**Modeling Demand for Islamic Microfinance using Partial Least Squares Approach: Evidence from Malaysia**

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**Abstract**

The ability to access capital is highly critical in ensuring the financial sustainability of microfinance clients. In lieu of this, it becomes important to identify factors that are significant in determining the demand factors for microfinance among the clients in order to ensure that microfinance can be effectively channelled to clients. This study aims to identify significant factors determining the demand for Islamic microfinance among women micro-entrepreneurs in Malaysia. A total of 402 samples are being considered with data collected using survey questionnaire covering various centers of Amanah Ikhtiar Malaysia in Selangor. A novel aspect of this study lies on the investigation method adopted - the Partial Least Squares approach, which is being applied on potential demand factors, namely the 4As factors (Affordability, Accessibility, Adequacy and Awareness). Findings of this study provide important inputs on the critical factors to be considered in the demand for microfinance among the women micro-entrepreneurs. Microfinance providers should consider these demand factors in further refining their products and services to enhance the participation of women in microenterprises in Malaysia.

*Keywords*: Islamic microfinance, PLS, Adequacy, Affordability, Awareness, Accessibility, Malaysia

**1. Introduction**

Since few decades ago, Malaysia has undertaken a continuous effort to reduce level of poverty by way of ensuring economic wellbeing, strengthening entrepreneurship awareness as well as increasing quality of Malaysian education. Through micro-finance facilities, financial assistance was offered to the poor to boost self-employment (through businesses), family income, and at the same promoted high standards of living. In this context, micro finance plays a vital role of poverty alleviation especially in developing countries. In Malaysia, through micro financing, numbers of micro enterprises have significantly increased in various sectors including food, craft, textiles, agriculture, and other sectors. It has become the best alternative to generate income for the poor as it only requires small capital to start, limited workers and also simple management system. In addition, the global trend shows there are increasing numbers of women being involved in microenterprises given various reasons pushing them to be self-employed due to social and financial needs. This phenomenon is similar with the Malaysian context where Malaysian woman in this modern era have become independence and able to go beyond expectation where their income level may be at par with man entrepreneurs.

Accordingly, to encourage the society especially low income group, Malaysian government has initiated various means to support the financial needs of micro-entrepreneurs. One of the initiatives that have been offered since 1980s is Amanah Ikhtiar Malaysia (AIM) which is introduced to assist the poor to improve the quality of their life by getting them involved in the business. AIM is established inspired by the practice of Grameen Bank in Bangladesh where the main objective is to provide financing assistance to the poor (Salwa et al., 2013). As was presented by the Prime Minister of Malaysia in the 2018 Malaysian Budget, the budget of financing by AIM would be increased a total of RM200 thousand amounted RM2.7 billion for 400 microentrepreneurs. This have clearly indicated that the microenterprises have played an important contribution to the Malaysian economy and received strong-support from the government.

As a pioneer and the most successful model of micro-financing providers in Malaysia, it is believed that there must be various factors that have contributed to the demand of AIM’s financing schemes. In this context, based on findings from past researches, this research examines four possible factors known as 4As factors which are affordability, accessibility, adequacy and awareness that may have significant effect attracting current woman micro-entrepreneurs to involve in the AIM micro financing. Hence, the remaining of this paper is organized as follow: next section introduces background of AIM, reviews past literatures, followed by methodology adopted for data collection. Data analysis and empirical finding is presented after the methodology and the research paper ends with findings together with conclusion.

**2. A Review of Amanah Ikhtiar Malaysia**

AIM was established in 1987 to enhance the economic status of the poor in Malaysia through micro-credit scheme. As of June 2017, AIM has extended its outreach to 23 states in Malaysia with a total of 136 branches and is currently serving a total of 45,382 clients hailing from Selangor and Terengganu which are known as ‘sahabat’ (AIM, 2017).

 AIM employs the group based lending mechanism as pioneered by Grameen Bank in offering loans that are collateral free based on qard-hasan concept inclusive of 10% service charge. The gross monthly household income measured against the poverty line income (PLI) which is estimated based on the price of basic necessities has been referred to as the indicator in selecting eligible clients. Households below the PLI are considered as absolute poor, whereas households with income lower than half of the PLI are categorised as hardcore poor, where both categories are worthy of credit assistance (Al-Mamun et al., 2011).

