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RESEARCH PAPER

The Impact of Benevolent (Interest-Free) Loans on Poverty in Iran Zeynab Shaki-Masouleh^a, Abolghasem Tohidinia^{a,*}

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Abstract

Although extensive research has been conducted on the impact of microfinance on poverty reduction, limited studies exist on the effect of charitable loans (interest-free or Qard al-Hasan) as an Islamic microfinance tool, primarily due to a lack of data. This article addresses this gap by employing a micro-data econometric model to investigate whether charitable loans have effectively reduced poverty among Iranian households. The study utilizes comprehensive data from 36 official financial institutions in Iran, including two specialized Qard al-Hasan banks - Resalat and Mehr of Iran - as well as data from numerous voluntary informal charity funds. Additionally, it incorporates household budget data from a large sample. The findings, derived from 24 distinct models, indicate that charitable loans significantly enhanced the spending power of poor urban and rural households, thereby having a positive and substantial impact on poverty reduction in Iran. Therefore, it is appropriate for the government to implement policies to expand them.

Keywords: Benevolent Loan, Micro-data Econometrics, Micro-financing, Poverty Reduction, Qard al-Hasan Instrument.

JEL Classification: C01, G21, I32, P36.

1. Introduction

Poverty reduction remains one of the most pressing challenges faced by countries today. In response, the United Nations has prioritized the eradication of poverty in all its forms as the first goal of its Sustainable Development Goals (SDGs). Specifically, the UN emphasizes the need to "ensure significant mobilization of resources from a variety of sources, including through enhanced development cooperation, to provide adequate and predictable means for developing countries, in particular least developed countries, to implement programs and policies to end poverty in all its dimensions." (United Nations Organization, 1945). The ultimate

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aim is that by 2030, no more than 3% of the global population will live on less than \$1.90 a day.

One of the fundamental strategies for alleviating poverty is microfinance. This innovative concept of providing small loans to local villagers based on trust and localized information was pioneered in the 1970s by Bangladeshi economist Muhammad Yunus, leading to the establishment of the Grameen Bank in 1983. Microfinance primarily supports impoverished individuals and women engaged in informal economic activities or entrepreneurial ventures who typically lack access to traditional bank loans. These microcredits impact household welfare in two key ways: by smoothing consumption and by enhancing the capacity to generate income. The significance of microfinance was underscored when the United Nations designated 2005 as the "Year of Microcredit."

The potential of microfinance to reduce poverty has been a subject of considerable research and debate. For instance, Duong and Thanh (2015) found that microcredits improved the living standards of rural households by increasing their income and consumption levels. Similarly, Choudhuri et al. (2017) reported significant positive effects on household income, expenditures, and savings in Bangladesh. Numerous other studies, including those by Khandker (2005), Nghiem et al. (2007), Imai et al. (2012), Yu et al. (2020), Thu and Goto (2020), Kaka (2020), and Chapagain and Dhungana (2020), have confirmed the positive role of microfinance in poverty alleviation through various mechanisms.

In the Iranian context, research on microfinance has also provided valuable insights. Hasanzadeh et al. (2012) proposed the adoption of a two-stage Islamic partnership (Musharakah) contract model, which has been successfully used in Sri Lanka for microfinance, and found it suitable for Iran as well. Di Pucchio (2015) highlighted an effective microfinance program implemented by the Iranian Agricultural Bank in collaboration with IFAD, which demonstrated significant impacts on women's empowerment and poverty reduction. However, Mosaviyan and Shahidinasab (2016) identified several challenges associated with microfinance in Iran's banking system, including moral hazard, high supervision costs, inadequate collateral, credit diversion, strategic default, low returns, and resource constraints.

Many religions, including Islam, emphasize poverty alleviation through specific mechanisms. Islamic microfinance is a notable tool in this regard, incorporating practices such as Qard al-Hasan (benevolent loans) and monetary endowments to assist the needy. A key distinction between Islamic and conventional microfinance lies in the prohibition of interest, making interest-free

loans more accessible. This cost-effective approach may enhance the efficacy of Islamic microfinance in reducing poverty compared to conventional methods.

Empirical studies have explored the impact of Islamic microfinance tools on poverty alleviation. For instance, Widiyanto et al. (2011) examined the performance of Baitul Mal Wat Tamwil, an Islamic microfinance institution in Indonesia, and concluded that Qard al-Hasan loans effectively empowered the poor to engage in economic activities. Rokhman (2013) highlighted the role of Islamic microfinance in improving household income and children's education. Iqbal and Shafiq (2015) evaluated the Akhuwat organization in Pakistan, which provides Qard al-Hasan loans, and found it successful in fostering entrepreneurship among economically and socially disadvantaged families. Zahid Mahmood et al. (2017) reported that loans from Islamic microfinance institutions significantly improved monthly income and increased spending on essentials like food, education, and health, as well as household assets. Muneer and Khan (2019) confirmed the positive effects of interest-free loans on poverty reduction. Selim (2018), using a mathematical model, demonstrated that the low cost of Qard al-Hasan loans promotes production, reduces price levels, and stabilizes the economy by addressing supply-demand imbalances.

Despite their potential, benevolent loans remain underutilized, even in Islamic countries, due to limited data availability. In Iran, however, two specialized banks exclusively provide Qard al-Hasan loans, and numerous charitable organizations also engage in this practice. This creates a relatively rich dataset for analyzing their impact. Additionally, comprehensive household budget data from the Statistical Center of Iran enables the exploration of novel aspects of Islamic microfinance. This study leverages data from 12,258 households, divided into experimental and control groups, a sample size unparalleled in prior research. Furthermore, the use of multiple models to address the research questions is a key innovation of this article.

The remainder of the article is organized as follows: Section 2 discusses the charity sector in Iran, with a focus on benevolent loans and relevant institutions. Section 3 describes the research methodology, including the model, variables, and data. Section 4 presents the results and findings, while Section 5 outlines the policy implications. Finally, the conclusions are provided in Section 6.

¹. This issue will be discussed in the next section.

2. Charity Sector and Benevolent Loans in Iran

2.1 Charity Sector in Iran

In Iran, religious teachings and long-standing traditions emphasize helping the needy as a fundamental duty of every individual. As a result, donations are considered a regular part of living expenses, though financial limitations mean that many donors contribute modest amounts. Despite these constraints, Iran ranks 23rd out of 120 countries in charitable giving, according to the CAF report (2019). The needs of the poor are addressed through a combination of government initiatives and non-governmental organizations (NGOs). Currently, 52,233 charities and NGOs are officially registered in Iran (Information Database of Charities and Foundations in the Country), with most focusing on assisting the underprivileged.

