

## **The Role of Dynamic Capabilities, Digital Capabilities and Social Capital on Resilience and Recovery of SMEs during Covid-19 in Sri Lanka**

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### **Abstract**

The question of why some SMEs failed to withstand the COVID-19 crisis whereas some Sri Lankan SMEs survived remains unanswered. It demonstrated very clearly how frail the economy of Sri Lanka is and raised doubts about the resilience of Sri Lankan businesses. This research investigated the factors affecting resilience of SMEs in Sri Lanka. This research used a conceptual framework comprising of Dynamic Capabilities, Social Capital and Digital Capabilities to analyze the antecedents of resilience of SMEs in Sri Lanka. A randomly selected sample of 76 SMEs in Sri Lanka was analyzed using Partial Least Squares Structured Equation Modelling (PLS-SEM) method. Results indicate Dynamic Capabilities, Social Capital and Digital Capabilities have a significant positive influence on SME resilience. Dynamic Capabilities, Social Capital and Digital Capabilities together explained 29% of the variance in resilience of SMEs. Development of knowledge, both theoretical and empirical, has become critical in order to understand how endured SMEs adapted, managed the crisis, built resilience and ultimately how they recovered from the crisis. Such knowledge will become invaluable in a future crisis situation to protect SMEs of Sri Lanka.

**Keywords:** Digital Capabilities, Dynamic Capabilities, Resilience, Social Capital

### **1. INTRODUCTION**

For Sri Lankan entrepreneurs and policymakers, COVID-19 may be considered as a “wake-up call”. It demonstrated very clearly how frail the economy of Sri Lanka is and raised doubts about the resilience of Sri Lankan businesses. More than anything else, COVID-19 demonstrated the interdependency of business, nature, government and society on each other for mutual survival during a crisis.

Currently the severity of the pandemic

looks to be diminishing in Sri Lanka. With a remission in sight and with the optimism that new variants are less harmful due to success of vaccination, business all over the world is looking forward to returning to normal. However, the post covid period seem to be more challenging for entrepreneurs in Sri Lanka. Pessimistic views are on the air and the economic indicators have worsened. Inflation soared to 54% in June 2022 (the highest ever recorded in Sri Lanka and highest in South

Asia). Foreign reserves stood at 10 million US dollars in January 2022 (lowest ever recorded), Foreign worker remittances fell to a 10-year low of \$ 5.5 billion in 2021. GDP growth rate is predicted to be around -1.6 to 0.5 in 2022 indicating a stagnant GDP. Within a decade, Sri Lankan rupee compared to US \$ has collapsed in a sequence of currency crises in 2012 (Rs. 131), 2016 (Rs. 151), 2018 (Rs. 182) and 2022 (Rs. 360) where parallel exchange rates are much more than the declared rate. It should be noted that recent depreciations are happening amid heavy import constraints and selling of gold reserves. There is little argument about the fact that business outlook is pessimistic.

Very little can be stated with confidence about the effect of COVID-19 on small business and entrepreneurs in Sri Lanka because of the lack of data released by the government. To add to this issue, trustworthiness of the data released is questioned by many researchers. The real losses to SMEs through the loss of business hours and customers (due to lockdown, limitations in number of customers which can be served and other health regulations), the losses due to customers' unwillingness to visit stores due to health concerns, losses due to supply chain interruptions are unprecedented. Many of SMEs may have been closed permanently because of the inability of owners to pay current expenses and survive the shutdown (Gourinchas, Kalemli-Özcan, Penciakova, & Sander, 2020). Opportunity costs in SMEs sectors are also large for the Sri Lankan economy. Many persons who

contemplated becoming an entrepreneur gave up or postponed the career transition due to pessimistic outlook.

Few research and surveys have attempted to assess the impact of COVID-19 on businesses around the world. The number of business owners in USA reduced from 15 million to 11.7 million in 2020 (Fairlie, 2020). Female entrepreneurs faced 35% higher cases of failure because women disproportionately work in industries that are more severely affected by the COVID-19 (Graeber et al., 2021). COVID-19 pandemic impact is more profound for minority community businesses (Fairlie & Foss, 2021) and for businesses in developing countries (Pereira & Patel, 2021). As a result of COVID-19 outbreak, nearly 80% of Indian companies have gone through cash flow issues and more than 50% of companies are confronting operations issues (Misra, 2021).

