

***INVESTIGATING THE OPERATIONAL RESILIENCE OF SMALL BUSINESSES IN
DUBLIN IRELAND POST-COVID-19 PANDEMIC OPERATIONAL DISRUPTION***

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ABSTRACT

INVESTIGATING THE OPERATIONAL RESILIENCE OF SMALL BUSINESSES IN DUBLIN IRELAND POST-COVID-19 PANDEMIC OPERATIONAL DISRUPTION.

The upsurge of the COVID-19 pandemic and its long-term effect has had an intense impact on businesses globally, especially on small businesses that frequently lack the means and resilience of big firms, they face unique challenges during disruptions due to the inability to rapidly adapt or recover from irregularities (Gorjian Khanzad and Goyabadi, 2021). This research aims to examine the operational resilience of small businesses in Dublin, Ireland, in the post-COVID-19 era. It seeks to explore the strategies implemented by these businesses to recover from disruptions, assess their effectiveness and evaluating the lessons learned for future resilience. A literature review conducted in this research highlights the importance of operational resilience, especially for small businesses, and discusses existing frameworks and methodologies for assessing resilience strategies in line with the Central Bank of Ireland's operational resilience framework.

The methodology involves analysing primary data gathered from seven small business owners in Dublin Ireland through semi- structured open-end interviews through a qualitative approach to draw insights from the experiences and perspectives of business owners.

Findings reveal that small businesses faced various challenges post-COVID-19, such as supply chain disruptions and changes in customer behaviour, financial strain, working pattern challenges. Many adopted digital transformation strategies, flexible working patterns, and new customer engagement methods. However, gaps in operational resilience exist, including the lack of continuous monitoring and evaluation of implemented strategies were identified.

Overall, the research contributes valuable insights into the existing literature of operational resilience of small businesses post-pandemic, offering practical recommendations for businesses to strengthen their continuity plans and enhance their ability to withstand future disruptions.

DECLARATION

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ABBREVIATIONS LIST

TERMS	DEFINITIONS
ABN	ALIGNABLE BUSINESS NETWORK
BCG	BOSTON CONSULTING GROUP
BCM	BUSINESS CONTINUITY MANAGEMENT
CBI	CENTRAL BANK OF IRELAND
COVID-19	CORONA VIRUS DISEASE OF 2019
CSO	CENTRAL STATISTICS OFFICE
DKM	DISTRIBUTED KNOWLEDGE MANAGEMENT
ERP	ENTERPRISE RESOURCE PLANNING
ERSI	ECONOMIC AND SOCIAL RESEARCH INSTITUTE
EU	EUROPEAN UNION
FCA	FINANCIAL CONDUCT AUTHORITY
FSB	FINANCIAL STABILITY BOARD
GVA	GROSS VALUE ADDED
IBR	INPUT BASED RESILIENCE
OBR	OUTPUT BASED RESILIENCE
OECD	ORGANISATION FOR ECONOMIC COOPERATION AND DEVELOPMENT
ORM	OPERATIONAL RISK MANAGEMENT
OPR	OPERATIONAL RESILIENCE
PESTEL	POLITICAL ECONOMIC SOCIAL TECHNOLOGY ENVIRONMENT AND LEGAL
PRA	PRUDENT REGULATORY AUTHORITY
SMES	SMALL TO MEDIUM BUSINESSE ENTERPRISE
UAE	UNITED ARAB EMIRATES
VAT	VALUE ADDED TAX
WHO	WORLD HEALTH ORGANIZATION

CHAPTER ONE

1.0 INTRODUCTION

1.1 BACKGROUND OF STUDY

The business landscape is continually confronted with a plethora of unprecedented and unpredictable challenges, exposing organizations to various internal and external threats (Annarelli & Nonino, 2016).

Operational disruptions, irrespective of business size or sector, are commonplace and can stem from natural or man-made forces (Gorjian Khanzad & Goyabadi, 2021; Essuman et al., 2020). Such disruptions have been found to have detrimental effects on operational systems, including supply chains, costs, and product quality, thereby impacting efficiency and posing a threat to a firm's survival (Mizgier et al., 2015; Haraguchi & Lall, 2015). An example is the Thailand Flood disruption in 2011, led to disruption in the supply chain, revenue loss of many Thai businesses particularly manufacturing and tourism sector, the impact of the flood according to world bank, resulted in the decrease in Thailand's Gross Domestic Product (GDP) growth rate in 2011 from 4.1% to 2.9% amounting to about \$10 billion loss (World Bank, 2011). Also, a recent shutdown of operations at the port of Iskenderun after the deadly earthquake in Turkey, resulting in about \$34 million damages incurred, amounting to 4% of the country's annual economic output (Lawati, 2023). Another instance is an outbreak of fire at Phillips Semiconductor's manufacturing facility in Albuquerque, New Mexico, resulted in the company losing an estimated \$400 million in potential income from its major client, Ericsson (Ali et al., 2022).

Many other threats such as cyber-attack, pandemics diseases, political instability, economic recession entrepreneurial activity such as equipment default are instances of many several disruptive events that can alter the stability and security of a business and its surrounding environment (Bhamra et al., 2011). Moreso, while the advent of globalization has made the world more interconnected both socially, economically, and technologically, it has resulted in a more competitive market space for businesses (Annarelli and Nonino, 2016). Particularly in the face of unprecedented operational disruptions, operational resilience has emerged as a critical facet of organizational survival and competitiveness (Annarelli and Nonino, 2016).

Operational disruptions in their nature are often unpredictable and unexpected, however with the study of earlier disruptive events overtime, they have been classified based on the frequency of occurrence such low probability or high probability and level of impact; high impact or low impact (Essuman et al., 2020). However, in the interconnected world regardless of the frequency of occurrence or impact of a disruptive event, its magnitude cannot be undermined (Annarelli and Nonino, 2016). Hence, organizations may find it difficult to independently resist disruptions while maintaining their competitiveness (Hamel and Valikangas, 2003).

The ability of an organization to resist and react to both internal and external operational disruptions and recuperate from it is referred to as “operational resilience” (Annarelli and Nonino, 2016). Existing literatures have it that some firms are more resilient than the other and have associated resilient firms to be more sustainable, innovative and have highly competitive advantage (Wallace, 2023). According to (Wallace, 2023) resilient firms are regarded as thrivers; with the ability to effectively withstand and recover from operational disruption due to their robust operational resilience mechanisms. Some examples of operational resilience are supply chain flexibility; supplier diversification, inventory management (Petitt et al., 2013; Chowdhury et al., 2019), effective crisis communication plan across a firm's shareholder (Ulmer, 2010), business continuity planning (Castillo, 2005), partnership and collaboration (Scholten and Schilder, 2015).

Understanding the factors that contributes to the resilient ability of some organization against disruptive events has become paramount. According to Wallace, 2022 saying that “if operational disruptions is the new normal, operational resilience is the new necessity”. This implies that the business environment is constantly surrounded by disruptions in one form or the other, hence organizations must imbibe a consistent resilient culture into their operation not only as a defensive mechanism but as a transformative way of creating innovation, achieving long-term sustainability and competitiveness (Gunasekaran et al., 2011; Annarelli and Nonino, 2016; Carayannis et al., 2014).

The landscape of operational disruptions is diverse, ranging from natural disasters to economic downturns, but none have underscored the need for resilience as emphatically as the COVID-19 pandemic of 2020 (Gorjian Khanzad and Gooyabadi, 2021). In comparison to previous economic downturn, the COVID-19 pandemic has influenced the economic landscape and shift from the common physical work pattern to a remote working pattern, virtualization and altering organizations operation processes (Gorjian Khanzad and Gooyabadi, 2021).

Although, its being passage of time since its onset, many businesses around the globe continue to grapple with the enduring disruptive aftermath of the COVID-19 pandemic, facing challenges in restoring their operations to pre-pandemic levels (Even and Christiansen, 2023; Gorjian Khanzad and Gooyabadi, 2021). For example, in a case study of the effect of the pandemic on UAE businesses and society pre-COVID-19 between 2010 and 2019 and the first quarter of 2020, a decrease in employment rate and annual growth rate of businesses was observed (Bocanet et al., 2021).

This global event presented an unprecedented challenge, disrupting supply chains, limiting consumer access, reduced customer spending, revenue loss and imposing operational

constraints on businesses of all sizes (Bocanet et al., 2021). Thereby raising an area of interest in this research to understand how businesses restore operations to normalcy through operational resilience. In this modern dynamic and unprecedented global landscape, the survivability and sustainability of a firm's operation requires developing resilience strategies (Gorjian Khanzad and Gooyabadi, 2021).

While it's been evident that operational disruptions can affect organizations of all sizes, small businesses, due to their inherent limitations in size, financial strength, and opportunities, they are often more susceptible to and are deeply affected by operational disruptions (Gorjian Khanzad and Gooyabadi, 2021). Despite their vulnerability, small businesses play a vital role in the economy, contributing significantly to employment and other socioeconomic attributes (Olaleye, 2021), creating a significance in understanding the role of disruption and operational resilience building in small businesses.

Since the publication of Holling's paper in 1973 the topic of resilience has been growing (Annarelli and Nonino, 2016). The idea of operational resilience gained prominence from the work of Erik Hollnagel, who introduced the Safety-II approach in his paper, focusing on learning from successes rather than only from failures (Hollnagel, 2013). Since its inception, the concept of operational resilience has evolved to encompass a broader range of strategies and practices. Scholars and practitioners have emphasized proactive approaches, such as adaptive governance, redundancy, and flexibility, to enhance an organization's capacity to manage disruptions (Boin & McConnell, 2007). It has also increasingly been integrated with operational risk management to offer a more integrated approach to managing risks and ensuring continuity (Sheffi, 2015). This constructive collaboration provides organizations with a comprehensive framework for both anticipating disruptions and responding effectively (Milkau, 2021). Over time, the field has developed best practices for operational resilience, including scenario planning, stress testing, and building resilient systems and processes in maintaining critical business services amidst operational disruption (Linkov et al., 2019).

For this study, the author seeks to adopt the cross-sectional practice and guidelines of operational resilience framework of the Central Bank of Ireland (CBI, 2021), in investigating the operational resilience of small businesses in Dublin Ireland in reaction to the aftermath of the COVID-19 pandemic disruption and provide the best practices and guidelines to achieving operational resilience for small businesses. The author believes that this framework represents the research novelty for this study differentiating it from past operational resilience framework such as the PESTEL Analysis (Gorjian Khanzad and Gooyabadi, 2021), BCG Framework (Wallace, 2022), Input-Based Resilience (IBR) framework (Chowdhury et

al., 2019), Supply Chain Resilience (Wagner et al., 2017; Chowdhury et al., 2019) and Business Continuity Management (BCM) Framework (Paton and Hill, 2006) that focuses on reactive and defensive mechanism of operational resilience rather than transformative and lessons for future resilience. Alongside, it captures the in-depth understanding of the construct tailored in respect to contextual perspective of small business owners and managers of small businesses in Dublin Ireland.

The author does this by examining and critically analysing past literatures, on the concept of operational resilience and its importance, challenges faced by small businesses during and post COVID-19 pandemic, definition and importance of small businesses and the Central Bank of Ireland cross sectional guidelines for operational resilience and operational resilience of small businesses in Dublin Ireland in chapter 2 and within the findings and discussion section in chapter 4.

1.2 STATEMENT OF PROBLEM

Small businesses defined as enterprises consisting of less than 50 employees (CSO, 2017; EU, 2003), make up over 97% of businesses operating in Ireland (DKM, 2006). They span across all business sectors including construction, industrial firm, wholesale and retail, hospitality, transport, business services, health, financial services, and other sectors as seen in figure 1.0 (CSO, 2005). Small businesses play a significant role in the economic and social fabric of any nation. They are a major source of employment in many countries according to the Organization for Economic Co-operation and Development (OECD, 2019), small alongside medium-sized enterprises (SMEs) accounts for around two-thirds of total employment in OECD economies. Similarly, research by (Birch, 1981) emphasized the role of small businesses as job creators. Small businesses are known for their agility and innovative nature (Gorjian Khanzad and Gooyabadi, 2021) often bringing new products and services to the market and hence contribute significantly to nations economy, productivity, and innovation (Acs and Audretsch, 1990; OECD, 2022). However, despite their unique characteristics, they are more susceptible to disruption than larger firms due to their limited access to resources to fall back on amidst market volatility, resulting in further financial, network, and supply chain disruption (Gorjian Khanzad and Gooyabadi, 2021).

The COVID-19 pandemic disruption of 2020 has undeniably ushered in a new era of challenges for businesses worldwide (Bonacet et al., 2021), with small businesses in Dublin, Ireland being no exception. Small businesses faced immediate financial challenges due to reduced demand, mandated closures, and operational restrictions. Research studies of (Bartik et al., 2020) in a

survey conducted late March in 2020 of about 6000 small businesses that were part of the Alignable Business Network (ABN), discovered that 43% of the businesses were closed down temporarily with massive lay-offs of employees due to liquidity of cash at hand, emphasizing the importance of financial resilience and access to liquidity during the pandemic (Bartik et al., 2020). Alexandra et al., 2020 also confirms this in their research study on the financial fragility of small businesses particularly in the retail sector, discovered 43% of businesses were closed with 40% decrease in employment.

Furthermore, many small businesses relied on local and global supply chains that were disrupted by the pandemic. According to the reports of the U.S Chamber of Commerce, 61% of small businesses were faced with disruption in their supply during the pandemic while 41% of them in 2022 post-pandemic needed to alter the supply chain resources and 47% continue to face challenges with meeting customers demand (WINDES, 2023).

As operational disruptions such as the COVID-19 pandemic became a stark reality, the ability of small businesses to maintain operation has been severely tested (Gorjian Khanzad and Gooyabadi, 2021). The unpredictable and unprecedented nature of the pandemic raised critical questions about the resilience of small businesses and their capacity to adapt to unforeseen operational challenges.

Several studies highlight the significant operational difficulties faced by small businesses during COVID-19 and underscore the importance of resilience, adaptability, and support to manage these challenges. The pandemic indeed accelerated the digital transformation of small businesses as they adapted to new market realities (Engidaw, 2022). Research by (Wang et al., 2020) discussed how the adoption of digital technologies helped small businesses build resilience and maintain operations during the pandemic. During the epidemic, the internet has proven to be a crucial resource of delivering services for several small enterprises. According to Facebook's report, digital ordering tools were used by 23% of firms, 16% by service delivery tools, and 37% by digital payment tools 30 days before the survey was fielded. All sales were made online, 36% of active small firms were accounted made use of internet resources (Engidaw, 2022). Considering the significant role of small businesses in the social and economic landscape of national economy, it is paramount that both business owners and government regulatory bodies, incorporate resilience in the way small businesses operate to withstand and recover from disruptions (Gorjian Khanzad and Gooyabadi, 2021).

The COVID-19 and previous disruptive events have stirred researchers of management and businesses to understand the concept, importance, measurement, and application of operational resilience.

The application of this construct has been evident in financial market (Anderson et al., 2018), supply chain networks (Chowdhury et al., 2019), elements and processes of organisations (Annarelli and Nonino, 2016).

Previous literatures, including studies by (Alexandra, 2016; Essuman et al., 2020; Fairlie and Fossen, 2021; Humphries et al., 2020; Bartik et al., 2020)), has focused on conceptualization and measurement of operational resilience as a multifaceted construct.

Several past literatures as also emphasized the importance of operational resilience. Bruneau et al., 2003, emphasizes the importance of a resilient business in ability to withstand and adapt with quick recoverability and continue operations in the midst disruption, in ensuring the survival and contribution to the growth of a nation's economy. Chowdhury and Quaddus, 2017 also, emphasized the importance of understanding operational resilience in managing supply chain risks and ensuring continuity of operations. Ganin et al., 2016 argues that businesses that proactively build operational resilience are better positioned to navigate challenges and maintain competitiveness by highlighting the role of operational resilience in preserving a company's competitive advantage. Furthermore, businesses with strong operational resilience inspire confidence, trust, and reliability among stakeholders, including customers, suppliers, and investors. This confidence stems from understanding business's ability to manage and recover from disruptions effectively (Sheffi and Rice, 2005)

From the several literatures reviewed in this research in chapter 2, the researcher as observed few gaps in the literatures which lead to the research aims and objectives for this research, aligned with the research topic. The first gap identified by the researcher is insufficient the in-depth knowledge and understanding of the operational resilience construct, while there is much quantitative research (Stolker et al., 2008; Essuman et al., 2020; Alexandra et al., 2016; Carlson et al., 2012; Chowdhury et al., 2017; Chowdhury and Quaddus, 2017) on the construct, there is research on the qualitative research of the construct. Therefore, to contribute to the growing body of knowledge of operational resilience, the research has chosen qualitative research of the study.

