Modeling Financial Inclusion in the *Ar-Rahn's* Financing as Imperatives for Economic Well-Being in Malaysia

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Abstract

This study examines the relationship between financial inclusion and the use of *ar-rahn* financing in enhancing individual economic well-being. Primary data assembled through questionnaire surveys were analyzed by using factor analysis and structural equation modeling. The results demonstrate that financial inclusion through patronising *ar-rahn* significantly improves the well-being of individuals and society. Importantly, the usage of *ar-rahn* financing for production purpose such as economic activity is claimed to be significant in enhancing individual well-being resulting into micro balancing and improving the financial and socio-economic development.

Keywords: Financial Inclusion, *Ar-Rahn*, Individual well-Being, Societal Well-Being.

Introduction

Following the recent global financial crisis, financial inclusion has increasingly received attention from academic and policymakers. As a development list tool, financial inclusion is seen as a way of improving people's livelihoods, reducing poverty, and supporting inclusive and sustainable development through having access to 'finance'. *The Global Financial Development Report 2014*, therefore, reports that most financial institutions and regulators in around fifty countries have been pushing for increased financial inclusion. The World Bank has also set a target of universal financial access by 2020. Thus, policymakers have increasingly developed strategies for promoting financial inclusion as a priority, especially in emerging and developing economies, where access to financial services tends to lag behind that of advanced economies.

In promoting financial inclusion, as part of SDGs, conventional finance has been partially successful in developing mechanisms such as development funds, NGO financing, microfinance, SMEs, and micro-insurance. Consequently, as Bauchet *et al.* (2011) states in the past three decades,

access to microcredit has expanded dramatically, as nearly 200 million micro-borrowers have been successful in their approach to formal financial services.

In terms of Islamic finance, there are several programmes found in some Muslim countries relating to *Shari'ah*-compliant microfinance and SME programmes to enhance financial inclusion and economic empowerment. These programmes, as non-banking financial institutors, are offered by either the federal government, the state government, non-governmental organisations or banking institutions. In Malaysia, one such Islamic financing instrument and institution, which has the potential to achieve financial inclusion, is Islamic pawnbroking, also known as *ar-rahn* (henceforth, *ar-rahn*).

There is a limited literature that analyses the role of non-banking financial institutions, in particular pawnshops and *ar-rahn,* in enhancing financial inclusion. Therefore, this study aims at exploring and examining the impact of *ar-rahn* as an Islamic financing instrument in the form of non-banking financial institution and arrangement in enhancing financial access of unbankable individuals whereby it examines the contribution of *ar-rahn* on financial inclusion and promoting economic well-being of the sampled individuals. The research question is this study is, hence, based on the hypothesis that the barriers to financial inclusion for the poor may result in the patronising of informal financing such *ar-rahn*, which then has a positive impact on the individual and on societal well-being. The study contributes to the existing but limited literature on *ar-rahn* and contribution by going beyond the existing studies through locating the impact of *ar-rahn* in financial inclusion and economic empowerment nexus.

This paper is structured as follows. Section 2 presents an overview of existing literature on financial development and economic growth nexus and also on the importance of financial inclusion. Section 3 sets out the research method for data collection and estimation procedure for data analysis. Section 4 encompasses extensive analysis using the structural equation modelling in examining the impact of this financing on improving the individual and societal well-being. Section 5 presents the results from the structural equation modelling by examining the direct and indirect effect of *ar-rahn* on economic well-being and how the usage of *ar-rahn* financing can give impact as well. Concluding remarks are briefly presented in the Section 6.

Financial Inclusion and Development: A Literature Review
Following the global financial crisis, financial inclusion has now become part of a global agenda. Aziz (2015), former governor of the Central Bank of Malaysia, in her keynote address at the World Bank's Asian Region Launch, stated that financial inclusion has become a more relevant tool for improving the livelihood of the poor and disadvantaged. More importantly, greater financial inclusion enables all citizens, regardless of socio-economic class, to participate in the economy and benefit from economic progress. The role of financial inclusion in contributing to this balance and to sustainable economic growth and development is also stated in the Central Bank of Malaysia Financial Sector Blueprint 2011-2020.

In responding to the increased emphasis on financial inclusion by policy circles, in recent years, burgeoning number of studies emerged to suggest that financial development leads to economic growth, which is, mainly, through mechanisms such as capital accumulation and is also acutely linked to investment efficiency (McKinnon, 1973; Shaw, 1973; Pagano, 1993; Levine, 2005; Klapper *et al.*, 2006; Demirguc-Kunt *et al.*, 2008). In line with this argument, among others, Ayyagari *et al*. (2008) found that financing obstacles were the most robust constraints to growth in developing countries. Recently, financial exclusion has started to be seen as important factor hindering economic development, which rationalises the drive towards increasing financial inclusion (Beck *et al*., 2008) beyond macro level financial and banking oriented development.

