Journal of Tropical Agriculture 61(2): 275-295, 2023

# Vulnerability of the microfinance sector with special reference to Covid-19 - a literature review

Divya Sajan* and C. Samuel Joseph

*Department of Commerce and International Trade, Karunya Institute of Technology and Sciences, Coimbatore 641 114 Tamil Nadu, India.*

Received 11 July 2022; received in revision form 15 July 2023; accepted on 01 December 2023

**Abstract**

Microfinance is one of the sectors which has received support from all world bodies in its fight to address the problems of the poor. This review aims at understanding how this vulnerable group, predominantly agriculturists, have been affected by microloans/microcredit during and before the Covid-19 crisis. Based on the available literature the review explains the concept of vulnerability and the vulnerability of microfinance institutions during the covid-19 crisis. It probes at length the causes of vulnerability and attempts to develop a construct model from the first level to the various types and classes of vulnerability. The types of indicators of vulnerability have been grouped under two major heads namely, quantitative and qualitative factors. Besides, it tries to establish the relationship between vulnerability and poverty and, vulnerability and economic fragility in the microfinance sector during the pandemic crisis. The review proposes a model founded on the three pillars -adaption, mitigation and resilience that would be leading to the sustainability of microfinance institutions. Finally, the review attempts to broadly summarise the threats, risks, vulnerability and mitigation measures to overcome them by developing a connect in the form of a model aimed at the revival of microfinance in the post Covid-19 scenario.

**Keywords:** Delinquency crisis, Economic fragility, Poverty, Risk, Vulnerability

## Introduction

Microfinance and microcredit have gained importance not only in poverty alleviation but also in all sectors concerning the poor in both rural and urban areas. Microfinance has been described as one of the most important economic phenomena since the advent of capitalism (Roy, 2010), and the World Bank predicts it as the economic driving force of the future. More than 65 per cent of microfinance borrowers live in rural areas where traditional banking and lending are difficult or impossible. Hence, it has become the source of finance of the underprivileged and made its impact as it is not based on any collateral. These features essentially make microfinance different from conventional banking with a dual role of both social ethos combined with a commercial mission to serve the chronic poor who have no formal access to credit from the organised banking sector. This group with no formal access to credit was estimated to be 31 per cent of the adults in the whole world (World Bank, 2017).

The microfinance barometer (2019) estimated that globally the industry has grown at 11.5 per cent over the preceding five years and serviced 139.9 million borrowers in 2018. Of this, south Asian countries is the largest market accounting for 85.6 million with four out of five being women and mostly engaged in agriculture. Inspite of the unimaginable growth and global acceptance of microfinance, there

*Author for correspondences: Phone: 9497327346,Email: divyasajan@karunya.edu.in.

are conflicting views on its actual impact on poverty. One group argues that it has a positive impact on poverty (Morduch,1999; Amin et al,2003; and De Aghion and Morduch,2006), the second group believes that it has a negative impact while the third reports mixed results (De Aghion and Morduch, 2006 and Karlan, 2007). Divya and Joseph (in press) after an exhaustive analysis of the available literature classified the existing works under the broad heads as 'optimists' and 'pessimists'

The pandemic caused by an invisible virus has now been recognised as one of the biggest disaster humanity has ever experienced as it has not only consumed more people than any of the world wars, but also still make its presence felt across the world. The root of the issue is highly to the infectious nature of the pandemic posing severe risk to human lives. Stringent measures like closure of educational schools and industrial units, restricted movement, lockdown, containment zones, and still tight measures had to be imposed as statutory measures forcing people to remain indoors (stay at home) to contain the spread but resulting in an economic plunge and nation after nation slammed rigorous measures in its fight against the deadly virus slowly but crippling the economy.

India is the global leader in microfinance the financial service that offers loans to entrepreneurs too poor to qualify for bulk loans individually, (Suhasini and Devi, 2018). Borrowers around the world have been put to great difficulty but perhaps nowhere so more than in India

Markets have crumbled, business witnessing serious setbacks, and production processes are under threat. A study by ILO(2019) has revealed that self-employed are the hardest hit and that 43.76 of the self-employed are vulnerable to financial risk, the severity of which varies from as much as 92 per cent in Central African countries to 8 per cent in France and 5 per cent in North America. Baldwin and Weder di Mauro, 2020 reported that the COVID-19 pandemic creates all types of economic shocks . The various economic shocks can be categorised as shock due to medical reasons and expectation shocks.

- The first among them are the purely medical shocks – workers in their sickbeds aren't producing GDP;
- The second are the economic impacts of containment measures and
- Third are the expectation shocks.

The COVID-19 crisis has caused the consumers and firms all around to put off spending and are found to be following a 'wait-and-see' approach. Anderson (2020) has reinforced the hardship caused by covid-19 and confirmed that self-employed are the hardest hit. Hence, the microcredit beneficiaries who are microentrepreneurs, belonging to the class of chronic poor were in absolute disarray and falling into more indebtedness. A silver lining noticed is the reverse migration but this is again millions for whom generation of decent livelihood and safety needs were major issues (NABARD, 2020). Even though definite analysis of the impact of Covid on the agriculture sector are limited due to the differential impact observed across nations and continents, it is clear that the clients of this sector are the most vulnerable poor and for them agriculture is the major source of livelihood.

The purpose of this review has gone beyond these aspects to see how microfinance has helped in reducing shocks and in improving their ability to cope with unprecedented shocks.

This review has been taken up with the broad objectives of examining the vulnerability of the microfinance beneficiaries or clients in the context of Covid-19, classifying and categorising the types of vulnerability, identifying the indicators of vulnerability, the possible mechanism of resilience, and proposing a model tracing the path of the vulnerability of microcredit clients and possible adoption of practices leading to improved mitigation/resilience.

*1. Methodology*

The study on the vulnerability of microfinance in the face of Covid-19 is based on a comprehensive survey of the available literature on the subject. An extensive literature search covering major databases of the World Bank MIX, the IMF, Measurement Instrument Database for Social Sciences (MIDSS), Shodhganga, krishikosh of ICAR and EBSCO using the keywords risk, vulnerability and microfinance and categorisation was made in the literature on risk in microfinance and vulnerability of microfinance with reference to covid-19. However, the literature search from the various databases did not give a full picture as even the mix databases were not fully updated.

Based on critical analysis of extant literature, deductive reasoning and rational inferential analysis, valid conclusions have been made on the subject of investigation. The models presented are a result of the critical scrutiny of the literature. The first model on constructs of types of vulnerability takes lessons from the double structure vulnerability model proposed by Bohl (2001) and various studies mentioned. The sustainable working model is basically a coping strategy founded on a large number of studies that have been conceptually analysed and put under three main subheads *viz*., adaptation, mitigation and resilience. The third and last model has its base on various theories of TAM Davis (1986), TAM2 Venkatesh and Davis (2000)TAM3 Venkatesh and Bala (2008), technology acceptance models critical thinking on various facilitating factors beginning from threat due to Covid-19 to risk-vulnerability and interventions proposed at each stage to overcome the problem and put the MFIs back on the rail.

*2. Scope of the study*

The scope of the study cannot just be restricted to its focus on microfinance as it is on one of the worst disasters ever recorded in world history with multi-dimensional effects. Firstly, it is based on the vulnerability of the chronic poor for whom microfinance has been to a fair degree a reprieve from their misery and poverty. Secondly, it deals with poverty, risks and vulnerabilities and the connection between them with special reference to the covid-19 pandemic. It also throws light on the factors, indicators and possible mechanisms to mitigate their effects on the financial stress in the microfinance sector. The human-centric approach on which microfinance is founded gains more importance and relevance than ever before because its very existence is under threat. Further, a model is presented based on the past, the present crisis and slew of measures aimed at the survival and sustainability of microfinance.

*3. Limitations of the study*

The whole basis of the review paper is on secondary literature and its further analysis. The major limitation of the paper is that it is not based on any experimental study as the results available are mostly founded on surveys, considering the severe risk involved due to infectious nature of the disease Afridi et al. (2020). Another factor is the lockdowns and containment which did not permit free and close interactions and even a fair assessment of the financial stress of both the clients or borrowers and the microfinance institutions cannot be fully realistic as most studies on which the paper is grounded are made on the basis of assumptions, projections and uncertainties.

*4. Vulnerability*

The origin of the word ‘vulnerable’ can be traced back to the Latin word (noun) *Vulnus* meaning “wound”, the verb *vulnerare* meaning “to wound” and *vulnerabilis* from which the word arose in the late 1600s meaning “capable of being wounded”. Literally, the Cambridge dictionary puts the meaning as able to be hurt, influenced or attacked, but in common dialect it means, “defencelessness”. Whereas the word “vulnerability” at household level, is commonly defined as a household’s ability to cope with risk, shocks, and their attitude towards undertaking risks (Swain & Floro, 2007 and 2014), within the realm of finance terminology, vulnerability is defined as “the vulnerable conditions that make exclusion and marginalization of individuals from participating in economic, social and cultural activities" (Lewis & Lewis, 2014). In Austria, Italy and England, studies have conceptualised financial vulnerability as income poverty (Albacete & Lindner, 2013; Guarcello, et al, 2010; Lewis & AV Lewis, 2014).

The World Bank (2012) defined vulnerability as "the probability of risk today of being in poverty or to fall into deeper poverty". This definition is more acceptable with respect to Covid-19. Again, the effects could be direct or indirect, for example, the effect of the former leading to the latter.

