

Business Model Innovation for Crisis Management: A Study of Pakistani Startups leveraging Dynamic Capabilities



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DEDICATION

I dedicate this thesis to my beloved parents, whose unwavering love, support, and encouragement have been my greatest source of strength throughout this journey. Their sacrifices and belief in me have made this achievement possible.

To my siblings, for their constant companionship, patience, and understanding, thank you for always being there and cheering me on.

This work is as much yours as it is mine.

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Abstract

The COVID-19 crisis had a significant and immediate impact on business activities in every industry across the world. The pandemic severely affected startups in particular, which are typically resource-constrained. However, during these tough times, some businesses not only sustained themselves but also managed to grow significantly. This occurred because these startups were able to adapt and manage change effectively. Thus, businesses strive to survive and, in the best scenarios, profit during a crisis. This study explores how startups can use business model innovation (BMI) to survive crises and earn profit. The study also aims to explore the different types of BMI adopted by startups in response to crises.

The theoretical lens of this study was centered on a dynamic capabilities lens, focusing on sensing, seizing, and reconfiguring strategies to cope with the crisis. The methodology of this study was qualitative and fifteen semi-structured interviews with founders and co-founders of Pakistani startups were conducted. The findings suggest that startups faced various challenges during the crisis, including shifts in consumer behavior, disruptions in business operations, and financial constraints. The study also highlights the value capture, value creation, and value proposition of BMI in response to these challenges. The results emphasize the importance of digital transformation as a crucial factor in customer engagement and enhancing business operations. Additionally, the study underlines the importance of strategic adaptability and market responsiveness for crisis resilience. Overall, this study contributes to exploring the role of BMI in empowering startups to transform crises into opportunities and underscores the significance of dynamic capabilities.

Keywords: Business Model Innovation, Startup, Dynamic Capabilities, COVID-19, Crisis Management.

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Chapter 1: Introduction

Innovation is widely recognized as a critical driver of economic growth and business success (Cooper & Kleinschmidt, 2000). Businesses that innovate effectively are better positioned to thrive, even in times of uncertainty and crisis. Crises, which can take many forms—such as economic downturns, natural disasters, or disruptive technological changes—pose significant challenges for businesses. The COVID-19 pandemic, which began in 2020, represents a major crisis that threatened the survival of many companies across various industries. The sudden and unforeseen shift in market conditions endangered the future of businesses that were unprepared to adapt quickly.

Greiner (1989) defines a crisis as an unforeseen event that endangers a company's future. Given the unpredictable nature of crises, businesses are often affected without warning. The time to respond is limited, and multiple stakeholders may be involved in navigating the challenges (Ferasso et al., 2020). In these situations, a company's ability to innovate becomes a crucial determinant of its ability to survive and thrive.

The COVID-19 pandemic fits this definition of a crisis more than any other event (Kraus et al., 2020). This global crisis had a detrimental impact on businesses' performance (Fernandes, 2020). To cope with the crisis, businesses had to adapt and adjust their business models and ways of working (Roux-Dufort, 2007). Startups, in particular, can be significantly affected by a crisis due to resource limitations. Crises influence startups' business strategies as they are already battling the difficulties of being smaller and less established than larger companies (Ritter & Pedersen, 2020). However, startups' flexibility allows them to innovate during times of crisis (Archibugi et al., 2013). The COVID-19 crisis provides an opportunity to examine how startups operate under challenging situations and reinvent themselves. While most firms lose money during a global

economic crisis, some thrive, as the COVID-19 crisis has shown. For instance, while airlines and travel companies faced historic lows in income, firms that provided digital meetings and contactless purchasing reached unprecedented levels (Amoah et al., 2021). This study focuses on startups that responded to the crisis by implementing business model innovation (BMI).

External environmental factors influence how firms adjust and modify their operations during a crisis. The COVID-19 crisis significantly affected the existing business models of companies (Ritter & Pedersen, 2020). A business model integrates the organization's value proposition, value creation, and value capture practices. During crises, many businesses modify these three interdependent pillars of their business models (Clauss, 2017). According to the literature, significant environmental changes compel businesses to alter their strategies and develop new business models to gain a competitive advantage (DaSilva & Trkman, 2014).

Business models, regarded as a source of innovation, can be altered at any moment to gain a competitive edge (Chesbrough, 2006). Furthermore, business models can evolve and pivot over time. Saebi et al. (2017) suggest that business models are flexible and subject to change in response to market threats or opportunities presented by a crisis. Studies collectively referred to as "Business Model Dynamics" have examined how businesses modify and improve their models to ensure continuous value generation over time (Foss & Saebi, 2017). Business model innovation (BMI), one of the business model dynamics patterns, characterizes the strategic changes organizations undergo in response to external environmental challenges (Chesbrough, 2006). To implement these business model changes, startups must consider dynamic capabilities theory.

The dynamic capabilities theory relates to a firm's ability to endure modifications, tackle challenges, and seize opportunities through business model adjustments. Dynamic capabilities

(DC) refer to “the firm’s ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments” (Teece et al., 1997, p. 516). These capabilities determine a firm's ability to implement new organizational structures, align new and existing activities, and swiftly respond to unexpected internal and external circumstances when deploying a new business model. Changes might occur in any of the fundamental elements of a business model, such as products and services, operations, resources, partnerships, customer interactions, target markets, distribution channels, and cost and revenue structures (Osterwalder & Pigneur, 2010; Teece, 2010).

This study aims to explore the role of proactive and innovative crisis responses of startups by utilizing dynamic capabilities and business model innovation (BMI). Recognizing the significance of innovation particularly BMI, during crises is essential for the survival of startups. The current research seeks to understand how startups apply BMI to survive and even benefit from crises. By examining the responses of startups to the COVID-19 crisis, this study aims to provide insights into the effectiveness of BMI in enhancing organizational adaptability and survivability. The research also contributes to both theory and practice by highlighting the role of BMI in managing crises, offering startups insights on how to grow and prosper in uncertain and challenging situations like the COVID-19 pandemic.

1.1 Research Question

- How can a startup utilize dynamic capabilities and BMI to its advantage during a crisis?
- What different types of BMI startups adopt in response to crises?

1.2 Research Objectives

- To explore how a startup can utilize dynamic capabilities and BMI to its advantage during a crisis.
- To explore different types of BMI startups adopt in response to the crisis.

1.3 Research Gap

While the COVID-19 pandemic has subsided, the lessons learned from crisis management during that period remain highly relevant. Crises, whether global or localized, can strike at any time, and it is crucial for businesses, especially startups, to be prepared with effective strategies to navigate through such challenging times. This study aims to explore the relationship between business model innovation (BMI) and crisis management, drawing insights from the experiences of startups during the COVID-19 outbreak.

The significance of this topic has been highlighted in various academic forums, including the the 22nd Annual Conference 2024 of the Interdisciplinary European Conference on Entrepreneurship¹Research will take place from September 18-20, 2024 at the Management Center Innsbruck, Austria., which called for research on " Entrepreneurship in Crisis".

¹ <https://www.iecer-conference.org/call-for-papers>

Though the extant literature covers how dynamic capabilities drive business model innovation in different contexts such as SMEs (Randhawa et al., 2021), there remains a critical void around understanding this relationship within startups, especially from an overpowering external crisis setting like the Covid-19 pandemic. Prior research has shown that dynamic capabilities (Teece, 2007) and business model innovation play a central role in organizations' adaptability as well as their success (Chesbrough, 2010; Foss & Saebi, 2017). Previous works have also researched these topics for SMEs (Arend, 2014; Borch and Madsen, 2007). However, startups are more vulnerable to external environment changes due to their resource constraints. By focusing on startups and how they incorporating the effect of a major external crisis like Covid-19 pandemic, this study will contribute to a more nuanced understanding of dynamic capabilities and business model innovation in entrepreneurial settings.

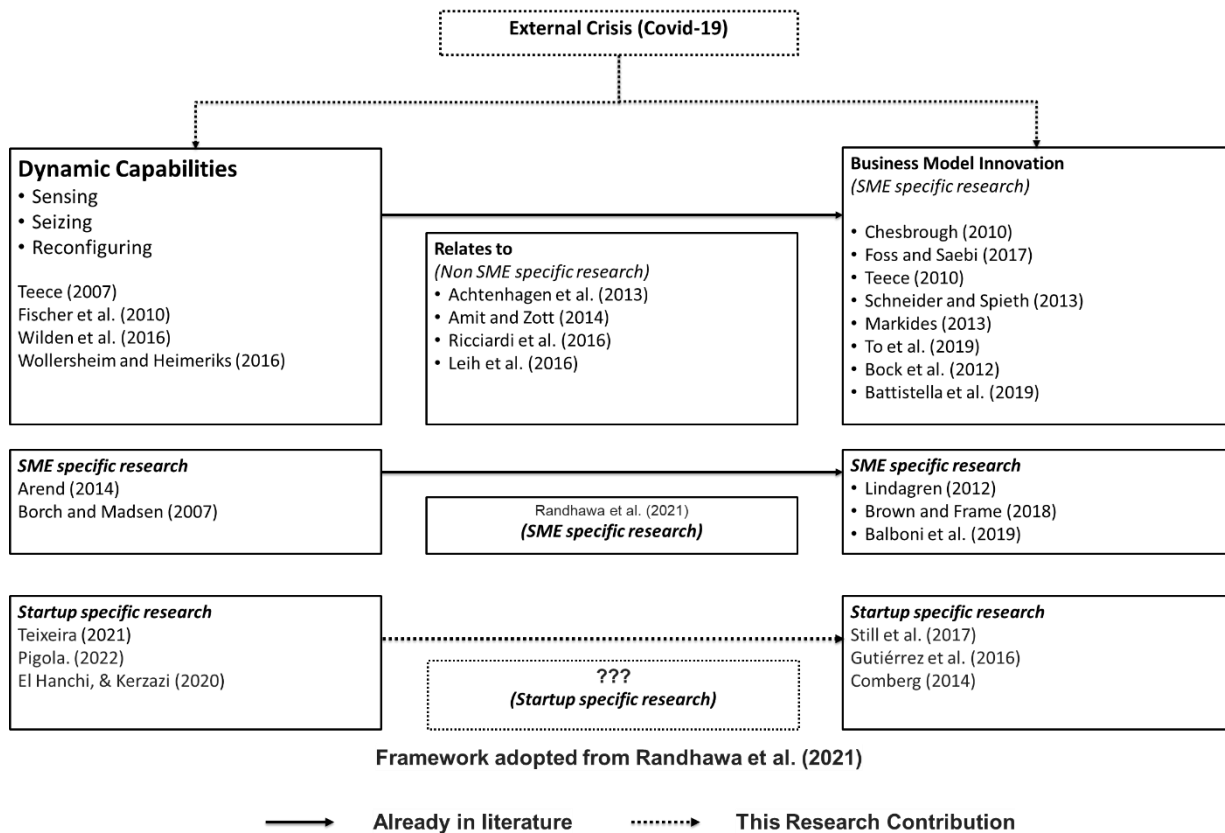


Figure 1: Research Gap framework

Several leading journals, such as R&D Management, have published special issues and calls for papers on crisis management, recognizing the need to enhance the literature in this domain (Ferasso et al., 2020). These efforts have aimed to address the questions and challenges raised by the COVID-19 pandemic, often highlighting innovative responses as potential crisis management strategies. Doern et al. (2019) also emphasized the need for further research on entrepreneurship and crisis management.

