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The Role of Microfinance In Poverty Reduction: Countries Experiences by Regions 2000-2018

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Abstract: The purpose of this study is to evaluate the impact of microfinance provisions on poverty reduction across various developing and a few developed countries, examining how regional differences and time influence the performance of the microfinance industry. The study employs a panel data model and pooled Ordinary Least Squares (OLS) to analyze the effect of key microfinance indicators—namely, the number of microfinance institutions, gross loan portfolio, and microfinance intensity (gross loan as a percentage of GDP)—in conjunction with control variables such as inflation, employment, population growth, trade openness, and the contributions of agriculture and industry to GDP. The empirical analysis is conducted using panel data from 91 countries across six regions, covering the period from 2000 to 2018, with data sourced from the World Development Indicators and the Microfinance Information Exchange (MIX) Market. The findings of the study indicate that microfinance indicators significantly reduce poverty, highlighting the critical role of microfinance in improving the living standards of disadvantaged populations. Additionally, the study finds that certain control variables also contribute to poverty reduction, further supporting the efficacy of targeted economic policies. This study underscores the importance of microfinance as a tool for poverty alleviation, particularly in regions with high poverty rates and low financial inclusion. The research also suggests that enhancing the performance of the microfinance sector can aid governments in achieving their poverty reduction goals. The implications of this study are significant for policymakers and stakeholders in the microfinance industry. It calls for the development of regulatory frameworks, legislative reforms, and policies aimed at strengthening the microfinance sector. Moreover, the study highlights the need for continuous training, capacity building, and support to ensure the sustainability and effectiveness of microfinance initiatives.

Keywords: Poverty, Microfinance, Financial Sector, Employment, Egypt

1. Introduction

Poverty, defined as a "pronounced deprivation in well-being" (Boonperm, Haughton, & Khandker, 2009), remains a pervasive global concern. According to the World Bank, over 1.29 billion people lived on less than $1.25 per day in 2010, representing almost 22% of the population in developing countries. Despite a reduction in the poverty rate by over half from 1990 to 2010, about one billion people still lived in extreme poverty by the end of 2015 (Beegle & Christiaensen, 2019). In 2017, the global extreme poverty rate fell further to 9.2%, yet approximately 700 million people continued to live below the World Bank's poverty line of $1.90 per day. At higher poverty thresholds, 24.1% of the global population lived on less than $3.20 per day, and 43.6% lived on less than $5.50 per day (Munoz Boudet, Bhatt, Azcona, Yoo, & Beegle, 2021). By 2018, nearly half of the world's population—about 4 billion people—survived on a daily family income of less than $2.50. Notably, approximately 50% of these individuals—368 million—reside in just five countries: India, Nigeria, the Democratic Republic of Congo, Ethiopia, and Bangladesh. These nations harbour the largest numbers of people living in poverty, who often remain excluded from economic growth and prosperity.

Given the global economic system's exclusion of the impoverished, microfinance institutions (MFIs) have emerged to address this "risky segment," offering micro-financial services that help alleviate poverty in developing countries (Battilana & Dorado, 2010). Research in Africa, Asia, Latin America, and the Caribbean demonstrates the positive impact of microfinance programs on household income, consumption, women's empowerment, and children's education (Vaessen et al., 2014). Microfinance has been recognized as a key contributor to poverty reduction, offering a range of financial services, including credit, payment services, money transfers, and insurance to poor and low-income families and their microenterprises. Given its significant role in job creation and revenue generation for governments, the United Nations has acknowledged microfinance as one of the most effective tools for poverty alleviation (Saad & Duasa, 2010).

MFIs typically offer standardized products, primarily small loans, to a vast number of unbanked individuals in developing countries, complementing rather than substituting traditional financial services (Bauchet & Morduch, 2013). In contrast,

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MFIs in developed countries, where banking services are widespread, focus on facilitating self-employment among a smaller group of micro-entrepreneurs overlooked by commercial banks. In Europe, the primary objectives of microfinance are job creation, the promotion of small enterprises, financial and social inclusion, and the empowerment of target groups. In 2011, active MFIs in the European Union (E.U.) disbursed over 204,080 loans worth EUR 1,047 million in total. Many MFIs in the E.U. benefit from government subsidies, which are crucial during their startup phase and come in various forms, such as insurance against default risk, tax incentives, loans at preferential rates, and business development services.