A large number of academic research on impact of COVID-19 on business are under construction and the results will be shared in the next few years (Alonso et al., 2021). The question why some SMEs failed to withstand the crisis whereas some SMEs survived remains unanswered. Development of knowledge, both theoretical and empirical, in order to understand how SMEs endured, adapted, managed the crisis, built resilience and ultimately how they recovered from crisis, has become critical. Such knowledge will become invaluable in future crisis situation to protect SMEs of the country.

In the most challenging times such as Covid-19 pandemic, resilience of

SMEs are influenced by dynamic capabilities (Mansour, Holmes, Butler, & Ananthram, 2019), social capital of entrepreneurs (Al-Omouh, Simón-Moya, & Sendra-García, 2020), and the digital capabilities of the entrepreneurs (Khlystova, Kalyuzhnova, & Belitski, 2022). The objective of this research is to uncover the antecedents of resilience and recovery capabilities of SMEs in Sri Lanka during and after Covid-19 pandemic. The specific objective are as follows.

1. To explicate the antecedents of resilience and recovery capability of SMEs in Sri Lanka in a crisis
2. To assess the influence of dynamic capabilities, social capital, and digital capabilities on resilience and recovery capability of SMEs in Sri Lanka

There is no single widely accepted definition of SMEs. The definition of an SME differs from country to country or region to region but is typically based on employment, level of assets, or a combination of the two criteria (Kumar, 2012). Many studies involving SMEs have greater preference on using number of employees as a proxy of firm size (Troilo, 2012). This research used the guidance of Sri Lanka Standards Institution (SLSI) and defined an SME as an organization with less than 250 employees.

## 2. LITERATURE REVIEW

In a crisis situation, most important factors of survival are management of change and possession of dynamic capabilities (Mansour, Holmes, Butler, & Ananthram, 2019). Covid-19 propelled SMEs to make

significant changes to them in terms of business models, product offerings and processes, customer and supplier base, reducing working hours and staff cuts, adopt to health regulations etc. within a short time. Those who possessed dynamic capabilities had the advantage in making these changes with minimum difficulty (Rashid, & Ratten, 2021). Successful crisis management in SMEs is associated with directly unobservable owner and organizational factors which are deep-rooted in dynamic capabilities (Pangerl, 2013). However, the role of dynamic capabilities for survival of SMEs in turbulent situations and crisis environment remains unanswered (Mansour, Holmes, Butler, & Ananthram, 2019).

Teece et al. (1997) argued that organizations rely on dynamic capabilities to build competitive advantage in regimes of rapid change. Teece et al. (1997, p516) define dynamic capabilities as "the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments". Zahra et al. (2006) define as dynamic capabilities as "the abilities to re-configure a firm's resources and routines in the manner envisioned and deemed appropriate by its principal decisionmaker".

Teece (2007) argues that ambidexterity is a key dynamic capability. Ambidexterity is pursual of both exploration and exploitative capabilities. March (1991) in his seminal article presented the concepts of exploration capability (ability to innovate) and exploitative capability

(taking maximum use of existing knowledge and assets). Iborra, Safón, and Dolz, (2020) explain that SMEs attain resilience, by efficiently responding to the dynamic environments by developing ambidexterity and strategic consistency.

So, there is ample evidence to hypothesize that dynamic capabilities influence SME resilience and recovery.

H1: Dynamic capabilities influence resilience and recovery of SMEs

Social capital is defined as “*naturally occurring relationships to promote or aid the development of valued skills or characteristics*” (Loury, 1979, p248). In dynamic markets and turbulent times, there will be lot of uncertainty about customer characteristics, target markets, competitor behavior, macro-economic conditions etc. In such situations, where the external resources are rare and difficult to be received, entrepreneurs give up long term strategic planning and shift their focus to maximizing the use of internal resources such as knowledge and social networks for survival (Kalinic, Sarasvathy & Forza, 2014). Social networks support to accumulation the knowledge required to be proactive in crisis and to survive in crisis where other SMEs with less networking capacity need to rely on time consuming experimental knowledge.

