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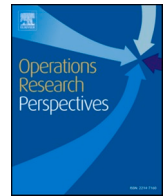
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SMEs in Covid-19 Crisis and Combating Strategies: A Systematic Literature Review (SLR) and A Case from Emerging Economy[☆]

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ABSTRACT

The paper intends to understand the research trends in "Covid-19 and SME" through a Systematic Literature Review (SLR) and extract themes to explore the most affected areas of SMEs during the Covid-19 pandemic. Subsequently, the study attempts to know the struggles of SME during Covid-19 crisis in a developing country. Furthermore, the study provides a critical dynamic resilience strategy framework to manage the SMEs in the crisis period. The authors extracted data from Scopus and Web of science to conduct a Systematic Literature Review (SLR). Extracted data from both databases were merged using R programming get the same tag in R programming. The study adopts a bibliometric analysis to present the research corpus in the domain of "Covid-19 and SMEs". The cluster method of R programming has been used to usher the significantly affected areas of SMEs. Based on the cluster theme, an open-ended questionnaire was developed and used to interview 23 SMEs in Bangladesh for the case study. NVIVO-13.00 was used to extract the topic from the transcriptions of the interviews. The study reveals that Cash flow shortages and Supply Chain Disruptions are the critical constraints of SMEs. On the contrary, Digital transformation has gained momentum during this crisis. Enterprises that made the best use of digital platforms through technology, digital marketing, and innovations secured the peak of success and profitability. The study also recommends a critical dynamic, resilient strategy model to adopt in the "new normal" for successful navigation of SME business in the future. The study is the first of its kind that integrates SLR and a case study on the hurdles of SME owners during the Covid 19 crisis. Thus, it helps advance the understanding of the subject matter and enables the formulation of resilient strategies by policymakers and SME owners to navigate the business in any potential crisis in the future. The study has significant methodological contribution as it presents how to merge both Scopus and web of science data to conduct bibliometric analysis through R programming. Besides, it also contributes to using R's clustering method to extract themes for "SME and Covid -19" domain. Finally, the study presents an overview of SMEs in crisis such as Covid-19 and a case study of a rising economy and its response measures. The Case study has been designed to concentrate on Bangladesh's SME owners and practical implications potentially limited to Emerging Asian Economies.

1. Introduction

The global pandemic Corona Virus spread its tentacles in almost all world countries, and the world's inhabitants have been witnessing its deadly dance for the last ten months. Although the novel coronavirus disease (Covid-19) was initially detected in Wuhan (in the Hubei Province of China) in December 2019, later, it turned into a global pandemic in March [1]. At the preliminary stage, the outbreak was limited to China and Europe, but it spread worldwide in March 2020 with 6,724,

667 confirmed cases and 198,589 deaths worldwide [1]. This unforeseen global phenomenon has thrown a chaotic impression on the economy and put commerce at a standstill [2–5]. While Covid 19 is impacting nearly all walks of life, there is a particular concern about how the newly emerged catastrophe will affect small and medium enterprises. A study [6] stated that SMEs represent over 90% of all firms worldwide, making them the backbone of the world economy in formal and informal business sectors. Despite their significant role, SMEs are most threatened by the Covid 19 crisis, given their relatively vulnerable

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position [6]. Since SMEs heavily rely on the velocity of money, a sudden fall in regular trade demand disturbs the company's cash inflow [7,8] have asserted that due to a lack of readiness, excessive reliance on local and government agencies, and a more significant psychological and financial impact on owners and managers, SMEs are the most vulnerable in the crisis period. Previously, there was little research on the effects of disasters on SME and developing strategies to cope with such vulnerability, with the majority of studies focusing on recovery after natural disasters such as floods and earthquakes; reflections on the impact of long-term epidemics on SME are also scarce [8]. SMEs in Bangladesh are primarily private entities, and it has to survive in a highly competitive environment like many other developed and developing countries. Covid 19 has already triggered an unprecedented dark impression on the SME industry [8]. During the protracted lockdown and movement control period, SME entrepreneurs faced obstacles such as operational disruption, supply chain disruption, a shortage of internal funds to handle recurring operating expenditure, the risk of bankruptcy, and a paucity of government stimulation packages [8,9].

Researchers worldwide have focused on the impact of covid-19 on SMEs to understand the current situations of SMEs. The present crisis caused by pandemic COVID-19 is different than other crises in several ways because economic activities have been interrupted differently in geographic areas with unforeseen implications [10]. SME entrepreneurs faced challenges such as operational interruption, supply chain disruption, a lack of internal capital to handle recurrent operating expenditure, the possibility of insolvency, and a scarcity of government stimulus packages during the lengthy lockdown and movement restriction period [8,9].

An extensive literature survey reveals that studies [5,6,9,11–15] emphasized on the impact of covid-19 on SMEs due to impending economic distress occurred in this pandemic and recovery strategies to manage the crisis. Studies indicate that SMEs are impacted from different aspects in this period. The extent of the problem in SMEs varies in terms of business nature, geographic location of the business, the economic condition of the country, environmental factors related to the company, entrepreneurial innovative and adaptive capability during the crisis period, and so on. Although the research on SMEs incorporating Covid-19 has gained attention among academicians and practitioners, there is scanty research that highlights the SME crisis and crisis recovery strategies together from a practical experience of SME business. Considering the significance of the issue, this study intends to reveal the pandemic's impact on SMEs in the context of developing countries like Bangladesh. Most of the studies conducted on SMEs addressing Covid-19 are based on developed countries like the USA, Europe, Australia, Canada, UK Italy [16,17] have been conducted in an emerging economy like Bangladesh and Pakistan. However, these studies have not addressed the research gaps identified above in the current work. Therefore, it is warranted further investigation in developing countries from practical aspects. Furthermore, the study will address the research questions such as RQ-1): What is the corpus of research in SMEs & Covid-19; RQ 2) Which areas of the SMEs were highly disrupted by the pandemic?; RQ-3): what was the Impact of COVID-19 on SMEs in Bangladesh?; and RQ-4): What resilience strategies can SMEs adopt to combat the crisis during this devastating pandemic?

This paper has been developed to meet four objectives. First, the article is intended to capture the corpus of research integrating "Covid-19 and SME" through a systematic literature review (SLR) to understand the recent development of research in the SME industry addressing Covid-19 attack through bibliometric analysis. Second, a co-word analysis was conducted to explore the theme that focused on major affected areas of SMEs. Third, A case study on SMEs of Bangladesh will be presented to explore the current situations of SMEs in Bangladesh. And, fourth, the study will provide a critical dynamic resilience strategy framework to manage the SMEs in the crisis period. The study will be carried out by extensive literature survey using renowned databases like Scopus and the web of science to fulfill the research objectives. The

systematic reviews will "summarise in an explicit way what is known and not known about a specific practice-related question" [18]. The value of a Systematic Literature Review can provide a clear understanding of the current state of the research regarding the topic being investigated in a single platform.

To fulfill the first and second research objectives, the study aims at presenting various classification schemes. The classification scheme will be done based on the published articles. It will categorize the total articles into different segments like distribution of published articles across other countries, journals, contexts, and periods under the descriptive analysis part following the Systematic Literature Review guidelines [19] and the second part will present the different themes based on the co-word analysis which is a popular text mining techniques to the titles, abstracts, and keywords of articles [20]. To satisfy the third objective, a survey will be conducted among some selected SME owners of Bangladesh using a self-developed open-ended questionnaire prepared based on the themes generated by co-word analysis. To fulfill the fourth objective, the study will propose a critical dynamic model to combat the crisis in SMEs during crisis periods like pandemic COVID-19.

It is already evident that SMEs are always affected by a natural disaster such as an earthquake in Turkey impacted SMEs where estimated loss is approximately \$1.1-4.5 billion [21] flood in Thailand affected severely 557637 enterprises, of which 90% from SMEs [22]. Similarly, Malaysia also faced the devastating effect of flood in 2014 where 13000 SMEs were collapsed [22]. Likewise, in Sri Lanka, in 2016, a storm severely affected the country's western side, causing a massive loss to the SMEs [23]. Many developed countries have also gone through a severe crisis in managing the business during a natural disaster; for instance, the UK experienced huge loss during Foot and Mouth Disease (FMD) outbreak in 2001. The loss was estimated to be 5 billion pounds [24]. Being a developing country, SMEs in Bangladesh have also faced other crises during natural disasters like floods, earthquakes, and storms.

According to the study [25], global trade will decrease by 14% to 33% in pandemic 2020, whereas this Covid-19 paralyzed regular economic activity in every country. Similarly, a recent [26] report delineates that the pandemic Covid-19 will highly hit developing countries. The above-stated condition implies that it is justified to examine the effect of Covid-19 on SMEs as these businesses are susceptible to the economic situation and stay in a vulnerable position all the time because of their dependency on cash flow which is negatively affected the pandemic. Thus, this study will contribute from theoretical aspects and practical aspects too. From a theoretical perspective, this study presents the current situations of SMEs by providing ample literature evidence to understand the devastating effects of covid-19 on SMEs. Theoretically, the study will describe what types of impacts SMEs can experience during a crisis like Covid-19. From the practical aspect, this study will provide a critical dynamic model to combat the attacks of covid-19 in SMEs. SMEs owners and managers will be able to develop strategies and policies to survive in the crisis period. SMEs will understand and analyze the situation to adapt to the following new standard or set guidelines for the post-covid-19 crisis. Hence, this study may assist SMEs business managers, owners, and especially practitioners in identifying strategies required to respond to the impact of the ongoing pandemic on SMEs. Mainly, this study may help the SME predict risks associated with the natural disaster like covid-19 at the initial stage of the crisis and take the necessary steps to manage the situation.

