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Integration of waqf-Islamic microfinance model for poverty reduction

The case of Bangladesh

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Abstract

Purpose – This paper aims to develop an integrated waqf-based Islamic microfinance (IsMF) for poverty reduction in Bangladesh. Microfinance institutions (MFIs) have been constrained by the high cost of funds, high interest rate charges and poor human resource quality of the recipients. Islamic MFIs have recently evolved with the hope of overcoming these financial, ethical and human capital deficiencies faced by the conventional financial institutions. Moreover, a good number of integrated models have been proposed to enhance the role played by Islamic MFIs. Most of these models, however, lack empirical justifications.

Design/methodology/approach – The research uses survey techniques. A total of 381 respondents were included in the survey. The integrated waqf-based Islamic microfinance model (IWIMM) was earlier on developed using literature and intellectual discussions. There are six constructs presenting the IWIMM, namely, waqf resources, IsMF, takaful, project financing, human resource development and poverty alleviation. In the survey instrument, 45 items represent the six constructs, but only 26 items have been retained after factor analysis. Structural equation modelling has been adopted to examine the relationship among the constructs.

Findings – The results show that there are significant relationships between IsMF and takaful, waqf resources and human resource development, takaful and human resource development, IsMF and human resource development and, waqf resources and project financing. The results also indicate that poverty alleviation is possible through the integration of these constructs.

Research limitations/implications – Though the paper has studied conventional and Islamic MFIs in Bangladesh, one of the populated Organisation of Islamic Cooperation (OIC) member countries and also where poverty incidence is high, further studies need to be conducted in other OIC member countries to adopt the model in line with practical and regulatory environment of those countries.

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Similarly, the study is based on the perception of the respondents, which limits the generalization of the result.

Practical implications – The paper proposed a model that has the potential of being applied for poverty alleviation programmes in most of the OIC member states.

Originality/value – The present paper has developed an IWIMM for poverty reduction.

Keywords Takaful, Human resources development and poverty alleviation, Islamic microfinance, Project financing, Waqf resources

Paper type Research paper

1. Introduction

Bangladesh is a populous country of 150.5 million people, of whom 76 per cent live in the rural areas. These areas are characterized by extremely unequal access to land, which is the most critical productive asset (World Bank, 2012). According to the human poverty index ranking for developing countries, Bangladesh ranks 110 out of 179 countries, while the human development index ranks Bangladesh as 146 among 189 countries in the world. The same report indicates the country's poverty incidence based on national poverty line income, which is 49.8. Around 49.6 per cent of its total population is surviving under the income of 1.25 dollar per day (Human Development Report, 2011).

Poverty is a pressing issue in Bangladesh and is considered the major impediment to economic development. To address the issue, the government of Bangladesh had initiated various steps. One of them is to fulfil the Millennium Development Goals where the eradication of poverty and hunger gets high priorities. According to the UN, the country has made significant progress in poverty reduction; baseline poverty was 58.8 per cent in 1990. In 2010, the rate of poverty was 31.5 per cent, and it is expected that the poverty reduction rate will decrease to 25.6 per cent by 2014 (Bangladesh Bureau of Statistics, 2014).

Due to the persistence nature of poverty, majority of the poor are landless. There exist relatively very few formal sectors providing employment opportunities. The poverty alleviation strategies of non-governmental organization (NGOs) have focused particularly on the possibilities for income generation in the rural areas.

It is relatively easier to improve the condition of the moderately poor, those who are living just below or around the poverty line, than the condition of the extreme poor due to their vulnerability (World Bank, 2002). To improve the living condition of the extreme poor, the microfinance institutions (MFIs) have designed various income-generating programmes for them (Microcredit Summit Campaign, 2005).

Khandker (2005) finds that microcredit programmes have a greater impact on extreme poverty than on moderate poverty. He has defined the extreme poor as those who have not more than 20 decimals of land in rural areas. Many advocates of microcredit institutions, including Dr M. Yunus, strongly support that these institutions are much hopeful in eradicating extreme poverty. In contrast, many researchers observe that the institutions have partially reached the extreme poor worldwide and even in Bangladesh (Wright and Dondo, 2001; NederveenPieterse, 2000, p. 175; quoted in Desai and Potter, 2002, p. 16; Ahmed, 2004).

The Microcredit Regulatory Authority (MRA) classified MFIs into four types, such as very large, large, medium and small (vide Table I). These classifications are based on the size and the number of clients. Among these classifications, majority (71 per cent) of them fall under small, whereas few (5.4 per cent) are categorized as very large and large

Table I.
Types of NGO-MFIs and their market share in June 2010

NGO –MFI type	Range of borrowers Col-1 (1 lakh = 100,000)	No. of MFIs Col-2	No. clients (In'000) Col-3	No. employees Col-4	Loan outstanding (Million Tk.) Col-5	Savings (by clients) (Million Tk.) Col-6
Very large	More than 5 lakh	5 (1.0)	16103.05 (63.3)	56,563 (51.3)	91706.30 (63.0)	32561.25 (63.0)
Large	1 lakh to 5 lakh	21 (4.4)	3962.8 (15.6)	21,907 (19.9)	23471.71 (16.1)	8534.28 (16.5)
Medium	10,000 to 1 lakh	115 (23.9)	4142.1 (16.3)	23,465 (21.3)	24575.01 (16.9)	8212.12 (15.9)
Small	Less than 10,000	341 (70.7)	1238.1 (4.9)	8,281 (7.5)	5897.96 (4.0)	2414.77 (4.7)
Total		482 (100)	25446.05 (100)	110,216 (100)	145650.98 (100)	51722.42 (100)

Note: The figures in parentheses show percentage based on col. total 1 lakh = 0.1 Million
Source: MRA-MIS database 2010

NGOs-MFIs. The very large NGOs show the highest concentration of clients of nearly two-third (63.3, Col. 3), followed by large by medium concentration of another one-third (31.9 per cent). The smallest number of clients (4.9 per cent) appears to be dealing with small MFIs. It is not surprising that the highest number of big borrowers (63 per cent) are involved both in terms of total outstanding loans and savings dealt by MFIs (vide Cols. 5-6) compared to the very small involvement of the small borrowers (ranging from 4 to 4.7 per cent). The relatively larger involvement of employees dealing with small borrowers (7.5 per cent handling less than 5 per cent of the loan outstanding, savings) compared to large and very large borrowers/clients seems to suggest relatively higher operational and other costs per unit of loans provided to the small clients. As such, the upgrading of loan operations through large and medium MFIs will help improve the condition of small borrowers having access to the loans as well as savings. Our findings (Table I) also suggest that the NGO's ability to extend loan is quite matched by the clients' ability to save (vide Col. 6, Table I).

