The Impact of Microfinance on Poverty Alleviation

EC831 – Dissertation

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April 2023

Word Count: 4963

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Abstract

This literature review examines the relationship between microfinance and poverty alleviation by considering the impacts that microfinance schemes have on impoverished people, by proxy of its effects on various socio-economic factors. Existing literature demonstrates that microfinance influences household income, employment, gender empowerment, education, and health. These factors are examined as they respectively impact key poverty indicators. This paper supports the association between microfinance and poverty alleviation, however it recognises the contention amongst scholars regarding its effectiveness. Technological innovation is explored as a potential solution for this, worthy of further research.

Keywords: Microfinance, Microcredit, Poverty, Financial Inclusion, Digitisation

Introduction

At its inception over forty years ago, microfinance was idealised as a revolutionary way of tackling poverty with its 'people first, win-win' approach. Since then, the concept has been researched extensively by scholars of various disciplines, and despite demonstrating many socio-economic benefits, it has been subject to intense scrutiny.

This paper will begin by defining the key concepts of the subject: financial inclusion, microfinance, and poverty. It will provide a brief background on the origin of microfinance to emphasise the motivation behind the scheme.

The following section will present an overview of what current literature says about the relationship between microfinance and various socio-economic factors associated with poverty (Pitt and Khandker, 1998; Morduch, 1999; Khandker, 2005; Mazumder and Lu, 2015; Gangadhar, 2015).

In this study, the following categories of socio-economic benefits are considered; direct benefits (household income and employment) and indirect benefits (gender, health, and education). Household income and employment have been included since the provision of microloans to entrepreneurs allows them to fund their enterprises, hence improving their income and providing them with employment as business owners.

Microfinance institutions often target women as their key borrowing demographic and influences gender empowerment as a supplementary benefit. This is because the support and resources that they offer empower women through gaining financial autonomy. Furthermore, increased disposable income allows individuals to afford better quality services, most notably education and health.

All five socio-economic factors can influence a household's wellbeing and standards of living, and are the basis of many key indicators of poverty. Table 1 (see Appendix) provides a broad categorisation of some of the most prominent indicators used throughout literature.

Section Three will demonstrate empirical evidence from secondary sources to examine the success of microfinance schemes in Bangladesh and India. These case studies have been specifically chosen as 60% of global microcredit borrowers are from South Asia, the majority of which are from these two countries (Global Outreach Financial Benchmark Report, 2018).

Section Four considers the purpose of microfinance institutions by discussing why commercial banks don't offer their formal financial services to impoverished individuals (Coleman, 2006; Cull *et al.,* 2011).

In contrast to the positive effects demonstrated in these studies and assessments, Section Five will critically evaluate various challenges and limitations of microfinance (Hulme, 2000; Bateman, 2009; Banerjee, 2016; Hossain *et al.*, 2020; Zheng and Zhang, 2021). It will consider the amplification of these limitations by result of the recent effects of the Covid-19 pandemic.

Section Six continues this debate by pertinently discussing the future implications of microfinance schemes (Chowdhury *et al.*, 2004; Mbiti and Weil, 2015; Ahmad *et al.,* 2020; Liu *et al., 2020*). This section will propose various solutions and improvements to make microfinance a more efficient tool for alleviating poverty. Consideration is given to the influence of digitisation and technological innovation, such as the emerging use of low-cost mobile devices and Artificial Intelligence (AI).

The final section presents a summary and some concluding remarks.

Key Concepts

According to the Global Findex Database (2021), 1.4 billion adults worldwide are considered to be unbanked, the majority of whom are women. As a concept, Microfinance directly addresses this problem by providing financial services to the poorest in society. In doing so, the primary intention of the scheme is to serve as a socially beneficial method of tackling poverty through financial inclusion.

What is Financial Inclusion?

Financial inclusion refers to individuals having sufficient access to financial goods and services, and is believed to foster economic growth (UNCDF, 2023). It is a key enabler towards reducing extreme poverty (The World Bank, 2022), and has been identified as fulfilling 8 of the 17 United Nations Sustainable Development Goals (see Figure 1 in Appendix).

What is Microfinance?

Microfinance involves providing financial services to low-income or impoverished individuals, particularly women, who typically lack access to traditional banking. The schemes facilitate such self-employed individuals, small-businesses, and entrepreneurs by providing them with capital. This is usually in the form of microcredit or microloans, which are labels used interchangeably to mean small loans offered at relatively low interest rates to underserved entrepreneurs (Banerjee *et al.*, 2015).

Many microfinance institutions (MFIs) have developed their offerings to meet the growing needs of their clients by offering supplementary financial resources such as savings accounts and money transfer facilities, as well as education and skill-based training to its borrowers (Brau and Woller, 2004; Khandker, 2005).