The second gap identified is the research target audience, while majority of the research on the impact of COVID-19 pandemic and operational resilience carried on large firms (Hendricks et al., 2021; Ganin et al., 2016; Wang and Zhog, 2020; Breunea, 2003), there are little research carried on small businesses, who are more prone to disruption considering their limited size, financial and physical capabilities (Gorjian Khanzad, Z. and Gooyabadi, 2021). They are also of significant importance in contributing to the employment, productivity, and Innovation of the economy (Olaleye, 2020), emphasizing the need for investigating the role of COVID-19

pandemic disruption and their operational resilience in response to the aftermath of the COVID-19. To fill this gap, the researcher has chosen to investigate both COVID-19 operational disruption and operational resilience in respect to small businesses in Dublin Ireland.

The third gap identified many researchers have investigated operational disruption during COVID-19 pandemic (Olaleye, 2020; Fairlie, 2020; Cowling, 2020; Ratten, 2020; Ponis, 2020), the COVID-19 pandemic aftermath challenges faced by businesses have not been fully captured. Therefore, to fill this gap, the researcher has chosen to investigate the challenges faced by the aftermath effect of the COVID-19 pandemic on small businesses in Dublin Ireland operation.

The fourth gap identified by the researcher is in the effectiveness of the operational resilience framework and strategy implemented by businesses to resist, react, adapt, and recover from disruptions and enhance the business continuity. While there are many different operational resilience framework including the PESTEL Analysis (Gorjian Khanzad and Gooyabadi, 2021), BCG Framework (Wallace, 2022), Input-Based Resilience (IBR) Framework (Chowdhury et al., 2019), Supply Chain Resilience Framework (Wagner et al., 2017; Chowdhury et al., 2019) and Business Continuity Management (BCM) Framework (Paton and Hill, 2006; Faertes, 2015; Herbane, 2004) in measuring, assessing, conceptualizing operational resilience of businesses and Framework to identify, prepare, react, adapt and recover from operational disruptions, however, none have provided best practises or guidelines that provides effectiveness of the implemented resilience framework against operational disruption.

Therefore, the author has chosen to fill this gap by adopting the Central Bank of Ireland Operational Resilience Framework that emphasizes on delivering critical business services amidst operational disruption through a step by step guidelines and best practices for achieving operational resilience, including identifying important or critical business services, impact tolerance, scenario planning, stress testing, and building resilient systems and lessons for future disruptions (CBI, 2021). These gaps identified by the researcher leads to the researcher research questions and objective below.

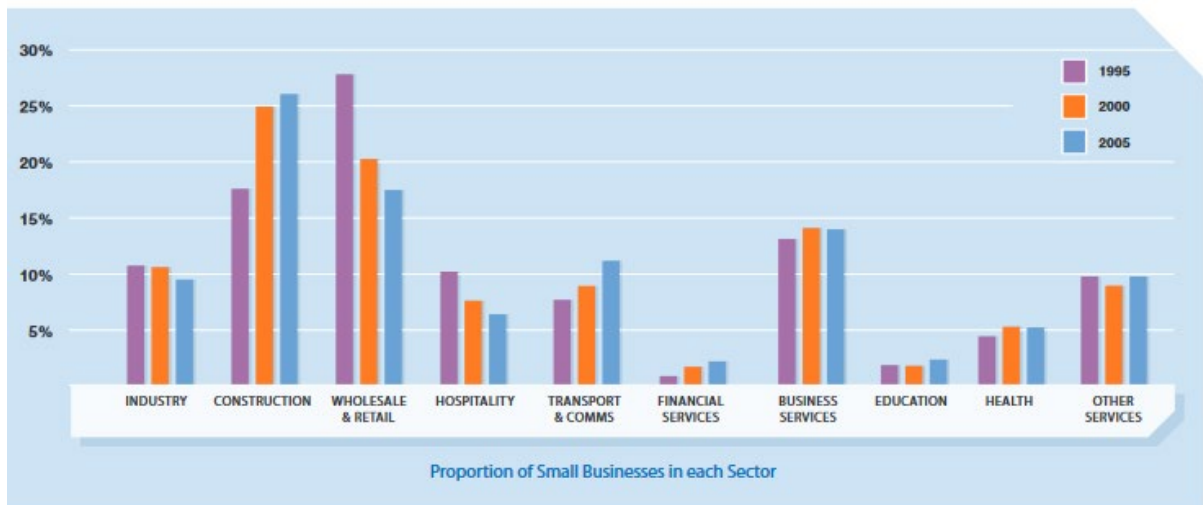


Figure 1 Sectoral Distribution of Small Businesses in 1995, 2000 and 2005 (CSO Data March- May 2005).

1.3 RESEARCH OBJECTIVES

According to (Saunders et al., 2009), research objectives must be clear, precise statements that define the goals of a study. Wilson, 2014 emphasizes that well-defined research objectives provide the necessary foundation for formulating and supporting research questions. In this study, the author employs the Central Bank of Ireland (CBI) framework (discussed in Chapter 2), which contends for a transformative operational resilience in preserving and delivery of important business amid operational disruptions. By so doing, the author aims to contribute valuable insights that can inform not only small businesses in Dublin Ireland but also policymakers and researchers interested in bolstering operational resilience in the face of unforeseen disruptions. From the research gaps identified in the literature the author put forward the following research objectives based on the operational resilience framework adopted. These objectives and sub-objectives are integrated into the study's design for a thorough analysis, which is discussed in Chapter 4.

Objective 1: To understand the COVID-19 aftermath disruption to business operation, perspectives on small businesses in Dublin Ireland.

Objective 2: To identify the specific operational disruptions experienced by small businesses in Dublin, Ireland, in the post-COVID-19 era.

Objective 3: To explore the level of tolerance small businesses, have towards operational disruptions post-COVID-19 and their ability to adapt to unforeseen challenges

Objective 4: To investigate the strategies implemented by small businesses to address and mitigate the impact of post-COVID-19 disruptions on their operations.

Objective 5: To explore the effectiveness of resilience-building strategies adopted by small businesses in Dublin in response to post-COVID-19 in line with best practices of operational resilience.

Objective 6: To understand the lessons gained from the COVID-19 disruption and operational resilience strategy implemented.

1.4 RESEARCH QUESTIONS

Stemming from the research objectives, the author puts forward the following research questions below:

1. What is the role of the post-COVID-19 pandemic disruption on small businesses in Dublin, Ireland.?
2. What strategies were implemented by small businesses in Dublin Ireland for building Operational resilience against post -COVID-19 disruption?
3. Where the strategies implemented consistent with existing guideline or framework of operational resilience building best practises?
4. What lesson has small businesses learn about building resilience from the past COVID-19 pandemic?

For additional sub-questions supporting these research questions (See Appendix 1).

1.5 SIGNIFICANCE OF THE STUDY

The investigation of operational resilience in small businesses in Dublin, Ireland, post-COVID-19 disruption is a study of significant importance, with implications for both academic understanding and practical application in the business landscape. This research provides valuable insights into how small businesses have navigated the challenges of the pandemic and adapted their operations to survive and thrive in an unpredictable environment.

First, the study fills existing knowledge gaps by offering empirical data and analysis on the resilience of small businesses in the Dublin region during and after the COVID-19 pandemic. This contributes to the broader body of literature on operational resilience and provides a localized perspective on the specific challenges faced by small businesses in Ireland.

Second, the research can guide policymakers and business support organizations in crafting targeted strategies and policies to aid small businesses in Dublin. Identifying effective measures to enhance resilience and support recovery in the post-pandemic economy is crucial for sustaining these enterprises and the local economy.

Third, the study promotes economic recovery and stability by examining how small businesses have managed to adapt and maintain continuity during the pandemic. Given the essential role small businesses play in the local economy, their resilience is critical to the region's overall economic health and future growth.

Additionally, the research underscores the resilience and adaptability of small businesses as drivers of community development and innovation. Understanding their strategies can inspire other businesses to adopt innovative practices, fostering a stronger sense of community and collective resilience in the local economy.

In conclusion, this study contributes significantly to academic literature on operational resilience while offering practical recommendations for policymakers and business leaders. The insights from this research support the sustainable recovery and growth of small businesses in Dublin, paving the way for a more robust and stable business sector in the region.

1.6 SCOPE OF THE STUDY

The main scope of the study focuses on examining the operational resilience of small businesses in Dublin, Ireland, following the disruption caused by the COVID-19 pandemic. The study is geographically limited to the city of Dublin, Ireland. The research targets small businesses, defined according to European Commission standards as enterprises with fewer than 50 employees.

The study encompasses a range of industries and sectors within the small business category to provide a comprehensive overview of operational resilience across different types of businesses. The time for this study will be from May 2023 to May 2024.

The study employs qualitative methods to collect data from small businesses in Dublin, by interviewing seven small business owners operating in Dublin Ireland (see table 1), to gather insights into operational resilience and adaptation strategies. The analysis focuses on identifying patterns, trends, and evaluate best practices in operational resilience that have emerged among small businesses in Dublin.

The study is limited to the city of Dublin and may not capture the experiences of small businesses in other regions of Ireland. The research may also be subject to limitations in data availability, particularly regarding the experiences of small businesses that have closed or permanently altered their operations due to the pandemic.

1.6.1 INTERVIEW INFORMATION

Interviewee	Sector	Role	Gender	Number of Employee
One	Hospitality	Owner	Female	6
Two	Business Service	Owner	Female	10
Three	Retail	Manager	Male	6
Four	Retail	Manager	Male	12
Five	Business Services	Owner	Male	10
Six	Business Service	Owner	Male	6
Seven	Hospitality	Owner	Male	10

Table 1 Interviewee Information

1.7 OVERVIEW OF RESEARCH STRUCTURE

1.7.1 CHAPTER 1 – BACKGROUND TO THE RESEARCH TOPIC

The background of this study captures a brief synopsis of the chosen research topic of operational resilience of small businesses in Dublin Ireland amid COVID-19 pandemic disruption. Further discussed in this section are the objectives and specific aims of the research, scope of study and overview structure of this study.

1.7.2 CHAPTER 2 – LITERATURE REVIEW

This chapter contains a comprehensive review of the academic literature pertaining to the research question. Recent literatures on the operational resilience, operational disruption, impact of COVID-19 disruption on businesses will be critically analysed, and the connections between both made throughout this section.

1.7.3 CHAPTER 3 – METHODOLOGY

The methodology chapter discusses the research objectives and the authors chosen methods and process applied to the primary data collection in this study. Further discussed are the

philosophies, approaches, population sample, and a systematic review of how the data collection was conducted.

1.7.4 CHAPTER 4 – FINDINGS AND DISCUSSION

This chapter discusses and critically analyses the findings of the primary research. The Central Bank of Ireland operational resilience framework and past literatures was used in this research to support the objectives and sub-objectives relevant to this study.

1.7.5 CHAPTER 5 – CONCLUSIONS AND RECOMMENDATIONS

The conclusions and recommendations section are a comprehensive summary and critical review outlining the research gaps found from the primary and secondary data consulted in Chapter 2, with a final summary on the desired outcome of this research.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 OPERATIONAL DISRUPTION CONCEPT

The phenomenon of operational disruption has garnered considerable attention from researchers due to its often unpredictable, inevitable nature and deleterious impact (Essuman et al., 2020; Ivanov & Dolgui, 2019; Mizgier et al., 2015). Several past literatures have extensively examined the concept of operational disruption (Chopra & Sodhi, 2004; Embrechts & Kluppelberg, 1997; Upton & McAfee, 1998). Operational disruptions are construed as inherent outcomes of entrepreneurial endeavors, capable of impeding a firm's performance and tarnishing its reputation (Wagner et al., 2017).

From a critical perspective, while acknowledging the construct's propensity to cause damage, the current conceptual delineation appears limited in its scope, primarily focusing on internal firm dynamics. Hence, the author advocates for a broader conceptualization, as proposed by Essuman et al. (2020), defining operational disruption as an unforeseen and unavoidable event influenced by natural or fabricated factors, posing a significant threat to a firm's operations and even its survival.

Supporting the aforementioned definition, operational disruption is also recognized to lead to operational risk, which stems from both internal and external events within a firm (Mizgier et al., 2015). Internal events may arise from defective internal processes, personnel, or systems, as exemplified by the application failure of ERP systems causing shipment delays at Nestle (Baker & Frolick, 2003). External events, such as the 2019 fire outbreak in Australia, can disrupt major supply chains, operations, and earnings, resulting in significant financial losses for businesses and industries (Edwards, 2020).

Operational disruption profoundly impacts business performance and operations, often resulting in detrimental consequences (Mahmoud et al., 2022). Extensive research has linked operational disruption to various adverse outcomes, including increased operational costs, shifts in consumer demand, supply chain disruptions (Wagner et al., 2017; Paul & Chowdhury, 2020), heightened firm risk (Mizgier et al., 2015; Schmidt & Raman, 2020), and diminished financial performance and business revenue (Olaleye et al., 2021).

The COVID-19 pandemic serves as a compelling scenario of the role of operational disruptions on businesses. This global event presented an unprecedented challenge, disrupting supply chains, limiting consumer access, and imposing operational constraints on businesses of all

sizes. In the specific context of Dublin, Ireland, the pandemic's effects on small businesses warrant closer examination, considering the unique economic landscape and business environment of the region. As the world transitions into a post-pandemic era, understanding the impact of COVID-19 on small businesses, operational resilience and the strategies employed to navigate operational disruptions becomes imperative (Gorjian Khanzad and Goyaabadi. 2021).

According to Newton's Third Law, every action has an equal and opposite reaction (Cohen, 2002 as cited in Newton's Law). In response to this principle, firms, and businesses endeavor to cultivate operational resilience to effectively manage and mitigate the impact of operational disruptions on their operations (Annarelli and Nonino, 2016). Consequently, operational resilience has emerged as a significant concern for small business proprietors and senior managers, attracting considerable attention from researchers (Essuman et al., 2020; Carali et al., 2010; Mizgier et al., 2015). Previous research findings indicate that resilient firms employ strategies to address disruptions, thereby enhancing their operational performance (Mahmoud et al., 2021).

2.2 OPERATIONAL RESILIENCE: CONCEPTUALIZATION AND COMPONENTS

The word resilience owes itself to several interpretations from a growing interest in the subject in various multiple research fields, varying from ecology to metallurgy, individual and organizational psychology to engineering (Bhamra et al., 2011).

Regardless of the differences in subfields of management scholars, majority of them have come in consensus with the definition of resilience (Annarelli and Nonino, 2016) however, the conceptualization and operationalization in management research has been developed and generated across different fields over four decades now. In this research, the author proposes various definitions in the literature below showing the development evolution of the resilience concept overtime put forward by many scholars.

The concept of resilience can be dated as far back as Holling, 1973, one of the foundational definitions of resilience. Linking it with ecology and environment, he defined it as the capability of an ecosystem to adapt to changes and yet exist. He proceeded to compare the construct with his theory of stability which he defines as the “capacity of an entity to return to equilibrium after temporary disturbance” (Holling 1973 p. 14). Holling developed a second definition from engineering resilience perspective and defined the construct as the process of handling resistance to disturbance and the speed of return to the pre-existing state.

In accordance with the ecological resilience perspective of Holling, (Cumming, 2005 p. 976) defines resilience as “ability of a system to maintain its original form in the face of internal and external shocks and disturbances”. Coherent on the other hand with Holling engineering perspective of resilience, (Dinh et al., 2012), defines resilience as the capacity to recuperate in the face of an unplanned event. Further contribution to the resilience engineering by (Hollnagel et al., 2006), extensively explained the concept of resilience engineering, he defined failure as a consequent of adaptation needed to adjust to the complexity of real world, contrary to a malfunction. Conversely, to this notion, success was measured as the ability of an organization, groups, and persons to expect the dynamic nature of risk prior to the onset of failure and harm (Hollnagel et al 2006).

In recent years, the concept of resilience from an organizational perspective has been developed extensively by management scholars (Annarelli and Nonino, 2016). Expanding the notion of resilience from resistance to shock and disastrous event to recoverability and recovering times and cost of recovery. In other words, the earlier notion of ecological and engineering resilience, implies resilience as the capability of resisting and recover from disruptive events that can cause significant impact on an organization either internally or externally (Coutu 2002; Hamel and Valikangas, 2003). However, (Christopher and Peck, 2004; Sheffi and Rice 2005) regarded this notion as robustness rather than resilience, stating that the term robustness differs from resilience despite being used interchangeably in management literature. They therefore differentiated both terms by referring robustness as a similitude of physical strength, conversely defining resilience as capacity of a system to recuperate to a state of normalcy or advanced state post disruption.