Islami Bank Bangladesh Limited (IBBL) started functioning using Shariah principles in 1983. Later on, few more banks have followed, including Al-Arafah Islami Bank (opened in 1995) and Shahjalal Islami Bank Ltd (2001). At present, there are 8 full-fledged Islamic banks, 19 Islamic banking branches provided by 8 conventional commercial banks and 25 Islamic banking windows offered by 7 commercial banks are operated across the country. The deposits and investments of the industry have increased by 5.50 and 5.76 per cent, respectively, during the second quarter of 2014. Besides, the Islamic banking industry is contributing more than one-fifth of the total market share of banking industry in terms of deposits and investments (Bangladesh Bank, 2014).

Islamic microfinance (IsMF) provides qard hasan (interest-free loan) or PLS (profit-loss sharing) system based on mudharabah. Islamic microfinance institutes (IMFIs), thus, not having the requirement of collateral, have the great potential of reaching the poorest of the poor. IBBL has introduced a scheme called rural development scheme (RDS), specifically to address the investment needs of the country's agricultural rural sectors where the majority of people live under the poverty line. The programme is based on PLS with necessary modification of Grameen Bank's model (followed by principles of Shariah) and provided financial services to both men and women. Among other existing IMFIs, the microcredit programme under RDS model is the largest and remarkable one. According to World Bank survey, there are about one million businesses in the country where only 7 per cent of those have had access to the financial institutions (Bhuiya and Chowdhury, 2002). As the lending formalities are less and more emphasis is given to the root level, the landless poor borrowers have a greater chance to get microfinance assistance from RDS of IBBL.

The recent study on RDS shows that lending rate is the lowest (i.e. 10 per cent), with the highest growth rate (i.e. 12.57 per cent) compared to the lowest dropout rate (i.e. 5 per cent) among other prominent and well-established MFIs like Grameen Bank, ASA and BRAC. It also figures out that the loan recovery rate is very high (99 per cent) compared to all the conventional sources of funds. In addition, RDS officials do not follow any harsh rule, rather it exhibits amicable behaviour in collecting the outstanding instalments. During the natural calamities, it postpones the payment of the instalments of the affected members until they recover from financial distress (Parveen, 2009).

2. Literature review

2.1 Islamic approach to poverty alleviation

The Islamic approach to poverty alleviation is quite different from the conventional approaches. It emphasizes more on the redistribution of wealth for uplifting the condition of the poor. In elaborating the poverty eradication from an Islamic perspective, Sadeq (2002) discusses three different measures of poverty alleviation such as:

(1) positive measure (income growth, functional distribution of income and equal opportunity);

(2) preventive measures (control of ownership and prevention of malpractice); and

(3) corrective measures (compulsory transfer: *Zakah*, recommended transfer: charity and state responsibility).

Under the redistributive approach, both *Zakah* and *Sadaqah* along with *awqaf* would have strong and effective role in alleviating poverty through the provision of health services, educational and infrastructural facilities, resource and employment creation (Sadeq, 2002).

In rendering such social services, both *Zakah* and *awqaf* institutions can contribute to a large extent of the society. For instance, *awqaf* which is considered as a perpetual charity (in the form of fixed property, land or buildings, cash money, books, shares, stocks and other assets) can generate benefit to certain types of philanthropic activities, such as providing religious education, community services and maintenance of the mosques (Kahf, 2007). Both Sadeq and Kahf have similar views on the potential of the *waqf* institution for poverty alleviation. It is suggested that raising the cash fund through issuing *awqaf* certificates can be used for financing development projects. Thus, given the limitations of the conventional sources of funds as delineated above, the Islamic financial institution can be more effective in poverty reduction once the *waqf* institution is integrated with others.

2.2 Concept of waqf-*based IsMF*

The Islamic institutions such as *zakah*, *waqf* and *qard hasan* are meant for ensuring justice, equity, social peace and for the fulfilment of the basic needs (Zarqa, 1988; Siddiqi, 2004). Hence, there is a prospect of *waqf*-based microfinance institution in solving the poverty problem. Some others also support this view by proposing the *waqf*-based financing institutions (El-Gari, 2004; Kahf, 2004, Ahmad, 2007; Hasan, 2010). For instance, cash *waqf*, *qard hassan* and *zakah* can be effectively channelled through Islamic financial institutions so that the poor can have easier access to financial services.

Sadeq (2002) provides an interactive model for poverty alleviation where *waqf* institution will be the sources of fund. According to him, the local corporation will receive *waqf* resources and will use all these resources for empowering the poor. Besides, *waqf* fund will be used for income-generating activities where both *zakah* and *sadaqah* will also be contributing for poverty alleviation. Sadeq also proposes an integrated approach to alleviate poverty where the *waqf* institution will issue two types of certificates:

(1) *awqaf* certificates of high denomination; and

(2) *awqaf* certificates of low/medium denomination.

The institution or individual will buy these certificates according to their capacities. By this, the *waqf* institution can pool the fund and finance the development project, and the poor will directly receive the benefit. There will be some primary projects and some secondary projects. An example of primary project is the building of hospitals. This primary project will help creating secondary projects such as markets or shopping malls. The revenue earned from the secondary project will help in maintaining the operational and other costs of the primary project.

Another study by Ahmad (2007) emphasizes on poverty, justice and equitable distribution of income in Islamic economics. The Islamic financial sector should cover the underprivileged people who have neither the bargaining power nor the access to the existing financial institutions. This justifies the need for the Islamic financial sector to involve in social intermediation. And, of course, the MFIs that provide support to micro-entrepreneurs need to be extended by both financial coverage and outreach in a wider scale. The Islamic banks also follow the conventional bank in terms of their credit selection criteria; in most cases, relatively large firms are selected where small firms are neglected. The author examined the basic model of a *waqf*-based Islamic MFI which is sustainable in the long term. IMFIs also face the challenges of mismatch in their assets and liabilities. An empirical study in Bangladesh shows that the growth and the efficient operation of IMFI are hampered due to its fund inadequacy (Ahmed, 2002). Despite the availability of local sources of fund, IMFIs are unable to receive the amount from local sources, as they violate the Islamic principles. Investment at fixed rate that ensures fixed returns cannot be used under Islamic microfinancing by following *mudharabah* and *musharakah* principles. The author has identified many other obstacles that originate from the fund shortage, such as hiring insufficient number of workers, lack of proper supervision and monitoring, low productivity of field worker due to low wage, quitting from IMFIs, etc. All of these eventually lead to defaulting of loan and lowering the expected income of the institutions. *Waqf*-based IMFIs can go a long way to resolving most of these problems.

According to Ahmad (2007), on the liability side, cash *waqf, waqf* certificates, can be used for collecting the capital for MFI. The Shari'ah-compatible saving facilities can also be provided to the public depositors based on mudharabah or profit-sharing contracts. Besides, *takaful* reserve is introduced as the safeguard for the beneficiaries in case of loan default. Again, a profit-equalizing reserve has also taken into consideration where a small portion will be subtracted from the profit-share of the depositors. Later on, this reserve will be utilized to boost the rates of returns on deposits. In the same way, economic capital can be increased by creating a reserve fund from its surplus. On the asset side, *waqf*-based IMFIs have various types of assets. It comprises low-risk fixed-income assets, microfinancing activities that include investments and *qard*. Here, the investment will be made on various Islamic modes of financing, i.e. *mudharabah, ijarah, salam, istisna, musharakah*, etc., depending on the appropriateness of the microenterprises.