By adopting a qualitative approach, this study seeks to contribute to the limited literature on the interplay of dynamic capabilities and BMI at startups and crisis management in the context of Pakistani startups. Drawing insights from the experiences of Pakistani startups during the COVID-19 crisis, the study aims to provide a deeper understanding of how BMI can be leveraged as a strategic tool for navigating crises, thereby enhancing the resilience and adaptability of startups in the face of future challenges.

1.4 Significance of Study

The significance of this study lies in its focus on a relatively underexplored area: the intersection of Business Model Innovation (BMI), dynamic capabilities, and crisis management within startups. While crises like the COVID-19 pandemic have passed, the need for effective crisis management strategies remains vital for businesses, especially startups, which are often more vulnerable due to limited resources. This research contributes to a deeper understanding of how startups can leverage BMI as a strategic tool to navigate crises, enhancing their resilience and adaptability.

Although Foss and Saebi (2017) have explored BMI's role in strategic adaptation, there is a notable gap in literature regarding how BMI interacts with dynamic capabilities during external crises, particularly within startups. Existing studies have primarily focused on larger enterprises and SMEs, but the startup ecosystem remains under-researched in this context. By drawing insights from Pakistani startups during the COVID-19 pandemic, this study addresses this gap and adds to the growing body of knowledge on how startups can innovate and adapt to survive external shocks. Furthermore, the study contributes to ongoing discussions in academic forums and leading journals that call for more research on entrepreneurship and crisis management. This qualitative research aims to offer new perspectives on the relationship between BMI and dynamic capabilities in the context of crisis management, particularly for startups, an area that remains underexplored in current literature.

1.5 Structure of the Thesis

This research is organized into six chapters. The first chapter introduces the study, outlining the research objectives, research questions, and the significance of the study. The next chapter, Chapter Two, focuses on the literature review, exploring key concepts and theories relevant to the research. Chapter Three covers the research methodology, including the data collection techniques used in the study. Chapter Four presents the data analysis and findings. In Chapter Five, the discussion of the results is provided, connecting the findings to the existing literature and research questions. Finally, Chapter Six concludes the thesis, addressing the study's limitations and suggesting future research directions.

2 Chapter 2: Literature Review

Introduction

This chapter presents a comprehensive literature review, providing a solid theoretical foundation for understanding the interplay between business model innovation, dynamic capabilities, and crisis management in the context of startups. It delves into the diverse perspectives and evolving definitions of startups, highlighting their unique characteristics and challenges. The chapter then explores the key components of business models, including value proposition, value creation, and value capture, emphasizing their significance in shaping a company's revenue-generating strategy. The concept of business model innovation (BMI) is introduced, along with its various typologies, offering a framework for understanding the scope and novelty of business model innovation. Additionally, the chapter examines the dynamic capabilities framework and its three key components.

2.1 Crisis context in Pakistan

With first case of COVID-19 reported on February 26, 2020, coronavirus spread instantly into many cities of Pakistan resulting in imposed nationwide lockdown in the last week of March 2020. The lockdown was then extended several times to curb the spread of COVID-19. Initially smart lockdown was expanded as complete lockdown across many cities. Considering vulnerable situation of workers on daily wages, the construction industry was allowed to continue their operations in the country. Considering the moderate growth in economy before COVID-19, the Federal Government announced PKR 1.2 trillion to overcome the socioeconomic impact of COVID-19 in the country. To support the economy and consumers amidst COVID-19, several other initiatives were taken such as reduction in petroleum prices and tax refunds to exporters (UNDP, 2020). Nascent entrepreneurs have been least facilitated in cash incentives except

extending the time for loan payments and reducing markup rate under long term financing facility to 5 percent for all sectors (State Bank of Pakistan, 2020).

The government was concerned about business failures because the unemployment rate skyrocketed after the epidemic. On the government's orders, the State Bank of Pakistan created a financing scheme for small and medium firms to pay salaries and wages at reduced rates. This decision was made to help businesses and reduce unemployment during the current economic downturn. A survey conducted from 920 enterprises in April 2020 by Small and Medium Enterprises Development Authority (SMEDA, 2020) reported that 95 percent enterprises experienced a reduction in operations, 92 percent faced disruption in the supply chain, 89 percent got financial issues, and 23 percent reported up to 100 percent loss in export orders. Global Entrepreneurship Monitor report (2020) indicated that before COVID-19 pandemic, Pakistan's national entrepreneurship context index scored 3.95 of 10 in 2019, which was very low. Thus, the SMEDA survey indicates a worse situation faced by entrepreneurs during the COVID-19 pandemic. The Sustainable Development Policy Institute (SDPI) released its results on Covid-19's influence on Pakistan's SMEs sector. According to their findings, over half of the 3.8 million SMEs will experience a drop in sales and profitability. According to SDPI, over 0.95 million SMEs are not capable of surviving even a one-month lockout. In addition, around 2 to 3 million SMEs will undoubtedly require financial support in order to reopen their doors following the lockout. The current situation will not only have an impact on financial viability, but it will also disrupt the SMEs sector's supply chain (Javed & Ayaz, 2020). The devastating consequences of Covid19 for Pakistan's small and medium businesses as a result of the country's economy collapsing (Sareen, 2020).

2.2 Startup

Startup is a dynamic concept and it has been defined taking several dimensions and perspectives. Interestingly, there does not exist any single or agreed-upon definition of startup, rather the definition has evolved over time. The literature has highlighted minor differences, inadequacies, and contradictions in describing the term 'startup'. The term 'startup' is rarely defined in a systematic way. As an example, some have said that startups are: a mindset; a company with a partially developed product but room to expand; a young company with a small workforce; an innovative company developing disruptive technologies; etc. (Cockayne, 2019). The research underscored the significance of defining key terms such as "start-up" for both practical and communicative purposes. However, it also emphasized the importance of maintaining flexibility

Reference	Age/Newness	Innovation	Risk/ Uncertainty	Growth	Definition
Keebel (1976)	✓				A startup is the creation of an entirely new enterprise which did not formerly exist as an organization.
Gudgin (1978)	✓				A new firm which began production for the first time.
Freeman et al (1983)	✓		✓		Startups are companies bound by their liability of newness and smallness.
Carter et al (1996)	✓				A "start-up" is a newly born company, without previous history of operations.
Strielkowski et al (2015)	✓	✓	✓	✓	A startup is a new and temporary company with a business model based on innovation technology, with potential for rapid growth and scalability.
European Startup Monitor (2016)	✓	✓			Start-ups are established for less than 10 years; bring innovative technologies and/or new business models.

Herte (2017)	✓	✓			Startups are newly established, innovative companies with a service life up to 2 years and a maximum of 10 employees.
Paoloni, P., & Modaffari, G. (2018)	✓	✓			A startup established for no more than 60 months, with social and innovative products/services and high technological value.

Table 2: Definition of a Startup

in these definitions. The study suggests that researchers should remain vigilant regarding the potential implications of their chosen definitions on subsequent interpretations and analyses throughout the research process. This finding emerged from an examination of the methodologies employed in defining research objects, particularly in the context of startup studies. This study also claims that defining a start-up precisely might have a methodologically restricting effect. It is possible to falsely highlight distinctions between businesses that are actually very similar. Therefore, a startup should be viewed as a consequence or product of specific working methods rather than as a particular type of organization.

The studies on startups prior 2000s used “new” as the main discriminator in defining a startup. After 2000s the studies reflects that a startup can defined through one of the four main characteristics which includes age/newness, innovation, risk/uncertainties, and growth. The below **table 2** shows the different definitions of startup over the course of time. In this study, a start-up is defined as a company that was established in the recent past and is getting indications of future potential. In other words, there is an existing market or potential for the company’s products and services, as well as room for startup growth. Therefore, current research follows this line of reasoning. However, in the interest of openness and clarity, this study will focus on the Paoloni,

P., & Modaffari, G. (2018) startup definition which states that only those businesses are considered as startup which have been established for no more than 5 years.

Startups have inadequate resources to implement strategies that can be useful in protecting or even improving business performance. Due to their lowered liquidity and restricted financial access in times of crisis, this limitation becomes even more restrictive (Eggers, 2020). The ability of startups to innovate in response to crises is further supported by their entrepreneurial focus (Beliaeva et al., 2020). According to Dowell et al. (2011) smaller hierarchies and a defined corporate structure are other characteristics of startups that enable them to make choices more swiftly and efficiently under unpredictable circumstances. These reasons often support the view that startups employ Business Model Innovation to survive and improve their situation during a crisis. The startups impacted by the COVID-19 pandemic crisis are still being studied; nonetheless, startups are resource constrained, and that is why they are more likely to incur greater liabilities due to their newness and smallness (Kuckertz et al., 2020). It means that startups are more likely to be negatively affected by COVID-19. Cowling (2020) observed that small firms like startups are experiencing an unpredictable number of adverse effects on their daily operations and are likely to be running out of funds.

The COVID-19 business closures have had a significant and quick impact on business activities in nearly each and every industry in the world. These shutdowns have also raised the dangers involved with personal and company investments. Many businesses become either insolvent or limited in their production volume. As per Kraus, et al. (2020) no other situation or event in the recent history is as well-defined as the COVID-19 pandemic. Previous pandemic restrictions, such as SARS, Ebola, and avian influenza, are insignificant if they are compared to those imposed restrictions during the COVID-19 pandemic. Globally, countries have adopted stringent

restrictions regulating and affecting how people communicate, which has significantly influenced businesses. While businesses plan for various contingencies, few anticipate a global health crisis of this scope. Nevertheless, despite the failures and difficulties, there have been chances. This crisis presented a chance to analyze activities of a company during the crisis and to reshape themselves. Startups are different, hence the way a crisis affect them and in response the way they strategize themselves is different and hence, needs to be studied. One of the strategies can be changing their business model, so the next section will discuss the business model.