 Applicants are required to undergo a one week training programme to be well acquainted with the rules and procedures related to financing and repayment before being accepted as a Sahabat. Upon passing the exam, the groups are then assigned into centers consisting of two to twelve groups per center (AIM 2017). The responsible officer would conduct performance review as well as other social services during their weekly meeting as control measures to evaluate Sahabats’ performance. Repayment system is of a varying small amount on a weekly basis during each meeting depending on the subscribed financial schemes by Sahabats.

 As mentioned earlier, AIM adopts a group lending mechanism that requires Sahabats to be in a group of five, vouching for one another throughout the disbursement process despite receiving financing on an individual basis. In the case of default within the group members, the pooled funds would be utilised to assist the members to fulfil their weekly repayment. Mason et al. (2015) advocate the feeling of peer pressure and accountability among the Sahabats arise as a result of the employment of the collective responsibility mechanism.

 To realise their objectives in enhancing economic condition of the target group, AIM provide benevolent loans to fund any viable economic activities with several options of microcredit schemes for Sahabats to choose from. The basic financing scheme is the i-Mesra scheme (up to RM 10,000) that aims to finance economic projects expected to generate income to the clients. The i-Srikandi loan is eligible for individuals with sustainable and successful projects up to RM 20,000. The i-wibawa loan on the other hand are specifically designed for individuals taking i-Mesra or i-Srikandi scheme; providing soft loans to those who are in need of additional capital for seasonal opportunities. Other non-economic financing schemes include the i-Bistari scheme (education loan), i-Sejahtera scheme (housing/multipurpose loan), i-penyayang scheme (recovery loan for those with repayment problems) and the i-emas loan for individuals aged 75 years old and above (Mason et al., 2015).

 Apart from providing for financing, AIM also stresses on the importance of equipping their clients with appropriate entrepreneurship skill and knowledge to ensure sahabats are able to manoeuvre their business well. Some of the programs offered include business development, human capital development and training. Additionally, Charity and Welfare Fund for Sahabat (Tabung Kebajikan dan Kesejahteraan Sahabat) was set up in 2006 to help reduce burden and distress among them with the provision of fund for khairat kematian, hospitalisation costs, chronic illnesses, destruction in natural disasters and others. Mason et al., (2015) attributed the high repayment rate of 99.6% to the group based lending mechanism and its efficient credit disbursement system.

**3. Factors Affecting Demand for Islamic Microfinance**

Eradicating poverty is one of the biggest global concerns and an essential requirement for continuous development. Several efforts must be undertaken in a number of aspects to realise this goal such as raising education levels, providing extensive medical care, enhancing socio economic standard among people thus improving their lifestyle and offering loans to small and micro sized business entities. Capital thus far, becomes an indispensable factor to facilitate economic growth and the microfinance sector; as suggested extensively in literature, plays a pivotal role to overcome the adverse economic situation. Numerous researchers have propounded microfinance as an effective tool to overcome poverty namely Khandker (2003), Gertler et al. (2003), and Park and Ren (2001).

 Microfinance institutions have undergone many reforms for example in terms of nature of the loans which has changed from subsidies to commercial financing, an increase in the number of clients who obtained microcredit from several thousand in the 1970s to about 211.1 million total borrowers worldwide as of December 31, 2013—the largest number ever reported. The loans outstanding among women clients recorded an increase of 6.8 million from 150.9 million in 2012 to 157.7 million in 2013. Furthermore, there was a decline in the number of outstanding loans among poor for three consecutive years from 115.7 million in 2012 to 114.3 million in 2013. The total number of poorest women with loans outstanding also declined from 96.4 million in 2012 to 94.4 million in 2013 (The State of the Microcredit Summit Campaign Report, 2015).

 It is noteworthy that over two decades, the statistics have shown that the number of people obtaining microcredit has increased substantially indicating its great demand among people. Researchers have illustrated the demands for microfinance and the strategy to improve its outreach to the Bottom of Pyramid (BOP) using the model of the Four A’s which was initially introduced by C.K Prahalad, a prominent researcher within the international marketing field (Kamande and Jarhult, 2013). The Four A’s are Accessibility, Awareness, Affordability, and Availability (Prahalad, 2010). In some studies, the Accessibility concept is replaced with Acceptability by researchers (Anderson and Billou, 2007). In comparison to the available literature, our research study has brought up to light a different dimension to the currently available demands factor of microfinance literature namely Adequacy instead of the Availability factor.