Several government institutions play a central role in supporting the deprived, most notably the Imam Khomeini Relief Foundation (IKRF) and the Barakat Foundation. According to the IKRF's 2020 report, the organization provides 120 types of services, including pensions, social insurance, healthcare, marriage and dowry assistance, mortgage and rental allowances, scholarships for students, pilgrimage programs, education, housing support (construction, purchase, repair, and reconstruction), job creation, and client empowerment. As Iran's primary support institution, the IKRF has made significant contributions, such as providing 60,000 marriage grants, 20,500 mortgage loans, 64,000 essential items, constructing 26,627 urban and rural housing units, repairing 84,906 housing units for the needy, and creating over 172,000 jobs for those in need (IKRF¹, 1979).

2.2 Benevolent (Qard al-Hasan) Loan in Iran

In Iran, two types of financial institutions collect funds and extend interest-free loans. The first type consists of numerous voluntary small funds typically formed informally within social networks such as families, colleagues, or neighbors. Members contribute to the fund, and the pooled money is lent to a randomly selected member based on rules agreed upon by the participants, including frequency and loan duration. These funds are not formally registered as charitable organizations, and their operations are managed by volunteers.

The second type includes 34 official financial institutions that offer interest-free loans as part of their services, comprising Islamic banks and dedicated interest-free lending institutions (Tohidinia et al., 2021). Additionally, two banks in Iran specialize exclusively in providing Qard al-Hasan loans: the publicly owned Qarz Al-Hasaneh Mehr Iran Bank and the privately owned Gharzolhasaneh Resalat

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¹. Imam Khomeini Relief Foundation

Bank. These banks fund their loans through benevolent savings accounts, which do not pay interest to depositors.

Based on Article 3 of Iranian "Law for Usury (Interest) Free Banking"4 ratified on 1983, banks are authorized to accept deposits under each of the following categories: (1) Qard al-Hasan and (2) Term Investment. Qard Hassan accounts can in turn be of two categories: current accounts', which is similar to the current accounts in the conventional banking system, and interest- free saving accounts that differs from a conventional saving account. Banks finance their benevolent loans from Qard al-Hasan saving accounts or benevolent accounts, which pay no interest to the depositors. The benevolent loans are generally paid for marriage costs, home renovation, residential rents and mortgages, medical expenses, and educational expenditures of poorer households. Term investment account is an investment account that has positive return similar to the ones in conventional banking system. In summary, there are three types of accounts in Iran: Qard al-Hasan current accounts, Qard al-Hasan saving accounts (or benevolent/interest-free accounts), and investment accounts (Ibid).

Limited studies have investigated the effectiveness of Qard al-Hasan loans in Iran, but available research suggests they have made, or could make, significant contributions to the Iranian economy, particularly in poverty alleviation. For instance, Arabi and Meisami (2013) examined Qard al-Hasan loans in Iran, highlighting the differences between Islamic and conventional microfinance and demonstrating the positive impact of Islamic microfinance on financing poor and middle-class households. Similarly, Tohidinia et al. (2021), using the Toda-Yamamoto causality test, found that benevolent savings have short-term positive effects on total consumption and investment. Furthermore, Qelich and Taheri (2021) proposed a new model for microfinance in the Iranian banking system. Their model involves attracting deposits through a special mandate contract and providing facilities using Qard al- Hasan and Murabaha contracts, aiming to support the financial needs of the lower and middle classes.

3. Model and Data

This research utilizes household budget data collected by the Iranian Statistics Center for the years 2017 to 2020 (Statistical Center of Iran, 2020). The dataset includes detailed information on household expenses and incomes. Using R software, households that received Qard al-Hasan (benevolent loans) with a repayment rate of 4% or less were identified by location (urban or rural). The values of the analyzed variables for these households were then extracted.

To ensure robust analysis, a matching technique was applied: for each household that received a Qard al-Hasan loan, five comparable households that did not receive such loans were selected. Matching was conducted separately for urban and rural areas, and data on the relevant analysis variables were collected for these groups.

The final dataset consists of 12,258 household budgets divided into two groups: the treatment group (households receiving benevolent loans) and the control group (households not receiving these loans). The treatment group comprises 2,043 households (1,377 urban and 666 rural), while the control group includes 10,251 households (6,885 urban and 3,330 rural).

Table 1 provides a detailed breakdown of the sample households by year, location (urban or rural), and loan status (receiving or not receiving benevolent loans):

Table 1. Sample Household Distribution by Year, Urban/Rural, and Loan Status

year	Urban or rural sector		ls not receiving loans		lds receiving loans	
·			SUM		SUM	
2017	Urban	2045	2860	409	572	
2017	Rural	815	2800	163	312	
2019	Urban	1815	2665	363	522	
2018	Rural	850	2665	170	533	
2010	Urban	1680	2550	336	510	
2019	Rural	870	2550	174	510	
2020	Urban	1345	2140	269	428	
2020	Rural	795	Z14U	159		

Source: Research finding.

The criteria used to select the closest households to the treatment group for the control group are outlined in Table 2. Five households were selected to match each household in the treatment group based on the following characteristics: gender of the household head, age of the household head, household size (number of family members), city of residence (since economic conditions vary significantly between cities within each province, we considered the city rather than the province), percentage of men in the household, percentage of household employment, and the weight of the household (where each household represents several others in the population). This matching process, carried out using R software, resulted in the selection of 10,215 households for the control group.

For example, as shown in Table 2, 42.8% of the treatment group and 29.11% of the control group were female, while 58.91% of the treatment group and 71.88% of the control group were male.

Table 2. Statistical Characteristics of Selected Variables for Matching the Control Group

		Borrowing group	Non-borrower group				
Gender of the head of the	Female	8/42%	11/29%				
household	Male	91/58%	88/71%				
Age of the head of the	A viama a a	48/24	50/56				
household	Average	(13/13)	(14/68)				
Family of a	Α	3/56	3/3				
Family size	Average	(1/17)	(1/23)				
City of residence	\max_{1}^{1}	10/62%	5/56%				
Percentage of males in the		49/64	48/79				
household	Average	(19/11) (20/81)					
Percentage of household	Avaraga	31/11	29/5				
employment	Average	(22/32)	(22/78)				
Percentage of household	A	85/92	74/2				
weight	Average	(89/6)	(79/93)				

Source: Research finding.

Note: The numbers in parentheses indicate the standard errors.

In this research, the expenditures and incomes of poor households are analyzed separately as dependent variables. Changes in these variables serve as criteria for evaluating the poverty status of households. If receiving a Qard al-Hasan loan leads to an increase in the income or expenses of a poor household, it can be concluded that the loan has enhanced the household's purchasing power. This improvement indicates a higher level of welfare and likely, a reduction in the severity of poverty compared to the period before receiving the loan.