The rest of the paper is structured as follows. Section 2 will present the methodology used for Systematic Literature Review (SLR), including the mechanism of data collection from the publication database, the screening process, and the data selection process. Section 3 and section 4 will try to delineate the descriptive and thematic analysis, respectively. Section 5 will present a case study on the condition of the SME sector of Bangladesh in this pandemic situation. The paper concludes with a summary of the contributions to knowledge, implications for managerial practices, limitations, and opportunities for future research.

2. Methodology of the Study

The study adopts a Systematic Literature Review (SLR) as it ensures the most efficient and high-quality approach for exploring and evaluating extensive literature [19]. A Systematic Literature Review (SLR) is used to assess and interpret the all-available research in a particular research area or phenomenon of interest where literature review can strengthen the foundation of study in a field of interest. SLR is a more authentic and verifiable source that incorporates a more comprehensive and unbiased search. According to [27] SLR “provides a precise mechanism and a stringent review protocol performed to minimize researchers’ bias and maintain the independence of the research process, yet allowing exploration and discovery that contributes to developing an understanding.” The fundamental difference between a traditional narrative review and a Systematic literature review exists is comprehensive and unbiased search [19]. Extensive literature survey ushers that articles based on Systematic literature review can be in different forms such as structured review articles with discussion on methods, theories discussed, and constructs that the previous researchers used in their studies [28,29]; Conceptual framework based papers with further research directions [30,31], theoretical review paper [32], bibliometric review [33]. Following the criteria of [19] and some frequently referenced review publications, the study uses a systematic literature review method that includes data collecting, data analysis, and theme exploration utilizing cluster analysis [28].

2.1. Data Collection for SLR

The data collection for this study was carried out following the protocol as management review protocol is widely used to explore, discover and develop any research area by providing flexibility to the researchers to modify through the course of study. At the same time, it also ensures that reviews will be less open to researcher’s bias [19]. The data collection protocol used in this study includes a rigorous search strategy with some specific criteria for inclusion and exclusion of the articles to fulfill a Systematic literature review objective. The search strategy incorporates appropriate steps such as identifying and selecting relevant keywords and search terms, selecting the database for articles, further modification of keywords, and applying search strategy [19,27].

2.2. Data Searching Strategy

This study used Scopus and Web of Science databases considering the research context and to get relevant peer-reviewed articles on “SME and COVID-19”. The search was limited to these databases as they include a wide range of peer-reviewed journals in Business, Economics, and Management [34]. We used both Scopus and Web of Science as these are reliable and widely accepted database and includes a wide range of peer-reviewed journals in Business, Economics, and Management [34, 35]. Before searching the database, we selected search strings such as “SME OR MSME AND COVID-19” While searching the data for this study, the researchers have set some criteria to choose more relevant papers in this domain. The researchers have employed some selection criteria. The search was limited to peer-reviewed journals in the business economics and management area, and the paper contextualized in the SME and COVID- 19 domain was selected. Title, abstract, and keywords of all primarily selected papers were checked rigorously. Initially, search in different debases presents different publications such as Scopus 270 and Web of science 152 articles. Study selection or article selection from a selected database identifies and chooses primary studies directly connected with research questions and objectives. The study adopted a systematic protocol that includes deciding on selection criteria, extraction methods, sorting duplicate articles among the databases, and selection of study based on title, abstract, and keywords to reduce the bias and human error [19,27].

2.3. Merging Scopus and Web of Science data and removing duplicates

We adopted the PRISMA method for the inclusion and exclusion of articles for this study. Using search strings, articles related to “SME OR MSME AND COVID-19” were extracted from Scopus and Web of Science in bib text format. Extracted data sets were merged using R studio. After removing the data from Scopus and Web of Science, the data were combined to perform bibliometric analysis. Initially, we converted both files into the bibliographic framework. Then, the data set for the science web was merged into the Scopus data set, and duplicates were removed through R programming. Then, two reviewers sincerely checked the title, keywords, and abstracts of all selected papers to ensure the relevance of the documents with the study’s objectives. In selection through the title, the reviewers have focused on those papers that addressed the SME and Covid-19 in the title of the documents. Next, keywords were reviewed to ensure unification and consistency (i.e., singular/plural). In the full-text selection, all of the articles were read carefully, focusing on SME and Covid-19. The implementation of data collection protocol, selection procedures, and assessment criteria are depicted in Fig. 1.

2.4. Data Analysis

The data analysis is SLR will be conducted through descriptive analysis and thematic analysis after retrieving the data through different appraisal mechanisms [27]. In the first part of the data analysis, the descriptive analysis will be presented. According to [19], descriptive research is used in SLR to depict the profile of the selected articles using some categories and classification schemes. The classification scheme will be done based on the published articles, and it will categories the total articles into different segments like distribution of published articles across other countries, journals, contexts, and periods; reports various policies and strategies for crisis period proposed by previous studies; presents a set of theoretical perspectives through which those studies have been explored. The second part of the analysis will try to usher some relevant themes. The study will use Co-word analysis similar to the content analysis [36] to analyze the music using the final data set. Co-word analysis has been applied as text mining to the titles, abstracts, and keywords of articles [37] Using the R programming, the data set will be analyzed to find the relevant themes.

3. Analysis Phase

3.1. Descriptive Analysis

Table 1 presents a summary of the data set used for this study. The table indicates that 188 articles from 127 journals have been considered for the examination within 2020-2021. Among the 188 articles, 27 are single-authored, and the rest are the output of collaborative work, and the total collective index is 3.32 within this period.

The final 188 articles were published in renowned journals in different disciplines, Like strategic management, Supply chain management, Human resource management, and Operation management. Fig. 2 sheds light on the journal-wise distribution of an article. The articles published in these journals and other articles selected for the analysis were directly related to SME management, SME operation, Supply chain Management, Sustainability in SMEs, Strategies, and management issues. It is exciting to find the most productive countries on this topic. Fig. 3 lists the most productive countries from where most of the researcher’s papers have been published. From the graph, it is found that five countries named Australia, China, Greece, Poland, the United Kingdom, United States have published more papers on SME addressing Covid-19. Remarkably, China has secured the highest citation among all the countries. Fig. 3 indicates the most contributing author in this domain.

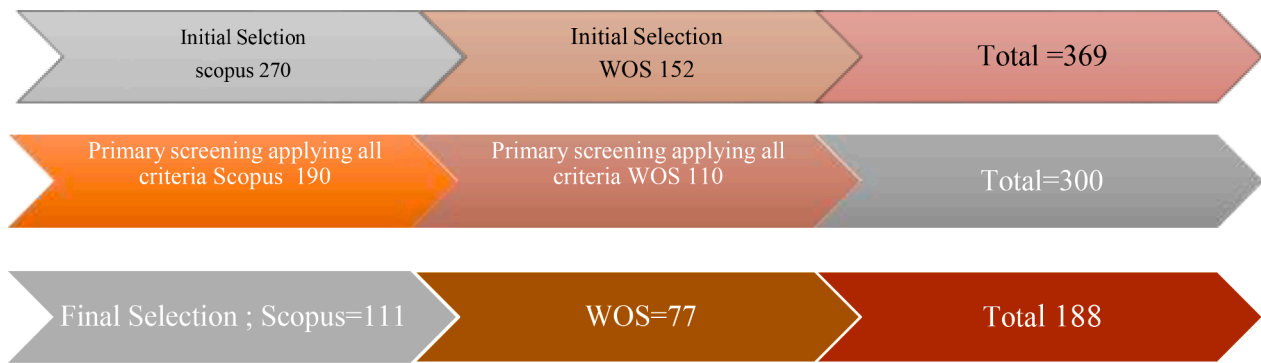


Fig. 1. The data collection and selection protocol Source: Developed by the Authors

Table :1
Summary of the Dataset

Description	Results
MAIN INFORMATION ABOUT DATA	
Timespan	2020:2021
Sources (Journals)	127
Documents	188
Average years from publication	0.485
Average citations per documents	5.723
Average citations per year per doc	3.528
References	9423
Keywords Plus (ID)	477
Author's Keywords (DE)	670
AUTHORS	
Authors	558
Author Appearances	593
Authors of single-authored documents	24
Authors of multi-authored documents	534
AUTHORS COLLABORATION	
Single-authored documents	27
Documents per Author	0.337
Authors per Document	2.97
Co-Authors per Documents	3.15
Collaboration Index	3.32

Source: Developed by the Authors using R Studio

3.2. Exploration of Themes through Cluster Analysis

The study is intended to use the clustering method through the co-word analysis to identify the theme in the field of SME research that

addresses the Covid-19 attack. A co-word comment is a kind of content analysis [38,39]. Co-word analysis reduces a space of descriptors (or keywords) to a set of network graphs that effectively illustrate the strongest associations between descriptors [40]. To detect the theme, the study will adopt the guidelines of [41]. The exploration of themes through the co-word analysis will go through some consecutive steps such as (1) collection of raw data, (2) selection of the type of item to analyze, (3) extraction of relevant information from the raw data, (4) calculation of similarities between items based on the extracted information and (5) use of a clustering algorithm to detect the themes. The methodological part of the study discussed on data collection and data section for the final analysis in detail.

The authors' keywords and indexed keywords from the sample research articles were analyzed to usher the themes addressed in the research paper. The assumption for Co-word analysis in this study is adopted from the study of [42] who mentioned that "It [co-word analysis] relies upon the argument that (i) All of the authors of scientific writing choose the technical terms sincerely; (ii) when different terms are used in the same articles it is therefore because the author is either recognizing or postulating some nontrivial relationship between their referents; and (iii) if enough different authors appear to recognize the same relationship, then that relationship may be assumed to have some significance within the area of science concerned. (p. 473). Based on the co-occurrence of pairs of words, the co-word analysis seeks to extract science themes and detect the linkages among these themes directly from the subject content of texts [43].