Extant literature highlights the importance of social networking (social capital) for SMEs (Pinho & Prange, 2015). The social capital plays a key role in acquiring business

resources such as hiring competent employees, introduction of customers and suppliers, obtaining of intellectual resources and finance. Social networks both formal and informal are likely to amplify the effects of human capital (i.e knowledge, experience etc.). According to scholars, networks contribute to indirect learning in organizations (Apaydin, Thornberry & Sidani, 2020). Social networks facilitate SMEs to receive valuable information from sources of information quicker than their counterparts in crisis situation (Al-Omouh, Simón-Moya, & Sendra-García, 2020). Past studies recognized that formal and informal networks provide a buffer for small businesses in the face of crisis. These networks also offer opportunities for increased mobilization of knowledge, dissemination of innovative activities, which in turn increase the resilience of SMEs (Saad, Hagelaar, Velde & Omta, 2021).

So, the second hypothesis can be formed as follow.

H2: Social capital influence resilience and recovery of SMEs

Sharma and Rautela (2021) note that digitalization was considered as the main strategy in Covid-19 crisis for SMEs in India. In the past decades, SMEs have witnessed a drastic change in the technological environment, but few SMEs embraced digitalization to reach out to larger consumer groups (Perera, Mudalige, & Liyanage, 2011). In times of social distancing and quarantine due to Covid-19, such digitalization was mandatory and those who were ready and capable for a quick digital transformation grabbed

the advantage (Bloombergquint.com, 2020). With the arrival of the COVID-19 pandemic, SMEs, specially, those operating globally, acknowledged the significance of digital transformation and implementing digital knowledge management (Valk & Planojevic, 2021).

However, for some SMEs where consumption of the product (mainly services such as hotel stay) is restricted to the physical place, the digitalization of value opposition is harder. Clearly, they are the hardest hit in covid-19. Even them, need to make structural changes and adapt quickly to the new reality for their mere survival. For example, many hotels in down south of Sri Lanka, adopted booking engines, online payment gateways, digital inventory management systems, use of crowdfunding, partnering with OTAs such as booking.com and Agoda and use of social media for marketing (GoodlifeX, 2022). All SMEs need to think about how to address consumer needs in new digital ways and how to shift to digital work processes. Digital capabilities are at the heart of such efforts (Kronblad & Pregmark, 2021).

So, the third hypothesis can be formed as follow.

H3: Digitalization capabilities influence resilience and recovery of SMEs

### 3. METHODOLOGY

This study is explanatory in nature and quantitative research approach was adopted where primary data were collected using survey questionnaires. Survey questionnaire was developed based on measures used in previous

studies. Dynamic Capabilities, Social Capital and Digital Capabilities were the independent variable and Resilience, and Recovery of SMEs was the dependent variable.

Figure 01 shows the conceptual framework of the study.

#### 3.1 Population and Sample

Population of the study is all SMEs in Western Province, Sri Lanka. The sampling frame used for this study is the yearly registration lists maintained by the Provincial Department of Business Names Registration, Western Province. A simple random sampling method was adopted in selecting the respondent from the sample frame. 100 business organizations were randomly selected from business registrations within the time period 2015-2020. Then the criteria of maximum 250 employees were tested in the questionnaire. But no organization was disqualified based on that criterion. For this research, due to its limitations, the desired sample size was 100.

#### 3.2 Questionnaire Development and Data Collection

A structured non-disguised questionnaire was developed to test the conceptual framework. All structured questions were measured on a five (5) point Likert scale similar to the original scale.

