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Islamic Microfinance as a Catalyst for Sustainable Financial Inclusion in Muslim Communities: A Lahore Perspective and Lessons for North-Western Region, Nigeria.

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ABSTRACT

This study investigates the impact of Akhuwat Qardul-Hasan, an interest-free microfinance initiative, on financial behaviors in Lahore, Pakistan, with relevance to regions like the North-Western region of Nigeria. Employing three models, the research evaluates the influence of Qardul-Hasan on beneficiaries' decisions regarding bank account openings, participation in Takaful, and the development of saving habits. Utilizing a descriptive survey and inferential design in districts within the Punjab province, the study utilizes a sample size of 380, determined through the Krejcie and Morgan (1970) table. Structural Equation Modeling (SEM) with Partial Least Squares (PLS) and simple linear regression equations are applied for analysis, revealing Qardul-Hasan's significant impact on financial behaviors. The validated questionnaire ensures reliable data collection, contributing valuable insights for understanding and addressing financial inclusion challenges in Lahore and similar regions, such as the North-Western region of Nigeria. The findings demonstrate a robust explanatory power, marked by strong effect sizes and validated predictive relevance. Based on the findings of the study, a key recommendation is to replicate and scale up the model of interest-free microfinance, exemplified by Akhuwat Qardul-Hasan, in regions facing financial inclusion challenges, particularly in the North-Western region of Nigeria.

Keywords: Islamic Microfinance, Financial Inclusion, Akhuwat, Qardul-Hasan, Lahore, North-Western Region, Nigeria.

Background to the Study

The impact of Akhuwat Qardulhasan on financial inclusion in Lahore is multi-faceted and transformative (Wazir, & Durmuşkaya, 2023). In a city where a significant portion of the population lacks access to traditional banking, Akhuwat's interest-free microfinance acts as a crucial bridge. By providing benevolent loans without interest, the organization empowers individuals who may have otherwise been excluded from the formal banking sector due to financial constraints or other barriers. The noteworthy outcome of this initiative is the increased engagement of recipients with formal banking institutions, contributing to a rise in Lahore's financial inclusion ratio (Abdulhameed, Muhammad, Badamasi, Olufadi, & Sulaiman, 2023).

In contrast to the broader financial landscape in Pakistan, where the financial inclusion ratio stands at a modest 15% (World Bank, 2020), Akhuwat's interventions have significantly impacted Lahore. The success of its interest-free microfinance initiatives has led to a notable expansion in the percentage of the population with formal bank accounts in the city. This success story underscores the potential of sustainable finance, particularly in the realm of Islamic microfinance, as a catalyst for broader economic participation and integration (Abdulhameed et al., 2023)

However, as the narrative shifts to the North-Western region of Nigeria, a stark contrast emerges. The region grapples with a substantial challenge, with a staggering 43% of adults excluded from formal financial services, as reported by Enhancing Financial Innovation and Access (EFInA) in 2021. The study by Yahaya Sirajo and Abdulrash in 2022 further highlights the complex factors contributing to financial exclusion in this region, including income levels, internet accessibility, insecurity, proximity to banks, lack of confidence, and documentation issues. This alarming reality underscores the pressing need for targeted interventions to address the high rates of financial exclusion and empower individuals in the North-Western region.

Juxtaposing these contrasting figures emphasizes the urgency and significance of implementing strategies inspired by successful models like Akhuwat to address the specific challenges faced by marginalized communities in Nigeria. In the subsequent sections, the study meticulously dissects the specific impacts of Akhuwat Qardulhasan on Lahore. It focuses on tangible contributions such as obtaining formal bank accounts, cultivating a saving habit, and encouraging participation in Takaful. Through this detailed analysis, the study unravels the layers of Akhuwat's transformative role, shedding light on how its innovative approach is shaping a more inclusive and resilient financial landscape in Lahore. This exploration serves as a source of inspiration for devising targeted interventions that could potentially alleviate financial exclusion challenges in the North-Western region of Nigeria.

Statement of Research Problem

In the context of Pakistan, the persistent challenge of financial exclusion among adults, despite the sustained efforts of the State Bank of Pakistan (SBP) and the National Financial Inclusion Strategy (NFIS), is alarming. Currently, 53% of adults in Pakistan remain financially excluded, necessitating a comprehensive investigation into the intricacies of this issue (Springer, 2023). This research aims to unravel the factors contributing to the persistence of financial exclusion, with a specific focus on the implications for obtaining formal bank accounts, fostering a saving habit, and encouraging participation in Takaful among beneficiaries of Akhuwat.

Adding to the urgency, more than two-thirds of financially excluded adults belong to Muslim communities in regions such as South Asia, the Pacific, and sub-Saharan Africa (Global Findex, 2022). This exclusion is primarily driven by religious beliefs, as Islam strictly prohibits interest (riba), prevalent in conventional financial institutions (World Bank, 2020). The study's exploration into the barriers hindering financial inclusion becomes pivotal when considering the goal of universal financial access. Understanding the challenges faced by individuals in obtaining formal bank accounts is crucial for policymakers, financial institutions, and organizations like Akhuwat. By identifying the specific hurdles that beneficiaries encounter in accessing formal banking services, the research can inform targeted interventions and strategies aimed at facilitating greater inclusion in the formal financial sector. This, in turn, contributes to the broader NFIS objective of expanding formal financial access to at least 50% of adults.