Household expenditures are categorized into seven main groups: food, clothing, healthcare, education, communication, housing, and insurance. Household income, on the other hand, is derived from three primary sources: fixed-salary employment, variable-salary employment, and miscellaneous income.

To investigate these factors comprehensively, the research considers total expenditures and total income, as well as each of their components, as dependent

¹. In both treatment and control groups, Isfahan is the city with the most matching.

variables in the model. For ease of reference, each model is assigned a number, as shown in Table 3.

Table 3. Dependent Variables

Dependent variable	Symbol	Model number
Total expenditures	T.C	1
Food expenditure	F.C	2
Clothes expenditure	CL.C	3
Housing expenditure	HO.C	4
Healthcare expenditure	HE.C	5
Connections expenditure	CO.C	6
Education expenditure	E.C	7
Insurance expenditure	I.C	8
Total Income	T.I	9
Income from fixed salary jobs	F.I	10
Income from jobs with variable salaries	V.I	11
Miscellaneous income	M.I	12
- 1 N 11		

Source: Research finding.

The study analyzes eight models where the dependent variables represent various types of expenditures and four models where the dependent variables represent types of income. To assess whether the impact of Qard al-Hasan loans differs between urban and rural poor households, these 12 models were run separately for urban and rural households. As a result, the research examines 24 models. The explanatory and control variables included in the models are detailed in Table 4, derived from theoretical foundations and prior literature.

As noted in Table 4, a dummy variable was used to distinguish households that received Qard al-Hasan loans from those that did not, as well as to differentiate between poor and wealthier households. Additionally, qualitative control variables - such as the gender of the household head, marital status, housing tenure (owned or rented), and access to basic utilities (piped water, piped gas, and telephone) - were incorporated into the model using dummy variables. The city of residence was also included to capture location-specific economic and social factors.

	Table 4. Explanatory and Control Variables						
troat	A household that received a benevolent loan will receive a value of one						
$treat_i$	and a household that did not receive a loan will receive a value of zero.						
	A household that is below the poverty line is given a value of one, and						
$poverty_i$	a household that is above the poverty line is given a value of zero.						
$treat_i * poverty_i$	A household that has both received a benevolent loan and is below the						
treat; * poverty;	poverty line.						
gender _i	The gender of the head of the household is set to one if it is a woman						
genuer _i	and zero if it is a man.						
age_i	Age of the head of the household.						
familysize _i	Number of household members.						
a_i	The number of people under 15 years of age in the household.						
marital2 _i	Marital status of the head of the household, the head of the household						
	is married.						
manital?	The marital status of the head of the household is the head of the						
marital3 _i	household without a spouse (his wife is deceased or divorced).						
residence2 _i	Housing situation of the household, the household lives in a rented						
restuence2 _i	house.						
residence3;	Housing situation of the household, the household lives in a house						
restuences _i	where they do not pay rent and do not own the house.						
$employed_i$	Percentage of household employment.						
female _i	Percentage of women in the household.						
Aedu _i	Average years of family education.						
$Aage_i$	Average age of the family.						
aas	Access to piped gas, a household that has access gets a value of one						
gas_i	and a household that does not have access gets a value of zero.						
nhono	Access to phone, a household that has access gets a value of one and a						
$phone_i$	household that does not have access gets a value of zero.						
water	Access to piped water, a household that has access gets a value of one						
$water_i$	and a household that does not have access gets a value of zero.						
city _i	City of residence of the household.						
year _i	The year in which the household information was collected.						

To account for events that may occur in specific years (e.g., elections, easing of sanctions), the dummy variable "year" was included in the model.

It is worth noting that some households receiving Qard al-Hasan loans are financially well off. Such households can access charitable loans by depositing money for a certain period, thereby increasing the financial resources available for granting benevolent loans. However, the primary purpose of these loans is to serve as a microfinance tool for poor households. Therefore, using the annual poverty

line for 2017–2020, recipients of Qard al-Hasan loans were categorized as either poor or non-poor.

The nominal poverty line, differentiated by urban and rural areas, was obtained from the Majlis Research Center reports for 2017–2018 and the Ministry of Labor, Cooperative, and Social Welfare reports for 2019–2020. To ensure comparability over time, the same basket of basic goods used to calculate the poverty line was applied to calculate the expenditure of sample households. Both the poverty line and household expenditures for each year were adjusted to real values by dividing them by the consumer price index (CPI), derived from Central Bank reports. A household was classified as poor if its expenditures fell below the poverty line.

The analysis revealed that only about one-third of loan recipients were poor, while approximately two-thirds were above the poverty line. Among non-loan recipients in the control group, about 39% were poor. Poor households received an average monthly loan of 0.747 million rials, while non-poor households received 1.385 million rials, meaning that non-poor recipients obtained loans approximately 1.85 times larger than their poorer counterparts. Consequently, a new explanatory variable, "poor household borrowing loans" (treatpoverty*), was added to the model.

Given the unique advantages of the Ordinary Least Squares (OLS) method—such as being an unbiased and efficient estimator—it was deemed suitable for analyzing the effect of one variable on another. However, since each sampled household in the Iranian Statistical Center data represents a certain number of households in the overall population, weighted least squares (WLS) was also applied. In the WLS method, each household is assigned a weight corresponding to the number of similar households in the population, ensuring more precise extrapolation of sample results to the national level.

To examine the impact of benevolent loans on the expenditures of poor households, functional form (a) was employed, while functional form (b) was used to analyze their effect on income:

```
a): log(C_i + 1)' = \alpha + \beta_0 treat_i + \beta_1 poverty_i + \beta_2 (treat_i * poverty_i) \\ + \beta_3 gender_i + \beta_4 age_i + \beta_5 familysize_i + \beta_6 a_i + \beta_7 marital2_i \\ + \beta_8 marital3_i + \beta_9 residence2_i + \beta_{10} residence3_i \\ + \beta_{11} employed_i + \beta_{12} female_i + \beta_{13} Aedu_i + \beta_{14} Aage_i
```

 $+\beta_{15}$ gas_i + β_{16} phone_i + β_{17} water_i + β_{18} city_i + β_{18} year_i + ε_{1i}

```
b): log(l_i + 1) = \alpha + \beta_0 treat_i + \beta_1 poverty_i + \beta_2 (treat_i * poverty_i) \\ + \beta_3 gender_i + \beta_4 age_i + \beta_5 familysize_i + \beta_6 a_i + \beta_7 marital2_i \\ + \beta_8 marital3_i + \beta_9 residence2_i + \beta_{10} residence3_i \\ + \beta_{11} employed_i + \beta_{12} female_i + \beta_{13} Aedu_i + \beta_{14} Aage_i \\ + \beta_{15} gas_i + \beta_{16} phone_i + \beta_{17} water_i + \beta_{18} city_i + \beta_{18} year_i + \varepsilon_{2i}
```

4. Result and Research Finding

The estimation results for urban households are presented in Table 5, enabling an evaluation of whether Qard al-Hasan loans have effectively reduced poverty. A significant increase in any category of expenditure or income for poor households influenced by the loan indicates an enhancement in their purchasing power, thereby demonstrating its effectiveness in poverty reduction.