2.3 Business Model

“A business model articulates the logic, the data and other evidence that support a value proposition for the customer, and a viable structure of revenues and costs for the enterprise delivering that value” (Teece, 2010, p. 173). A Business Model comprises of the value proposition, value creation, and value capture (Foss and Saebi, 2017). Value Proposition, Creation, and Capture are the three well-established aspects of business models (Clauss et al., 2019). Combining these three aspects results in formulating a business's revenue-generating strategy (Breier et al., 2020; Teece, 2010). The three different aspects of business models are explained below.

A company's value proposition encompasses its whole line of products and services and the distribution methods it employs to reach consumers. The value proposition emphasizes innovative prospects while accounting for environmental changes (Johnson, 2008). The Company Value Proposition defines, in addition to the company's unique benefits, that target customers need from your products and services through your distribution channels. It is the unique value that a company seeks to provide and deliver to customers, making it different from competitors (Osterwalder & Pigneur, 2010). Value proposition is a statement that emphasizes how the business will serve, benefits and ease of access to customers satisfaction (Frow & Payne 2011).

Additionally, the value proposition should not just highlight the current products but also skills/communications of new possibilities and a capacity to evolve in the context. Johnson (2008) clearly substantiates the position, arguing that the value proposition has to take into account the changes in the competition environment, developments in technology, and customer requirements. Adaptability is an important aspect in the general business framework, because through it the business organization can continue to be relevant and useful to the customers in as far as the products are concerned. Further, there is a need to ensure that these value propositions are marketed and branded well so that the customers can easily grasp and value the special form of value being offered (Rintamäki et al., 2007). It can be argued that the communication of the company's value proposition must be aligned and consistent across the contact points because it creates a perception of the firm as unique amidst the perceived competition (Payne & Frow, 2014). It is an essential and multifaceted idea that reveals a firm's product and service positioning and mix of delivery systems and opportunities, its capacity to shift to meet environmental conditions and requests, and the preferences and demands. This way, organizations are able to create a competitive advantage and also develop long-term customer relationships (Frow & Payne, 2011).

Value creation can be further described as creation of the tangible and intangible assets that go into the production of the products or services that are sold to the customer. It concentrates on the competency that a business needs to develop across the value chain (Achtenhagen, & Naldi, 2013). It can hence be argued that new techniques, new equipment, new skills from the next generation, and new collaborations can all add value (Clauss, 2017). As a continuation from the above definitions, value creation can also be described as the manner in which a company initiates its resources, capabilities and activities to develop offerings that customers consider valuable (Lepak et al. , 2007). it is a process of defining activities with the use of inputs, where these inputs are

transformed by means of processes into products or services which are satisfactory to the customers (Bowman & Ambrosini, 2000).

From market and hierarchy models in that value creation is more directly related to being able to gather, analyze and respond to customer requirements and to possess resource and capabilities to satisfy those requirements (Priem, 2007). These may include Research & Development, innovativeness, acquiring and developing specific knowledge and skills, strategic relationships & network and operational excellence (Clauss, 2017; Achtenhagen & Naldi, 2013). Secondly, value creation is not a fixed activity and, therefore, needs to evolve over time to be in a position to address new issues that may emerge in the market, new technologies that may have emerged in the market, new markets or needs that may arise due to changing customers' needs (Teece et al. , 1997). There is nothing like passive management when it comes to the renewal of value creation activities; companies need to proactively, for instance, identify the use of new technologies, new business models or new markets (Lepak et al ., 2007).

Value creation also requires the coordination of various activities and processes in the value chain such as the purchasing, manufacturing, marketing and distribution of the product (Porter, 1985). When co-ordinated and integrated, these activities can help firms to increase productivity, cut costs, and provide superior value to customers (Bowman & Ambrosini, 2000). Creation of value is a complex activity that entails the use of resources, capabilities and activities of a business firm to offer a value delivering offering to the customer's desirable standard. The concept of analytics implies ongoing creativity, implementation and fine-tuning of multiple activities within the value chain, along with in-depth knowledge of customers' needs and the capability to predict and thereupon address the changes that affect the market (Priem, 2007; Clauss, 2017).

Value capture is defined as how the revenue can be created (Morris et al., 2005). This document defines the concept of profit making in making and selling goods or providing services to consumers and cost allocation. This one can be variable depending on future revenues or actions of reduction of costs (Clauss, 2017). Based on the above definitions, value capture is the processes and activities with which a firm encases some amount of value created for the customer (Bowman & Ambrosini, 2000; Lepak et al. , 2007). It is the concept of converting into financial return the value added to produce for and sell to the customers. According to Teece (2010), value capture strategies entails identifying, creating and implementing correct value capture vehicles, the revenue model, the prices structures and the cost structure that is compatible with the strategic value creation position of a firm in the market. This may include adaptation of new pricing strategies to enable effective gains in the sales price, gaining subscription prices, freemiums or dynamic prices (Clauss, 2017; Zott & Amit, 2010).

Also, value capture goes a step further to revenue and concerns itself with the capability of even maintaining an empire by erecting barriers to imitating or substituting it (Lepak et al. , 2007). This may entail the use of licenses, patents or trademarks, the development of proprietary assets, the creation of customer awareness or customer loyalty (Amit and Zott, 2001; Teece 2010). Value capture is also differential to cost structure and the firms capability to control cost and optimize resource usage throughout the value chain (Clauss, 2017). This can be done through maintaining efficiency through lean production and operations management, rationalizing mass, or creating strategic network collaborations to minimize cost (Zott & Amit, 2010).

In addition, value capture is not an immutable process; it needs to be constantly checked, reassessed, and modified based on the shifting market dynamics, competitors' actions, and customers' preferences (Teece, 2010). Executives must be ready to adapt the existing business

models and experiment with the new and innovative ways of achieving value capture and sustaining the company's profits and market position (Clauss, 2017). Value capturing is the act of taking a proportion of the value that has been delivered to consumers through mechanisms such as charging the right amount of fees, having the right costs structures and protecting its competitive position. It is a dynamic and adaptable component of the business model, requiring continuous monitoring and refinement to ensure sustained profitability and competitive advantage (Teece, 2010; Clauss, 2017).

According to the literature, significant environmental changes force businesses to alter their strategies before building business models (BMs) around them. DaSilva and Trkman (2014) expand on this viewpoint by stating that a corporation develops dynamic capabilities that form the basis of a BM based on a strategy. According to them, a company's strategy is its long-term approach to a prospective future that it strives towards. According to DaSilva & Trkman (2014) the Business Models also describes a company's present status and how revenues are currently generated. Hence, (midterm) dynamic capabilities, which are based on the (long-term) plan, generate a (short-term) Business model. Since business models are subject to change so the next section sheds light on business model innovation.

2.4 Business Model Innovation (BMI)

“Business Model Innovation (BMI) is the designed, novel, nontrivial changes to the key elements of a firm's BM and the architecture linking these elements” (Foss & Saebi, 2017, p. 201).

BMI based on the components and interrelationships of a business model (value proposition, value creation, and value capture). Foss and Saebi (2017) used this information to construct their Business Model Innovation typology which classifies BMIs according to their scope (modular or

architectural) and innovation/novelty (new to the firm, new to the industry). The authors explained four different typologies of BMI. These typologies include

- ‘Focused BMI’ which refers to the changes made to business model which are modular in term of scope and new to industry in term of innovation.
- Evolutionary BMI refers to the changes made to business model which are modular in term of scope and new to firm in term of innovation.
- Adaptive BMI refers to the changes made to business model which are architectural in term of scope and new to firm in term of innovation.
- Complex BMI refers to the changes made to business model which are architectural in term of scope and new to industry in term of innovation. The different type of BMI can be differentiated easily from the below *table 2*.

Scope

		Modular	Architectural
<i>Novelty</i>	New to Firm	Evolutionary BMI	Adaptive BMI
	New to Industry	Focused BMI	Complex BMI

Table 2: Types of Business Model Innovation (Foss and Saebi, 2017)

According to Saeb (2017), the characteristics of these several types of BMI may vary. According to them, evolutionary BMI refers to changes in the BMI components over time. When discussing adaptive BMI, literature often ties architectural modifications to environmental changes; thus, if a firm has already modified its BM, an adaptable BMI will likely be new to the business but well-known in the industry. Using a targeted BMI, a company may adjust or introduce a new BM into

a sector proactively. In contrast to a focused BMI, which can only modify a single component, a complex BMI completely restructures an existing BMI via industry-unique architectural adjustments.

Modular BMI refers to changes or innovations that are focused on a specific component or module of the existing business model. These changes are typically incremental and aim to improve or enhance a particular aspect of the business model without fundamentally altering its overall architecture or logic (Foss & Saebi, 2017). Modular BMI can involve adjustments to individual elements such as revenue streams, cost structures, value propositions, or distribution channels, while preserving the core components and relationships within the business model (Saebi et al., 2017).

However, architectural BMI affects profound and systemic changes that rearrange the general architectural blueprint of the business model and its parts, the interaction between which is reorganized (Foss & Saebi, 2017). As it was proposed by Saebi et al. , (2017), while architectural BMI overcomes the need for the actual change of modules, it is concerned with the adjustment of the ways these modules are connected and operate. This type of BMI typically needs a deeper and higher level of intervention because the issue is not just reorganizing the implementation of a business model but reformulating its logics and profit generating mechanisms.

Changes in the business models are warranted by external and internal factors. A BMI can be triggered by any change to a company setting since these changes impact the company's overall assumptions. New market entrants frequently introduce new BMI into sectors. A successful BMI depends on company's internal characteristics. For instance, a strong market orientation might assist uncovering possible values that customers may be seeking. On both, individual and corporate

level, entrepreneurial skills are required to spur innovation and seize opportunities (Scott et al., 2019). Internal BMI characteristics have not yet been thoroughly examined (Foss and Saebi, 2017). They affirm the value of open innovation research (Chesbrough, 2010) and the dynamic capability literature (Teece, Pisano, & Shuen, 1997) in developing these internal elements. So, both external and internal factors can lead to BMI, and BMI can eventually have some significant effects on the startups.

