THE INFORMAL ECONOMY, FINANCIAL RISK, AND OPPORTUNITIES IN THE TIME OF CLIMATE CHANGE: A REVIEW STUDY

Venkateshwara, S Gajavelli, Institute of Management Technology Nagpur

ABSTRACT

In this study an attempt is made to understand the susceptibility of informal economy to the risks arising from climate change. The purpose of the study is to examine the recent literature and suggest a conceptual framework to understand the existing theory and the developing applications. The existing works broadly fall into four constituents and try to understand (a) the positive impact of technology adoption on MSMEs, their resilience and response in the post-Covid-19 crisis, (b) transformation drivers, technology selection, and ways to help augment MSMEs' resilience and responsiveness in the context of post-Covid-19 crisis, (c) gendered bias, discrimination and vulnerability in the time of climate change, and (d) climate change impacts, SME adaptation, and government-sponsored sustainable mitigation measures.

The present study broadly focus on (a) Feasible conceptual framework and discussion around 'informal economy, financial risk and climate change' to approach the additional risks arising out of climate change risk, Covid-19, and conflict for MSMEs in particular and the informal economy in general; and (b)Generating feasible alternative solutions at different levels of business, governments, and society. The first section set the context and background to the study and the second section examine the existing literature and delineate broad contours of the study. The third section define the approach and objectives of the study followed by fourth and fifth sections devoted to the discussion and conclusions of the study with a research agenda for the future.

Keywords: The Informal Economy, Financial Risk, Climate Change, MSMEs, Risk Modelling, Climate Action, Climate Finance.

INTRODUCTION

The International Trade Centre (ITC), UN celebrated the 5^{th} Anniversary of the Micro, Small, and Medium-sized Enterprises (MSMEs) Day recently to pay its respects to the small and nimble companies that are the mainstay of most of the economies world over. More importantly, their role in the emerging and underdeveloped economies of the world such as Asia and Sub-Saharan Africa is of paramount significance. On this occasion, the global multilateral agency while honoring the entrepreneurs in societies as they face the triple threat of COVID-19, conflict, and climate change, has identified access to finance as one of the primary hurdles to MSME growth and to their overall integration into the mainstream economy (UNO, 2022). It's indeed a startling revelation that out of 250 million informal enterprises that are in genuine need of credit but cannot really avail of it, more than 90 percent of them are MSMEs. Most of these MSMEs are Indian and about 51 million MSMEs are facing a credit shortfall of an astonishing US$ 400 billion scale.

The recent past has given us more than a glimpse of what *'business as usual'* could mean in an increasingly volatile and risky landscape. As of September 2021, the pandemic has caused

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over 5 million deaths, a US$ 12 trillion global GDP loss, and a record debt in most of the emerging economies. Besides, the global community experienced a myriad of 'never before' disaster events, raging conflicts, trade wars, displacement, and humanitarian crises, with climate change predicted to reduce global GDP by about 18 percent by 2050 (World Economic Forum, 2021). This only calls for a systematic change towards a more resilient and sustainable future for the global community. Despite record human and economic losses, global stock markets rallied and world trade flows almost back to pre-pandemic levels. Improving economic prospects in the developed world and in some emerging economies prompted some to praise the resilience of our financial system and raise the temptation to go back to business as usual, which turns out to be the real hazard.

As per the Economic Survey 2021-22, the contribution of MSMEs to the economic and social development of the country with regard to entrepreneurship and employment generation has been creditable. It has noted the 33.1 percent MSME Gross Value Added (GVA) in total GVA (current prices) for the year 2019-20 (Economic Survey, 2022). Estimates show that from a total outstanding credit of INR 26,041 billion as of November 2017, 82.6 percent of the amount was lent to large Indian enterprises and only 17.4 percent of financing was disbursed to MSMEs by the banks. Further, the flagship annual document of the Finance Ministry, Government of India evidently reveals that MSMEs are severely handicapped by the dearth of credit to finance their businesses and hence find it challenging to reach their potential scale and growth much to the detriment of the economy and various stakeholders. More importantly, there is a need for banks and financial institutions to align their MSME lending operations in accordance with the Environment and Social Risk Framework, which is a global best practice (SIDBI, 2020).