As shown in Table 5, Qard al-Hasan loans have had a positive impact on the housing and education expenditures of poor urban households. Additionally, the loans have contributed to increases in total income, income from self-employment, and miscellaneous income among the urban poor. These findings suggest that Qard al-Hasan loans play a meaningful role in alleviating poverty in urban areas.

¹. Using log (x+1) as the dependent variable (instead of x) is a practical transformation that improves model fit, accommodates zeros in the data, and facilitates interpretation in terms of relative changes. This approach is particularly beneficial for skewed distributions or when working with count data or non-negative continuous variables.

Table 5. Results of Models for Urban Households

		T.C	F.C	CL.C	НО.С	HE.C	CO.C	E.C	I.C	T.I	F.I	V.I	M.I
Intercept		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Intoncont	1/69***	1/46***	0/6***	0/66***	-0/07	-0/11*	33***/-0	-0/31***	-25/97***	-0/05	-7/43**	-0/64**
	Intercept	(0/11)	(0/16)	(0/14)	(0/09)	(0/16)	(0/05)	(0/09)	(0/09)	(3/12)	(0/3)	(2/54)	(0/24)
	twoot	0/01	0/01	0/002	-0/06***	0/12***	0/01	-0/05**	0/08***	-0/68	0/24***	-2/63***	0/04
Powerty (0/01) (0/02) (0/02) (0/01) (0/02) (0/01) (0/01) (0/01) (0/03)	treat _i	(0/02)	(0/02)	(0/02)	(0/01)	(0/03)	(0/01)	(0/01)	(0/01)	(0/48)	(0/05)	(0/39)	(0/04)
	w 0.220 where	-0/82***	-0/86***	-0/45***	-0/31***	-0/35***	-0/1***	-0/12***	-0/18***	-6/82***	-0/14***	-1/88***	-0/33***
treat, * poverty, general, * poverty, a pound * month * mont	poverty _i	(0/01)	(0/02)	(0/02)	(0/01)	(0/02)	(0/01)	(0/01)	(0/01)	(0/35)	(0/03)	(0/29)	(0/03)
gender _i (003) (004) (004) (006) (002) (003) (001) (001) (002) (007) (007) (006) (006) (006) age _i (003) (005) (004) (0000) (0000) (000) (000) (000) (000) (000) (000) (000) (000) (000) (000) (000) (000) (000	treat + november	0/01	-0/02	-0/02	0/07***	-0/09*	-0/01	0/06**	-0/001	1/91*	-0/08	1/64**	0/19**
	treat _i * poverty _i	(0/03)	(0/04)	(0/04)	(0/02)	(0/04)	(0/01)	(0/02)	(0/02)	(0/77)	(0/07)	(0/62)	(0/06)
	and or	0/02	-0/02	0/06	0/06*	0/12**	0/02	0/01	-0/08**	0/74	-0/02	-0/74	0/09
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	genderi	(0/03)	(0/05)	(0/04)	(0/02)	(0/05)	(0/01)	(0/03)	(0/03)	(0/89)	(0/08)	(0/72)	(0/07)
	age _i	0/003**	0/003*	0/00	0/003***	0/002	0/002***	0/01***	0/000	0/07*	-0/01*	0/003	0/02***
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		(0/001)	(0/001)	(0/001)	(0/001)	(0/001)	(0/000)	(0/001)	(0/001)	(0/03)	(0/003)	(0/02)	(0/002)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		0/16***	0/19***	0/07***	0/02***	0/05***	0/06***	0/07***	0/04***	2/53***	0/19***	0/62***	0/09***
$ \begin{array}{c} \mathbf{a_i} \\ \hline \\ \mathbf{marital2_i} \\ \hline \\ \mathbf{marital3_i} \\ \hline \\ mar$	ramnysize _i	(0/01)	(0/01)	(0/01)	(0/01)	(0/01)	(0/003)	(0/01)	(0/01)	(0/22)	(0/02)	(0/18)	(0/02)
		0/05***	0/01	0/05***	0/07***	0/03	-0/02**	0/01	0/09***	2/75***	0/23***	0/26	-0/18***
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	a _i	(0/01)	(0/01)	(0/01)	(0/01)	(0/01)	(0/004)	(0/01)	(0/01)	(0/26)	(0/025)	(0/211)	(0/02)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	manital?	0/06	-0/06	0/025	0/14***	0/15*	0/01	0/02	0/12***	6/85***	0/44***	2/82**	-0/32***
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	maritai2 _i	(0/04)	(0/06)	(0/05)	(0/03)	(0/06)	(0/02)	(0/04)	(0/03)	(1/18)	(0/11)	(0/96)	(0/09)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	manital?	-0/03	-0/13*	0/01	0/06	0/01	-0/01	0/02	0/07	4/56***	0/46***	1/49	-0/18 ·
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	marttais _i	(0/04)	(0/07)	(0/06)	(0/04)	(0/07)	(0/02)	(0/04)	(0/04)	(1/28)	(0/12)	(1/04)	(0/1)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	nasidanga?	-0/03*	-0/09***	-0/04*	0/09***	-0/03	-0/01*	-0/03**	-0/09***	-2/33***	-0/01	-0/14	-0/21***
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	residencez _i	(0/01)	(0/02)	(0/02)	(0/01)	(0/02)	(0/01)	(0/01)	(0/01)	(0/37)	(0/04)	(0/3)	(0/03)
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	rocidonao?	-0/05*	-0/04	0/02	-0/04**	0/02	-0/002	-0/01	-0/1***	-3/18***	-0/19***	0/41	-0/24***
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	residences _i	(0/02)	(0/03)	(0/02)	(0/01)	(0/03)	(0/01)	(0/02)	(0/02)	(0/52)	(0/05)	(0/42)	(0/04)
$\mathbf{female_i} = \begin{pmatrix} (0/000) & (0/000) & (0/000) & (0/000) & (0/000) & (0/000) & (0/000) & (0/000) & (0/000) & (0/000) & (0/000) & (0/001) $	omnloved	0/001***	0/003***	0/002***	-0/001***	-0/001**	0/001***	-0/001***	0/002***	0/12***	0/03***	0/1***	-0/02***
	empioyea _i	(0/000)	(0/000)	(0/000)	(0/000)	(0/000)	(0/000)	(0/000)	(0/000)	(0/01)	(0/001)	(0/01)	(0/001)
(0/000) $(0/000)$ $(0/000)$ $(0/000)$ $(0/000)$ $(0/000)$ $(0/000)$ $(0/000)$ $(0/000)$ $(0/01)$ $(0/001)$ $(0/001)$	fomala	-0/001*	-0/001*	0/001	-0/000	-0/000	-0/000*	0/000	0/000	-0/03***	0/001	-0/01	-0/004***
$\textbf{Aedu_i} \qquad 0/04*** \qquad 0/03*** \qquad 0/01*** \qquad 0/04*** \qquad 0/01*** \qquad 0/02*** \qquad 0/02*** \qquad 0/03*** \qquad 1/4*** \qquad 0/03*** \qquad 0/03 \qquad 0/07** \qquad $	female _i	(0/000)	(0/000)	(0/000)	(0/000)	(0/000)	(0/000)	(0/000)	(0/000)	(0/01)	(0/001)	(0/01)	(0/001)
	Aedui	0/04***	0/03***	0/01***	0/04***	0/01***	0/02***	0/02***	0/03***	1/4***	0/03***	0/03	0/07***