In addressing the issue of sustainability, group-based lending mechanism can mitigate the credit risk of IMFIs. In addition, moral hazard issue can be tackled once IMFIs will adopt various Islamic modes of financing which are directly connected to the real transactions. Again, IMFIs can overcome the economic viability problem through the reduction of their financing costs (Ahmad, 2007).

In dealing with various risks associated with *waqf*-based MFI, Ahmad (2007) suggests that IMFI must create various reserves to tackle the risk that may arise due to the mismatch of its assets-liabilities. For example, it is suggested to adopt takaful and profit-equalization reserves to overcome the depositor's withdrawal risks. The author also proposes that a portion of *waqf* funds can be channelled through microfinancing, which again depends on the takaful and economic capital reserves. Once these reserves increase, a good portion of the *waqf* fund can be channelled through microfinancing (Ahmad, 2007).

Manjoo (2008) argues that *zakah* and *waqf* can be effective tools for poverty alleviation. He emphasizes on voluntary sectors like *zakah* and waqf to address the need of economically disadvantaged people. The *zakah* fund can be effectively utilized, and the VAT which is paid on the goods will be distributed among the poor. It is argued that the Muslim donors can get tax exemptions. A national *zakah* fund can be set up to facilitate the *zakah* disbursement. Again, the author proposes to establish *waqf* as a public benefit organization. The *waqf* fund under the *Poverty Entrepreneurship Scheme* will be used for creating employment opportunities. It can be channelled through Islamic microfinancing instruments like *mudharabah* and joint-venture consistent with poverty alleviation. It also suggests that an Islamic venture capital model can be well-structured to help its partner to sell the *waqf* share at a higher rate, ensuring the level of self-sufficiency.

Hasan (2010) develops the idea of an integrated model that combines IsMF with *zakah* and *awqaf* institutions for poverty alleviation. First, *zakat* fund will be given to the borrowers (hard-core poor) for their consumption need whereas the *awqaf* fund will be used as investable fund that will work as capital investment and working capital for micro-business. It will minimize the risk of loan default as the consumption needs of the poor borrowers have already been satisfied. One of the characteristics of this model is that it will ensure the equitable distribution of income and welfare for the poor. As the proposed model is fully based on profit-loss-sharing and concessional contract modes, the distribution of profit or earnings will be allocated as per the contribution of capital among the depositors, shareholders and investors in the NGO. Furthermore, the burden of debt is less on the poor under this model, as the provision of *zakat* fund does not require any repayment. As the model is based on profit–loss-sharing principle, no fixed interest payment will be imposed on the borrowers. It is argued that all these factors will lower the chances of default rates and thus contribute to higher success rate of poverty alleviation.

Although above literature provides the most insightful and stimulating concept of integrated *waqf*-based IsMF, many aspects of borrowers as well as the institutions are not well-addressed. Hasan (2010) and Manjoo (2008) have argued for *zakat* and *waqf* for poverty alleviation by utilizing either NGOs or MFIs. However, the *takaful* instrument which is important for tackling the business risk and default risk of both borrowers and MFIs is not clearly mentioned. Again, a very conceptual paper by Sadeq (2002) provides the idea of issuing *waqf* certificates at various levels, but the operational aspect of his proposed model seems to be not very clear. The paper by Ahmad (2007) argues that *takaful* and profit-equalization reserves can overcome the depositor's withdrawal risks. But, the issues of how the borrowers will involve in MFIs with various Islamic modes of operations, which type of microenterprise they should pursue for and what role should MFI play in providing training have not been discussed in those papers.

Taken as a whole, the *waqf* institution has a great role in providing socioeconomic services to the Muslim countries (Hasan and Abdullah, 2008). The practice of cash *waqf* can be effective, as it is popular in many countries including Turkey, Egypt, South Africa, Singapore, Malaysia and Pakistan (El-Gari, 2004; Kahf, 2004, Ahmad, 2007). The provision of cash *waqf* creates an avenue for many other possibilities. Once the *waqf* fund is properly channelled via an MFI, many projects can be undertaken for the employment of the hardcore poor, landless and destitute. These groups, despite having potentials to enhance productivity, have no capital to establish individual businesses (Karim, 2010).

2.3 Waqf *institution to support the project financing*

In the current practice of MFIs, either conventional or Islamic, the borrowers are given a small loan to run their individual businesses, where responsibilities are fully vested on the borrowers. It is the norm and tradition of all the MFIs across the globe. The authors have discussed the integrated *waqf*-based microfinancing that offers many options to generate social as well as individual benefit. In the present study, we are proposing to utilize the *waqf* resources through IMFIs where many other services can be provided, such as human resource development, Islamic insurance and project financing. Previous studies have shown that IMFIs are hardly involved in any risky investment or project with the clients based on the *mudharabah* or *musharakah* principle (Mohamed *et al.*, 2013). It is due to their operational limitations and for their sustainability. In addressing these issues, project financing by the IMFIs with the support of *waqf* resources can facilitate both the borrowers as well as the institution.

Although the underlying concept of project financing appears to be very simple, it has the capacity to generate huge benefit. For example, IMFIs will select a group of productive poor and train them with proper skills. This homogenous group of borrowers will directly participate in a big project (i.e. poultry farm, fish farm, dairy farm, handicrafts, etc.) that requires huge investment and manpower. The group members will share the profit and loss with the IMFI. This kind of project has the advantage of economies of scale, marketing and pricing the product, etc. There will be one pre-requisite to enlist as a member of the project. To become a member, they must have achieved a certain level of training on respective projects. The *waqf* fund will facilitate both human resource development and financing the large project aimed at improving their economic conditions.

2.4 Waqf *for human resource development*

A good number of studies propose to harness the potential of *waqf* resources for human resource development. Ahmed (2004) has classified the productive poor and the unproductive poor. For instance, it is relatively easy to utilize the capacity of the productive poor through human resource development. According to him, *waqf* can be used to provide the essential inputs in terms of physical and financial resources. Particularly, the *waqf* resources can be used for implementing various educational programmes and skill development schemes. In the light of this, Krafess (2005) suggests that *waqf* can be an effective tool for social welfare and economic development. This tool is useful to promote various humanitarian projects, especially in providing health, education and training facilities for the society. Ahmed (2008) recommends that the *waqf* institution can hold and develop certain assets for its sustainability. Then, it is only

possible to boost up the productive capacity of the poor through transferring knowledge and entrepreneurial skills. Many others also opt for the concept of using *waqf* resources for enhancing human resources (Hasan and Abdullah, 2008).

