, BTPN Syariah
Expert respondents of ANP pair-wise comparison questionnaire			
1	RR	Lembaga Penjamin Simpanan (LPS)	Lead Specialist, International Affairs
2	AAA	Bank Indonesia Institute	Regulator (Senior Researcher)
3	ES	Otoritas Jasa Keuangan (OJK)	Regulator [Deputi Komisioner Pengawas Industri Keuangan Nonbank (IKNB) I Otoritas Jasa Keuangan (OJK)]
4	DA	Bursa Efek Indonesia (BEI)	Regulator (Market Development Unit, Indonesia Stock Exchange)
5	HH	BTPN Syariah	Practitioner (Business Development Head, BTPN Syariah)
6	AH	BPRS Amaanah Ummah	Practitioner (Marketing Director)
7	SA	MNC Sekuritas	Practitioner (Manager)
8	SW	BMT Sidogiri	Director of Marketing
9	ITS	Bogor Agricultural University (IPB)	Academics (Lecturer)
10	LT	STEI Tazkia	Academics (Lecturer)
11	EF	Paramadina Islamic Management Institute	Academics (Lecturer)
12	HT	Ibn Khaldun University	Academics (Lecturer)

Table 1. ANP respondent profile

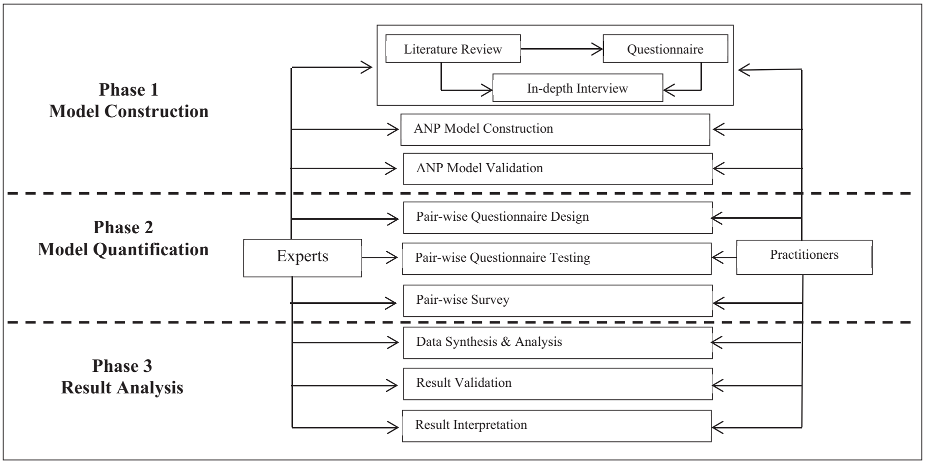

Figure 1.
Steps of ANP

Source: Ascarya (2013)

is deemed the most knowledgeable respondent among the peers. Figure 2 shows the ANP framework.

Based on the ANP framework above, the ANP network on the determinants of Islamic financial inclusion is constructed (Figure 3).

3.3.2 Model quantification. Phase 2 in the ANP model is to quantify and measure the ANP network. In this phase, pair-wise questionnaires are computed using the "Super Decisions Software" based on the established ANP framework. The questionnaire experiment is carried out to ensure that the questionnaire is filled and responded to within a tolerable inconsistency. Modifications on the questionnaire may be made to obtain the appropriate data. From the theoretical perspective, ANP adopts a *supermatrix* calculation to obtain the *eigenvector* result. The eigenvector is derived from the matrix and supermatrix calculation based on reciprocal theory from one to nine fundamental scale as in Table 2.

3.3.3 Result analysis. Phase 3 presents the results and synthesis of the ANP network. The data are subsequently exported to Excel worksheet to produce the expected outputs. Afterwards, a geometric mean/average of all responses was calculated and re-synthesized to produce a scientific "consensus" result analysis. Subsequently, Kendall's coefficient of concordance or Kendall's W is computed to determine the level of agreements among raters or respondents. The interpretation of detailed (individual) and overall (geometric mean) results is presented and used in formulating conclusions and policy recommendations. Kendall's coefficient of concordance is identified when (W;$0 < W \leq 1$), whereby $W = 1$ shows a perfect agreement among respondents. If the value of $W = 0$, it signifies a perfect disagreement among respondents, and their responses are regarded as ignorantly random. An intermediate value of $0 < W < 1$ means a greater or lesser degree of agreement among raters or respondents. A higher value indicates a higher level of agreement.