(0/001)	(0/002)	(0/002)	(0/001)	(0/002)	(0/001)	(0/001)	(0/001)	(0/04)	(0/004)	(0/04)	(0/003)
0/0004	-0/002	-0/004**	0/003***	0/004*	-0/002***	-0/01***	0/002*	0/21***	-0/004	-0/02	0/02***
(0/001)	(0/002)	(0/001)	(0/001)	(0/002)	(0/000)	(0/001)	(0/001)	(0/03)	(0/003)	(0/03)	(0/002)
0/12	0/03	0/07	0/13*	0/03	0/08*	0/002	0/04	4/53*	-0/22	4/66*	0/24
(0/08)	(0/12)	(0/1)	(0/06)	(0/12)	(0/03)	(0/07)	(0/07)	(2/26)	(0/21)	(1/84)	(0/17)
0/07***	0/04 ·	0/03	0/05***	-0/02	0/07***	0/03*	0/05***	0/9*	-0/01	1/31***	-0/03
(0/01)	(0/02)	(0/02)	(0/01)	(0/02)	(0/01)	(0/01)	(0/01)	(0/4)	(0/04)	(0/32)	(0/03)
0/08 ·	-0/001	0/05	0/16***	0/01	0/01	0/03	0/03	1/44	0/09	-0/05	0/06
(0/05)	(0/07)	(0/06)	(0/04)	(0/07)	(0/02)	(0/04)	(0/04)	(1/3)	(0/12)	(1/06)	(0/1)
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
0/61	0/43	0/19	0/5	0/12	0/4	0/21	0/27	0/33	0/31	0/10	0/50
7002	7002	7002	7002	7002	7002	7002	7002	7002	7002	7002	7002
1993	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993	7993
8262	8262	8262	8262	8262	8262	8262	8262	8262	8262	8262	8262
0202	0202	0202	0202	0202	0202	0202	0202	0202	0202	0202	0202
	0/0004 (0/001) 0/12 (0/08) 0/07*** (0/01) 0/08 : (0/05) yes	0/0004 -0/002 (0/001) (0/002) 0/12 0/03 (0/08) (0/12) 0/07*** 0/04 (0/01) (0/02) 0/08 * -0/001 (0/05) (0/07) yes yes yes yes 0/61 0/43 7993 7993	0/0004 -0/002 -0/004** (0/001) (0/002) (0/001) 0/12 0/03 0/07 (0/08) (0/12) (0/1) 0/07*** 0/04 0/03 (0/01) (0/02) (0/02) 0/08 -0/001 0/05 (0/05) (0/07) (0/06) yes yes yes yes yes yes 0/61 0/43 0/19 7993 7993 7993	0/0004 -0/002 -0/004** 0/003*** (0/001) (0/002) (0/001) (0/001) 0/12 0/03 0/07 0/13* (0/08) (0/12) (0/1) (0/06) 0/07*** 0/04 0/03 0/05*** (0/01) (0/02) (0/02) (0/01) 0/08* -0/001 0/05 0/16*** (0/05) (0/07) (0/06) (0/04) yes yes yes yes yes yes 0/61 0/43 0/19 0/5 7993 7993 7993 7993	0/0004 -0/002 -0/004** 0/003*** 0/004* (0/001) (0/002) (0/001) (0/001) (0/002) 0/12 0/03 0/07 0/13* 0/03 (0/08) (0/12) (0/1) (0/06) (0/12) 0/07*** 0/04* 0/03 0/05**** -0/02 (0/01) (0/02) (0/01) (0/02) 0/08* -0/001 0/05 0/16*** 0/01 (0/05) (0/07) (0/06) (0/04) (0/07) yes yes yes yes yes yes yes yes 0/61 0/43 0/19 0/5 0/12 7993 7993 7993 7993 7993 7993	0/0004 -0/002 -0/004** 0/003*** 0/004* -0/002*** (0/001) (0/002) (0/001) (0/001) (0/002) (0/000) 0/12 0/03 0/07 0/13* 0/03 0/08* (0/08) (0/12) (0/1) (0/06) (0/12) (0/03) 0/07*** 0/04* 0/03 0/05**** -0/02 0/07**** (0/01) (0/02) (0/01) (0/02) (0/01) 0/08* -0/001 0/05 0/16*** 0/01 0/01 0/08* -0/001 0/05 0/16*** 0/01 0/01 0/05 (0/07) (0/06) (0/04) (0/07) (0/02) yes yes yes yes yes yes yes yes yes 0/61 0/43 0/19 0/5 0/12 0/4 7993 7993 7993 7993 7993 7993	0/0004 -0/002 -0/004** 0/003*** 0/004* -0/002*** -0/01*** (0/001) (0/002) (0/001) (0/001) (0/002) (0/000) (0/001) 0/12 0/03 0/07 0/13* 0/03 0/08* 0/002 (0/08) (0/12) (0/1) (0/06) (0/12) (0/03) (0/07) 0/07*** 0/04 0/03 0/05*** -0/02 0/07*** 0/03* (0/01) (0/02) (0/02) (0/01) (0/02) (0/01) (0/03) (0/05) (0/07) (0/06) (0/04) (0/02) (0/01) (0/03) (0/05) (0/07) (0/06) (0/04) (0/07) (0/02) (0/04) yes yes yes yes yes yes yes yes yes yes yes yes yes yes yes yes 0/61 0/43 0/19 0/5 0/12 0/4 0/2	0/0004 -0/002 -0/004** 0/003*** 0/004* -0/002*** -0/01*** 0/002* (0/001) (0/002) (0/001) (0/001) (0/002) (0/000) (0/001) (0/001) 0/12 0/03 0/07 0/13* 0/03 0/08* 0/002 0/04 (0/08) (0/12) (0/1) (0/06) (0/12) (0/03) (0/07) (0/07) 0/07*** 0/04* 0/03 0/05*** -0/02 0/07*** 0/03* 0/05*** (0/01) (0/02) (0/01) (0/02) (0/01) (0/02) (0/01) (0/03) 0/03* 0/05*** (0/01) (0/02) (0/01) (0/02) (0/01) (0/01) (0/01) (0/01) (0/01) (0/01) (0/01) (0/01) (0/01) (0/02) (0/04) (0/01) (0/02) (0/04) (0/04) (0/07) (0/02) (0/04) (0/04) (0/07) (0/02) (0/04) (0/04) (0/02) (0/04) (0/04)	0/0004 -0/002 -0/004** 0/003*** 0/004* -0/002*** -0/01*** 0/002* 0/21*** (0/001) (0/002) (0/001) (0/001) (0/001) (0/001) (0/001) (0/001) (0/003) 0/12 0/03 0/07 0/13* 0/03 0/08* 0/002 0/04 4/53* (0/08) (0/12) (0/1) (0/06) (0/12) (0/03) (0/07) (0/07) (2/26) 0/07*** 0/04 0/03 0/05*** -0/02 0/07*** 0/03* 0/05*** 0/9* (0/01) (0/02) (0/01) (0/02) (0/01) (0/01) (0/01) (0/01) (0/01) (0/01) (0/01) (0/04) 0/08* -0/001 0/05 0/16*** 0/01 0/01 0/03 0/03 1/44 (0/05) (0/07) (0/06) (0/04) (0/07) (0/02) (0/04) (0/04) (0/04) (0/04) (0/04) (0/04) (0/04) (0/04)	0/0004 -0/002 -0/004** 0/003*** 0/004* -0/002*** -0/01*** 0/002* 0/21*** -0/004 (0/001) (0/002) (0/001) (0/001) (0/001) (0/001) (0/003) (0/003) (0/001) (0/003) (0/003) (0/001) (0/003) (0/003) (0/001) (0/003) (0/003) (0/007) (0/0	0/0004 -0/002 -0/004** 0/003*** 0/004* -0/002*** -0/01*** 0/002* 0/21*** -0/004 -0/02 (0/001) (0/002) (0/001) (0/001) (0/001) (0/001) (0/001) (0/003) (0/003) (0/003) (0/003) (0/003) (0/003) (0/003) (0/003) (0/003) (0/004) 4/53* -0/22 4/66* (0/08) (0/12) (0/1) (0/06) (0/12) (0/03) (0/07) (0/07) (2/26) (0/21) (1/84) 0/07**** 0/04* 0/03 0/05**** -0/02 0/07**** 0/03* 0/05**** 0/9* -0/01 1/31**** (0/01) (0/02) (0/01) (0/02) (0/01) (0/01) (0/01) (0/04) (0/04) (0/04) (0/03) 0/08* -0/001 0/05 0/16**** 0/01 0/01 0/03 0/03 1/44 0/09 -0/05 (0/05) (0/07) (0/06) (0/04) (0/