The landscape of microfinance in developed countries differs from that in developing regions, where the distinction between clients served by conventional banks and MFIs is blurred. Some MFIs serve clients eligible for bank loans, while others fill the gaps left by traditional financial institutions. The financial sector's response to the growth of microcredit activities has been mixed; some banks have established or partnered with MFIs, while others have advocated for stricter market regulations and greater oversight of microfinance activities. Micro-entrepreneurs often prefer MFIs over traditional banks due to less stringent screening processes and a stronger social orientation. MFIs provide business advice, technical assistance, and other appealing credit conditions and products such as savings and insurance, which makes them a formidable challenge to traditional banks (Bendig, Unterberg, & Sarpong, 2014).

The purpose of this study is to investigate and evaluate the impact of microfinance provisions on poverty reduction across various regions, including both developing and developed nations. Additionally, the study aims to assess the influence of regional and temporal factors on the performance of microfinance businesses.

2. Literature Review

The prominence gained by the Microfinance industry marks a significant milestone within a historical framework. It has reshaped preconceived notions about the poor as consumers of financial services, debunked the myth that the poor are unbankable, introduced a variety of lending methodologies proving the feasibility of delivering cost-effective financial services to the impoverished, and mobilized substantial "social investment" for the underprivileged (Mutua, Nataradol, Otero, & Chung, 1996). The principal goal of the microfinance movement has always been poverty reduction. Microfinance institutions (MFIs) sought to be self-sustaining and even profitable while providing the poor with the necessary repayable funds, which led to the global institutionalization of microfinance. “Microfinance is perhaps the best strategy for poverty alleviation in developing nations. Although it has traditionally been supported by non-governmental organizations and socially-oriented investors, MFIs have increasingly proven their value as standalone entities, offering a variety of products and services to serve the underserved.”

In Thailand, the impact of funds on income and expenditure levels was investigated through an empirical study using panel data from the Thailand Socioeconomic Surveys of 2002 and 2004, employing propensity score matching. Launched in 2001, the Thailand Village and Urban Community Fund (VF) provided working capital for local credit associations with a total of US$2 billion for Thailand's 78,000 rural villages. A fixed-effects model using a panel of rural households concluded that VF borrowing is associated with an average 3.5% increase in current spending and a 1.4% increase in income. A similar study using propensity score matching on nationwide data in 2004 found that VF loans are linked to the acquisition of durable goods, indicating increased spending (Boonperm, Haughton, & Khandker, 2013).

The impact of microfinance on key needs indices, such as family consumption and housing improvements, was examined through a four-round panel dataset on farm households with access to microfinance in northern Ethiopia. The use of fixed-effects and random trend models to mitigate potential biases showed that borrowing significantly enhanced consumption and housing improvements over the long term. These findings suggest that short-term impact estimates might overstate the benefits of microfinance (Berhane & Gardebroek, 2011).

Bangladesh, the birthplace of the modern microfinance era, has been the focal point of numerous studies on microfinance's effect on poverty. Imai and Azam (2012) examined the impact of MFI loans on poverty reduction using a household panel covering 1997 to 2004. They assessed the effects of general MFI loans and loans for productive purposes on income, food consumption, and women's Body Mass Index. The study found that MFI loans positively impacted income and food consumption, with the purpose of the loan being a key factor in improving household welfare indicators. Alternative evaluation methods confirmed the positive impact of MFI loans on food consumption and poverty reduction in Bangladesh.

In Pakistan, Rajper, Ghumro, Mangi, and Lund (2018) analyzed the impact of microloans disbursed by Khushhali Bank Limited in the Sukkur region of Sindh. They studied the effect of generated income on poverty alleviation among a sample of 370 individuals. The study revealed significant relationships among various variables, including occupation, residential area, age, gender, education, income, and the microloans provided. The findings suggest that microfinance plays a crucial role in alleviating poverty among the bank's customers in Sindh and that MFIs can significantly enhance their performance in this regard.

In India, a large segment of the population remains financially excluded, particularly among the poor and marginalized. Prathap, Mahesh, and Karthik (2018) explored the impact of microfinance initiatives on income levels, employment opportunities, and living standards in Karnataka State. Through structured questionnaires

targeting members of Self Help Groups (SHGs) engaged in microfinance for at least two years, the study found that 82% of borrowers were able to start businesses, with 61% reporting an increase in income levels. The study highlighted the positive impact of microfinance on employment opportunities and overall living standards.