Legendre (2005) provided the calculation for Kendall's (W) coefficient based on the following assumption: suppose that object i is given the rank $r_{i,j}$ by judge number j, where there are in total n objects and m judges, then the total rank given to object i is:

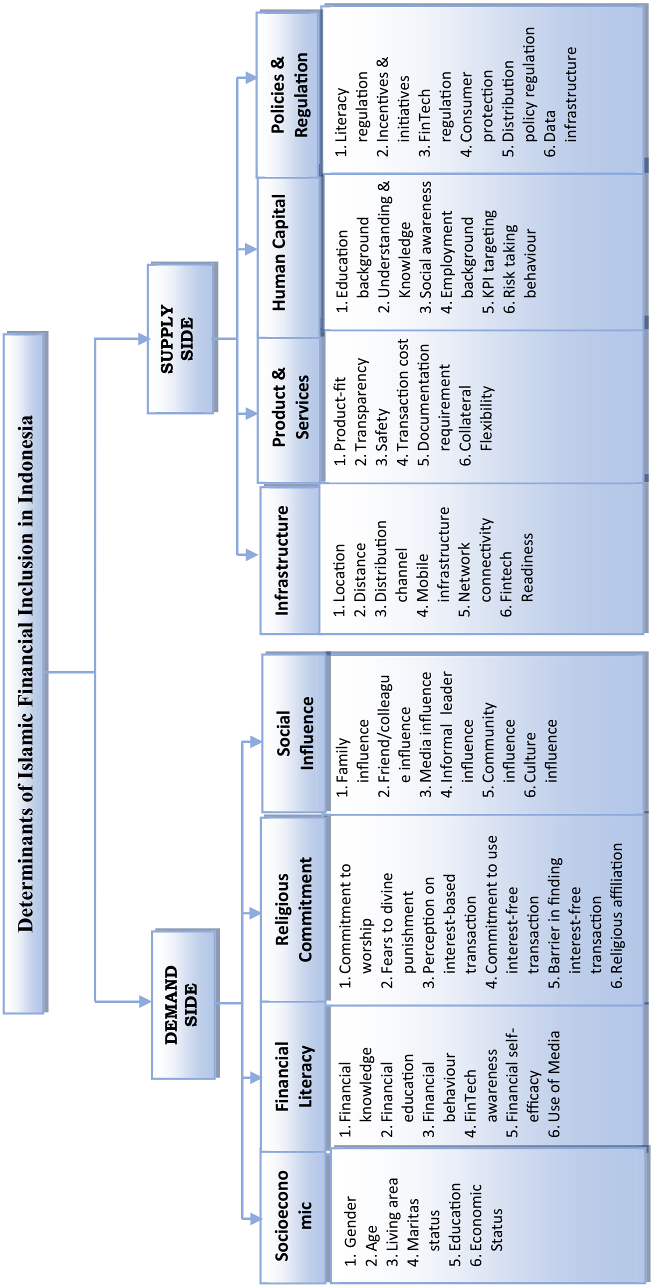

Figure 2.
ANP framework

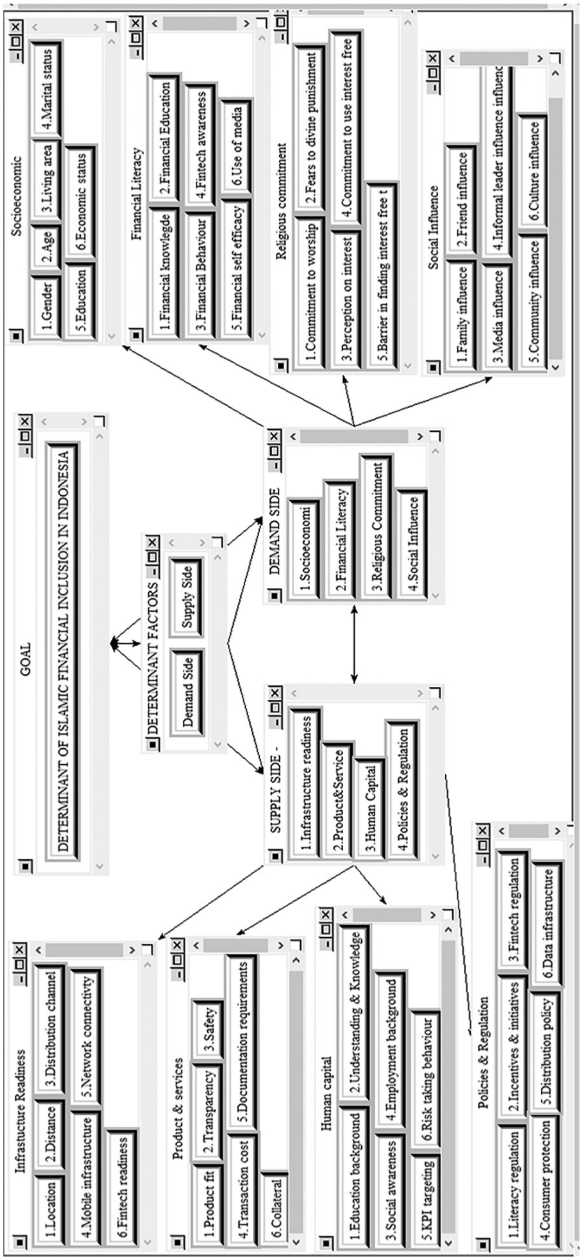

Figure 3.
ANP network of Islamic financial inclusion

$$R_i = \sum_{j}^{m} = 1 r_{i,j} \tag{3.1}$$

When the mean from total ranking is:

$$R = \frac{1}{2} m(n+1) \tag{3.2}$$

The sum of deviation quadratic (S) is calculated by the following formula:

$$S = \sum_{i}^{n} = 1\left(R_i - \bar{R}\right)^2 \tag{3.3}$$

and then, Kendall's W is defined as:

$$W = \frac{12S}{m^2(n^3 - n)} \tag{3.4}$$

where W is the Kendall's coefficient, n is total objects, m is total judges and s is the sum of quadratic deviation.

4. Findings

The overall ANP result shows that the determinants of Islamic financial inclusion from the demand side, based on the level of their significance, are financial literacy, followed by religious commitment, socioeconomic factor and social influence, with a relatively insignificant value of rater agreement ($W = 0.026$). This signifies that all respondents from three different groups of expert have relatively divergent views on the priority of demand factors (see Figure 4).

Based on the detailed priority of each sub-clusters of demand factors, the overall ANP result found that the two most important determinants of Islamic finance inclusion under the financial literacy cluster are financial knowledge and financial behavior. The rater agreement under this cluster is relatively low at 0.27, which signifies a high level of divergence among the respondents (see Figure 5).

Concomitantly, Figure 5 explains that the two most significant elements of religious commitment are fear of divine punishment and a commitment toward interest-free products. Meanwhile, the influence of an informal leader and family influence are the two most important determinants under the social influence cluster. All groups of respondents show a relatively convergent view on the importance of informal leader influence with a W value at 0.34.

1	Equal importance
3	Moderate importance of one over another
5	Strong or essential importance
7	Very strong or demonstrated importance
9	Extreme importance
2, 4, 6, 8	Intermediate values
Use reciprocals for inverse comparisons	

Source: Saaty (2007)