Hasan (2010) in his integrated model of *zakah*, *awqaf* institutions and IsMF suggests that sufficient educational facilities and human capital development can help in poverty alleviation. Two strategies can be adopted for poverty alleviation. The indirect strategies include formulation of macro-economic policy framework for enhancing growth, employment and per capita income. The direct strategies cover the neglected or deprived population in a way to provide various services like easy access to credit, health care, expanding educational facilities, etc.

2.5 Need for integrated model

The operation of microfinance is expanding over the past few decades across the globe. This is based on collateral-free credit access and group lending mechanism principles. IMFI is receiving much attention and becoming more popular, as it can overcome most of the existing challenges of conventional MFIs. These include:

- asymmetric information problems;
- economic viability (due to high operating and administrative cost for monitoring loan operations, dependency on foreign aid);
- charging fixed interest rates;
- higher interest rates and focus on short-term loans;
- low rate of return on investment;
- high dropout rate and non-graduation from poverty, debt trap, non-conforming to popular religious beliefs (as it deals with riba); and
- credit rationing.

To address these issues, scholars are proposing integrated IMFI that combines *awqaf* and *zakah*. They have provided necessary inputs for implementing the integrated model into practice.

The earlier research, however, focuses only on the conceptual and theoretical aspects of the integrated model. There exists hardly any empirical investigation in identifying the effectiveness of an integrated model. The present research is an attempt to fill up the research gap particularly in considering the perception of IsMF borrowers based on the integrated model. Thus, it is important to get the view of microfinance borrowers with respect to the applicability, suitability and sustainability of the following integrated model.

2.6 Modus operandi of integrated waqf-based Islamic microfinance model

The operational aspects of the integrated waqf-based Islamic microfinance model (IWIMM) are:

- *Waqf* fund can be properly utilized through IMFI. As IMFI has the limitation of shortage of funds and cost of capital is quite high, *waqf* fund is expected to expand the outreach of it.
- A special programme under IMFI can be offered that can have the provision of *takaful* financing, project financing and human resource development.

- It is a prerequisite to involve in human resource development programmes before granting for project financing.
- Project financing which can be on individual or group basis can largely contribute to poverty alleviation.
- As *takaful* is for the protection of clients' business and family, it is expected to have a positive impact on the economic well-being of the members.

2.7 Components of IWIMM

2.7.1 Waqf/*Endowment*. The role of *waqf* is wide but its implication in addressing inequality, unemployment and poverty is very limited in most of the Muslim countries. The IWIMM is expected to mobilize *waqf* resources to tackle these issues. This fund can be gathered from various sources, such as *waqf* donors, government, philanthropists/charitable entities, banks/financial institutions or other corporations and IDB/other international donor agencies. These funds can facilitate in successfully operating IsMF programmes.

2.7.2 Islamic microfinance/NGOs. IWIMM can be implemented by IMFIs, NGOs and different government schemes that work with poverty alleviation agenda depending on the country contexts. Besides, *zakah* funds can also play a key role for the socio-economic development of the poor.

2.7.3 Project financing. Under this provision, clients/members engage in joint partnership with the IMFI/NGOs to share both profits and losses. The type of projects depends on the need and circumstance of the clients. For instance, members are provided group loan to run the same business. Besides, single member is qualified for individual/personal loan. Regardless of the types of projects, the members are involved in various Islamic modes of operations.

2.7.4 Takaful. This component of IWIMM is especially designed for reducing the economic vulnerability of clients. It safeguards clients to protect themselves from the adverse effect of any kind of personal and family uncertainty such as disease, theft, disability and natural hazards. Thus, the *takaful* contribute clients to become economically solvent by mitigating risks and uncertainties of their respective projects.

2.7.5 Human resource development. Waqf funds can uplift human resources among the productive poor. The fund facilitates to upgrade human resources through various training and entrepreneurial development programmes. The IWIMM requires its members to join the programs before qualifying for project financing.

The authors have developed the above-mentioned IWIMM. In validating the integrated model, the following hypotheses will be tested.

2.7.6 Research hypotheses

H1. *Waqf* resources contribute to Islamic microfinance.

H2. Islamic microfinance contributes to *takaful* financing.

H3. Islamic microfinance contributes to human resource development.

H4. Islamic microfinance contributes to project financing.

H5. Human resource development contributes to project financing.

H6. *Takaful* financing contributes to poverty reduction.

H7. Project financing contributes to poverty reduction.

3. Research method

This section focuses on the research method. Here, the main objective is to present the findings of field survey on the microfinance borrowers in justifying their need for the IWIMM. This section draws attention to the research method, including study area, sample size and sampling techniques.

3.1 Study area

Bangladesh has 64 districts under six divisions. The survey was conducted in three divisions, namely, Dhaka, Rajshahi and Khulna. Within these divisions, only three main districts have been selected based on the availability of RDS along with few other MFIs like Grameen Bank, ASA, Proshikha and BRAC. The information of the specific districts under survey area is analysed below.

The Dhaka division has 17 districts and only two districts were chosen. First, the Gazipur District is selected for the field survey. It includes respondents who are mainly involved in businesses or factories. Following table presents the basic information about the district. The second district selected for the data collection is Narsingdi, where only two upazilas, i.e. Narsingdi Sadar Upazila and Palash Upazila, were selected for data collection. Following table depicts the basic information of the district.

Field survey was conducted in another largest division of Bangladesh named Rajshahi, which has eight districts, of which the Naogaondistrict was selected for data collection. The third division selected for the field survey is Khulna, where only Khulna Sadar (main) District is considered for data collection. Above all, three districts of Bangladesh are selected because of its diverse geographical location and the socioeconomic condition. To address the poverty problem, many NGOs and MFIs are working in different locations. RDS, Grameen bank, ASA, Proshikha and BRAC all are operating in these areas for many years.

3.2 Sample size

The research applies structural equation modelling (SEM), which overcomes some of the weaknesses of regression methods. The determination of actual sample size is also important to get stable and meaningful results. A good number of studies have suggested on the actual sample size in applying SEM. On average, a sample size ranging between 200 and 400 is considered to be sufficient for good results (Hair *et al.*, 2006). It is also suggested that a minimum of 200 is also good for any statistical analysis (Hoe, 2008). Some prefer to take the sample size in proportion to the number of parameters or items in the research. Some argue that a minimum of ten respondents should be taken at least for a single parameter (Schreiber *et al.*, 2006). It is also suggested to follow the rule of thumb where at least five observations for each parameter are required (Hair *et al.*, 2010). As the present research has six constructs or latent variables, while the sample size for the field survey includes a total of 381 samples. The sampling distribution in the selected districts under study is shown in Table II.

3.3 Sampling technique

The study adopts purposive sampling technique, as it represents a group of different non-probability sampling techniques. Authors have chosen this technique due to the flexibility and applicability of the judgement of researchers in deciding the composition of the respondents. In other words, the purposive sampling enables researchers to focus on specific characteristics of the population based on the research interest.