Despite the growing popularity of financial inclusion, the literature on the topic remains limited. Most of the researches have examined measures of financial inclusion, and most of these are related to public access to a formal bank account. For example, Demirguc-Kunt and Klapper (2012) used the Global Financial Inclusion (Global Findex) Database as an indicator to measure how adults in 148 economies manage their finances in terms of saving, borrowing, making payments and managing risk. The data shows that 50 percent of adults worldwide have bank accounts in formal institutions. Nevertheless, this varies across different regional groups and socio-economic strata. Based on a sample of more than 65,000 adults from 64 countries, Demirguc-Kunt *et al*. (2013) used the Global Findex and Gallup World Poll databases when comparing the use and demand for formal financial services between Muslims and non-Muslim adults. The results show that Muslims are significantly less likely to engage with or patronise formal financial institutions, which could be due to religious and cultural reasons alongside economic factors.

Previous studies in this line of enquiry also examined the relationship between financial inclusion and income inequality. Burgess and Pande (2005) found that opening rural bank branches in rural unbanked areas in India helped reduce local poverty. Similarly, Brune *et al.* (2011) found that owning a savings account in rural areas of Malawi helped provide valuable capital for agricultural use. In another case study, Allen *et al*. (2013) found that commercial banks were able to increase financial inclusion in Kenya through tapping underprivileged households. In addition, Cole *et al*. (2009) found that with higher levels of financial knowledge and skill, households could be inclusively financed, hence improving their wealth, education and well-being.

Although there is an increase in public access to formal financial institutions throughout the world, this is not necessarily an indication of the alleviation of poverty in a country. For example, opening bank accounts does not help alleviate poverty, as individuals may not be able to actively use them due to lack of savings and credits. Additionally, having a bank account is not enough to create financial inclusion as generating income should be the target of any such strategy (Asutay, 2014). In other words, economic empowerment is a necessary condition for financial inclusion to have positive impact.

There is, hence, a growing realization that greater outreach must be coupled with greater account usage in order to effectively eradicate poverty. Access to efficient financial system enables

the poor to actively contribute to development, and thus they will be protected against economic shocks (Swamy, 2014). In addition, improving the availability and quality of financing can help motivate sustainable growth and productivity, especially for potential or existing entrepreneurs (Iqbal and Mirakhor, 2012). Moreover, there has been a paradigm shift in economic development and poverty alleviation, suggesting that the micro-dynamics of society is essential for individual and social development, and changes in these can only be possible through individual empowerment, whereby the importance of human development and capacity-building is emphasized (Zaman and Asutay, 2009).

Limited work has emerged with regards to financial inclusion through the perspective of Islamic finance despite the rapid developments and increase in Islamic financing activity globally. Recently, Islamic finance as a means of increasing Muslim financial inclusion has become a popular topic, as *The Global Financial Development Report 2014* found that Islamic banking is positively related to financial inclusion. Islamic finance addresses financial inclusion from two directions: one is through risk-sharing contracts as an alternative to conventional debt-based financing, and the other is through wealth redistribution instruments (Mohieldin *et al.*, 2011). Provision of *shari'ah* compliant financing should be considered an additional way Islamic finance overcoming involuntary financial exclusion. Within Islamic finance sphere, various financial instruments, such as *shariah*-compliant microfinance, small and medium enterprises (SMEs) financing, micro-*takaful* (insurance), are designed to provide financial access to the poor with the objective of economic and social empowerment, thus increasing financial inclusion among the Muslim population using equity financing and risk-sharing contracts. In addition, redistributive instruments such as *zakah* (alms) and *zakah* funds, and *waqf* (pious trusts) based financing, *sadaqah* (charitable giving) and *qard al-hassan* (benevolent loan) in the form of Islamic social financing is expected to complement risk-sharing instruments so as to offer a comprehensive approach towards a reduction in poverty and the growth of the economy (Iqbal, 2014; Obaidullah, 2008).

As mentioned, to date, there has been limited empirical work which analyses the impact of Islamic financial instruments on the enhancement of individual and societal well-being. Therefore, this paper aims to analyse the potential of *ar-rahn* as the Islamic financing equivalent of pawnbroking to achieve such goals.

Financial Inclusion through *Ar-Rahn*
In identifying the ultimate objective of any action, including, economic and financial action, in Islam, Chapra (2008) states that it lies in promoting people's well-being as conceptualised my *maqasid al-Shari'ah* or the higher objectives of *Shari'ah* which is defined as 'human well-being'. One Islamic finance instrument that has the potential for ensuring Islamic ideals in contributing to social and economic justice, the equitable distribution of income and wealth, and removing poverty is *ar-rahn* or Islamic pawnbroking. The key objective of *ar-rahn,* as an historical Islamic financing instrument, is to help those who face financial difficulties in order to protect them from becoming involved with interest-based loans as these are prohibited in Islam (Razak, 2011).

Ar-rahn is fundamentally a contract involving pledging an item as a security which becomes binding once the possession of the pledge has taken place (Bhatt and Sinnakkannu, 2008). Since the importance of helping the poor and the needy is emphasized and strongly encouraged in the Islamic faith, *ar-rahn* plays an important role in providing financial support for those people without involving the elements of interest or *riba* and uncertainty or *gharar* which are prohibited in Islam. In addition, *ar-rahn* also acts as an instrument to encourage saving and investment involving the buying and selling of gold, where customers benefit from the difference in gold prices (Hisham *et al*., 2013).