 According to Selos and Mair (2007), the 4As model is receiving rather lackluster recognition due to inadequate researches to validate its relevance hence resulting in the lack of literature discussing its employment to cater for the BOP segment. London & Hart (2011) reiterate despite researchers’ efforts to highlight the importance of the 4As model to ensure success in the BOP segment, a proper theoretical framework on how to handle the model has yet to be established.

 The first concept of the 4As model is Accessibility which is achieved, according to Prahalad (2012) when consumers in remote and sub urban areas are able to gain access to products and services offered by the producers to the specific target group. To illustrate, areas without good infrastructures such as roads would be inaccessible for trucks delivering products and services. Anderson and Billou (2007) view that major obstruction facing emerging markets are caused by poor infrastructure, thus hampering distribution channels. They also added that resources from capital markets, product markets as well as labor markets are seldom available in the emerging markets. This situation gives rise to some suggestions for the producers to initiate partnerships with local organisations to gain better accessibility within the BOP markets. Researchers in the field approve of the idea of establishing a close collaboration with the local institutions, non-governmental organisations as well as local entrepreneurs because they have better networking system in terms of contacts and local knowledge of the BOP market (Shah, 2012; Soete, 2010; Seelos & Mair, 2007).

 Essentially, awareness measures to what extent customers are aware of products or service. Chikweche and Fletcher (2012) asserted that inculcating awareness in the BOP segment pose a real challenge for organisations because their target group normally are living in such low economic status where majority of them neither have access to mass media such as radio, television, internet nor read the newspapers. Awareness building of the products and services offered is important to both the BOP consumers and producers to respectively help consumers utilise the information wisely in order to attain optimal impacts from the services and to assist the producers in understanding the market needs better. More importantly, Pralahad (2012) opines the awareness creation within BOP segment is based on the organization and the specific target group as there is no specific solution to be adapted to all organisations because of their varying objectives.

 Affordability on the other hand is one of the most challenging issue facing the BOP segment because they have low income and therefore the products and services offered need to match their cash flows because they receive their income on a daily basis. Pricing is identified as one of the most challenging factors in BOP segment (Anderson & Billou (2007). Chikweche & Fletcher, 2012 claimed that researchers attempt to implement developed market-pricing formulae in the BOP segment but with minimal success.

 Availability is simply understood as the level to which customers are able to readily acquire and utilise a service or product. It is observable that the BOP consumers would only purchase products when they have enough disposable income and the product is readily available in the market. According to Prahalad (2011), an uninterrupted supply of products and services is crucial to gain trust and a loyal customer at the BOP level.

**4. Methodology**

**4.1 Conceptual Framework**

Various factors have been taken into consideration as potential variables in building a conceptual framework for the research model. As shown in Figure 1, the dependent variable for this conceptual framework is the demand for AIM microfinancing. Four independent variables were identified as factors impacting the demand for microfinancing namely accessibility, awareness, adequacy and affordability. The four variables are described as facilities provided by AIM in terms of services and process, awareness of clients on products and mechanisms, adequacy in aspects of the micro financing and clients’ affordability towards the microfinance scheme offered.

**Figure 1.** Research Framework

Accessibility

Awareness

Demand for microfinancing

Adequacy

Affordability

***4.2 Measurements***

For the demographic question, it was computed using a nominal scale as done by Haque and Raihan (2004) and Amin et al. (2006). This nominal was used to collect a range of value for values in obtaining age of the correspondents and much more. For the answers of questions, it was based on a five-point Likert type scale, ranking as 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), 5 (strongly agree). Using a Likert type scale, the respondents choose a point on the scale reflecting his or her position towards the statement. The reason behind choosing the Likert type scale was done based on the previous work of Bhatti (2007) and Amin et al. (2006).

 Extant literatures have been used to extract the constructs and the items. All the constructs and items were adapted and modified to suit the purpose of this study. All major scale items are based on a five-point Likert-scale ranging from strongly disagree (1) to strongly agree (5). In terms of items development, they are adapted from Riquelme & Rios (2010). Risk consists of (4-item), ease of use consists of (4-item), adoption consists of (3-item), usefulness consists of (4-item), relative advantage consists of (5-item) and social norms consists of (3-item).

***4.3 Data Collection and Sampling***

The data collected in this research was done through survey. Questionnaires were distributed to clients of Amanah Ikhtiar Malaysia (AIM) Hulu Selangor branch. A total of 402 respondents participated in the survey, however, only 393 out of the 402 questionnaires collected could be used for analysis.