With respect to vulnerability of households, two interrelated aspects are poverty and vulnerability and, poverty and economic fragility. On the one hand, vulnerability is a condition to which households are sucked in and makes them unable to withstand the effects of a hostile environment, be it a disaster or a pandemic. Thus, it is a condition to which an individual or household is subjected or prone to, while on the other hand financial fragility refers to a situation where the financial structure is rendered volatile, be it an individual (microfinance client) or group/household (SHG/family) or an institution like MFI. Another aspect is that vulnerability is a dynamic concept affecting the degree of sensitivity of well-being. From this angle, an early definition of vulnerability proposed by Moser (1998) as insecurity and sensitivity in the well-being of individuals, households and communities in the face of changing environment gains more meaning and relevance.

Thus Vulnerability = (Exposure) + (Resistance) + (Resilience). Where, exposure means risk at risk property and population; resistance means the measures taken to prevent, avoid or reduce loss; and resilience is the ability to recover to a prior state or achieve desired post-disaster state. However, Westen (2017) has used the term 'susceptibility' instead of 'resistance' which is more acceptable in the context of the present paper.

*5. Understanding Vulnerability of microfinance due to covid-19*

To understand vulnerability, we need to have an understanding primarily on poverty. Microfinance is much important to the poor as they lack access to the organised banking system. The 2030 UN agenda for sustainable development focuses mainly on the critical importance of humanity and planet, with emphasis on poverty eradication. The recognition of microfinance as the main instrument to eradicate poverty, the first of the sustainable development goals (SDGs), is one of the reasons which paved the way for its growth (UNDP, 2016a and b). Another impetus to the growth of this sector came with the award of the Nobel prize in 2006 to Prof. Mohammed Yunus, the ground-levelpragmatic practitioner of microfinance and founder of the Grameen Bank in Bangladesh.

The Consultative Group to Assist the poor CGAP (2010a) in its focus note on the vulnerability of microfinance even before the report of the covid incidence has reported signs of stress with loan delinquency crisis at the regional or national level and its studies on five countries revealed three major causes; a) concentrated market competition and multiple borrowing b) Overstretched MFI systems and controls and c) erosion of MFI lending discipline. Ibtissem and Bouri (2013) in their studies on instabilities in the financial sector inferred that the subprime mortgage lending crisis was due rapidly growing supply of funds for micro-loans, the increasing competition in microcredit markets and the increasing over-indebtedness among micro-entrepreneurs. They concluded that the ongoing and the current financial crisis increase the credit risk and therefore points to a growing need to estimate the risk of failure of microfinance borrowers.

The vulnerability of MFIs is a major point that merits serious consideration at this critical juncture. It is an impending necessity to 1) realise some of the key fundamental features of its vulnerability and accept that its effects are multidimensional (e.g. physical, social, economic, environmental, institutional, and human factors define vulnerability); dynamic (vulnerability changes over time); scale-dependent (vulnerability can be expressed at different scales from individual to family (household), community (society), country and site-specific in the sense that each defined area need separate approach and 2) accept that this is most realistic with respect to Covid-19.

Some more studies emanating from the EU throw light on the impact on microfinance. In the EU, 14 per cent of the work force are self-employed and the sizeable chunk who thrive on micro credit (Eurostat, 2018). The self-employed are over-represented in both the upper tail and the lower tail of the income distribution (Cassis *et al*, 2018). Anderson (2020) based on his studies finally confirms that during Covid -19 the hardest hit are the self-employed. The Economic times (2021) in its article entitled "millions of defaults threaten microfinance future in India" has reported that borrowers around the world have been hit hard but nowhere so hard than in India which is the global leader in microfinance.

Bull and Ogden (2020) in their studies are of the learned opinion that a slip in repayment rates from 95 to just 85 per cent would render many MFIs insolvent in less than a year, and they see a significant risk that repayment rates may fall by more than this as borrowers struggle to make ends meet in the face of a precipitous income shock.
To summarise the above section brings into the fore that the self-employed are worst hit by the pandemic and in India this group constitute the major chunk of the clients leading to large scale defaulters. Another major aspect that needs a serious introspection is at the level of repayment as even a minor slip can lead to the insolvency of the MFI itself.

*6. Financial fragility in microfinance sector due to Covid-19.*

Financial fragility and financial vulnerability are used almost as synonyms but in the actual economic or financial sense, they are two distinct terms; the former meaning the weakness and the latter is the inability to repay financial debts or the accruing installments (Jappelli et al, 2013). The concept of financial fragility has its roots in United States sometime in 2007-08 with the financial crisis of 2007-08 and linking it household financial fragility as a lack of capacity of households to face shocks leading to financial instability. Lusardi *et al* (2011) analysed the capacity of households to face a shock and used the term "*financial fragility*" based on their studies of the 2009 financial crisis in the United States. The study relied on a self-assessed survey-based measure wherein the respondents were asked how confident they were to come up with $2,000, should an exigency arise in the next month. An inter connected definition of financial fragility is that it is the vulnerability of a financial system to a financial crisis (Krugman, 2011).

In Austria, Italy and England, studies have conceptualised financial vulnerability as income poverty (Albacete & Lindner, 2013; Guarcello, et al, 2010; Lewis & AV Lewis, 2014). Westen, (2017) on the other hand used the term to mean susceptibility.

In March 2020, a survey of the G7 countries revealed that in 31 per cent of households, the coronavirus had already impacted their incomes. Workers throughout the European Union have seen a reduction in weekly working hours, temporary suspensions and even redundancies. Many self-employed workers and small businesses have been particularly impacted, and some ceased to operate altogether (Anderson, 2020)

Besides, the impact provides a good characterisation of the state of balance sheet, (assets versus repayment capacity) *i.e.,* not only people have assets but they should have capacity to borrow as well (Gupta *et al*, 2018), which serves as a good indicator of the ingenuity improvement in income of households in dealing with shocks. Hasler and Lusardi, (2019) in their studies showed that in addition to income, the number of children in a household is another important predictor of financial fragility. In January 2020, when the stock market was still climbing and unemployment was very low, 27 per cent of Americans were still reported as financially fragile (Lusardi et al, 2020). In other words, this means that there is a group of the population that is going to be disproportionately affected by shocks and by changes in policy. Identical results have been reported by Wiersma et al(2020) using Dutch data, but the wholistic results in Europe is inhibited by comprehensive research coverage of EU.

There has been much discussion about the COVID-19 economic crisis disproportionately impacting women, chiefly because they bear the burden of unpaid household work including caring for children (Demertziz et al,2020), and also because they form typically the majority of frontline workers (Norman, 2020).

Here it has to be stressed that financial fragility clearly means weakness or the capacity of household to face a shock. Whereas the financial vulnerability clearly implies that it is the inability for repayment. Thus, the former actually gives the strength and capacity to withstand an unexpected crisis and the latter is the aftermath or the effect of the former resulting in non-payment or accruing instalments. The women are disproportionately impacted by covid-19 and have been rendered both financially fragile and financially vulnerable.

*7. Causes of Vulnerability*

Vulnerability, as per UNDP, is a human condition or process resulting from physical, economic and social factors which also determine the likelihood and scale of damage from the impact of given hazard (UNDP 2004).Vulnerability has two sides an external side of risks shocks and stress to which an individual (client) is subject to; and an internal side which is defenceless, meaning a stage where clients cannot cope without damaging loss. The GTZ (2005) has outlined a broad range of causes for vulnerability as political, institutional, economic, environmental, and socio-cultural factors and lack of financial resources. Westen (2017) has broadly classified vulnerability into, (i) physical vulnerability, which is the potential physical impact on physical environment, (ii) economic vulnerability, which denotes the political impact of the hazard on the economic assets and process, (iii)social vulnerability, which signifies the potential impacts of events on groups such as children, elderly, household, the poor and ability of groups to cope with hazards and, (iv) environment vulnerability, denoting the potential impacts of hazard on environment, including flora, fauna, biodiversity and ecosystems etc.

The broad classification of vulnerability have been taken up seriously. They are 1) Attitude and Motivational Vulnerability 2) Cultural Vulnerability 3) Ecological Vulnerability 4) Material/ Economic Vulnerability 5) Organisational Vulnerability 6) Physical vulnerability 7) Political Vulnerability and 8) Social vulnerability.

Banerjee and Jackson (2017) categorised vulnerability under three major heads *viz*., (i) Economic vulnerability results from increasing levels of indebtedness as well as loss of assets due to inability to repay loans and the reasons ascribed in the above study were a) vast majority of loans were used for household consumption, food, medicine and necessities rather than the income generation activities b) Physical income generation activity did not yield the expected results and c) borrowers sought out multiple loans leading to spiralling of debts. The study also supported the previous report of Hamill *et al,* (2008)that borrowers went even without nourishment feeling the urgency to repay loans

(ii) Social Vulnerability- The above study revealed that solidarity circles consisting of family, friends and associates are a fundamental asset in dealing with vulnerability. The innovation of solidarity circles and social collateral led to a heightened feeling of surveillance disempowerment shaming and even ostracization. Often the surveillance leads to conflicts, discord and eroded trust

(iii) Environmental Vulnerability- Inequality threats from climate change, droughts, earthquakes, landslides are part of the ecosystem. Shiftin agrarian practices and cultivation of new crops without a clear understanding of their congeniality and susceptibility is another aspect. It is also reported that disaster induced economic damage has been increasing in the past few decades and is likely to continue growing because of population growth, urban development and changing land use pattern (IPCC, 2012).Women constitute a disproportionate share of the poor and hence are likely to be extremely vulnerable to the effects of climate change (Hemmati and Rohr, 2007). In a critical study on the risk and vulnerability assessment of Indian Agriculture to climate change , Rao et al (2019) cite three major reasons in the Indian context.1) Flood proneness,2) Drought proneness and 3) Cyclonic proneness but it's a matter of common knowledge that cloud burst, earthquakes and landslides are becoming increasingly rampant. Additional costs under such circumstances are also incurred on integrated initiatives on land such as soil fertility loss, land reclamation costs, accrued loss on borrowings, and collateral damage (Kuriakose and Joseph (2020).Another key factor which merits immediate attention is themarket-driven vulnerability which has not received any focus at all but is important in the whole gamut of agriculture.