Table 2.
Fundamental scale

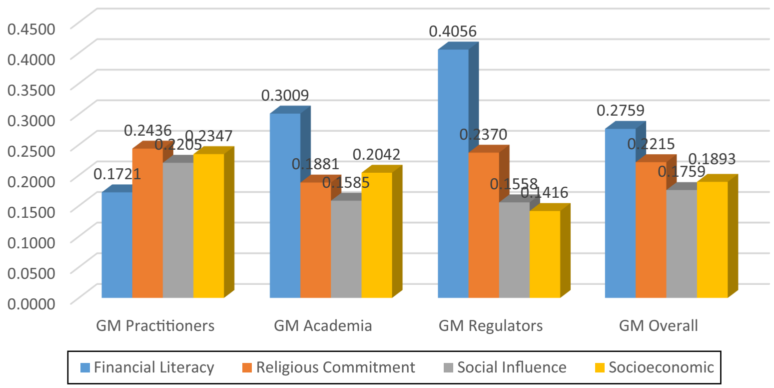

Figure 4.
General demand determinants of Islamic financial inclusion

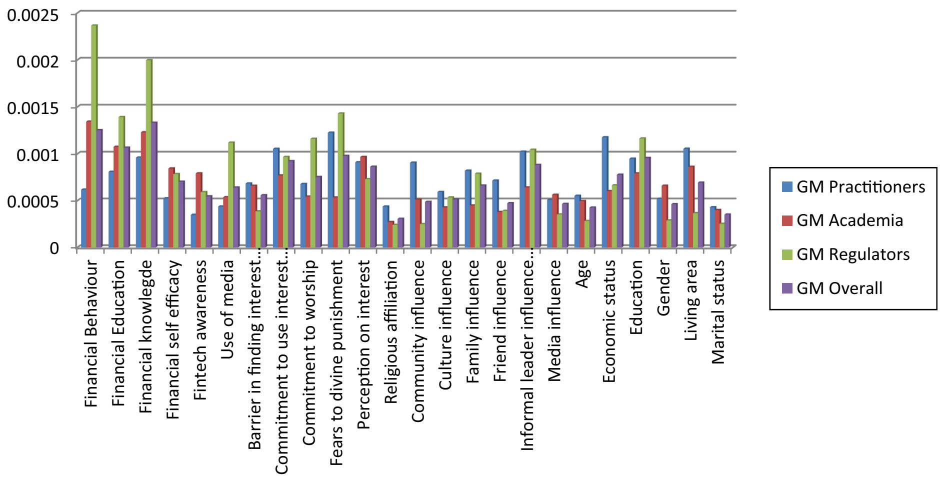

Figure 5.
Geometric mean subclusters of demand determinants of Islamic financial inclusion

Additionally, Figure 5 illustrates the significance of the socioeconomic cluster, in which education and economic status are the top two priorities. The rater agreement on this shows a significant value of 0.30.

On the supply factors, the detailed ANP results established that human capital and products and services are the two main factors of Islamic financial inclusion, with a low rater agreement ($W = 0.17$) (Figure 6).

The priority of each sub-clusters within the supply factors is provided to have a more detailed framework on the Islamic financial inclusion determinants in Indonesia (see Figure 7). For the human capital cluster, the ANP analysis discovered that the overall respondents are unanimous in considering understanding and knowledge and educational background as the two most important factors of Islamic financial inclusion, with a W value of 0.20. As for the products and services cluster, most respondents agree that security and transaction costs are the two most critical determinants of Islamic financial inclusion. The overall rater agreement shows a relatively insignificant value ($W = 0.18$).

Figure 7 presents the ANP analysis on infrastructure cluster: distribution channel takes the highest priority, whereas fintech readiness is the least priority. Nevertheless, the *W* value under this cluster shows a relatively low rater agreement (0.26).

Additionally, Figure 7 also illustrates information about the policies and regulation cluster: incentives and initiatives take the highest priority, whereas fintech regulation indicates the least priority. The rater agreement shows a relatively moderate *W* value of 0.33.

5. Discussion

Based on the ANP results, the study discovered that Islamic financial inclusion in Indonesia is determined by two main drivers, namely, demand and supply. On the demand side, financial literacy is the key driver of Islamic financial inclusion. A plethora of empirical literature confirmed that literacy is a perfect predictor for the demand for financial products and services (Rastogi and Ragabiruntha, 2018; Cohen and Nelson, 2011; Chibba, 2009). Bassir *et al.* (2014) argued that the level of knowledge and religiosity affects the usage of Islamic financial products and services among Muslims. Financially literate people can