Providing rural entrepreneurs with such invaluable resources allows them to fund their enterprises in the hope that they will sustain a profit and gain the financial freedom they need to lift themselves out of poverty.

Defining Poverty

Microfinance was intended as a socially beneficial method of tackling poverty. As a concept, there are various definitions and standards by which poverty is measured.

In an article regarding the influence of microfinance on poverty, Shil (2009) paraphrases Yunus (1997)'s definition of poverty as:

"…being in a state of joblessness, illiteracy, landlessness, homelessness, lack of adequate capital, facilities and food to earn a decent living, and also powerlessness" (Shil 2009, p.191).

In general terms, poverty is defined as the global crisis of individuals lacking the ability to afford basic necessities. Many scholars use the benchmark assigned by the World Bank, denoted as the International Poverty Line, when quantifying poverty (Hulme and Mosley, 1996; Navajas *et al.*, 2000; Batinge and Jenkins, 2021). As of September 2022, the World Bank identified 648 million impoverished individuals as living below $2.15 (USD) per day (The World Bank, 2023).

However, poverty is increasingly becoming understood as a multidimensional phenomenon. The evolving definitions of poverty over time go beyond monetary aspects to include broader issues. Many measures and indicators of poverty focus on factors that influence an individual's wellbeing and standard of living (see Table 1 in Appendix for a broader categorization of such measures). As such this study focuses on the following socio-economic factors; household income, employment, and demographic characteristics (gender, health, and education).

The Origin of Microfinance

The concept of microfinance was pioneered in Bangladesh by Nobel laureate, Muhammad Yunus, with his formation of the Grameen Bank (Morduch, 1999). In the early 1970s, Yunus was a professor of economics at Chittagong University, where he conducted research on rural poverty. In 1976, he visited a village in Bangladesh where he provided a small loan of $27 to a group of women to free them from the restrictions of loan sharks (Yunus *et al*., 2010). From there he dedicated his life's work towards developing the idea that even the poor are credit worthy.

In an interview with the Nobel Peace Prize Outreach establishment, Yunus stated:

"Lend the poor money in amounts which suit them, teach them a few basic financial principles, and they generally manage on their own" (Nobel Prize, 2006)

Yunus established the Grameen Bank in 1983, which became the first microfinance institution in the world (Dowla, 2004). Under his leadership, the bank has helped millions of impoverished people to start small businesses and improve their economic circumstances. As a result of his contributions, Yunus was appropriately named as 'The Banker to the Poor'.

However, despite being intended for the purpose of poverty alleviation, much scholarly debate exists surrounding the impact of microfinance on poverty.

The Socio-Economic Benefits of Microfinance

"Credit creates economic power which quickly translates into social power" (Yunus, 1999 p. 150).

Abundant literature investigates the benefits that microfinance has on people in poverty. By providing financial services to the unbanked, microfinance contributes towards 6 of the United Nation's 17 Sustainable Development Goals (SDG) (see Figure 1 in Appendix).

Collective findings have demonstrated that microfinance has spillover effects on various socio-economic factors, most notably: household income, employment, gender empowerment, education, and health. These factors have been widely recognised throughout literature as having an effect on key indicators of poverty and wellbeing (see Table 1 in Appendix for examples of such indicators and see Figure 2 in Appendix for an illustration of the overall relationship).

In this study, these factors have been split into two categories: direct (household income and employment) and indirect (gender empowerment, education, and health) benefits.

Income and Employment

In a direct sense, microcredit provides employment to impoverished individuals by supplying them with the means to create their own businesses. This has spillover effects of providing further employment to family and community members. Moreover, it enables individuals to retain a profit and increase their household income. Morduch (1999) uses this as a reason to validate the success of microfinance. He argues that an increase in disposable income improves the standard of living for households as they are now able to afford better healthcare, and education for their children, instead of rationing on basic necessities.

Impoverished individuals understandably prioritise spending on essential needs rather than saving for the long term. However, Morduch (1999)'s study suggests that given the correct instruments, these individuals can learn to save and break free from borrowing constraints. Khandker (2005) uses panel data to reiterate this claim by demonstrating how the generation and sustainability of income reduces consumption and income poverty. His findings showed that microfinance raises household consumption per capita. This was further reinforced by Goldberg and Karlan (2006) using an impact evaluation study. However, it can be argued that these results could represent the misuse of microcredit by these individuals by unsustainably over-consuming basic goods.