The research on financial inclusion goes beyond mere access to formal banking; it encompasses the cultivation of responsible financial behavior, including the development of a saving habit. The study's examination of persisting financial exclusion sheds light on how barriers to saving may impede the economic progress of individuals. For beneficiaries of Akhuwat, understanding the factors that hinder the establishment of a saving habit is crucial. Insights gained from the research can inform tailored financial literacy programs and interventions, empowering individuals to not only access financial services but also to utilize them effectively for long-term financial well-being.

Participation in Takaful, or Islamic insurance, is closely tied to the cultural and ethical considerations of beneficiaries, especially in a country like Pakistan. The research, by uncovering the challenges that persist in financial inclusion, provides valuable insights into the impediments faced by individuals in engaging with Takaful. For Akhuwat beneficiaries, the study's findings can inform the organization's strategies to encourage and facilitate participation in Takaful programs. This aligns with the broader goal of promoting ethical and sustainable financial practices and contributes to the beneficiaries' overall financial resilience.

The challenges faced by Pakistan in achieving financial inclusion, particularly among Muslim communities, offer lessons for the North-Western Region of Nigeria, which grapples with a staggering 43% of adults excluded from formal financial services (EFInA, 2021). The North-Western region, much like Pakistan, has a significant Muslim population facing financial exclusion, with factors such as income levels, internet accessibility, insecurity, proximity to banks, lack of confidence, and documentation issues contributing to the challenge as noted by Yahaya, Sirajo and Abdulrash (2022).

Lessons from Akhuwat's interest-free microfinance in Lahore can inspire the development of innovative and inclusive financial models in Nigeria. Similar initiatives tailored to the cultural and religious context could serve as a bridge to formal financial services.

Recognizing the influence of religious beliefs on financial exclusion, interventions in the North-Western region should consider aligning financial products with Islamic principles. This may involve exploring interest-free financial solutions and promoting Islamic banking practices.

The research emphasizes the importance of tailored financial literacy programs. In the North-Western region, addressing specific challenges related to confidence, documentation, and cultural considerations could enhance financial literacy and empower individuals to engage with formal financial institutions.

The focus on Takaful participation in Pakistan provides insights for promoting ethical financial practices in Nigeria. Understanding and addressing cultural and ethical considerations can be crucial in encouraging participation in Islamic insurance or similar ethical financial instruments.

In regions facing security concerns, such as the North-Western region of Nigeria, collaboration between financial institutions and local authorities is essential. Enhanced security measures can create a conducive environment for financial inclusion initiatives.

By drawing on the experiences and successes of Akhuwat in Lahore, the North-Western Region of Nigeria can tailor its financial inclusion strategies to address the specific challenges faced by its population. The research provides a framework for understanding and mitigating financial exclusion, fostering inclusive and sustainable financial practices for the benefit of individuals and communities in Nigeria.

In an attempt to provide solution the research problem, the study would be guided by the following objectives:

a) Evaluate the effectiveness of interest-free microfinance in Lahore (Akhuwat Qardul-Hasan) in increasing the tendency of beneficiaries to open formal bank accounts; lessons for North-Western Region, Nigeria.

b) Investigating the Effect of Akhuwat Qardul-Hasan on Recipients' Saving Habits; lessons for North-Western Region, Nigeria.

c) Assessing the Impact of Akhuwat Qardul-Hasan on Takaful Participation; lessons for North-Western Region, Nigeria.

LITERATURE REVIEW

Concept of Microfinance

Microfinance serves as a critical economic development approach designed to uplift individuals in low-income communities, particularly women and men. It is a targeted financial service provision dedicated explicitly to the poor, with a focus on business activities. The goal is to empower those considered "unbankable," fostering financial inclusion and expanding access to banking services. Microfinance institutions, as described by Report Linker (2021), facilitate financial support to micro-small enterprises and low-income households through deposits, interests, loans, or facilities.

Key characteristics of microfinance, as outlined by FINCA International (2020), include the provision of small and short-term loans, emphasizing social collateral over financial collateral, and offering larger loan amounts based on positive repayment performance. Microfinance institutions engage in thorough searches to identify the real poor and assess their business demands. Continuous business monitoring, though labor-intensive, is a crucial element to ensure the sustainability of the borrowers' enterprises.

Microfinance operates with flexibility, providing an easy and accessible way for borrowers to obtain finance with minimal paperwork and streamlined procedures. Despite higher interest rates attributed to expensive financial transactions and risk factors, microfinance institutions play a vital role in facilitating access to finance for those who would otherwise be excluded (Ashraf, 2010).

Beyond financial support, microfinance institutions contribute to the holistic development of micro-borrowers. They offer saving services, business development training, literacy programs, and healthcare and social services. These multifaceted initiatives aim to alleviate poverty, enhance financial literacy, improve healthcare, and address various social challenges faced by the beneficiaries (Fang, Ke & Zhou, 2015).

