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Impact of Dynamic Capabilities on Business Performance of SMEs during an Economic Crisis with reference to Western Province

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Abstract

The current economic crisis which is experiencing has a significant impact on the development and performance of most SMEs, making their existence even more susceptible. In the face of the current economic crisis, Dynamic capabilities (DCs) can be utilized as a survival mechanism to help organizations to increase the value of their businesses, get competitive advantages, and increase business performance in a changing business environment. Therefore, the purpose of this paper is to analyze the impact of three dimensions of DCs which are sensing, seizing, and reconfiguring on the business performance of SMEs during this economic crisis. In addition, this study investigates how DCs could impact business performance through Information technology (IT) adoption as a moderator. The quantitative approach is adopted, where a cross sectional survey was utilized to collect primary data from SMEs. Findings of the study based on a sample of 380 SMEs in western province and stratified random sampling method was utilized to select participants. Structural Equation Modeling (SEM) was used to analyze data by using Smart PLS 4 software. The results revealed that only sensing and reconfiguring capabilities have a significant impact on SMEs' performance and IT adoption moderates the relationship between DCs and business performance during the economic crisis. Therefore, this study provides a great effort to quantitatively investigate the impact of three procedures of DCs and the moderate effect of IT adoption during the economic crisis. Furthermore, it conveys a better understanding of how SMEs could deploy their DCs to ensure higher levels of performance in periods of crisis. The results of this research will pave a path for them to successfully take effective strategic decision on the

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SMEs.

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Introduction

In the modern world, small and medium-sized enterprises (SMEs) are the heart of the economy, introducing innovations and increasing productivity. Ferguson (2009) identifies SMEs as the "lifeblood of the economy". As nations become more interconnected and dependent, SMEs must prioritize innovation, high-quality service, and technology development. They play a crucial role in developing dynamic economies and contributing to growth in innovation, GDP, export sector, and employment opportunities. Modern strategic management aims to find means of value and generate firm performance, focusing on the dynamics of relationships between a company and its environment (Dovbischuk, 2022). Economic crises can lead to a decline in a nation's economy, total output, or gross domestic product (Terziovski, 2010). The economic crisis which Sri Lanka is currently experiencing is considered the worst since independence in 1948. The Easter Sunday attack in 2019, the COVID-19 pandemic, policy decisions with limited vision, and external borrowing contributed to the crisis (Akmal, 2022). SMEs faced issues such as a lack of inputs, import limitations, reduced demand, restrictions on imports, and challenges with loan repayment (Hossain et al., 2022). Decision-makers' perception of the situation directly impacts their reactions and engagement in various activities.

SMEs face significant challenges during economic crises due to their low capacity for downsizing, lack of company diversification, weak financial foundation, restricted market access, and reliance on external financing (Karadag, 2016). These challenges can impact the manufacturing, marketing, financial, and administrative aspects of businesses, leading to cash flow issues, working capital shortages, declining capacity utilization, rising production costs, and staff layoffs (Teece, 2018). In Sri Lanka, the economic crisis can affect SMEs in three ways: reduced demand, low-capacity usage, financial hardships, working capital issues, and liquidity concerns. Despite these challenges, SMEs have shown resilience by making the right choices and implementing

extraordinary survival strategies. An economic crisis can have significant negative effects on organizations, including the impact on SMEs. To overcome these challenges, organizations must adopt new technologies, and e-commerce, and enter foreign markets (Gamage et al., 2020). DCs, which are higher-level competencies, enable businesses to interconnect, develop, and rearrange resources and skills. Innovations are essential for entrepreneurs to succeed in challenging business environments. Sri Lanka, a developing country, has a high contribution to the economy from SMEs.