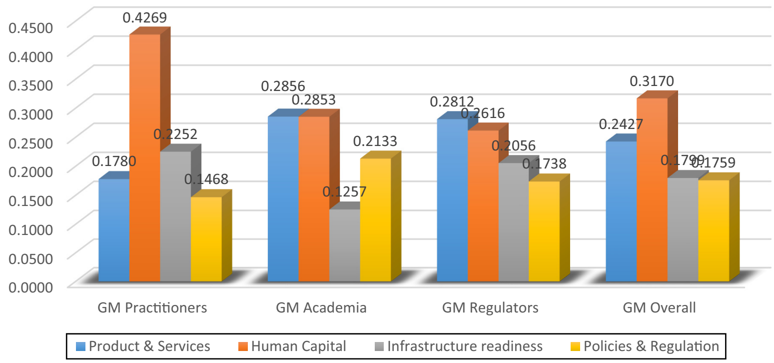

Figure 6.
General supply determinants of Islamic financial inclusion

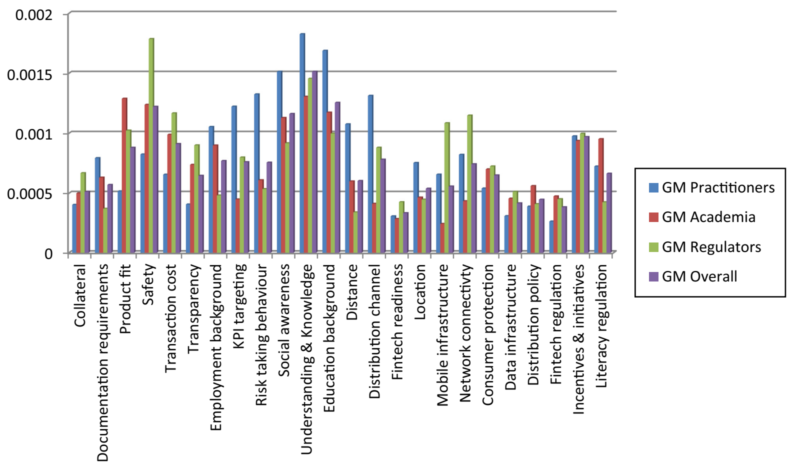

Figure 7.
Geometric mean subclusters of supply-side determinant for Islamic financial inclusion

understand the benefit of financial products, and they are more well-informed to make any financial decision (Abel *et al.*, 2018). Likewise, Ramakrishnan (2012) concluded that Islamic financial literacy is the most important solution to encourage people to participate in the Islamic financial system. In this regard, Hussain *et al.* (2018) suggested the inclusion of financial literacy lessons in the school curricula. Kimutai (2015) recommended several actions to help the government improve financial literacy, namely, improving financial education, providing regular information update on financing, setting up more seminars and workshops, boosting media campaign and improving access to the internet.

Religious commitment provides a significant contribution to Islamic financial inclusion. This finding is consistent with previous studies (Guiso *et al.*, 2002; Barro and Mitchell, 2004; Gerrans *et al.*, 2009; Khan and Khanna, 2010; Demirgüç-Kunt and Klapper, 2012a, 2012b; Echchabi and Aziz, 2012; Naceur *et al.*, 2017; Zulkhibri, 2016; Hassan *et al.*, 2018). Jouti (2018) concluded that *Shariah*-compliance is the primary catalyst for unbanked religious people to adopt Islamic financial products. Muslims in Indonesia are generally religious; the Pew Research Center Surveys in 2017 found that 93% of Indonesian Muslims consider religion as very important and a way of life, whereas 84% of them perform daily prayers (Lipka, 2017). Nevertheless, other factors also contributed to the problem of financial exclusion in Indonesia, such as the absence of need, location barrier, complicated administrative procedures, lack of required documents and incompatible price/product features.

Surprisingly, socioeconomic factors and social influence assume less significant influences on Islamic financial inclusion in Indonesia. This finding conflicts with previous literature arguing that socioeconomic factors provide a considerable positive influence on financial inclusion (Allen *et al.*, 2012; Clamara *et al.*, 2014; Naceur *et al.*, 2017; Zins and Weill, 2016; Wang and Guan, 2017).

Looking from the variables of each cluster, financial knowledge and financial behavior are the two priorities of financial literacy, whereas fear of divine punishment and a commitment to using interest-free products are the two top priorities under the religious commitment cluster. On the other hand, the priorities of the socioeconomic cluster are education and economic status. This finding confirms previous studies, arguing that education and income correspond positively to financial inclusion (Abel *et al.*, 2018; Kimutai, 2015; Allen *et al.*, 2012; Clamara *et al.*, 2014; Naceur *et al.*, 2017; Zins and Weill, 2016). People who have a higher level of education are more likely to be financially included. This is because of the advantages of making informed decisions that will improve access to financial instruments. Similarly, the more people earn, the more likely they are to be financially included. This is, perhaps, because of their higher financial capability and exposure to formal banking transactions.

Finally, an informal leader and family influences serve the two top priorities of the social influence cluster. These results are consistent with the finding of previous literature such as Fox *et al.* (2000), Shim *et al.* (2010) and Xiao *et al.* (2007). The role of an informal leader has also been discussed by Pescosolido (2001), Durham *et al.* (1997) and Wheelan and Johnston (1996). According to them, an informal leader assumes the greatest influence on people's perceptions, beliefs and expectations. Nienhaus and Brauksiepe (1997), on the other hand, added shared altruistic values as essential characteristics for community members to participate in financial institutions in Bangladesh. Accordingly, almost all informal leaders are established through the community (both formal and informal communities).