In line with operation management, (Iakovou et al., 2007) considered resilience in the terms of recovery time, i.e. the capacity to recuperate operations rapidly. Focusing on supply chain resilience (Carvalho et al., 2012), built upon this definition, both authors regarded the construct as systems capability to return to its initial form or an advanced post disruption avoiding failure, however, (Annarelli and Nonino, 2016) argued that the resilience should be centered on preventing the movement to undesirable state where failure can occur.

More recent research of resilience literature as associated the concept of resilience with entrepreneurial activity, (Sheffi and Rice, 2005) established that building a resilient enterprise entail incorporating strategic steps that changes the way of operation of businesses, increasing the competitiveness and reducing the likelihood of disruption. (Stolker, 2008) built upon this notion and defined operational resilience as the capability of an organization to prevent disruptive events from occurring, responding rapidly recuperate from disruption and still

maintain basic functionality of business. Further contributions towards this notion by the National Academy of Science (NAS) in view of resilience engineering defined operational resilience as the capacity of a firm to plan and prepare for, absorb, respond, and recuperate from disastrous event and adapt to new conditions (Ganin et al., 2016).

Contemporary research of operational resilience literature has conceptualized the construct into two basic approaches (Essuman et al., 2020; Rombe 2021, Chowdhury et al., 2019) including an input-based resilience (IBR) approach and output-based approach. While some focused on the IBR approach (Chowdhury et al., 2019), noted that operational resilience is the capability of an organization to respond effectively to disruption by absorbing and recuperating from the impact and return to its initial state determined by the IBR element scale. The IBR scale used to define the resilience concept are flexibility, stock, visibility, preparedness for disruption, agility, collaboration, integration, and information sharing (Chowdhury et al., 2019). Essuman et al., 2020 however argued that the IBR approach cannot adequately capture the nature and concept of operational resilience, as it is impossible to determine the level of resilience in the absence of disruption, he further referred them as mere resilience stimulator and antecedents to OBR element. The OBR approach on the other hand, conceptualizes operational resilience as disruption absorption, recoverability, adaptability, and transformability as its core element (Scholten and Schilder, 2015; Essuman et al., 2020).

Thus, from the OBR perspective, (Essuman et al., 2020) viewed operational resilience as a multi-dimensional entity, disruption absorption; capacity of a firm to sustain its structure amid disruptions and recoverability; ability of a firm to return to its original state after disruption and compared to varying levels of operational disruption.

Following the past COVID-19 pandemic taking its toll on global economy, the scope of operational resilience has been expanded globally by professionals and Institutions. Operational resilience to disruption had gone beyond adapting and recovering as seen in previous literatures (Essuman et al., 2020; Chowdhury et al 2019) to enhancing business continuity processes; a process of ensuring that the critical operations of a business are carried out amidst disruption (Galaitisi, 2023). Critical operations or important businesses are essential functionality aspect of businesses if undelivered threatens the survival of a firm (CBI, 2021; FCA, 2021).

With more focus on enhancing business continuity processes, the Central Bank of Ireland (CBI, 2020) defines operational resilience as the capacity of individual firm or financial service sector to recognize, plan, react and adapt, recuperate, and learn from operational disruptions. The UK's Prudent Regulatory Authority defines operational resilience as the "ability of a firm's

financial market, infrastructure and financial sector as a whole to prevent, respond to recover and learn from operational disruptions” (PRA, 2021).

This definition is concurrent to the Central Bank of Ireland (CBI, 2021) definition as the capacity of both individual firms and the broader financial sector to recognize, anticipate and effectively deal with operational disruption by planning, responding, recovering, and gaining insight from such incidents. This definition primary implies that an operational resilient firm must possess the capacity to protect and sustain its important business functions when experiencing operational stress and disruption, reducing the consequential effect, and protecting its customers and the integrity of the firm’s systems (Stolker, 2008).

The highlight of this definition that catches the interest of author towards the research is the ability to recognize and learn from operational disruption. One of the research's objectives would be to observe if small businesses could learn from the past COVID-19 disruption.

From the Literatures reviewed (Essuman et al., 2020; CBI, 2021, Stolker, 2008) the author proposes a definition of operational resilience as a “multi- dimensional construct, with the ability of a firm to recognize, plan, react and adapt, recuperate normal business operation after a disruption and as well learn from disruption and develop innovation”.

2.3 IMPORTANCE OF OPERATIONAL RESILIENCE BUILDING

The establishment of resilience is paramount for the day-to-day functioning of businesses, offering protection against various unforeseeable and inevitable threats and risks posed by operational disruptions. Ganin et al. (2016) outlined three primary rationales underlying the importance of fostering operational resilience within organizations. Firstly, it enables firms to respond promptly to disruptions characterized by low probability but high impact, thereby minimizing associated costs and damages (Essuman et al., 2020). Secondly, it serves as a safeguard against unpredictable risks stemming from supply chain disruptions (Chowdhury et al., 2019). Lastly, it aids organizations in preparing for and mitigating the effects of disruptive events (Stolker, 2008).

The aftermath of the covid-19 impacted many important business services of small to large sized firms causing disruptions to processes, facility, financial stability, and detriment to customers. Some businesses, to amend or restore their operations prior to the pandemic and retain customers, incurred back-order cost due to low level of operational resilience (Aylor et al., 2022).

Aylor et al., 2022 recorded that in a survey of 150 companies carried out by the Boston Consulting Group (BCG) in 2021 to assess the resilience of businesses in response to the

COVID-19 pandemic disruption, they developed a resilience matrix as seen in figure 2.0 below. The resilience matrix is classified into four quadrants; thriving, responsive, reactive, and insulated. In the survey carried out they discovered only 10% of the business were thrivers to the COVID-19 disruption, referring to businesses who have excellent resilient capabilities predeveloped and were able to efficiently anticipate and recover from the disruption (Aylor et al., 2021). 5% of them were categorized as responsive, that is, they had resilient capability required to mitigate short-term disruption. Hence, they were compelled to rely on the ability to make informed decisions to adjust to the COVID-19 disruption. 80% of the businesses were classified as reactive, had structured operations but no planned resilient strategy, hence they were prey to cycle of firefighting amid the COVID-19 disruption. 5% of the businesses made up the last quadrant of the matrix referred to as insulated, not structuring their operation to mitigate disruption and hence struggled.

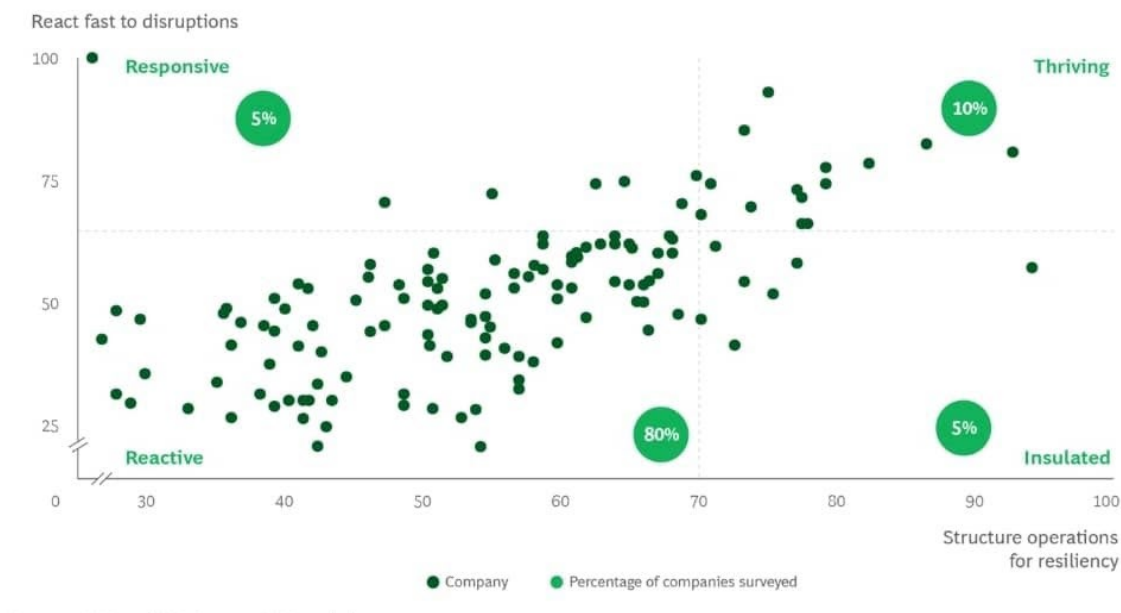


Figure 2 BCG Analysis of Companies Operational Resilience Matrix to COVID-19 Pandemic

Source: Aylor et al., 2022

2.4 OPERATIONAL RESILIENCE AND OTHER CONSTRUCTS

Recent global events such as the COVID-19 pandemic have highlighted how susceptible organizations are to disruptions and underscored the importance of planning beyond just emergency response to ensure long-term resilience and continuity (Wallace, 2022). Organizations must develop strategies to prepare for such events. Construct such as business

continuity management (BCM), operational resilience (OPR), and operational risk management (ORM), all focus on helping organizations proactively prepare for and respond to unexpected challenges and disruptions (Galaitzi et al., 2023). While these three areas share a common goal of safeguarding organizational stability and continuity, they differ in scope, focus, and methodologies. The distinctions between them highlight the importance of an integrated approach to risk management and resilience that considers both immediate and long-term impacts on an organization's operations and strategic direction (Galaitzi, 2023).

2.4.1 BUSINESSS CONTINUITY MANAGEMENT VERSUS OPERATIONAL RESILIENCE

There have been several controversies in literature regarding the concept of business continuity management (BCM) (Bajgoric, 2014; Gartner 2021, Zeng and Zio, 2017). While some argue that BCM is a branch of existing risk management approach (Bajgoric, 2014), authors like Mciluee, 2013; Faertes, 2015, Feng and Zio 2017), defines BCM as a risk discourse processes (Galaitzi et al., 2023), where steps are taken to prepare a system to withstand disruption with the foreseeable predictions that a disruptive event will occur. Conversely, other authors debate BCM to include recovery approach from disruption rather than preparation for disruptive events (Gartner, 2021; Azadegan et al, 2020; Herbane et al., 2004). However, a standardized definition of BCM, generally adopted is that of the International Organization for Standardization (ISO, 2019), defined BCM as a system of management with the objective of preventing the probability of occurrence of a disruption, preparing for, and responding to and recovering from disruption to maintain critical functions.

There have been several ambiguities as to the relationship between OPR and BCM. While OPR has been regarded as a pre-requisite for BCM, (Hofbauer and Quirchmayr, 2021), (Gartner, 2021), regarded BCM as the framework to building OPR. Conversely, the (CBI, 2021), regarded BCM as a component of OPR, emphasizing that OPR is a broader concept than the former, noting that BCM focuses on a particular disruption such as individual system, people or processes, OPR further proceeds on determining how the possibility of that disruption will impact the end-to-end delivery of a critical business services. CBI, 2021 from their notion, concludes that in achieving operational resilience, the business continuity management (BCM), must be tested on severe and plausible scenarios.

2.4.2 OPERATIONAL RISK MANAGEMENT VERSUS OPERATIONAL RESILIENCE

According to (Lam, 2014; Zhao et al., 2013), operational risk management (ORM) is defined as a system of risk management for identifying, assessing, and mitigating risk related to day-to-day operation using frameworks and models. (Power, 2007), emphasized the use of ORM for both short-term and long-term risk management, depending on the nature of the risk. (CBI, 2021), argues that while both OPR and ORM are considered risk management principles, aiming to identify, assess and mitigate risk to ensure continuity and smooth operations (ISO, 2018), OPR is regarded as a broader concept focusing on building capacity to mitigate risk when they occur rather than a defensive measure of preventing risk event from happening.

In summary, CBI, 2021 highlights that operational resilience requires the coordination between operational risk management, business continuity management, incident management international communication technology, cyber risk, recovery, and resolution planning.

2.5 OPERATIONAL RESILIENCE FRAMEWORKS

Frameworks such as BCG Operational Resilience Framework (Aylor et al., 2022), Input Based Resilience (IBR) framework (Chowdhury et al., 2019) and PESTEL analysis (Gorjian Khanzad and Gooyabadi, 2021) have been put forward by previous literatures as an adaptation tool for achieving operational resilience.

According to the research literature of (Gorjian Khanzad and Gooyabadi, 2021), referred operational disruptions as environmental jolts, they believed that using the PESTEL Analysis, organizations could achieve resilience in operation by successfully analyzing their external and internal environment and aligning political, environment, technology, economical and legal factors to their business processes to withstand, recover from operational disruption.

Input-based of resilience framework (IBR) has been used by several literatures as a perspective of understanding the concept of operational resilience construct (Essuman et al., 2020; Rombe et al., 2021; Chowdhury et al 2019), also implemented by (Rombe et al., 2021) in a comparative case study of operational resilience on SMEs (Small to Medium Enterprises) in Indonesia in overcoming crisis. The IBR perspective postulates that a resilient organization should have a mechanism determined by the IBR scale for effectively responding to disruption in relation to absorption and recoverability (Essuman et al., 2020). The IBR element for determining a resilient organization includes firm's visibility, buffers, visibility, disruption preparedness, agility, collaboration, integration, and information sharing (Rombe et al., 2021; Essuman et al., 2020)

However, the PESTEL analysis and the IBR approach although provides insights and characteristics a firm should have respectively to adapt and recover from operational disruptions but limited in evaluating the effectiveness of the resilience strategy and future lessons for addressing further operational disruptions. Conversely, from a critical perspective, the IBR approach lacks comprehensive insight into the essence of operational resilience due to its inability to ascertain the extent of resilience in the absence of disruption. Consequently, it is often regarded as merely serving as stimuli for resilience rather than offering a complete understanding of the concept (Essuman et al., 2020).

The Boston Consulting Group (BCG) operational resilience framework is a widely recognized model used and referenced by various authors and researchers in studies on business resilience and risk management (Martinelli et al., 2021) and supply chain resilience (Tang 2006; Ivanov 2020). This framework offers a structured approach for organizations to assess and promote their capacity to withstand and recover from supply chain disruption (Aylor et al., 2022). It states four steps to building supply chain resilience including establishing visibility and risk assessment, reacting rapidly to disruptions, structuring operation for resilience and putting enablers in place (Aylor et al., 2022).

While the BCG framework aligns with the concept of operational resilience, presents a generalized approach to supply chain operational resilience by highlighting the importance of identifying potential risk, reacting rapidly to disruption, incorporating inventory management strategies, establishing effective communication and collaboration with suppliers, and leveraging technology and data analytics to monitor supply chain real time (Aylor et al., 2022), its emphasis on technology and data analytics and extensive planning may be more suitable for larger organizations with greater resources. Considering the nature of small businesses and resource size and the complexity of the framework, the author therefore rejects the BCG operational resilience framework.

The author adopts the Central Bank of Ireland's 2021 operational resilience framework to fully capture the in-depth nature of how small businesses in Dublin Ireland were resilient to the recent COVID-19 aftermath disruption in line with best practices for achieving operational resilience. The author has chosen this framework for several reasons considered suitable from the literature reviewed; it tailors to local Irish context, considering local regulations, business practices, and economic conditions.

Although the framework primarily targets financial institutions, its principles and guidelines can be adapted to other sectors, including small businesses (Beashel and Lydon, 2022). The framework's emphasis on risk management and operational continuity, scenario testing,

effectiveness of strategy and lessons learned while maintaining critical business functions, can provide valuable insights for small firms seeking to enhance their resilience. In addition, the framework promotes flexibility and agility in responding to disruptions, which is crucial for small businesses that may not have the same level of resources as larger organizations. This focus aligns with the needs of small firms to quickly adapt and innovate in the face of challenges.

Contrary to other frameworks, the CBI 2021 framework promotes ongoing assessment and improvement of operational resilience strategies. Small businesses can use this approach to learn from their experiences and refine their resilience plans over time.

However, this framework is limited in the sense that it is a new framework developed by regulatory body after the COVID-19 pandemic, with no evidence of use by previous literatures. However, there are similarities in the processes with other resilience guidelines used in previous literature such as (Hofbauer and Quirchmayr, 2021). (Hofbauer and Quirchmayr, 2021), emphasizes the need for organizations to adopt a comprehensive approach to resilience that includes technological innovations, changes in business continuity processes, and strategic decision-making. Their work stresses the role of robust information technology infrastructures in supporting long-term operational resilience and the capacity to adapt to and manage disruptions. This approach contrasts with the Central Bank of Ireland's operational resilience framework, which primarily targets the financial sector.

The Central Bank's framework emphasizes the importance of financial stability, continuity, and operational risk management in the face of disruptions. Although, (Hofbauer and Quirchmayr, 2021) take a broader view, considering diverse industries and emphasizing technological adaptations. Nevertheless, the author believes the Central Bank's framework provides a structured and systematic approach to assessing and managing operational risks, which may be easier for small businesses to understand and implement. This approach includes identifying critical business services, conducting impact assessments, and developing continuity and recovery plans (CBI, 2021).