The keywords of the selected articles were analyzed to cluster them



Fig.:2. Journal Wise Distribution of the Article

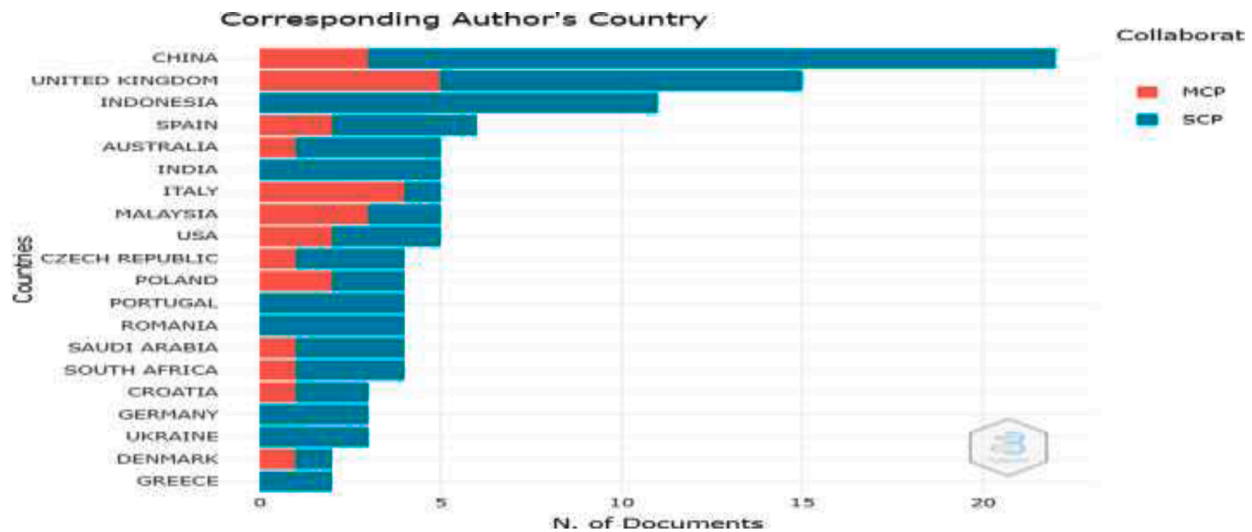


Fig.:3. Country Wise Distribution of the Article

and to locate a subgroup of keywords connected which deals with the center of interest or research problem. The clustering graph is depicted in Fig. 4. For further investigation, we analyze three fields plot including authors' keywords, title, and abstracts of the sample articles through R programming (see Fig. 5). A closer look at each graph indicates that specific words that direct detailed theme exploration is present in both charts. Following the guideline of [44], the theme will be identified using the co-occurrence of keywords, 2) the thematic network will be visualized, 3) articles will be analyzed through the cluster and its corresponding items, and finally, it will be explained. Figs. 6–10.

3.2.1. Theme's exploration using R Programming

In this study, we use R software to identify the theme from the selected research articles. The principal research themes were detected after computing the co-occurrence of the keywords. Although there are

different ways of seeing the music here, we used the association index by measuring association strength. The association index is calculated after calculating the co-occurrence matrix. There are various approaches in the literature to performing this calculation. One of the most common approaches is called association strength. A clustering algorithm is applied from the indexes that result from the analysis to identify subgroups of strongly associated keywords and topics on which researchers focus. Using R programming, it is possible to distinguish different thematic groups, which can then be characterized

3.3. Synthesis of Theme

3.3.1. Theme 1: Cash flow shortages

Due to its significant role in providing job opportunities, developing new markets, and contributing to the national economy, SMEs are