Concept of Qardul-Hasan

The concept of Qardul-Hasan in Islamic finance stems from the Arabic words "qard," meaning to cut off or lend, and "hasan," signifying beautiful or fine. Qardul-Hasan, when combined, refers to a beneficial, benevolent, or gratuitous loan. Technically, it involves giving something of value to another with the condition that it will be returned either on demand or at a specified future date, without any interest or compensation (Abdulhameed et al., 2023).

Qardul-Hasan holds special significance in the Islamic economic system, as it is mentioned in the Qur'an as a "beautiful" loan. In verses such as Chapter 64, verse 17, and others like 2:245, 5:12, 57:11, 57:18, and 73:20, the loan is emphasized to be made directly to Allah (S.W.T) rather than the recipient. It is a voluntary loan extended to community members facing financial distress, with the creditor having no expectation of return on the principal. Furthermore, the creditor does not press the debtor for a specific timing of repayment, and Allah (S.W.T) promises multiple returns for the "beautiful loan," as stated in Qur'an, chapter 2: verse 245. Overall, Qardul-Hasan embodies the principles of benevolence, selflessness, and a commitment to community welfare within the framework of Islamic finance.

Concept of Financial Inclusion

Financial inclusion, defined as the provision of affordable financial services to all segments of the population, aims to address economic disparities. According to Ozili (2018), Dev (2006), and Sahay et al. (2015), financial inclusion is multifaceted, covering accessibility, availability, and usage of formal financial services. The concept revolves around ensuring that every individual has access to available financial services (Amidžić et al., 2014).

Account ownership is considered the foundational level of financial inclusion (Ahmed, 2018; World Bank, 2018). Without a bank account, individuals lack a track record, hindering their existence in the mainstream financial system. The three levels of financial inclusion, as highlighted by Ahmed (2018), start with account ownership, emphasizing that "I have a bank account; I do exist." The second layer involves access to credit and savings, with a bank account serving as a prerequisite for a credit record. Finally, the third layer pertains to access to insurance services, often linked to loan requirements (Ahmed, 2018; Lester, 2011).

The interconnected nature of financial inclusion across banking services, credit, and insurance underscores its significance in promoting economic participation and overall well-being. The concept emphasizes not only the provision of services but also their accessibility and utilization by all members of society, particularly those who are economically disadvantaged.

Akhuwat Model

Akhuwat, meaning brotherhood in Arabic, reflects its commitment to Islamic principles of ukhuwwah (brotherhood) and muwakhat (brotherhood in Urdu), inspired by the historical sharing of wealth in Madina. Established in 2001, Akhuwat envisions a poverty-free society based on compassion and equity, with interest-free loans as a means to empower borrowers. Dr. Saqib, the founder, emphasizes that these loans ensure the hard work of borrowers does not go in vain (Akhuwat Microfinance Timeline, 2021).

As a rare fully Sharia-compliant institution in Pakistan, Akhuwat rejects high interest rates, viewing them as contributing to the exacerbation of poverty. The organization believes that using money to earn money concentrates wealth among a few, contradicting principles of equity and social justice. Akhuwat's portfolio consists of 90% "Family Enterprise Loans" in the form of interest-free "Qardul-hasan," derived from Islamic teachings. Eligibility for these loans is open to individuals with viable business plans, promoting economic sustainability (Akhuwat Microfinance Timeline, 2021)..

Initially a philanthropic experiment, Akhuwat formalized in 2003 and has since grown significantly. By 2018, it boasted an outstanding loan portfolio of PKR 14.5 Billion, 901,513 active loans, and over 800 branches across Pakistan. As of December 2021, Akhuwat has disbursed over PKR 155 billion to

more than 4.8 million families, reflecting its substantial impact on poverty alleviation. The organization's growth and success underscore its commitment to fostering economic strength and brotherhood in society (Akhuwat Microfinance Timeline, 2021).

Review of Empirical Literature

The reviewed studies offer valuable insights into the dynamics of financial inclusion in Pakistan, addressing various facets such as the relationship between financial inclusion and agricultural growth, the impact of financial inclusion and literacy on sustainable farm performance, mobile e-wallet services, and financial inclusion among women. Farooq et al. (2023) highlight the complex interplay between financial inclusion and agricultural growth, revealing the contrasting effects of domestic credit and positive influences of broad money and cropped area.

Raza et al.'s (2023) examination emphasizes the crucial role of trust in extension services for agriculture in achieving sustainable farm performance. Masood et al. (2023) explore the usage of mobile e-wallet services, identifying the mediation of perceived risk by perceived usefulness and government support, underlining the significance of external factors in shaping the intention to use such services.

Zahid et al.'s (2023) study on financial literacy among women in Pakistan underscores the positive impact of various financial literacy aspects on women's financial inclusion. Additionally, Govindapuram et al.'s (2023) focus on women's access to finance reveals the influence of micro-level factors, individual characteristics, and informal gender norms in shaping financial inclusion for women.

Despite these valuable contributions, a notable research gap exists in understanding the specific impact of Akhuwat's Islamic microfinance, particularly the Qardul-hasan model, on obtaining formal bank accounts, fostering saving habits, and encouraging participation in Takaful among beneficiaries. A dedicated study on Akhuwat's transformative potential in Lahore could provide nuanced insights into its effects on financial inclusion, contributing to the broader discourse on Islamic microfinance and addressing existing research gaps in the evolving landscape of financial inclusion.