The existing studies in the literature relating to *ar-rahn* in the case of Malaysia have primarily focused on the history and background of the establishment of *ar-rahn* and conventional pawnshops in Malaysia (Ismail and Ahmad, 1997), identifying the users of *ar-rahn* (Abd. Hamid and Abdul Aziz, 2003; Maamor and Ismail, 2007), determining the factors affecting customer acceptance and the selection of particular pawnbrokers (Amin *et al*., 2007; Bhatt and Sinnakkannu, 2008; Razak, 2011; Mansor *et al*., 2014), customer satisfaction with *ar-rahn* schemes (Ibrahim, 2010; W. Daud, 2011; Othman *et al*., 2012), as well as the analysis of the *modus operandi* of Islamic pawnbroker systems, including recommendations for improving their service quality so as to ensure that the systems are consistent with *shari'ah* rules and principles. With regards to regulation, Sanusi *et al*. (2004) examined *ar-rahn's* operating procedures manual under the Bank Rakyat and Pawnbrokers Act of 1972 in relation to defending the rights of pawnshop customers in Malaysia. Furthermore, a study by Maamor and Md. Supian (2005) examined the issues and challenges faced by *ar-rahn* scheme operators due to the amendments to the Pawnbrokers Act of 1972. A study by Taher *et al*. (2010) also examined the issue of *shari'ah* in *ar-rahn* schemes in terms of Islamic microcredit instruments.

Over the last two decades, the establishment and growth of *ar-rahn* facilities has resulted in displacing the conventional pawnshops. A study by Amin *et al.* (2007) identified five factors, which determine the choice and adoption of *ar-rahn* among customers. They found that the *shari'ah* view, the pledge asset, and customer service is significantly related to patronising *ar-rahn*, whereas the pricing and the locality of *ar-rahn* institutions is insignificantly related to *ar-rahn* adoption. Apart from these factors, in an empirical study, Razak (2011) found that *ar-rahn* financing is preferable to society due to the security of the collateral being guaranteed, the transparency in the pawning procedure, and the image of the *ar-rahn* institution as compared to the conventional pawnshop. In her empirical analysis, Razak (2011) demonstrated that 70 percent of the customers of *ar-rahn* agreed with the positive role of financing in improving their socio-economic conditions, whilst more than 80 percent of the conventional pawnshop respondents disagreed with the statement. Evidently, those who disagreed with the statement argued that pawning would only help them to be financially better-off on a temporary basis or in emergency circumstances, but not for the long-term improvement. Using structural equation modeling analysis, Razak *et al*. (2017) revealed that there is a positive relationship between financial inclusion and the adoption of *ar-rahn's* financing, hence positively affect the well-being of individual and societal well-being.

Figure 1 presents the conceptual research framework for this research. In this study, customer adoption of *ar-rahn* is used as a mediating variable and also viewed as the consequences of being financially included, which will give impact to individual and societal well-being. Thus, the financial inclusion variable was an exogenous variable, whilst the customer adoption of *ar-rahn* was both an exogenous and endogenous variable in the structural model. On the other hand, individual and societal well-being were used as endogenous variables in the structural model.
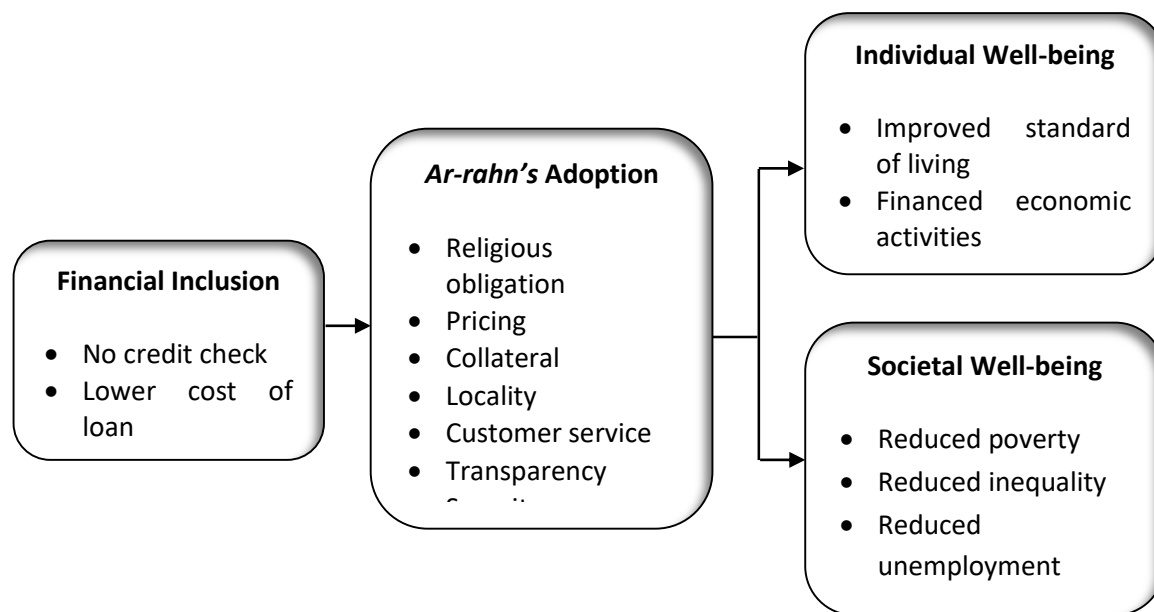
Figure 1: Research Framework