Nevertheless, regardless of these individuals' consumption habits, the surplus income that microfinance provides enables people to lift themselves, and their families out of poverty (Yunus 2007). This is pertinent as it demonstrates how microfinance programs can have a compounding impact on a borrower's entire household's welfare and living standards. In a seminal study, Bateman (2009) contradicts this claim and states that such benefits are only viable in the short term, and any long-term aggregate effects on development are insignificant. Recent studies have similarly emphasised that microcredit alone is insufficient in alleviating poverty. They suggest a multidimensional approach to be more effective (Chikwira *et al.*, 2022).

Gender Empowerment, Education and Health

Of the 71 million microfinance borrowers in South Asia alone, 89% are women (Global Outreach Financial Benchmark Report, 2018). Aside from fostering local economic growth, microfinance schemes have the ability to empower women from rural communities and improve their lifestyle. In doing so, the concept actively works towards the United Nations' 5th Sustainable Development Goal of Gender Equality (UNCDF, 2023) (see Figure 1 in Appendix).

Gender empowerment can take many forms. One of the most prominent ways is through gaining financial autonomy. Microfinance achieves this by providing women with capital and the opportunity to earn an income. Economic security can give women the financial freedom to escape from domestic domination and violence (Schuler and Haschemi, 1994). However, Goetz and Gupta (1996) question whether women truly hold control over the loan by highlighting the concern of loan appropriation by an individual's, often male, family members. Nevertheless, they acknowledge that enabling women to take on responsibility fosters their self-confidence and autonomy (Goetz and Gupta, 1996). Recent studies highlight how the financial and intellectual resources that women gain through microfinance empowers their say in family and household economic decision making (Gangadhar, 2015; Jamal *et al.*, 2016).

Furthermore, many microfinance institutions (MFIs) specifically target women as a key borrowing demographic. Hulme and Mosley (1996) identify women to be a good credit risk and found that simply enhancing a borrower's income encourages them to escape the cycle of poverty. Pitt and Khandker (1998) validate this by demonstrating that providing credit to women has more of an impact on household welfare, than lending to men. As such, MFIs can amplify their impact by simply lending to women.

In many of his early works, Khandker *et al.* (1998, 2005) demonstrates the spillover benefits that microfinance provides. This includes increased access to education and preventative healthcare measures. Some microfinance institutions directly provide education to women about important topics such as health and finance (Brau and Woller, 2004). One such example is the 'Ultra Poor Graduate Initiative' offered by the BRAC; a highly acclaimed microfinance institution in Bangladesh who aim to educate individuals out of poverty (BRAC, 2021).

Chowdhury *et al.* (2004) evaluated key methodologies used to analyse the wider impacts of microfinance, and determined that these spillovers potentially have more significance on key development indicators (i.e. education and health) than the direct benefits of microfinance schemes. This is largely because a general increase in income enables an individual to access and afford better quality education and healthcare, not only for themselves but also their wider household.

Many scholars have used data and case studies from around the world to verify this association (Chowdhury and Bhuiya, 2004; Morris and Barnes, 2005; Ghalib, 2007; Rooyen *et al.*, 2012). For example, Mazumder and Lu (2015) conducted a study with the primary focus of investigating the influence of microfinance programs in Bangladesh on rural livelihood. Using a series of data collection and quantitative analysis methods such as regression models and propensity score matching, they concluded that microfinance improved the participant's quality of life by enabling them access to higher quality nutrition, education, and health facilities (Mazumder and Lu, 2015).

These various studies pertinently demonstrate how extensive literature agrees on the impact that socio-economic benefits which microfinance provides has on the local economy and standards of living.

Microfinance in Action

This section will present quantitative data from secondary sources to provide a broad overview of the current global situation with regards to both microfinance and poverty. Particularly, case studies of Microfinance Institutions (MFIs) from India and Bangladesh will assist in examining the overall success of existing microfinance schemes. These cases have been specifically chosen as according to the Global Outreach Financial Benchmark Report (2018), 60% of global microcredit borrowers are from South Asia, the majority of which are from these two countries (see Table 2 and Figure 3 in Appendix).

Global account ownership has shown a positive trend whereby, between 2011 and 2021, it has steadily increased from 51% to 76% (Global Findex Database, 2021). Particularly in India, Bangladesh, and Kenya, financial inclusion has demonstrated significant improvement over time (see Figure 4 in Appendix). This progress can largely be credited to the digitisation programs in these countries.

Bangladesh

Bangladesh is widely acknowledged as the origin of microfinance - from the formation of the first microfinance institution (MFI), to the development of joint liability group-based lending (Yunus, 1999; Dowla, 2004). Since the concept's creation during the mid-1970s, microfinance institutions have begun to establish themselves and expand their operations in both Bangladesh and across the world. In 2018, there were around 27 million active borrowers in Bangladesh alone (Global Outreach Financial Benchmark Report, 2018). Two of the leading microfinance institutions currently operating in Bangladesh are the Grameen Bank, and the BRAC (Bangladesh Rural Advancement Committee).