Aggarwal, Klapper, and Singer (2013) examined the role of microfinance in promoting long-term economic growth for small businesses in Sub-Saharan Africa. The study found that access to finance leads to business growth, though the economic gains from microfinance were lower than expected due to challenges in mobilizing household savings and empowering individuals through financial services. The study concluded that promoting savings methods could be more effective in reducing poverty than loans.

The long-term success of microfinance is tied to the "graduation rate," where successful microfinance "graduates" often achieve sustained benefits through saving and business success. Ahlin and Jiang (2008) studied the long-term economic effects of microfinance, finding that the sustainability of microfinance loans could be improved by enhancing the productive efficiency of self-employed borrowers. This can be achieved through data sharing, automated transactions, and developing borrower programs. Incentives for MFI loan officers and performance measures are also crucial for MFI's success.

Regarding MFI sustainability, microfinance sustainability can be divided into four interconnected concepts: economic viability, financial suitability, institutional feasibility, and borrower reasonability. Economic viability relates to how a lending institution compares the cost per unit of currency lent to the interest charged to borrowers. Financial suitability involves ensuring that the monetary return on assets used for lending activities meets the costs incurred. Khandker (2005) suggested that loan repayment rates might be an indicator of MFI's financial sustainability, as low default rates support future lending. Meyer (2002) emphasized that the poor need long-term access to financial services rather than one-time financial assistance, as short-term loans could worsen their welfare.

Microfinance's financial sustainability challenges arise from low repayment rates or the non-fulfilment of funding promises by donors or governments. "Measuring financial sustainability requires that MFIs maintain good financial accounts and follow recognized accounting practices that provide full transparency for income, expenses, loan recovery, and potential losses" (Meyer, 2002). Microfinance has emerged as a key financial delivery innovation, widely regarded as a poverty alleviation tool that supports economic development and provides vital financial services. Numerous MFIs worldwide have demonstrated the feasibility of reaching the poor while remaining profitable.

3. Microfinance Performance Worldwide

3.1. Micro Finance Institutions' Performance

Micro Microfinance Institutions (MFIs) have consistently demonstrated their crucial role in poverty alleviation by providing loans to the poor or those with limited access to credit through commercial banks. In 2017, MFIs served 139 million clients, with a total credit portfolio of USD 114 billion. Microfinance continues to reduce financial exclusion, with 69% of adults accessing financial services in 2017, a 7% improvement from 2014. Over the past decade, MFIs have lent hundreds of billions of dollars, maintaining an average annual growth rate of 11.5% since 2014.

With nearly 66% of the world's borrowers in 2017, South Asia remains the global leader in microfinance. India led the way, with 50.9 million borrowers and an outstanding loan portfolio of EUR 17.1 billion, followed by Bangladesh, Vietnam, Mexico, and the Philippines (Barometer, 2019).

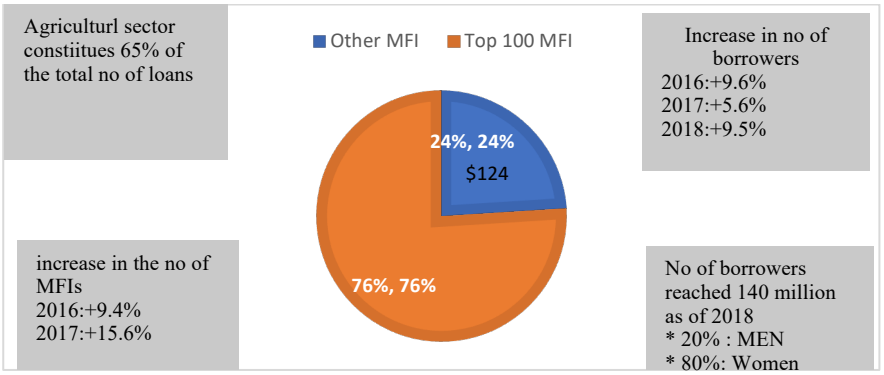

Figure 1: Worldwide MFI performance. Source: Barometer (2019)

3.2. Number Of Microfinance Institutions

Although the microfinance revolution began in Bangladesh, data from Mix-market indicates that the Latin America and Caribbean region has the largest number of microfinance institutions, followed by Sub-Saharan Africa, with the MENA region having the fewest. The region with the highest volume of loans disbursed is East Asia and the Pacific, while South Asia has the highest number of borrowers. Sub-Saharan Africa has the highest microfinance intensity.