In addition, the Central Bank's focus on financial stability and continuity could be crucial for small businesses, as they often face greater financial challenges during disruptions (Coles et al., 2021). By emphasizing risk management and continuity planning, the framework can help small businesses build resilience against financial shocks and uncertainty.

Furthermore, the Central Bank of Ireland's framework is aligned with local regulations and standards, which may be particularly important for small businesses in maintaining compliance with Irish law and regulatory requirements. This alignment ensures that the framework is not

only theoretically sound but also applicable within the regulatory landscape of Ireland. In conclusion to, application of the CBI operational resilience framework brings novelty to this research and can serve as foundation and point of reference for future operational resilience research.

2.6 CENTRAL BANK OF IRELAND RESILIENCE FRAMEWORK AND BEST PRACTICES GUIDLINES

While there is a growing importance of operational resilience, two factors are contributing to this development including self-realization and regulatory steps (OPS Central). Self-realization of firms that they require a well define operational resilience framework. In recent years, as observed globally, disruptive events have been on the rise with a major impact to the firm and customers (FCA, 2021; CBI 2021).

Regulators across the globe are branding in new regulations in operational resilience and to safeguard the customers and ensure that firms become more resilient to absorb operational resilience. Disruptions like cyber-attacks, internet outrages, customer's inaccessibility to their account, the recent events of the COVID-19 pandemic and natural disasters like hurricane, flood as reinforced the extents of operational resilience disruption (Fig 2.0).

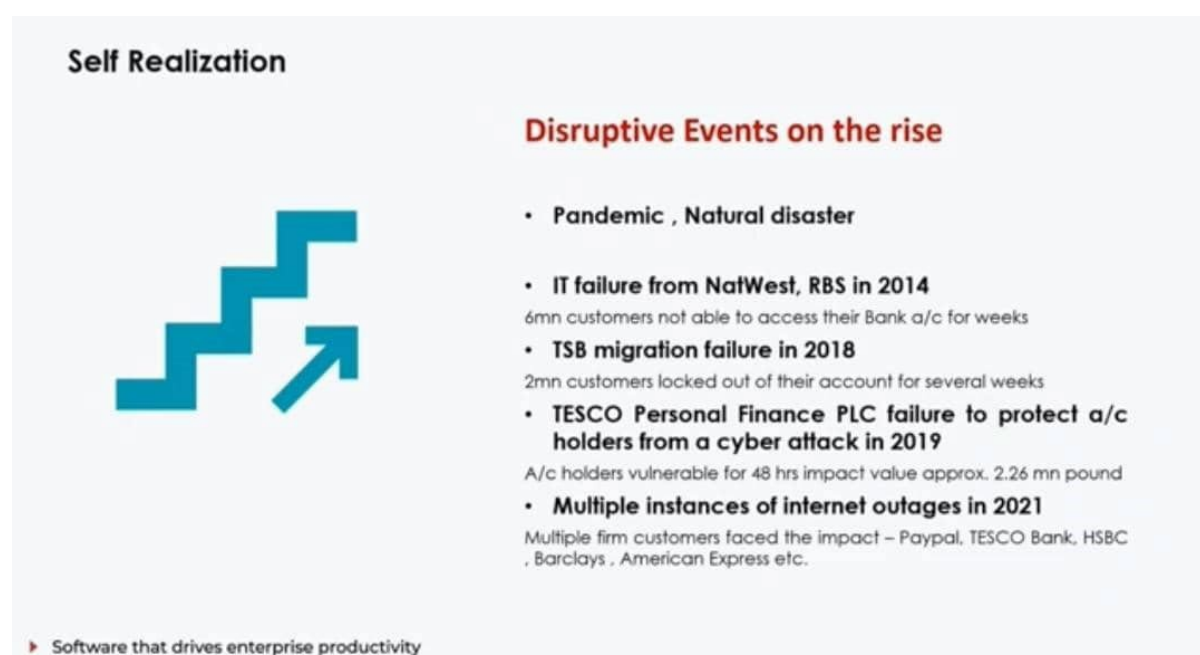


Figure 3 Rise of Disruptive Event

Source: Gieom Ops Central, 2022

Recent studies, as seen in figure 2.1, have shown that there are major policy measures taken in response to COVID-19 pandemic, with operational resilience support being the major measure to mitigate the impact of the pandemic. These policies were published by the Bassel

Committee on banking supervision in March 2021 with the goal of promoting a principle-based approach to improving bank operational resilience to be able to withstand, adapt to and recover from severe adverse events. Regulators in country like the UK, Hongkong, US, Ireland and other countries have developed operational resilience regulation as seen in Fig 2.2 (CBI, 2021; FCA, 2021).

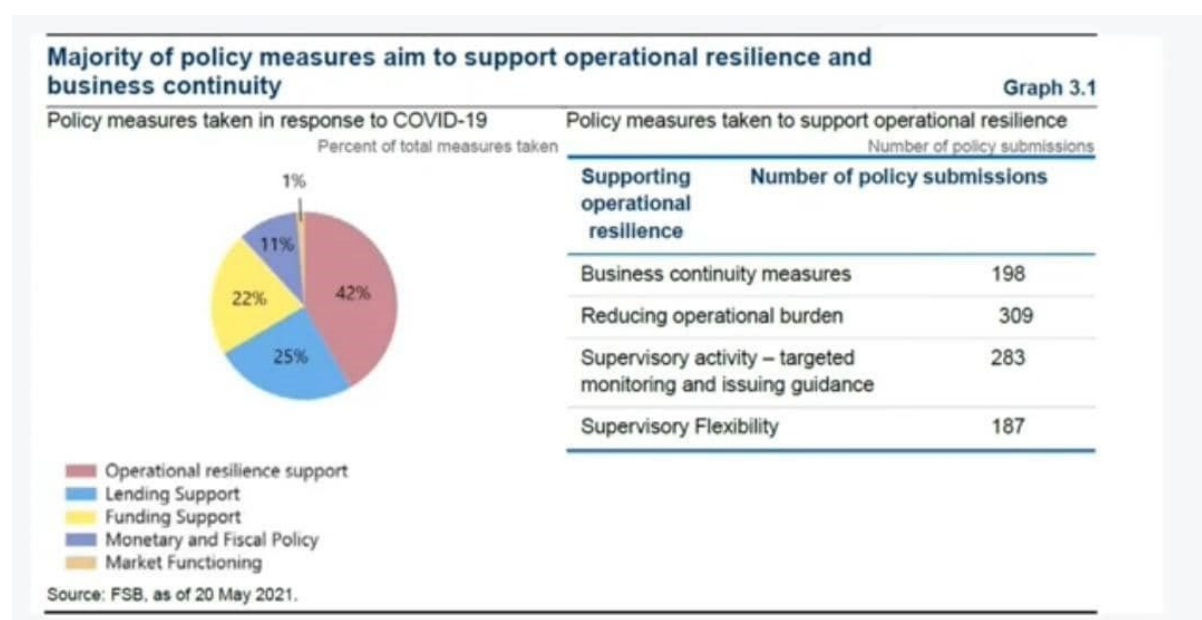







Figure 4 Policy Measures to Support Operational Resilience Against Covid-19 Pandemic (FSB, 2021).

Regulatory steps taken by Countries			
United Kingdom		Regulatory Guideline	For entire Financial Market- Banks , Intermediaries, Insurance, Mutual Funds etc. To be implemented by Mar'22
Ireland		Consultative Paper . RG expected in early 2022	For entire Financial Market- Banks , Intermediaries, Insurance, Mutual Funds etc.
Hong Kong		Regulatory Guideline	For Financial Intermediaries
USA		Regulatory Guideline	For Fintech companies dealing with Community Banks
UAE		Consultative Paper . RG expected in early 2022	For Banks and Financial Intermediaries
Other Countries		At various stages	For Banks & Financial Intermediaries

* Basel Committee on Banking Supervision – Principles of Operational Resilience – March 2021- Bank of International Settlements

Figure 5 Regulatory Steps Taken by Countries (Bassel Committee, 2021).

All regulatory guidelines are similar across many nations. In adherence to regulatory standards, this research will align with the operational resilience guidelines established by the Central

Bank of Ireland (CBI, 2021). In December 2021, the Central Bank of Ireland, after engaging in consultations with various industry stakeholders, prioritized operational resilience and issued comprehensive guidance across industries (Beashel et al., 2022). Central Bank of Ireland in December 2021 following a consultation with a wide range of industry stakeholders made operational resilience a point of concern, published across industry guidance on operational resilience (Beashel et al., 2022). The guidance aims to clarify the Central Bank's expectations and minimize ambiguity regarding optimal practices in operational resilience. This objective is attained by embracing the three foundational pillars of Operational Resilience classified as identify and prepare; respond and adapt; recover and learn as seen in figure 2.4 below. (CBI, 2021).

CBI elucidates that "these three pillars form the foundation for overseeing operational resilience and its associated risks. Furthermore, they establish a cyclical process that facilitates the continuous integration of insights gained into an organization's readiness for operational disruptions. However, there are few considerations before implementing these guidelines that must be followed by the directors or board of directors. These considerations include that the director or board of directors must have reviewed the guidelines and be aware of what is expected, and the demand of responsibility required. In addition, the firm must approve an implement a resilience framework that encompasses areas including; business continuity management, operational risk, cyber and information technology, communication plan and incident management (CBI, 2021).

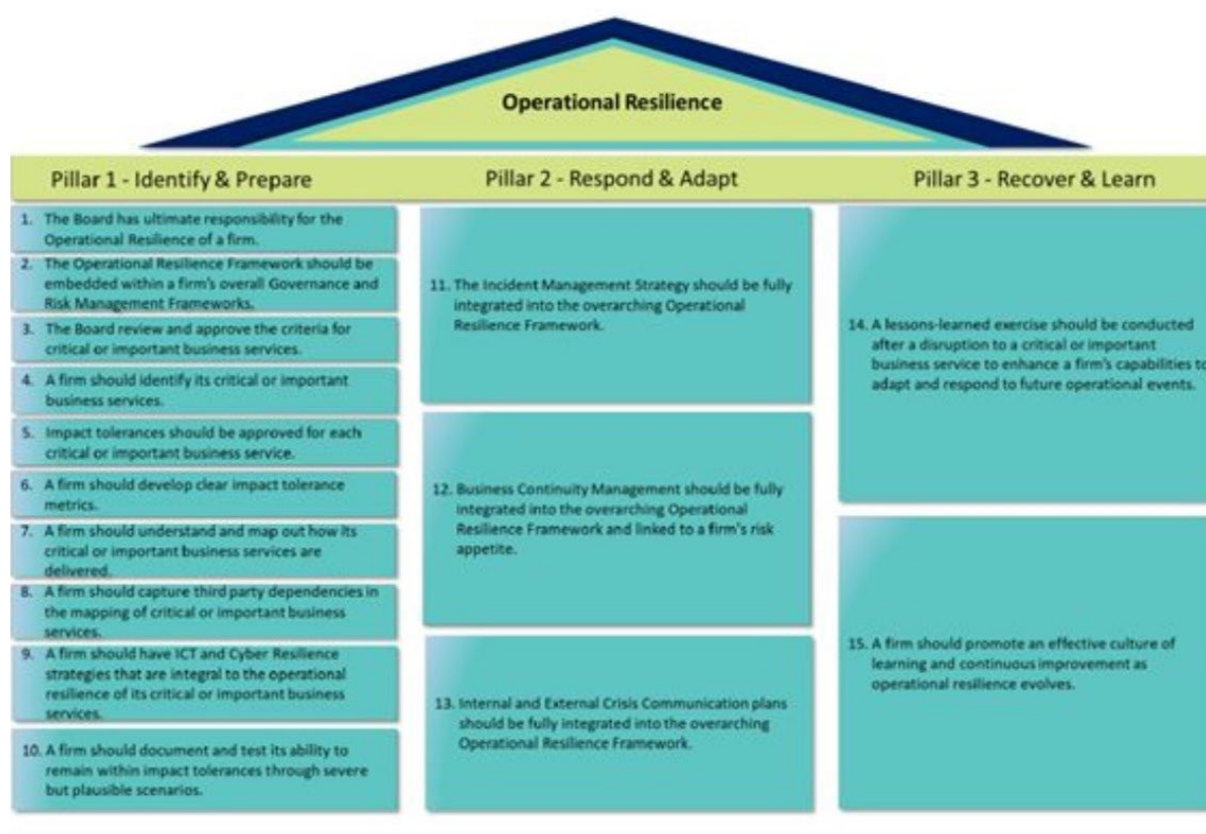


Figure 6 Central Bank of Ireland Operational Resilience Framework (CBI, 2021)

2.6.1 NARRATION TO FIGURE 6

The figure 2.4 above of the CBI operational resilience framework, depicts the cyclic steps to achieve operational resilience, it displays three pillars of operational resilience. The first pillar consists of the regulatory requirement and processes such as identification of critical businesses, impact tolerance analysis to be put in place to identifying and prepare for a disruption, the second pillar consist of the processes involve in mapping out and implementation of the right operational resilience framework to adapt in response to the disruption with scenario testing to determine the effectiveness of the strategy, the third pillar, consist of recovery measured and lessons learned from the strategy implemented and application to potential future disruptions.

2.7 CENTRAL BANK OF IRELAND CROSS INDUSTRY STEPS TO OPERATIONAL RESILIENCE FRAMEWORK BUILDING

2.7.1 PILLAR ONE: IDENTIFY AND PREPARE

2.7.1.1 IDENTIFICATION OF IMPORTANT BUSINESSES

The first step to achieving a firm's operational resilience is to identify the critical or important business services (CBI, 2021). According to the Federal Conduct Authority (FCA, 2021), important services refer to services rendered by a firm or by a third party on behalf of the firm to one or more customers of the firm that if disrupted, may lead to an intolerable level of harm to one or more customers with possibility of posing a risk to the soundness, safety, viability and financial stability of the firm. These important business services are daily activities that constitute to the delivery of services as opposed to the traditional belief of individual systems, processes and functions (CBI, 2021). Identifying these important businesses will align measures to protect them in the face of disruption in the order of priority or significance to the service delivery (CBI, 2021). In addition to, the identification of critical business services of the firm will enable them to clearly determine the impact tolerances according to maximum bearable levels of disruption.

2.7.1.2 IDENTIFY IMPACT TOLERANCES

The next step in this phase is to identify the impact tolerance of the critical business services. An impact tolerance refers to the highest level of disruption that a critical or vital business service can tolerate (Beashel and Lydon, 2022). To achieve operational resilience, businesses need to understand and be able to determine the point at which a disruption to their critical business services would pose or potentially pose to the business's viability, safety, soundness, financial stability and detriment to the customer (CBI, 2021). The impact tolerance in accordance with Central Bank of Ireland, can be applied as a tool for planning ahead of disruption. However, it is sometimes confused with standard risk appetite (Beashel and Lydon, 2022). Traditional risk management and risk appetite procedures primarily aim to mitigate risk by implementing controls to decrease the likelihood and impact of potential disruptive events within a firm (Beashel and Lydon, 2022). In contrast, operational resilience prioritizes the enhancement of a firm's ability to manage risk events effectively as they arise, rather than solely concentrating on implementing defences to prevent risks (CBI, 2021). By establishing impact tolerances, organizations can quantitatively assess the maximum level of disruption a service

can withstand. This facilitates the effective prioritization of service restoration efforts following a disruption event.

2.7.1.3 MAPPING THE PROCESSES

The subsequent phase involves ensuring that critical or vital business services remain within their impact tolerances, necessitating an analysis of the methods and processes integral to service delivery (Beashel and Lydon, 2022). This entails mapping the delivery process, which includes identifying key personnel involved, necessary facilities and technologies, as well as any third-party or outsourced service providers engaged (CBI, 2021). By delineating interconnections and dependencies, organizations can proficiently pinpoint potential failure points, dependencies, or critical vulnerabilities.

2.7.1.4 ICT AND CYBER RESILIENCE STRATEGIES IMPLEMENTATION

Given the pivotal role of technology in facilitating the smooth and productive functioning of many businesses, it must be regarded as an indispensable element of a firm's operational resilience (CBI, 2021). Thus, it is imperative for organizations to ascertain that their technological infrastructure not only aligns with their operational requirements but also that any shortcomings or susceptibilities in technology, particularly in critical or vital business services, are duly recognized (Beashel and Lydon, 2022).

2.7.1.5 ANNUAL REVIEW AND STRESS TESTING PERFORMANCE

In order to bolster operational resilience, it is imperative for a firm to conduct stress testing exercises pertaining to severe yet feasible scenarios (CBI, 2021). These scenarios can be pinpointed through meticulous mapping of processes and vulnerabilities affecting the critical or significant business services identified. It is recommended that such testing be undertaken at least annually to ensure thorough preparedness (CBI, 2021).