Theoretical Framework

The theoretical framework for this study is grounded in the "Vulnerable Group Theory of Financial Inclusion," which emphasizes the importance of targeting vulnerable segments of the population, such as the poor, young people, women, and the elderly, in financial inclusion efforts. The theory suggests that focusing on vulnerable groups is essential to reduce financial exclusion and mitigate the impact of economic hardships on those most affected (Bhandari, 2018). By identifying the financially excluded members based on vulnerability factors, such as income level, age, and gender, the theory aims to make financial inclusion initiatives more effective and cost-efficient. The study aligns with this theoretical perspective by examining how Akhuwat Foundation's interest-free micro-credit, rooted in principles of qardul-hasan, encourages unbanked and vulnerable beneficiaries to access formal financial services, fostering affordability and sustainability. The theory's relevance lies in its alignment with the research objectives, guiding the study toward understanding the impact of Akhuwat's initiatives on the targeted vulnerable population and their engagement with formal financial services.

Methodology

The research methodology for this study involves a descriptive survey and inferential design, utilizing a structured questionnaire for data collection from the Akhuwat qardul-hasan beneficiaries in Lahore. The study focuses on the Punjab province, particularly in the districts of Badami Bagh, Kot Khawaja Saeed, and Kahna Nau. The population comprises 30,000 to 40,000 beneficiaries, and a sample size of 380 is determined using the Krejcie and Morgan (1970) sample size table. The questionnaire covers demographic information and explores the relationship between qardul-hasan and financial inclusion indicators such as obtaining a formal bank account, saving habits, and participation in Islamic insurance (takaful). The study employs structural equation modeling (SEM) with Partial Least Squares (PLS) for data analysis. The model specification involves simple linear regression equations to examine the influence of qardul-hasan on obtaining formal bank accounts, saving habits, and takaful participation among Akhuwat beneficiaries. The instrument's validity and reliability are ensured through expert scrutiny and statistical measures, and the research contributes to understanding the impact of qardul-hasan on financial inclusion in Lahore.

Presentation, Interpretation and Analysis of Result

Pilot Test Result

The pilot study results, involving normality tests for the variables related to financial inclusion, indicated that none of the variables significantly deviated from a normal distribution. Although these findings are based on a pilot study with a limited sample size, they provide initial insights into the normality assumption. Additionally, the results of the reliability and validity assessments for the measurement scales of constructs such as Participation in Takaful, Open formal bank accounts, Qardul-hasan scheme, and Saving habit revealed satisfactory levels of composite reliability, average variance extracted, and Cronbach's Alpha. The composite reliability values were above the recommended threshold of 0.7, indicating high internal consistency. The average variance extracted values also met the acceptable criterion of 0.5, demonstrating convergent validity. Moreover, the Cronbach's Alpha values were within the acceptable range, further affirming the reliability of the measurement scales. These preliminary findings suggest that the measurement instruments used in the study exhibit adequate reliability and validity.

Response Rate Analysis and Preliminary Analysis

The response rate for the study was satisfactory, with 300 out of the 380 distributed questionnaires returned and deemed usable. This resulted in a response rate of 78%, considered adequate for analysis. In the preliminary analysis, data screening was conducted to identify any potential violations of key assumptions related to multivariate analysis. Two important tests, the Kolmogorov-Smirnov and Shapiro-Wilk tests, were employed to assess the normality of the data. The aim was to ensure that the data met the assumptions necessary for accurate model estimations in the subsequent analyses, especially in the context of partial least squares structural equation modeling (PLS-SEM). This careful consideration of normality is crucial, as skewed or kurtotic data can impact the accuracy of path coefficient estimates in PLS-SEM.

Table 1: Result of Normality Test

Tests of Normality				
Variable	Kolmogorov-Smirnov[a]		Shapiro-Wilk	
	Statistic	Sig.	Statistic	Sig.
Qardul-hasan scheme	.150	.400	.935	.100
Open formal bank accounts	.060	.610	.989	.220
Saving habit	.089	.670	.990	.138
Participation in *Takaful*	.148	.080	.923	.530

Source: Computed from Field Survey (2023) using SPSS Version 22

From Table1, the Kolmogorov and Shapiro Test of normality shows that the variables of the study namely *Qardul-hasan* scheme, open formal bank account, saving habit and participation in *Takaful* were statistically insignificant that is, P<0.05, hence all the variables are normally distributed and therefore further analysis can be conducted

Demographic Profile of the Respondents

This section analyses the demographic profile of the respondents of the study. The demographic characteristics are gender, age, marital status, loan received, high educational qualification, religion and location.