According to Teece (2018), DCs focus on strategic changes in a firm's possibilities to achieve higher business performance. These capabilities include first-order and higher-level capabilities, which enable businesses to value creation and capture new opportunities. Research shows a direct relationship between an organization's business performance and DCs, improving the invention of new products and assessing organizational effectiveness (Teece, 2016, 2018; Ferreira et al., 2020; Dovbischuk, 2022). The Resource-Based theory can be applied to improve business performance in SMEs, while external changes have a visible influence on internal operations capability. Organizational performance is positively impacted by DCs, which improve the capacity of the SME sector to establish and maintain a competitive edge in a rapidly changing market (Dovbischuk, 2022). While some industries have been severely impacted by the financial crisis, some businesses have shown impressive returns, suggesting they have benefited from the crisis and taken advantage of opportunities. Decision-makers' perceptions of the situation, challenges, and growth prospects can determine how to respond to the recession.

Many entrepreneurs lack an understanding of their dynamic capabilities, which can improve business performance. Additionally, there is a lack of research analyzing the relationship between DCs and the performing of SMEs within the framework of global crises like an economic crisis (Fainshmidt et al., 2017). As a developing country, Sri Lanka struggles to adopt developed strategies, leading to difficulties for decision-makers. However, ICT and technology can be valuable solutions to address economic difficulties (Jameel et al., 2017). Researchers are exploring the influence of DCs on ICT utilization and seeking more recent and updated information to better understand the

impact of the economic crisis on SMEs' performance.

Therefore, the purpose of this study is to analyze how DCs affect SME company performance as well as how IT use in a time of economic crisis affects the relationship between DCs and business success. This multidimensional construct and the continuing interactions among its various aggregating subdimensions can be better understood by examining the ways in which businesses change and implement their DCs.

Literature Review

SMEs have been identified as the strength of any economy (Gamage et al., 2020). According to the statistics, the contribution of SMEs to the economy has been over 52% in terms of Gross Domestic Production (GDP) while 75% of the entire business entities are considered under this category of SME. But in the face of the current economic crisis in Sri Lanka, the SMEs encountered several major concerns, such as increased production costs and a drop in demand because of inflation, a lack of necessary raw materials, frequent power cuts, issues with working capital and liquidity, and a breakdown in their supply chain as a result of fuel shortages (Sriyani, 2022). In the Sri Lankan context, the Easter Sunday attack, the COVID-19 pandemic, the loss of foreign reserves, and the depreciation of the rupee against the USD, all have acted in an adverse way where the economy has been affected adversely. Also, SMEs are frequently unable to preserve their competitive advantages that are based only on the availability of resources that may no longer exist. Considering these effects, SMEs have been affected in a negative manner where it was difficult for them to survive (Santhirakumar & Narmilan, 2021). However, these circumstances need a firm's ability to continually acknowledge, retain and remove unnecessary assets in response to changes in consumer preferences and perceptions (Laskovaia et al., 2018).

As identified in the literature there are several resources that could create a competitive advantage for the SME entity, which will help them to survive in a disturbing change (Naidoo, 2010). Apart from the resources, it was also identified that there are several competencies within an organization help them to achieve competitive advantage and thereby sustainable future. Collectively, these resources along with the

competencies will help an organization to be resilient in such changes. And identified through the DCs (Laskovaia et al., 2018). The word "dynamic capabilities" was identified as the firm's operations that integrate, reconfigure, gain, and release resources to meet and even drive market change (Eisenhardt & Martin, 2000). Moreover, it also can be identified as the firm's ability to adapt to changing market conditions, technological advancements, and customer needs which provide the existence of an entity (Teece, 2018; Mortazavi et al., 2020; Dyduch et al., 2021; Weaven et al., 2021; Dejardin et al., 2022).

According to Teece (2012), dynamic capabilities can be divided into three groups of activities and adjustments that influence SMEs' performance such as identifying, interpreting, and evaluating an opportunity or threat (sensing), deploying resources to address an opportunity or to respond to a threat and to create value from doing so (seizing), and reconfiguring, integrating, and renewing resources and organizational structures (reconfiguring). Overall, SMEs with DCs are more probable to be successful during an economic crisis as they are better equipped to adapt to changing market conditions and customer needs.