Moving to the supply side, human capital is the most important determinant of Islamic financial inclusion. This finding confirms previous studies (Loo, 2010; Buchari *et al.*, 2015), arguing that social awareness and attitudes are essential key performance indicators in evaluating the competitiveness of IFI employees. Kimutai (2015) explained that a banking agent must offer outstanding service quality for all segments of customers. Having knowledge-based work management and competent human capital is imperative in the industrial sector, particularly the IFI. Bontis (1998) argued that human resources are part of a structural capital, which has a function to create, acquire and use consumer capital for the success of an organization. Namasivayam and Denizci (2006) discovered the important role of human capital in designing, developing and maintaining the organization. Thus, the lack of human capital and high financial illiteracy might prevent many people from benefitting financial services (Arora, 2012).

Besides, products and services also provide a significant influence on the level of Islamic financial inclusion. For obvious reasons, the features offered by the products and services would highly determine an individual's decision to participate in financial institutions. In line with this, the respondents suggested that Islamic financial products should ensure the following features: safe and secure, affordable, tailor-made, better collateral flexibility and more straightforward documentation requirements. This finding is consistent with previous studies (Beck *et al.*, 2008; Allen *et al.*, 2012; Purba and Purwanti, 2016; World Bank, 2017), citing cost variables, product design and sophisticated documentation as significant barriers to financial inclusion.

Interestingly, the study also revealed that infrastructure, as well as policies and regulations, are less significant factors in Islamic financial inclusion. This finding is in contrast with previous studies that emphasized the vital role of infrastructure and regulation in financial inclusion (Allen *et al.*, 2012; Kimutai, 2015; Zins and Weill, 2016; Umar, 2017; Abel *et al.*, 2018; Morgan *et al.*, 2018; Asadov and Mogilevskii, 2018).

Concerning the variables of each cluster under the supply factor, understanding and knowledge, and educational background are the two main determinants under the human capital cluster. Security and transaction costs are the two top priorities in the product and services cluster. Distribution channels and network connectivity are the two main priorities in the infrastructure cluster. Finally, incentives and initiatives, and literacy regulation are the two most essential elements in the policies and regulation cluster. In this regard, it is concluded that appropriate incentives are imperative to facilitate easy and affordable financial access to the low-income segment. For example, the low-income segment needs be exempted from the purview of PMK (Peraturan Menteri Keuangan – Regulation of Finance Minister) No. 137/PMK.03/2011 on Taxation for Islamic Banks in Indonesia.

6. Conclusion and policy recommendation

In its investigation on the determinants of Islamic financial inclusion in Indonesia, this study found that the Islamic financial inclusion in Indonesia is dependent on both the demand side and supply side. The determinants of Islamic financial inclusion from the demand side, based on their level of significance, are financial literacy (0.2759), religious commitment (0.2215), socioeconomy (0.1893) and social influence (0.1759). Second, the determinants of Islamic financial inclusion from the supply side, ranked based on their level of significance, are human capital (0.3170), product and services (0.2427), infrastructure readiness (0.1799) and policies and regulation (0.1759).

The study, therefore, proposes that the Islamic financial inclusion agenda should focus on enhancing financial literacy, human capital and products and services. In this regard, the Indonesian government has a significant role in instilling Islamic financial literacy, particularly in its Muslim-majority regions. Islamic finance modules should, therefore, be one of the main components in the national education curriculum. Additionally, regulators are advised to revisit the PMK No. 137/PMK.03/2011 as to create level-playing field to the low-income segment.

The study also recommends the following to IFIs:

- to develop a systematic approach and strategy to enhance financial knowledge and literacy of low-income segments by actively engaging informal religious leaders and introducing sustainable community-based education programs;
- to enhance their products and services compatibility by offering a more straightforward procedure and documentation requirements; affordable price; proactive services; collateral flexibility; PLS-based product; and subsidized products;
- to strengthen human capital competencies and skills of IFIs via training and education, capacity building, social awareness programs and risk culture creation programs; and
- to improve IFIs' infrastructure by unlocking/reaching more remote areas; widening network connectivity; and leveraging on fintech and mobile connectivity.

Note

1. POJK refers to Peraturan Otoritas Jasa Keuangan – Financial Services Authority Regulations.

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Corresponding author
Mohammad Mahbubi Ali can be contacted at: mahbubi@iais.org.my