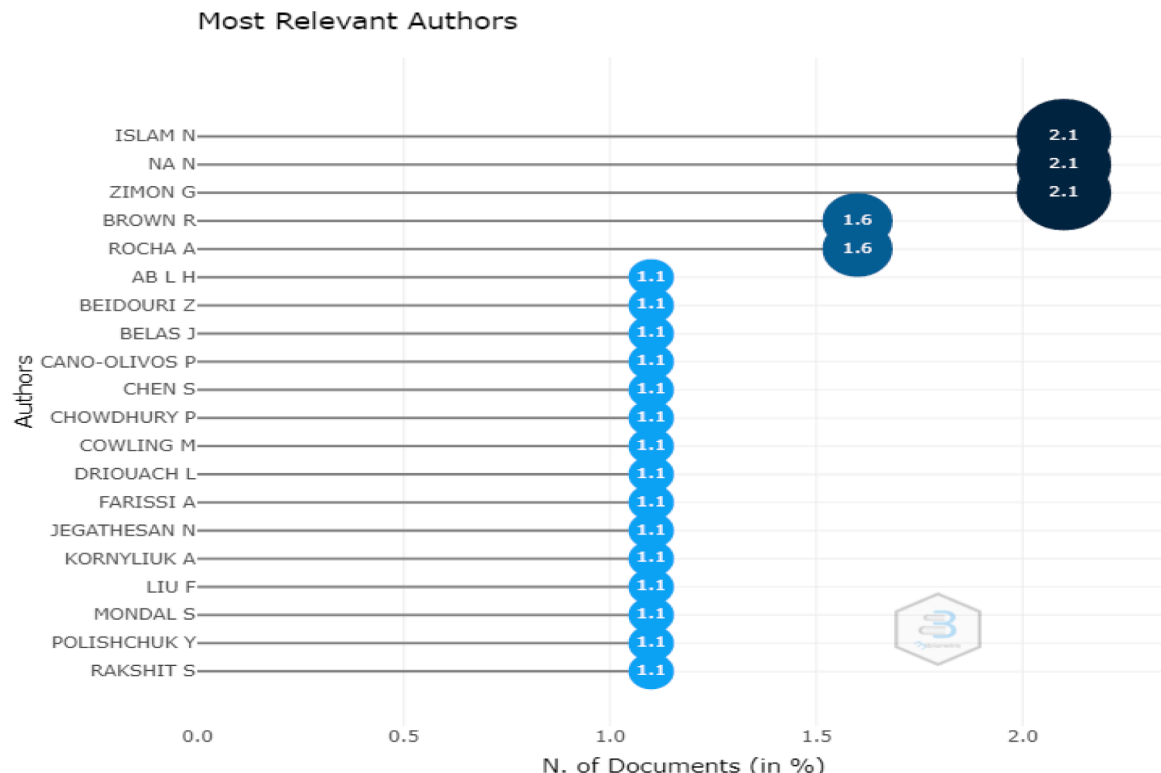


Fig.:4. Most contributing Author

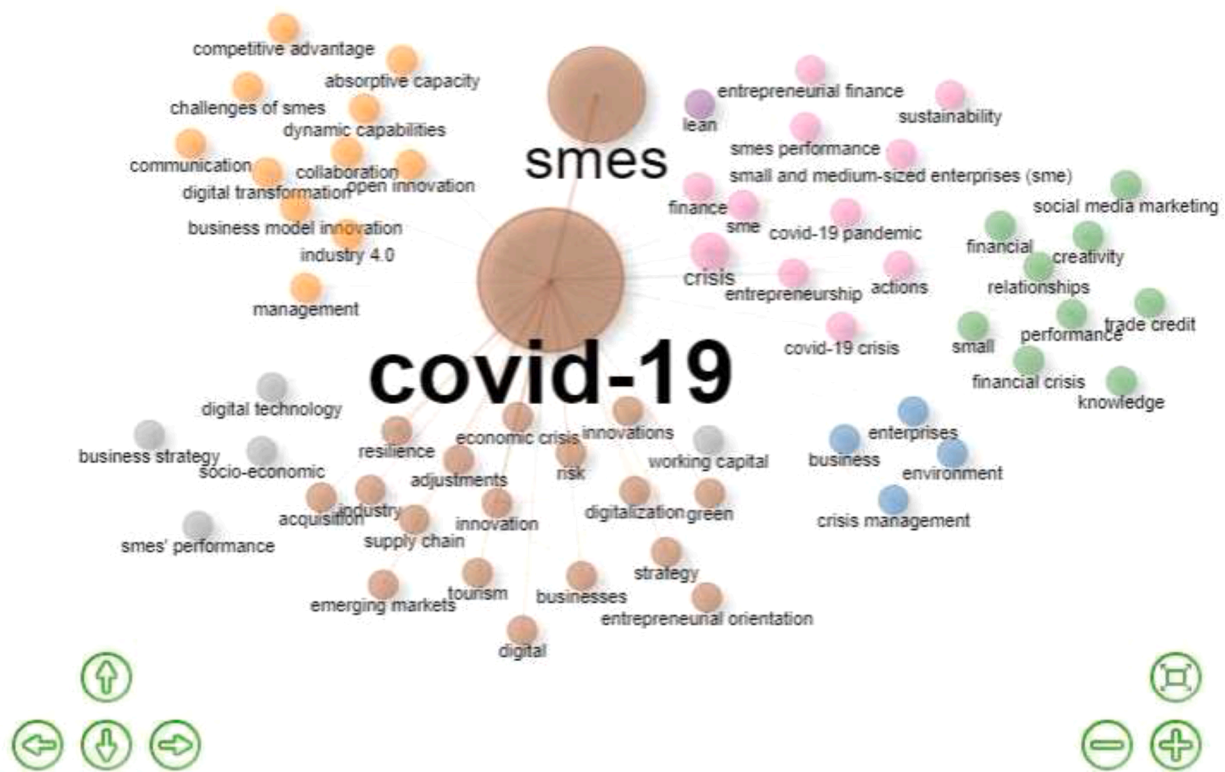


Fig. 5. Thematic Network explored through Cluster Analysis using R

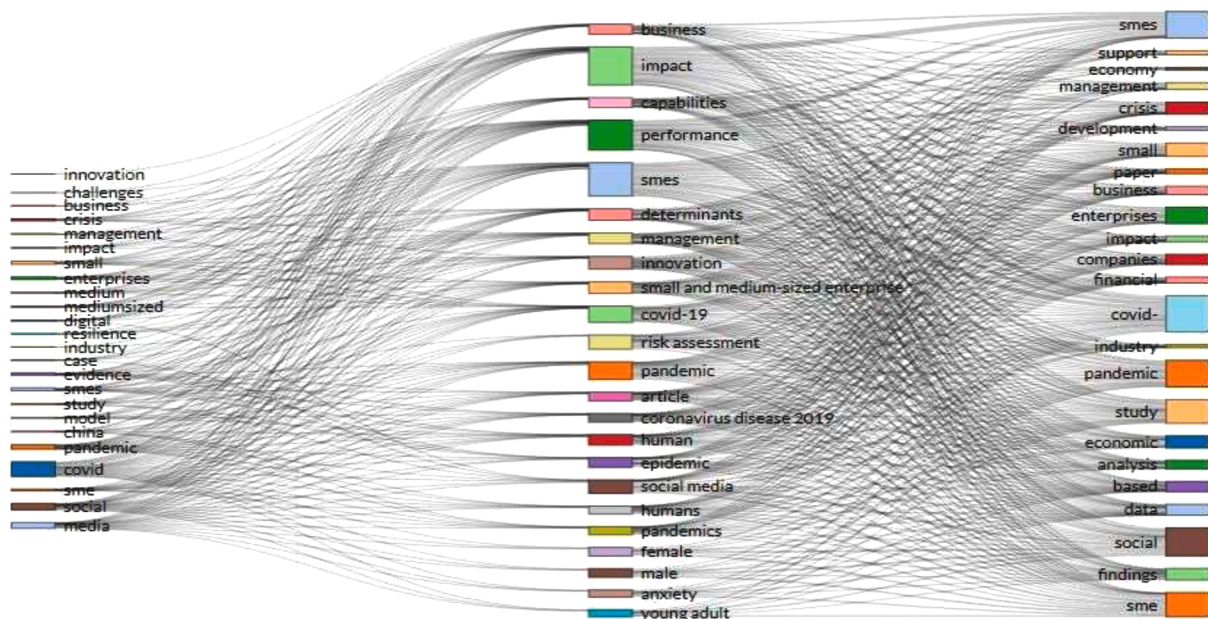


Fig. 6. Three field plot Using R (fist column for keywords, 2nd column for the title, and a third column for abstract

regarded as one of the most important economic drivers [6,45]. Despite their significant role, SMEs are the most vulnerable in every public crisis [8,9,45]. The paucity of working capital is a common concern for most SME owners, which compels them to exit from business due to prolonged lockdown periods and lack of customer demand [8,46]. Excessive reliance on the internally generated fund, greater reliance on government and local agencies, low level of preparedness are a few causes attributed to such a jeopardized state [8]. Shut down order and movement control restrictions due to sudden onslaught of pandemic and sales disruptions

trigger immediate liquidity crisis among SME owners [7]. Subsequently, many of them struggle to pay recurrent expenditure such as rent, salaries, the interest of loans, are unable to service their clientele and

They were compliant with suppliers; commitment [8,47]. A study conducted by Cowling et al. [9] provides a stable long-term aspect on how businesses manage cash flow and take a conservative view on holding cash reserves to hedge against the potential risk that future income streams are lower than expected for an unforeseen situation. The study [9] also found that one in every 12 SME businesses is at high risk

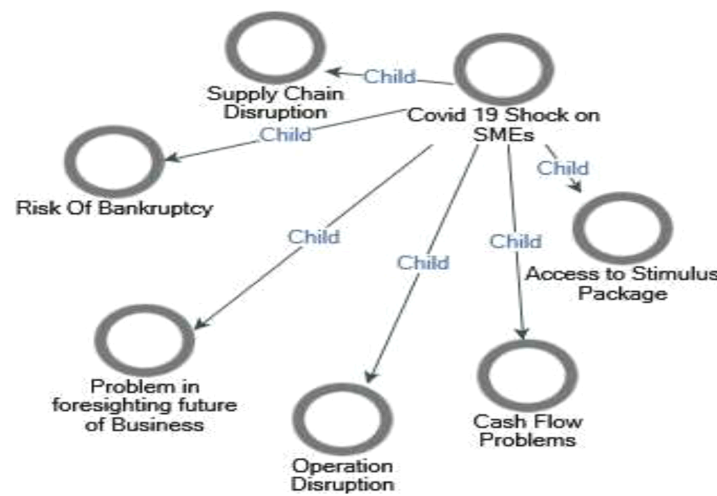


Fig. 7. Graaph from Nvivo

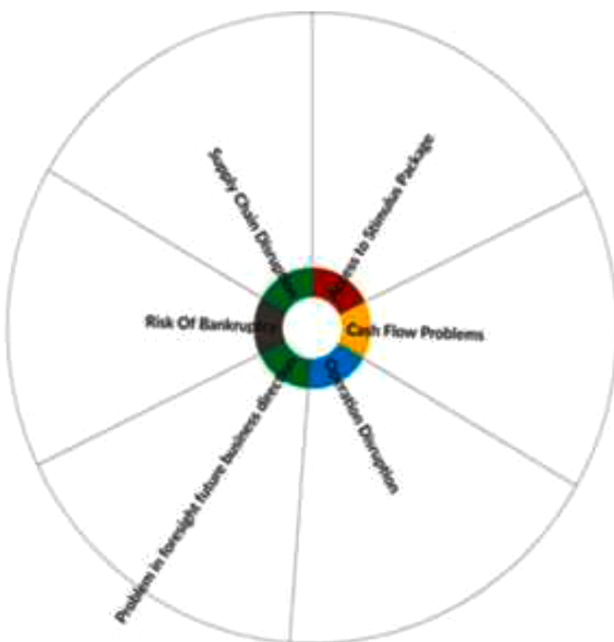


Fig. 8. Mind Mapping Graph



Fig. 9. Graph from Keywords

as they hold no internal cash, mainly surplus cash obtained from revenue. Study [48] supports the findings who recommend credit cards as a form of improvised financial ‘bootstrapping’ to smooth out short-term liquidity problems.

3.3.2. Theme 2: Digital Transformation

Covid19 unfolded new challenges for SME business. Digital transformation has become a must for every SME business to survive [7,49]. Due to prolonged periods of lockdown, movement control protocol, social distancing, and physical distancing, people of almost every part of the world have changed their shopping and consumption patterns and prefer online services to fulfill their daily needs [7–9,50]. Therefore, to cope with the newly emerged crisis, SMEs need to change their business mindset. In contrast to companies that still depend on physical outlets or traditional, SME businesses that embrace digital platforms for offering products and services are booming and generating bright returns [46]. Ato Sarsah et al. [51] opine that digital transformation is deemed to be the highest level of digital skill achieved when integrated innovation and creativity. In addition, the internet, blockchain, cybersecurity,



Fig. 10. Key Dynamic Model

simulation are factors in developing a data-based management model [52]. In a situation like Covid 19, adoption of technology, digital marketing, presence in digital platforms, and innovations in digital skills can only be the means of survival of SME business for the long term. Digital technologies also play pivotal roles in enhancing internal efficacy and productivity and offer new opportunities for firms [53]. Moreover, cloud-based technology allows the firms to navigate the crisis, provide better services to the market [50] and increase the responsiveness of

SMEs to harness them. Covid 19 should not impede intensifying sales, profitability, and survival while SME actors have their greatest weapon, digital marketing, to boost their promotion and visibility [7,49]. Although many SMEs fail to keep pace with the growing changes due to scarcity of liquidity following the crisis, they also need to retrain their human resources [46]. Few researchers recommend 'organizational ambidexterity' measures organizations' capability to adopt technology to win crises like the Covid19 battle [49,54].

3.3.3. Theme 3 Supply Chain Disruption

The escalation of the Covid19 outbreak triggers profound ramifications in supply and demand manufacturing logistics, although the full impact is yet to be revealed. [50,51,55]. The study [66] describe this catastrophe as one of the most severe since the last decade as it has disrupted and dismantled supply chains globally. A global supply chain has emerged for many manufacturing industries, with businesses intimately linked to one another. China, the United States, and Germany have become regional industrial hubs for North Asia, North America, and West Europe. Meanwhile, South Korea, Japan, and Singapore have been essential members of the global value chain due to their industry or geographic advantages [50]. Altogether, these countries have contributed to more than 40% of the world's export of raw materials. Covid 19 is a profound disruption in the smooth operation of all the countries, and few renowned manufacturing enterprises are forced to shut down. Restrictions were imposed on the movement of goods carriers from February to April 2020 [55,56]. Due to imposed export-import restrictions, stricter commodity inspection, air-flight control, international shipping also gets disrupted, and delays in import time double. Price surge at airfreight, supply shortage due to frequent cancellation of air freight, increased lead time, and disrupted distribution pose threats for international logistics [50]. Furthermore, the demand for ocean shipping dropped dramatically in the first phase of Covid 19 since many of the contracts got canceled and no new agreements were signed. Moreover, ship owners might not be willing to dock at ports due to staff's strict examinations and off-board restrictions. Hence, a large proportion of market demand for fast-moving consumer goods and electronic products is left unsatisfied [57,58]. According to a recent press release, World Trade Organization estimates that the world's merchandise trading will likely drop between 13% to 32% due to the Covid shock [59]. The import delay has started returning to its average length from May 2020, and quarantine policy and restrictions on movement have become easy [55]. Still, recovery from this unprecedented exogenous shock may not be easy [12].