Sensing Capabilities

The term "sensing" describes how companies can use their resources, particularly by gathering information, to better understand the market, take opportunities, and identify risks. In simple terms, the organization could be able to sense its surroundings to identify possible opportunities or market responses (Osiyevskyy et al., 2020). Sensing in the context of the business performance of SMEs during an economic crisis in Sri Lanka refers to the ability of SMEs to detect and monitor changes in their business environment, such as changes in customer demand, supply chain disruptions, or government policies that may impact their operations (Kump et al., 2019). Effective sensing can help SMEs to identify potential threats and opportunities and take appropriate actions to mitigate risks and capitalize on opportunities (Teece, 2016).

As stated in the literature, Tseng & Lee (2014), argue sensing enhances the higher performance of the business. Ardyan (2016) concluded sensing capability has a positive impact on business performance which is not significant. Also, Dejardin et al. (2022) argue in covid 19 period,

many companies have not emphasized on producing new goods and services because their results show there is no significant impact of sensing capabilities on business performance during the pandemic. Therefore, this study expects to test the following hypothesis:

H1: There is a significant impact of sensing capabilities on the business performance of SMEs.

Seizing Capabilities

The ability of SMEs to use resources to develop effective answers to unpredictable market situations that reflect risks and new opportunities is referred to as seizing (Teece, 2016). Seizing in the context of the business performance of SMEs during an economic crisis refers to the ability of SMEs to capitalize on new opportunities that may arise during an economic crisis (Quayson et al., 2023). Seizing involves identifying and pursuing new business opportunities that may not have been possible in normal circumstances, as well as leveraging existing capabilities to create new value for customers. According to Min & Kim (2022), their results show seizing capabilities has a statistically significant impact on business performance. Therefore, this study expects to test the following hypothesis:

H2: There is a significant impact of seizing capabilities on the business performance of SMEs.

Reconfiguring Capabilities

This is the third stage where organization changes from their perspective are described as a way of exploiting the identified opportunity. Reconfiguring describes a company's ability to adapt organizational structures and resource allocation as the business expands, and develops markets and technologies (Biesenthal et al., 2018). Empowerment of the employees as well as encouraging them to step up and take responsibility may increase the effectiveness of the changes. Organizations must act quickly in times of economic crisis and unpredictability to provide creative new ideas and add new benefits for clients (Girod & Whittington, 2017).

Companies must create structures with expanded autonomy, power delegation, plan development, and bottom-up experimentation to react

swiftly to an unanticipated crisis and it helps to enhance business performance (Dyduch et al., 2021). As per the study by Martinez et al. (2019), there is a significant relationship between the company's performance during an economic downturn and the level of reconfiguring activities such as adopting innovations as a part of their business strategy. Accordingly, researchers will test on the following hypothesis:

H3: There is a significant impact of reconfiguring capabilities on the business performance of SMEs.

Adoption of Information Technology

In a knowledge driven economic system, the usage of information technology cannot be undermined. Jameel et al. (2017) argued that ICT usage in firms helps to minimize operational costs and enhance the profit of organizations. With the current situation most of the SMEs use ICT-based knowledge and activities to increase their efficiency, productivity, and satisfaction (Gamage et al., 2020). The study of Maes et al. (2017), indicated that there is a relationship between IT governance and business performance.

However, some researchers concentrated on the impact of dynamic capabilities on ICT usage (Kademeteme and Twinomurinzi, 2019) but there is a dearth of literature in investigating the adoption of ICT as a moderator between the relationship between dynamic capabilities and business performance. IT adoption can provide SMEs with the tools and resources necessary to adapt to changing market conditions, improve operational efficiency, and increase their competitive advantage. As discussed earlier, sensing, seizing, and reconfiguring can be done in a better way with the adoption of technology (Bhattacharyya et al., 2021). According to the existing literature, the effect of IT adoption is supported to moderate the relationship between DCs and business performance (Martins, 2023). Therefore, this study expects to test the following hypotheses:

H4: The adoption of information technology moderates the relationship between sensing capabilities and the business performance of SMEs.