As of 2018, the top 100 MFIs accounted for 76% of the total loans disbursed, amounting to $US124 billion, with 80% of the beneficiaries being women. The number of MFIs has been growing steadily, with increases of 9.4%, 15.6%, and 8.5% in 2016, 2017, and 2018, respectively, alongside a rise in the number of borrowers (Microfinance Barometer 2019). South Asia remains the global leader in terms of the number of borrowers, accounting for 60% of global borrowers in 2017. India led the way among active countries in microfinance worldwide in 2017, with 50.9 million borrowers and an outstanding gross loan portfolio of $19.5 billion, followed by Bangladesh, Vietnam, Mexico, and the Philippines.

3.3. Number Of Borrowers And Gross Loan Portfolio

In In 2018, 139.9 million borrowers benefited from MFIs, compared to 98 million in 2009. Of these 139.9 million borrowers, 80% are women, and 65% are rural borrowers—ratios that have remained stable in recent years despite the increase in the number of borrowers (Barometer, 2019).

Geopolitical situations and economic models influence the performance of MFIs, especially regarding profitability, which varies from one region to another. In Eastern Europe and Central Asia, MFIs experienced a decline in performance, while returns in Africa were positive. Performance in South Asia improved, supported by high efficiency and effectiveness.

Data from Mix-Market highlights that Africa is one of the fastest-growing regions for MFIs. Between 2002 and 2014, the gross loan portfolio of African MFIs grew from $0.6 billion to $8.48 billion. The expanding loan portfolio is driven by the increasing consumer base opting for this alternative financing solution. Between 2002 and 2011, depositors grew from 3 million to 20 million, and the number of active borrowers increased from 3 million to 6 million. The demand for microfinance products stimulated the supply, with the number of MFIs growing from 177 in 2002 to 394 in 2011.

South Asia continues to dominate global microfinance, being the region with the largest number of borrowers (85.6 million in 2018). This number has been increasing faster than in other regions (+13.8% between 2017 and 2018). The region also hosts the three leading microfinance markets: India, Bangladesh (where micro-credit was first ignited by Professor Yunus), and Vietnam, with 73% of clients being women and 79% being rural borrowers. With 500 MFIs operating between 2000 and 2018, India accounts for half (250 MFIs), followed by Bangladesh (86 MFIs). Microfinance loans disbursed in the region continued to grow, with a portfolio of $21.5 billion in 2018. That same year, 20.8 million recipients borrowed from microfinance organizations in the region (+10.2% versus 2017). From 2012, the total number of MFIs in the region grew by an average of 16% annually, accompanied by continuous, albeit slower, growth in the number of clients (+6%/year). Although South Asia accounts for nearly two-thirds of global borrowers, it ranks second in terms of outstanding portfolio, with an estimated $36.8 billion in 2018 (Barometer, 2019).

The Asia-Pacific microfinance sector has undergone transformational change. It has grown extensively as innovations in the financial industry have helped MFIs diversify their product offerings. Furthermore, enterprises served by these microfinance institutions are becoming more dynamic, along with the increasing complexity of financing requirements. Significant contrasts exist across the region, as MFIs undergo structural changes, adapting their business models to various financial institutions, such as small banks.

The East Asia & Pacific and Latin America and Caribbean regions have the largest Gross Loan portfolios, together accounting for 44% of the total microfinance sector portfolio, with $48 billion in outstanding loans (+5% annually since 2012). These regions were the first to integrate microfinance into their economies, drawing from Bangladesh's experience. The region is the second largest for the number of borrowers, with 23 million clients in 2018, a slightly lower figure (-0.3%) following years of growth.

South Asia has the highest number of borrowers, followed by Latin America and the Caribbean. However, financial inclusion in the MENA region remains among the lowest globally, with only 18% of the population having a formal bank account and just 13% of the female population participating. The MENA region also has the lowest number of borrowers and the least amount of microloans disbursed. Microfinance is an effective method for increasing financial access. However, specific microfinance regulations and an effective support structure are necessary to strengthen the sector in the MENA region. Moreover, there should be provisions for training, information sharing, monitoring techniques, and capacity building for MFI staff to scale up and expand their outreach. This will enable them to better provide borrowers with the necessary advice to ensure business success and loan repayment, which in turn will ensure the sustainability and success of MFIs.