***4.4 Data Analysis***

A computerized statistical analysis of the data is necessary to describe and interpret the data from the questionnaires. A conversion will be made through a statistical computer software (SPSS version 23) in order to analyse the information. Windows SPSS also provides data management system in an attractive graphical environment by using menus and dialog. Therefore, all commands can be done easily. The stages in the statistical analysis were data preparation; tabulation of data and then various tests will be conducted to analyse relationships.Correlation analysis and multiple regression analysis were performed to analyse relationships among variables.

***4.5* Hypothesis**

*H1* : Accessibility has significant positive relationship towards the demand for microfinance

*H2* : Awareness has significant positive relationship towards the demand for microfinance

*H3* : Adequacy has significant positive relationship towards the demand for microfinance

*H4* : Affordability has significant positive relationship towards the demand for microfinance

**5. Results and Discussion**

The questionnaire is tested with Common Method Bias by using Harman’s single factor test. All research must ensure that there is no Common Method Bias. Common Method Bias indicates that the variances are represented in measurement method rather than to the construct itself in the questionnaire. Based on finding, it showed that the first factor accounted for 37.8% of variance. This figure meets the threshold level where less than 50 percent suggested by Podsakoff et al. (2003).

***5.1 Assessment of Measurement Model***

The convergent validity was tested at the initial stage. During the test of convergent validity, indicator or items loadings, average variance extracted (AVE) and composite reliability (CR) were taken into the consideration. Based on the results presented in Table 2, items’ loading exceeded 0.6 for all items, which meet the recommended value suggested by Hair et al. (2009). In terms of AVE threshold or requirement, Hair et al. (2009) suggested that AVE should exceed 0.5. In the current study, AVEs were in the range of 0.56 and 0.71. The CR value ranged from 0.860 to 0.936, which meet the recommended value of 0.7 suggested by Hair et al. (2009). Table 1 shows the results of measurement model.

**Table 1.** Results of Measurement Model

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variables** | **Items** | **Factor Loading** | **Average Variance Extracted****(AVE)** | **Composite Reliability (CR)** |
| Demand for AIM | B1 | 0.697898 | 0.607 | 0.860 |
| B5 | 0.700713 |
| B7 | 0.852441 |
| B8 | 0.851183 |
| Accessibility  | CA1 | 0.79267 | 0.565 | 0.920 |
| CA2 | 0.61009 |
| CA3 | 0.682555 |
| CA4 | 0.848753 |
| CA5 | 0.783164 |
| CA6 | 0.772865 |
| CA7 | 0.677982 |
| CA8 | 0.738034 |
| CA9 | 0.824446 |
| Awareness | CB1 | 0.687428 | 0.523 | 0.909 |
| CB2 | 0.677612 |
| CB3 | 0.658823 |
| CB4 | 0.719621 |
| CB5 | 0.783946 |
| CB6 | 0.745666 |
| CB7 | 0.721438 |
| CB8 | 0.800049 |
| CB9 | 0.718494 |
| Affordability  | CD1 | 0.868987 | 0.710 | 0.929918 |
| CD2 | 0.900156 |
| CD3 | 0.859658 |
| CD4 | 0.833714 |
| CD5 | 0.815782 |
| CD6 | 0.771948 |
| Adequacy | CC1 | 0.687263 | 0.660 | 0.906 |
| CC2 | 0.802052 |
| CC3 | 0.802862 |
| CC4 | 0.861713 |
| CC5 | 0.891469 |

 After conducting earlier test of convergent validity, next, the discriminant validity needs to be tested. The test of discriminant validity can be performed by examining correlations between the measures of potentially overlapping constructs (Fornell & Larcker, 1981). The result shows that the square root of AVEs (in bold) are larger than off-diagonal elements in their corresponding row and column for all cases (see Table 2). Thus, it is suggesting that the required discriminant validity has met the criteria. Based on these results, it indicates that measurement model has adequate convergent validity and discriminant validity.

**Table 2.** Results of Discriminant Validity Analysis

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Accessibility** | **Adequacy** | **Affordability** | **Awareness** | **Demand** |
| **Accessibility** | **0.752** |   |   |   |   |
| **Adequacy** | 0.50157 | **0.812** |   |   |   |
| **Affordability** | 0.605498 | 0.69461 | **0.843** |   |   |
| **Awareness** | 0.693593 | 0.721119 | 0.692441 | **0.723** |   |
| **Demand** | 0.567712 | 0.291549 | 0.45546 | 0.497931 | **0.780** |

***5.2 Assessment of Structural Model***

Ramayah et al. (2016) have suggested using R2 to observe the goodness of the structural model. According to Hair et al. (2011), coefficient of determination and the level of significance of the path coefficients (beta values) can be captured by R2. The R2 for the current research is 0.37, suggesting that 37% of the variance of demand in AIM can be explained by accessibility, adequacy, affordability, and awareness.