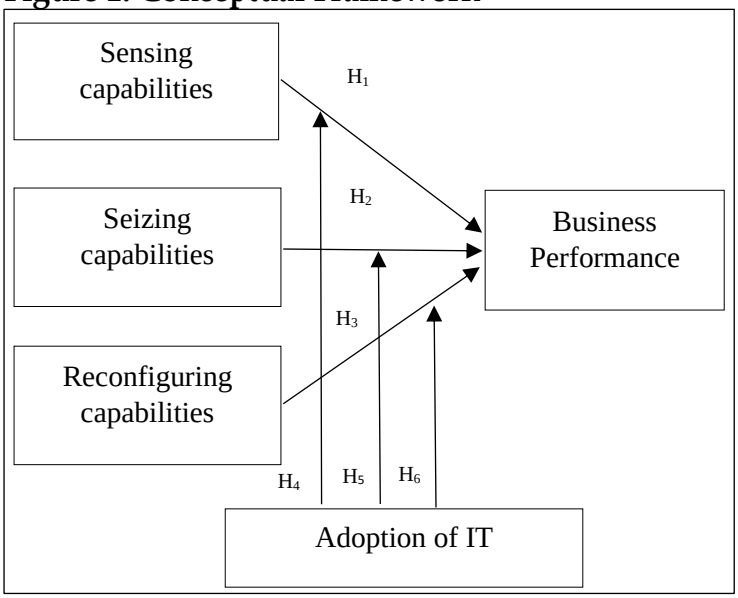
H5: The adoption of information technology moderates the relationship

between seizing capabilities and the business performance of SMEs.

H6: The adoption of information technology moderates the relationship between reconfiguring capabilities and the business performance of SMEs.

The current study's conceptual framework has been developed based on earlier discussion and it shows in Figure 1. Sensing, seizing, and reconfiguring capabilities are displayed as independent variables, and business performance is presented as the dependent variable. The adoption of IT is used as the moderate variable of this study.

Figure 1: Conceptual Framework



Source: Authors' compilation

Methodology

This study obtained a quantitative research method and a deductive approach as it allows the analysis of the hypotheses. The cross-sectional survey approach was used for this study because it enables the collection of data on a wide variety of variables from a sample of respondents at a specific point in time. The research design of this study aims to investigate the impact of DCs on the performance of SMEs during an economic crisis. According to that, the target population of this study is SMEs in the western province of Sri Lanka.

The stratified random sampling method was utilized to select the sample size which is a probability sampling method. This method allows for a more accurate and efficient analysis of the entire population, ensuring equal chances of selection. The sample is 380 SMEs, and the strata of this study were identified based on the districts in the western province which are Colombo, Gampaha, and Kalutara. The sample size from each district was calculated proportionally and the sample from each district was chosen in a random manner.

The primary data is used as the data type, and it was collected by using the survey method. The instrument that has been used is a structured questionnaire. The literature review inspired the questionnaire design, drawing from previous models published in other research papers. The questionnaire was distributed among the calculated sample size of SME owners from each district. The questions of the questionnaire were measured on a five-point Likert scale. The Likert Scale, consisting of five boxes ranging from 1=strongly disagree to 5=strongly agree, is used in a questionnaire to assess respondents' choices regarding statements.

Respondents provided general information about their organization, including industry type, district, number of employees, and age. The questionnaire also included 39 statements to measure the variables of the study. Each series of questions aimed to establish a link between the variables and the study objective. DCs were used as independent variables and the dimensions of DCs were sensing capabilities, seizing capabilities, and reconfiguring capabilities. To measure those capabilities, 7 statements for sensing, 5 statements for seizing, and 7 statements for reconfiguring were included in the questionnaire. Regarding the business performance of SMEs as the dependent variable, 9 items were accepted from previous literature (Drnevich and Kriauciunas, 2011a; Nedzinskas et al., 2013; Ranatunga et al., 2022) and 9 statements were included in the questionnaire. To analyze the moderate effect of IT adoption, 4 dimensions were utilized (Mithas et al., 2012; Giotopoulos et al., 2017) and 11 statements were indicated to measure that moderate variable.