The hypotheses developed in line with the research aim are as follows:

H_1:   Financial inclusion affects individual well-being.
H_2:   Financial inclusion affects societal well-being.
H_3:   Financial inclusion affects *ar-rahn's* adoption.
H_4:   *Ar-rahn's* adoption affects individual well-being.
H_5:   *Ar-rahn's* adoption affects societal well-being.
H_6:   Financial inclusion indirectly affects individual well-being through *ar-rahn's* adoption.
H_7:   Financial inclusion indirectly affects societal well-being through *ar-rahn's* adoption.
H_8:   The effect of *ar-rahn's* adoption on individual well-being is stronger when the loan is used for production purpose.
H_9:   The effect of *ar-rahn's* adoption on societal well-being is stronger when the loan is used for production purpose.

This study, hence, aims to contribute to the scarce literature on *ar-rahn* by taking financial inclusion as a frame through which economic well-being of individuals is examined.

Methodology

To fulfil the research objectives, this research adopts a qualitative research methodology since it measures the respondents' perceptions as part of their understanding and perception of the role of *ar-rahn* in enhancing financial inclusion and its impact on the well-being of individuals and society. In terms of data collection and data analysis method, this research involves quantitative data collection based on purposive sampling through questionnaire surveys distributed to the customers of *ar-rahn* institutions throughout Malaysia. These questionnaires were distributed to 294 people and further analysis was conducted on these. These questionnaires were distributed at Northern, Central, Southern, East Coast and East Malaysia.

The survey questionnaire consists of four parts. The first part of the questionnaire dealt with the demographic information of the respondents. The data obtained was further subjected to data cleansing and tests of normality using skewness and kurtosis. The remaining parts of the questionnaire dealt with the factors influencing financial inclusion, and the role of the *ar-rahn* on individual and societal well-being using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The instrument developed for financial inclusion was reversely defined from involuntary exclusion barriers World Bank (2008) and Kempson *et al.* (2000, 2004), such as 'no credit check' (access exclusion) and 'lower cost of loan' (price exclusion). On the other hand, the instrument for the determinants of *ar-rahn* adoption was adopted from Razak *et al*. (2017), with the addition of two more variables from Razak (2011) such as security and transparency. In addition, the instrument for the impact of *ar-rahn* financing on the individual and on societal well-being was also adapted from Razak (2011). The individual well-being variable was measured by two items: 'improving my standard of living' and 'helped me to finance economic activity', and societal wellbeing was measured by 'reduced poverty', 'reduced income inequality', and 'reduced unemployment'. The scales were validated in terms of construct validity and dimensionality using exploratory factor analysis (EFA) and reliability using Cronbach's alpha coefficient. Next the scales were confirmed using confirmatory factor analysis (CFA), in particular by assessing model fit, reliability of the constructs, and convergent and discriminant validity of the constructs.

In order to test the nine hypotheses framework, the structural equation modeling (SEM) with a maximum likelihood estimation is employed using the AMOS version 22.0. SEM technique is a second generation technique that is widely applied in contemporary studies to overcome the limitations associated with the first-generation techniques. In particular, SEM was performed to test a set of relationships between the independent variables and dependent variables (Tabachnick & Fidell, 2007) as have been proposed in the research hypotheses. In addition, SEM not only provides an assessment of the model fit in terms of the unidimensionality, reliability and validity of each construct tested, but also allows overall model, which include the direct and indirect relationship, as well as the individual parameter estimate to be tested simultaneously (Garson, 2012). In addition, SEM works with minimum measurement error as it is reduced using confirmatory factor analysis (CFA) and provides a better model visualization (Garson, 2012). The following sections present data analysis and findings with the objective of testing the hypothesis formed above.

Empirical Results and Discussion

Exploratory factor analysis (EFA)
Using principal component analysis (PCA) extraction technique with Varimax rotation, the Exploratory Factor Analysis (EFA) was employed for each construct to confirm on the dimensions (Hair *et al*., 2010). In other words, it corroborates the dimensions of financial inclusion, *ar-rahn* adoption, and individual and societal well-being so that the underlying items for the extracted component structure of the variables can be verified. According to Hair *et al.* (2010), the accepted threshold valued of standardized factor loading is above 0.50, while Cronbach's Alpha is recommended to be greater than 0.70 (Nunnally and Bernstein, 1994).