Source: Research finding.

Note: symbols ***, **, * and ` In order to indicate the significance of the coefficients in the levels 99/9%, 99%, 95% and 90% and the numbers in the parentheses indicate the standard error of the coefficients.

Table 6. Results of Models for Rural Households

	T.C	F.C	CL.C	но.с	HE.C	CO.C	E.C	I.C	T.I	F.I	V.I	M.I
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Intoncent	1/79***	1/59***	0/25 ·	0/97***	0/06	0/05	-0/27***	-0/12	-1/28	0/74**	-1/84	-0/000
Intercept	(0/11)	(0/13)	(0/13)	(0/07)	(0/14)	(0/04)	(0/05)	(0/08)	(2/2)	(0/28)	(1/99)	(0/21)
treat	0/08***	-0/01	0/08**	0/04**	0/12***	0/01	0/01	0/07***	0/04	-0/003	-0/73 ·	0/07 ·
treat _i	(0/02)	(0/03)	(0/03)	(0/01)	(0/03)	(0/01)	(0/01)	(0/02)	(0/44)	(0/06)	(0/4)	(0/04)

	-0/81***	-0/67***	-0/35***	-0/22***	-0/31***	-0/07***	-0/04***	-0/13***	-4/56***	-0/01	-2/65***	-0/23***
poverty _i	(0/02)	(0/02)	(0/02)	(0/01)	(0/02)	(0/01)	(0/01)	(0/01)	(0/34)	(0/04)	(0/31)	(0/03)
treat _i	-0/02	-0/02	-0/09 ·	-0/03	-0/03	-0/02	0/02	-0/06 ·	-0/54	-0/21*	1/21 ·	-0/01
* poverty _i	(0/04)	(0/05)	(0/05)	(0/03)	(0/05)	(0/01)	(0/02)	(0/03)	(0/8)	(0/1)	(0/72)	(0/07)
dor	-0/1*	-0/11*	0/09 ·	-0/07**	0/02	-0/01	0/01	-0/08*	0/08	-0/02	-0/65	0/06
gender _i	(0/04)	(0/05)	(0/05)	(0/03)	(0/06)	(0/02)	(0/02)	(0/03)	(0/87)	(0/11)	(0/79)	(0/08)
	0/003**	0/003*	0/003*	0/001 .	-0/001	-0/001**	-0/001*	-0/000	-0/01	-0/01*	-0/03	0/01***
age _i	(0/001)	(0/002)	(0/001)	(0/01)	(0/002)	(0/000)	(0/001)	(0/001)	(0/03)	(0/003)	(0/02)	(0/002)
familyaira	0/15***	0/15***	0/03**	0/03***	0/05***	0/05***	0/05***	0/01 ·	2/35***	0/18***	1/47***	0/01
familysize _i	(0/01)	(0/01)	(0/01)	(0/01)	(0/01)	(0/003)	(0/01)	(0/01)	(0/2)	(0/03)	(0/18)	(0/02)
	0/01	-0/01	0/06***	-0/002	0/004	-0/03***	0/02***	0/04***	-0/41	0/05	-0/81***	-0/07**
$\mathbf{a_i}$	(0/01)	(0/02)	(0/02)	(0/01)	(0/02)	(0/004)	(0/01)	(0/01)	(0/25)	(0/03)	(0/23)	(0/02)
monital?	0/06	0/03	0/01	-0/01	0/08	0/01	0/05	0/08	0/56	-0/14	1/22	-0/16
marital2 _i	(0/08)	(0/09)	(0/09)	(0/05)	(0/09)	(0/03)	(0/03)	(0/06)	(1/49)	(0/19)	(1/34)	(0/14)
	-0/03	-0/01	-0/01	-0/07	0/04	0/01	0/08*	0/08	0/6	0/12	0/92	-0/14
marital3 _i	(0/08)	(0/09)	(0/09)	(0/05)	(0/1)	(0/03)	(0/04)	(0/06)	(1/53)	(0/2)	(1/38)	(0/14)
masidanga?	-0/03	-0/12***	-0/04	0/1***	0/02	-0/03**	-0/04**	-0/05*	0/25	0/23**	-1/24*	-0/08
residence2 _i	(0/03)	(0/04)	(0/03)	(0/02)	(0/04)	(0/01)	(0/01)	(0/02)	(0/57)	(0/07)	(0/51)	(0/05)
rosidon so 2	-0/16***	-0/17***	0/01	-0/09***	-0/05	-0/004	-0/02 ·	-0/04 ·	-0/7	-0/06	-0/24	-0/02
residence3 _i	(0/03)	(0/03)	(0/03)	(0/02)	(0/03)	(0/01)	(0/01)	(0/02)	(0/51)	(0/07)	(0/46)	(0/05)
amployed	0/002***	0/003***	0/001*	-0/0002	0/0003	0/000***	-0/001***	-0/000	0/09***	0/01***	0/07***	-0/01***
employed _i	(0/000)	(0/000)	(0/000)	(0/000)	(0/0004)	(0/000)	(0/000)	(0/000)	(0/01)	(0/001)	(0/01)	(0/001)
fomalo	0/001 ·	0/000	0/001	0/000	0/001	-0/000	0/000	0/000	-0/03***	-0/003**	-0/01	-0/002**
female _i	(0/000)	(0/000)	(0/000)	(0/000)	(0/001)	(0/000)	(0/000)	(0/000)	(0/01)	(0/001)	(0/01)	(0/001)
Andu	0/03***	0/01***	0/02***	0/01***	0/01*	0/01***	0/02***	0/03***	0/53***	0/04***	-0/12*	0/05***
Aedu _i	(0/003)	(0/003)	(0/003)	(0/002)	(0/003)	(0/001)	(0/001)	(0/002)	(0/06)	(0/01)	(0/05)	(0/01)
Acas	-0/003*	-0/003 ·	-0/01**	-0/001	0/01**	0/000	0/003***	0/001	0/06*	-0/01*	0/01	0/01**
Aage _i	(0/001)	(0/002)	(0/002)	(0/001)	(0/002)	(0/000)	(0/001)	(0/001)	(0/03)	(0/003)	(0/03)	(0/001)