The collected data was analyzed using the Smart PLS 4 software. The structural equation modelling with the Partial Least Squares (PLS-SEM) technique was used for the main statistical analysis.

Results

This research includes several sample profiles of industry types, number of years, and number of employees. The questionnaire was distributed among 380 small and medium size enterprises in Western province. Researchers can receive almost all the responses from the respective parties. Among them most of the responses are received from trade type business, scoring 57.4%. 61.6% of the business organization have Employee number of less or similar than 50. According to researcher's data set most of business have established in range of 1 to 10 years scoring percentage of 33.4%. Demographical profiles results are evaluated by using IBM SPSS statistics. The Partial Least Squares Structural Equation Modelling (PLS-SEM) method with Smart PLS 4 was used to conduct the main statistical analysis. The Measurement model and the Structural model were both examined in PLS-SEM.

Assessing the Measurement Model

Measurement model analysis evaluated the model's reliability and validity. Reliability is considered as a regular measure that can indicate stability and consistency. There are several ways of calculating reliability. Internal regularity measures the indexical similarity of the items in the measure taps into the construct (Sekaran, 2013). Item reliability is frequently explained by the factor loadings of the Smart PLS components. In this study, a threshold value of 0.7 was taken to be considered. Each indicator's outer loading was greater than 0.7, indicating the indications' reliability. Internal consistency reliability makes ensuring that the research tool and its measurements are stable and consistent. Cronbach's Alpha (α) and composite reliability (CR) are always used to determine the variables' internal consistency. Table 1 shows that both Cronbach's α and composite reliability values were higher or similar than 0.7 (Reliability score ≥ 0.7) (Nunnally, 1978). When the reliability score is above 0.8 it is considered as a strong reliability of a dataset (Sekaran, 2013). For all research constructs, the "average variance extracted" (AVE) of latent variables was above 0.50; hence, "convergent validity" was demonstrated.

Table 1: Reliability and Validity

Constructs	AVE	CR	Cronbach's α
Sensing	0.760	0.957	0.957
Seizing	0.759	0.940	0.940
Reconfiguring	0.729	0.950	0.949
Adoption of IT	0.617	0.910	0.878
Business Performance	0.750	0.964	0.964

Source: Authors' compilation

Assessing the Structural Model

The structural pathways were evaluated using the bootstrapping method. There were 380 samples used to test the hypotheses. The ß-coefficient, t-value, and p-value were used to verify the outcomes that were predicted. The full structural model is shown in Figure 2.

Direct hypothesis

In Table 2, the results show that sensing and reconfiguring are positively and significantly related to business performance (ß = .425, t=6.796), (ß = .111, t=3.521) respectively. Therefore, direct hypotheses i.e., H_1 and H_3 are fully supported. However, there was no relationship However, there was no relationship between seizing and business performance (ß = .446, t=1.840), thus H_2 was not supported.