Ates and Bititci (2011) defined SME resilience as “the capacity of SMEs to survive, adapt and grow in the face of turbulent change and crisis”. As per Rahman, Yaacob, & Radzi (2016), SME survival refers to the year of business operation, availability of

future plans and diversity of products range. It can be seen that SME survival/recovery has been measured using different scales as a single factor in addition to considering recovery as a single stage of a four- or three-stage process of resilience. Measurement of firm survival (for this research it was assumed survival represents resilience) and recovery was done using perceptual constructs developed by Naidoo (2010). These scales are subjective measures (perceptual constructs) and they were chosen over objective measures (financial data) given the lack of financial data and the resistance of owners to reveal actual values in SMEs. The interest of research is also in the perception of the owner of SME about survival/recovery of his/her firm in future not the actual data.

Literature indicates many different conceptualizations and scales to measure dynamic capabilities. This is usually in the initial period of a concept development. Most of these scales follow the operationalization of Teece et al. (1997) (Lin & Wu, 2014) or Teece (2007). Different scales adopt different number of dimensions of dynamic capabilities. This research used three dimensions dynamic capability scale (i.e. sensing, learning and transforming dimensions) suggested by Lin & Wu (2013).

A majority social capital scales measure the strength and extent of formal and informal networks such as business partners (suppliers, customers and distributors) and personal acquaintances. This research used the social capital measurement

scale developed, validated and tested by Che Senik et al. (2011).

Table 1 summarizes the variables and scales used for measurement.

Although the scales are selected based on a priori basis, before the actual distribution of questionnaires, a pilot study was conducted to determine the understanding of the items. Ten (10) SME owners were selected based on convenience basis for this pilot study. This was to ensure that the items in the questionnaire will be understood by the targeted group. No major revisions to the questionnaire were done after pilot study.

A total of 100 survey questionnaires were distributed using both online and physical methods. Questionnaires prepared using the Google Forms facility were distributed through email. Some questionnaires were also physically presented to the entrepreneur/owner or the SME manager. Respondents were promised anonymity for themselves and their organization, together with a guarantee of the confidentiality of data they provided. The final response is a total of 76 observations (A response rate of 76%). The conceptual framework and its hypothesis were tested using SPSS and SMARTPLS.

## **4. RESULTS**

### **4.1 Demographic Profile**

There are 76 usable questionnaires from respondents for this study. The demographic characteristics were analyzed by descriptive statistics by computing percentage of each group. Please refer to Table 2.



Analysis of demographic characteristics indicates that male entrepreneurs outnumber the female entrepreneurs easily in Sri Lanka. The Majority of entrepreneurs/ SME managers are from 20-40 years range. Only about 5% of the respondents had a degree or above qualification level.

#### 4.2 Reliability Test

Table 3 summarizes the reliability test of all measures after factor analysis has been done (Hair, Sarstedt, Hopkins, & Kuppelwieser, 2014). As shown, the Cronbach alphas of the measures were all comfortably above the lower limit of acceptability is  $\alpha \geq .7$ .

The histogram plots were scrutinized, and they indicate that although the data is not normal, there is no serious violation of the assumption of normal distribution.

Multicollinearity was tested for IVs by observing VIF values for all IVs as seen in Table 4. All VIF values are less than 5 and close to 1.

#### 4.3 Analysis of Data Using PLS-SEM (SMARTPLS)

Minimum factor component loadings of 0.50 or higher are normally considered significant for outer measurement model. All the indicators of the outer measurement model of this research fulfilled this criterion of a minimum 0.5 (Hair, Sarstedt, Hopkins, & Kuppelwieser, 2014).

Fornell and Larcker (1981) stated that if the Average Variance Extracted (AVE) is greater than 0.5 that is a necessary and sufficient condition for convergent validity of the instrument.

All AVEs are above 0.5 for the constructs.

The number of bootstrap samples was set to 500 to run the SMART PLS program. Table 5 summarizes the findings.

$R^2$  is also called the coefficient of determination because it assesses the proportion (which is converted to percentage by multiplying by 100) of the variance of the endogenous construct that can be explained by its predictor constructs (Hair, Sarstedt, Hopkins, & Kuppelwieser, 2014). Falk and Miller (1992) suggest 0.10 as a threshold to identify a minimum level of prediction that can be practical significance.