	0/07*	-0/002	0/02	0/1***	0/09*	0/04***	0/03*	0/06**	0/29	0/34***	-1/43**	-0/04
gas _i	(0/03)	(0/04)	(0/04)	(0/02)	(0/04)	(0/01)	(0/01)	(0/02)	(0/61)	(0/08)	(0/55)	(0/06)
nhono	0/05**	0/06**	-0/002	0/03**	-0/04 ·	0/07***	0/004	0/04**	0/8*	-0/04	0/69*	0/04
phone _i	(0/02)	(0/02)	(0/02)	(0/01)	(0/02)	(0/01)	(0/01)	(0/01)	(0/32)	(0/04)	(0/29)	(0/03)
water	-0/19***	-0/28***	0/06	0/02	-0/05	-0/05**	-0/01	-0/04	0/54	-0/19	3/17***	-0/24*
water _i	(0/05)	(0/07)	(0/06)	(0/03)	(0/07)	(0/02)	(0/03)	(0/04)	(1/06)	(0/14)	(0/96)	(0/1)
city _i	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
year _i	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Adjusted $R^2(\overline{R}^2)$	0/64	0/47	0/21	0/57	0/17	0/46	0/24	0/35	0/35	0/29	0/18	0/29
Degrees of	3789	3789	3789	3789	3789	3789	3789	3789	3789	3789	3789	3789
freedom (DF)	3709	3/09	3709	3709	3709	3709	3709	3709	3109	3709	3709	3709
number of	3996	3996	3996	3996	3996	3996	3996	3996	3996	3996	3996	3996
samples (N)	3990	3990	3990	3990	3990	3370	3990	3970	3990	3990	3990	3990

Source: Research finding.

Note: symbols ***, **, * and ` In order to indicate the significance of the coefficients in the levels 99/9%, 99%, 95% and 90% and the numbers in the parentheses indicate the standard error of the coefficients.

The estimation results for rural households are presented in Table 6. As shown, Qard al-Hasan loans have significantly increased only the variable income of the rural poor. Unlike the urban poor, where Qard al-Hasan loans were effective in improving livelihoods and reducing poverty through multiple channels, the loans for rural poor households have enhanced purchasing power and alleviated poverty through a single channel. This disparity will be explored further in the following sections.

Based on Tables 5 and 6, Figure 1 summarizes the types of expenditures and incomes that have increased as a result of receiving Qard al-Hasan loans. The table categorizes these increases by poor and non-poor borrowers and distinguishes between urban and rural households. This detailed breakdown highlights the specific areas where Qard al-Hasan loans have had a measurable impact, providing insights into their effectiveness across different demographic and socioeconomic groups.

According to Figure 1, Qard al-Hasan loans have increased the purchasing power of urban poor households through two expenditure channels and three income channels. In contrast, rural poor households have experienced a positive impact only on their variable income. Non-poor urban households receiving Qard al-Hasan loans have seen improvements in welfare through two expenditure channels: healthcare and insurance. Meanwhile, rural non-poor households have been the most positively affected by the loans, with increases in four expenditure categories—clothing, housing, healthcare, and insurance—along with an increase in miscellaneous income.

The benevolent loans have had a significant positive effect on housing and education expenditures, as well as on total income, income from variable salaries, and miscellaneous income for poor urban households. However, the poverty status of urban households has led to a decrease in all types of expenditures and incomes. This suggests that receiving benevolent loans has improved the welfare of the urban poor.