Moderating hypothesis

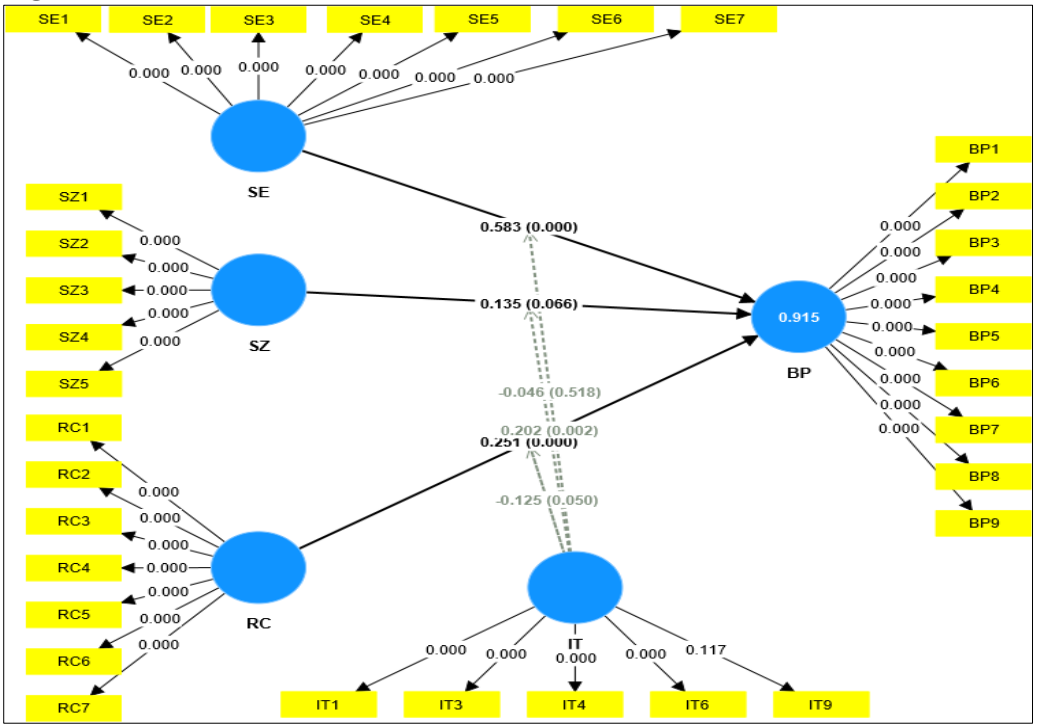
An interaction term between the moderator (IT adoption) and the predictive variable (dynamic capabilities) was generated using the product indicator approach for examining the moderating impact of IT adoption on business performance in PLS-SEM. The results presented significant interaction terms, seizing adoption of IT (β =.669, t-value = 3.044, p = .002) on the relationship of seizing and business performance. And, significant interaction terms, reconfiguring adoption of IT (β =.695, t-value = 1.961, p = .050) on the relationship of reconfiguring and business performance. Therefore, moderating hypotheses i.e., H_5 and H_6 are fully supported. However, the study assessed the moderating role of adoption of IT on the relationship between sensing and business performance. The results revealed that H_4 is not supported.

Table 2: Hypothesis Testing Results

Hypothesized relationships	Std. Beta	T-value	P-value	Findings
Sensing -→ BP	0.425	6.796	0.000	Supported
Seizing → BP	0.446	1.840	0.066	Not Supported
Reconfiguring → BP	0.111	3.521	0.000	Supported
IT x Sensing → BP	0.002	0.647	0.518	Not Supported
IT x Seizing → BP	0.669	3.044	0.002	Supported
IT x Reconfiguring →BP	0.695	1.961	0.050	Supported

Source: Authors' compilation

Figure 2: Full Structural Model



Source: Authors' compilation

Discussion

H_1, H_3, H_5, H_6 hypotheses of the study were found to be supported, showing that sensing, reconfiguring, and moderating impact of seizing and adoption of IT, moderating impact of reconfiguring and adoption of IT in the SMEs during an Economic Crisis are positively and significantly related to business performance. The results mentioned

above support previous studies (Zollo & Winter, 2002; Nedzinskas et al., 2013; Ferreira et al., 2020; Khalil & Belitski, 2020; Hernández-Linares et al., 2021) that found a positive connection between these dynamic capacities and SME effectiveness. As evidence for previous studies, this study indicates that the DCs (sensing, and reconfiguring) have distinct effects on SME performance, announced by Martins (2023). This research further provides the main capability with the highest effect on SME performance which was lacking in Hernández-Linares et al. (2021) research. In difference, this research disagrees with the findings of Drnevich and Kriauciunas (2011) and Eisenhardt and Martin (2000) that DCs rather have an indirect relationship with business performance. This result, this study has offered empirical support from the perspective of an emerging market on how DCs could influence the business performance of SMEs during an Economic Crisis.