3.3.4. Theme 4: Policy Responses to crisis management

Financial hurdles are the biggest challenge in the survival of SME business during the pandemic 2020 [6,9,46]. Despite knowing the fact that being weaker and vulnerable members, they might be forced to go out of the business, many of the SMEs was compelled to operate below the capacity, which was a tremendous financial strain on their business viability [8,46,60,61]. Due to the sudden onslaught of this highly contagious disease and resulting economic shock SME, seems to be the most fragile and vulnerable [46]. Still, the SME industry accounts for a lion proportion of the world's total employment opportunities [62]. The SME sector has been inflicting an unprecedented shock due to the pandemic in the form of financial illiquidity, lack of access to trade credit, high risk of being bankrupt, layoff employees, and switching business to survive [63]. Unlike previous crises, policymakers of most of the developed and developing countries pay immediate attention to addressing the challenges of SME towards survival during the pandemic and support them to promote resilience and growth for the long term through a variety of stimuli packages that entailed various kinds of financial support to prevent employment losses and prevent liquidity crunches. A recent survey conducted by the [64] revealed that European Governments acted quickly to safeguard the SME warriors by allowing sick leave, working hour reduction, and specific wage support schemes for partial

unemployment. Many countries also facilitate SMEs through a delay of payment or postpone of costs and creating a new finance line to ensure a smooth flow of liquidity. In addition, loan guarantees to incentivize commercial banks to expand lending to SMEs, direct financial supports, direct lending, grants, and subsidies are included in the policy mix to support the survival of SMEs during the first stage of the crisis [46]. Since confinement order has been relaxed, the policy mix should focus on promoting the resilience of SMEs and supporting further growth. Furthermore, fostering innovation, internationalization and networking should also be taken into consideration. Indeed, more proactive targeted strategies coordinating industrial efforts for coupling domestic capabilities are necessary for this stage, considering the opportunities and challenges facing different sectors and the particularities of different types of SMEs within those sectors particular research questions' [64].

4. A Case on An Emerging Economy

Covid-19 has brought an unprecedented and dramatic change in the business and socio-economic condition of the world since first reported in China [65] Although SMEs are the backbone of an economy but in developing countries like Bangladesh SMEs business becomes stuck and going through a tremendous crisis in this devastating pandemic situation. This case aims to synthesize the problems of SME owners from the different industries of Bangladesh during the COVID-19 emergency. To combat the destructive effects of the coronavirus, Bangladesh has put an enormous chunk of its economy on hold. Estimates of the negative economic impact of the crisis are at an early stage for many countries. Still, they are substantial, even devastating, for some emerging economies like Bangladesh [66]. The world economy was shut down almost overnight due to the Covid-19 pandemic. The pandemic has confined the SME sectors to an unprecedented challenge. The government in Bangladesh has taken different strategies like lockdown, movement control order, social distancing, stay-at-home order, restriction on mobility from one region to other regions to control and to flatten the curve of Covid-19 severely affected all types of business, including small and medium enterprises [67] SMEs are going through a negative experience for unavoidable reasons like high-interest payment, supply chain disruption worker's wages, and high rental costs during the pandemic [68]. Unlike SMEs of other countries, SMEs in Bangladesh faced tremendous trouble operating the business smoothly because of pandemic situations. This case study is intended (1) to explore the crisis of SME Business in Bangladesh during Covid-19 and (2) to know what strategies were taken by SME owners to face the unprecedented crisis and to improve resilience in this sector.

4.1. Context of the Case

Being a developing country, Bangladesh is forwarding toward achieving its Millennium Development Goal (MDG) to ensure sustainable socio-economic growth, which is possible only through stable growth of GDP, ample employment opportunities, environment for entrepreneurship development. SME can play a vital role in helping the country to achieve the MDG goals of Bangladesh. The contribution of SMEs in Bangladesh extends over the past decade at the aggregated output of the gross domestic products nnn. According to Bangladesh Bank, 2017, SMEs contribute to 25% of GDP, generate 15% of total employment, contribute 7.8 % in export, and 31% in entrepreneurship development. According to the Bangladesh Bureau of Statistics (2017), about 90% of business units belong to small enterprises with a revised definition of SME, about 80% of current employees working in small businesses, 75% of gross domestic product composite with SME output, and 65% of the export-oriented product come from SME sector of Bangladesh. However, due to the pandemic COVID-19, SMEs of Bangladesh are facing tremendous pressure and challenges in operating the business. Considering the urgency of the SME sector, this case study will thoroughly investigate the crisis and challenges faced by the SME so

that managers can formulate their strategies for resilience in the crisis period.

4.2. Methods of data collection and Unit of analysis

We have conducted 24 interviews among the SME owners who own businesses in different industries like Hotel and Tourism, Catering services, Dairy and agro-business, Restaurant, Import and export business, Makeover industries. Following the purposive sampling method, we had invited 42 SME owners to participate in the interview. Out of which 24 respondents agreed to participate in the interview process. Table 2 summarizes the respondent's profile and their related business in a particular industry along with business profiles like Paid-up capital, annual profit, and employee size. Because interviews were the primary data collecting method, it was critical to know the data analysis used in the early phases.

Moreover, our study analyses systematically and rigorously by synthesizing, classifying, and categorizing the data into different themes [69]. The interviews were conducted in the Bangla language, which two authors translated and were cross-checked to increase accuracy. We adopted a qualitative approach of thematic analysis as it is considered the method used for 'identifying, analyzing, and reporting patterns (themes) within the data' [69]. We chose this method because a 'rigorous thematic approach can produce an insightful analysis that answers

4.3. Data Analysis

The collected data were analyzed through interviews with SME owners following the suggested three-step procedures [70]. For the theme exploration, we follow the guidelines of [64]. First, familiarisation with data was internalized through transcription and translation of the interviews. All interviews were directly translated into English, verbatim, by the researcher after listening to the audio records several

Table:2

Questionnaire Form Used for interview

Owner and business background	Gender Academic Qualification Business experience Type of business and activities Business location Paid-up capital Average turnover (monthly or yearly) Number of staffs No. of subsidiaries owned.
Impacts and business strategies	Could you please explain how Covid 19 outbreak affected the industry and business? What are the overall impacts of covid 19 and MCO on your existing and future business directions? How far the MCO affects your company's business operation? What is the impact of MCO on your company's current financial position? Do the government stimulus packages help your company? (if any) What has been your company's supply chain position since the start of the Covid-19 outbreak in china and during the lockdown? Could you describe any financial strategies, resources, or tactics that help your company to survive during and perhaps, after the MCO? Could you please further explain other non-financial strategies, resources, or tactics (such as business networking, products differentiation, marketing, etc.) that help your company survive during and perhaps after the Movement Control Order?

Reducing Orders from the customer, Problems with inventory management, and consumer purchase pattern changes. Fourth, these categories were aggregated into 10, then into 7, and were further reduced into the five most referred to types. A study [71] points out that 'Most inductive studies report a model with between 3 and 8 main categories in the

	Gender	Business Experience	Type of Business	Paid-up Capital (In Taka)	Annual turnover (in Taka)	Staffs
R -1	Male	Ten years	Bakery	20 million	Depend on sale	140
R -2	Male	Five years	Restaurant	50,00,000	Depend on sale	110
R -3	Male	Three years	Restaurant	40,00,000	Depend on sale	111
R -4	Male	Two years	Motor Parts	500000	1500000	16
R -5	Female	Three years	Makeover	100000	300000	18
R -6	Male	Ten years	Hardware	1000000	2000000	20
R -7	Female	Two years	Bakery	50000	150000	70
R -8	Male	Ten years	Super Shop	156,89,000	134,80,000	58
R -9	Male	Eight years	Marine Business	89,62,000	72,97,000	37
R -10	Male	Five years	Restaurant	35,90,000	24,60,000	22
R -11	Female	Three years	Boutique Shop	9,18,000	3,67,000	19
R -12	Male	Two years	Restaurant	27,00,000	Confidential	18
R -13	Male	One year	Restaurant	16,00,000	Confidential	29
R -14	Male	2.5 years	Restaurant		50,00,000	115
R -15	Male	Six years	Hotel service		75,00,00,000	265
R -16	Male	Four years	Stock lot		Confidential	45
R -17	Male	Ten years	Dairy		10,00,000	127
R -18	Male	Three years	Import	8,00,000	70, 00,000	45
R -19	Male	Three years	Working for Halda & Agro farm	28,00,000	20,00,000	55
R -20	Male	Seven years	Fishing Business	Almost 38,00,00042,00,000	Monthly 15, 00,000-20,00,000	15-160)

times. Second, the transcriptions were imported into the NVivo and coded on it. On NVivo, we have reread the transcriptions carefully to generate code based on the content of the interviews. The third stage was theme development. At this stage, coded nodes on NVIVO were read and reread to identify significant broader patterns of meaning (potential themes). The preliminary analysis came up with 12 main categories with their subcategories: digital transformation, financial crisis, liquidity shortages, supply chain disruptions, consumer demand reduction,

findings.'

4.4. Findings and discussions based on Case Study

This section presents the findings of the case study. The results are shown in two sub-sections: the impacts of the COVID-19 pandemic and potential strategies to reduce or mitigate those impacts.

4.5. Impacts of Covid-19 on Bangladeshi SME

After coding the transcriptions into NVIVO, we run a mind map graph to generate a graph of COVID-19 shocks in SMEs during the pandemic in Bangladesh. The mind map explains that SMEs of this country have gone through a severe crisis like Supply chain disruption, Risk of Bankruptcy, Problems in accessing stimulus Packages, Cash flow problems, operation disruption, and problems in foresight future business directions. The following figures one and Fig. 2 project the potential difficulties of SMEs. The interview ushers some hurdles faced by SME owners of Bangladesh.