Existing literature have studied BMI with reference to performance of the business and have shown a significant effect of BMI on business performance (Visnjic et al., 2016). Additionally, academics have emphasized how BMI enhances a company's competitive edge (Casadesus-Masanell & Zhu, 2013). Research shows that BMI effects are more difficult to imitate than pure product and process improvements, so they offer more long-term value. Foss and Saebi (2017) highlight consequences of BMI (cost reduction, profitability, innovativeness). It is challenging to track all of the effects of a change in BM since BMI is a complicated alteration in a system.

2.5 BMI and Crisis Management

Business models play a crucial role in how companies create, deliver, and capture value, particularly during times of crisis or significant environmental shifts. A crisis can be defined as a situational event or condition that poses a severe threat to an organization's operations, financial stability, or reputation, often requiring immediate and decisive action to mitigate potential harm or exploit emerging opportunities (Wenzel et al., 2020). The COVID-19 pandemic that affected global markets, supply chain, and consumer behaviour is a perfect illustration of the crisis of unprecedented scale and consequent, that require quick adaptation or failure.

Recent studies' goal is to understand how companies adapt and develop their business models in the course of crisis to be prepared for such situations, with rather focus on the part of crises in stimulating BMI in startups and SMEs. There are numerous articles that quite rightly emphasize the need for business model shifts due to exigent circumstances; the evidence that the firm which survives, recovers, and may even flourish, are those that have adapted their business models to the existing conditions (De Vries & Hamilton, 2021; Breier, 2021).

For an illustration, investigations on small firms in New Zealand affected by earthquakes established that the company adapting to different business models when dealing with the disaster outperformed better and recovered (De Vries & Hamilton, 2021). Likewise, in the current COVID-19 environment, several firms in the hotel business together with other industries have expressed that they have embraced new sources of revenue and involve themselves in business model innovation as a way of exploiting the opportunities that come with crises (Lai & Wong, 2020; Clauss et al. , 2022).

Clauss et al. (2022) carried out a study on the temporary business model innovation of SMEs during COVID-19 and suggested that temporary BMI is suitable for SMEs in crises and COVID-19 is a trigger for starting the temporary BMI efforts. Secondly, analyzing the outcomes of small businesses after the global economic downturn one can concluded that the new initiatives are known to grow at a faster pace than integrated businesses (Cowling et al., 2018), which gives credit to the idea that agility and flexibility of the new businesses and startups may be beneficial in the context of crises.

According to several studies, small businesses and startups are vulnerable to adversity during crises; however, they enjoy Organizational agility and strategic flexibility, which provides them

with relatively faster innovative response in comparison to Large well-established organizations (Nagy and Kacmar, 2013; Nagel, 2020; Wenham et al., 2020; Kuckertz, 2021). This adaptive capacity is beneficial for startups, as firms often are not tied to a particular business model; thus, moving resources from one strategic angle to another is easier than for an incumbent firm (Wenham et al., 2020).

According to Chesbrough (2010), business models are crucial for businesses striving to commercialize innovations. Business models serve as drivers of innovation (Schneider & Spieth, 2013), demonstrating how companies develop and capture value from innovative technologies or ideas that lack inherent value until they are marketed through a viable business model (Chesbrough, 2010). Due to their importance in innovation, business models themselves have become subjects of innovation, leading to the concept of business model innovation (BMI) (Schneider & Spieth, 2013).

Demil and Lecocq (2010) state that BMI can occur voluntarily and spontaneously through changes in distinct business model components. In contrast, adaptive BMI refers to changes made to the overall business model and its architecture (i.e., how business model components are interconnected) in response to environmental changes (Foss & Saebi, 2017). Although evolutionary and adaptive BMI adjustments may not necessarily be new to the business, they are often novel in the industry (Saebi et al., 2017).

To actively disrupt market conditions in a particular sector, an organization's management may initiate complex and targeted business model changes that are either modular or architectural in nature (Foss & Saebi, 2017). These changes are brand-new for both the corporation and the industry. Modular BMI involves modifications to specific business model components, while

architectural BMI affects the overall business model architecture and the relationships between its components.

While academic and practitioner interest in BMI has increased in recent years (Foss & Saebi, 2017), there has been limited research on BMI in the context of startups, implying that its components and typology are not being adequately addressed. Despite innovation being essential for the growth and competitiveness of startups, the role of BMI has been largely overlooked, with few exceptions (Bogers & Jensen, 2017). This research aims to bridge this gap by examining how businesses, particularly startups, implement different components and categories of BMI, especially in response to crisis situations.

It have previously demonstrated that BMI can help organizations develop a lasting competitive edge, particularly when operating in unpredictable environments. In reality, external factors such as globalization (Lee et al., 2012), changes in the marketplace (De Reuver et al., 2013), new technological options, or new behavioral trends often drive BMI (Wirtz et al., 2010). Consequently, to succeed under today's conditions of increased speed of change, volatility and uncertainty BMI is critical to enterprises (Giesen et al., 2010). As per Chesbrough (2010) it is possible to say that "the ability to redefine your business model before you need to "is the major source of competitive advantage in this case, and this is all the true since established business models may no longer be profitable.

Also, literature that checks for the relationship between BMI and performance also shows that the two have a positive relationship (Foss & Saebi, 2017). The effect of business model innovation has been observed on the performance of new ventures (Zott and Amit, 2007) and new ventures (Aspara et al., 2010), including large organisations (Ibid). For example, in the 2006 IBM Global

CEO Study it was discovered that BMI could be positively linked with financial performances (Pohle & Chapman, 2006).

Thus, as a result, this section outlines what is meant by the crises and their implications to the business including startups and SMEs. They point the needs to adopt business model innovation as a strategic approach to managing crises to change and to exploit new opportunities for commercial success. The discussion also explains various types of BMI including; evolutionary BMI, adaptive BMI, modular BMI and architectural BMI and their applicability to crisis management. Also, the possible utilitarian value of BMI for performance and the achievement of competitive advantage is discussed, and thus strengthens the importance of this research in ascertaining how BMI could be utilised effectively in business especially in start-up firms for adequate crisis management.

2.6 Dynamic Capabilities

This concept has been defined by Teece et al. (1997) as the dynamic capabilities, which was described as the “firm’s ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments.” Dynamic capabilities underline an organization’s ability to identify new opportunities and threats and then to configure its structures and resources in ways that would provide an optimal fit between the firm and its context (Helfat et al., 2015).

The concept of dynamic capabilities is acknowledged as encompassing multiple facets, which are closely related but can be considered as separate capabilities (Yin et al., 2014). Teece (2007) outlines three key components of dynamic capabilities:

- i. Sensing opportunities and threats

- ii. Seizing opportunities
- iii. Maintaining competitiveness through reconfiguring resources

These three capabilities are further described below:

Sensing capabilities: Enterprises must continuously scan, investigate, and explore across different domains, including technologies, markets, and customer needs, to identify and shape opportunities (Teece, 2009). As Kindström et al. (2013) describe, "sensing" refers to the process of acquiring relevant intelligence and insights. An organization's ongoing ability to sense opportunities and threats forms the foundation for developing and offering new products, services, or business models. This can involve recognizing emerging customer demands, potential partnerships, environmental threats, or the availability of new technologies.

Seizing capabilities: Once an opportunity is identified, seizing capabilities enable an organization to address it by introducing new products, processes, or services. This may involve acquiring new skills, knowledge, or technologies, as well as making strategic investments or forming partnerships. Collaborating with technology providers, suppliers, or complementary businesses can be crucial for effectively seizing opportunities and maximizing returns. Failure to seize a recognized opportunity, by not committing the necessary resources or actions, can lead to missed potential (Teece, 2007).

Reconfiguring capabilities: According to Eisenhardt and Martin (2000), the value of dynamic capabilities for competitive advantage lies in their ability to modify and reconfigure the resource base, including the creation, integration, recombination, and exploitation of resources. Reconfiguring capabilities refer to the capacity to reassemble and reorganize organizational resources in response to market shifts, technological changes, or organizational growth.

Reconfiguration is necessary to maintain evolutionary fitness and, if required, to break free from unfavorable path dependencies or inertia (Teece, 2007: 1335).

The dynamic capabilities framework is applicable to various industries and contexts, including startups operating in technological and non-technological sectors. The abilities to sense opportunities, seize them through strategic actions, and reconfigure resources are crucial for startups navigating rapidly changing environments, such as crises or disruptive events.

This stream of research focuses on how existing startups use business model innovation in response to crisis; thus, the ideas currently being executed fit into the dynamic capabilities scheme. By understanding how startups proactively or reactively recognize, capture and create opportunities in crises, the research can shed light on the process of dynamic capabilities that proven for adaption and sustaining. Knowledge of dynamic capabilities can assist the startups to acquire ways of how to seize opportunities despite conditions that are unfavourable in the market. For example, those that can detect changing customer preferences in the context of COVID-19 or emerging markets were better placed to capture those opportunities through readjustment of business models or new products and services. Similarly, resilient startups can adjust and quickly disband or redo some of their activities and partnerships to sustain competitive advantage and overcome forces. As a result, this research will integrate the dynamic capabilities perspective such that it offers an exhaustive analysis of the process of crisis management by startups concerning business model innovation, distinct capabilities of sensing the opportunities within inconsistent environments, seizing such opportunities through strategic steps, as well as reconfiguring organizational assets to maintain competitive advantage amid crises. In the next section, the correlation between dynamic capabilities and business model innovation is discussed.

2.7 BMI and the Dynamic Capabilities Approach

The DCs relate to the capacity to adapt, to neutralise threats and risks, or to build on opportunities by changing the business model. Any of the essential elements of a business model (BM) may undergo changes: specifies the key activities of partners, cost and revenue model, segments, channels, activities, product and services, customer connection (Teece, 2010). The processes and procedures involved in the operation of DCs are explored in the literature as micro-foundations of DCs with references to the following; Teece (2007) proposed entrepreneurial management paradigm of recognizing, seizing and changing as ways of explaining how such transitions occur. Also, BMs may change because of the process of seeing and recognising opportunities and threats, and because of responding to newly emerged threats and opportunities (ibid).