2.7.2 PILLAR TWO: RESPOND AND ADAPT

2.7.2.1 BUSINESS CONTINUITY MANAGEMENT IMPLEMENTATION

Business continuity management constitute an integral component of the holistic strategy for operational resilience (CBI, 2021), encompassing the adoption of a Business Continuity Plan is the next after review and testing of strategies. Moreover, both internal and external crisis

communication strategies should be formulated and integrated within either the Operational Resilience Framework or the Business Continuity Plan.

2.7.3 PILLAR THREE: RECOVER AND LEARN

2.7.3.1 IMPLEMENT LESSONS LEARNED

After experiencing a disruption to a critical or important business service, it is imperative for the firm to engage in a reflective process to glean lessons from the incident (Beashel and Lydon, 2022). This analysis should encompass an examination of both successful and unsuccessful aspects of the remediation efforts, as well as an exploration of the underlying factors that precipitated the incident (CBI, 2021). Through a thorough evaluation of the response to the disruption, deficiencies can be identified and addressed, while recovery processes can be enhanced to enable more effective responses in future occurrences (CBI, 2021).

2.8 SMALL BUSINESSES

2.8.1 DEFINITION OF SMALL BUSINESSES

Small businesses have a substantial impact on the economies of various nations worldwide (Olaleye, 2021). In defining the construct, many conceptual frameworks have been developed by scholars and professional bodies. One of the foundational definitions of small businesses is that of Morrison, 1996, p. 400) defined “as enterprises financed by an individual or small group that is directly managed by its owner(s), in a personalized manner and not through the medium of a formalized management structure”. However, contemporary definition such as those of regulatory body, defined the term small businesses as a significant benchmark for tax regulation and determinant of availability and suitability of funds from public financial sector (Olaleye, 2021). The European Union has implemented a classification-based standard for defining small businesses, incorporating factors such as the number of employees, annual turnover, and annual balance sheet, albeit with optional components (Olaleye, 2021). In other words, the EU defined small businesses as businesses or enterprise consisting of less than 50 employees and earns less than or equals to £10 million turnover with a £40 million balanced sheet annually.

According to the world bank, they are defined on three qualities criterion; the number of employees, total revenue, and total assets in US dollars (Olaleye, 2012). Hence, small businesses are defined according to the world bank standard as business consisting of more

than 10 and less than or equal to 50 employees with accumulative assets of more than \$100,000 to 3 million annually.

The Central Statistics Office (CSO, 2017) of Ireland characterized small to medium businesses (SMEs) like the European union and World Bank as enterprises with less than 250 engaged persons as seen in the table 2.0 below. Engaged person are characterized as employees; persons paid fixed wage or salary and persons temporarily working due to holiday, illness, or strike with the exclusion of sub-contract labor staffs, proprietors, and family members; including partners in business or family members who are constantly working in the firm and are not rewarded on a fixed wages or salary (CSO, 2017). They further classified the SMEs into Micro sized enterprises consisting of less than 10 engaged persons, small sized businesses consisting of 10 to 49 engaged persons and medium sized enterprises as consisting of between 50 and 249 engaged persons (CSO, 2017).

Employment size classes Numbers of Employee Engaged	
Small and medium enterprises (SMEs)	Less than 250 persons engaged
Micro	Less than 10 persons engaged
Small	Between 10 and 49 persons engaged
Medium	Between 50 and 249 persons engaged
Large	Greater than 249 persons engaged

Table 2 CSO, 2017 Classification of Businesses in Ireland

2.8.1 CHARACTERISTICS OF SMALL BUSINESSES

Small businesses are distinguished by their restricted geographic scope and limited market share (Harel, 2021). Their operation is niche based with specific market segment, with the ability to produce and provide immediate goods and services different from that rendered by large companies. According to (Harel 2021), small businesses are essential growth enhancers of economy and are flexible in nature, able to adapt, respond rapidly to market deviations and make prompt decisions in a diversified dynamic economy.

Small businesses are recognized as enhancers of socio-economic advancement due to their substantial contributions to the expansion of gross domestic product (GDP), employment opportunities, and entrepreneurial endeavours (Olaleye, 2021). They are also referred to as the backbone of many global nations. The importance of small businesses across many nations

cannot be overemphasized, in addition to meeting the socio-economic needs and job creation, it aids the production and exportation of goods and services worldwide. Its significance in many nations as finance support programs for their innovation and development. These small enterprises are seen as the EU commission as a major instrument for achieving and executing the Lisbon strategy as it is regarded by the Eu commission as a great asset for economic growth and development of a nation.

Furthermore, small businesses have unique characteristics such as agility and flexibility making them more adaptable to respond to disruptions than larger firms (Brock and Evans, 1989). However, their unique characteristics, make them more susceptible to and vulnerable, limiting their ability to effectively respond to disruptions, limited access to financial and physical resources, limited employees and challenges in staff acquisition and retention, short term horizons for business planning and little or no concern for accountability and participation in disaster planning and management (Coles et al, 2021).

2.8.2 IMPORTANCE OF SMALL BUSINESSES IN IRELAND

Small businesses make over 97% of all business operating in Ireland. About 500,000 million small businesses with more than 50% increase in number over the past years. According to Central Statistics Office (CSO, 2005), Ireland ranked the 5th in entrepreneurial activity across the 25 OECD countries, having the higher number of upcoming businesses. According to the Organisation for Economic Co-operation and Development (OECD, 2019), small enterprises constitute a significant portion of the Irish enterprise landscape, comprising more than 99% of establishments in this classification. Moreover, they employ nearly 70% of the workforce, operating across diverse sectors such as primary industries, wholesale and retail, healthcare, education, hospitality, construction, and various other domains.

Small businesses contribute greatly to the development of the Irish economy, they are referred to as the backbone of the Irish economy (Olaleye, 2021). They contribute towards Ireland's economic development, job creation, socio-economic, exportation development.

In addition, small businesses make a considerable contribution to the increase of gross value added (GVA) in the Irish economy (CSO, 2005). In 2003, small construction businesses accounted for over 70% of Ireland's GVA while other small business service sector made over 40%. They further contribute to the Irish economy in terms of tax and exchequer (DKM, 2006).

According to (DKM, 2006), in 2002 about 11% of corporation taxes (£20 million), 37% of income taxes (almost £ 4 billion) and 50% of value added tax (VAT) in the services sector (over £4 billion) was paid by small businesses.

2.8.3 COVID-19 DISRUPTIVE ROLE ON SMALL BUSINESSES

The covid-19 was announced to be a pandemic globally by the world health organization in 2019 (WHO, 2019). It was a dreadful event leading to the death of many people with statistics record of over 45 million people infected and over 1 million deaths as of ending of October 2020 (DDC, 2020). In order to mitigate the spread of the contagion, governmental authorities implemented movement restrictions by enforcing comprehensive lockdown measures on numerous non-essential businesses. This action impacted both manufacturing and service-oriented enterprises worldwide (Mahmoud et al., 2022), affecting virtually all sectors within most countries.

The outbreak of this contagion sent shock waves across global economies, disrupting business of all sizes. Among the most profoundly affected were small businesses which constitute a vital component of the Irish and global economies landscape (Gorjian Khanzad and Gooyabadi, 2021). The pandemic, regarded as one of the most significant and unprecedented crises globally in decades, has been observed (ESRI et al., 2020). And hence, it had a long-term impact on the global prospecting economy as predicted by the economic global prospect June 2020. The unprecedented nature of the covid-19 pandemic triggered a cascade of operational disruption for small businesses.

Small businesses play a vital role in the Irish economy, contributing to employment opportunities and local communities (Hamel, 2021). However, the emergence of the COVID-19 pandemic has introduced unprecedented challenges, leading many small enterprises to confront significant disruptions in their operations. Understanding the ramifications of these disruptions is pivotal for formulating strategies aimed at facilitating their recovery and long-term viability. Due to their limited size and resource capacity, small businesses often struggle to swiftly adapt to regulatory changes and shifts in consumer demand precipitated by the COVID-19 pandemic (Olaleye, 2021). Consequently, these enterprises face heightened pressure during crises such as the recent COVID-19 outbreak, with their operations and performances severely impacted (Eggers, 2021).

Supply chain disruption emerged as a major concern with global shutdown and movement restriction, impeding the flow of goods and services across and within nations (Batrik et al. 2020). Furthermore, the pandemic took its toll on diverse sector of national economy; education, tourism and hospitality, retail industry, health, manufacturing, and servicing industry were affected, leading to the rise of unemployment rate nationwide (Olaleye, 2021). For example, in the Civilian Population US survey, the total civilian employee decreased by 21 million from the fourth quarter of 2019 to the second quarter of 2020 with tripled increase in the unemployment rate from 3.6% to 13% (Smith and Duong, 2021). Many small businesses experienced interruptions in their supply chains, leading to shortages of essential materials or products and delayed deliveries, impacting their ability to maintain production and meet customer demand (Ponis & Ntalla, 2020).

In addition, according to literature, the pandemic led to weakening of the global economy power, resulting to recession. It was recorded during the pandemic period of the European economy going into recession in the first quarter of the year 2020 with a decline by 2.2%, same as north America economy decline by 32.9%, Africa economy by 3.5%, Latin economy by 20 % and Asia by 5.2% (Olaleye, 2021). Small businesses faced significant financial challenges due to sudden declines in revenue and cash flow. Many struggled to cover operational expenses such as rent, utilities, and employee wages (Cowling et al., 2020). Access to credit and financial support was also a challenge, as traditional financing sources were often limited or unavailable (Bartik et al., 2020).

More so, Businesses had to rapidly adjust their operations to comply with new health and safety regulations, such as social distancing measures and sanitation protocols (Grube, 2021). Some small businesses struggled to implement remote work arrangements for employees, affecting productivity and communication (Ratten, 2020).

Also, sudden shifts in consumer behavior and market demand presented challenges for small businesses, especially those in sectors heavily affected by the pandemic, such as hospitality and retail (McKinsey and Company, 2021). Uncertainty about the duration and severity of the pandemic made long-term planning difficult.

Some small businesses struggled to adopt innovative technologies quickly, such as e-commerce platforms and digital marketing tools, which were essential for maintaining operations during lockdowns (Papadopoulos et al., 2020). Those that lacked digital infrastructure found it difficult to pivot to online sales and services.

According to the forecasts made by Fairlie (2020), the initial three-month period of social distancing restrictions imposed during the pandemic witnessed enduring disruptions for certain businesses. Consequently, some small enterprises permanently ceased operations, while others grappled with challenges in achieving operational efficiency due to financial constraints (Fairlie, 2020). However, there were instances where certain small businesses not only managed to operate effectively during the pandemic but also demonstrated improved performance, attributed to the adoption of operational resilience strategies. Given these circumstances, it is imperative to investigate the impact of COVID-19 disruptions on small businesses and ascertain the requisite operational resilience strategies necessary to navigate and recuperate from such disruptions, as well as potential future challenges.

2.8.4 SMALL BUSINESS OPERATIONAL RESILIENCE AMID COVID-19

During the COVID-19 pandemic, small businesses worldwide faced significant challenges that threatened their survival. Previous academic literature has highlighted how many small businesses adapted and demonstrated resilience in response to the disruption.

Adopting technology, many small businesses quickly pivoted to online sales channels, expanding their e-commerce capabilities to maintain sales during lockdowns and restrictions (Papadopoulos et al., 2020). Increased use of digital marketing strategies, including social media campaigns and targeted online advertising, allowed businesses to reach customers remotely and maintain engagement (Ratten, 2020).

The innovative restructuring of the business model was of the strategies used by small businesses to mitigate the COVID-19 disruption. Some small businesses diversified their offerings to meet new demands, such as creating new products like masks or hand sanitizers, or offering services like home delivery (Grube, 2021). In addition, many small businesses adapted their operations, such as modifying store layouts, shifting to curbside pickup, or implementing contactless transactions (Zhou et al., 2021)

For financial viability, many small resilient businesses implemented cost-cutting measures, including renegotiating leases, reducing overheads, or restructuring staff arrangements (Bartik et al., 2020). Utilization of government relief programs and grants, as well as seeking alternative financing sources, helped businesses maintain liquidity (Cowling et al., 2020).

Collaboration with local businesses and organizations to create joint promotions, share resources, or support each other's operations (Yin et al., 2020). Small businesses, through community connections and supporting local causes, were able to maintain customer loyalty and goodwill (Eggers, 2020).

Many small businesses imbibed the remote working culture for their employees, when possible, which allowed flexibility and continuity of business operations (McKibbin & Fernando, 2020).

CHAPTER THREE

3.0 RESEARCH DESIGN, PROCESS AND METHODOLOGY

3.1 INTRODUCTION

As posited by Saunders et al. (2012), research embodies a structured process aimed at acquiring and interpreting data to augment comprehension of a specific topic. Moreover, according to Wilson (2014, p.2), the exploration of a research question necessitates a thorough scrutiny and analysis of information in a systematic and organized manner to propel understanding forward. The aim of this study is to examine the operational resilience exhibited by small businesses in Dublin, Ireland, following the COVID-19 pandemic. This section will offer an outline of the methodologies and instruments employed in the research. It will expound on the methodology adopted for investigating and analysing the research objectives, encompassing the research design and procedural aspects involved. Additionally, it will explicate the chosen method for the study and provide details regarding the research techniques employed. In this study, the author adheres to the guidelines outlined by (Saunders et al., 2009), ensuring a structured and orderly approach to the research procedure.

(Saunders et al., 2009) proposed the notion of the Research Onion, as depicted in Figure 3.0 which comprises outer, inner, and central layers delineating various research methods. The process, as advocated by (Saunders et al., 2009), involves systematically uncovering each layer, with the outer layer being explored first before progressing to the inner layers. The Research Onion serves as a framework for navigating methodological approaches, guiding researchers through a sequence of decisions essential for determining the final methodology and collection of data procedures (Saunders et al., 2009).

The research framework proposed by (Saunders et al., 2009) delineates an onion model, with its core focused on data collection and inquiry. The inner layers highlight the significance of research approaches, strategies, and techniques, contrasting with the outer layer, which addresses philosophical considerations and potential approaches to theory development. This framework serves as a foundational tool for methodological analysis in this study. Following (Saunders et al., 2015) Research Onion model, the subsequent chapter will comprehensively explore philosophical perspectives, research methods, strategies, design considerations, sample selection procedures, and data analysis techniques. These elements collectively contribute to the establishment of a robust research methodology (Wilson, 2014, p. 7).

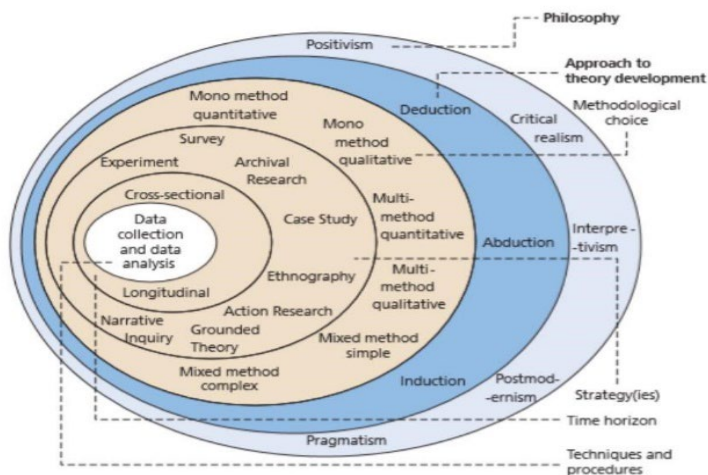


Figure 7 The Saunders Research Onion

Source: (Saunders et al., 2012)

3.2 RESEARCH DESIGN

A research design is a detailed plan that lays out how we're going to investigate and solve research questions or problems (Creswell, 2014, p. 4). It serves as the framework shaping every aspect of the research process, starting from formulating research questions and objectives to interpreting findings. Research design entails decisions on the research approach (quantitative, qualitative, or mixed methods), participant or case selection, methods of data collection, techniques for data analysis and possible ethical issues and constraint that may be encountered.

A clearly defined research design is essential for ensuring the credibility, dependability, and thoroughness of research outcomes (Saunders et al., 2015). It brings clarity and coherence to the research work, allowing researchers to methodically handle their research questions and objectives and derive significant insights.

3.3 RESEARCH PHILOSOPHY

In the initial stages of research, it's crucial to align the research question with a specific philosophical framework. According to Saunders et al. (2019), research philosophies are often influenced by individual perspectives, values, and assumptions. The main goal of the researcher in this study was to minimize any potential bias or preconceived ideas, emphasizing the importance of choosing the right philosophical standpoint. (Dudovski, 2018) suggests that the selected philosophical orientation may reflect an individual's beliefs and viewpoints. However,

(Wilson, 2014) argues that rational decision-making should also consider the researcher's ability to assess alternative methodologies effectively. (Saunders et al., 2015) outline four distinct research philosophy perspectives: positivism, realism, interpretivism, and pragmatism. Interpretivism, as explained by (Bryman and Bell, 2007), encompasses various subtleties within the range of proposed philosophies. Given the nature of this study, interpretivism emerges as the most appropriate approach.