Dynamic capabilities, social capital and digital capabilities account for 29% of the variance of resilience and recovery of SMEs. This is a substantial significance in explaining the dependent variable.

### 5. DISCUSSION

There is a call for more comparative research on SMEs and crisis management (Alonso et al., 2021). Little resilience research has focused upon the context of SMEs in developing countries (Saad et al., 2021).

The Results of this research indicate that digital capabilities have a substantial role in building resilience of SMEs. SMEs in Sri Lanka must be encouraged and supported to develop digital capabilities. Developing the digital capabilities of future entrepreneurs through a formal education system must be done as soon as possible. SMEs must embrace

digital technologies to enable major business improvements such as enhancing customer experience, streamlining operations and creating new business models or they will face annihilation (Fitzgerald et al., 2014). Many SMEs in developed countries use AI to identify what is trending among customers that support the organizations to customize their product offerings. For example, many retail organizations in South Korea allow persons to scan the codes of virtual groceries whilst waiting at train stations. The purchased items are delivered to the purchaser's homes even before they go home. This digital offering boosted the Tesco's online sales. Such digital innovations greatly supported SMEs in developed region to overcome disadvantages in crisis situation.

This research highlights the importance of social networks in managing crisis situation for SME sector. In the light of above, investments in programs that would develop domestic and international networks of SMEs would be beneficial in the long run. These programs can vary from symposiums, workshops, funded-foreign visits, trade fairs to facilitation of informal encounters between entrepreneurs. Improved informal networks can develop the confidence of international buyers and suppliers in order to overcome negative country of origin perception which is hindering the SME export sector amid a crisis (Francicevic & Bartlett, 2001). Given the owner centric nature of SMEs, development of personal networks may be the first step and the benefits of informal acquaintances would gradually flow to

organizational level. Facilitation of industry clusters may be more useful in crisis time as SMEs become vulnerable and the confidence of suppliers/customers on individual SME may dwindle. Clusters can provide that additional guarantee and confidence for sustained business as the risk of partnering with a single SME will be reduced.

Another suggestion for SMEs is to divest from unnecessarily diversified businesses as soon as possible. A substantial percentage of SMEs indicated that they are engaged in more than one core business. During COVID-19 managing a too-diversified portfolio seem to be disadvantageous as every strategic business unit needed special attention in crisis transitions (e.g moving to online platform from brick and motor type, layoffs to reduce cost etc.). Managing a diversified portfolio will make it more complex and difficult for an SME with entrepreneur centric decision-making style. Even MNCs followed divesting strategies from 1990s. Coca Cola divested from wine, movie and bottled water business and United Airlines divested from hotel business (Hilton) and car rental business (Hertz). With COVID-19 crisis, fundamental changes and new challenges take place in many aspects of business including customer behavior, liquidity challenges, global supply chain management and digitalization (Accenture, 2022). Flagship products and brands need to be protected while divesting from other business to make sure such changes and challenges can be given adequate attention.



As per the limitations, the research sample is comparatively small because the timing of the research was sample should be done with caution. With the gradual return to normalcy and lifting of restrictions, future studies could seek a larger sample of SMEs. Factors such as entrepreneurial self-efficacy (i.e. self-confidence of entrepreneur about his/her own skills and knowledge) and entrepreneurial bricolage (i.e. ability to use resources in a novel way in a resource scarce condition) are also linked to SME survival recently (Alonso et al., 2020). Future studies may take these into considerations and improve the conceptual model. Longitudinal studies which investigate how SMEs develop dynamic capabilities, social capital and digital capabilities (and of course, the other relevant factors) will become useful in policy planning aimed at developing resilience of SMEs. However, such studies demand a long duration and research effort.