Bohl (2001) developed a double structure of vulnerability model showing the internal and external sides, while the Pelling model framework is based on exposure, resilience and resistance (Pelling,2003). Based on the studies on the subject, a model has been developed in the paper outlining the causative factors as constructs at different levels leading to various types of vulnerability

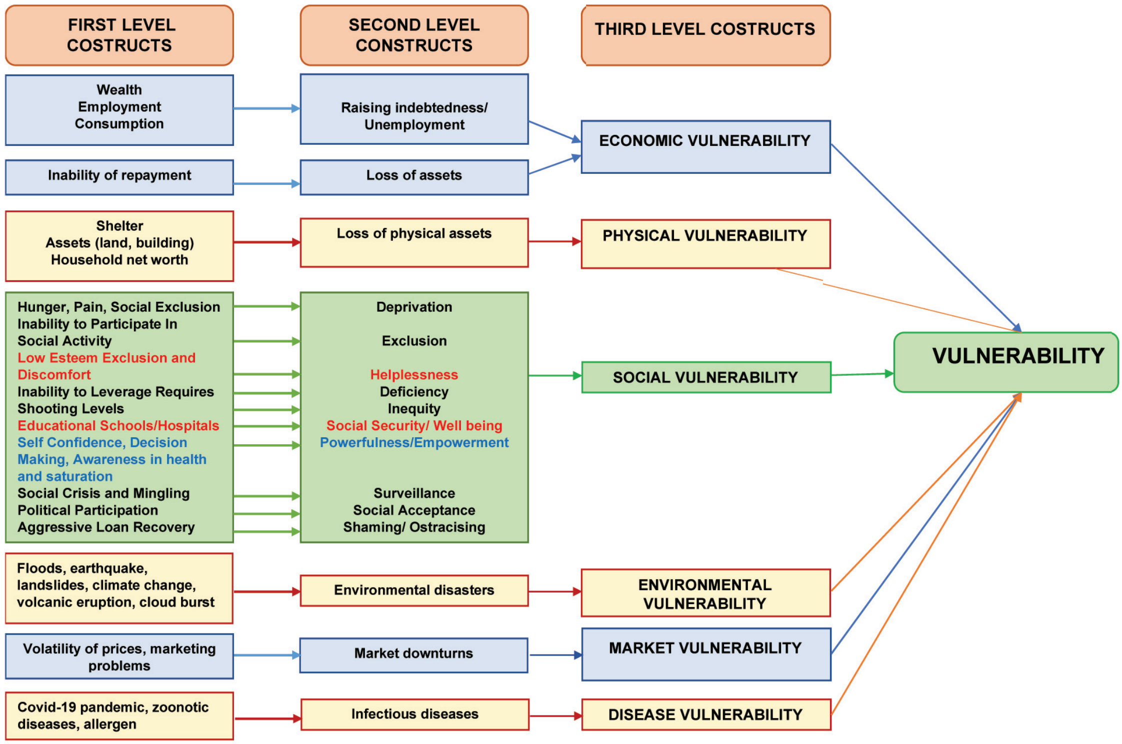


Figure1. Model Of Constructs Of Types Of Vulnerability

Summing up this section, it would be more pertinent to rationalise that within the realm of microfinance economic vulnerability is mostly linked with repayments, indebtedness and delinquency rates; social vulnerability with respect to collateral and group based process and conflicts, environment vulnerability with respect to the ecosystem and that market driven vulnerability like price volatility, demand and supply not considered as vulnerability at all but are very important.

*8. Poverty and Vulnerability in the microfinance sector*

Ending poverty in all its forms everywhere is the first of the 17 Sustainable Development Goals set by the United Nations. The world Bank Group's goals on the other hand are to end extreme poverty and promote shared prosperity (World Bank,2018). Both the UN and the World Bank see microfinance as a major tool of poverty alleviation. The comity of nations has no second opinion or a second thought hailed microfinance as a tool to alleviate poverty and on this aspect is but for the first time in a generation the quest to end poverty has suffered its worst setback due to the Covid -19 induced economic crisis due to lockdown.

Poverty has been defined by authors in different ways. Poverty has been defined as a process whereby people are subjected to sustained physical, social economic, political, psychological and/or spiritual deprivation that gives rise to a combination of physical weakness, perceived isolation and feelings of ill-being, vulnerability and poorer business (Chambers, 1995; Ravallion,2002; Chakravarthy,2006; Banerjee and Dufflo,2007, Bannerjee and Jackson,2017). There is also a vital question raised here as to whether microfinance can unlock a poverty trap of a client/borrower

A more generic concept of vulnerability developed under EU FP7 which is European Unions 7th framework programme or the EU's research funding program between 2007-13 includes major components of risk assessments, governance and management (Biskman et al, 2013). Measurement of vulnerability using various indices is another thrust area of research. Zamman (2000) categorised the poor as people having less than ten decimals (an area of 4355.60 square feet) of land and moderately poor as those having more than that. The world Bank defined two thresholds of poverty- the 'extreme poor', who live on less than 1.25$ a day and the merely 'poor' on less than \$2 a day on consumption per capita (Banerjee and Dufflo, 2007). Dhongde and Minoiu (2011) stated in their studythat the poverty lines that are used on an international level to estimate the poverty level range from \$1/ day to \$2.5/day. World bank calculated a poverty line of \$ 1.25 which was based on thePurchasing Power Parity (PPPs) of 2005

Another categorisation that has been within the broad group of poor is long-term poor or chronic poor and those who fall into poverty due to shocks called the "transitory poor". From the point of poverty in the face of pandemic covid-19 this is the most realistic definition.

Global extreme poverty rate fell to 9.2% in 2017 from 10.1 per cent in 2015, which is equivalent to 689 million people living on less than \$1.9 a day. A qualitative factor of this was that four out of five people in 2018 below the international poverty line were from rural areas and half of the poor were children. Women represent a majority of the poor and above 70 per cent of the global poor aged 15 and above have no schooling or basic education, which reveals the vulnerability in the face of poverty. CGAP (2010b) in its study reported that from 2004-2008 microfinance witnessed an unprecedented growth and thereafter are showing signs of stress, with regional or national scale loan delinquency.

Climate change is expected to drive 68 million to 132 million into poverty by 2030. Added to this is the covid-19, which has unleashed another economic disaster in the face of an already existing one in the form of climate change. The cumulative effects will be of unmeasurable magnitude when the second and third waves of Covid outbreaks.

A critical analysis of the literature reveals that though some previous works examine the income inequality impact of pandemics in general, and the Covid-19 pandemic in particular, these works unfortunately suffer from certain weaknesses. Lakner et al (2021) estimated that the pandemic will push between 143 million and 163 million people globally into extreme poverty between 2019 and 2021, thus reversing the downward trend in global poverty for the first time in a generation. However, a possible explanation for the muted global income inequality increase is that GDP contraction in 2020 was higher in richer advanced countries (estimated at -5.8 per cent by the October 2020 IMF *World Economic Outlook*) than in poorer emerging and developing countries (estimated at -3.3 per cent by the same IMF report), and thus between-country income inequality has declined.

This increase in extreme poverty is bound to widen the gap between the rich and the poor and increase income inequality both within countries and globally. World Bank (2021) hypothesised that within-country income inequality is likely to worsen because of COVID-19, partly because the pandemic disproportionately impacts the incomes of vulnerable groups, including women, migrant workers and those employed in lower-skilled occupations or informal sectors.

Deaton (2021) in his studies analysed the cross-country standard deviation of the logarithm of GDP *per capita*, measured at purchasing power parity. In 2020 this standard deviation went up when countries were weighted according to population size, but went down when each country accounts for one unit. He attributed the increase in the weighted case to the fact that the Chinese economy grew in 2020, while most other countries suffered from GDP declines. This is because the combined populations of those countries with lower average *per-capita* income than China (which is 4.4 billion) exceed the combined populations of those countries that have higher average income than China (2.0 billion), and thus the average income of the 1.4 billion Chinese residents was pulling away from poor countries.

Finally, Darvaz, (2018) reported about the inequality prevailing in the microfinance sector has gone one step further based on his recent studies in which he concludes on "the unequal inequality of the Covid-19 Pandemic" and that the pandemic has taken millions of lives and resulted in the deepest economic contraction since the second world war (Darvaz, 2021). The adverse social consequences, including job losses, have been massive in many countries, even if large-scale government support programmes have dampened the labour market impacts.

Thus, it is worth that while world bodies grapple with the major problem of means inequality between nations. The present crisis has induced a situation with wider ramifications as microfinance is all about the poor and focused on household or group as in group lending model or community as its effects are manifested on the vulnerable communities. Thus, a widening of the unequal inequality at the grassroot level will be the net result if adequate measures are not put in place.

The present crisis has induced a situation with wider ramifications as microfinance is all about the poor and focused on household or group as in group lending model) or community as its effects are manifested on the vulnerable communities. Thus, a widening of the unequal inequality at the grassroot level will be the net result if adequate measures are not put in place.