4. Result and discussion

4.1 Demographic information

Based on the extensive studies of Grameen Bank Bangladesh, the biggest NGO, MFIs mainly deal with female clients due to their management, accountability, good business skills and high repayment records. Majority of our respondents are female (97 per cent). As evident from Table III, the overwhelming marital status is considered an indicator of stability and responsibility at the individual or family level. Most of our respondents (92 per cent) are married and hence indicate stable family. The age is another factor in materializing the goal of economic productivity. MFIs select those who are physically capable of working hard. The majority of respondents (71 per cent) belong to the

District	Upazila	Survey administrator	Sampling distribution/size
Dhaka	Narsingdi Sadar Upazila Palash Upazila	2	110
Rajshahi	Mohonpur	5	147
Khulna	Dumuria, Dighalia, Koyra	5	124
Total	6	12	$N = 381$

Table II. Sampling distribution

Variable	Category	Frequency	(%)
Gender	Male	13	3.4
	Female	368	96.6
Marital status	Single	7	1.8
	Married	351	92.1
	Widow	20	5.2
	Single parent	3	0.8
Age	15-29 years	101	26.6
	30-44 years	168	44.1
	45-59 years	101	26.5
	60-64 years	10	2.6
	65 and above	1	0.3
Family size	Below 5	244	64
	5-7	118	31
	8-10	14	3.7
	Above 10	5	1.3
Level of education	Informal education	103	27
	Islamic school/Madrasa	6	1.6
	Primary school	105	27.6
	Secondary school	123	32.3
	Diploma/College	11	2.9
	Tertiary institution	4	1.0
	Others	29	7.6
Years of schooling	5 and below	235	61.7
	6-10	128	33.6
	10 and above	18	4.7

Source: Field survey, 2012

Table III. Demography of the respondents

economically most active age group ranging between 15 and 44 years. On the other hand, family size always does matter particularly in upholding the economic status and well-being of households with a limited household income. The high dependency ratio is found to be one of the most important attributes of the families suffering from poverty anywhere in the world. The relatively bigger family size comprising 95 per cent having members including children below 7 does speak for higher dependency ratio and lower standard of living. Given the bigger family size and higher dependency ratio, it is quite likely that the female members including, particularly, the wives get directly involved in income-generating activities and assist their partners in sharing the cost of living. Due to the participation in microfinance activities, mutual trust and cooperation among the clients are found to be fair. This also strengthens social capital in terms of social networking facilitated by mobile phones in Bangladesh with rather very poor physical infrastructures (Table III).

Around two-third of the total respondents have the family size below 5, while another one-third of members ranging from 5 to 7. MFIs enhance the educational awareness among the borrowers (Table III). Easy access to education is considered as one of the crucial determinants of family-level income. The higher level of education with longer years of schooling can successfully contribute to the capability-building of the families as well as the individual family members to materialize their potentials to earn more and live better. Our findings seem to suggest that a little less than three-fourths of the respondents have formal education. However, because of the lower family incomes, the families having years of schooling exceeding six years are little over one-third (38 per cent) and those not exceeding five years constitute nearly two-fifths of the respondents (62 per cent). Hence, it can be suggested that the level of education and years in schooling as a part of capability-building can be improved only by way of enhancing productivity and income of the microfinance clients (Table III).

4.2 Structural equation modelling

In the study, we have conducted factor analysis and reliability test. In the exploratory factor analyses, a total of 26 out of 45 items have been retained presenting a total of six constructs under study, namely, *Waqf* Resources (WR), Islamic Microfinance (IsMF), Project Financing (PF), *Takaful* Financing (TF), Human Resource Development (HRD) and Poverty Alleviation (PV).

In the present research, we are considering Cronbach alpha value as an indicator of internal consistency of the items retained from factor analysis and the cut-off value is considered to be 0.7, as recommended for adopting SEM. The Cronbach alphas for each construct are more than 0.85, except for poverty alleviation, perhaps due to the limited number of items retained under the construct.

SEM has been applied in the research to test the causal effect among the constructs of a conceptual model (Kline, 2010). There are two steps for SEM:

(1) to test the measurement model through confirmatory factor analysis (CFA); and

(2) to test the full-fledged structural model.

4.2.1 Confirmatory factor analysis. CFA is conducted to measure the relationship between the observed and the underlying latent variables. Generally, four fit indices are tested to determine the fitting of the model with the data. These are:

(1) chi-square statistic;
(2) normed chi-square;
(3) root mean square approximation (RMSEA); and
(4) comparative fit index (CFI).

As the condition to model fit, following criteria must be fulfilled:

- normed chi-square should be less than 5;
- RMSEA should be less than 0.08; and
- CFI values are to be above 0.9.

The CFAs for the six constructs, i.e. WR, IsMF, PF, HRD, TF and PV, are provided below.

4.2.1.1 CFA of waqf resources (WR). The initial measurement model of WR *consists* of six indicators. As presented in Figure 1, the initial measurement estimation of WR shows a poor fit with the sample data, as evidenced from the lower value of CFI (0.741) and higher values of RMSEA (0.304) and normed Chi-square (36.040), while the threshold values of these fit indices are above 0.9 and below 0.08 and 5, respectively. Thus, it is required to modify the initial WR measurement model (Figure 2).

Depending on the values of factor loading and the modification indices from the AMOS output, the initial model is modified. Following the criteria that items with factor loading less than 0.4 are to be deleted from the model, thus WR1 is deleted. Looking at the higher error inter-correlations from AMOS output such as WR2 and WR4 (MI = 41.6), WR4 and WR5 (MI = 74.6) and WR5 and WR6 (MI = 59.2), we put the earnings on these items to significantly improve the model (Figure 3).

The following Table IV presents the results of the initial and modified CFA of WR with the threshold values for the fit indices.