3.3.1 INTERPRETIVISM, POSITIVISM, PRAGMATISM AND REALISM

Interpretivism involves a critical examination and integration of individuals and their organizations, aiming to access respondents' perspectives on reality (Bryman & Bell, 2007). According to (Thomas, 2009), interpretivism posits that reality, or the world perspective, is subjective and socially constructed by observers through their experiences. This philosophical approach is often employed in studies aiming to understand the meanings and interpretations individuals assign to their experiences. Interpretivism relies on qualitative methodology, involving data collection methods such as interviews, observations, focus groups, and textual analysis (Saunders et al., 2012). However, interpretivism's qualitative nature may present challenges in terms of data trustworthiness and measurement (Wilson, 2014). Nevertheless, interpretivism provides a distinct approach that aligns with the research question by allowing for an understanding of phenomena from the perspectives of the individuals involved (Bryman & Bell, 2007).

By applying interpretivism to the study of operational resilience, it becomes possible to extract meaningful insights and actions that hold significance for individuals. This approach facilitates the exploration of how individuals perceive and respond to disruptions, thereby enhancing our understanding of resilience within organizational contexts.

The alternative approaches considered but ultimately rejected in this research include Positivism, which (Wilson, 2014) characterizes as a perspective grounded in empiricism, emphasizing verifiable data. Unlike interpretivism, Positivism entails a scientific detachment from participants and typically employs quantitative research methods. However, these aspects are incongruent with the nature of this research study, which seeks to explore the personal experiences and viewpoints of individuals, necessitating a qualitative approach that aligns with interpretivism.

Furthermore, Pragmatism was excluded due to its role as an alternative perspective when the researcher's convictions do not correspond with either positivism or interpretivism (Wilson,

2014). Realism, delineated by (Saunders et al., 2015), serves as the philosophical foundation of positivism, accentuating the objective existence of facts. However, realism was not deemed suitable for this study's focus on understanding the subjective interpretations and responses of individuals to operational resilience challenges.

In essence, while positivism offers a structured and empirical approach to research, its emphasis on detached observation and quantitative analysis is incompatible with the qualitative nature of this study. Pragmatism and realism were also deemed unsuitable due to their lack of alignment with the research objectives centred around interpreting subjective experiences and perspectives related to operational resilience

3.4 RESEARCH APPROACH

There are two major approaches to research, the inductive and deductive approach according to (Saunders et al., 2019). The deductive approach to research uses a confirmatory methodology and attempts to validate theories or hypotheses that already exist through empirical data (Saunders et al., 2019). Deductive theory is concerned with existing theory from literature and evaluates its assumptions through proper research methodologies, in contrast to the inductive approach, which is focused on observation and experience (Wilson, 2014). The objective is to distil into testable hypotheses for additional empirical analysis (Bryman and Bell, 2007).

Commonly used with the quantitative research is the deductive method and is distinguished by positivism methodology and a highly organised approach (Dudovskiy, 2018). Nonetheless, scholars who prefer inductive methods frequently condemn the deductive approach for being inflexible and giving limited attention to other theories (Saunders et al., 2019).

On the other hand, the inductive approach, starts with preliminary examinations and proceeds to recognise patterns before formulating theoretical conclusions. Known as a "bottom-up" strategy, it places an emphasis on observation before moving on to the formulation of rough ideas and hypotheses. Although the choice of research technique is ultimately dependent on the research questions. Furthermore, inductive reasoning is characterised by its exploratory and open-ended nature (Dudovskiy, 2018). (Saunders et al., 2019), highlights using the appropriate research approach is crucial to the research success.

In line with the objective of this research, the inductive approach has been adopted by the author in this research. Operational resilience in the context of small businesses involves complex and multifaceted dynamics that are not fully understood or theorized. An inductive

approach allows for exploring and identifying patterns, challenges, and strategies directly from the experiences and perspectives of small business owners. It enables the emergence of new insights and theories that are grounded in the specific context of this research which are more concurrent and can be attained using the interpretivist approach (Saunders et al., 2019, p. 155).

3.5 FORMS OF RESEARCH DESIGNS

They are basically two types of research designs according to (Saunders et al., 2019) including descriptive and exploratory. Descriptive research highlights the characteristics, behaviours, or phenomena of a certain population or data sample. It focuses on providing a detailed and accurate representation of an existing situation or condition without attempting to establish causal relationships (Saunders et al., 2019). However, (Wilson, 2014) argues that descriptive research is more appropriate for relatively novel study since it is unable to clarify the fundamental causes of such events. As a result, the author opted it out as a methodology for this study.

Exploratory, on the other hand, aims to explore new phenomena, generate hypotheses, or gain initial insights into a research problem, characterized by its flexibility, openness, and lack of predetermined hypotheses or research questions (Saunders et al., 2019). Exploratory research often involves qualitative data collection methods such as interviews, focus groups, or observations (Saunders et al., 2019). Operational resilience in the aftermath of COVID-19 involves multifaceted dynamics, including organizational responses, adaptive strategies, and the impact on various stakeholders. An exploratory approach allows for flexibility, through open-end interview questions, allowing the author to delve deeply into the lived experiences of small business owners, employees, and other stakeholders, uncovering rich and contextualized insights.

3.6 RESEARCH METHODS

The research methods involve the method in which data are collected to be analysed. According to (Bryman and Bell, 2007) there are two methods of collecting data; quantitative and qualitative methods.

3.6.1 QUANTITATIVE VERSUS QUALITATIVE METHODS

According to (Saunders et al., 2015), quantitative research focuses on obtaining statistically meaningful data through mathematical analysis. To quantify variables like behaviours, attitudes, or views, surveys, questionnaires, or polls with a considerable number of closed-

ended questions are frequently used, along with large population samples (Perrier et al., 2020). Qualitative research, on the other hand, gives participants' perspectives more weight than the researcher's, therefore the quantitative method can be constricting in this regard (Bryman and Bell, 2007, p. 425).

In contrast, qualitative research aims to elucidate the significance of individuals' experiences and convey their viewpoints and perspectives (Bryman and Bell, 2007, p. 163; Yin, 2016, p. 40). It entails procedures that are action-oriented and designed to identify problems and, based on the results, develop solutions (Bryman and Bell, 2007, p. 428).

The COVID-19 pandemic has significantly impacted various aspects of society, including businesses and organizations, leading to an increased interest in studying operational resilience in the context of this global crisis. While there has been a plethora of research on COVID-19's impact on businesses, including quantitative studies examining the effects on financial performance (Olaleye, 2021; Devi et al., 2020), supply chains (Essuman et al 2020, Meyer, 2022, Goel et al., 2021) and workforce management (Pamidimukkala and Kermanshachi, 2021), there's still a need for qualitative research to delve deeper into the experiences, strategies, and challenges faced by organizations in maintaining operational resilience post-pandemic.

Quantitative studies may provide valuable insights into the overall trends and statistical relationships between certain variables and operational resilience metrics during the COVID-19 crisis. However, they fail to capture the nuanced and context-specific factors that influence organizational responses and resilience strategies.

Therefore, the author has chosen the qualitative the qualitative approach to explore the lived experiences, organizational cultures, leadership dynamics, and decision-making processes that shape how organizations adapt and respond to aftermath disruptions like COVID-19. The chosen interpretivism and inductive approach by the author as stated in the previous section, as well as the exploratory approach aligns with the qualitative methodology (Dudovskiy, 2018).

3.6.2 QUALITATIVE APPROACH

This study adopted a qualitative methodology, utilizing semi-structured interviews to collect data from seven respondents. Each interview session was scheduled for thirty minutes and consisted of 19 interview questions. The participants selected for this research were small business owners or managers in Dublin, Ireland, possessing knowledge about their business

operations. The aim of this approach was to elicit participants' perspectives on the 19 questions linked to the research objectives and questions.

3.7 DATA COLLECTION

The author carefully structured the data collection process to align with the research strategy and adhere to essential components of research design, including validity, trustworthiness, triangulation, and reflexive thinking (Yin, 2016). This approach ensured the accuracy, integrity, and truthfulness of the data collection process, which are paramount to the study (Bryman and Bell, 2007; Yin, 2016).

The selection of methods by the author was carefully tailored to suit the research objectives and gather pertinent information for the study. As outlined by (Saunders, and Thornhill, 2015), researchers have the option to utilize either primary or secondary sources to gather information, both of which are effective in obtaining data from multiple respondents on a given topic. In line with this, the researcher employed two data collection methodology: qualitative primary data collection and secondary data collection.

3.7.1 QUALITATIVE PRIMARY DATA COLLECTION

(Yin, 2016, p. 116) emphasizes that fieldwork and interaction with individuals with experiences of real-world situations are essential aspect of qualitative research. Field data, as defined by Yin (2016, p. 169), refers to newly gathered data within an unaltered environment. The methodology employed by the author in this research involved semi-structured interviews, allowing the author to explore participants' experiences, perspectives, and interpretations in depth while maintaining some consistency across interviews. It provides the flexibility to probe deeper into specific areas of researcher's interest and gather nuanced insights that structured interviews might not capture (Yin, 2016, p. 171). The interview was conducted virtually and audio-recorded and transcribed, enabling participants to articulate their perspectives on the research topic. Recording the interviews facilitated accurate data analysis, in accordance with (Yin 2016, p. 169) interviewing, observing, collecting, and investigating are the four main methods for data collection.

3.7.2 SECONDARY DATA COLLECTION

(Bryman and Bell, 2007) highlights that secondary data collection involves using existing data that was collected for a different purpose but can be repurposed for current research. Sources of secondary data include published reports, academic articles, government documents, industry publications, journals, books, online databases. This method offers several advantages

for research, such as saving time and resources since data is already available and often comprehensive.

(Bryman and Bell, 2007) caution researchers to critically evaluate the quality and relevance of secondary data, considering aspects such as data source credibility, data timeliness, and alignment with research objectives. By carefully selecting and analysing secondary data, researchers can supplement primary data collection and provide a broader perspective on the subject.

3.8 STUDY SAMPLE

In this research, the study sample was carefully chosen to ensure that it accurately represented the population of interest and allowed for a thorough investigation into operational resilience post-COVID-19. According to (Saunders et al., 2015), selecting a representative sample is crucial for generating reliable and valid research findings.

3.8.1 POPULATION SAMPLE

The population for this research consisted of seven small businesses operating in Dublin, Ireland, that experienced disruptions due to the COVID-19 pandemic were interviewed. Participants included small business owners and managers who had first-hand knowledge of the operations and challenges their businesses faced during the pandemic.

3.8.2 SAMPLE TECHNIQUE

(Saunders et al., 2012) highlights two types of sample techniques are probability and non-probability sample techniques. Simple random technique, cluster technique, stratified technique and systematic techniques are regarded as probability sample techniques and are commonly use in quantitative research such as surveys that requires making inferences about a population sample to address a research question and meet research objectives (Saunders et al., 2012). Non-probability sample techniques such as purposive technique, quota, volunteer and haphazard, involves selecting a sample from a population based on subjective criteria, convenience, or the researcher's judgment rather than random selection. Purposive sampling was chosen because it enables the researcher to target participants who can offer the most relevant and informative insights into the research topic. This technique ensures that the sample includes participants with in-depth knowledge and varied perspectives on the impact of COVID-19 and the measures taken to enhance operational resilience.

3.9 THEMATIC DATA ANALYSIS

Thematic analysis emerges as a widely utilized method for qualitative data analysis, particularly within social and behavioural research domains (Braun & Clarke, 2006). This method entails the identification, analysis, and interpretation of patterns or themes present within the data. (Braun and Clarke, 2017) characterize thematic analysis as a versatile approach adaptable to diverse qualitative research contexts. It is valuable for capturing the richness and complexity of qualitative data and for providing insight into the underlying meanings of the data. The process of thematic analysis involves six recursive steps (Braun and Clarke, 2006:

3.9.1 FAMILIARIZATION

The initial stage involves the researcher immersing themselves in the data, engaging in repeated readings to discern initial analytical insights (Braun & Clarke, 2019). This iterative process facilitates the researcher's acquaintance with the scope and intricacies of the data.

3.9.2 CODING

In this step, the researcher organizes the data by creating codes that represent meaningful patterns or features within the data in line with the research questions channelling the analysis (Braun and Clarke, 2019). Coding captures both a semantic and conceptual understanding of the data as it is an analytical procedure as well as a data reduction technique (Braun and Clarke, 2006). After coding each data item, the researcher compiles all their codes together with relevant findings to complete this step.

3.9.3 GENERATING THEMES

After coding, the researcher organizes the codes into broader themes. A theme represents a pattern or trend in the data that relates to the research question or objective (Braun and Clarke, 2006). This is a subjective step hence; the researcher constructs the themes (Braun and Clarke 2019).

3.9.4 REVIEWING THEMES

In this step, the researcher reviews the themes to ensure they accurately represent the data. The researcher should assess whether the themes provide a coherent and engaging narrative based on the data and start to articulate the essence of each theme and how they relate to one another (Braun and Clarke, 2019). It might be necessary to merge two themes, divide a theme into multiple themes, or eliminate the initial themes entirely and start the theme development process anew.

3.9.5 DEFINING AND NAMING THEMES

Once the themes have been reviewed and finalized, the researcher defines each theme and gives it a name that captures its essence. The researcher needs to do a thorough examination of each theme and describe it in detail (they should consider questions like 'What does this theme reveal?' and 'How does this theme connect to the bigger picture in the data?') (Brawn and Clarke, 2006)

3.9.6 PRODUCING THE REPORT

The ultimate step involves writing up the analysis in a coherent and structured report. Writing the analysis involves combining a clear narrative with data examples to present a consistent and convincing story about the data. The analysis should also connect the findings to existing research literature (Brawn and Clarke, 2019).

Braun and Clarke emphasize the importance of rigor and transparency throughout the thematic analysis process (Brawn and Clarke, 2006). This includes clearly documenting the researcher's decisions and rationale at each stage, which enhances the credibility and trustworthiness of the analysis. However, while it provides rich insights and flexibility, researchers must be mindful of its limitations in terms of subjectivity, time requirements, potential over-interpretation, and generalizability (Brawn and Clarke, 2019).

3.9.6 ETHICAL CONSIDERATION

This is a critical aspect of any research, particularly in studies involving human participants (Saunders et al, 2012 p. 226). According to (Panter and Sterba, 2011), obtaining informed consent from participants is a fundamental ethical requirement. Participants were enlightened with necessary information about the purpose, procedures, potential risks, and benefits of the study before they agreed to participate. This process ensured that their consent was voluntary and informed. (Bryman and Bell, 2007) emphasizes the importance of protecting participants' confidentiality and anonymity. The author ensured that participants' identities and data obtained were protected. Personal information was kept confidential, and any data collected was anonymized to prevent identification. Arifin (2018) highlights the importance of respecting participants' autonomy and dignity. Participants were given the choice to opt out from the study at any time without penalty. Furthermore, (Panter and Sterba, 2011; Bryman and Bell, 2007) also stress the need for researchers to obtain ethical approval from an appropriate review board or ethics committee before commencing the study. Before beginning

the research, the author obtained from the National College of Ireland (NCI) ethics committee, the ethics approval.

3.9.7 LIMITATIONS

The research was conducted using a qualitative approach with a small sample size of six interviewees. This limited sample size poses challenges for the generalizability of the findings, as the insights derived from such a small group may not fully capture the complexities and variations within the broader population. Using semi-structured interviews provided rich, in-depth data but also introduced potential bias and subjectivity, as each participant's perspective and experiences shaped their responses.

(Bryman and Bell, 2007, p.525) highlights that the process of compiling themes within qualitative research can be complex, given the unique experiences and viewpoints of each participant. This diversity may lead to anomalies in the data, making it challenging to establish consistent patterns or draw definitive conclusions (Braun and Clarke, 2006). In the context of operational resilience, this difficulty is compounded by the varying degrees of exposure interviewees have had to different resilience strategies and measures, especially in response to the COVID-19 pandemic.

Given additional time and resources, the study could have leveraged a larger sample size to yield a more extensive and diverse array of perspectives on operational resilience practices within various small businesses. Such an expansion would bolster the study's validity and reliability while affording a more comprehensive comprehension of the resilience-building strategies adopted by businesses.