The DCs relate to the entrepreneur's inclination and capability to effect modifications, in addition to their evaluation of probable opportunities for modifying prior patterns and resource structures. An opportunity-based perspective of entrepreneurship that is the act of opportunity discovery and evaluation and exploitation also fits with this (Leih et al. , 2015; Ratten, 2020). Dahles and Susilowati (2015) defined tourist entrepreneurs as those actors within tourist sector who spot opportunities, evaluate them and act within the tourist sector and contribute to find solutions in a challenging period. These three typologies for BM changes are evolution, adaptation, and innovation, for which Saebi (2015) consequently grouped DCs, the essential capabilities motivating changes in BMs, into three sorts. Unlike the adaptive DCs which revolve their strategy on realignment in order to address conditions, which are dynamically changing, the evolutionary DCs aims at small changes in order to maintain the current BMs. Thus, DCs in their most radical manifestation use creative value generation, distribution as well as capture to develop so called BMIs to cope with a rather unstructured situation (Saebi, 2015). Other typologies identified in the

literature related to Teece's (2007) conceptualization of DCs may include; sensing that involves the capacity to perceive the business environment in terms of technology and BMs, competitors, the market, and its trends, market best practices, and shifts, seizing that involves the ability to harness new knowledge relating to the market, technology and BM, and translation that entails the ability to utilize the knowledge in product and process To take decisions regarding modification of value chain processes and selection of the key resources and competency sourcing, the transformative skills have to be introduced (Kump et al. , 2019; Mezger, 2014). DCs are also classified based on how they support BMI from the perspective of sustainability.

This classification is connected to the concept of resilience, namely that of the attempted preparation for a crisis (Ritter & Pedersen, 2020), and with reference to BMs it refers to the challenge of exploring new strategies for value creation that would ensure and enable the transition to post crisis BMs (Schaltegger, 2020). Inigo et al. 's 2017 study also looked at a number of DCs directed towards either radical or evolutionary BMI for sustainability. They highlighted the more external trend scouting and stakeholder seeking, as well as the opportunity-driven BM development, which includes both the creation of radical BMs and the enhancement of the existing ones – evolutionary BMs. The classification aligns with a dynamic approach to resilience as a learning process that refers to pertinent DCs in the context of crisis management (Hall et al., 2017), which will be covered after this chapter. It implies that changes in BMs for sustainability occur over time.

2.8 BMs and DCs in Crisis Management

In a recent study introduced a classification system for business models (BMs) during times of crisis (Ritter and Pedersen, 2020). They identified two types: resilient BMs, which effectively establish and manage DCs to navigate a crisis, and BMs, which lack the ability to change

independently and therefore rely on external interventions. Resilient business models are formed by promptly adapting new items to meet the changing demands of the market (Manolova et al., 2020). According to Brück et al. (2011), crises serve as a catalyst for promoting entrepreneurial activities. Tourism studies have sought to examine how people respond to crises and develop resilience. However, there has been limited discussion on how these crises can actually inspire innovative transformations. Compared to research in the business field, there have been relatively few studies conducted on this topic (Breier et al., 2021; Jiang et al., 2019).

According to Breier et al. (2021), hospitality companies in Austria prioritized making little improvements to increase their income during the epidemic, rather than focusing on creating a long-term competitive edge. In addition, Breier et al. (2021) identify three factors that drive BMI: available resources, environmental risks, and customers. Nevertheless, the study conducted by Schilke et al. (2018) have not addressed the significant influence of DCs on shaping BMs. Consequently, businesses may need to restructure their resources and practices, as highlighted by Jiang et al. (2021). In a recent multi-industry study conducted by Kraus et al. (2020) on family firms in European countries, it was discovered that tourist companies, in particular, make significant efforts to create new business models (BMs).

While it is argued that DCs play a crucial role in developing resilience during a crisis, there is a lack of research focused on creating new DCs for crisis management (Jiang et al., 2021). In their study, found two dynamic capabilities in crisis management: crisis assessment, which refers to the cognitive processes involved in understanding and evaluating a crisis, and crisis reaction, which pertains to the behavioral actions used to address and mitigate the crisis. Moreover, it is crucial to stipulate that the authors describe only two broad talents concerned with creating reactive and

defensive strategies for managing problems. Consequently, there is no adequate understanding of how the dynamic capabilities are needed when a startup is facing the crisis.

Drawing from Leih et al. (2015), the authors regard DCs to play a central role in propelling BMI through entrepreneurial processes and disposition. These capabilities help see opportunities and the need for BM change as well as define the required resources and competencies. The present work is a literature review of the academic sources and concerned with analysing a DC as a multi-faceted scheme dividing it into its components introduced by Wang et al. (2019), which include sensing, seizing, and transforming. Recent studies reveal the fact that there is lack of studies regarding the relationship between DCs (Dynamic Capabilities) and BMIs (Business Model Innovations) in the context of the crises of startups.

In view of this, the aim of the current study is to bridge this gap and advance the understanding of issues concerning crisis management within startups, with especial reference to dynamic capabilities and business model innovations. This study has been designed to address the research question on how startups exploit dynamic capabilities to detect opportunities, capture these by committing certain strategic actions and lastly transform resources and business models in response to disruptions to know how to manage disruptive events, one needs to understand the essential capabilities and strategies that are necessary within the context of startups. The dynamic capabilities framework therefore aligns well towards the understanding of the adaptive and innovative responses in startups, and thus, provides insights into the specific factors and mechanisms uphold resilience and sustained competitiveness during crises.

Summary

In summary, this literature review chapter provides a comprehensive understanding of the theoretical underpinnings and empirical evidence related to business model innovation, dynamic capabilities, and crisis management in the context of startups. It establishes the significance of business model innovation as strategic responses to crises, drawing upon empirical studies from various industries and crisis events, such as the COVID-19 pandemic. The chapter highlights the unique challenges and opportunities faced by startups in navigating crises, underscoring their agility, flexibility, and faster innovation response times as potential advantages. The dynamic capabilities framework is presented as a valuable lens for analyzing the adaptive and innovative capacity of startups, emphasizing the critical capabilities required for sensing opportunities, seizing them through strategic actions, and reconfiguring resources and business models. By integrating these concepts, the chapter lays a solid foundation for exploring how startups leverage business model innovation and dynamic capabilities to navigate crises effectively.

3 Chapter 3: Research Methodology

3.1 Introduction

This chapter outlines the research methodology employed to explore how startups utilized business model innovation and dynamic capabilities during the COVID-19 crisis. It provides a detailed explanation of the research design, philosophical underpinnings, and methods used for data collection and analysis. The qualitative approach adopted, the use of semi-structured interviews, and the thematic analysis conducted to interpret insights from startup founders and co-founders are discussed in-depth. Additionally, the rationale behind the chosen case study method and sampling techniques is highlighted.

3.2 Research Design

The research design defines the structure and approach taken to investigate how startups use business model innovation and dynamic capabilities to manage crises. The ontological stance of this study is subjectivism, acknowledging that reality is perceived through the subjective experiences of participants. The epistemological approach is constructivist, focusing on how knowledge is constructed by individuals through their interactions and experiences, making the study qualitative in nature (Creswell & Poth, 2016).

3.2.1 Ontology and Epistemology

The ontological position of subjectivism underpins the use of qualitative methods like semi-structured interviews. This approach seeks to understand how startups perceive changes in their business models and use dynamic capabilities during crises. The constructivist paradigm emphasizes the importance of capturing the participants' meanings and experiences to gain a holistic view of business model innovation during a crisis (Gephart, 2004; Gioia et al., 2013).

Constructivism is most suitable for analyzing organizational phenomena, as it involves a detailed description of the meanings that organizational actors assign to their experiences (Marriem, 1998). In this study, the constructivist philosophy aligns with the research objective, providing a comprehensive understanding of how startups treat, understand, and act during a crisis.

Research design is a concept meaning the proposed outline or map of a study that defines an approach of implementing a research study. It gives an overview of what the researcher intends to do in order to solve the research problem or answer the research question. The research design can therefore be viewed as a guide, to guarantee that the study is done orderly and efficiently (Levitt et al., 2018).

The qualitative approach involves gathering data from a small, purposive sample of participants to explore their interpretations and behaviors within a specific context. This approach enables the researcher to interact with participants directly, allowing for an in-depth understanding of their perspectives. The subjective nature of the research requires the use of semi-structured interviews to capture the personal experiences and insights of startup founders and co-founders (Crotty, 1998).

By following a systematic approach, this research emphasizes the importance of understanding the participants' stories and the meanings they attach to their experiences during the COVID-19 crisis. This ensures that the collected data is analyzed in line with the philosophical underpinnings of constructivism.

3.3 Methodology

The methodology refers to the specific strategies, methods, and techniques employed in a research study to collect and analyze data. It is the practical implementation of the research design (Levitt et al., 2018).

3.3.1 Nature of the Study

This research is qualitative in approach, aspiring to understand the changes in the business models of Pakistani startups during crises, and the concept of business model innovation and dynamic capabilities. This was an exploratory research design which enables researcher to study a phenomenon and respond to questions that begin with ‘why’ (Creswell & Poth, 2016; Yin, 2018).

Since this research seeks to understand the role of business model innovation in preparation for crises amid new startups, an inductive research approach was used. Inductive approach focuses on data collection and analysis with the aim of establishing patterns, themes, and possible explanations which may culminate in the formulation of theoretical concepts or hypotheses (Bryman & Bell, 2022).

The inductive approach is useful in this context, since it enables a broad analysis of the situation, the observation of Pakistani startups’ experiences and perceptions regarding BMI and crisis, as well as the formulation of specific, well-fitted hypotheses. By the use of inductive approach the researcher is in a position to be very rich in understanding the nature of the relations between these phenomena without being so much confined by a number of theories or hypothesis (Merriam & Tisdell, 2016).

Additionally, it fits the spirited constructivism epistemology since the researcher is able to diagnose the participants' perceptions and personal interpretations of the occurrences; thus, offering a precise and contextual solution to the research issue (Merriam, 1998).

3.3.2 The Case Study Method

This research uses qualitative approach due to its inherent research design that includes investigation and exploration. The focus of analysis is on startups, and therefore the responses of the startups' executives will be used after interviewing them about the data that we need. The perspectives, subjective experiences, and interpretations of these executives are crucial in addressing the research problem, which examines how startups leverage business model innovation to cope with crises like the COVID-19 pandemic.

3.3.2.1 Defining and Describing the Case Study

In the literature, there are various definitions and descriptions of case study research, which can sometimes be confusing. Some commonly cited definitions come from Yin (2014), Stake (1995), and Merriam (2009). Yin's (2014) definition focuses on the scope, process, and methodological aspects of case study research, highlighting its empirical nature and the significance of considering the context. In contrast, Stake (1995) adopts a more flexible stance, emphasizing what is studied (the case) rather than how it's studied (the method) and describes it as understanding the activity of a single case within important circumstances. Merriam (2009) defines case study as an in-depth exploration and analysis of a limited system, highlighting both what is studied and the research's descriptive and heuristic outcomes. To simplify this diversity of definitions, Flyvbjerg (2011) suggests using a concise definition, such as the description, which emphasizes intensive analysis of an individual unit concerning developmental factors and the environment. These different definitions reflect researchers' distinct approaches to developing case study methodology, focusing

on the elements they find most essential to their research designs. The table below presents the comparison of the three (Yin, Merriam & Stake) approaches to case study methodology.