*9. The Covid-19 impact and beyond*

Ever since the coronavirus was identified (severe acute respiratory syndrome coronavirus 2, or SARS-CoV-2) and later renamed Covid-19 (Qiu et al., 2020), from Wuhan in China it has spread rapidly across the world, resulting as one of the worst human tragedies, tremendous economic damage, and misery of untold dimensions.

The spread of Covid-19 is expected to result in a considerable slowdown of economic activities. According to an early forecast of the International Monetary Fund (2020a), the then global economy was expected to contract by about 3 per cent in 2020 and the contraction was expected to be of greater magnitude than that of the 2008-2009 Global Financial Crisis. However, later the International Monetary Fund (2020b) revised the forecast to 4.9 per cent contraction in 2020. The report cited the reasons for the updated forecast as (i) greater persistence in social distancing activities; ((ii) lower activity during lockdowns; iii) steeper decline in productivity amongst firms that have opened up for business; and (iv) greater uncertainty. Among the four, the last three reasons were bound to bend the economy but to what extent is the vital question.
The above IMF study also revealed that economic implications will be wide-ranging and uncertain, with different effects on the labour markets, production supply chains, financial markets, and the world economy. In addition, the pandemic and government interventions could also lead to mental health distress, increased economic inequality, and adversely affect some socio-demographic groups adversely. There is no sector which has been left out by the pandemic.

The greatest aftermath of this is going to be experienced as the uncertainty in all fields. Baker *et al* (2020) opined that assessing the economic impact of the Covid-19 pandemic is essential for policymakers, but definitely challenging because the crisis has unfolded with extreme speed. They identified three indicators – stock market volatility, newspaper-based economic uncertainty, and subjective uncertainty in business expectation surveys – that provide real-time forward-looking uncertainty measures. The study implied a year-on-year contraction in U.S. real GDP of nearly 11 per cent as of 2020 Q4, with a 90 per cent confidence interval extending to a nearly 20 per cent contraction. The exercise says that about half of the forecasted output contraction reflects a negative effect of COVID-induced uncertainty.

Zheng and Zhang (2021) reported that the studies of ADB revealed that the global economy could suffer between \$5.8 trillion and \$8.8 trillion in losses – equivalent to 6.4%–9.7% of global gross domestic product (GDP) – as a result of the novel coronavirus disease (Covid-19) pandemic"

As this paper is being drafted a second wave is hitting the Indian sub-continent with greater severity with more than four lakhs fresh reports per day accounting for 46 per cent of worldwide fresh cases, a quarter of the mortality rates and its effect increasing to levels beyond human comprehension. In short the shivers that the pandemic has spread on microfinance sector has for reaching effects as it has not only consumed lives but affected the livelihood of others who have escaped and managed to tide over it. It cannot be seen just as vulnerability alone but risk, vulnerability and uncertainty coupled together. Precisely the pandemic will be overcome but its effect, and impact aftermath on livelihood will long outlive the period of its spread.

*10. Coping mechanisms*

Before venturing into the coping mechanism, the meaning of the terminology 'coping capacity' is to be understood**.** Coping capacity has been defined as"the ability of people, organizations and systems, using available skills and resources, to face and manage adverse conditions, emergencies or disasters" The capacity to cope requires continuing awareness, resources, and good management, both in normal times as well as during crises or adverse conditions. Coping capacities contribute to the reduction of disaster risks (UN-ISDR, 2009).

Many infectiousdiseases recorded in history like the Spanish Influenza, Avian Influenza, plague have all caused untold suffering and misery lent none so severe as covid-19. Its timing also coincided with

*Table 1*. Measures of adaptation in the present scenario

| Sl. No. | Measures | Source |
|---|---|---|
| 1. | Reducing the loans and client numbers | Abara *et al,* 2017 and Zetterli,2020 |
| 2. | Closing down unprofitable loans and NPA | Rao, 2020 |
| 3. | Adopting close monitoring and evaluation | Singh, 2020 and FSB, 2020 |
| 4. | Cutting down Overheads | FSB, 2020 |
| 5 | Portfolio at risk management | Singh, 2020 |
| 6. | Incentives for prompt repayment | Arunachalam,2020 |
| 7. | Cutting down wasteful expenditure | FSB, 2020 and findev 2020 |
| 8. | Digitalisation of accounts loans and portfolio | FSB,2020 |

the period when global economy was just on its revival and its infection and spread was at lightening pace and mortality rate beyond comprehension. Even the most developed nations struggled under its impact and the effects on microfinance sector which is focused on the poor clients trickled down to livelihood security and to increasing indebtedness. The MFI's on the other hand lacks the preparedness and financial base to face an economic crisis of such a magnitude.

Broadly the strategies to overcome the present crisis can be put under three major heads a) adaptation b) mitigation and c) resilience- which have to be the three pillars on which a slew of measures have to come in place as a coping strategic plan to address the issue.

*10.1. Adaptation in the present scenario*

Adaptation essentially means to adjust to a new environment or situation. In the context of our study, it is basically the adjustment of the MF sector to Covid -19 induced financial stress or to sustain the impact of covid induced financial stress. Konn (2020) quoting the Economist reported that small businesses, who are the majority, struggle to continue their businesses.Even after the release of covid induced restrictions eighty, seventy to eighty and seventy per cent of businesses in South Africa, Bolivia and Uganda respectively remain shut down. In South Africa, eighty per cent, in Bolivia seventy to eighty per cent and in Uganda seventy per cent remain closedeven after the Government began to release their reservations.

The financial stress needs to be observed through the lenses of scale and impact. When it comes to the poor, the scale and impact outweighs the coping strength and the financial base and that makes it more prone to vulnerability. The study by Kloninger (2020), while dealing with potato farmers who were

*Table 2*. Measures proposed in mitigation

| Sl. No | Measures | Level of Action | Authority |
|---|---|---|---|
| 1. | Avoidance of risks | Credit risk, Operational risk, Market risk and strategic risk | Singh,2020; EY,2020;FSB, 2020 and BSBS |
| 2. | Moratorium on repayments | Rolling forward interest and Principal payment. | MFIN,2020; Microcapital team, 2020;MFIN , 2020 and Bhattacharya *et al,* 2020 |
| 3. | Reducing lending rates | Bringing down interest rates | Arunachalam,2020;EY,2020;Sun and Im,2020 and Zetterli,2020 |
| 4. | Restructuring of loans | Debt restructuring | CGAP, 2020a; CGAP,2020b;CGAP, 2021 and Zetterli,2020; |
| 5. | Restructuring use of micro loans | Using credit only for the purpose | Abara *et al,* 2020 and Mc Guiness, 2020; |
| 6. | Careful scruiteny of few applications | Viability to be assesed | Abara *et al,*2017 |
| 7. | Interest payment waiver | Waving of interest | Toth, 2020 |
| 8. | Fully digitising | Technological intervention | Konn, 2020 and Saxena 2021 |
| 9. | Trust and relationship | Building client-Manager relationship | Bteisch and Chatang,2020;CGAP 2020b; MFIN Advisory 2020; Sachdev,2020 and Zetterli, 2020. |

distressed microfinance clients found them to be improvising, adapting and overcoming the unfavourable situation. This study speaks of farmers who could not sell thus produce turning on to improvised sundried and smoked value added products 'chuno' and 'tunto' and overcame the difficulties.

The broader ILO agenda (ILO,2021) agenda advocates set of three parameters a) Innovation capacity building b) Podcasts- a series of interactions virtually with finance experts and practitioners and c) Going digital- computerisation of the entire system to avoid physical contacts. Digitalisation is conceived as the major thrust of activities in governance to be undertaken in microfinance (Bull, 2020).

Bteisch and Chatang, (2020) ventured one step further and stressed that global networks have to learn, improvise and adapt as the crisis evolves and the process has to continue. Borgogno, (2021) evaluating after 'one year on' of Covid-19 inferred that most MFIs have shown a remarkable capacity to adapt during the unprecedented crisis.

*10.2. Mitigation*

This part refers to the proposed actions required to reduce the severity, seriousness or painfulness of the impact of covid-19 on the microfinance sector. The MFIN Advisory (2020) formulated guidelines to operationalise collection as the lockdown and the moratorium led to the inability to access customers or group meetings and for contacting the customers as covid resulted in almost zero collection levels. They proposed a three-prong repayment design strategy, which includes (a) the extension of loan tenures with EMI remaining the same and the borrower paying higher interest for the extended time period (b) An increase in EMI for the loan tenure for which the credit was disbursed and (c) addition of the accumulated interest in the moratorium to the last EMI or extension of last few EMIs for loan tenure. However, they incorporated other aspects to increase the effectiveness of moratorium which they explicitly laid as (i) effective communication with customers, (ii) Duration of the moratorium to be combined with the resumption of economic activity, and (iii) Digitisation of transaction is crucial to sustainability and Addressing concerns of liability mismatch. The various measures proposed in mitigation are as follows.

Though many mitigation measures have been recommended two major aspects based on ground realities would be to delineate the measures into the 'possible and the feasible'. It would be pragmatic to harp on the feasible as the former could be a gamble, but the latter a sure step paying rich dividends.