Cash flow shortage or lack of working capital was the biggest shock of Covid-19 on SME as emerged from the discussion with the owners of SME enterprises. Interviews ushered that sales reduction and demand decline were the main reasons for the cash crisis. For example, R-1 explained this way *"We are financially collapsed at this moment, but we are running our business. We do not have money to pay rent for this bakery because we own this property. Because of some delivery issues, we are losing our customers, so we had to lay off some employees". In a similar vein, R-5 and R-9 opined respectively that "I had zero clients for around 3 to 4 months, so it was very tough to pay our staff."* *"Due to lockdown, I had to keep my shop closed. Without having an income, I had to pay compulsory payments to pay such as staff's salary, rental, and business loans".* The shortages of cash flow have led the SME into many other negative impacts on operating the business. Most of the participants opined that they were struggling at the pandemic to maintain the operating expenses like salary of the staff, rent of the outlet and production house, utility charges and paying installment to the loans, and so many operational costs. An owner mentioned that *"We are in very shortage of cash since the lockdown we have used our emergency fund, but after a few months we are in negative cash flow. Currently we are struggling with our existence."*

Supply Chain Disruption was another devastating effect of Covid-19 on SMEs. SMEs are primarily dependent on the raw materials imported or collected from local sources. Both of the seeds were disrupted because of import restrictions and MCO on the country. Analysis of interviews reveals that the Supply chain was disrupted in two phases in SME. Initially, SMEs could not foresight the upcoming conditions at the beginning of the pandemic. The SME owners thought there would be a crisis of raw materials, and they ordered to the supplier, but those suppliers could not deliver the raw materials to the Bangladeshi SME owners on time due to the spread of covid-19. Conversely, the owners who ordered and received the raw materials to stock inventories for future crises were also disadvantaged due to sudden MCO in Bangladesh. R-8 opined that *"the Supply Chain condition is broken due to Corona as most of the necessary ingredients are imported from China or cheaper in China. So It was tough for us to have those ingredients as China market was closed, but after opening these ingredients rate is still so high"*. Few of the participants were involved in exporting products abroad, which was also highly affected due to lockdown and restrictions. From importing countries. *"My business had a few orders from Europe worth 10 million takas. Still, right now, those countries are not interested in continuing the business with us because of MCO and restrictions given by the government,"* as said by R-8.

Although the government of Bangladesh has declared stimulus packages and instructed the bank to reduce loan interest rates, unfortunately, those stimulus packages were for some specific sectors like the garments industry and so on. The government also applied some conditions to be eligible to get financial help. Unfortunately, the interviewees for our study have not received any stimulus packages even though some of them were eligible to enjoy the packages. R-19 said that *"I have applied for the box, but I was unable to get the facility because the duration of my business is only three years, and the people who are getting this facility are the people who have been doing this business for a long time. But I think we, the people who have started their business newly, are the ones to get the facility rather than the people who are in the field for a long time as they have or should have enough savings or portion*

From their profit to cope up with the situation. The lenders like banks

and other financial companies have not followed the government's instructions to reduce the interest rate as said R-9. *"Although the government promised to reduce the interest rates by the banks who provide loans for the SME businesses, it was limited to the paper. Honestly, we didn't get any facility like that. We had to pay the interests as usual."*

Moreover, interviews reveal that MSMEs owners have gone through tremendous pressure during a pandemic for lack of working capital, sales decline, supply-demand mismatch, operation disruptions, and noncooperative behavior from distributors. Some interviewees opined that they are at risk of bankruptcy as they depend entirely on sales and client service, which is too low in this pandemic. As a result, after a few months, they will be unable to pay the loan installment. R – describes the situation in this way *"We are hoping to sustain for at least 6 to 7 months with our existing savings and earlier profits. But I actually can't predict what is going to happen in future."* In a similar vein, R-9 opined that *"We had to take loans and pay the interests and as we are facing huge loss and we aren't sure how long we can sustain our business."* In this situation, the owners are uncertain about the plan to combat the crisis of this deadly pandemic. R-4 said that *"At this moment we really cannot decide about future and I can't even transform my business digitally as it is service-based"* similarly, R-5 describes that *"In this pandemic, it is tough to plan about the future. We have closed our business for almost four months so we cannot decide what to do in future."*

5. Strategies to Combat the Crisis in SME

The extensive literature survey and case on SME in the previous part ushered in how MCO and other control measures to stop the spread of the virus have impacted SME. Solid preparedness and preplan have been considered strategic management tools to combat the uncertainties [73]. The qualitative part of this rapid response research suggests that SMEs can overcome the crisis of this pandemic following the model illustrated in Fig. 3. The proposed model is based on the extensive and author's conceptualization.

5.1. Understanding the Crisis

SMEs, in this pandemic, are passing through different types of problems like a decrease in demand, supply chain disruptions, cancellation of export orders, raw material shortage, and transportation disruptions [72,73] which is consistent with the findings of our case on Bangladeshi SME. To manage the crisis, entrepreneurs initially think of the extent of problems considering the nature of their business. Business recovery can be possible in two ways, firstly, by identifying the physical impacts on business operations which is applicable in the short term, secondly, in a long time, by analyzing the age and financial condition of the business, economic sectors, direct and indirect disaster impact, and operations disruptions and so on [74]. In Consistent with the opinion of [74], the discussion with the entrepreneurs has explored that the owners faced a different level of problems based on their business context and nature. In the first phase, owners of SMEs should try to understand the nature and extent of the issues from all aspects of their business. The formation of the crisis management team can help the entrepreneurs to understand the crisis and crisis management strategies.

5.2. Crafting the Opportunities for combating the Crisis

"Natural disasters pose unpredictable and significant threats to the incumbency and continuity of enterprises, thus directly affecting their ability to offer products and services to customers" [75]. Entrepreneurs embrace different roles to spur change and create opportunities with available resources [75]. To some extent, a crisis can nurture the development of new opportunities [76] and stimulate crafting the latest opportunities [77]. In the short term, there will be opportunities to learn new things like the digitalization of business. Conversely, In the long -time, there will be opportunities arising from the COVID-19 crisis, such

as developing hygiene or digital work solutions [77]. Similarly, although the long-term impact is not known to date, “It seems inevitable that broader opportunities will arise” [77]. To craft the opportunities with current resources in the crisis moment, SME owners can focus on different issues like relying on relational capabilities, building financial capacity, assistance recipients’ mismatch [77], collaborating with other stakeholders like an employee, suppliers, distributors, Competitiveness of product-service solutions, Reorganization of the workplace and Logistics pipeline [10]. An organization’s ability (SME) can help continue the business sustainably even in a crisis time like a pandemic.

5.3. Resilience Strategy

To maintain their businesses’ continuity, sustainability, and future success, entrepreneurs of business-like SMEs must have resilience capabilities and plans [75]. From an SME perspective, to sustain in the crisis of Covid-19, SMEs should embrace “organizational resilience view” which means that “firm’s ability to absorb effectively, develop situation-specific responses to, and ultimately engage in transformative activities to capitalize on disruptive surprises that potentially threaten organization survival”. “Resilience is considered a key feature in the responses individuals, systems, or organizations exhibit to adverse and unexpected events” [75]. Resilient does not mean only adaptive capacity. Instead, it means to learn to respond to a new environment to combat the disruption [75]. A study conceptualized resilience as turning challenges into opportunities and improving performance. In their view, organizational resilience is a process rather than a static state and goes beyond mere re-establishment to the sensing and seizing of new opportunities [77,78,79]. SMEs can adopt different types of resilient strategies to manage the crisis such as reconfiguration, Leveraging, sensing and interpreting, learning and knowledge integration, Social capital [75]. , digitalization and digital servitization, adapt to the next normal [10] Encourage positive employee relationships to enhance resilience during a crisis [73].

5.4. Entrepreneurial Innovation

Product Design and Investment Preference, Digital and Intelligent Transformation COVID-19, Market Reshuffle [80] Entrepreneurial marketing behavior like Opportunity seeking, Resource organizing, Accepting risk, Creating new customer value [74]. As crises impose several challenges to the business, the entrepreneurs’ innovative and adaptive capacity can help manage the situation smoothly.

6. Conclusion & Managerial Implication

The ferocity of Covid 19 has thrown a chaotic impression on World’s SME industry. It will take years to get back to its legacy, thus necessitating the present study’s urgency and relevance, which attempted to capture the corpus of research integrating “Covid 19 & SMEs” through a systematic literature review. A series of themes from the SLR were investigated, and a case was built in the context of a developing country, in which SME owners were interviewed about how they dealt with Covid 19 problems. The study also sheds light on resilience measures that can combat such a crisis in the future. Four themes have been extracted using Co-word Analysis: Cash flow shortages, Digital Transformation, Supply Chain Disruption, and Policy responses to Covid Crisis Management. Previous studies suggest that Cash Flow shortages and Supply Chain Disruptions are the biggest crisis for most SME owners. Digital transformation, mainly, cloud-based technology has gained momentum during the pandemic. Those who embrace digital platforms for sales, promotion through innovation successfully navigate the crisis, and others who fail to keep abreast with a new average lag behind. However, world leaders pay immediate attention to face these unforeseen challenges with SME owners through various stimuli packages such as wage support schemes, the new line of finances, grants & subsidies, loan

guarantees, etc., to prevent employment losses and liquidity crunches. Furthermore, an open-ended questionnaire has been constructed to accumulate the experiences of SME owners during the prolonged pandemic. Most of the respondents spoke in a similar vein, agreeing that the absence of liquidity put them into a devastating condition at this unprecedented shock. Like many other developed and developing countries of the world, the Government of Bangladesh offered a broad spectrum of stimulus packages such as direct lending, grants & subsidies instruction to Commercial banks to promote SMEs through a loan at a reduced interest rate. Still, the majority of offered stimuli packages were delivered to focus on Garments Industry. Moreover, several conditions were levied for being eligible for such packages; therefore, start-up enterprises operating in Bangladesh, who desperately require the benefits, fail to avail the options. Respondents also agreed on a point that declined sales, mismatch of supply-demand, operation disruptions, and non-cooperative behavior of distributors triggered immediate liquidity crisis and made them reluctant to apply for loans as they dip into the fear of being bankrupt. Enterprises that shifted their business to daily utensils and life-saving products gained an enormously positive response. Moreover, all the respondents expressed that, due to import restrictions, the supply chain has been entirely dismantled during the first two phases of lockdown, which triggered profound ramifications in manufacturing logistics. However, the import delay has started returning to its average length since import restrictions have been uplifted and movement control restrictions have become easy. On the contrary, the pandemic also witnessed the utmost usage of technology. Enterprises that made the best use of the digital platform through the adoption of technology, digital marketing, and innovations secured the peak of success and profitability. The study provides significant managerial implications both for SME owners and policymakers of developing countries. Solid preparedness is the only means to combat such uncertainties in the future.