As can be seen from the estimates at Table 1, The Kaiser-Meyer-Olkin measure of the sampling adequacy index for the factor was 0.83 and Cronbach's Alpha was above 0.70, which indicates the appropriateness of the data for the factor analysis. Table 6 also shows that the factor loading through the principle components of the items ranged from 0.52 to 0.91, which is above the threshold of 0.50 as recommended by Hair *et al*. (2010).

Table 1: Factor loading and cronbach's alpha

No.		Description	Loadings	Construct	Cronbach's Alpha
1	FINEXC1	No credit check	0.84	Financial inclusion	0.70
2	FINEXC5	Lower cost of loan	0.82		
3	RO1	Lending based on Islamic principle	0.73	Religious obligation	0.70
4	RO2	Interest free loan	0.52		
5	PRICE3	Lower safekeeping fee	0.66	Pricing	0.79
6	PRICE4	High loan margin	0.81		
7	PLEDGE2	Accepting gold bar	0.80	Collateral	0.91
8	PLEDGE3	Accepting gold dinar, gold coin	0.80		
9	LOCALITY3	Location near residential area	0.75	Locality	0.88
10	LOCALITY4	Location near workplace	0.72		
11	SERVICES3	Simple documentation	0.69	Services	0.91
12	SERVICES4	Less procedures	0.62		
13	TRANS1	Transparent in pawning procedure	0.64	Transparency	0.83
14	TRANS2	Information in pawning ticket is detailed	0.68		
15	SECURITY2	Security of collateral is guaranteed	0.78	Security	0.93
16	SECURITY3	Notice will be given as reminder	0.77		
17	IW13	Improving my standard of living	0.83	Individual well-being	0.88
18	IW14	Helped me to finance economic activity	0.82		
19	SW5	Reduced poverty	0.88	Societal well-being	0.94
20	SW6	Reduced income inequality	0.92		
21	SW7	Reduced unemployment	0.91		

Although they were statistically significant under EFA, the items may be subject to modifications. In ensuring the data is free from outliers and non-normality, a confirmatory factor analysis (CFA) was conducted on the ten latent variables using AMOS 22.0, adopting a maximum likelihood estimation (Adewale, 2014). The essence of this is to assess how closely the items are loaded in the eight latent constructs. Model fit was assessed using the comparative fit index (CFI), the root mean square error of approximation (RMSEA), and the chi-square/ degrees of freedom ratio (Kline, 1998). CFI compares the hypothesized model with the independent model in which nothing is related (Byrne, 2001). A CFI of 0.95 or above indicates a good fit. The RMSEA estimates how well the model fits with the estimated population covariance matrix (Byrne, 2001). RMSEA should be well

under 0.10 and preferably under 0.08 (Tabachnick and Fidell, 2007). A good fitting model is assumed to be when the Chi-square is non-significant. However, the Chi-square is extremely sensitive to sample size. To minimise this problem, the chi-square is divided by the degrees of freedom with a Chi-square/*df* ratio of 3 or less indicating acceptable fit (Kline, 1998).

The estimates in Table 2 demonstrate that the model fits the data well (CFI = 0.963; RMSEA = 0.061; χ^2 = 274.687, *df* = 144, χ^2/*df* = 1.908).

Table 2: Fit indices

	Values	Recommended values
Chi Square (χ^2)	274.687	
Df	144	
GFI	0.907	≥ 0.90
AGFI	0.850	≥ 0.80
NNFI (TLI)	0.947	≥ 0.90
CFI	0.963	≥ 0.90
RMSEA	0.061	≤ 0.08
NORMEDCHISQ (χ^2/df)	1.908	≤ 3.00
p-value	0.000	

Table 3 summarises the results of internal reliability and convergent validity for the constructs. Convergent validity is the degree to which multiple attempts to measure the same concept are in agreement, which is assessed based on factor loading, composite reliability, and the average variance extracted (Fornell and Larcker, 1981).

As can be seen in Table 3, the factor loading for all the items in this study exceeded the recommended level of 0.6 (Chin *et al.*, 1997). Composite reliability (CR), which depicts the degree to which the construct indicators indicate the latent construct, ranged from 0.7 to 0.94, exceeding the recommended level of 0.7, which was suggested by Gefen *et al.* (2000). The values for average variance extracted (AVE), which reflects the overall amount of variance in the indicators accounted for by the latent construct, were in the range of 0.54 and 0.87, exceeding the recommended level of 0.5 as suggested by Hair *et al.* (2010). Therefore, the scales exhibit acceptable convergent validity.