	Grameen Bank (2021)	BRAC (2021)
Year of Establishment	1976	1972
Number of Borrowers	6,765,000+	692,000+
Number of Members	9,495,000+	497,000+
Total Amount Deposited	$2,271.1 million USD	$20.5 million USD
Total Working Capital	$29.0 million USD	$84.0 million USD
Value of Loans Given	$1718.8 million USD	$311.9 million USD
Profit	$4.64 million USD	$5.9 million USD
% of Female Borrowers	94%	96%

Source: Grameen Bank (2021); BRAC (2021)

India

India is the market leader with regards to microfinance. As of 2018 it held the greatest number of active microfinance borrowers globally, at approximately 38 million individuals, and has the largest Gross Loan Portfolio (GLP) of $21 billion USD (Global Outreach Financial Benchmark Report, 2018) (see Table 2 in Appendix for a full global comparison). Significant growth has been reported despite India's regional demonetisation scheme in 2016 which subjected micro, small, and medium enterprises (MSMEs) to bear the majority of the negative impacts (Kurosaki, 2018). Demonetisation was a governmental initiative that aimed to formalise India's economy by removing large denomination bills from circulation. This was done in an attempt to produce a cashless economy and clean out any counterfeit notes. However, studies have widely criticised the scheme as they conclude that cash still plays a pivotal role in facilitating economic activity in India and despite the government's efforts, fake notes remain in use (Kurosaki, 2018; Chodorow-Reich *et al*., 2019; Verma *et al*., 2020). The Mann Deshi Bank and the SEWA (Self-Employed Women's Association) Bank are two of India's oldest and most prominent microfinance institutions.

	SEWA Bank (2017)	Mann Deshi Bank (2018)
Year of Establishment	1974	1997
Number of Borrowers	60,000+	200,000+
Number of Members	47,000+	26,000+
Total Amount Deposited	$29.7 million USD	$11.8 million USD
Total Working Capital	$42.2 million USD	$13.5 million USD
Value of Loans Given	$18.1 million USD	$60.9 million USD
Profit	$366 thousand USD	$124 thousand USD
% of Female Borrowers	100%	100%

Source: SEWA Bank (2017); Mann Deshi Bank (2022)

Both case studies demonstrate a wide outreach in terms of beneficiaries that have been positively impacted with comparably small investments. However, each MFI notably makes a minimal net profit overall. Nevertheless, as put by Yunus (2022) in a recent interview, the purpose of microfinance lies in its social mission, not in the size of its profits (BNP Paribas, 2022).

Why Don't Commercial Banks Offer Microfinance

Considering the evidence that demonstrates how microfinance loans not only provide social benefits, but can also return a profit on investment, why do commercial banks exclude the poor from accessing their financial services?

Coleman (2006) explains the reluctance of such institutions from a high risk and low profitability standpoint. Since the poor typically lack assets that can be put up as collateral in the event that their loan defaults, lending to such individuals is considered as perceivably risky. Furthermore, the high transaction costs involved for lending relatively small loan and deposit amounts are an additional disincentive.

Microfinance overcomes this difficulty through its group lending initiative. This allows individuals to borrow in groups and act as guarantors for each other to ensure the repayment of the loan and mitigate any associated risk. This peer pressure allows for self-regulation of the loans which tackles another issue encountered by institutions. This refers to the difficulty faced by local authorities in enforcing loan repayments (Cull *et al.*, 2011).

Instead, commercial banks indirectly provide financial services to these individuals by offering capital to microfinance institutions who are better suited for this purpose. One such example is BNP Paribas. Between 1989 and 2021, they impacted the lives of 2.9 million indirect beneficiaries by granting partner microfinance institutions with a total of $1.32 billion USD worth of loans (BNP Paribas, 2021).

However, if loan repayment isn't guaranteed and relies predominantly on the success of vulnerable individuals who will typically offer low returns, this highlights a number of potential challenges faced by microfinance institutions.

Challenges and Limitations of Microfinance

The impact of microfinance on alleviating poverty is a contentious issue amongst scholars. Despite evidence supporting the claim, widespread literature reports how it may be failing to meet its intended goals.

Can Microfinance make a sizeable impact on Poverty?

Standalone enterprises funded by microfinance typically generate low returns that often don't cover their costs. In a seminal work on the topic, Morduch (1999) argues that microfinance only offers localised benefits rather than influencing any sizeable change. He gives the example of a limited creation of jobs and demonstrates the restricted potential to drive growth through employment. Khandker (2005) investigates this perspective further using household panel data from Bangladesh to suggest that any observed impacts are likely the result of a redistribution or short-run generation of income. He is notably one of only a few scholars who has managed to conduct seminal empirical data analysis on this topic.