Table 2: Demographic Characteristics of the Respondents

	Frequency	Percentage (%)
Gender		
Male	261	87.0
Female	39	13.0
Total	300	100.0
Age		
20-29	55	18.3
30-39	100	33.3
40-49	101	33.7
50-59	40	13.3
60 and above	4	1.3
Total	300	100.0
Marital status		
Single	46	15.3
Married	254	84.6
Total	300	100.0
Loan Received		
Below 5,000	11	3.7
5,000-20,000	11	3.7
20,000-50,000	15	5.0
50,000-80,000	50	16.7
80,000-100,000	131	44.7
100,000 and above	79	26.3
Total	300	100.0
Educational Qualification		
Primary Certificate	119	39.7
Secondary Certificate	142	47.3
Post-secondary Certificate	39	13.0

Total	300	100.0
Religion		
Islam	275	91.7
Christianity	25	8.3
Total	300	100.0
Location		
Rural	35	11.6
Urban	265	88.3
Total	300	100.0

Source: Computed from Field Survey (2023) using SPSS Version 22

Table 2 presents demographic and socioeconomic characteristics of the subjects in the study. The majority of respondents are male, comprising 87% of the sample, while females account for only 13%. Age distribution indicates that the largest proportion falls within the 40-49 age group (33.7%), followed closely by the 30-39 age bracket (33.3%). In terms of marital status, 84.6% of respondents are married, with only 15.3% being single. Regarding loan amounts, a small percentage of respondents have received loans below 5,000, while the majority fall within the 80,000-100,000 range, followed by 100,000 and above. Educational attainment reveals that 47.3% of respondents have a secondary certificate, 39.7% possess a primary certificate, and only 13% have a post-secondary certificate. Moreover, the majority of respondents are Muslim (91.7%), and the study population is predominantly urban, with 88.3% residing in urban areas, while only 11.6% live in rural areas. Overall, the findings suggest a predominantly male, married, urban-dwelling population with a significant proportion in the 40-49 age group and holding secondary education certificates.

Assessment of Measurement Model

An assessment of a measurement model involves determining individual item reliability, internal consistency reliability, content validity, convergent validity and discriminant validity (Hair *et al.,* 2014; Hair *et al.,* 2011; Henseler *et al.*, 2009).
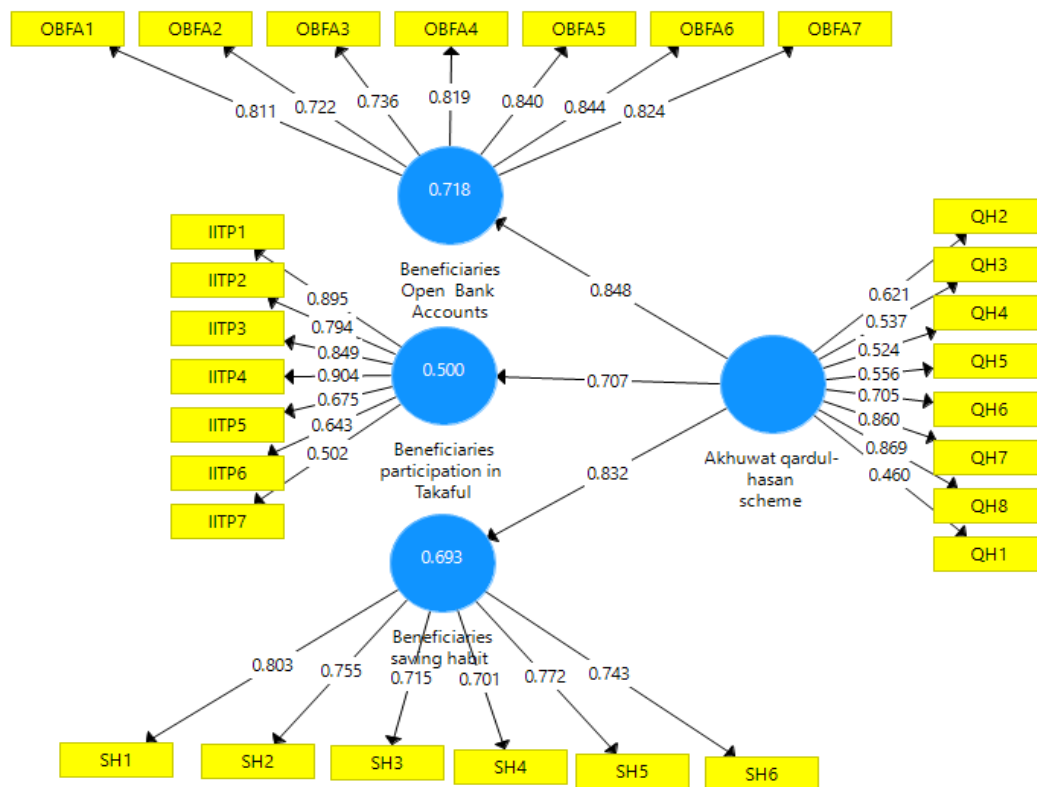

Figure 4.1 Measurement Model

Source: Computed from Field Survey (2023) using SPSS Version 22 and Smart-Pls 3

Convergent Validity

Individual reliability, as defined by Hulland (1999), involves evaluating the loading of multiple items in relation to their respective constructs in a study. The consistency of items in measuring the proposed construct is crucial for achieving reliability and validity, ensuring that items are free from random

and systematic errors (Hair et al., 2013). The assessment of individual item reliability involves examining their loadings, obtained from the Partial Least Squares (PLS) algorithm results. Scholars, such as Henseler et al. (2009), suggest that a latent variable should explain at least 50% of the variance in the observed variable shared with the construct. While different thresholds are proposed in the literature, with varying opinions on the ideal range, scholars generally agree on individual item loadings falling between 0.4 and 0.7 (Hair et al., 2013). This range is considered acceptable for ensuring the reliability of individual items in measuring the intended constructs.