*10.3. Resilience*

The capacity to recover from the economic fallout caused by Covid-19 and spring back to normalcy is dealt with under this subhead. A slew of measures has been proposed by the IFPRI (Toth,2020) and the most important among them are a) Declaring the MFIs as essential service and allowing MFI to resume full operation, promote the recent LIFT

*Table 3.* Measures of resilience

| Sl No. | Measures | Source |
|---|---|---|
| 1. | Infusing liquidity | Arunachalam,2020; Borio and Restoy,2020; Carstens, 2020; Findev,2020; Malik et al 2020; SME finance, 2020; Shah, 2020; Tergooi 2020; Saxena, 2021; |
| 2. | Improving the asset base | Arunachalam 2020; McGuiness, 2020; FSB 2020; and Rao, 2020; |
| 3. | Improving the capital base and remittance | Rao, 2020; CGAP, 2021b and Rao 2020. |
| 4. | Promoting microsavings | FSB, 2020 and Saxena ,2021 |
| 5. | Microinsurance as blanket cover | Lane, 2020; Arunachalam, 2020 and Wang 2021 |
| 6. | Financial products and services to add resilience | CGAP 2020C and CGAP2021 |
| 7. | Government and regulatory support | Borio and Restory, 2020 and ILO, 2020 |
| 8. | Borrowings from friends, family and social networks | CGAP, 2020a |

Economic response of Slover (2020) which again contains a series of measure which needs to be prioritised. The main aspects of the response package are increasing the debt to equity ratio, relaxation of liquidity ratio, clarification on asset base, classification of structured loans and fast track processing of international loans.

The recommended viable practices and available literature on resilience include

There is an absolute used to add more strength particularly in the face of such a difficult situation and one of the fundamental requirements in crisis of the sort is to improve the financial liquidity foremost among the priorities is to put in a strong financial discipline and culture into the system, if the financial health of the MFIs are to be maintained, improved and sustained in the long run and fulfilling the much needed social ethos and commitment to serve the under privileged on which it is embedded. Based on the studies done on this aspect, a model for the sustainability of MFIs is proposed on three founding pillars This is in turn promote the financial base, overcome risk and vulnerability and improve the managerial efficiency as well as governance leading to ultimate goal of sustainability of MFIs (fig-2).

Covid -19 has applied brakes on all developmental initiatives, repayments have been halted as

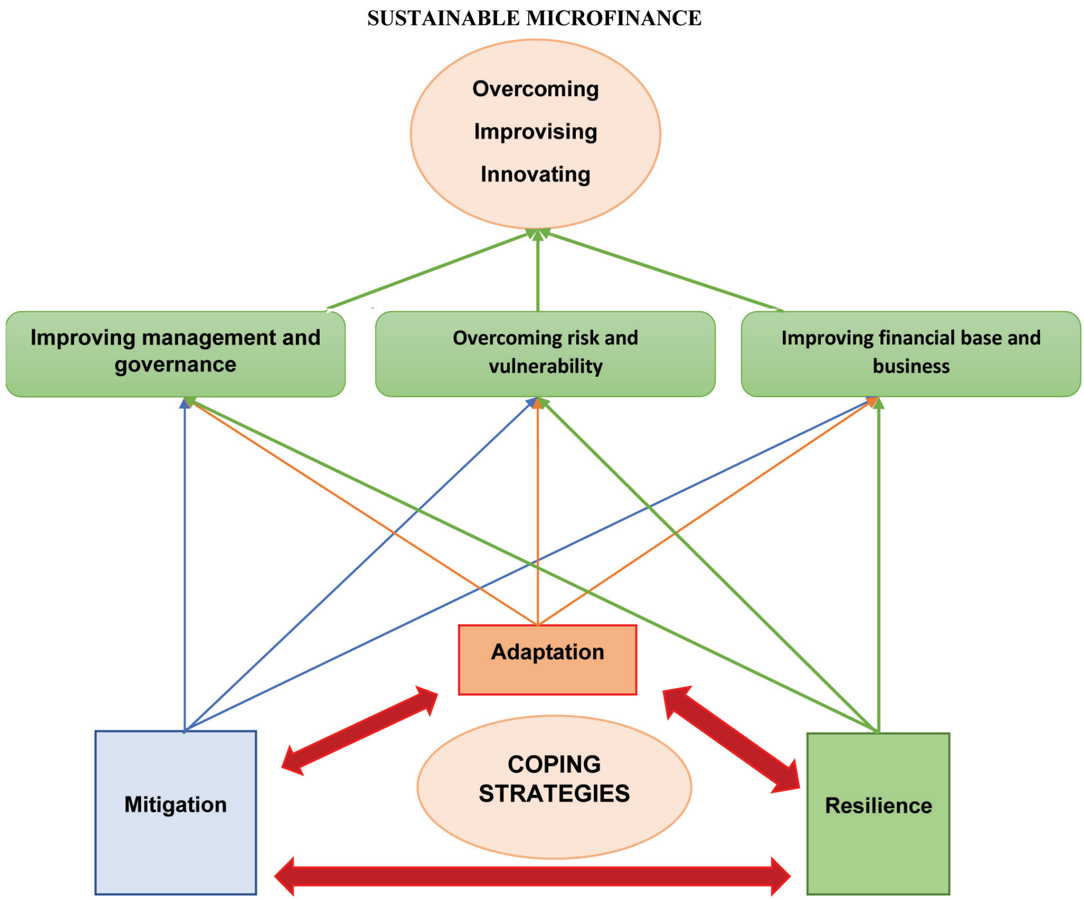


Figure 2. A sustainable working microfinance model

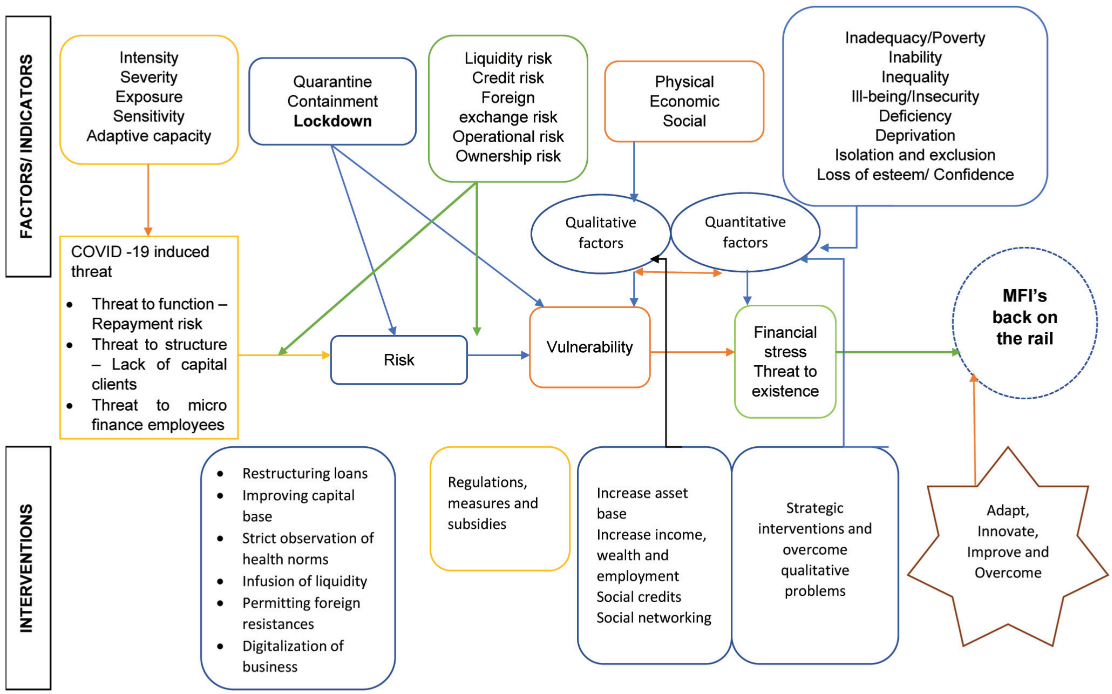


Figure 3. Threat- Risk – Vulnerability – Interventions model of revival of financial stress in Microfinance sector due to Covid -19

meetings, communications and physical collections have been impaired. In some of the countries the situationhas improved. A more important aspect is that uncertainty looms large on how long this situation will continue (Baldwin and Weder-de-mauro, 2020).

One of the key aspects that require immediate attention is bringing in ICT into the mainframe of accounting, management and governance. Adapting and mitigating all issues at the budding level is very important so that resilience becomes an inherent mechanism. The Basel Committee on Banking Supervision (2020) also reinforces this by bringing in the concept of operations using ICT including Cyber security as a key component. Technology is definitely going to be the next phase of revolution in MFI and becomes an inevitable intervention not only to break the chain of covid-19 but also for improved efficiency. In the process of digital transformation there is a likely problem of anxiety among the employees which can be addressed by capacity development programmes (Pfaffinger et al,2020).

Pressure has also mounted that CGAP has entitled one of their studies as "illiquidity is as good as insolvency" (CGAP,2020b). Uncertainty looms at large but even then, there are many MFIs which have sprung back but it has to be underlined that building and maintaining resilience shall be the top goal to fight the impact of Covid-19 in the microfinance sector. The silver lining is that the relevance of microfinance has become more important than ever before. An attempt has been made to bring in a connection between the threat, risk and vulnerability and counterchecks to overcome the same in the form of a threat-risk-vulnerability and mitigation measures to overcome the covid-19 induced crisis

Further the road map to sustainability of microfinance and further growth of this sector have to be built on a robust system aimed at managerial efficiency and governance at its best. This can be achieved only by technology adoption. In short, post Covid MFIs have to be tech-savvy, tech-driven and tech-accomplished.

What everyone has to acknowledge on the economic front comes from the words of Goldberg of Yale University as, in the short term, governments need to provide calm, confident reassurance that they are there to boost the confidence and morale of the clients; and that economic policy will reinvigorate the world economy after the healthcare tsunami passes with time. And most importantly is the quote of Prof Goldberg"The only thing I know is that I know nothing." This statement is never more so relevant as of today as it has not only consumed lives but the aftershocks and economic plunge continues to threaten livelihood as has never been recorded in human history.