Theoretical Background and Methodology

The Covid-19 pandemic has brought significant challenges for MSMEs and the informal economy. While SMEs have traditionally faced financial and non-financial crises, the pandemic has brought about additional uncertainties for their business continuity and survival (Singh et al., 2021). Further, the value of this work (Singh et al., 2021) lies in addressing the gap between the espoused literature's claim of the beneficial impact of new technological advancements and SMEs' ability to survive in the context of the COVID-19 pandemic. The added contribution of this work is a framework of recommendations to help enhance SMEs' resilience and responsiveness in the context of COVID-19. In a similar vein, Gregurec et al. (2021) studied the impact of COVID-19 on sustainable business models in SMEs with a specific reference to service-based industries. This study aims to gain insights into which transformation drivers they have focused on and which technologies they have selected as a means to respond to the disruption. These insights regarding MSMEs are then explored according to their influence on the redefinition of sustainable business models in MSMEs. The review data was analyzed via a customized research framework that contains three dimensions and 30 sub-concepts. The results show the distribution of drivers and technologies across service sectors. They are organized into a Business Model Canvas and could be considered useful for academia and practitioners. The highly unpredictable environment allows for only a few feasible strategic approaches regarding an SME's decision to follow the incumbent, become a challenger, or reinvent themselves based on their own transformation drivers and readiness to apply digital technology.

In their work by Abbass et al. (2022), an attempt was made to identify gendered barriers and enablers to private sector adaptation and suggest women entrepreneurs face a *"triple*

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differential vulnerability" to climate change, wherein they: (a) are often more sensitive to climate risk, as a result of their concentration in certain sectors and types of enterprises (e.g., micro SMEs in the agricultural sector in remote regions); (b) face additional barriers to adaptation in the business environment, including access to finance, technologies, (climate and adaptation) information and supportive policies; and (c) are also often concurrently on the frontline of managing climate risk at household levels. Since various forms of inequality often create compounding experiences of discrimination and vulnerability, the study pays particular attention to how factors of differential vulnerability intersect, amplify, and reproduce with a gendered bias. In a review of the global climate change impacts, adaptation, and sustainable mitigation measures, Kashif argue that government involvement is necessary for the country's long-term development through strict accountability of resources besides regulations implemented to generate decisive climate policy. Therefore, the study maintains that mitigating the impacts of climate change must be of the utmost importance, and hence, this global threat requires global commitment to address its dreadful implications to ensure global sustenance. In their study on the *'conceptualization of SMEs'* business resilience, Saad et al. (2021), while focusing on SMEs' business resilience maintain that there is a need to take stock of current knowledge in varied areas and structure them to lay the foundation in this field. The study further also gave due attention to the resilience of SMEs in highly vulnerable settings of developing countries, as the nature of these settings requires resilience research focus in terms of rate of recurrence and complexity of disruptions. The study deployed a well-structured systematic review procedure and offers (a) an overview of SMEs resilience literature from 2000 to November 2018 comprising 118 articles, and (b) special attention, within that overview, to developing countries. This review work concludes that resilience literature is very much varied in its definitions and measurements, and is inconclusive about its influencing factors (Le Loarne-Lemaire et al., 2021). Furthermore, little resilience research has focused on the context of SMEs in developing countries, which is perhaps surprising given the contribution made by these businesses in such a setting. Based on the review results, the authors describe distinguishing features of resilience; give options to extend the theoretical foundations of research into resilience in the future (Venturini, 2022).

The Approach and Objectives

The above works broadly fall into four constituents and try to understand (a) the positive impact of technology adoption on MSMEs, their resilience and response in the post-Covid-19 crisis, (b) transformation drivers, technology selection, and ways to help augment MSMEs' resilience and responsiveness in the context of post-Covid-19 crisis, (c) gendered bias, discrimination and vulnerability in the time of climate change, and (d) climate change impacts, SME adaptation, and government-sponsored sustainable mitigation measures (Banerjee, 2014).