4. Methodology

This section examines the effect of microfinance on the poverty headcount rate while controlling for other variables that have been identified in the literature as typically influencing poverty. The dependent variable in this study is the poverty headcount ratio at three poverty lines: $1.90, $3.20, and $5.50 per day. In addition to microfinance variables that might influence poverty rates—such as the number of microfinance institutions, the total gross loan portfolio disbursed, and the percentage of microfinance loans to GDP (referred to as microfinance intensity)—other determinants of poverty rates are included in the model as control variables. Based on the literature, these control variables include inflation, employment rate, gross capital formation, trade openness, and agriculture and industry value added (% of GDP).

Each microfinance variable/indicator will be tested separately, alongside all other control variables that may affect the poverty rate, to assess each microfinance indicator's effect and significance in reducing poverty rates. More specifically, this study employs an enhanced model following the approach used by Inoue and Hamori (2013) to estimate the effect of microfinance on poverty headcount ratios at $1.90, $3.20, and $5.50 per day. A panel data model is applied to study 91 countries, clustered into six regions: Sub-Saharan Africa, Middle East and North Africa, East Asia and Pacific, South Asia, Europe and Central Asia, over the period 2000-2018.

The Model is as follows:

$$PHR_{it} = \beta_0 + \beta_1 MF_{it} + \beta_2 \text{ Pop Growth}_{it} + B_3 \text{ Inflation}_{it} + \beta_4 \text{ Trade \%GDP}_{it} + \beta_5 GCF^2_{it} + \beta_6 \text{ Agg\% GDP}_{it} + \beta 7 \text{ Ind\% GDP}_{it} + \beta_8 \text{ Employment Rate}_{it} + u_{it},$$

Where $i = 1, 2, \ldots N$, $t = 1,2,\ldots T$

Microfinance variables include the number of microfinance institutions, total loans, and microfinance intensity as examples of explanatory factors for microfinance (MF). The control variables include trade as a percentage of GDP, gross capital formation, employment rate (male and female %), and agriculture and industry value added (% of GDP). The coefficient B_{it} measures the partial effect of microfinance or any other control variables on poverty headcount ratios, while u_{it} is the error term for country *i* at time *t*.

A Hausman test is performed on the panel data to determine whether to use Random Effects or Fixed Effects. Due to data limitations, the model tests the effect of these variables across six regions over five periods (using averages). Dummy variables for the regions and time periods are included in the model to capture the effects of a country being in a specific region and the impact of time. Consequently, pooled OLS will be used to test for the significance of these dummies.

5. Data And Estimated Results

Data was estimated using Fixed Effect (FE) and Random Effect (RE) models, with the Hausman test employed to determine the more appropriate model. Since the results of the Hausman test for all model variations rejected the null hypothesis, with all P values being less than 0.05, the FE model was deemed the most appropriate, and the results were interpreted accordingly. The model was estimated individually at each poverty level, with each microfinance indicator tested alongside the control variables. This approach allowed for assessing the impact of each microfinance indicator independently.

Table 1 presents the estimated results at a poverty headcount ratio (PHR) of $1.90 using three FE models to test the effect of Total Gross Loans Disbursed, the Total Number of Microfinance Institutions, and Microfinance Intensity (Number of Microfinance Institutions as a % of GDP), each on its own, along with the control variables. The results indicate that all microfinance indicators have a significant negative effect on PHR at $1.90. The greater the number of microfinance institutions, the higher the volume of loans disbursed, and the larger the percentage of GDP represented by these loans, the lower the poverty rates. This demonstrates the positive impact of microfinance in reducing poverty and improving the living standards of disadvantaged populations. As for the control variables: Gross Capital Formation (GCF) and Agriculture Value Added have a significant negative effect on poverty across all three model variations, indicating that higher GCF and a more substantial contribution from the agriculture sector to GDP correlate with lower poverty rates. Conversely, at this poverty level, a greater contribution from the industrial sector to GDP correlates with higher poverty rates. Therefore, higher involvement of the poor in the agricultural sector appears to be beneficial at this poverty level. The estimates also show that a higher percentage of female employment reduces the poverty rate, underscoring the importance of encouraging female participation in the labor force. The literature highlights that female engagement in microfinance projects is generally higher than that of males, and women have higher repayment rates, as reflected in the estimated models. In contrast, a higher percentage of male employment correlates with increased poverty. Additionally, the higher the Trade % of GDP, the Population Growth Rate, and the Inflation Rate, the higher the poverty rate; however, in the first model, inflation has an insignificant negative impact.