Especially considering the high transaction costs involved, microfinance institutions heavily depend on subsidies and donor contributions to keep afloat. Both Morduch (1999) and Khandker (2005) use this perspective to argue against the long-term profitability of the concept. Several critical studies in recent years evaluate these earlier findings to emphasise the minimal effect that microcredit has on poverty reduction (Bateman, 2009; Banerjee, 2016). They conclude that if the benefits of microfinance are unsustainable and short-lived, they cannot be expected to make a substantial impact on poverty.

Does Microfinance truly help those who need it the most?

One of the defining characteristics of microfinance is that it targets low-income groups and provides them with financial services. In reality however, it often has a limited scope of distribution and fails to target the poorest individuals in rural societies (Hulme, 2000). Weiss and Montgomery (2005) build on Hulme's earlier findings to analyse strategies used in Asia and Latin America. They conclude that despite having a clearly positive impact on poverty through its influence on various socio-economic benefits, microfinance fails to reach and benefit the 'core poor'. This is because many rural communities embody traditional views and still have a hierarchical structure amongst themselves. MFIs may only reach and benefit those at the top.

The double bottom line of microfinance refers to the idea that microfinance institutions (MFIs) should have two goals: financial sustainability and social impact. Yaron (1994) developed a fundamental framework which assessed these two components. Hulme (2000) uses a qualitative approach to analyse this framework and claims that financial sustainability shouldn't be the main priority of microfinance. Recent literature also shows that in an attempt to fulfil this double-bottom line, negative competition is fostered amongst MFIs (Hossain *et al.*, 2020). Hossain *et al.*, (2020)'s empirical findings conclude that this competition undermines the economic sustainability of these institutions and encourages borrowers to become over-indebted. Such ordeals force individuals to reluctantly sell their land and subjects them to detrimental amounts of stress. In some extreme circumstances this has reportedly driven some borrowers into committing suicide (Bloomberg, 2022). This is crucial as it shows how microfinance can counterproductively push individuals further into poverty.

Vulnerability to External Shocks

The Covid-19 global pandemic had monumental impacts on nearly every sector and individual across the world - microfinance and its participants were no exception. Unlike previous shocks that threatened the industry, Covid-19 put both microfinance institutions and borrowers under severe strain (Economics Observatory, 2020).

Due to a lack of mobility as a result of social distancing, and the rapid spread of coronavirus across densely populated rural areas where individuals had minimal protection, rural individuals were the most vulnerable to the effects of the pandemic. Small scale entrepreneurs struggled to work and earn a sufficient income. Borrowers struggled to repay their existing loans and incurred further debt to maintain their daily needs (Covid Collective, 2022). The Power and Participation Research Centre (PPRC) and the BRAC Institute for Governance and Development (BIGD) conducted a survey in 2021 which compared the rates of outstanding loans in Bangladesh among urban slum and rural households, and found them to have drastically increased by 86% and 76% respectively compared with their pre-pandemic levels (PPRC-BIGD, 2022). Prior to 2020, microloan repayment rates were reported steadily at 95-99% (CGAP, 2009; Economics Observatory, 2020). Post-pandemic, these rates have deteriorated, and the long-term sustainability of microfinance as a concept has been widely critiqued.

Microfinance institutions themselves faced funding pressures and had to allocate considerable proportions of their own resources to rapidly adapt to changing circumstances (Economics Observatory, 2020). This ultimately meant having constrained funds to simultaneously support its clients.

Nevertheless, various reports and studies have demonstrated the pivotal role that microfinance played in protecting impoverished individuals during these challenging times (Brickell *et al.,* 2020; Zheng and Zhang, 2021). Microfinance institutions (MFIs) acted as a medium for governments and larger commercial organisations to reach individuals from the most rural locations and provide them with support. BNP Paribas for example launched an emergency program via these institutions to provide essential nutrition such as rice to 24,043 beneficiaries (BNP Paribas, 2021). By supplying resources and offering short-term funding for energy bills etc., MFIs were a critical lifeline in helping those who struggled to afford basic necessities to stay afloat (FINCA, 2020). Many agree that microfinance will play a more important role in a post-pandemic world (The Economist, 2020; BNP Paribas, 2021). Both in terms of helping rural economies recover and supporting the social needs of its populations.