Dimension of Interest	of	Robert Yin's Case Study Research: Design and Methods	Robert Stake's The Art of Case Study Research	Sharan Merriam's Qualitative Research and Case Study Applications in Education
Epistemological Commitments		<p>Positivism</p> <p>Case is “a contemporary phenomenon within its real life context, especially when the boundaries between a phenomenon and context are not clear and the researcher has little control over the phenomenon and context” (p. 13).</p>	<p>Constructivism and existentialism (nondeterminism)</p> <p>Case is “a specific, a complex, functioning thing,” more specifically “an integrated system” which “has a boundary and working parts” and purposive (in social sciences and human services) (p. 2).</p>	<p>Constructivism</p> <p>Case is “a thing, a single entity, a unit around which there are boundaries” (p. 27) and it can be a person, a program, a group, a specific policy and so on.</p>
Defining Case and Case Study		<p>Case study is an empirical inquiry that investigates the case or cases conforming to the abovementioned definition by addressing the “how” or “why” questions concerning the phenomenon of interest.</p> <p>Design refers to “the logical sequence that connects the empirical data to a study's initial research questions and, ultimately, to its conclusions” (p. 20).</p>	<p>Qualitative case study is a “study of the particularity and complexity of a single case, coming to understand its activity within important circumstances” (p. xi).</p>	<p>Qualitative case study is “an intensive, holistic description and analysis of a bounded phenomenon such as a program, an institution, a person, a process, or a social unit” (p. xiii).</p>
Designing the Case Study		<p>Case study design has five components: a study's questions; its propositions, if any; its unit(s) of analysis; the logic linking the data to the propositions; and the criteria for interpreting the findings.</p>	<p>Flexible design which allows researchers to make major changes even after they proceed from design to research. Researchers need a set of two or three sharpened issue questions (research questions) that will “help structure the observation, interviews, and document review” (p. 20).</p>	<p>Literature review is an essential phase contributing to theory development and research design. Theoretical framework emerging from literature review helps mold research questions and points of emphasis.</p>
		<p>Quantitative and qualitative evidentiary</p>	<p>He relies on Parlett and Hamilton's (1972) notion of “progressive focusing” which builds upon the assumption that “the course of the study cannot be charted in advance” (cited in Stake, 1998, p. 22).</p> <p>Exclusive use of qualitative</p>	<p>Five steps of research design: conducting literature review, constructing a theoretical framework, identifying a research problem, crafting and sharpening research questions, and selecting the</p>

	sources should be combined.	data sources.	sample (purposive sampling).
Gathering Data	Data gathering is influenced by case study investigator's skills, training for a specific case study, the development of a protocol for the investigation, the screening of the case study nominations (making the final decision regarding the selection of the case), and the conduct of a pilot study.	Being a qualitative case study researcher requires "Knowing what leads to significant understanding, recognizing good sources of data, and consciously and unconsciously testing out the veracity of their eyes and robustness of their interpretations. It requires sensitivity and skepticism" (Stake, 1995, p. 50).	Exclusive use of qualitative data sources. Qualitative case study researcher needs to acquire the necessary skills and follow certain procedures to conduct effective interviews and careful observations and mine data from documents.
	Case study researchers make use of six data gathering tools: <i>documentation, archival records, interviews, direct observations, participant observation and physical artifacts.</i>	Qualitative case study researchers exploit <i>observation, interview and document review</i> as data gathering tools.	Qualitative case study researchers utilize three data collection techniques <i>conducting interviews, observing, and analyzing documents.</i>
Analyzing Data	Data analysis "consists of examining, categorizing, tabulating, testing, or otherwise recombining both quantitative and qualitative evidence to address the initial propositions of a study" (p. 109).	Data analysis is "a matter of giving meaning to first impressions as well as to final compilations" (p. 71).	Data analysis is "the process of making sense out of the data... [which] involves consolidating, reducing, and interpreting what people have said and what the researcher has seen and read – it is the process of making meaning" (p. 178).
	<i>Five dominant techniques for data analysis:</i> pattern matching, explanation building, time-series analysis, program logic models, and cross-case synthesis.	Simultaneity of data collection and analysis. <i>Two strategic ways to analyze data:</i> Categorical Aggregation and Direct Interpretation. "Each researcher needs, through experience and reflection, to find the forms of analysis that work for him or her" (p. 77).	Simultaneity of data collection and analysis. <i>Six analytic strategies:</i> ethnographic analysis, narrative analysis, phenomenological analysis, constant comparative method, content analysis, and analytic induction.

Table 1.2:
Comparing Case-Study Approaches
Source: Yazan, 2015

The particular research cases of interest are startups from Pakistan that have used aspects of business model innovation as a strategic management technique due to COVID-19 disruptions. Such cases were sourced from a rigorous search routine that targeted different source of references including startup directories, accelerator programs, industry networks and expert recommendations. The case boundaries were clearly defined by adopting the startup definition proposed by Paoloni, P., & Modaffari, G. (2018), which states that only businesses established for no more than 60 months are considered startups.

3.3.3 Foundational Approach for this Study

This study opts for Merriam's (1998) approach towards conducting the case study research. Merriam (1998) adheres to a constructivist approach in case study research, suggesting that reality is collectively constructed through shared meanings and social experiences. Similar to Yin (2014), Merriam (1998, 2009) underscores the importance of employing processes to interpret and manage information, particularly when dealing with abundant data and abstract concepts, ensuring that the findings are clear and applicable. Merriam's perspective reflects a practical approach to constructivist investigation.

Moreover, Merriam (2009) recognizes that case study research can incorporate both quantitative and qualitative methods. However, for qualitative case studies, the emphasis is on generating inductive reasoning and interpretation rather than hypothesis testing. The selection of cases depends on the research objectives and questions, focusing on what they can reveal about the phenomenon of interest. The primary aim is to provide a comprehensive and illuminating description that enhances our understanding of the subject (Merriam, 1998). While interviews are

a common method for collecting qualitative data, Merriam does not prioritize a specific data collection or analysis method. Nevertheless, she underscores the importance of rigorous procedures to guide the research process.

This study adopted multiple-case study approach (Merriam, 1998) to generate strong and reliable findings (Gustafsson, 2017) about the phenomenon under study. Current research took a single startup as one case as Merriam 1998 defines “the case as a thing, a single entity, a unit around which there are boundaries” (pg.27). Agreeing to Merriam’s perception of qualitative research, case study is “an interactive, holistic description and analysis of a bounded phenomenon, a person, a process or a social unit” (pg.13), employing this method allows us to have a particularistic, descriptive, and empirical answers to our research questions. Current research chose multiple-case study method as it allows to replicate findings across the cases to investigate the same phenomena.

3.3.4 Type of Sampling

Purposive sampling, a non-probability sampling technique, was employed in this study. This is a process where the researcher intentionally chooses individuals to participate in the research driven by some condition or feature that is vital in the research purpose (Etikan et al., 2016). Purpose sampling is typically applied in qualitative research, especially when the researcher aims to study the information-rich case or participants who can produce pertinent and valuable data (Palinkas et al., 2015).

This kind of purposive sampling was useful in this study because it allowed the identification and selection of such startups that have declared use of Business Model Innovation as a strategic move to deal with the COVID-19 situation. This sampling strategy was chosen as a strength, as it allowed for the inclusion of relevant and information-rich cases that could provide valuable insights into

the research problem and contribute to a deeper understanding of the phenomenon under investigation.

3.3.5 Research Participants/Sampling Strategy

There is no fixed rule for the desirable number of cases in multiple case study research, however, some guidelines are given in the review of literature section from the works of inspirational researchers such as Miles & Huberman (1994) and Eisenhardt (1989).

Miles and Huberman (1994) opinion are that the number of cases should be selected concerning the level of the complexity expected: the maximum number of cases should be fifteen for highly complex situation to avoid an extremely time-consuming investigation with a large amount of material to process. Eisenhardt (1989) equally and further advises that the use of four to ten cases in a study increases the probability of developing new theories and insights.

Based on these recommendations and the unit of analysis for this study, which was startup, the respondents' sample included 15 startup firms. This sample size was considered enough to collect various experience and views from startups working in various spheres, and equally important to remain theoretically narrow but rather deep to provide for comprehensive views on the subject and proper theory building.

The startups were selected based on the following specific criteria:

1. Starting their operations after the year 2017 based on the age definition of a startup provided by Paoloni, P., & Modaffari, G. (2018) where a startup is an organization that is not more than 60 months old. This definition has been used since it gives the most modern and widely accepted characterization of startup to widen the field and include more relevant cases.

2. Experienced the COVID-19 crisis and have made changes to business model as a strategic coping mechanism to address the challenges posed by the pandemic Covid-19.

The research participants were the founders or co-founders of the selected startups because they are involved in the decision-making processes regarding the business models, and they have knowledge and experience to share.

To identify and gain access to the research participants, a comprehensive sampling strategy was employed. This involved leveraging various channels, including:

- Startup directories: Reputable online platforms and databases that list and provide information about startups operating in different regions and industries.
- Accelerator programs: Programs designed to support and nurture startups through mentorship, funding, and networking opportunities.
- Industry networks: Professional associations, conferences, and events related to entrepreneurship and innovation, where startups and their founders may be present.
- Referrals: Recommendations and connections from industry experts, investors, and other stakeholders familiar with the startup ecosystem.

After potential startups qualified by the above selection criteria were identified, their founder or co-founder was contacted and invited to participate in this study. To ensure consistent and ethical data collection, the following conditions were established: To ensure consistent and ethical data collection, the following conditions were established:

- Only the founder or co-founder of the selected startups were interviewed because it was believed they know best regarding the business model innovation strategies put in place by the startup they founded.

- To ensure anonymity, the participants were given a code such as P1 referring to the first participant.
- Written informed consent was sought from all participants to confirm their voluntary participation and their agreement to the aim and handling of data of the study.

The sampling technique used was purposive with an emphasis on including a diverse group of startups with varied experiences of the impact of COVID-19 with a specific lens on business model innovation as the mode toward coping with the challenges. This approach proved helpful in acquiring extended and detailed data that enabled broader analysis of the research problem, and production of useful findings and theories.