*11. Conclusion*

The covid-19 has presented one of the worst situations sparing no sector nor strata of society. This paper has focussed mostly on the impact of Covid-19 on the microfinance sector, on which the class of poor and the chronic poor, predominantly the agriculturists, depend for credit. It probes at length the vulnerability of the microfinance, the categorisation of vulnerability based on the factors on which a construct model at different levels has been developed and indicators of this major aspect identified. Based on the available literature the paper tries to address focusing on a coping strategy based on three major founding pillars namely adaptation, mitigation and resilience under which a slew of measures have been suggested. Finally, a model is presented on threat, risk, vulnerability and interventions to mitigate the financial crisis in the microfinance sector. The study is of immense practical relevance as it pertains to the most vulnerable class of the society and on the sector on which they are dependent for their lives and livelihood. While all nations and comity of nations acknowledge the impact of covid-19, cross-sector analysis of its impact, particularly on the whole gamut of agriculture and mechanisms to address all issues plaguing this sector is the need of the hour. It has to be underlined as an impending need of the hour lest it doesn't make a dent in the proclaimed primary goal of UN –poverty alleviation.

## References


Abara, G., Mengesha, B., and Reddy, P. A. K., (2017) Determinants of Credit Default Risk of Microfinance Institutions in Assosa Zone. Research on Humanities and Social Sciences,7(19): 31-39

Adams-Prassl, A., Boneva, T., Golin, M., and Rauh, C. (2020). Inequality in the Impact of the Coronavirus Shock: Evidence from Real Time Surveys. Report of Working paper.

Afridi, F., Dhillon, A., and Roy, S. (23 April, 2020). How has Covid-19 Crisis Affected the Urban Poor? Findings from a Phone Survey. Ideas for India. https://www.ideasforindia.in /topics/poverty-inequality/how-has-covid-19-crisis-affected-theurban-poor-findings-from-a-phone-survey.html

Albacete, N and Lindner, P., (2013) Household Vulnerability in Austria – A Microeconomic Analysis Based on the Household Finance and Consumption Survey, Financial stability report 25 – June 2013

Al-Mamun, A., & Mazumder, M. N. H. (2015). Impact of microcredit on income, poverty, and economic vulnerability in Peninsular Malaysia. Development in Practice, 25(3), 333-346.

Amin, S., Rai, A.S. & Topa, G. (2003). Does Microcredit reach the poor and vulnerable? Evidence from Northern Bangladesh, Journal for Development Economics, 70 (1), pp 59-82

Anderson, J. (2020) COVID-19: The self-employed are hardest hit and least supported, Bruegel Blog, 8 April

Ansari, S, Munir, K, Gregg, T (2012) Impact at the bottom of the pyramid: The role of social capital in capability development and community empowerment. Journal of Management Studies 49(4): 813–842.

Arunachalam, R. S (2020) Mitigating the Impact of Covid-19: A To-Do List for RBI Economy. https://www.moneylife.in/article/mitigating-the-impact-of-covid-19-a-to-do-list-for-rbi/60131.html.

Baker, S. R., Bloom, N., Davis, S. J., & Terry, S. J. (2020). Covid-Induced Economic Uncertainty (Working

Paper No. 26983; Working Paper Series). National Bureau of Economic Research. https://doi.org/10.3386/w26983.

Baldwin, R and Weder-de-mauro (2020) Mitigating the Covid Economic crisis: Act fast and act whatever it takes, CEPR Press Banerjee AV and Duflo E (2007) The economic lives of the poor. Journal of Economic Perspectives 21(1): 141–167

Banerjee SB and Jackson L (2017), Microfinance and the business of poverty reduction: Critical perspectives from rural Bangladesh. Human relations 2017, Vol. 70(1) 63–91

Banerjee, A., Breza, E., Duflo, E., and Kannan, C. (2019). Can microfinance unlock a poverty trap for some entrepreneurs? Working Paper 26346, National Bureau of Economic Research

Basel Committee on Banking Supervision. (2020a) Governors and Heads of Supervision announce deferral of Basel III implementation to increase operational capacity of banks and supervisors to respond to Covid-19. March 2020. https://www.bis.org/press/p200327.htm

Basel Committee on Banking Supervision. Measures to reflect the impact of Covid-19. April 2020. https://www.bis.org/bcbs/publ/d498.pdf

Bhattacharya, D. Dasgupta, M and Sharma, M (2020) Covid-19 and Debt Moratorium - The Case of Microcredit. Dvara Research | Policy Brief | September 2020.https://www.dvara.com/research/wp-content/uploads/2020/09/Covid-19-and-Debt-Moratorium-The-Case-of-Microcredit.pdf

Birkman, J (2005) Danger need not spell disaster- but how vulnerable are we? Research brief No.1/2005. Institute for environment and human security, United Nations University.

Biskman, J, Cardona, D, Carreno, M., Barbeto, A, Pelling, M., Schneiderbaur, S, Kienberger, S., Keiler, M, Alexander, D and Zeil, P, (2013) Framing Vulnerability, risk and Societal response: the MOVE framework. Natural Hazards,67(2):193-211

Bohle, H.G (2001) Vulnerability and Criticality: Perspectives from Social geography, IHDP update 2/2001, Newsletter of the International Human Dimensions Programme on Global Environmental Change:1

Borgogno, M (2021) One Year On: What a Year of Surveys Tell Us About Covid-19 and Microfinance.https://www.findevgateway.org/interview/2021/03/one-year-what-year-surveys-tell-us-about-covid-19-and-microfinance

Borio, C., and Restoy, F (2020) Reflections on regulatory responses to Covid-19 pandemic, FSI Briefs No.1 Financial Stability Institute

Bradshaw, T K (2007) Theories of poverty and anti-poverty development programs in community. Journal of Community Development Studies 38(1): 7-25

Brodeur, A, Gray, D. Islam, A., Bhuiyan, S. J. (2020a). A Literature Review of the Economics of Covid-19. IZA – Institute of Labor Economics, Discussion paper Series, IZA DP No. 13411. Initiated by the Deutsche post foundation. www.iza.org.

Brodeur, A., Clark, A., Fleche, S., & Powdthavee, N. (2020b). Covid-19, Lockdowns and Well-Being: Evidence from Google Trends. In Working Papers (No. 2004E; Working Papers). University of Ottawa, Department of Economics. https://ideas.repec.org/p/ott/wpaper/2004e.html

Brodeur, A., Grigoryeva, I., & Kattan, L. (2020c). Stay-at-Home Orders, Social Distancing and Trust (SSRN Scholarly Paper ID 3602410). Social Science Research Network. https://papers.ssrn.com/abstract=3602410

Bteisch, C and Chetaing S.M. (2020) Microfinance Institutions vs. Covid-19: The Real Asset Lies in the Global Networks. https://www.smefinanceforum.org/post/microfinance-institutions-vs-covid-19-the-real-asset-lies-in-the-global-networks.

Bull, G (2020) After the Storm: How Microfinance Can Adapt and Thrive https://www.cgap.org/blog/after-storm-how-microfinance-can-adapt-and-thrive CGAP, Blog 14, October 2020

Bull. G and Ogden, T (2020) Covid-19: How Does Microfinance Weather the Current Storm. https://www.financialaccess.org/blog/2020/3/26/covid-19-how-does -microfinance-weather-the-current-storm.

Carstens, A (2020) Bold steps to pump coronavirus rescue funds down the last mile, Financial Times, 30th March,2020.

Cassis, Y., Grossman, R.S. and Schenck (2018). The oxford handbook of Banking and Financial history (Oxford Handbook) I st Edition, Oxford University.

CGAP (2010) Growth and Vulnerabilities in Microfinance. http://www.cgap-org>blog>microfinance-2010 CGAP (2010b) Microfinance in 2010 https://www.cgap.org/blog/microfinance-2010