Furthermore, even amongst such difficult circumstances, Covid-19 has paved the way for significant advancements in microfinance. The pandemic highlighted the need for digital payment systems and subsequently accelerated the implementation of digital financial services (Malik *et al.,* 2020). Whilst mobile banking and fintech had been previously introduced to various microfinance schemes with the regional integration of mobile financial services (MFS) such as MPesa in Kenya or bKash in Bangladesh, the pandemic has further encouraged its adoption. They displayed their astonishing potential when government authorities in Bangladesh were able to provide emergency relief through their services. Due to its strong digital financial services infrastructure and extensive network of mobile money agents, they were able to facilitate millions of financial transfers. Close to 300,000 MFS accounts were opened in Bangladesh (CGAP, 2021).

Future Impacts and Recommendations

Current literature clearly demonstrates polarising views about the impact of microfinance on poverty. Several seminal works recognise important knowledge gaps, particularly from a macroeconomic perspective, that prevents a definitive answer regarding the true impact of microfinance on poverty from being formed (Morduch,1999; Chowdhury *et al.*, 2004; Khandker, 2005). These scholars suggest further literature and public research into alternative allocations of resources as viable solutions to improve the efficiency of microfinance as a method of poverty alleviation. Morduch (1999) particularly emphasises the need for research into innovation as the way forward, as was the case with the aforementioned group lending initiative that previously revolutionised the scheme. One such recommendation is increased investment in technological innovation to improve the operational capabilities of microfinance.

With the current boom in technological advancements, digitisation and innovation is a key enabler in money management. It offers immense benefits to both the provider and borrower alike. There are significant risks involved with current cash-based methods of money transfer that can be eradicated using this alternative. Digitisation has the potential to significantly improve microfinance by making financial services more accessible, efficient, and secure for underserved populations.

According to the Global Findex Database (2021), there are a number of reasons why some adults intentionally remain unbanked, which notably includes a lack of access due to services being too far away. With the help of digitisation, microfinance has the potential to overcome these barriers and can simultaneously foster financial inclusion.

Benefits of Digitisation - Borrowers

One of the various ways fintech can be employed to make microfinance more efficient is through the use of low-cost mobile devices (Liu *et al.,* 2020). More than half of unbanked adults in South Asia reportedly own a mobile phone (Global Findex Database, 2021). Over the last couple of decades, microfinance institutions have begun to leverage these devices using simple digital banking platforms to enable them to offer their services to individuals in a faster, cheaper, and more convenient way (Parikh *et al.,* 2006). This tackles one of the main challenges of microfinance by improving its capacity to reach the poorest and most remote individuals. It does this by eliminating the need to visit a physical branch in order to open and manage accounts, receive and make payments, and access loans. Moreover, switching to digital platforms reduced various risks associated with traditional cash-based payment systems and largely protects borrowers from theft (Ahmad *et al.,* 2020). The positive impact of this technology can already be seen in Kenya by the utilisation of mobile payments i.e. M-Pesa (Mbiti and Weil, 2015), and similarly in Bangladesh with their mobile financial service bKash (LightCastle Partners, 2019).

Benefits of Digitisation - MFIs

From the provider's point of view, mobile banking allows for significant cost cuts in terms of reduced transportation, staffing needs and risk management. For example, bKash is owned by the BRAC Bank and currently holds 75% of the transaction market share in Bangladesh (Nasdaq, 2022). This eases the regulatory burden faced by MFIs and allows for further cost saving as a result of the reduced operational risk. Furthermore, digital platforms enable institutions to gather customer information and track transactions more seamlessly.

Data analysis can allow MFIs to better understand their customers and make more informed lending decisions (CGAP, 2018). 4ToldFintech is an example of a start-up technology platform that aims to reduce the associated decision-making risk for microlenders using Artificial Intelligence (AI). Its conversational approach improves the end user experience of providing personal details and documents and uses a complex algorithm to assess this information to make automated financial solutions in real time (Mastercard, 2020). Following its analysis, it matches borrowers with the appropriate lender, and in doing so makes the approval process both faster and cheaper. The company is currently working with a subsidiary of global payment leader MasterCard in order to develop and expand its operations. This demonstrates how microfinance can become more efficient by cutting various costs using digitisation, which enables them to make a more sizeable impact.

Potential Limitations

There are several limitations faced when integrating digitisation and technological innovation within microfinance. One example would be the newfound threat of cybersecurity as some microfinance institutions may not have the structural capabilities of dealing with such advanced risks (KPMG, 2021). Furthermore, even if they manage to implement appropriate security measures, given that a lack of trust is one of the primary concerns amongst borrowers when opening accounts, there is no guarantee that they will easily embrace digital banking (AFI, 2018). Additional effort may be required to encourage them to adopt these methods.