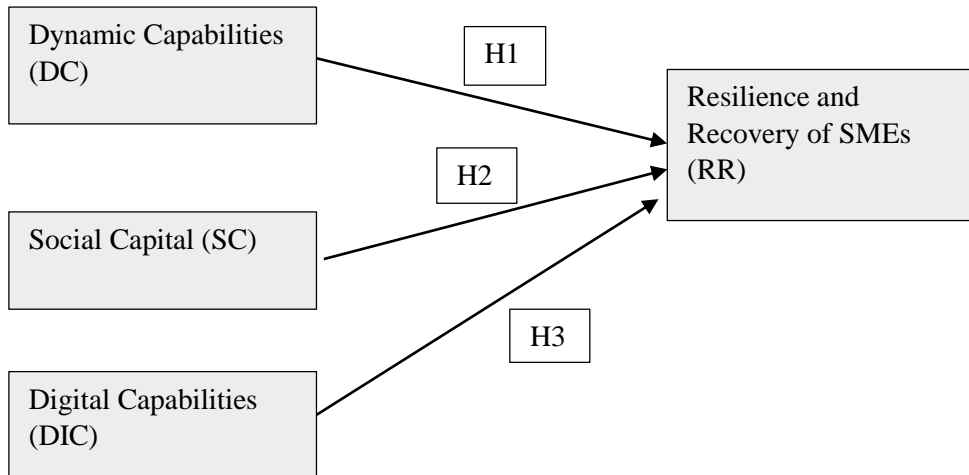
## **6. CONCLUSION**

The question why some SMEs failed to withstand the COVID-19 crisis whereas some Sri Lankan SMEs survived remains unanswered. It demonstrated very clearly how frail the economy of Sri Lanka is and raised doubts about the resilience of Sri Lankan businesses. This research investigated the factors affecting resilience of SMEs in Sri Lanka. This research used a conceptual framework comprising of Dynamic Capabilities, Social Capital and Digital Capabilities to analyze the antecedents of resilience of SMEs in Sri Lanka. A randomly selected sample of 76 SMEs in Sri Lanka was analyzed using

very challenging. Therefore, generalizability of the findings derived from this comparatively small

Partial Least Squares Structured Equation Modelling (PLS-SEM) method. Results indicate Dynamic Capabilities, Social Capital and Digital Capabilities have a significant positive influence on SME resilience. Dynamic Capabilities, Social Capital and Digital Capabilities together explained 29% of the variance in resilience of SMEs. This research is in line with past studies on SME recovery in a crisis such as Ates and Bititci (2011) and Alonso et al., 2021. Development of knowledge has become critical in order to understand how endured SMEs adapted, managed the crisis, built resilience and ultimately how they recovered from crisis. Such knowledge will become invaluable in future crisis situations to protect SMEs of Sri Lanka.

**APPENDIX**



**Figure 1. Conceptual Framework of the Research**

**Table 1: Scales of Measurement**

Variable	Scale of Measurement
Dynamic Capabilities	Lin & Wu (2013)
Social Capital	Che Senik et al. (2011).
Digital Capabilities	Naidoo (2010)
SME Resilience	Naidoo (2010)

**Table 2: Demographic characteristics**

Variable		Percentage (%)
<b>Gender</b>	Male	82
	Female	18
<b>Education Level</b>	Passed A/L	87
	Have done a Vocational Qualification	7
	Have a Degree or Postgraduate	5
<b>Age</b>	20-26 years	16
	27-33 years	24
	34-40 years	36
	More than 40 years	24

**Table 3: Reliability Coefficients for Variables in the Study**

Variables	Reliability
<b>Dependent Variable (DV)</b>	
• Resilience and Recovery of SMEs	.872
<b>Independent Variables (IV)</b>	
• Dynamic Capabilities (DC)	0.711
• Social Capital (SC)	0.689
• Digital Capabilities (DIC)	0.705

**Table 4: Collinearity Statistics (VIF)**

Collinearity Statistics	
Construct	VIF
DC	1.506
SC	1.741
DIC	1.908

**Table 5: Summary of structural model testing**

Hypothesis	Path	Path Coefficient	Standard Error	t statistics	Significance
H1	DC>RR	0.4150	0.0563	7.718	Significant
H2	SC>RR	0.4210	0.0871	4.465	Significant
H3	DIC>RR	0.4350	0.0523	7.528	Significant

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