Table 3: Loadings, Composite reliability and Average Variance extracted

	Composite reliability (pc)	Average variance Extracted	Cronbach Alpha
Participation in *Takaful*	**0.905**	**0.585**	**0.909**
Open formal bank accounts	**0.926**	**0.432**	**0.926**
***Qardul-hasan* scheme**	**0.853**	**0.432**	**0.862**
Saving habit	**0.884**	**0.561**	**0.885**

Source: Computed from Field Survey (2023) using SPSS Version 22 and Smart-Pls 3

Table 3 shows that the entire items factor loadings exceed the yardstick of 0.4 as requested by (Hair *et al.,* 2013), hence no need of any item deletion, in case of Composite reliability a lantern variable should explain at least 0.5 of the variance in the observed variable shared with the construct, all the lantern variable of the study revealed reliability of >0.5, therefore the reliability is achieved, while the average variance extracted value of the lantern variable have exceed the threshold of >0.4. Cronbach alpha value of all variables of the study exceeds the yardstick of 0.6.

Discriminant Validity

Discriminant validity refers to the extent to which a particular latent construct is different from another latent variable (Duarte & Raposo, 2010). In the present study, Discriminant validity was determined following Chin's (1998) criterion, by comparing the indicator loadings with other reflective indicators in the cross loadings.

Table 4: Cross Loadings

	Qardul-hasan _scheme	Open Bank _Accounts	Participation in Takaful	saving habit
IITP1	0.633	0.756	**0.895**	0.789
IITP2	0.562	0.630	**0.794**	0.751
IITP3	0.601	0.681	**0.849**	0.795
IITP4	0.640	0.690	**0.904**	0.706
IITP5	0.478	0.648	**0.675**	0.662
IITP6	0.455	0.585	**0.643**	0.606
IITP7	0.355	0.493	**0.502**	0.498
OBFA1	0.688	**0.811**	0.678	0.675
OBFA2	0.612	**0.722**	0.715	0.704
OBFA3	0.624	**0.736**	0.605	0.703
OBFA4	0.694	**0.819**	0.676	0.821
OBFA5	0.712	**0.840**	0.689	0.801
OBFA6	0.715	**0.844**	0.662	0.809
OBFA7	0.699	**0.824**	0.693	0.866
QH1	**0.460**	0.362	0.366	0.376
QH2	**0.621**	0.533	0.432	0.518
QH3	**0.537**	0.455	0.358	0.465
QH4	**0.524**	0.467	0.305	0.470
QH5	**0.556**	0.466	0.415	0.449
QH6	**0.705**	0.564	0.544	0.583
QH7	**0.860**	0.745	0.576	0.726
QH8	**0.869**	0.747	0.633	0.697
SH1	0.668	0.832	0.676	**0.803**
SH2	0.628	0.758	0.601	**0.755**
SH3	0.595	0.751	0.616	**0.715**
SH4	0.583	0.670	0.696	**0.701**
SH5	0.643	0.648	0.711	**0.772**
SH6	0.619	0.656	0.770	**0.743**

Source Computed from Field Survey (2023) using SPSS Version 22 and Smart-Pls 3

In Table 4, the correlations among the latent variables were compared with the square root of the average variances extracted (values in bold face). Table 4 also shows that the square root of the average variances extracted were all greater than the correlations among latent constructs, suggesting adequate discriminant validity (Fornell & Larcker, 1981).

Structural Model Assessment

The validity of the outer model (measurement model) gives room for evaluating the inner (structural) model (Henseler *et al.,* 2009). The structural model is concerned about R^2, coefficient and P-value by way bootstrapping (Hair *et al.,* 2013). Additionally, the model predictive relevance (Q^2), as well as the effect size (F^2) of each variable, was explained by the structural model. The inner model is to evaluate the significance of loadings and paths coefficient that exists between variables (Barclay *et al.,* 1995). Specifically, the structural model is aimed at model evaluation, as well as, an examination of the regression and correlation assumption between the variables of the study
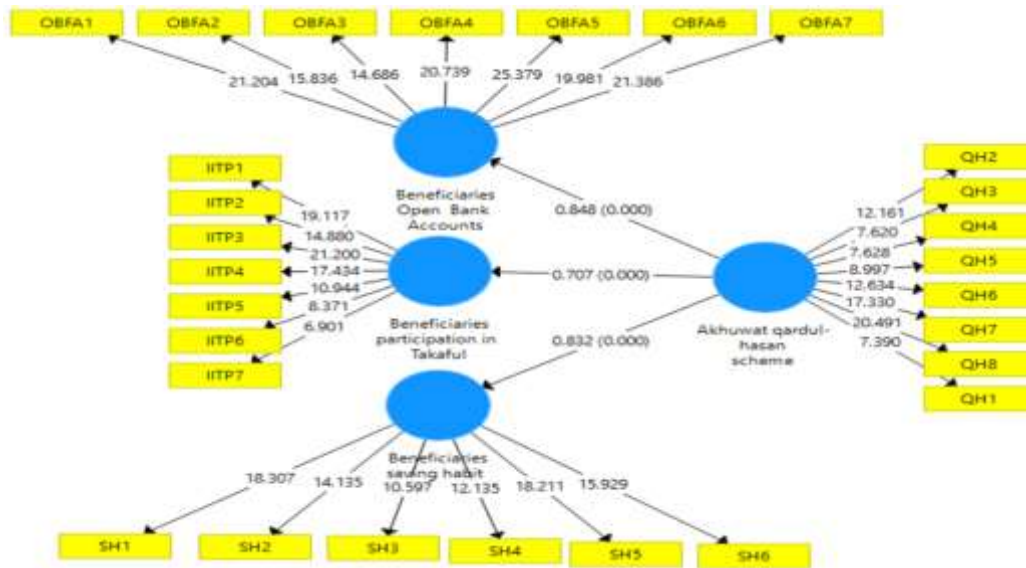