Nevertheless, over the years microfinance has welcomed change from a guarantor-based scheme towards its current group lending initiative. As the world looks towards technological advancements for efficiency, the digital lending model may be the future of microfinance.

Conclusion

This literature review has examined the findings of seminal work regarding the socio-economic impacts of microfinance and its contribution to poverty alleviation through financial inclusion. The paper presents the argument that in its current form, microfinance programs alone are not enough to alleviate poverty. It supports the findings of many academic scholars who suggest a multifaceted approach.

Fundamentally, microfinance is an important tool for fighting poverty. Its unique approach supports the poorest individuals and aims to empower them to lift themselves out of poverty. There is evidence that even the smallest of loans can have life changing implications, not only to the borrower, but also to their household and wider community.

Overall, microfinance is considered to be a well-intentioned scheme that presents significant potential. The paper has highlighted how digitisation can mitigate some of the negative challenges that microfinance currently faces. Low-cost mobile banking and the use of AI for example has managed to revolutionise the scheme in a short period of time. This paper hopes to inspire more targeted research into the use of this technology.

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Appendix

Table 1:

An outline of various quantitative measures used throughout literature as indicators of poverty

Indicator	Brief Description	Measure	Comments	India	Bangladesh	Data Source
World Bank - International Poverty Line	The International Poverty Line is a monetary threshold, assigned by the World Bank, under which an individual is considered to be living in poverty.	Nominal value assigned by the world bank by considering the poverty thresholds of each country	This benchmark is used by vast literature to quantify poverty. It is often used as a form of categorisation to identify impoverished individuals or as a threshold beyond which they are considered to have been lifted out of poverty (Chowdhury and Mosley, 2004; Khandker, 2005).	Current International Poverty Line: $2.15		The World Bank (2023)
GDP per Capita	The Gross Domestic Product (GDP) of a country signifies the total value of final goods and services produced in a country over a given period. GDP per capita is calculated as the nominal GDP value divided by the total population of the country, and represents the 'per person' economic output. GDP per capita can be used to calculate per capita income, and as such the two measures are used relatively interchangeably.	$\frac{GDP}{Total\ Population}$	Even though this measure includes amounts spent on factors such as education and health within its calculation, it fails to account for the quality of respective goods and services. Since GDP per capita is a calculated average, a number of factors can skew its result and render it an inaccurate indication of a population's standard of living	$2600 USD (2023)	$2470 USD (2023)	IMF (2023)
Gross National Income Per Capita	GNI Per Capita is the average income that an individual in a given country earns. It is calculated by dividing the aggregate income of a country by its total population. The metric gives an indication of the living standards in a country and can be considered a good proxy for a country's overall wellbeing. It can be positively correlated with a variety of social outcomes, such as literacy, life expectancy, and improved infant mortality rates (Ray, 1995).	$\frac{Gross\ National\ Income}{Total\ Population}$	Despite being recognised as a decent measure of wellbeing and living standards in general, one criticism of per capita income is that it fails to account for income disparity within a country. Since microfinance specifically focuses on improving the wellbeing of the poorest individuals, some studies identify PCI as a poor indicator for this population group.	$2150 USD (2021)	$2570 USD (2021)	The World Bank (2021)

Table 1 continued:

Indicator	Brief Description	Measure	Comments	India	Bangladesh	Data Source
Gini Coefficient	The Gini Index is used as a measure of income inequality by assessing the distribution of income across a country and ranking it accordingly. The coefficient typically ranges between 0-1 but can also be represented as a percentage. The higher the value (closer to 1), the more 'unequal' a country is in terms of its income distribution	$G = \frac{1}{2n^2\mu}\sum_{i=1}^{m}\sum_{j=1}^{m} n_i n_j \lvert y_i - y_j \rvert$	This coefficient takes the difference between all pairs of incomes and totals the (absolute) differences. Inequality is defined as the sum of all pairwise comparisons of "two-person inequalities" that can conceivably be made. It is normalized by dividing by population squared pairs and mean income	0.36 (2019)	0.32 (2016)	The World Bank Poverty and Inequality Platform (2021)
Human Development Index	The Human Development Index (HDI) measures key dimensions of human development including: Life Expectancy (Health), Years in Education, and Standard of Living (measured by country price level adjusted GNI per capita). It is calculated as the average of indexed values of the above factors.	$HDI = Ih * Ie * Ii$	This index is a key indicator of a country's wellbeing. It particularly indicates that the quality of accessible health, education and general standards of living has an impact on poverty.	0.633 (2021)	0.661 (2021)	UNDP Human Development Report (2021)
Life Expectancy	Life Expectancy is the average number of years a person is expected to live, which can be influenced by factors such as access to healthcare, nutrition, and environmental factors.	$\frac{Total\ Years\ Lived}{Number\ of\ Individuals\ born}$	Official values are calculated using detailed stastical analysis and 'Life Tables' which indicate the birth and death rates of a given country over a given period. However a simpler formula isolates combined years lived and birth rates (ONS, 2022).	70.15 years (2020)	71.97 years (2020)	The World Bank (2023)
Infant Mortality Rate	Infant Mortality Rate is the number of deaths of infants under one year of age per 1,000 live births.	$\left(\frac{Num.\ of\ Infant\ Deaths}{Num.\ of\ Live\ Births}\right)$ x1000	This measure can be an indication of a country's level of healthcare and access to basic services. It is calculated by comparing infant death and birth rates over a given year	27.7 (2022)	22.6 (2022)	United Nations World Population Prospects (2022)