4.2.1.2 CFA Islamic microfinance (IsMF). The initial measurement model of IsMF consisted of five indicators. Shown in Figure 4, the initial measurement estimation of IsMF displays a poor fit with the sample data, as evidenced from the lower value of CFI (0.951) and higher values of RMSEA (0.178) and normed Chi-square (13.087) that cross

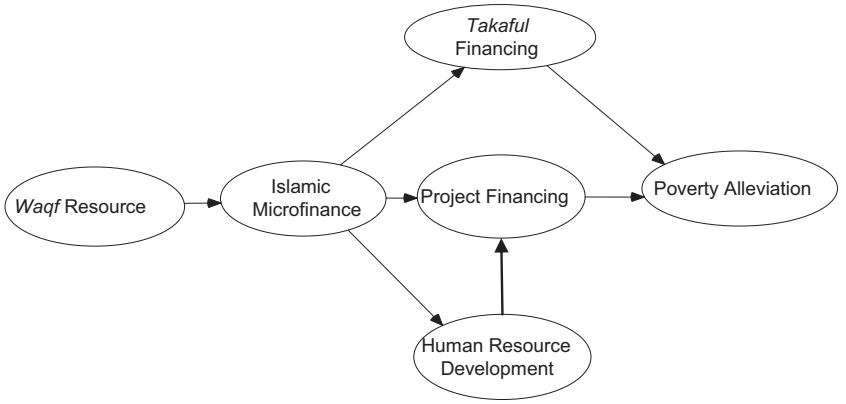

Figure 1.
Integrated *waqf*-based Islamic microfinance model (IWIMM)[1]

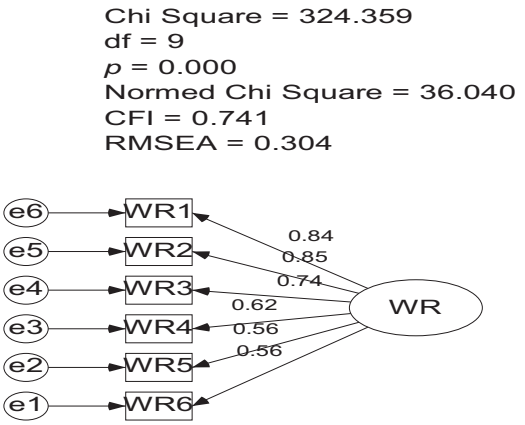

Figure 2.
Initial measurement model of WR

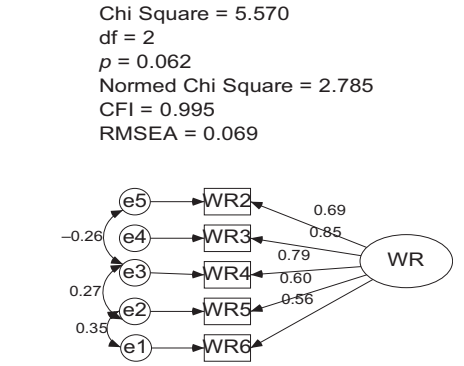

Figure 3.
Modified measurement model of WR

Goodness-of-fit statistics	Initial model	Modified model	Threshold values for the fit indices
Normed-chi square	36.040	2.785	<5.0
RMSEA	0.304	0.069	<0.08
CFI	0.741	0.995	>0.9

Table IV.
Results of CFA for *waqf resources* (WR)

the threshold points for such indices. This necessitates a revision of this initial IsMF measurement model.

By observing the factor loading and the modification indices from the AMOS output, the initial model of IsMF is modified. Due to the higher error inter-correlations of IsMF1 and IsMF4 (MI = 9) and IsMF4 and IsMF7 (MI = 39.4), we put the earnings to improve the model (Figure 5). After connecting these error terms, the model shows a significant improvement.

Table V presents the results of the initial and modified CFA of IsMF with the threshold values for the fit indices.

4.2.1.3 Human resource development (HRD). The initial measurement model of HRD consisted of 11 indicators, which is shown in Figure 6. It displays a poor fit with the

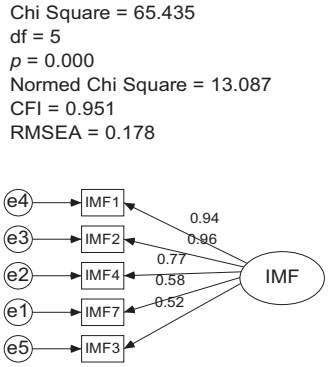

Figure 4.
Initial measurement model of IsMF

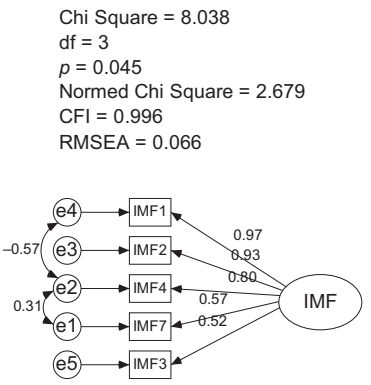

Figure 5.
Modified measurement model of IsMF

Goodness-of-fit statistics	Initial model	Modified model	Threshold values for the fit indices
Normed-chi square	65.435	2.679	<5.0
RMSEA	0.178	0.066	<0.08
CFI	0.951	0.996	>0.9

Table V.
Results of CFA for Islamic microfinance (IsMF)

sample data, as evidenced from the lower value of CFI (0.347) and higher values of RMSEA (0.281) and normed Chi-square (1364.538) that cross the threshold points for such indices. This necessitates a revision of this initial HRD measurement model.

The adjustment to this initial CFA is performed based on the values of the factor loadings and the modification indices from the AMOS output. As the loadings of the indicators HRD1 (0.24), HRD2 (0.17), HRD3 (0.33), HRD4 (0.23), HRD5 (0.35), HRD7 (0.23) and HRD8 (0.25) are very low, they are omitted straightway, which helped in improving the model (Figure 7).

Table VI presents the results of the initial and modified CFA of HRD with the threshold values for the fit indices.

4.2.1.4 Project financing (PF). The initial measurement model of PF consisted of six indicators representing. Shown in Figure 8, the initial measurement estimation of PF

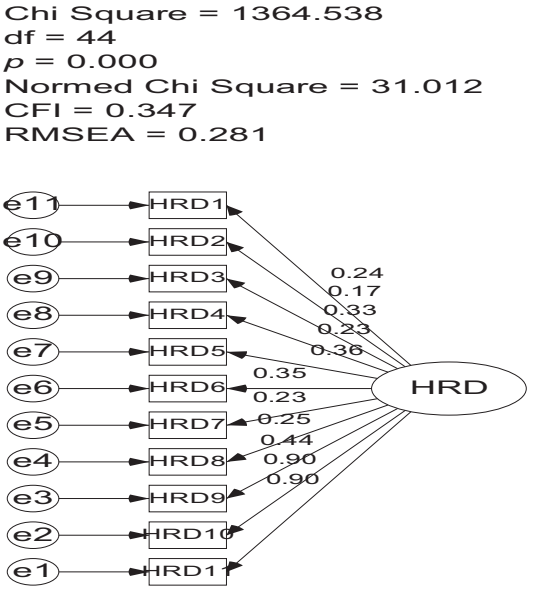

Figure 6.
Initial measurement model of HRD

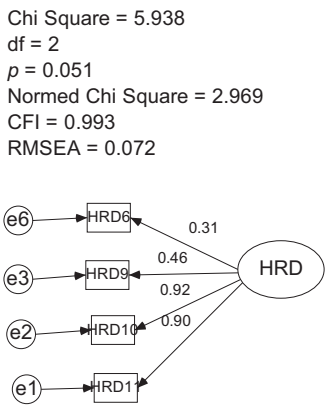

Figure 7.
Modified measurement model of HRD

Table VI.
Results of CFA for human resource development (HRD)

Goodness-of-fit statistics	Initial model	Modified model	Threshold values for the fit indices
Normed-chi square	31.012	2.969	<5.0
RMSEA	0.281	0.072	<0.08
CFI	0.347	0.993	>0.9

displays a poor fit with the sample data, as evidenced from the lower value of CFI (0.916) and higher values of RMSEA (0.153) and normed Chi-square (9.936) that cross the threshold points for such indices. This necessitates a revision of this initial PF measurement model.