CHAPTER 4

4.0 RESEARCH FINDINGS AND DISCUSSION

4.1 INTRODUCTION

The literature as highlighted in the chapter two of this research underscored the vulnerability of small businesses to crises, highlighting the need for proactive measures to enhance operational resilience amidst operational disruption (Herbane, 2019; Williams et al., 2017). This chapter aims to present the findings and discussions derived from the data collected through interviews with small business owners in Dublin, Ireland, focusing on their experiences and strategies for operational resilience in the wake of the pandemic.

The chapter presents an inductive thematic analysis of the interview data, identifying key themes and subthemes related to operational resilience, adaptability, and recovery strategies allowing for in-depth exploration of the operational disruptions, faced by small businesses in Dublin Ireland and their adaptive measures to sustain operations. The purpose of the research objectives was to gain insights from respondents on the challenges and resilience strategies adopted post-COVID-19. This approach aligns with the Central Bank of Ireland's operational resilience framework, which outlines key practices for ensuring business continuity and effective risk management as highlighted in chapter one and two (Central Bank of Ireland, 2021).

The analysis of data collected from participants offers a comprehensive understanding of their operational challenges, resilience strategies, and lessons learned. By examining how small businesses responded to the pandemic's disruptions, this study aims to identify best practices and resilience-building measures that can inform future business strategies and policy planning.

Continuously in this chapter, parallels between the study's data collection and current literature on operational resilience will be explored. This includes an examination of how small businesses adapted to digital transformation and the adoption of modern technologies to cope with disruptions (Herbane, 2019). Additionally, this research examines the effectiveness of resilience-building strategies implemented by small businesses and their impact on business continuity and recovery.

By addressing specific gaps in the literature, such as the localized experiences of small businesses in Dublin, this research provides valuable insights into operational resilience. The

findings contribute to the academic discourse on resilience and offer practical recommendations for small businesses and stakeholders aiming to enhance resilience.

4.2 QUALITATIVE RESEARCH ANALYSIS

4.3 OBJECTIVE 1: TO IDENTIFY THE SPECIFIC OPERATIONAL DISRUPTIONS EXPERIENCED BY SMALL BUSINESSES POST-COVID-19:

The Central Bank of Ireland (CBI, 2021) and previous academic literatures (Christopher and Peck, 2004; Ivanov and Dolgui, 2020; Sheffi and Rice, 2005) have emphasized the importance of critical business services and how operational disruption can hinder these services. While many previous research literatures have highlighted the operational disruption experienced by small businesses during COVID-19 pandemic (Olaleye, 2021; Fairlie, 2020, Ratten, 2020; Ivanov and Dolgui, 2020; Bartik et al., 2020), there is little research on the disruptive aftermath to small businesses post-Covid-19. The aim of this section is to identify post-COVID-19 operational disruption of small businesses, hindering their delivery of critical business services defined in chapter 2 “as services provided by a business that, if disrupted, could have a significant impact on the firm, its customers, or the financial system as a whole” (CBI, 2021). The author outlines and discusses the data collected in this section, exploring the specific disruptions that had hindered the delivery of critical business service post-COVID-19 pandemic of small businesses in Dublin Ireland, taking account of the interviewee's perspectives. From the data obtained from the respondent, the author identified the patterns regarding this section and was able to generate sub-themes below.

4.3.1 POST-COVID-19 PANDEMIC AND SUPPLY CHAIN DISRUPTIONS

Previous academic literature has documented significant disruptions in the supply chains of many small businesses during the COVID-19 pandemic lockdown. Issues included challenges in sourcing materials or products, delivery delays, and shifts in supplier relationships (Brown and Rocha, 2021; Lu et al., 2020). Notably, around 60% of the interviewees reported ongoing supply chain disruptions in their operations post-pandemic, while 40% did not face such issues.

For instance, Interviewee 6 highlighted that they struggled to meet customer demand in the initial months post-lockdown due to delivery delays. Additionally, Interviewee 5 noted that the Brexit period coinciding with the pandemic contributed to challenges in obtaining supplies, with customs fees increasing significantly, thus elevating operational costs. These findings align with existing literature predicting a long-term impact on business supply chains as a consequence of the COVID-19 pandemic (Nordhagen et al., 2021; Hobbs, 2021).

Conversely, 40% of respondents reported no significant supply chain disruptions post-pandemic. For instance, Interviewee 6 explained that their business is primarily a consultancy firm that conducts mostly office work, rendering them largely unaffected by supply chain issues.

4.3.2 POST-COVID-19 AND WORKFORCE CHALLENGES

Remote work became a critical strategy for sustaining business operations during the COVID-19 pandemic, as small businesses adapted to government-imposed lockdowns and health and safety guidelines (McKibbin & Fernando, 2020; Ratten, 2020). However, as the pandemic began to subside, many small businesses faced challenges in restoring traditional physical work patterns, as employees often preferred the flexibility and comfort of working from home.

For instance, 4 of the respondents highlights difficulties in persuading employees to return to the office, highlighting a preference for the work-from-home model. This preference aligns with findings from other research, which suggests that the remote work experience during the pandemic has reshaped employees' expectations and attitudes toward workplace flexibility (Bailey & Kurland, 2021; Bartik et al., 2020). This shift poses challenges for small businesses attempting to revert to pre-pandemic work patterns, as they may encounter resistance from employees who have grown accustomed to remote work.

In contrast, interviewee 6 stated that remote working continued to be highly effective even after the lockdown due to its flexibility and the increased productivity of its employees. This perspective is supported by academic literature, which has shown that remote work can enhance productivity by providing employees with a more flexible work schedule and the ability to create a better work-life balance (Gajendran & Harrison, 2007; Allen et al., 2015). This suggests that while restoring physical work patterns may be a goal for some businesses, for others, a hybrid or continued remote work model may offer ongoing benefits.

Small businesses must navigate these differing perspectives and potential conflicts by balancing the desire for traditional office environments with the benefits of remote work. This includes redesigning office spaces for safety, managing employees' expectations around work-life balance, and addressing potential declines in employee morale and productivity due to enforced changes (Shockley et al., 2021; Waizenegger et al., 2020).

4.3.3 POST-COVID-19 AND FINANCIAL STRAIN

A considerable proportion of the respondents, (80%) reported encountering financial challenges in running their businesses after the COVID-19 pandemic. Interviewee 5 noted that

during the pandemic, business inactivity severely disrupted revenue streams, resulting in insufficient financial resources to operate the business optimally. Interviewee 7 emphasized the struggle to pay rents and taxes that had accumulated both before and after the pandemic due to a lack of cash reserves prior to COVID-19, which negatively impacted business operations. Furthermore, Interviewee 7 also faced difficulties in securing financial support from banks or government grants due to non-compliance with tax regulations. On the other hand, Interviewee 6 experienced increased sales and revenue during and after the pandemic. These accounts align with previous academic literature, which highlights the financial strain small businesses endured due to disruptions caused by COVID-19. Many businesses faced liquidity challenges and struggled with debt and cash flow management during and after the pandemic (Bartik et al., 2020; Brown & Rocha, 2021). Additionally, securing financial support from banks or government programs was a common challenge for those not meeting compliance requirements (Parker et al., 2020; Fairlie, 2021). In contrast, some businesses were able to leverage new opportunities, such as increased demand for certain goods and services, to navigate the pandemic and achieve positive financial outcomes (Cowling et al., 2020).

4.3.4 POST-COVID-19 AND SHIFT IN CUSTOMERS BEHAVIOUR

Previous literature has highlighted the adoption of remote working, home delivery, and virtual services as effective methods of operational resilience for small businesses during the COVID-19 lockdown (Jones et al., 2021; Smith & Patel, 2020). While many small businesses successfully incorporated these practices, they also faced challenges in meeting the evolving expectations of customers who had grown accustomed to the convenience of home delivery. Interviewee 4 acknowledged the struggle to maintain both home delivery services and in-store operations, leading to a decision to scale back on home delivery to focus on running the physical shop more effectively. Similarly, another respondent experienced difficulty attracting customers to in-person training sessions, as many preferred the online format, they had become used to during the lockdown.

Contrastingly, respondent 6 viewed the shift to virtual consulting and training as advantageous due to the lower cost and potential for reduced service fees, even though the quality of virtual sessions did not match that of in-person interactions. This observation aligns with the trade-offs discussed in prior research on the shift to virtual service models and their impact on business operations (Johnson & Liu, 2021; Perez & Thompson, 2021). Despite the cost savings and potential for broader reach, many small businesses must balance these advantages with the need to maintain the quality of their services.

4.3.6 POST-COVID-19 AND REGULATORY CHANGES CHALLENGES

Government-imposed measures such as safe distancing and hand sanitation protocols were enforced across social gathering venues, including businesses, to curb the spread of COVID-19 while maintaining daily human activities (Wilson & Brown, 2021). These measures posed significant challenges for businesses, as noted in previous literature (Johnson & Patel, 2020; Lee & Martinez, 2022).

Interviewee 7, who operates a bar offering shisha rentals, reported that they were only able to accommodate a limited number of customers due to the initial safe distancing regulations, which resulted in decreased revenue. Additionally, they had to make changes to their facilities, such as transitioning to healthier shisha consumption methods, which led to increased operational costs. This aligns with prior research suggesting that compliance with safety measures often necessitated adjustments to business operations, resulting in added expenses and reduced customer capacity (Smith & Green, 2021).

Similarly, Interviewee 1 experienced disruptions to their event services due to safe distancing restrictions during the early months following the COVID-19 lockdown. This limitation significantly impacted their revenue streams. Such findings are consistent with previous studies, which indicate that event-based businesses faced challenges in adapting to new restrictions while maintaining financial sustainability (Clark & Thompson, 2021).

4.4.0 OBJECTIVE 2: TO EXPLORE THE TOLERANCE AND ADAPTABILITY OF SMALL BUSINESSES IN DUBLIN IRELAND, TOWARDS OPERATIONAL DISRUPTIONS POST-COVID-19 PANDEMIC

The Central Bank of Ireland's operational resilience guidelines emphasize the necessity for businesses to conduct thorough risk assessments and establish their capacity to withstand disruptions. This involves understanding the threshold at which interruptions to critical business services could compromise the viability, safety, stability, and customer experience of a business (CBI, 2021). The primary focus of this section is to examine the adaptability and tolerance levels of small businesses in Dublin, Ireland, to disruptions following the COVID-19 pandemic. Through an analysis of primary data, the author identified trends and established two key themes for this objective, which are detailed below.

4.4.1 SMALL BUSINESS EXPERINCES POST-COVID-19 DISRUPTION AND THEIR IMPACT TOLERANCE AND ADAPTABILITY

Despite the challenges faced by small businesses in Ireland post-COVID-19, as outlined in the previous section (objective 4.3), many respondents perceived their businesses as adaptable and resilient to the changes induced by the pandemic. Most respondents attributed their successful adaptation to their flexibility and agility in navigating the changes. According to 90% of the respondents, while they experienced disruptions to some critical business services due to financial strains, supply chain interruptions, and shifts in customer behavior, there was no recorded financial loss or reputational damage to their businesses or harm to customers. This tolerance to impact aligns with the Central Bank of Ireland's guidelines on operational resilience (CBI, 2021) and is consistent with findings from previous literature that highlight the importance of agile strategies and adaptive practices in navigating post-pandemic disruptions (Ivanov & Dolgui, 2021; Chowdhury et al., 2022). Such strategies can play a key role in ensuring business continuity and resilience in the face of unforeseen challenges.

4.4.2 RISK ASSESSMENT AND MANAGEMENT

Despite the emphasis on the importance of risk assessment and management in previous literature. (Kule and Kanyangale, 2023) underscore the need for small businesses to adopt effective risk management strategies to navigate uncertainties and potential disruptions. In the analysis of the primary data reveals that none of the respondents had a structured approach to risk assessment. Instead, they reacted in response to disruptions as they occurred. Many respondents believed operational disruptions were unpredictable, while others considered risk assessment unnecessary due to the size of their businesses, suggesting it was more relevant for larger firms. This perspective contradicts existing research and Central Bank of Ireland best practices for operational resilience that underscores the necessity of risk assessment and management for small businesses as a critical component of operational resilience and continuity (CBI, 2021; Hudson et al., 2022; Bhamra et al., 2021). Such risk management practices are crucial for small businesses to anticipate and mitigate potential disruptions, thus contributing to overall sustainability and success.

4.5.0 OBJECTIVE 3: OPERATIONAL RESILIENCE STRATEGY OF SMALL BUSINESSES IN DUBLIN IRELAND IN RESPONSE TO POST-COVID-19 DISRUPTION

Previous academic literature underscores the importance of operational resilience strategies for small businesses in facing unexpected disruptions. For instance, (Smith and Martin, 2021) emphasize the critical role of adaptability and innovation in maintaining business continuity during and after crises. Additionally, research by (Patel and Turner, 2022) highlights how small businesses that embrace flexible operational practices and leverage emerging technologies are better positioned to recover from post-pandemic challenges. These studies provide valuable insights into the necessity of incorporating resilient strategies to ensure long-term business sustainability.

Even after the lifting of the COVID-19 lockdown, businesses continued to face ongoing and emerging disruptions in their operations due to new regulatory measures, shifts in customer preferences, and supply chain and financial challenges as previously discussed in this section. The primary focus here is to investigate the operational resilience strategies employed by small businesses in Ireland to navigate and recover from the post-COVID-19 disruptions. The analysis identifies patterns within the data, generating sub-themes that are discussed in detail for this objective.

4.5.1 TECHNOLOGY ADOPTION

The COVID-19 pandemic has underscored the importance of integrating technology into small businesses' operations. According to the Central Bank of Ireland's operational resilience framework, leveraging technology is a critical aspect of maintaining the delivery of essential business services amidst disruptions (CBI, 2021). While many small businesses initially adopted technology such as virtual working platforms and online sales during the pandemic as a means of survival, in the post-COVID-19 era, they have transitioned to using it as a key sustainability strategy.

All respondents in this study acknowledged the role of technology in aiding their recovery and adaptation to post-COVID-19 challenges. Two respondents offering consulting services mentioned their continued use of virtual tools such as Zoom, Microsoft Teams, and Google Meet to facilitate remote working and virtual services, citing flexibility and cost-effectiveness. Approximately 70% of respondents emphasized the necessity of rebranding and promoting their businesses in the post-pandemic era, citing increased competition due to the emergence of new businesses.

Respondents highlighted the use of technology such as social media platforms and business websites to enhance business promotion, sustain competitiveness, and engage with customers more effectively. Some also noted the development of mobile applications for easier service access and improved communication with customers. In line with post-COVID-19 safe hand hygiene regulations, four respondents implemented contactless payment services.

These technology adoption measures align with prior research indicating the importance of technological innovation for mitigating COVID-19 disruptions (McKinsey, 2021; Digital Economy Journal, 2020). Such approaches underscore how small businesses are leveraging technology not only to survive but to thrive in the changing business landscape.

4.5.2 FINANCIAL MANAGEMENT

In Chapter 2, the author detailed the impact of the COVID-19 pandemic on small businesses, specifically highlighting the financial strains resulting from business inactivity during the lockdown. According to the Central Bank of Ireland, the financial viability of a business is crucial for enduring disruptions and determining its impact tolerance while continuing to deliver critical business services (CBI, 2021). In the immediate aftermath of the COVID-19 lockdown, many respondents encountered financial strain, aligning with the observations in the previous section of this chapter.

All respondents noted receiving pandemic allowances for their staff during the pandemic, though these were insufficient to cover the accumulated expenses and increased operating costs following the lockdown. Approximately 40% of respondents reported securing government grants to mitigate financial challenges, while 60% did not apply for grants and instead implemented cost-cutting measures and diversified their products and services to create new revenue streams.

The financial adaptations made by small businesses to navigate the post-COVID-19 landscape align with the strategies suggested in previous academic literature. Such measures include optimizing operational costs, exploring new market opportunities, and diversifying revenue sources to enhance financial resilience (Bartik et al., 2020; Fairlie et al., 2022).

4.5.3 SUPPLY CHAIN DIVERSIFICATION

Following the lifting of global COVID-19 pandemic movement restrictions, small businesses in Dublin, Ireland, continued to face ongoing supply chain disruptions, as outlined earlier in this chapter. To navigate these challenges and sustain their operations, many respondents employed supply chain resilience strategies. For instance, five respondents indicated that they

purchased supplies in large quantities, more than initially needed, to satisfy customer demand and avoid incurring additional customs fees.

Furthermore, three respondents emphasized the importance of cultivating relationships with local suppliers and similar businesses to ensure timely delivery of goods. These approaches align with previous academic literature that advocates for proactive supply chain management and collaborative partnerships as effective measures to enhance operational resilience in the face of disruption (Craighead et al., 2020; Ivanov & Dolgui, 2020).