Table 3: Results of CFA for the first-order factor model

Construct	Item	Loading	Convergent validity	
			AVE	CR
Financial inclusion	FINEXC1	0.65	0.54	0.70
	FINEXC5	0.81		
Religious obligation	RO1	0.88	0.57	0.72
	RO2	0.61		
Pricing	PRICE3	0.68	0.68	0.81
	PRICE4	0.95		
Collateral	PLEDGE2	0.93	0.84	0.91
	PLEDGE3	0.90		
Locality	LOCALITY3	0.92	0.79	0.88
	LOCALITY4	0.86		
Services	SERVICES3	0.94	0.83	0.91
	SERVICES4	0.88		
Transparency	TRANS1	0.95	0.73	0.84
	TRANS2	0.75		
Security	SECURITY2	0.95	0.87	0.93
	SECURITY3	0.91		
Individual well-being	IW13	0.92	0.79	0.88
	IW14	0.86		
Societal well-being	SW5	0.87	0.85	0.94
	SW6	0.96		
	SW7	0.93		

In the next step, the discriminant validity, which is the extent to which a measure is not a reflection of some other variable, was assessed. Discriminant validity can be established by noting low correlations between all the measures of interest and the measure of other constructs. Additionally, according to Fornell and Larcker (1981), when the square root of the average variance extracted is greater than its correlations with all the other constructs, discriminant validity is established. Based on Table 4, the discriminant validity for the first-order factor model is established. As a conclusion of the above discussion, the measurement model fitted the data well.

Table 4: Discriminant validity of constructs (First-order model)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Individual Well-being	**0.891**									
Religious	0.231	**0.895**								
Pricing	0.292	0.312	**0.939**							
Collateral	0.359	0.290	0.360	**0.914**						
Locality	0.311	0.286	0.379	0.761	**0.888**					
Services	0.408	0.333	0.320	0.609	0.618	**0.912**				
Transparency	0.319	0.275	0.318	0.468	0.476	0.572	**0.865**			
Security	0.352	0.268	0.412	0.515	0.558	0.520	0.320	**0.933**		
Financial Inclusion	0.201	0.610	0.456	0.262	0.326	0.290	0.202	0.339	**0.907**	
Societal Wellbeing	0.459	0.190	0.265	0.323	0.340	0.299	0.302	0.217	0.228	**0.917**

The construct of *ar-rahn's* adoption is considered a second-order construct. In the questionnaire, the sub construct of *ar-rahn's* adoption was measured by the dimension of locality (2 items), security (2 items), customer service (2 items), pricing (2 items), pledge asset (2 items), *shariah* (2 items), and transparency (2 items). Hence, results of CFA for the second-order factor model results are provided in Table 5.

Table 5: Result of CFA for the second-order factor model

| Construct	Item	Loading	Convergent validity	
			AVE	CR
Ar-rahn's Adoption	Religious	0.78	0.56	0.90
	Pricing	0.75		
	Collateral	0.77		
	Locality	0.81		
	Services	0.76		
	Transparency	0.67		
	Security	0.66		
Financial Inclusion	FINEXC1	0.67	0.54	0.70
	FINEXC5	0.79		
Individual Well-being	IW13	0.88	0.80	0.90
	IW14	0.91		
Society Well-being	SW5	0.87	0.84	0.94
	SW6	0.96		
	SW7	0.93		

Based on Table 5, the average variance extracted is above 0.50 and composite reliability is above 0.70. The results in Table 6 also show that the average variance extracted is greater than its correlations with all the other constructs. In summary, the measure had adequate reliability, convergent validity and discriminant validity.

Table 6: Discriminant validity of constructs

	(1)	(2)	(3)	(4)
Societal Well-being	**0.917**			
Financial Inclusion	0.226	**0.913**		
Individual Well-being	0.459	0.190	**0.891**	
Adoption	0.393	0.411	0.474	**0.748**