Looking at the factor loading and the modification indices from the AMOS output, the initial model of PF is modified. Because of the higher error inter-correlations of PF3 and PF5 (MI = 15) and PF6 and PF7 (MI = 31.2), we put the earnings to improve the model (Figure 8). After connecting these error terms, the model shows a significant improvement (Figure 9).

Table VII presents the results of the initial and modified CFA of PF with the threshold values for the fit indices.

4.2.1.5 *Takaful* financing (TF). The initial measurement model of TF consisted of eight indicators. Shown in Figure 10, the initial measurement estimation of TF displays a poor fit with the sample data, as evidenced from the lower value of CFI (0.632) and higher values of RMSEA (0.282) and normed chi-square (31.286) that cross the threshold points for such indices. This necessitates a revision of this initial TF measurement model.

Authors have taken into consideration the values of the factor loadings and the modification indices from the AMOS output to modify the initial CFA of TF. The loadings of the indicators TF6 (0.34), TF7 (0.19) and TF8 (0.23) are found to be very low, and they are omitted to improve the model. Next, we identify the higher error

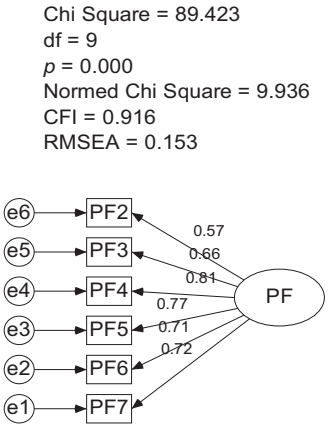

Figure 8.
Initial measurement model of PF

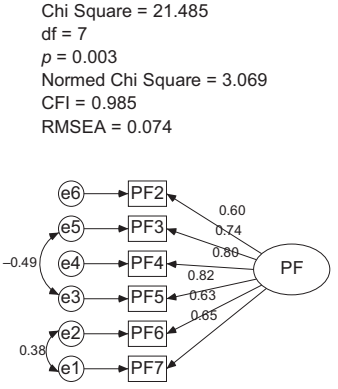

Figure 9.
Modified measurement model of PF

inter-correlations of TF1 and TF2 (MI = 26), which we solved by putting the earnings (Figure 11).

Table VII presents the results of the initial and modified CFA of TF with the threshold values for the fit indices.

4.2.2 Full-fledged structural model. The full-fledged structural model takes into consideration all the latent constructs of the research framework. Here, only the modified model is shown in Figure 12. It depicts all the standardized path coefficients among the latent constructs of the hypothesized theoretical framework. It is observed that five path coefficients prove to be statistically significant at $p < 0.001$, one is significant at $p < 0.05$ and the rest four appear to be non-significant, as evidenced by the critical ratio. However, the fit indices support the modified model.

Both the initial model (Figure 13) and the modified model (Figure 13) are shown.

In this modified model, five path coefficients, namely, WR → HRD, IsMF → TF, TF → HRD, IsMF → HRD, WR → PF, prove to be statistically significant at $p < 0.01$, $p < 0.05$, $p < 0.001$ and $p < 0.001$, respectively (Table IX).

Therefore, it is suggested that, *H2* (Islamic microfinance is positively related to *Takaful* financing) [IsMF → TF], *H3* (Islamic microfinance is related positively to Human Resource Development) [IsMF → HRD], *H4* (Islamic microfinance is related positively to project financing) [IsMF → PF] and *H6* (Takaful financing is related positively to poverty reduction) [TF → PR] are supported.

The other four hypotheses, namely, WR → IsMF, TF → HRD, HRD → PF and PF → PR, are not validated by the model.

Table VII. Results of CFA for project financing (PF)

Goodness-of-fit statistics	Initial model	Modified model	Threshold values for the fit indices
Normed-chi square	9.936	3.069	<5.0
RMSEA	0.153	0.074	<0.08
CFI	0.916	0.985	>0.9

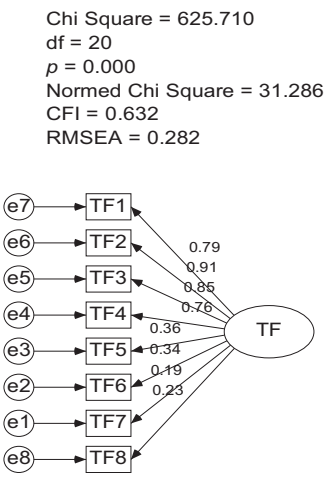

Figure 10. Initial measurement model of TF

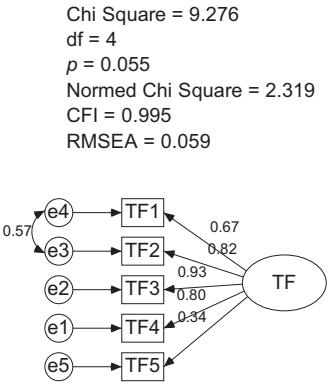

Figure 11. Modified measurement model of TF

Goodness-of-fit statistics	Initial model	Modified model	Threshold values for the fit indices
Normed-chi square	31.286	2.319	<5.0
RMSEA	0.282	0.059	<0.08
CFI	0.632	0.995	>0.9

Table VIII. Results of CFA for takaful financing (TF)

5. Concluding remarks

The main purpose of conducting the empirical study was to justify the needs for the IWIMM. There are six constructs presenting the IWIMM, including *Waqf* Resources, IsMF, *Takaful* Financing, Project Financing, Human Resource Development and Poverty Alleviation. In the survey instrument, 45 items represent the six constructs and only 26 items have been retained after factor analysis. The average Cronbach alpha value of the constructs is more than 0.85. SEM has been adopted to examine the relationship among the constructs. The modified full-fledged structural model provides us with the relationships between Islamic microfinancing and *Takaful* financing, *Waqf* resources and Human Resource Development, *Takaful* financing and Human Resource Development, Islamic microfinance and Human Resource Development and *Waqf* resources and Project Financing. Thus, the results indicate that poverty alleviation is possible through the integration of above constructs.