Understanding the crisis and analyzing its short- and long-term impact on business operation may be SME management’s first and foremost task. Exploring opportunities from a crisis can be a viable survival strategy. For instance, pandemics pushed us to think about ideas like digital work solutions, E-learning, digital business, etc. Besides, to ensure continuity, sustainability, and future success, SMEs must be prepared with resilient strategies and entrepreneurial innovation in transformative activities to survive disruptive surprises. Few national-level policies are also required to fight such unprecedented shocks in the future, such as direct financial support to SMEs to prevent employment loss, loan guarantees, grants & subsidies, deferred payment (where applicable), incentivize commercial banks to expand lending for SMEs, fostering innovation & internationalization,

Notwithstanding those mentioned above theoretical and practical contributions to the study, some limitations remain in the research that allows further investigation. Future studies can empirically investigate the influence of technology adoption on SME profitability and performance. Additionally, it would be worthwhile to explore the benefits of live streaming marketing in SMEs’ survival. Cross-country analysis of similar economic settings and quantitative data analysis will provide valuable insights into the present work.

Authorship Contribution Statement

Mohammad Rokibul Hosain: Conceptualization, Data collection for SLR, Data curation, Formal Analysis, Writing - original draft; Fahmida Akhter: Reviewing the Articles from the database, writing an explanation of each cluster theme, preparing a questionnaire for case, writing & editing; Misnad: Interviewing the SMEs owner.

Declaration of Competing Interest

There is No conflict of interest. All of the contributors have been selected accordingly

References

- [1] WHO (2020a). Coronavirus disease (COVID-19) pandemic. Available: World Health Organization <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>.
- [2] Čosić K, Popović S, Šarlija M, Kesedžić I. Impact of human disasters and COVID-19 pandemic on mental health: potential of digital psychiatry. *Psychiatria Danubina* 2020;32(1):25–31.
- [3] Baldwin R, Weder di Mauro B. *Economics in the Time of COVID-19*. CEPR press; 2020.
- [4] McKibbin W, Fernando R. The economic impact of COVID-19. *Economics in the Time of 2020/COVID-19*;45–10.1162.
- [5] Qamruzzaman, M. (2020). COVID-19 Impact on SMEs in Bangladesh: An Investigation of What They Are Experiencing and How They Are Managing? *SSRN Electronic Journal*, 2020. <https://doi.org/10.2139/ssrn.3654126>.
- [6] Thorgren, S., & Williams, T. A. (2020). Staying alive during an unfolding crisis: How SMEs ward off impending disaster. *Journal of Business Venturing Insights*, 14. <https://doi.org/10.1016/j.jbvi.2020.e00187>.
- [7] Winarsih, Indriastuti, M., & Fuad, K. (2021a). Impact of covid-19 on digital transformation and sustainability in small and medium enterprises (smes): a conceptual framework. In *Advances in Intelligent Systems and Computing*: Vol. 1194 AISC. Springer International Publishing. https://doi.org/10.1007/978-3-030-50454-0_48.
- [8] Lu Y, Wu J, Peng J, Lu L. The perceived impact of the Covid-19 epidemic: evidence from a sample of 4807 SMEs in Sichuan Province, China. *Environmental Hazards* 2020;19(4):323–40. <https://doi.org/10.1080/17477891.2020.1763902>.
- [9] Cowling M, Brown R, Rocha A. Did you save some cash for a rainy COVID-19 day? The crisis and SMEs. *International Small Business Journal: Researching Entrepreneurship* 2020. <https://doi.org/10.1177/0266242620945102>.
- [10] Rapaccini, M., Saccani, N., Kowalkowski, C., Paiola, M., & Adrodegari, F. (2020a). Navigating disruptive crises through service-led growth: The impact of COVID-19 on Italian manufacturing firms. *Industrial Marketing Management*, 88(May), 225–237. <https://doi.org/10.1016/j.indmarman.2020.05.017>.
- [11] Chowdhury MT, Sarkar A, Paul SK, Moktadir MA. A case study on strategies to deal with the impacts of COVID-19 pandemic in the food and beverage industry. *Operations Management Research* 2020. <https://doi.org/10.1007/s12063-020-00166-9>.
- [12] cowlkertz A, Brändle L, Gaudig A, Hinderer S, Morales Reyes. Startups in times of crisis – A rapid response to the COVID-19 pandemic. *Journal of Business Venturing Insights* 2020;13:e00169. <https://doi.org/10.1016/j.jbvi.2020.e00169>.
- [13] Roggeveen AL, Sethuraman R. How the COVID-19 Pandemic May Change the World of Retailing. *Journal of Retailing* 2020;96(2):169–71. <https://doi.org/10.1016/j.jretai.2020.04.002>.
- [14] Sahoo P. COVID-19 and Indian Economy: Impact on Growth, Manufacturing, Trade and MSME Sector. *Global Business Review* 2020;1–25. <https://doi.org/10.1177/0972150920945687>.
- [15] Sjödin, D., Parida, V., Kohtamäki, M., & Wincent, J. (2020). An agile co-creation process for digital servitization: A micro-service innovation approach. *Journal of Business Research*, 112(June 2019), 478–491. <https://doi.org/10.1016/j.jbusres.2020.01.009>.
- [16] Lalor RM. COVID-19 vs Bangladesh: Is it Possible to Recover the Impending Economic Distress Amid this Pandemic? *Journal of Economics and Business* 2020;3(2). <https://doi.org/10.31014/aior.1992.03.02.240>.
- [17] Shafi M, Liu J, Ren W. Impact of COVID-19 pandemic on micro, small, and medium-sized Enterprises operating in Pakistan. *Research in Globalization* 2020;100018. <https://doi.org/10.1016/j.resglo.2020.100018>.
- [18] Briner RB, Denyer D, Rousseau DM. Evidence-based management: concept cleanup time? *Academy of management perspectives* 2009;23(4):19–32.
- [19] Tranfield D, Denyer D, Smart P. Towards a Methodology for Developing Evidence-Informed Management Knowledge by Means of Systematic Review* Introduction: the need for an evidence-informed approach. *British Journal of Management* 2003;14:207–22.
- [20] EckVan NJ, Waltman L. Text Mining and Visualization. *Text Mining and Visualization* 2016:1–5. <https://doi.org/10.1201/b19007>.
- [21] Asgary A, Ozdemir AI, Özyürek H. Small and medium enterprises and global risks: Evidence from manufacturing SMEs in Turkey. *International Journal of Disaster Risk Science* 2020;11(1):59–73.
- [22] Auzzir Z, Haigh R, Amaratunga D. Impacts of disaster to SMEs in Malaysia. *Procedia Engineering* 2018;212:1131–1138.Bartik.
- [23] Samantha G. The impact of natural disasters on micro, small and medium enterprises (MSMEs): A case study on 2016 flood event in western Sri Lanka. *Procedia Engineering* 2018;212:744–7.
- [24] Bennett K, Phillipson J. A plague upon their houses: Revelations of the foot and mouth disease epidemic for business households. *Sociologia Ruralis* 2004;44(3):261–84.
- [25] Trade World. Organization. In: *Natural disasters and trade: Study I*. Geneva, Switzerland: World Trade Organization; 2019.
- [26] UNCTAD (2020). Investment trends monitor: Impact of the coronavirus outbreak on global FDI. Available: United Nations Conference on Trade and Development https://unctad.org/en/PublicationsLibrary/diaefn2020d2_en.pdf?user=1653.
- [27] LilianiTjahjono B, Cao D. Advancing bioplastic packaging products through co-innovation: A conceptual framework for supplier-customer collaboration. *Journal of Cleaner Production* 2020;252:119861. <https://doi.org/10.1016/j.jclepro.2019.119861>.
- [28] Rosado-Serrano A, Paul J, Dikova D. International franchising: A literature review and research agenda. *Journal of Business Research* 2018;85:238–57.
- [29] Kahiya ET. Five decades of research on export barriers: Review and future directions. *International Business Review* 2018;27(6):1172–88.
- [30] Paul J, Parthasarathy S, Gupta P. Exporting challenges of SMEs: A review and future research agenda. *Journal of world business* 2017;52(3):327–42.
- [31] Kumar A, Paul J, Unnithan AB. Masstige marketing: A review, synthesis and research agenda. *Journal of Business Research* 2020;113:384–98.
- [32] Paul J, Rosado-Serrano A. Gradual internationalization vs born-global/international new venture models: A review and research agenda. *International Marketing Review* 2019.
- [33] Randhawa K, Wilden R, Hohberger J. A bibliometric review of open innovation: Setting a research agenda. *Journal of Product Innovation Management* 2016;33(6):750–72.
- [34] Anees-Ur-Rehman M, Wong HY, Hossain M. The progression of brand orientation literature in twenty years: A systematic literature review. *Journal of Brand Management* 2016;23(6):612–30. <https://doi.org/10.1057/s41262-016-0008-2>.
- [35] Foroudi P, Akarsu TN, Marvi R, Balakrishnan J. Intellectual evolution of social innovation: A bibliometric analysis and avenues for future research trends. *Industrial Marketing Management* 2021;93:446–65.
- [36] Muñoz-Leiva F, Viedma-del-Jesús MI, Sánchez-Fernández J, López-Herrera AG. An application of co-word analysis and bibliometric maps for detecting the most highlighting themes in the consumer behaviour research from a longitudinal perspective. *Quality and Quantity* 2012;46(4):1077–95. <https://doi.org/10.1007/s11135-011-9565-3>.
- [37] Van Eck, Waltman L. Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics* 2010;84(2):523–38. <https://doi.org/10.1007/s11192-009-0146-3>.
- [38] Berelson, B. (1952). Content analysis in communication research.
- [39] Kassarjian HH. Content analysis in consumer research. *Journal of consumer research* 1977;4(1):8–18.
- [40] Coulter N, Monarch I, Konda S. (1998) Software engineering as seen through its research literature: a study in co-word analysis. *J. Am. Soc. Inf. Sci.* 1998;49(13):1206–23.
- [41] Qin W. *Anatomy of desire*. University of Georgia; 1999.
- [42] Whittaker J. Creativity and conformity in science: Titles, keywords and co-word analysis. *Social Studies of Science* 1989;19(3):473–96.
- [43] Callon. Some elements of a sociology of translation: Domestication of the scallops and fishermen of St. Brieuc Bay. In: LAW J, editor. *Power, Action and Belief: A New Sociology knowledge?* Routledge and Kegan Paul; 1986.
- [44] Cobo MJ, Jürgens B, Herrero-Solana V, Martínez MA, Herrera-Viedma E. Industry 4.0: a perspective based on bibliometric analysis. *Procedia computer science* 2018;139:364–71.
- [45] Tsilika T, Kakouris A, Apostolopoulos N, Dermatis Z. Entrepreneurial bricolage in the aftermath of a shock. Insights from Greek SMEs. *Journal of Small Business and Entrepreneurship* 2020. <https://doi.org/10.1080/08276331.2020.1764733>.
- [46] Juergensen J, Guimón J, Narula R. European SMEs amidst the COVID-19 crisis: assessing impact and policy responses. *Journal of Industrial and Business Economics* 2020;47(3):499–510. <https://doi.org/10.1007/s40812-020-00169-4>.
- [47] Esper TL. Supply Chain Management Amid the Coronavirus Pandemic. *Journal of Public Policy and Marketing* 2020:1–2. <https://doi.org/10.1177/0743915620932150>.
- [48] Brown R, Liñares-Zegarra J, Wilson JOS. Sticking it on plastic: credit card finance and small and medium-sized enterprises in the UK. *Regional Studies* 2019;53(5):630–43. <https://doi.org/10.1080/00343404.2018.1490016>.
- [49] Papadopoulos T, Baltas KN, Balta ME. The use of digital technologies by small and medium enterprises during COVID-19: Implications for theory and practice. *International Journal of Information Management* 2020. <https://doi.org/10.1016/j.ijinfomgt.2020.102192>.
- [50] Cai Min, Luo J. Influence of COVID-19 on Manufacturing Industry and Corresponding Countermeasures from Supply Chain Perspective. *Journal of Shanghai Jiaotong University (Science)* 2020;25(4):409–16. <https://doi.org/10.1007/s12204-020-2206-z>.
- [51] Ato Sarsah S, Tian H, Dogbe CSK, Bamfo BA, Pomegbe WWK, Nummela N, et al. Impact of COVID-19 on China's macroeconomy and agri-food system – an economy-wide multiplier model analysis. *International Small Business Journal: Researching Entrepreneurship* 2020;38(5):1–25. <https://doi.org/10.1108/APJBA-05-2020-0160>.
- [52] Moreira F, Ferreira MJ, Seruca I. Enterprise 4.0 -. The emerging digital transformed enterprise? *Procedia Computer Science* 2018;138:525–32. <https://doi.org/10.1016/j.procs.2018.10.072>.
- [53] Cirillo V, Molero Zayas J. Digitalizing industry? Labor, technology and work organization: an introduction to the Forum. *Journal of Industrial and Business Economics* 2019;46(3):313–21. <https://doi.org/10.1007/s40812-019-00126-w>.
- [54] Kimbrough S. Organizational Ambidexterity. *Agents, Games, and Evolution* 2011;27(4):311–40. <https://doi.org/10.1201/b11422-19>.
- [55] Wang Y, Wang J, Wang X. COVID-19, supply chain disruption and China's hog market: a dynamic analysis. *China Agricultural Economic Review* 2020;12(3):427–43. <https://doi.org/10.1108/CAER-04-2020-0053>.
- [56] Ivanov, D. (2020). Predicting the impacts of epidemic outbreaks on global supply chains: A simulation-based analysis on the coronavirus outbreak (COVID-19/SARS-CoV-2) case. *Transportation Research Part E: Logistics and Transportation Review*, 136(March), 101922. <https://doi.org/10.1016/j.tre.2020.101922>.
- [57] Sharma, P., Leung, T. Y., Kingsthorpe, R. P. J., Davcik, N. S., & Cardinali, S. (2020). Managing uncertainty during a global pandemic: An international business