Structural equation model (SEM)
In this study, the relationship between financial exclusion and individual and societal well-being is analysed using structural equation modelling (SEM) following Bryne (2001). SEM is a statistical model that seeks to explain the relationships among variables. These equations depict all the relationships among unobservable or latent variables (Hair *et al.*, 2006). For this study, the SEM model that is estimated is shown in Figure 2. It consists of four latent variables: (i) financial inclusion, (ii) *ar-rahn's* adoption, (iii) individual well-being, and (iv) societal well-being. This study analyses the effect of financial inclusion on the well-being of the individual and society. In addition, *ar-rahn's* adoption as a latent construct is used as a mediating variable, in which case it ia determined by financial inclusion and is also viewed as the cause of positive changes in the well-being of society. Thus, it is both exogenous and endogenous in the structural model.
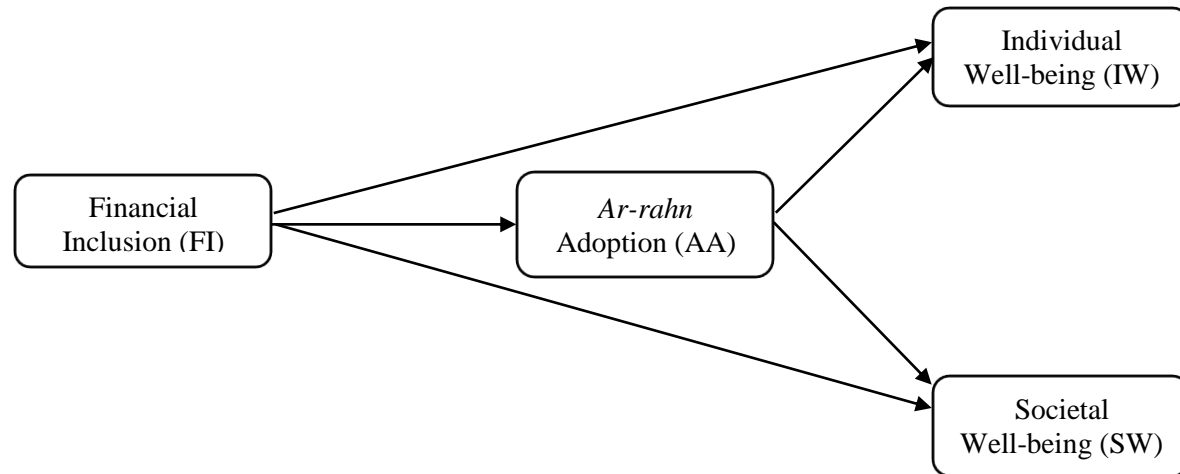
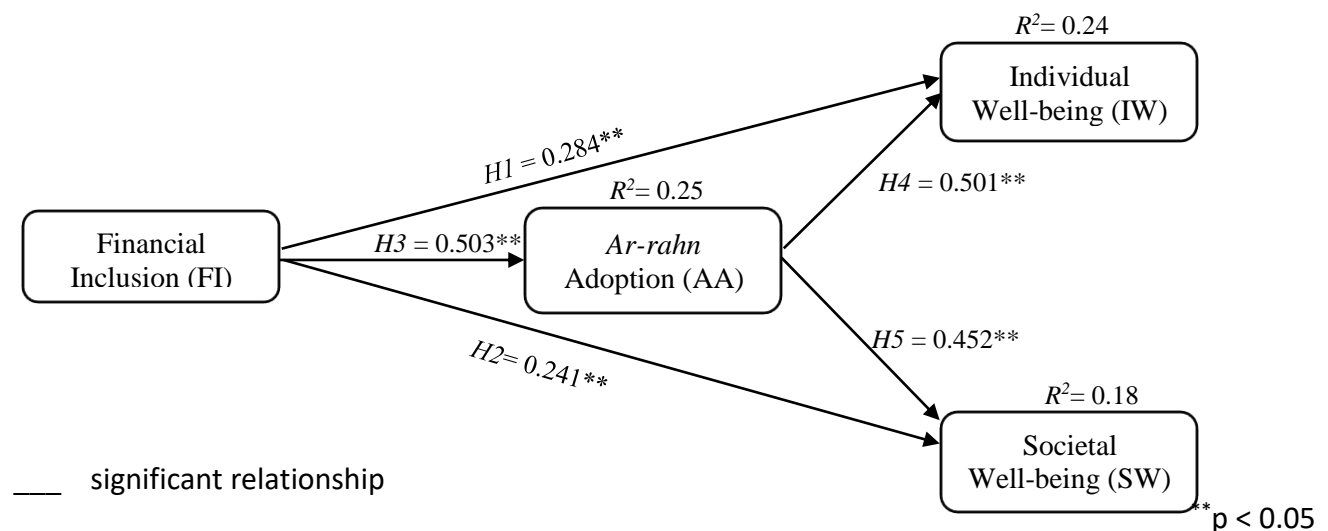**Figure 2: Proposed structural model**

Hypotheses testing

Analysis of direct effects
Table 7 and Figure 3 illustrate the summary results of the proposed structural model. The test of the overall model fit yielded a Chi-square of 443.258 with 177 degrees of freedom and a *p*-value equal to 0.000. All the fit indices were above the recommended values, except for GFI which is lower than 0.90 but still acceptable (AGFI = 0.863; CFI = 0.925; TLI = 0.912; RMSEA = 0.078; χ^2/df = 2.504). The R^2 value for the relationship between financial inclusion and *ar-rahn's* adoption is 0.253, which indicates that 25 percent of the variance in *ar-rahn's* adoption can be explained by financial inclusion. On the other hand, 24 percent and 18 percent of the variances in individual well-being and society well-being can be explained by *ar-rahn's* adoption, respectively.

Two of the hypotheses, H_1 and H_2, expected that financial inclusion has a direct effect on individual and societal well-being. The influence of financial inclusion on the individual (β = 0.284, p < 0.05) and societal well-being is significant (β = 0.241, p < 0.05). The third hypothesis, H_3, proposed that financial inclusion has a positive influence on the customer's adoption of *ar-rahn*. Based on Table 7, the standardised parameter estimates between financial inclusion and customer adoption of *ar-rahn* is positive and statistically significant (β = 0.503, p < 0.01), indicating that hypothesis 3 is supported. The fourth hypothesis, H_4, expected that *ar-rahn's* adoption would positively influence individual well-being. The standardised parameter estimates between *ar-rahn's* adoption and individual well-being is positive and statistically significant (β = 0.501, p < 0.01), indicating that H_4 is supported. The fifth hypothesis, H_5, expected that *ar-rahn's* adoption would positively influence societal well-being (β = 0.452, p < 0.01) is also supported.