3.3.6 Interview Guide

Using an interview guide is useful in guiding a discussion as well as in making certain that it is focused where and when required, on the specific issue area of the study. In simple terms, an interview guide is a collection of questions that a researcher uses to gather information from the participant. Usually such questions are developed from the information already available to the researcher, for example through a literature survey. These questions are then brought into questions which capture the elements of the research. The questions are fundamentally essential, questions that are broader in nature, clear in word choice and do not contain any form of suggesting the right or wrong answer (Kallio et al. , 2016). In other words, pilot test is done with the purpose of ascertaining the applicability of the interview guide for the study project. Appendix (a) presents the interview guide used for this study.

The first part of the interview guide had questions on the formation of the companies in order to obtain demographic information about the participants and their startups. Moreover, the questions

posed in this section were to serve as warm-up questions which were meant to help establish rapport between the author and the participants of the study before approaching the main research questions.

The primary inquiries, such as the request to elucidate your existing company model, were focused on the specific domain of interest in the study. This is the designated space where the participants were actively encouraged to express their thoughts, perspectives, and personal experiences. The use of extending questions, such as "can you please tell me more about that?", was employed to probe the participants and obtain comprehensive and in-depth data. Additionally, they facilitated the smooth progression of the debate. The elaborating questions were not adhered to in a logical or sequential manner, but rather as necessary. Occasionally, the probing was also conducted spontaneously, prompted by the specific reaction of the person. The concluding inquiries, such as whether there are any unexpressed thoughts you would like to share, were employed to afford the participants a last chance to contribute further insights and to solicit their perspective on the interview. It facilitated the discourse to reach a logical ending, while ensuring that no significant aspects were overlooked.

3.3.7 Data Collection

Online semi-structured interviews were conducted via MS Teams interviews with 15 startups. The questions were designed in three sections. The interview guide has three main themes around which the interview questions were built. The first section was about the startup and impact of COVID-19 on the startup, the second section was related to the responses of the startup to the Covid crisis, and in the last section the questions were asked related to the old and new business

model innovation, like the main architects which are value creation, value proposition, and value capture. The participants and their details are shown in table 3.

Participant No	Startup	Respondent Job Title	Age at time of Data collection (Months)	Founding Year
P1	Digital Agency	Founder	47	2018
P2	Digital Marketing	CEO/Co Founder	35	2019
P3	Media Services	Founder	53	2017
P4	Media Services	Co Founder	56	2017
P5	IoT tech	CEO/Founder	33	2019
P6	AgTech	Co-Founder	53	2017
P7	Premium Product	Co-Founder	31	2019
P8	Ecommerce	Founder	50	2018
P9	Online marketplace	Co-Founder	46	2018
P10	Packaging Products	Founder/CEO	53	2018
P11	Ecommerce	Product Manager	37	2019
P12	HealthTech	Founder	39	2019
P13	Ecommerce	Co-Founder	57	2017
P14	Media/Print Services	Co-Founder	50	2018
P15	Food & drink	Founder	38	2019

Table 3: Participants Data

Another source of data collection from startup included their profiles on the startup directories with incubation centers, social media handles, and websites. All of the startup had online presence so the data gather from the interview was double checked with information available online.

1. **P12 startup interview was conducted from Product Manager, the main reason for the selection of product manager for interview is that this startup is owned by a bigger company and product manager is responsible for*

each and every step taken in the startup or in other words we can say that the product manager of this startup can be called as CEO since he is the one leading the startup.

Online semi-structured interviews were conducted to collect data from participants. This mode of data collection was chosen for two main reasons: to accommodate participants from diverse geographical locations, and to ensure their convenience. The interview questions were carefully designed based on a comprehensive literature review. They were crafted to be easily comprehensible for the interviewees while avoiding any discomfort during the process. Prior to the actual interviews, pilot interviews were conducted to identify and eliminate any irrelevant questions (Worthington & Whittaker, 2006), thus refining the interview guide.

Each interview lasted between 45 and 60 minutes, during which participants were asked the pre-designed interview questions, as well as probing follow-up questions to gather in-depth insights. After an extensive outreach process, 15 startups from various geographical locations, fulfilling the selection criteria, agreed to participate in the research. During the data collection activity, the interviewed participants were asked for their permission in order to record the interview sessions. Before the interviews, the participants were given an assurance that the information to be collected would not reveal their identity and that the information would be kept a secret. These recorded interviews were transcribed literally and where necessary, slight modifications were made to the text in a view to actually bringing out the meaning rather than a word-to-word account. In the process of data analysis, the transcribed data from the interviews were subjected to a very strict codification process, which will be elaborated in the subsequent data analysis section.

3.4 Data Analysis

The data analysis was conducted on the interviews with Pakistani startup founders/co-founders who made changes to their business models in response to the COVID-19 crisis. Thematic analysis

was employed as the primary analytical approach, as it allows for a thorough examination and interpretation of the participants' lived experiences and realities concerning the phenomenon under study.

For the analysis mainly the Thematic analysis was performed. Thematic analysis involves the systematic identification, analysis, and reporting of patterns or themes within qualitative data (Braun & Clarke, 2006). This analytical technique is particularly useful for capturing the richness of participants' perspectives and experiences, as well as for generating insights and theoretical contributions. The author employed thematic analysis as a relevant study technique to thoroughly examine and understand the participants' realities and experiences. The themes discovered in the

Phase	Process Description
1. Familiarizing yourself with your data	"Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas."
2. Generating initial codes	"Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code."
3. Searching for themes	"Collating codes into potential themes, gathering all data relevant to each potential theme."
4. Reviewing themes	"Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis."
5. Defining and naming themes	"Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme."
6. Producing the report"	"The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis."

Table 4: Phases of thematic analysis (Braun and Clarke, 2006:87)

interview transcripts were used to produce a detailed description and interpretation of the data in relation to the study topic (Joffe and Yardley, 2004). The process referred to during this analysis

involved the utilization of the six phases of theme analysis as defined by Braun & Clarke (2006). These phases are as follows:

Bottom-up coding was carried out for this research which means that the data was collected and “the data is coded without trying to fit the themes into a pre-existing coding frame or the researcher’s preconceptions about the research” (Dawadi, 2020, p. 63). At first, the codes were created after reviewing the interview transcripts, after the codes were created, they were formed into sub-categories and then the main category/theme of the research. The interview transcripts were revisited from time to time which helped create the major categories or crux of the research.

Following are the steps included in this research data analysis.

Step 1 Case analysis: All 15 startups were considered case by case in the first step of our data analysis (Miles & Huberman, 1994). Getting immersed in the data through multiple readings, reflections and discussions of the interview transcripts enabled in-depth understanding of the phenomenon. The empirical data was organized and refined (Eisenhardt, 1989). The initial impression that the data gave us was the journey and experiences of the startups, of how they faced and responded to the crisis.

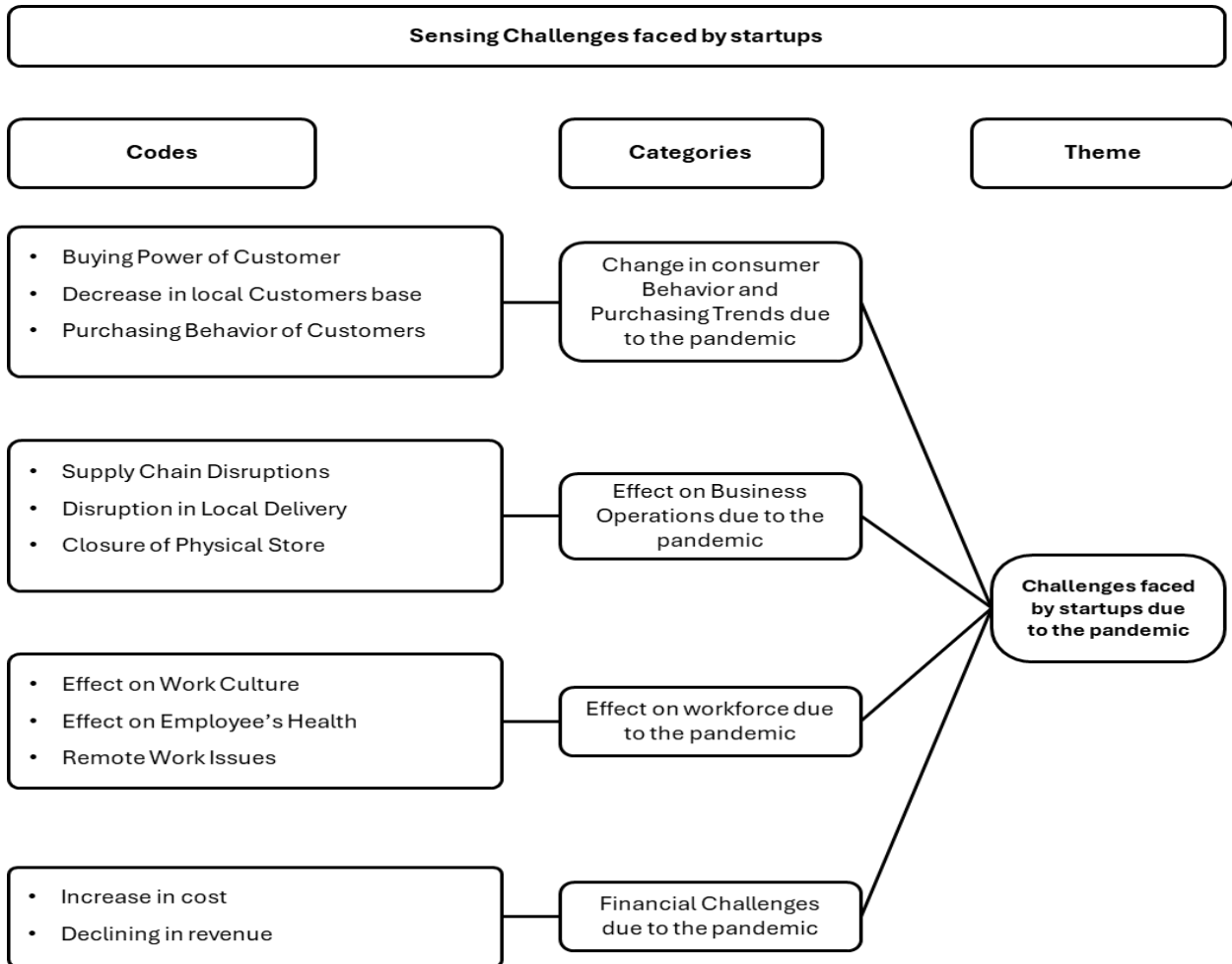
Step 2 Thematic Analysis: For the analysis, the individual startup interviews were analyzed using thematic approach of Barun and Clarck (2006). The process starts with coding, in this phase of the data analysis. Each transcript was read several times to understand the perspective of the startup. After getting **familiarized** with the data, the next step was to **generate initial Code** the data. For this line-by-line coding was employed where appropriate. After ending up with the initial coding of 15 interviews, 1900 of initial codes were generated. As one startup was considered as one case, hence 15 case studies, the process led to a cross-case analysis. It happened in conjunction with this