Table 1: Estimated results of the Model at Poverty headcount ratio $ 1.9

Model 1 Testing for Gross Loan		**Model Testing for Number of Microfinance Institutions**		**Model 3 Testing for Microfinance Intensity**	
Gross Loan Portfolio	(-1.17e-09***)	No of Microfinance Institutions	(-0.0970)**	Microfinance Intensity	(-0.450)***
	0.000		(0.04)		(0.15)
Population Growth	2.148*	Population Growth	1.628	Population Growth	2.053
	(1.251)		(1.310)		(1.26)
Inflation	-0.00405	Inflation	0.104	Inflation	0.00518
	(0.080)		(0.11)		(0.08)
Trade(%GDP)	0.024	Trade(%GDP)	0.034	Trade(%GDP)	0.0191
	(0.03)		-0.0297		(0.03)
Gross Capital Formation	(-0.544)***	Gross Capital Formation	(-0.580)***	Gross Capital Formation	(-0.527)***
	(0.102)		(0.10)		(0.10)

Aggriculture Value Added (% GDP)	(0.681)***	Aggriculture Value Added (% GDP)	(0.700)***	Aggriculture Value Added (% GDP)	(0.670)***
	(0.14)		(0.15)		(0.14)
Industry Value Added (% GDP)	(0.282)*	Industry Value Added (% GDP)	(0.355)**	Industry Value Added (% GDP)	0.248
	(0.17)		(0.18)		(0.17)
Per cent of Female Employment	-0.115	Percent of Female Employment	-0.239	Percent of Female Employment	(-0.316)*
	(0.19)		(0.19)		(0.18)
Percent of Male Employment	(0.560)**	Percent of Male Employment	(0.619)***	Percent of Male Employment	(0.621)***
	(0.23)		(0.23)		(0.23)
Constant	-24.27	Constant	-24.18	Constant	-18.03
	(17.70)		(15.46)		(14.98)
No of Obsv	266	No of Obsv	265	No of Obsv	264
R-squared	0.445	R-squared	0.41	R-squared	0.413

Source: Calculated by author. **Note:** ***p<0.01, **p<0.05, *p<0.1

Table 2 presents the estimated results of the three FE models on the Poverty Headcount Ratio (PHR) at $3.20. The results indicate that all microfinance indicators have a significantly negative effect; the higher the microfinance indicators, the lower the poverty rate. Among the control variables, higher GCF, a greater contribution from female employment, and a higher Trade % of GDP are associated with lower poverty rates. At this PHR, Agriculture Value Added % of GDP and Industry Value Added % of GDP increase poverty, along with Inflation, Population Growth, and Percent of Male Employment.

Table 2: Estimated results of the Model at Poverty headcount ratio $ 3.2

Model 1 Testing for Gross Loan		**Model Testing for Number of Microfinance Institutions**		**Model 3 Testing for Microfinance Intensity**	
Gross Loan Portfolio	(-1.16e-09***)	No of Microfinance Institutions	(-0.119)**	Microfinance Intensity	(-0.669)***
	0.000		(0.06)		(0.19)
Population Growth	0.169	Population Growth	-0.487	Population Growth	-0.00531
	(1.63)		(1.72)		(1.62)
Inflation	0.105	Inflation	(0.322)**	Inflation	0.118
	(0.10)		(0.14)		(0.10)
Trade(%GDP)	-0.0151	Trade(%GDP)	-0.00238	Trade(%GDP)	-0.0214
	(0.04)		(0.04)		(0.04)
Gross Capital Formation	(-0.547)***	Gross Capital Formation	(-0.600)***	Gross Capital Formation	(-0.514)***
	(0.13)		(0.14)		(0.13)
Aggriculture Value Added (% GDP)	(1.307)***	Aggriculture Value Added (% GDP)	(1.327)***	Aggriculture Value Added (% GDP)	(1.283)***
	(0.18)		(0.19)		(0.18)
Industry Value Added (% GDP)	(0.685)***	Industry Value Added (% GDP)	(0.806)***	Industry Value Added (% GDP)	(0.625)***
	(0.22)		(0.23)		(0.22)
Percent of Female Employment	(-0.423)*	Percent of Female Employment	(0.806)**	Percent of Female Employment	(-0.726)***
	(0.24)		(0.25)		(0.29)
Percent of Male Employment	0.468	Percent of Male Employment	(0.573)*	Percent of Male Employment	(0.541)*
	(0.29)		(0.31)		(0.29)
Constant	-1.514	Constant	-4.408	Constant	9.43
	(19.50)		(20.23)		(19.28)
No of Obsv	266	No of Obsv	265	No of Obsv	264
R-squared	0.445	R-squared	0.41	R-squared	0.413