Table 2: An overview of the Top 10 Countries by Active Microfinance Borrowers

Data Source: Global Outreach Financial Benchmark Report (2018)

Country	Number of Active Borrowers '000	Global Proportion of Active Borrowers (%)	Gross Loan Portfolio (GLP) (USD) m	Number of Depositors '000	Deposits (USD) m
India	37891.7	32%	21033.0	4166.5	6102.4
Bangladesh	26916.4	22%	7896.5	23846.5	5038.6
Vietnam	7317.3	6%	8675.8	9227.1	4320.4
Mexico	6465.0	5%	3068.8	2537.5	779.6
Philippines	5187.4	4%	1043.6	6996.3	678.8
Pakistan	5062.2	4%	1681.2	27705.6	1679.9
Peru	4921.4	4%	12443.3	6771.1	10294.1
Colombia	2743.1	2%	6334.6	7966.7	4864.0
Cambodia	2172.9	2%	7713.1	3999.9	5660.4
Brazil	2090.8	2%	998.6	0	0
Global	119,985.20	-	111,568.30	140,611.90	80,411.00

Figure 1: An infographic of the 17 United Nations Sustainable Development Goals

Source: United Nations (2015)

Figure 2:

A flow diagram demonstrating the relationship between Microfinance and Poverty through its associated influence on various socio-economic factors.

Figure 3: A map of South Asia illustrating the number of borrowers per region

Source: The Global Outreach Financial Benchmark Report (2018)

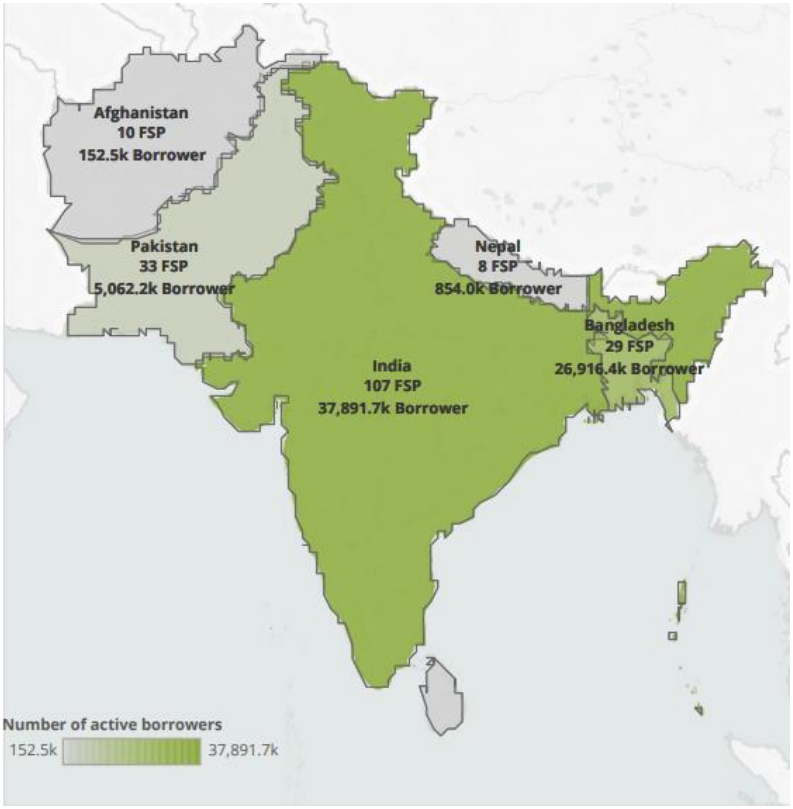

Figure 4:

A graphical representation of the trend in account ownership over the past decade

Data Source: The Global Findex (2021)

	2011	2014	2017	2021
India	35.23	53.14	79.88	77.53
Bangladesh	31.74	30.99	50.05	52.81
Kenya	42.34	74.66	81.57	79.2