1. It emerges from the above that we need more of a holistic and feasible conceptual framework and discussion around 'informal economy, financial risk and climate change' to approach the additional risks arising out of climate change risk, Covid-19, and conflict for MSMEs in particular and the informal economy in general (Green Finance Task Force, 2015).
2. The study attempts at generating feasible alternative solutions at different levels of business, governments, and society.

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The Discussion

As the focus of this work is to have a perspective on climate-change-driven disruptions, Covid19, and resulting financial risks, an attempt is made to deliberate on the inclusive, resilient, and green sustainable development as a recovery path for MSMEs. In the process, this paper further tries to address how climate-related disruptions including the post-Covid-19 crisis necessitate climate finance to help support MSMEs' sustenance (Environment Programme, 2016; Zutshi et al., 2021).

Climate change is driving the financial risks

The World Economic Forum (2021) advocated that climate change is driving the financial risks and has come out with what needs to transform for a better future. Then the question arises about whether the existing systems and governance are truly resilient for the future and if not what can be done at various institutional levels and stakeholders?

A critical issue according to The Global Risk Report, 2022 is that disaster risk and related costs are not reflected in financial modeling or analysis or commodity or asset prices, nor do they appear on the balance sheet or affect companies' profitability and valuations. Therefore, unsustainable companies have a lower cost of capital than their more sustainable peers, allowing – or even rewarding – them to misallocate capital towards risk creation rather than risk prevention. Further, the report delineates the economic costs of a disaster are rarely borne by those who caused it but are left to governments, small businesses, communities, and the most vulnerable. As a result, markets operate *"risk-blind"* when it comes to high-impact shocks such as climate change risk weforum. The report further argues that we need to raise the targets and put comprehensive risk reduction at the heart of financial sector decision-making. The risk-informed investment will be rewarded, as prevention pays in return. The Global Assessment Report on Disaster Risk Reduction (UNDRR) estimated US$6 billion in prevention can generate economic benefits of $360 billion. Success depends on three critical elements:

1. Broadening the horizon from investing in sustainability and climate resilience to incorporating sustainability and resilience into investment.
2. Enhancing our understanding of and capacity to address systemic disaster risks including recognizing and embracing inter-linkages and trade-offs.
3. To put risk reduction at the heart of investment decisions and unleash the power of public and private finance and investment towards resilience and sustainability, governments should change the profit motive by ensuring investors and other companies pay the full cost of risk creation weforum.

With the world slowly emerging out of the pandemic, we must reconsider how we deal with increasingly systemic climate and disaster risk, looking at resilience from long-term, multi-hazard, and prevention-focused angles. Reinforcing Kashif this can only be done with strong leadership at the macro-level from those mandated to take feasible decisions. Governments have an unprecedented opportunity to take decisive action to make risk-informed investment a market incentive towards and within a sustainable global community (Barry & Hoyne, 2021).

Climate Change and Informal Economy: Climate Finance for MSMEs

As a corollary to the climate change-related threats and financial risk to the informal economy and the fragile small businesses, the role of climate risk finance acquires a pivotal role to play. Hence, there is a strong case to make climate finance accessible for small, and medium

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enterprises (MSMEs), and ways to take steps in that direction. It is also an established fact that MSMEs are disproportionately affected by climate risks. Both physical risks - damage to infrastructure and assets such as buildings and factories, as well as to people and communities-, and transitional risks (policy changes, reputational impacts, and shifts in market preferences and technology) slow down or halt the operations of an MSME, leaving them in need of immediate and considerable financial support. Given this, it is understandable why MSMEs require an urgent push toward the adoption of technologies that lower their emission footprints and reduce their vulnerability to climate change. Climate finance can help MSMEs make this transition feasible. However, this has remained elusive to a large number of eligible enterprises, marginalizing them in the process. There are numerous factors that make climate finance hard to access for MSMEs such as (a) lack of awareness (b) formal financing structures and (c) extensive procedural requirements (Financial Stability Board, 2015).