CGAP (2020a) how covid-19 is affecting microfinance,

October, 2020
CGAP (2020b) Lessons from 2008 for the Covid-19 crisis: Illiquidity is as dangerous as insolvency. https://www.smefinanceforum.org/post/lessons-from-2008-for-the-covid-19-crisis-illiquidity-is-as-dangerous-as-insolvency.
CGAP (2020c) Covid-19 (coronavirus) insights for inclusive finance.https://www.cgap.org/topics/collections/coronavirus-inclusive-finance
CGAP (2021a) Resilient microfinance industry signals path toward cautious, gradual recovery. Covid-19 Briefing https://www.cgap.org/sites/default/files/datasets/2021_4_cgap_symbiotics_covid_briefing.pdf
CGAP (2021b) Snapshots: MFIs during the Covid-19 Crisis Research and analysis data April, 2021 https://www.cgap.org/research/data/snapshots-mfis-during-covid-19-crisis
CGAP and Symbiotics (2020) MFIs on the rebound but will it last? https://www.findevgateway.org/paper/2020/11/mfis-rebound-will-it-last
CGAP (2010b) Microfinance in 2010 https://www.cgap.org/blog/microfinance-2010
Chakravarthy, D (2006) Voices unheard. The psychology of consumption in poverty and development. Journal of consumer Psychology., 16(4): 363-376
Chatterji, P., & Li, Y. (2020). Effects of the Covid-19 Pandemic on Outpatient Providers in the US (Working Paper No. 27173; Working Paper Series). National Bureau of Economic Research. https://doi.org/10.3386/w27173
Chambers, R (1995) Poverty and livelihoods: Whose reality counts? Environment and Urbanisation 7(1): 173-204.
Darvas, Z. (2018) 'European income inequality begins to fall once again', Bruegel Blog, 30 April
Darvaz, Z (2021) The unequal inequality impact of covid -19 Pandemic. Working paper date downloaded: May 16, 2021.
Davis, F.D. (1986). A technology acceptance model for empirically testing new end-user information systems: Theory and results.: Ph D thesis, Sloan School of Management, Massachusetts Institute of Technology. Massachusetts, United States.
Davillas, A., & Jones, A. M. (2020). The Covid-19 pandemic and its impact on inequality of opportunity in psychological distress in the UK (ISER Working Paper Series No. 2020–07). Institute for Social and Economic Research. https://econpapers.repec.org/paper/eseiserwp/2020-07.htm
de Aghion, A., B. & Morduch, J. (2005). The Economics of Microfinance, The MIT Press Cambridge, Massachusetts London, England.
de Pedraza, P., Guzi, M., & Tijdens, K. (2020). Life Dissatisfaction and Anxiety in Covid-19 pandemic [MUNI ECON Working Paper]. Masaryk University. https://econpapers.repec.org/paper/mubwpaper/2020-03.htm
Deaton, A (2021) Covid-19 and Global Income Inequality, NBER Working Paper No. 28392, available at http://www.nber.org/papers/w28392
Dhongde, S and Minoiu, C (2011) Global Poverty Estimates: A Sensitivity Analysis, IMF Working Paper, IMF Institute, WP/11/234
Donald, M and Marcus, K (2005) Poverty and Vulnerability- An interdisciplinary approach, Centre for Development Research, University of Bonn. MPRA Paper No.6964, https:// mprs.uv.uni-muenchen.de/6964/
Economic Times (2021) Millions of defaults threatens microfinance future in India. Dt 4th Feb., https://economictimes.indiatimes.com/industry/banking/finance/banking/millions-of-defaults-threaten-microfinances-future-in-india/articleshow/80682643.cms?from=mdr.
Esselink, H. and L.H. van Gijsel (2017) The use of cash by households in the euro area', Occasional Paper Series 201, European Central Bank.
European Commission. (2004). Joint Report on Social Inclusion. Employment and Social Affairs. Social Security and Social Inclusion, European Commission, Directorate-General for Employment and Social Affairs, Unit E.2, Brussels, available at:http://ec.europa.eu/employment_social/social_inclusion/docs/final_joint_inclusion_report_2003_en.pdf
Eurostat (2018) Statistical reports-Eurostat. http://www.cc.europa.eu.
EY (2020) Re-aligning Liquidity & Interest Rate strategy for Banks & NBFCs post Covid-19. Financial Management, Markets and Institutions, 1(1), 23-46.
Financial Stability Board. Covid-19 pandemic: Financial stability implications and policy measures taken. April 2020. https://www.fsb.org/wp-content/uploads/P150420.pdf
Findev (2020) Country Profiles: Policy, Regulatory, & Supervisory Covid-19 Responses for MF. https://www.findevgateway.org/paper/2020/06/policy-

regulatory-and-supervisory-covid-19-responses-microfinance

Francois, F and Akim. A (2018) DEA and SFA Research on the efficiency of microfinance institutions: a meta-analysis World Development,107: 176-188.

Friedline, T Chen, Z and Morrow, S.P. (2020) Families' Financial Stress & Well Being: The Importance of the Economy and Economic Environments, Journal of Family and Economic Issues. Springer Nature https://doi.org/10.1007/s10834-020-09694-9

Garcia-Perez, I., Fernandez-Isquierdo, M.A., and Munoz-Torres, M.J (2020) Microfinance institutions fostering sustainable development by region. Sustainability, 12:2682

Goldstein, J. R., & Lee, R. D. (2020). Demographic Perspectives on Mortality of Covid-19 and Other Epidemics (Working Paper No. 27043; Working Paper Series). National Bureau of Economic Research. https://doi.org/10.3386/w27043

GTZ (2005):Linking Poverty Reduction and Disaster Risk Management. German Technical Cooperation. Eschborn

Guarcello, L., Mealli, F., & Rosati, F. C. (2010). Household vulnerability and child labor: the effect of shocks, credit rationing, and insurance. Journal of population economics, 23(1), 169-198.

Gupta, R., A. Hasler and A. Lusardi (2018) 'Financial Fragility in America: Evidence and Implications', GFLEC Policy Brief, April

Hammill, A, Matthew, R, McCarter, E (2008) Microfinance and climate change adaptation. Institute of Development Studies Bulletin 39(4): 113–122.

Hasler, A. and A. Lusardi (2019) 'Financial Fragility Among Middle-Income Households: Evidence. Beyond Asset Building', GFLEC Working Paper, March.

Hemmati, M and Rohr,U.,(2007) A he challenge and a narrow discourse- ain't no pace for gender in climate change policy? Women and Environments International Magazine,74: 5.

Ibtissem, B and Bouri A (2013) Credit risk management in microfinance: the conceptual framework acrn Journal of Finance and Risk Perspectives Vol. 2, Issue 1, Nov. 2013, p. 9 – 24

ILO (2019) Small change, big changes: women and microfinance. Accessed from http://www.ilo.org/wcmsp5/groups/public/@dgreports/@gender/documents/meetingdocument/wcms_091581.pdf

ILO (2020) The sister hood of groups51: Microfinance brings decent work.https://libguides.ilo.org/microfinance-en.

ILO (2021) Risk management, inclusive finance and Covid-19. https://www.ilo.org/empent/areas/social-finance/WCMS_749384/lang—en/index.htm

ILO (International Labour Organisation). 2015. Microfinance for Decent Work. Enhancing the Impact of Microfinance: Evidence from an Action Research Programme. Geneva: Social Finance Programme and University of Manheim. Impact-covid-19-global-poverty-looking-back-2020-and-outlook-2021

International Labour Organisation (2021) ILO Monitor: Covid-19 and the world of work. 7th edition, available at https://www.ilo.org/global/topics/coronavirus/impacts-andresponses/

International Monetary Fund. Fiscal Monitor. April 2020.

International Monetary Fund. (2020a, April). World Economic Outlook, April 2020: The Great Lockdown. IMF. https://www.imf.org/en/Publications/WEO/Issues/2020/04/14/weo-april-2020

International Monetary Fund. (2020b, June). World Economic Outlook Update, June 2020: A Crisis Like No Other, An Uncertain Recovery. IMF. https://www.imf.org/en/Publications/WEO/Issues/2020/06/24/WEOUpdateJune2020

Jappelli, T., Pagano, M., & Di Maggio, M. (2013). Households' indebtedness and financial fragility. Journal of Financial Management, Markets and Institutions, 1(1): 23-46.

Johnston, R., Chai, J., Schumaker, L., (2000). Assessing Financial System Vulnerabilities, IMF Working paper WP/00/76

Karlan, D (2007) Social Connections and Group Banking, Economic Journal 117, F52-84.

Karlan, D., Osman, A., and Zinman, J. (2016). Follow the money not the cash: Comparing methods for identifying consumption and investment responses to a liquidity shock. Journal of Development Economics, 121:11–23.

Kloninger, J.P (2020) Human Resilience, Microfinance, and the Evolution of Potatoes. https://www.3blmedia.com/News/Human-Resilience-Microfinance-and-Evolution-Potatoes

Konn (2020) The organisation for world peace: The Critical Role Of Microfinance Institutions Amidst The Covid-19 Pandemic. CGAP August 17,2020.

Krugman, P (4 February 2011). Another Kind of Financial Fragility The New York Times.

Kuriakose, F and Joseph, J., Microfinance and Human development in Kerala (2020) SSRN Electronic journal, March. http://dx.doi.org/10.2139/ssrn.3526668

Lane, G (2020) Credit lines as insurance: Evidence from Bangladesh. Report. http://www.gregoryvlane.com> pdfs>JMP_Lane

Lakner, C, Yonzan, N, Mahler, G. D., Aguilar, A.C and Haoyu Wu (2021) Updated estimates of the impact of COVID-19 on global poverty: Looking back at 2020 and the outlook for 2021, World Bank blogs, available at https://blogs.worldbank.org/opendata/updatedestimates-

Lewis, J., & AV Lewis, S. (2014). Processes of vulnerability in England? Place, poverty and susceptibility. Disaster Prevention and Management, 23(5), 586-609.

Lin, P. Z., & Meissner, C. M. (2020). A Note on Long-Run Persistence of Public Health Outcomes in Pandemics (Working Paper No. 27119; Working Paper Series). National Bureau of Economic Research. https://doi.org/10.3386/w27119

Lusardi, A., A. Hasler and P. Yakoboski (2020) Building Up Financial Literacy and Financial Fragility, GFLEC Working Paper, July

Lusardi, A., D. Schneider and P. Tufano (2011) Financially Fragile Households: Evidence and Implications, Brookings Papers on Economic Activity, 83-150, Brookings Institution

Malik, K, Meki, M., Morduch, J § Ogden, T., Quinn, S., Farah Said, F. (2020) Covid-19 and the Future of Microfinance: Evidence and Insights from Pakistan Oxford Review of Economic Policy, Volume 36, Issue Supplement_1, 2020, Pages S138–S168, https://doi.org/10.1093/oxrep/graa014

McGuinness, E (2020) Financial Services Build Resilience in Face of Crises Like Covid-19. Blog 27. CGAP https://www.cgap.org/blog/financial-services-build-resilience-face-crises-covid-19

Mecha, S. N. (2017) Effect of microfinance on poverty reduction: A critical scrutiny of available literature. G.J.C.M.P.,6(3):16-33.