Source: Calculated by the Author. **Note:** *** p<0.01, ** p<0.05, * p<0.1

Table 3 presents the estimated results of the three FE models on the Poverty Headcount Ratio (PHR) at $5.50. The results show that all microfinance indicators significantly reduce poverty. Among the control variables, higher GCF (except in the last model) and greater engagement of the female labour force correlate with lower poverty rates. Higher inflation rates are associated with increased poverty, and at this poverty level, neither Agriculture nor Industry % of GDP improves poverty outcomes. A higher Trade % of GDP correlates with a lower poverty rate, though the impact is insignificant. As in the previous models, a higher percentage of male employment does not improve the poverty rate, and higher inflation rates correspond with higher poverty rates.

Table 3: Estimated results of the Model at Poverty headcount ratio $ 5.5

Model 1 Testing for Gross Loan		Model Testing for Number of Microfinance Institutions		Model 3 Testing for Microfinance Intensity	
Gross Loan Portfolio	(-2.05e-09***)	No of Microfinance Institutions	(-0.114)*	Microfinance Intensity	(-0.909)***
	0.000		(0.07)		(0.22)
Population Growth	-2.773	Population Growth	(-3.497)*	Population Growth	-2.916
	(1.89)		(1.99)		(1.86)
Inflation	(0.239)***	Inflation	(0.541)***	Inflation	(0.254)***
	(0.12)		(0.16)		(0.12)
Trade(%GDP)	-0.0185	Trade(%GDP)	-0.00703	Trade(%GDP)	-0.0261
	(0.04)		(0.05)		(0.04)
Gross Capital Formation	(-0.280)*	Gross Capital Formation	(-0.335)**	Gross Capital Formation	-0.24
	(0.150)		(0.15)		(0.15)
Aggriculture Value Added (% GDP)	(1.350)***	Aggriculture Value Added (% GDP)	(1.379)***	Aggriculture Value Added (% GDP)	(1.309)***
	(0.21)		(0.22)		(0.21)
Industry Value Added (% GDP)	(0.613)***	Industry Value Added (% GDP)	(0.738)***	Industry Value Added (% GDP)	(0.558)***
	(0.24)		(0.26)		(0.24)
Percent of Female Employment	(-0.801)***	Percent of Female Employment	(-1.016)***	Percent of Female Employment	(-1.142)***
	(0.28)		(0.29)		(0.27)
Percent of Male Employment	(0.377)**	Percent of Male Employment	0.545	Percent of Male Employment	0.449
	(0.34)		(0.36)		(0.33)
Constant	(41.05)*	Constant	35.14	Constant	(53.93)**
	(17.70)		(23.54)		(22.25)
No of Obsv	266	No of Obsv	265	No of Obsv	264
R-squared	0.445	R-squared	0.41	R-squared	0.413

Source: Calculated by the author.

Microfinance can play a significant role in poverty reduction by providing poor people with the necessary funds to start and develop their businesses, generating income that improves the quality of life for their families, including better nutrition, education, and health, as evidenced by the above estimates at various poverty headcount ratios. Moreover, microfinance can alleviate the burden of unemployment by creating job opportunities for entrepreneurs and through induced job creation. Microfinance encourages female participation in the labor force, and females' high repayment rates contribute to the sustainability of their businesses. As the estimates indicate, the larger the percentage of employed females, the lower the poverty rates at all levels. Therefore, policies and regulations should encourage female employment and provide the necessary support to facilitate their engagement and contribution to the economy. Microfinance should also be supported to increase and strengthen its role in the business sector, not only by expanding the number of microfinance institutions and loans but by enriching the business environment with the tools necessary to ensure the sustainability of this sector. Training, technical assistance, capacity building, follow-up, guidance, support, and appropriate policies are all essential to elevate the performance of all partners involved in the microfinance business.