Figure 2: Structural Model

Source: Computed from Field Survey (2023) using SPSS Version 22 and Smart-Pls 3

Direct Relationship

Table 5: Results of Direct Hypotheses

Relationship	Beta	P-Value	Findings
QH -> OBFA	0.848	0.000	Supported
QH -> IITP	0.707	0.000	Supported
QH -> SH	0.832	0.000	Supported

Note: ***Significant at 0.01 (two-tailed)

Source: Computed from Field Survey (2023) using SPSS Version 22 and Smart-Pls 3

Figure 2 provides the graphical display of the standardized path coefficient (β) and P- values of the hypothesis in this study. Table 5 provides standardized path coefficient (β) and P-values as suggested by Cho and Abe (2013).

Test of Hypotheses

The study examined three hypotheses related to the impact of Akhuwat Qardul-hasan on beneficiaries. Hypothesis 1, asserting that Akhuwat Qardul-hasan does not significantly increase the tendency of beneficiaries to obtain formal bank accounts, was rejected based on a significant relationship with a coefficient of β=0.848 and a probability value (P=0.000) below the 0.05 threshold. Similarly, Hypothesis 2, suggesting that Akhuwat Qardul-hasan does not significantly enhance participation in Islamic insurance (Takaful), was rejected as well, supported by a significant relationship with a coefficient of β=0.707 and a probability value (P=0.000) below the 0.05 threshold. Hypothesis 3, postulating that Akhuwat Qardul-hasan does not significantly improve the saving habit of beneficiaries, was also rejected, with a significant relationship indicated by a coefficient of β=0.832 and a probability value (P=0.000) below the 0.05 threshold. Overall, the findings suggest that Akhuwat Qardul-hasan has a significant positive impact on beneficiaries' engagement in

formal banking, Islamic insurance, and saving habits.

Assessment of Variance Explained in the Dependent Latent Variables

Another important criterion for assessing the structural model in PLS-SEM is the R-squared value, which is also known as the coefficient of determination (Hair *et al.,* 2012). The R-squared value represents the proportion of variation in the dependent variable(s) that can be explained by one or more independent variable (Hair *et al.,* 2010). Although the acceptable level of R^2 value depends on the research context (Hair *et al.,* 2010), an R-squared value of 0.10 is a minimum acceptable level. Meanwhile, Chin (1998) suggests that the *R*-squared values of 0.67, 0.33, and 0.19 in PLS-SEM can be considered as substantial, moderate, and weak, respectively. Table 4.8 presents the R-squared values.

Table 6: Variance Explained in the dependent Variables

Variable	R Square (R^2)
Open Bank Accounts	72%
Participation in *Takaful*	50%
Saving habit	69.3%

Source: Computed from Field Survey (2023) using SPSS Version 22 and Smart-Pls 3

The results from three models, as presented in Table 6, reveal the explanatory power of the predictor variable, Akhwat Qardul-hasan, on three distinct dependent variables: open bank account, participation in Takaful, and saving habit. In the first model, Akhwat Qardul-hasan explains 72% of the variance in the beneficiaries' decision to open a bank account, with the remaining 28% attributed to unaccounted variables represented by the error term. Similarly, in the second model, the predictor accounts for 50% of the variance in beneficiaries' participation in Takaful, leaving 50% influenced by other unspecified factors. In the third model, Akhwat Qardul-hasan explains 69.3% of the variance in beneficiaries' saving habits, with 30.7% variability attributed to other unidentified variables. These findings highlight the substantial influence of Akhwat Qardul-hasan on the specified outcomes, emphasizing its role in shaping beneficiaries' financial behaviors while acknowledging the presence of other factors contributing to the observed variations.

Assessment of Effect Size (F^2)

Effect size indicates the relative effect of a particular independent variables on dependent variable by means of changes in the R-squared (Chin, 1998). It is calculated as the changes in R-squared of the variable to which the path is connected, (Chin, 1998). Cohen (1988) describes F^2 values of 0.02, 0.15 and 0.35 as having weak, moderate and strong effects respectively. Table 4.9 shows the respective effect sizes of the independent latent variables of the structural model.