MFIN, (2020). MFIN issues post moratorium guidelines for members. https://economictimes.indiatimes.com/small-biz/sme-sector/mfin-issues-post-moratorium-guidelines-for- members/articleshow/77872297.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst

Micro capital Team (2020) SPECIAL REPORT: Resilience Among Microfinance Institutions? Region of Crisis Relatively Stable; Moratorium Veil Yet to Lift. https://www.microcapital.org/special-report-resilience-among-microfinance-institutions-region-of-crisis-relatively-stable-moratorium-veil-yet-to-lift

Microfinance Barometer (2019). Key figures of financial inclusion/World. 10th Edition,2-3

Midoes, C. (2020) 'Risking their health to pay the bills: 100 million Europeans cannot afford two months Morduch, J (1999) The microfinance promise. Journal of Economic literature, 37:1596-1614

NABARD (2020). National Bank for Agriculture and Rural Development -Annual report (2019-2020). P1-96.

Norman, J. (2020) Gender and Covid-19: the immediate impact the crisis is having on women, LSE British Politics and Policy Blog, 23 April, London School of Economics

Ogden, T. (2011). The Microfinance Contagion Scenario. Harvard Business Review 10 June, 2011.Paper, No 201, European Central Bank

Pfaffinger, K.F., Julia A. M.R., Erika S., E., Rita, E and Berger, R (2020) Anxiety in a digitalised work environment. Gr Interakt Org. 51:25–35

Pelling, M. (2003) The Vulnerability of Cities. Natural disasters and Social Resilience. Earthscasn Publications, London. Published by Oxford University Press.

Qui, Y., Chen, X., & Shi, W. (2020). Impacts of Social and Economic Factors on the Transmission of Coronavirus Disease 2019 (Covid-19) in China (Working Paper 494 [pre.]). GLO Discussion Paper. https://www.econstor.eu/handle/10419/215739

Rao, K. S. (2020) Covid-19 crisis: How policy can revive lending appetite among banks. https://www.ideasforindia.in/topics/money-finance/covid-19-crisis-how-policy-can-revive-lending-appetite-among-banks.html.

Rao, R.C.A., Raju, B.M.K., Islam, A., Rao,S. A.V.M., Rao, K.V., Chary, R. G., Kumar, N.R., Prabhakar, M., Reddy,S. K., Bhaskar, S. and Chaudhari, S.K. (2019). Risk and Vulnerability Assessment of Indian Agriculture to Climate Change, ICAR-Central Research Institute for Dryland Agriculture, Hyderabad, P.124

Ravallion, M. (2002) Poverty Comparisons. London: Routledge.

Roy, A. (2010) Poverty Capital: Microfinance and the Making of Development by Routledge, 286 Pages 7

Sachdev, D (2020) Microfinance in India: The Story of Resilience.http://www.businessworld.in/article/

Microfinance-In-India-The-Story-Of-Resilience/24-12-2020-357835/

Saxena, S (2021) From response to recovery: How Covid-19 crisis spurred turnaround of microfinance industry. https://www.businesstoday.in/opinion/columns/how-covid19-crisis-spurred-turnaround-of-microfinance-industry-nbfc-mfis/story/428336.html

Sen, A (2008)., The Economics of happiness and capability. In L, Bruni, Comim, F. and Pugno, M. (Eds). Capability and Happiness. New York: Oxford University Press.

Shah, P (2020)., What steps banks and NFBC need to take to mitigate liquidity and risks. EY Financial services.

Singh, S (2020) Types of Risks faced by Microfinance Institutions, https://moneymint.com/types-risks-faced-microfinance-institutions/

Slover, C., 2020 LIFT Covid-19Economic Response Livelihood and Food security fund (LIFT) note. April 8, Yangon, LIFT

SME Finance (2020) Lessons from 2008 for the Covid-19 crisis: Illiquidity is as dangerous as insolvency. https://www.smefinanceforum.org/post/lessons-from-2008-for-the-covid-19-crisis-illiquidity-is-as-dangerous-as-insolvency

Solt, F (2020) Measuring Income Inequality Across Countries and Over Time: The Standardized World Income Inequality Database, Social Science Quarterly, 101: 1183-1199, available at https://doi.org/10.1111/ssqu.12795

Suhasini, K and Devis I.S(2018) Microfinance a tool of financial inclusion- A constraint Analysis http://www.researchgate.net/publication/324485036-micro_finance_a_tool_of_financial_inclusion_a_constraint analysis.

Sun, L.S. and Im. J (2015) Cutting Microfinance Interest Rates: An Opportunity Co-Creation Perspective. https://www.effectuation.org/wp-content/uploads/2017/06/Sun_et_al-2015-Entrepreneurship _Theory_and_Practice-1.pdf.

Swain, R. B., and Floro, M. (2007). Effect of microfinance on vulnerability, poverty and risk in low-income households. Department of Economics, Uppsala University

Swain R.B and flora, M (2014) Microfinance, vulnerability and risk in low income households. International review of applied economics 28(5): 539-561

Taylor, S (2021) Microfinance and the informal economy under the Covid-19 https://devpolicy.org/microfinance-and-the-informal-economy-under-covid-19-20200624-2/

Tergooi (2020) EIB approves • 5.1 billion for Covid-19 resilience, clean energy, rail transport and urban development. https://www.eqmagpro.com/eib-approves-e-5-1-billion-for-covid-19-resilience-clean-energy-rail-transport-and-urban-development/

Toth, R (2020) Sustaining Myanmar's microfinance sector during the Covid-19 economic crisis to support food security, resilience, and economic recovery. IFPRI, Myanmar. https://www.ifpri.org/publication/sustaining-myanmars-microfinance-sector-during-covid-19-economic-crisis-support-food

Tubadji, A., Boy, F., & Webber, D. (2020). Narrative economics, public policy and mental health. Centre for Economic Policy Research, 20, 109–131

UNDP (2016a) Microfinance and financial services. http://www.undp.org

UNDP (2016b) Transforming our World: The 2030 Agenda for Sustainable Development. Sustainable development.un.org

UNISDR, (2009). UNISDR Terminology for Disaster Risk Reduction. United Nations International Strategy for Disaster Reduction (UNISDR) Geneva, Switzerland.https://www.unisdr.org/publications

UNDP/BCPR (2004): Reducing disaster risk. A challenge for development, UNDP/Bureau for Crisis Prevention and Recovery, New York, http://www.undp.org/bcpr/disred/rdr.htm

United Nations (2004) UN launches International Year of Microcredit 2005. Available at: http://www.un.org/News/Press/docs/2004/dev2492.doc.htm

United Nations. 2006. Department of Economic, and United Nations Capital Development Fund UNCDF. Building inclusive financial sectors for development. In: United Nations Publications.

Venkatesh, V. and Bala, H. (2008). Technology Acceptance Model 3 and a Research Agenda on Interventions. Decision Science, 39 (2), 273-312.

Venkatesh, V., & Davis, F. D. (2000). A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. Management Science, 46 (2), 186-204.

Viswanath, P. V. (2015). Microfinance and investment in human and social capital. ACRN Oxford Journal of Finance and Risk Perspectives, 4(3), 81-101

Wang, Z (2021) How Can Insurance Support the Recovery and Resilience of MSMEs?https://

cdn.smefinanceforum.org/post/how-can-insurance-support-the-recovery-and-resilience-of-msmes?page=2WCMS_767028/lang—en/index.htm

Westen C.J.V (2017) Vulnerability, ACP-EU Natural Disaster reduction, Caribbean handbook on risk information management

Wiersma, J., R. Alessie, A. Kalwij, A. Lusardi and M. van Rooij (2020) Skating on thin ice: new evidence on financial fragility, Working Paper 670, De Nederlandsche Bank

without income', Bruegel Blog, 7 May

World Bank (2012) World Bank Lending for Financial Inclusion: Lessons from Reviews of Select Projects.

World Bank, (2017) Insights from the 2017 Global Symposium on Microfinance: Revolutionizing Microfinance: Insight, Innovation, Inclusion, May 22-23, Kuala Lumpur, Malaysia

World Bank (2018). Poverty and Shared Prosperity: Piecing Together the Poverty Puzzle; World Bank: Washington, DC, USA, 2018.

World Bank (2021) Microfinance and economic development https://documents.worldbank.org/en/publication/documents-reports/documentdetail/107171511360386561/microfinance-and-economic-development

World Bank (2021) Global Economic Prospects, January 2021, available at https://www.worldbank.org/en/publication/global-economic-prospects.

Yaidoo, L.I.K. and Vishwanatha, K (2018) Microfinance: A review of literature – development strategy recommendations for improving low income and poverty reduction. International Research Journal of Social Sciences,7(4):6-20.

Yunus, M (2007) Creating world without poverty: Social business and the future of capitalism. New York: Public Affairs.

Yunus, M. (2011, January 14). Sacrificing microcredit for megaprofits. New York Times, p. A23.Zamman, (2000)

Zamman, Q. M. M and Lau, S. S. Y (2000) City Expansion Policy Vs Compact city demand: The case of Dhaka. In Jenks, M and Burgess, R (Ed). The compact cities: Sustainable Urban form for developing countries, Spon Press, London p141-152.

Zetterli, P (2020) Four Ways Microfinance Institutions Are Responding to Covid-19. Blog 13, CGAP.https://www.cgap.org/blog/four-ways-microfinance-institutions-are-responding-covid-19

Zheng, C., and Zhang, J., (2021) The impact of Covid-19 on the efficiency of microfinance institutions. International Review of Economics and Finance,71:407-423.