Pooled OLS was used to assess the effects of different regions and time periods on poverty rates. Countries were divided across six regions, and the analysis was conducted over a five-year average period. The MENA region served as the reference region, and the last period (P5) was the reference period. The estimated results at PHR $1.90 show that all regions exhibit significantly higher poverty rates than the reference period, except for Europe & Central Asia and Latin America & Caribbean, where the results are not significant. Regarding the effect of time, higher poverty rates are observed, though the first and fourth periods are insignificant.

At PHR $3.20, Europe & Central Asia exhibit lower, yet insignificant, poverty rates compared to the MENA region; all other regions show significantly higher poverty rates, except for Latin America & Caribbean, which show insignificant results. All periods also exhibit significantly higher poverty rates, except for the first period, which shows a lower yet insignificant poverty rate. The regional and temporal effects show that Europe and Central Asia have lower but insignificant poverty rates, Latin America and the Caribbean have insignificantly higher poverty rates, while the other three regions—Sub-Saharan Africa, East Asia Pacific, and South Asia—exhibit significantly higher poverty rates than the MENA region at PHR $5.50. As for the effect of time, all periods show significantly higher poverty rates, except for the first period, which shows a significantly lower rate than the last period under study.

6. Conclusion

Poverty remains one of the most significant global challenges. This study empirically investigates the impact of microfinance provision on the welfare of those who access it and highlights its potential as a powerful tool for poverty reduction. The literature has extensively discussed the effectiveness of microfinance in enhancing the welfare of low-income populations. The small loans provided by microfinance institutions or commercial banks do not require collateral or formal documentation, making them suitable for the poor, who typically lack such resources. However, the microfinance sector in the MENA and Sub-Saharan Africa regions is not yet fully developed and has not reached its potential demand. A notable issue in the MENA region is the lack of an appropriate financial management system, monitoring and information systems, product diversification, and innovation in microfinance programs that meet clients' needs. Microfinance can also be an effective tool for empowering women by involving them in social activities, as they have demonstrated their ability to sustain businesses and repay loans successfully. The estimated results indicate that an increase in the number of microfinance institutions, gross loans disbursed, and the share of loans to GDP correlate with lower poverty rates. Furthermore, engaging more women in the workforce significantly contributes to poverty reduction. The results underscore the importance of the microfinance industry in alleviating poverty and the need to enhance its role in the economy, particularly in regions with high poverty rates and low levels of financial inclusion. Regulatory, legislative, and policy reforms are essential to improving and strengthening the business environment to ensure the sustainability of loan provision. Simultaneously, continuous follow-up, training, capacity building, and guidance are necessary. It is crucial to design and implement appropriate criteria for selecting beneficiaries to ensure loan repayment and that these loans are used effectively to establish and grow businesses.

7. Limitations And Further Recommendations

This study faced several limitations. Due to data constraints, not all countries in the studied regions were covered, particularly concerning poverty rates, which necessitated using five-year averages. Additionally, microfinance data available from MIX Market was not comprehensive for all countries over the entire period from 2000 to 2018. The availability of microfinance literature, especially concerning developed countries that have incorporated microfinance into their financial systems, is still limited, making it challenging to study the impact of microfinance and its performance in such economies. These limitations present future research opportunities that require more updated data and further investigation. More research and empirical studies are needed for developed countries as well as the MENA regions and Arab countries to identify their performance, gaps, and the means required for enhancement and improvement.

Governments aiming to reduce poverty should focus on developing a robust legal framework to legitimize and promote the inclusion and expansion of microfinance activities. This will increase confidence in the system and contribute to poverty reduction efforts. Microfinance must move away from reliance on grants or charity and transition towards self-sufficiency and financial sustainability. The creation of incentive mechanisms for microfinance, along with the provision of necessary supervision, training, technical advice, assistance, and management tools, is crucial to enhance and develop this sector and enable it to have a more significant impact on poverty reduction.

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