This work emphasizes the applicability of the resource-based view theory and the dynamic capacities theory in this context. According to this study, dynamic skills are present in all organizations, whether they are small, medium-sized, or large. Knowing how to use each DC and when to do so to influence performance is made possible by understanding SMEs. This study also shows that the dynamic capacities theory's reconfiguration component is best suited to support SMEs in this difficult period. Additionally, by successfully applying the dynamic capacities theory to SMEs, which obtained less attention than large enterprises, this work addresses a theoretical gap in the literature (Zahra et al., 2006; Tallott & Hilliard, 2016; Martins, 2023). H_2 was not supported because there was no impact of seizing on business performance.

The findings of Table 2 illustrate that adoption of IT has no appreciable moderating impact on the capability for sensing and business performance. But the relationship between seizing and reconfiguring capabilities and business performance is significantly moderated by IT adoption. This finding suggests that raising the moderator (adoption of IT) would enhance the impact of seizing capability on SME performance. As a result, H_5 and H_6 are supported whereas H_4 is not supported.

Although the results mentioned earlier lack precise precedent, they offer empirical support for (Khalil & Belitski, 2020) claim that incorporating IT governance into the DCs framework will give organizations more flexibility and agility when using digital technologies, as well as when adapting, creating, modifying, and putting into practice new products and services. The new empirical findings provide additional evidence that IT adoption and business performance are related (Groberg et al., 2016; Maes et al., 2017; Khalil & Belitski, 2020). This study emphasized the interaction between the use of DCs and IT adoption in relation to the business performance of SMEs, and it has shown that seizing and reconfiguring capabilities will have an impact on SMEs performance regardless of the usage of IT.

Conclusion

SMEs are essential to the development of the global economy because they are innovative and productive. SME performance must be improved in the face of an economic crisis by putting an emphasis on innovation, superior customer service, and the creation of new technologies. SMEs can adapt to changing conditions and gain a competitive advantage by utilizing DCs, including sensing, seizing, and reconfiguring abilities. These characteristics give SMEs the ability to generate value and capture it, endure quick environmental changes, and improve business performance. The COVID-19 outbreak, and the Easter Sunday attack have both had a detrimental effect on Sri Lanka's SMEs, compounding the country's current economic predicament. But studies have shown that some SMEs have been successful in utilizing these challenges as opportunities by making the appropriate choices and putting in place successful survival techniques. Sensing, seizing, and reconfiguring are the three main elements of dynamic capacities that have been found in the literature. Sensing is the ability of SMEs to recognize and react to changes in the market; seizing is the capacity to seize new possibilities; and reconfiguring is the capacity to reorganize their resources and operations to meet shifting demands. Therefore, this research was conducted to analyze the impact of DCs on the business performance of SMEs during an economic crisis. It is guided through performance data of SMEs with special reference to the western province, of Sri Lanka.

According to the results of the tested hypotheses, it can be identified that only sensing and reconfiguring capabilities have a significant impact on business performance during the economic crisis. The study also emphasized the significance of IT adoption in enhancing SMEs' performance during an economic recession. When considering the moderator effect of the adoption of IT shows that it is supported to moderate the relationship between DCs, and the business performance of SMEs. It would help to fill the gap of dearth literature regarding the moderator effect of IT, and it can give SMEs the tools and resources needed to adjust to shifting market conditions, boost operational effectiveness, and strengthen their competitive advantage. In the face of the current economic crisis, SMEs encountered several major concerns, such as increased production costs and a drop in demand because of inflation, a lack of necessary raw materials, frequent power cuts, issues with working capital and liquidity, and a breakdown in their supply chain because of fuel shortages. It is more difficult to recover from the economic crisis due to their relative limitations in conditions of managerial, technological, and human capabilities in addition to financial issues. Therefore, our study provides additional evidence within this context of how DCs support SMEs in times of adversity. When they are constructing the DCs with the adoption of IT they have a better chance of overcoming their concerns during this economic crisis. According to the results, Sensing and reconfiguring capabilities can give a better ability to increase the efficiency in the development of performance, and seizing capabilities can be increased the business performance only with the IT adoption. Focusing on a limited sample restricted to the western province is a limitation of the study.

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