The Climate Action Needed

The climate action involves high initial capital investments in renewable energy, technology substitutes for energy-efficient measures, waste and water treatment systems, etc. While large industrial houses have the financial strength to invest in these areas, MSMEs are confronted with several financial constraints. Besides, limited awareness and technical wherewithal, unsupportive regulatory controls, and complex environmental norms create further challenges for MSMEs (Gorti et al., 2021). For the informal economy in general and MSMEs in particular, a supportive regulatory framework with incentives could include (a) enhanced access to climate finance at low cost to help MSMEs adopt climate-smart technologies and measures, (b) leverage the training and advisory services of entities such as the CII-ITC Centre of Excellence for Sustainable Development to identify material issues across Environmental, Social, Governance (ESG) dimensions, (c) tailor policies and regulations to create incentives for MSMEs to participate in the SME Climate Hub, a global initiative that has been launched as a one-stop-shop for SMEs to cut carbon emissions and build business resilience, (d) build synergies between state governments, industry associations, and larger enterprises to establish sector-specific eco-industrial parks. Given their organizational structure, MSMEs are not as complex as large enterprises, making it easier for them to achieve low carbon processes and products, and at considerably lower costs (Gorti et al., 2021).

International Cooperation: Business, Government, and Society

The climate change risk and managing carbon emissions is a global challenge cutting across sovereign governments, businesses, and the global community. The United Nations Environment Programme Finance Initiative (2015) found that globally a *“silent revolution”* has taken place in which policymakers, regulators, and private financial institutions are bringing sustainability to the core of the financial decision-making process. The global multilateral agencies such as the IMF and World Bank can employ their environmental expertise in their surveillance work, for example in their Financial Sector Assessment Programme (FSAP). With ecological risks as an integral part of the financial stability assessment, a common standard can be set and policed. The carbon stress test can thus become an integral component of the FSAP, because it is important to judge the vulnerability of the financial sector in an international setting.

International cooperation is again plagued with a mix of successes and failures including that of a *‘free-rider problem’*. The global response to COVID-19, which significantly reduced

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greenhouse gas emissions, was indeed less an outcome of global cooperation than countries reacting individually and not necessarily in coordination with the global community to deal with a common public health hazard. Since there is no way out of the climate change risk problem other than through genuine or reluctant cooperation further inquiry should focus more on how multi-lateral treaties on the issue could be more effective in serving the purpose.

CONCLUSIONS

The literature survey broadly captured four constituents of the climate change and focused on: firstly, the positive impact of technology adoption on MSMEs in terms of their resilience and response in the post Covid-19 crisis; secondly, transformation drivers, enterprise technology choice, and the ways to help augment MSMEs' resilience and their responsiveness in the context of post-crisis emerging scenario; thirdly, the gendered bias, discrimination and vulnerability in the time of climate change and the revelation that women entrepreneurs face a *"triple differential vulnerability"* to climate change in terms of often more sensitive to climate change risk, additional barriers to adaptation in a given business environment setting and also women are often on the frontline of managing climate risk at the household-level; and lastly climate change impacts, SME adaptation, and government-sponsored sustainable mitigation measures. Given the objectives and the purpose delineated the study makes an attempt to develop more of an integrated framework and critically evaluates four important but inter-connected elements*:* (i) Climate change is driving the financial risks, (ii) Climate Change and Informal Economy: Climate Finance for MSMEs, (iii) The Climate Action needed, and (iv) International Cooperation: Business, Government, and Society. The study tries to develop a holistic understanding by integrating concepts and practical issues in understanding and managing climate change risk and its impact on the prospects for the informal economy. Understanding and managing climate change risks are complex and require the use of new tools, metrics, and analytics. Similarly, exploiting opportunities from a changing climate will also emerge and require due consideration. These could arise from a change in the physical environment such as new places for farm production or urban habitation, or for various industries like tourism. Besides, through the use of new technologies and methods to manage risk in a changing climate. The challenges could stem from using the not-so-appropriate and robust models to quantify the climate change risk. The study suggests that developing a very robust and right approaches to measure climate change risk should be the immediate focus of the future research fraternity.

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