The authors recommend a few points based on the research findings. Firstly, the educational and training programme must be provided to the borrowers. It is important for the successful operation of their businesses or agricultural farms. Secondly, MFIs should be providing adequate amount of loan, otherwise the borrowed amount will not be utilized for productive purposes. Thirdly, the awareness level of the borrowers should be enhanced through social networks. MFIs can play a great role here. Finally, the respective authority of the *waqf* institution should think of channelling their funds to the IMFIs, as we have confirmed the relationship between *waqf* resources for poverty alleviation. Although the project financing is not supported in our model due to the lack of awareness among the respondents, it should be practised by the IMFIs based on *mudharabah* principles. Overall, the paper suggests applying the proposed model in

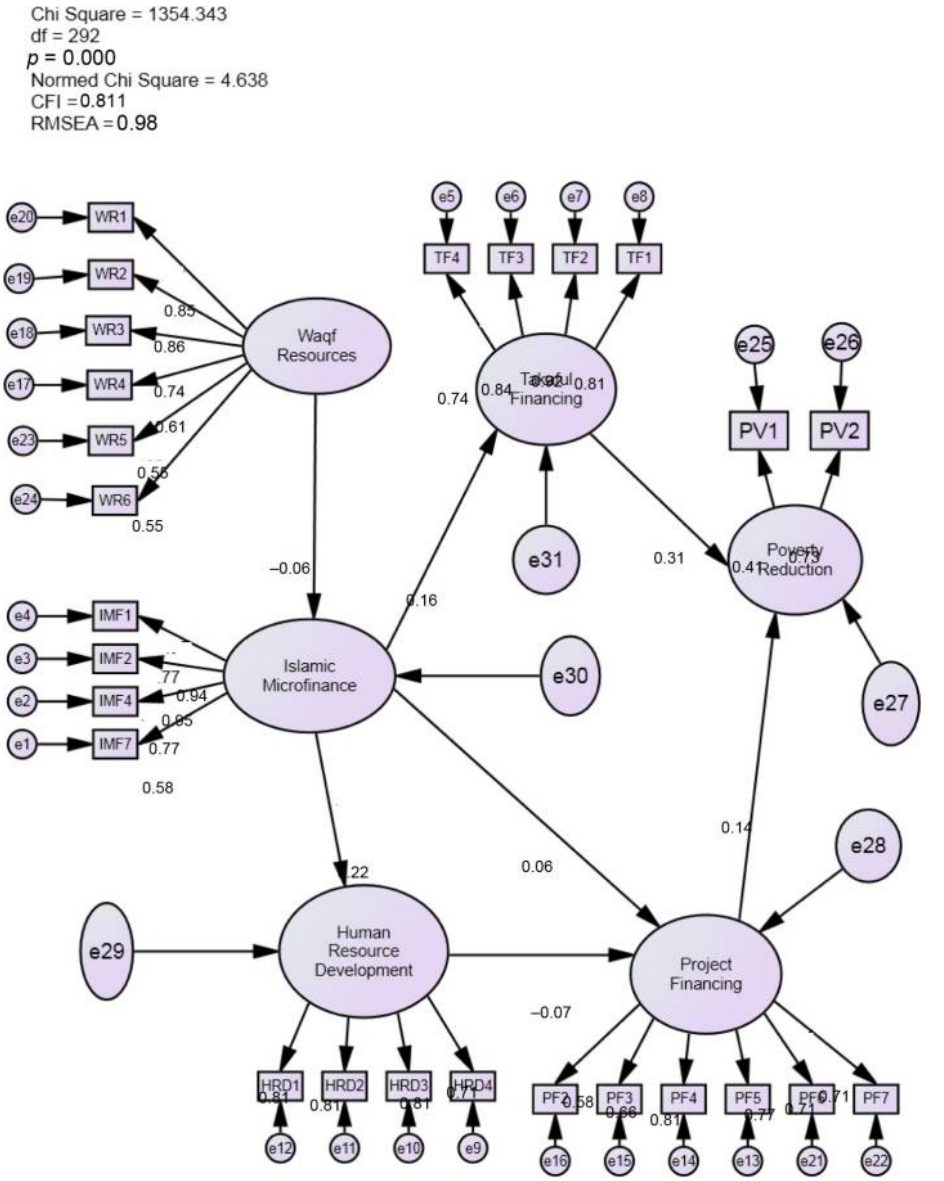

Figure 12.
Initial structural model

other Organisation of Islamic Cooperation (OIC) countries for policy agenda of poverty alleviation.

The research team includes Professors, Assistant Professors, Research Fellows and PhD Researchers from the Department of Economics, Kulliyyah of Economics and Management Sciences (KENMS), IIUM.

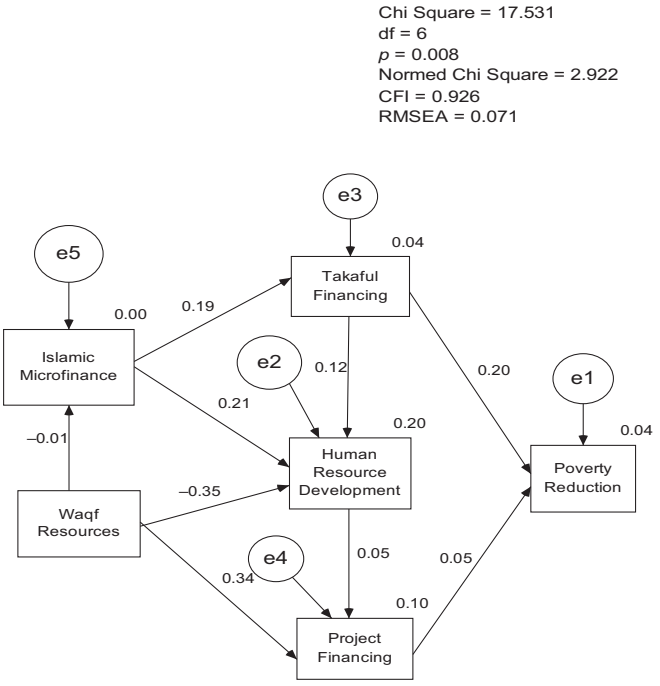

Figure 13.
Modified structural model

Hypothesized paths	Coefficient (β)	p-value (significance)	Remarks
H1. Waqf resources → Islamic microfinance	−0.013	0.793	Not supported
H2. Islamic microfinance → *Takaful* financing	0.193	0.011	Supported
H3. Islamic microfinance → Human resource development	0.213	0.000	Supported
H5. Human resource → Project financing	0.053	0.306	Not supported
H6. Takaful financing → Poverty reduction	0.201	0.021	Supported
H7. Project financing → Poverty reduction	0.053	0.290	Not supported
Additional relationship from the modified model			
Waqf resources → Project financing	0.336	0.000	Significant
Waqf resources → Human resource development	−0.350	0.000	Significant
Takaful financing → Human resource development	0.123	0.009	Significant

Table IX.
Hypothesized path coefficients

Note

1. More details on the operational aspects as well as the constructs in IWIMM have already been discussed in a paper titled "Integrated Waqf Based Islamic Microfinance Model (IWIMM) for Poverty alleviation in OIC Member Countries", published in *Middle-East Journal of Scientific Research*, Vol. 9 No. 2, pp. 286-298, 2014.

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