Table 7: Summary of the Structural Model

Path	Expected direction	Standardized estimate	t-value	p-value	Result
H1: FI→IW	+	0.284	3.037	0.002	Supported
H2: FI→SW	+	0.241	2.799	0.016	Supported
H3: FI→AA	+	0.503	5.042	0.001	Supported
H4:AA →IW	+	0.501	5.124	0.001	Supported
H5:AA→ SW	+	0.452	4.888	0.001	Supported

Figure 3: Test results for the proposed structural model

Analysis of the mediating effects

In addition to the direct effects, the mediating effect of *ar-rahn* adoption in improving both individual and societal well-beings was examined using bootstrapping method. In determining the occurrence of the mediation, the estimated standardized indirect effect must not include zero (Mohd Sobhi, 2013; Preacher and Hayes, 2008). Based on Table 8, the results showed the insignificant direct relationship between financial inclusion (FI) and individual well-being (IW) ($\beta_{FI \to IW}$ = -0.010, p > 0.05), and societal well-being (SW) ($\beta_{FI \to SW}$ = -0.074, p > 0.05). Hence, the results indicate that full mediation occurs in a relationship between financial inclusion and individual and societal well-beings through *ar-rahn* adoption which support H_6 and H_7. These findings suggest that *ar-rahn* adoption fully mediate the effects of financial inclusion and both individual and societal well-beings, providing support for the basic formulation of the model.

Table 8: Summary of the hypotheses testing related to mediating effects

Path	Standardized estimate		Indirect effect	Conclusion
	Direct effect			
	on mediator	on IW and SW		
$H6$: FI → AA → IW	0.503	-0.010^{ns}	0.252**	Full mediation. H6 is supported.
$H7$: FI → AA → SW	0.503	-0.074^{ns}	0.227**	Full mediation. H7 is supported.

Note:'**' $p < 0.05$; 'ns' not significant

Analysis of the moderating effects

The moderating effect of usage of loan in the relationship between *ar-rahn* adoption and both individual and societal well-beings is examined using a multi-group SEM analysis. Using the dichotomous variable, respondents were divided into those using loan for consumption (0) and production purposes (1). To test the moderation hypotheses, the critical ratios for the differences in regression weights between *ar-rahn* adoption and usage of loan. From these critical ratios, *p*-values was calculated to determine the significance of the difference. The results in Table 9 indicated that *ar-rahn* adoption significantly and positively affected individual well-being for both consumption (β = 0.430, $p < 0.10$) and production (β = 1.038, $p < 0.001$) group respondents. On the other hand, *ar-rahn* adoption was insignificantly affected societal well-being for both groups, which also shows that the effect of *ar-rahn* adoption on individual well-being is stronger for those who used the loan for production purpose. Therefore, H_8 is supported and H_9 is not supported.

Table 9: Structural invariance tests for hypothesized paths

Paths	Consumption		Production		z-score	Results
	Std Est (t-value)	p-value	Std Est (t-value)	p-value		
$H8$: AA → IW	0.430* (1.839)	0.066	1.038*** (5.243)	0.000	1.982**	• Significantly different across group. • Significantly stronger in production purpose. *H8* is supported.
$H9$: AA→ SW	0.733	0.010	0.806	0.000	0.221^{ns}	• Not significant.

Note: *** $p < 0.001$; ** $p < 0.05$; * $p < 0.10$; ns not significant

Discussion and Conclusion

This study attempted to examine the significant role of *ar-rahn* financing as a tool for financial inclusion for the well-being of society. As hypothesized in this study, financial inclusion is predicted to improve the well-being of the individual and society. The result is as expected which is consistent with the results of Burgess and Pande (2005) and Brune *et al*. (2011).The positive and statistical

significance between financial inclusion and customer adoption of *ar-rahn* indicates that people who are excluded from mainstream financial institutions, or the so-called 'unbankable', will obtain loans from non-banking financial institutions such as *ar-rahn* which is consistent with Abdul Razak *et al.* (2017) and Mohieldin *et al*. (2011). Moreover, this result indicates that there is a significant potential role in Islamic microfinance for such as *ar-rahn* to support financial inclusion.

Furthermore, the statistical significance of individual and societal well-beings in this study is an indication of the fact that a relationship exists between financial inclusion and individual and societal well-beings through customer's adoption of *ar-rahn*. These findings are in line with Abdul Razak (2011), which indicates the positive impact of *ar-rahn* on individual and societal well-being. This study argues that the well-being of individual will be improved if *ar-rahn* facility is used to finance production purpose rather than consumption purpose.

In concluding, financial inclusion has become an important consideration due to the recent global financial crisis but also importantly due to SDGs. It has been seen by policy makers as a way to achieve inclusive growth as part of SDGs by providing financial service access to all strata of society. Therefore, policy makers and *ar-rahn* institutions should play a role in improving the outreach of *ar-rahn* services. Nevertheless, the strategy to expand financial inclusion throughout the world is not necessarily an indication of the improvement of societal well-being since generating income and individual empowerment should be the target of any such strategy.

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