4.5.4 WORKFORCE ENGAGEMENTS

To address the challenges of remote working, Interviewee 5 noted that they adopted a hybrid work model, offering employees a schedule of two days in the office and three days of remote work each week. This approach aimed to balance employees' needs and preferences, supporting morale and productivity while maintaining operational resilience. This strategy aligns with Barrero et al. (2021), who endorse hybrid working patterns to accommodate employee flexibility and organizational continuity.

Regarding employee training, while many respondents did not feel the need to provide special training to staff post-COVID-19, one interviewee emphasized the importance of professional development opportunities and training programs. These initiatives were designed to enhance employees' skills and adaptability to future disruptions while fostering loyalty and job satisfaction.

Additionally, the respondents highlighted the value of cultivating a supportive work environment. By promoting teamwork, open communication, regular check-ins, and collaboration among employees, these businesses strengthened their resilience to post-COVID-19 challenges. This approach is consistent with existing literature that underscores the importance of teamwork in navigating operational disruptions (Menzies et al., 2021).

4.6.0 OBJECTIVE 4: EFFECTIVENESS AND EVALUATION OF RESILIENCE-BUILDING STRATEGIES

The Central Bank of Ireland's operational resilience guidelines, emphasizes ongoing evaluation to ensuring that businesses are prepared for and can adapt to disruptions (CBI, 2021). Other academic literatures such as Herbane, 2009; Hiles, 2014; Ponnusammy and Sieng, 2018) also highlighted the importance of ongoing evaluation and adaptation of resilience strategies to changing environments and future disruptions to ensure business continuity amidst operational disruption, which is the major objective of the Central Bank of Ireland resilience

framework. The objective of this section is to explore how small businesses in Dublin Ireland assess the effectiveness and continuous evaluation of the resilience strategies including tangible outcomes, failure, or improvements amid post-COVID-19 operational disruption (CBI, 2021).

4.6.1 EFFECTIVENESS OF OPERATIONAL RESILIENCE STRATEGY

To evaluate operational resilience strategies in the post-COVID-19 context, many respondents implemented ability to meet customers demand, online sales, customers feedback, and digital marketing and assessed the effectiveness of their strategies using metrics such as revenue generated and customer engagement indicators (e.g., customer clicks, customer reach, and interactions on social media). Interviewee 5 mentioned using both workforce productivity and financial measures, including customer churn rate, acquisition, retention, and other key performance indicators, to continuously assess the effectiveness of their strategies. These continuous assessment measures align with the Central Bank of Ireland's best practices for operational resilience strategy (CBI, 2021).

Past academic literature supports these assessment methods in the context of post-COVID-19 recovery. For instance, (Pandey, 2021) emphasize the importance of digital marketing for customer engagement and business growth, which aligns with the assessment of customer interaction and reach in evaluating operational resilience, 80% of the respondents, noted they had more customer and revenue turnover after COVID-19 pandemic than before COVID-19 with the use of digital marketing and online sales and services, however it was noted by interviewee 2 that the online services to customer was not effective and that the business benefits more from physical services, as stated by the respondent, “it was only a temporary solution for the disruption, I don’t intend continuing it”.

Additionally, (Mcphail et al., 2024) investigate the challenges and opportunities associated with remote work and transitions back to in-person operations, noting the significance of productivity metrics for organizational resilience 20% of the respondent who maintained remote working after the pandemic lockdown, reported more productivity and efficiency of employees and better performance in operation. Lastly, (Even and Christiansen, 2023) discuss using key performance indicators to guide business continuity and assess operational resilience, reinforcing the importance of revenue and workforce productivity metrics in post-pandemic strategy assessment. Both respondents who used cost-cutting measures and financial support schemes, had increased revenue compared to the pre-COVID-19 era.

4.6.2 MONITORING AND EVALUATION

The Central Bank of Ireland underscores the importance of reviewing and testing strategies against plausible disruptive scenarios, which aligns with Aylor et al. (2022), who emphasize the necessity of implementing operational resilience strategies with a long-term perspective, as well as learning from failures or improvements for future disruptions. The analysis of primary data revealed that 80% of respondents did not consistently monitor and evaluate resilience strategies, focusing instead on immediate business performance objectives while adapting and reacting to post-COVID-19 operational disruptions on a short-term basis. This approach resulted in limited monitoring of resilience strategies over time.

While it is acknowledged that operational disruptions are difficult to predict, continuous monitoring and evaluation of previously implemented strategies can provide guidance for handling future disruptions and enable scenario testing (CBI, 2021). In contrast, 20% respondents highlight continuous monitoring and evaluation of implemented strategies. According to the BCG matrix classification of resilient businesses, the 90% of respondents can be characterized as reactive, developing immediate short-term strategies to recover from disruptions, whereas the 10% who engage in continuous monitoring and evaluation can be categorized as thrivers, possessing robust operational resilience strategies for long-term goals (Aylor et al., 2022).

4.7 OBJECTIVE 5: LESSONS LEARNED AND FUTURE PLANNING

The Central Bank of Ireland's operational resilience guidelines stress the importance of learning from past disruptions to critical business services, considering both the failures and successes of strategies implemented. This approach supports the enhancement of business continuity during disruptions and contributes to improved preparedness and management of future disruptions (CBI, 2021). The aim of this section is to examine the lessons learned by small businesses in Dublin, Ireland, and the anticipated changes necessary to bolster resilience against future disruptions. Based on the responses collected from small businesses in Dublin, Ireland, in this research, several lessons emerged from experiences of small businesses regarding operational resilience during the post-COVID-19 and their efforts to enhance resilience in the face of future challenges.

4.7.1 ADAPTABILITY AND FLEXIBILITY LESSONS AND FUTURE PLANNING

Many respondents noted that they learnt the importance of quickly adapting being flexible to changing circumstances from the COVID-19 pandemic believing that disruption could occur anytime and accept when they occur and make the best out of the situation by encouraging

flexibility. Many of the respondent noted that they are looking to enhance more adaptability and flexibility in their operations such as adopting virtual work arrangements, and diversifying revenue streams.

4.7.2 DIGITAL TRANSFORMATION LESSONS

All respondents stated that the COVID-19 pandemic was a revelation to digitalization for them, they had little knowledge and inadequate use of technology in their operation pre-COVID-19. They highlighted how digital tools and platforms helped them engaged with customers to deliver their critical business services during and post-COVID-19 era. 80% of the respondent noted willingness to embrace advance and updated digital transformation.

4.7.3 SUPPLY CHAIN RESILIENCE LESSONS

60% who had supply chain disruption post-COVID-19 respondents stated they learned to strengthen their supply chains by maintaining buffer inventory and building relationships with local suppliers. Interviewee 4 highlighted incorporating constant supply chain measures in operation, by observing his environment and further building strong relationship with suppliers against future disruptions.

4.7.7 FINANCIAL MANAGEMENT AND STABILITY

Many respondents highlighted the need for maintaining healthy financial reserves to withstand periods of disruption.

4.7.8 COLLABORATIVE WORKING CULTURE

Many of the respondents emphasized anticipating adapting a resilient culture by fostering effective communication and collaboration among stakeholders, employees, customers and suppliers.

4.8 DISCUSSION

The main objective of this research was to explore the operational resilience of small businesses in Dublin Ireland post-COVID-19 pandemic in line with the best practices of operational resilience, using the Central Bank of Ireland operational resilience guidelines and framework (CBI, 2021). The findings from this research aligned with existing literatures, provided important insights into the challenges faced, strategies implemented, effectiveness of those strategies, lessons learned, areas for improvement, and the gaps in aligning with the Central Bank of Ireland's best practices for operational resilience.

Small businesses in Dublin faced significant challenges post-COVID-19, including supply chain disruptions that led to delays in sourcing materials and products and impacted their ability to meet customer demands. They also encountered financial strains due to reduced revenue and difficulties in managing increased costs of operation. Workforce challenges emerged as businesses struggled with employee preferences for remote work, which posed difficulties in returning to pre-pandemic work patterns. Additionally, shifts in customer behaviour necessitated adaptations in offerings and delivery methods.

To address these challenges, small businesses adopted various strategies, including embracing digital transformation through e-commerce platforms, online marketing, and virtual working tools to sustain operations and engage customers. Supply chain resilience was achieved through diversifying suppliers and building relationships with local businesses. Cost-cutting measures and service diversification helped generate new revenue streams and manage financial strains. Businesses also offered flexible work arrangements, such as hybrid models, to accommodate employee needs and preferences.

These strategies proved effective in maintaining customer engagement, managing costs, and sustaining business operations. The use of digital tools enabled continuous interaction with customers and supported recovery from pandemic disruptions. Respondents highlighted the importance of being flexible and adaptable in the face of disruption and recognized the value of digital tools and virtual platforms.

However, there is room for improvement in several areas. Many businesses lacked structured risk assessment and monitoring of implemented strategies, which is essential for future resilience (CBI, 2021). Alignment with the Central Bank of Ireland's best practices for operational resilience was not always achieved, particularly regarding strategy monitoring and testing against plausible disruptions. Furthermore, many businesses focused on short-term reactions rather than developing robust long-term strategies for resilience.

Lessons learned from the post-COVID-19 disruption era include the importance of flexibility and adaptability, the critical role of digital tools in sustaining operations and customer engagement, and the need for strong financial management to navigate disruptions effectively.

In conclusion, the research findings highlight the challenges and successes small businesses faced post-COVID-19 in Dublin. While they demonstrated resilience through adaptability and innovation, there remains a need to align more closely with best practices for operational resilience. Developing structured risk assessment and long-term strategies will better prepare small businesses for future disruptions and enhance their operational resilience. These lessons underscore the critical role of operational resilience in ensuring long-term sustainability for

small businesses. By incorporating these lessons into their strategic planning and operations, respondents can better prepare for future disruptions.

CHAPTER 5

5.0 CONCLUSION AND RECOMMENDATION

5.1 CONCLUSION

The COVID-19 pandemic posed significant operational disruptions to businesses worldwide, particularly impacting small businesses. These businesses play a crucial role in local economies, providing employment opportunities and stimulating economic growth. However, the pandemic brought about challenges such as financial strain, supply chain interruptions, and shifts in customer behaviour. In response, small businesses had to adapt by incorporating technology, diversifying their offerings, and exploring new operational strategies to navigate these disruptions.

Operational resilience emerged as a critical concept for small businesses, emphasizing the importance of being prepared for and responding effectively to disruptions. The Central Bank of Ireland's operational resilience framework highlights best practices for maintaining continuity and managing risk in the face of disruption. These practices include understanding and tolerating the impact of disruptions, monitoring and evaluating resilience strategies, and learning from previous disruptions to improve future responses.

This research findings indicated that while many small businesses implemented online sales and digital marketing to mitigate challenges, there was a lack of structured risk assessment and monitoring of resilience strategies. Many businesses focused on short-term responses rather than long-term resilience planning, which is crucial for adapting to future disruptions. Some businesses faced difficulties in aligning with the Central Bank of Ireland's best practices for operational resilience, revealing gaps in preparedness and continuity planning.

Therefore, this research underscores the importance of operational resilience for small businesses, advocating for continuous monitoring, assessment, and improvement of resilience strategies. Limitations of the study may include a narrow focus on specific sectors or regions, but the findings emphasize the need for small businesses to invest in robust operational resilience strategies.

In conclusion, the COVID-19 pandemic underscored the need for small businesses to develop operational resilience strategies to withstand and recover from disruptions. Small businesses must prioritize risk assessment, continuous monitoring, and the implementation of resilience practices to ensure long-term sustainability and adaptability in the face of future challenges.

These efforts, guided by frameworks such as the Central Bank of Ireland's operational resilience guidelines, can help small businesses thrive amid uncertainty.

5.2 RECOMMENDATION

Small businesses can strengthen their operational resilience and enhance their important business service delivery in the best practice amid operational disruptions. These recommendations are tailored to the challenges and strategies identified in this research and emphasize alignment with the Central Bank of Ireland's operational resilience framework.

First, it is essential for small businesses to develop and regularly update comprehensive business continuity plans that account for potential disruptions. This includes scenario planning and stress testing to prepare for various challenges, ensuring the business is equipped to withstand disruptions effectively. This approach aligns with the Central Bank of Ireland's emphasis on maintaining critical business services amid potential disruptions (Central Bank of Ireland, 2021; Atkinson & Penney, 2022).

In terms of enhancing resource flexibility and adaptability, small businesses should focus on increasing flexibility in workforce management, inventory control, and financial reserves. This flexibility allows businesses to adapt quickly to changing circumstances and maintain operations during disruptions (Williams et al., 2022). Building strong relationships with local suppliers and similar businesses is another crucial strategy to enhance supply chain resilience and reduce dependency on distant suppliers (Ivanov & Dolgui, 2021).

Accelerating digital transformation is a critical strategy for small businesses. This includes adopting and integrating digital tools such as virtual communication platforms, online sales channels, and e-commerce solutions. By incorporating these technologies, businesses can streamline operations, improve communication, and better manage customer relationships, all of which align with the Central Bank of Ireland's guidance (Kumar et al., 2021; KPMG, 2021). Monitoring and evaluating resilience strategies is vital. According to this research finding, many businesses focused on short-term responses rather than continuous monitoring and evaluation of their strategies. Establishing metrics and monitoring systems to assess the effectiveness of resilience-building strategies over time can help businesses continuously improve and adapt (Hynes et al., 2022; Patel & Medhekar, 2021).

Fostering a culture of learning and adaptation within the organization is another key recommendation. Encouraging collaboration between employees and management on resilience initiatives, as well as providing regular training and development programs, can

support a culture of openness and change. This focus on organizational learning aligns with the Central Bank of Ireland's approach (Hollnagel, 2014; Cukier et al., 2022).

Establishing strong governance and oversight structures ensures accountability and efficient decision-making during crises. Appointing a resilience officer or committee can help oversee the implementation of resilience practices (CBI, 2021; Atkinson & Penney, 2022; Financial Stability Board, 2021). The research findings suggest the importance of building stronger relationships with stakeholders. Maintaining open lines of communication with customers, suppliers, and other stakeholders can facilitate collaboration and support during times of crisis, as outlined by the Central Bank of Ireland (Central Bank of Ireland, 2021).

Finally, leveraging government and industry support is crucial. Businesses should take advantage of available government support programs and industry initiatives that promote resilience and recovery (OECD, 2021; KPMG, 2021). Participating in industry forums and workshops allows businesses to share best practices and learn from other businesses' experiences.

By implementing these recommendations, small businesses in Ireland can enhance their operational resilience and be better prepared to navigate future disruptions, ensuring long-term sustainability and success.

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APPENDIX 1: INTERVIEW QUESTIONS

Part 1: COVID-19 disruption perspective on small businesses in Dublin Ireland

Question 1: How would you describe the past COVID-19 pandemic disruption?

Part 2: Challenges Faced by Small Businesses in Dublin Ireland during and after the COVID-19 Pandemic

Question 2: Can you describe the specific operational disruptions your business has faced in the post-COVID-19 era?

Question 3: How have these disruptions impacted your day-to-day business operations?

Part 3: Impact tolerance and adaptability small businesses, have towards operational disruptions post-COVID-19

Question 4: How adaptable do you consider your business to be in response to unforeseen challenges or disruptions?

Question 5: Were there situations whereby your business services were disrupted by the post-COVID-19 pandemic that led to either financial loss, reputational damage or customer dissatisfaction?

Question 6: Can you describe the situation and aspect of your business service that led to either financial loss, reputational damage or and customer dissatisfaction. what happened?

Question 7: Were there situations whereby your business services were disrupted by COVID-19 pandemic but didn't result in any harm to your finance, or customer post-COVID -19?

Part 4: Adaptive and resilience strategies adopted by small businesses in Dublin in response to post-COVID-19.

Question 8: What strategies did you implement to address the operational disruptions caused by the COVID-19 pandemic and restore your business operation back to normalcy post-COVID-19 pandemic.

Question 9: Can you provide examples of resilience-building initiatives or strategies your business has adopted?

Question 10: Can you describe how you use your resources to restore operation disrupted by COVID-19 back to normalcy?

Question 11: To what extent has your business embraced digitalization and technology to cope with the challenges brought about by the pandemic?

Question 12: What were development your business obtained after adoption of technology post-COVID-19.

Part 5: Effectiveness of their resilience-building strategies in the face of evolving challenges

Question 13: How do you assess the effectiveness of the resilience-building strategies implemented by your business post-COVID-19?

Question 14: Have you observed any tangible outcomes or improvements as a result of these strategies?

Question 15: How do you continuously monitor and evaluate the performance of your resilience-building strategies over time?

Question 16: Are there specific metrics or indicators you use to gauge the effectiveness of these strategies?

Part 6: lessons gained from the COVID-19 disruption and operational resilience strategy implemented.

Question 17: Based on your experiences during the pandemic, what lessons have you learned about operational resilience, and how do you plan to apply these lessons in the long term?

Question 18: Are there changes you anticipate making to your business operations or strategies to enhance future resilience?