Table 7: Effect Sizes of the Independent Latent Variables on Cohen's (1988) Recommendation

Independent variable	Dependent variable	F^2	Effect size
Qardul-hasan **scheme**	Open Bank Accounts	2.551	Strong
Qardul-hasan **scheme**	Participation in Takaful	1.002	Strong
Qardul-hasan **scheme**	Saving habit	2.255	Strong

Source: Computed from Field Survey (2023) using SPSS Version 22 and Smart-Pls 3

From the result displayed in Table 7, it could be deduced that all the variables have some exploratory power towards the dependent variables. Specifically, *Qardul-hasan* scheme has a strong effect on dependent variables namely, open bank account, participation in *Takaful* and saving habit.

Assessment of Predictive Relevance

The study also applied Stone-Geisser Test of predictive relevance of the research model using blindfolding procedures (Geisser, 1974; Stone, 1974). Hence, because the dependent variable was reflective in nature, a blindfolding procedure was applied mainly to this dependent variable. In particular, a cross-validated redundancy measure (Q^2) was applied to assess the predictive relevance of the research model (Chin, 2010; Geisser, 1974; Hair *et al.,* 2013). According to Henseler *et al.,* (2009), a research model with Q^2 statistic (s) greater than zero is considered to have predictive relevance. They added that a research model with higher positive Q^2 values suggests more predictive relevance. Table 4.10 presents the results of the cross-validated redundancy Q^2 test.

Table 8: Construct Cross-Validated Redundancy

Total	SSO	SSE	Q2(=1-SSE/SSO)
Open Bank Accounts	2,100.000	1,309.773	0.376

Participation in Takaful	2,100.000	1,602.092	0.237
Saving habit	1,800.000	1,225.553	0.319

Source: Computed from Field Survey (2023) using SPSS Version 22 and Smart-Pls 3

Table 4.10, reveal positive cross-validation redundancy measures (Q^2) for all three models. Specifically, the Q^2 values for the open bank account, participation in Takaful, and saving habit variables are above zero. This suggests that the first, second, and third models possess predictive relevance, signifying that the proposed models are capable of predicting the respective dependent variables. The positive Q^2 values indicate that the models' predictions are better than those generated by a simple mean model, reinforcing the validity and utility of the models in explaining the variations in the specified outcomes.

Discussion of Findings with Implications and Lessons for North-Western Region, Nigeria

Explanatory Power of Akhuwat Qardul-Hasan: The results from the three models, assessing the impact of Akhuwat Qardul-Hasan on open bank accounts, participation in Takaful, and saving habits, reveal significant explanatory power. In the first model, Akhuwat Qardul-Hasan explains 72% of the variance in beneficiaries' decisions to open bank accounts, highlighting its substantial influence. Similarly, for participation in Takaful, the predictor accounts for 50% of the variance, and for saving habits, it explains 69.3%. These findings underscore the pivotal role of Akhuwat Qardul-Hasan in shaping beneficiaries' financial behaviors.

Effect Size (F2) Analysis: The assessment of effect size (F2) further supports the substantial influence of Akhuwat Qardul-Hasan. Cohen's (1988) recommendation categorizes F2 values, with 0.02, 0.15, and 0.35 denoting weak, moderate, and strong effects, respectively. In this study, all variables, including open bank accounts, participation in Takaful, and saving habits, exhibit strong effects (2.551, 1.002, and 2.255, respectively). This reinforces the idea that Akhuwat Qardul-Hasan has a robust impact on these financial behaviors among beneficiaries.

Predictive Relevance Assessment: The Stone-Geisser Test of predictive relevance, employing cross-validated redundancy (Q^2), further validates the research models. Positive Q^2 values for open bank accounts (0.376), participation in Takaful (0.237), and saving habits (0.319) indicate that the models possess predictive relevance. The Q^2 values above zero suggest that the models are capable of predicting the respective dependent variables, surpassing predictions generated by a simple mean model.

The study's implications for the North-Western region of Nigeria are significant, suggesting that the introduction of interest-free microfinance initiatives aligned with the cultural and religious context, such as Akhuwat Qardul-Hasan, could substantially impact financial inclusion. Additionally, promoting Takaful through targeted campaigns could enhance participation in Islamic insurance, considering cultural and ethical considerations. Financial education programs tailored to address specific barriers and income disparities may further foster formal bank account openings and saving habits. Policymakers are urged to consider the success of Akhuwat Qardul-Hasan in developing policies supporting interest-free microfinance initiatives, and collaborations between financial institutions, religious leaders, and local authorities could prove instrumental. Addressing security concerns is highlighted as crucial for financial inclusion in the region. In summary, the findings underscore the potential of interest-free microfinance to positively influence financial behaviors and guide strategic interventions for fostering financial inclusion and ethical financial practices in the North-Western region of Nigeria.

Conclusion

The study underscores the significant impact of Akhuwat Qardul-Hasan on financial behaviors in Lahore, Pakistan, revealing its substantial influence in promoting formal bank account openings, fostering participation in Takaful, and cultivating saving habits among beneficiaries. The explanatory power of Akhuwat Qardul-Hasan, as evidenced by high percentages of variance explained, coupled with strong effect sizes and positive predictive relevance assessments, emphasizes its transformative role in shaping a more inclusive and resilient financial landscape. These findings have practical implications for the adoption of interest-free microfinance initiatives in regions with a Muslim majority, such as the North-Western region of Nigeria, offering valuable lessons for policymakers and financial institutions aiming to enhance financial inclusion and promote ethical financial practices in diverse cultural contexts.

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