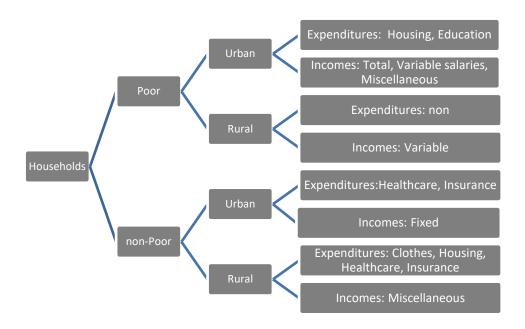


Figure 1. The Benevolent Loans Have a Positive Effect on Some Expenditures and Incomes

Source: Research finding.

On the other hand, the loans have not had a significant positive impact on the expenditures of rural poor households, though they have increased their variable income. This is a typical outcome, as the poor generally need to earn money before they can spend it. Additionally, most rural income comes from self-started businesses such as agriculture and animal husbandry. Despite this, clothing and insurance expenditures of rural poor households that received loans have slightly decreased, while other expenses remained largely unchanged. This could be because loans for rural households are, on average, lower than those for urban residents. During the study period, after adjusting for inflation, urban poor households borrowed an average of 1.65 times more than rural poor households did. One reason for this discrepancy could be that official employees, who are less

likely to default on loans, tend to live in cities and are therefore able to secure loans more easily. As a result, they often have to reduce their expenses to generate the capital needed to start a business.

For non-poor urban households, receiving loans has led to a significant increase in healthcare and insurance expenditures, while some other expenses, including housing, have decreased. This suggests that many non-poor households have turned to loans and reduced other expenditures to cover sudden and unexpected healthcare costs, either now or in the future. This highlights the positive impact of loans in improving the welfare of the middle class. Regarding fixed-salary jobs, it is worth noting that while these urban-oriented jobs offer income stability, they tend to have lower average earnings. As a result, many individuals likely choose such jobs only after receiving benevolent loans that help meet some of their financial needs. Therefore, the loans have a positive effect on this type of income in urban areas.

For non-poor rural households, most types of expenditures significantly increased with the receipt of loans, with none decreasing significantly. Additionally, the loans have had a positive impact on their miscellaneous incomes, possibly because starting miscellaneous income-generating activities requires a small amount of initial capital, which the loan helps provide. This indicates a positive welfare effect of the loan on the rural middle class. However, the loans have negatively affected the income of self-employed non-poor individuals. This could be because these individuals needed money to increase their expenditures, and by receiving a benevolent loan, their financial needs were reduced. As a result, they may have scaled back their income-generating activities.

Regarding the robustness of the model results, it is important to note that the same data and variables were first estimated using the OLS method. When comparing the OLS and WLS estimates, in the eight models where the dependent variable represents one of the types of expenditures, the coefficient for the variable "receiving a benevolent loan by the poor" was not significant for urban dwellers in almost all of the OLS models. In contrast, some coefficients in the WLS estimates were significant. Moreover, the sign and magnitude of the coefficients were similar in both methods, but the standard errors of the coefficients were smaller in the WLS estimates, resulting in estimates that are more accurate. This observation also applies to rural expenditures, where the standard errors of the coefficients were smaller in the WLS method, making the estimates more precise. Thus, the WLS model is preferred over the OLS model in this case.

For income as the dependent variable, four models were estimated using the OLS method for urban households and four models for rural households. Similar to expenditures, for rural households' income, the WLS estimates provided more precise results than the OLS estimates, making the WLS model the preferred choice. However, for urban households' income, the results from both the OLS and WLS models were very similar, suggesting that the two models produce equivalent outcomes. Nonetheless, since the WLS method accounts for the fact that each household represents multiple households, it is more appropriate for the data structure. Therefore, overall, the WLS model is favored over the OLS model.

In the next step, we ran the WLS model while retaining the variables of loan, poverty, and poverty multiplied by loan, household size, city of residence, and year of data collection, while removing other control variables. As a result, the significance, sign, and size of the coefficients remained largely unchanged, but the standard errors of the significant coefficients increased slightly. This indicates that including all control variables in the model enhances the accuracy of the estimation. Therefore, the reported model is robust.

5. Policy Implication

According to the results of the model, the following points should be considered for more effective policy-making regarding charitable loans:

- a) Increase the share of loans allocated to the poor: In addition to the humanitarian benefits, these loans are more impactful for the poor than for the non-poor. A fixed amount of money increases their welfare more significantly, leading to a greater overall increase in social welfare.
- b) Increase the share of loans for poor rural households: The loan amounts for rural households are considerably lower compared to those for urban residents. Increasing these loans could lead to higher spending and, in turn, reduce poverty in rural areas.
- c) Adopt the collective loan model used by Grameen Bank and other similar initiatives: This approach could help mitigate the risk of default in rural areas. By offering group loans, the financial charity would be more inclined to lend to rural households. Additionally, if the government allows cash subsidies to be directed to these institutions in the event of loan defaults, it would increase the number of loans allocated to rural areas, further supporting poverty reduction efforts.

6. Conclusion

The impact of micro-financing on poverty reduction has been widely examined by researchers. Practical studies have shown that microcredits improve the welfare of the poor and contribute to poverty alleviation. In Islamic literature, however, there is a focus on a specific micro-financing instrument known as the benevolent (Qard al-Hasan) loan, which is provided at zero interest to the poor. Islamic scholars believe that this non-conventional loan, more common in Muslim countries, is particularly effective in reducing poverty. However, due to the relatively small size of these loans compared to interest-based loans, as well as the limited availability of data, research on the topic has been relatively scarce.

This study aimed to determine whether benevolent loans have reduced poverty among Iranian households. It utilized data from 36 official Iranian financial institutions, along with data from various non-official charity funds and household budgets, to investigate the issue through 24 different models, with a large sample size and a distinction between urban and rural households. Since about two-thirds of the recipients of benevolent loans were above the poverty line, the study separately analyzed the impact of the loans on both poor and non-poor households.

The findings revealed that the loans had a significant positive impact on the housing and education expenditures of poor urban households, as well as on most of their income sources. This indicates that the loans effectively reduce poverty, especially since housing and education are key drivers of economic growth, and strengthening these sectors improves economic conditions and increases social welfare.

For poor rural households, the results showed that the loan had a significant positive effect on income from self-employment. However, it had a negative effect on income from fixed-salary jobs and certain types of expenditure. Nonetheless, when considering the effects of other variables on expenditures and incomes across different models, the decrease in certain areas does not suggest a negative causal relationship between the benevolent loan and these factors. Instead, the loan still has a significant positive effect on some sources of income, contributing to poverty reduction.

Finally, a comparison of the magnitude and types of effects of benevolent loans on poor and non-poor borrowers, whether urban or rural, suggests that increasing the share of benevolent loans allocated to poor households compared to non-poor households, as well as increasing the share for rural households compared to urban households, should be a priority for policymakers.

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