 Subsequently, in order to assess the statistical significance of path coefficients, the current study has calculated the path coefficients of the structural model and performed bootstrap analysis (re-sampling = 500) (please see Table 5). Based on results, it revealed that only the factors of accessibility has a positive relationship with the demand for AIM with b = 0.379, p < 0.05. Thus, H1 is supported. In addition, the results of structural model also indicated that adequacy, affordability and awareness are found to be insignificant. Thus, H2, H3 and H4 are not supported. Table 3 shows the results.

**Table 3.** Results of Structural Model

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Hypothesis | Relationship | Beta | SE | t-Value | Decision |
| H1 | Accessibility > Demand | 0.379 | 0.166 | 2.29 | Supported |
| H2 | Adequacy > Demand | -0.225 | 0.126 | 1.78 | Not Supported |
| H3 | Affordability > Demand | 0.205 | 0.106 | 1.94 | Not Supported |
| H4 | Awareness > Demand | 0.254 | 0.147 | 1.73 | Not Supported |

***5.3 Predictive Relevance (Q2)***

According to Ramayah et al. (2016), predictive sample which is previously known as Stone-Geisser’s Q2 can be used to look at the predictive relevance of research model. This measure has also been used by Henseler et al. (2009) to assess their research model’s predictive relevance. Predictive validity has assessed by using blindfolding procedure. Our results shows that the Q2 of demanding for AIM (CV Red = 0.201). Based on Hair et al. (2011) suggestion, if Q2 values are larger than zero, they indicate that the exogenous constructs have predictive relevance for the endogenous construct. Thus, it can be conclude that the current research model has good predictive relevance

**6. Conclusions**

With the aim of identifying significant factors determining demand for Islamic microfinance among women micro-entrepreneurs in Malaysia, this study conducts a survey on several centers of Amanah Ikhtiar Malaysia in Selangor. In achieving this objective, the study adopts the Partial Least Squares (PLS) on potential demand factors, namely affordability, accessibility, adequacy and awareness. The results of the PLS analysis reveled that, of the four potential factors affecting demand, only “accessibility” has significant and positive relationship with demand for Islamic microfinance. This result suggests that, measurements of accessibility such as distance to microfinance institution, collateral requirements, guarantor requirement, application procedure and process, repayment method, efficiency of services by microfinance providers, continuous advise and consultation, and ample microfinance centers, are among the reasons why clients are attracted to demand microfinance services in the context of Malaysia.

In view of the findings, the microfinance providers need to focus on these critical factors in order to ensure that the microfinance product is appealing to the clients. Clearly, distance matters for the clients since the greater the distance, the greater is the cost incurred by the borrowers (clients), and this could be a major reason hindering them from demanding the microfinance services in view of the small financing amount that they get, yet they have to incur a high cost to access the facility. In this context, the effort by many MFIs to be near to the clients is commendable since the clients are unlikely to take up microfinancing if they have to incur high cost to access the microfinance facility. In this regard, ample availability of microfinance centers is also highly important to attract demand for microfinance services.

Also related to accessibility are the product’s features including collateral requirements, guarantor requirement, and repayment method, which are found to be highly important considerations by the clients to take up microfinancing. In view of this finding, the MFIs need to ensure that these requirements are not too stringent given the situations of the clients and alternative measures need to be undertaken to address these issues. Innovative risk mitigations efforts need to be considered in this context, such as by refining the group lending and weekly repayment methods need to put in place.

Accessibility also involves efficiency of services provided by the microfinance providers, continuous advise and consultation, and simplified application procedures and process, all of which are found to be highly important variables for the clients to demand microfinance services. As such, the MFIs should continue to strive in providing better services so as to ensure customer retention as well as attraction of new clients for their services.

The findings of this study provide important inputs on the critical factors to be considered in the demand for microfinance among the women micro-entrepreneurs. Microfinance providers should consider these demand factors in further refining their products and services to enhance the participation of women in microenterprises in Malaysia.

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