- perspective. *Journal of Business Research*, 116(May), 188–192. <https://doi.org/10.1016/j.jbusres.2020.05.026>.
- [58] Singh S, Kumar R, Panchal R, Tiwari MK. Impact of COVID-19 on logistics systems and disruptions in food supply chain. *International Journal of Production Research* 2020;0(0):1–16. <https://doi.org/10.1080/00207543.2020.1792000>.
- [59] Trade World. Organization. In: Natural disasters and trade: Study I. Geneva, Switzerland: World Trade Organization; 2019.
- [60] Chowdhury P, Shumon R. Minimizing the gap between expectation and ability: Strategies for smes to implement social sustainability practices. *Sustainability* (Switzerland) 2020;12(16). <https://doi.org/10.3390/SU12166408>.
- [61] Laloni RM. COVID-19 vs Bangladesh: Is it Possible to Recover the Impending Economic Distress Amid this Pandemic? *Journal of Economics and Business* 2020;3(2). <https://doi.org/10.31014/aior.1992.03.02.240>.
- [62] OECD (2020), OECD Economic Outlook, Volume 2020 Issue 1. Paris: OECD Publishing. <https://dx.doi.org/10.1787/0d1d1e2e-en>.
- [63] Djuricin D. The New Growth Model and Economic Policy Platform. *Cadmus* 2020;4(2):149–56.
- [64] Braun V, Clarke V. Using thematic analysis in psychology. *Qualitative research in psychology* 2006;3(2):77–101.
- [65] Rowan NJ, Laffey JG. Challenges and solutions for addressing critical shortage of supply chain for personal and protective equipment (PPE) arising from Coronavirus disease (COVID19) pandemic—Case study from the Republic of Ireland. *Science of the Total Environment* 2020;725:138532.
- [66] Evans O. Socio-economic impacts of novel coronavirus: The policy solutions. *BizEcons Quarterly* 2020;7:3–12.
- [67] Sansa NA. (2020) The Impact of the COVID-19 on the Financial Markets: Evidence from China and USA. *Electronic Research Journal of Social Sciences and Humanities* 2.
- [68] Le H, Nguyen T, Ngo C, et al. Policy related factors affecting the survival and development of SME in the context of Covid 19 pandemic. *Management Science Letters* 2020;10:3683–92.
- [69] Yin RK. Validity and generalization in future case study evaluations. *Evaluation* 2013;19(3):321–32.
- [70] Creswell JW, Hanson WE, Clark Plano, Morales A. Qualitative research designs: Selection and implementation. *The counseling psychologist* 2007;35(2):236–64.
- [71] Thomas, D. R. (2003). A general inductive approach for qualitative data analysis.
- [72] Amankwah-Amoah J, Khan Z, Wood G. COVID-19 and business failures: The paradoxes of experience, scale, and scope for theory and practice. *European Management Journal* 2020. <https://doi.org/10.1016/j.emj.2020.09.002>.
- [73] Shafi M, Liu J, Ren W. Impact of COVID-19 pandemic on micro, small, and medium-sized Enterprises operating in Pakistan. *Research in Globalization* 2020;2:100018. <https://doi.org/10.1016/j.resglo.2020.100018>.
- [74] Morrish SC, Jones R. Post-disaster business recovery: An entrepreneurial marketing perspective. *Journal of Business Research*, 113(March 2020;2019:83–92. <https://doi.org/10.1016/j.jbusres.2019.03.041>.
- [75] Martinelli E, Tagliazucchi G, Marchi G. The resilient retail entrepreneur: dynamic capabilities for facing natural disasters. *International Journal of Entrepreneurial Behaviour and Research* 2018;24(7):1222–43. <https://doi.org/10.1108/IJEBR-11-2016-0386>.
- [76] Brem, A., Nylund, P., & Viardot, E. (2020). The impact of the 2008 financial crisis on innovation: A dominant design perspective. *Journal of Business Research*, 110 (February 2019), 360–369. <https://doi.org/10.1016/j.jbusres.2020.01.048>.
- [77] Kuckertz A, Brändle L, Gaudig A, Hinderer S, Morales Reyes. Startups in times of crisis – A rapid response to the COVID-19 pandemic. *Journal of Business Venturing Insights* 2020;13:e00169. <https://doi.org/10.1016/j.jbvi.2020.e00169>.
- [78] Lengnick-Hall CA, Beck TE, Lengnick-Hall ML. Developing a capacity for organizational resilience through strategic human resource management. *Human resource management review* 2011;21(3):243–55.
- [79] Lengnick-Hall CA, Beck TE. *Resilience capacity and strategic agility: Prerequisites for thriving in a dynamic environment*. San Antonio, TX: UTSA, College of Business; 2009. p. 39–69.
- [80] Hao F, Xiao Q, Chon K. COVID-19 and China's Hotel Industry: Impacts, a Disaster Management Framework, and Post-Pandemic Agenda. *International Journal of Hospitality Management* 2020;90:102636. <https://doi.org/10.1016/j.ijhm.2020.102636>.



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