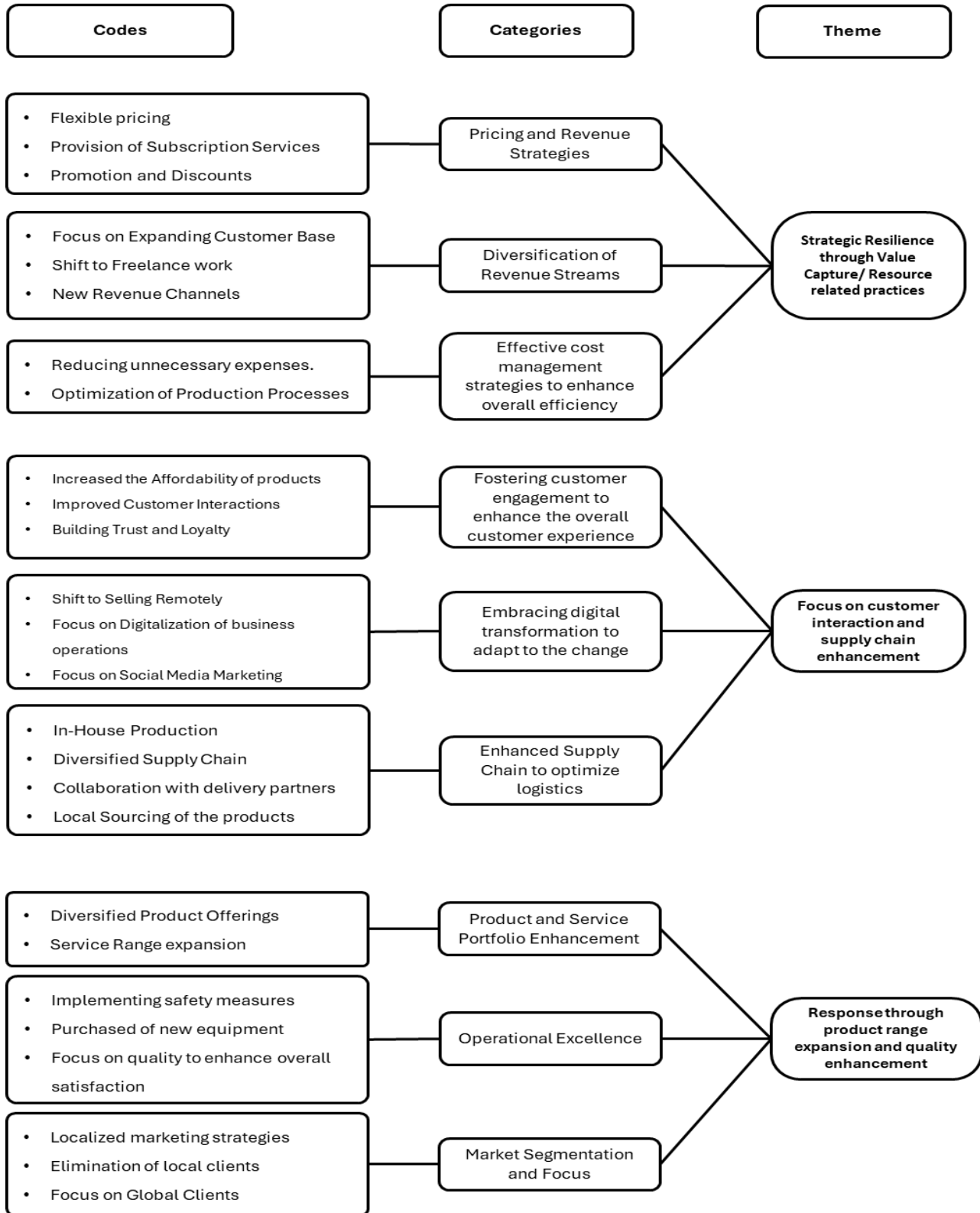
step, where we were conducting the thematic analysis, once the themes were identified from the interview transcripts of one case, we looked for similar patterns in the startups in terms of responding to the crisis.

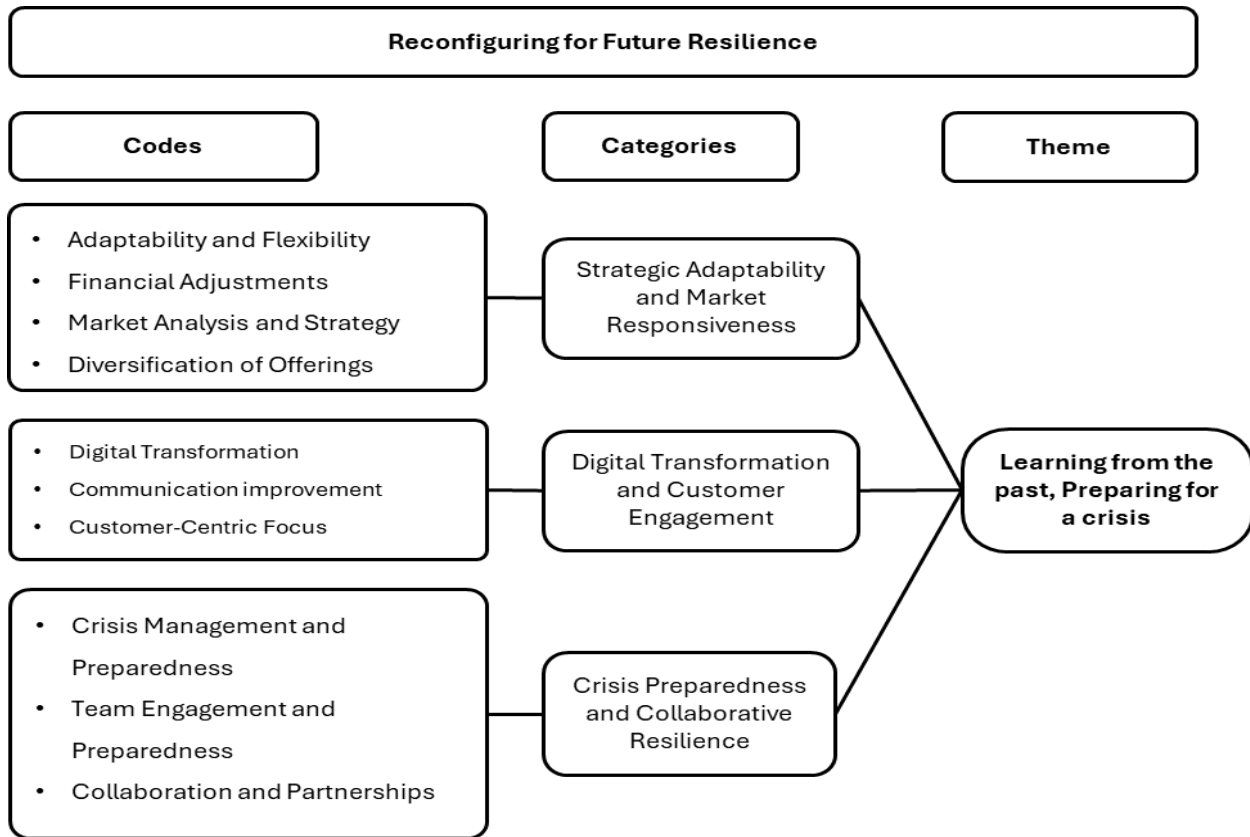
So, as Braun & Clarke (2006), suggested the process continued with **looking for the themes** by cleaning, merging, and clubbing the initial codes, into Codes (where necessary), categories and themes. By doing a total of 16 categories were developed. In the 4th step the categories were again reviewed and were taken to the level of abstraction by forming 5 main themes to explore the crisis response of the startup utilizing dynamic capabilities and business model innovation. In 5th step the **themes were defined**. Last step the **write-up** of the categories is presented in the next chapter.

The following table presents the categories and themes generated from the data. It also enlists a few relevant codes to give a snapshot of the analysis process.

3.4.1.1 Data Structure







3.5 Ethical Considerations

The term ethics can be broadly defined by the “moral philosophy” which means doing what is morally good for oneself and society and abstaining from the bad. These ethics help make decisions that eventually do not harm others. Ethics in research are there to ensure that the participant of the research does not feel exploited and does not feel ‘harmed’ by the researcher. Research needs great deal of cooperation and collaboration from the participants which may only be done if the participants feel at ease moreover, the following ethical guidelines are set by the research community for the researchers to ensure that the data is reliable. The researcher needs to embrace the guidelines such as informed consent, confidentiality, anonymity, etc., before they start collecting their data and even after the data is being collected (Tracy, 2010).

Ethics in qualitative research has now become a more prominent topic of discussion after the inception of the digital era in concern to taking pictures, recording videos or audios (Hammersley & Traianou, 2012). Which is why the ESRC (Economic and Social Research Council) coined the six key principles of ethics which use strong words such as “must” or “ensure” to make sure that the researchers do not deviate from these principles. The key principles are as follows:

1. Research should aim to maximize the benefit for individuals and society and minimize risk and harm
2. The rights and dignity of individuals and groups should be respected
3. Wherever possible, participation should be voluntary and appropriately informed
4. Research should be conducted with integrity and transparency
5. Lines of responsibility and accountability should be clearly defined
6. Independence of research should be maintained and where conflicts of interest cannot be avoided, they should be made explicit.

For this research, the participants were provided with a deed that had details of their rights and were informed of the ethical consideration beforehand which can be seen in the participant consent form in the Annex. It was only after receiving their consent, the data was collected. The following ethical considerations were followed to ensure the safety of the participants:

Informed Consent

The participants were informed about the details of the research and how will the data be used beforehand so that they make an informed decision about being part of the research and who will be using the research and accessing it. This was to ensure that they are informed about their rights and the details of the research so that they make an informed decision. The participants were also informed that the interview will be recorded for the transcription process.

Voluntary Participation

The participants were not forced or coerced into participating in the research by the researcher. They were informed about their rights to withdraw from the research at any point if they feel uncomfortable. All the participants of this research volunteered willingly. No pressure was inflicted on the participants and no explanation was asked for not being part of the research from the potential participants.

No Harm

This research ensured that no kind of physical or psychological harm was inflicted on the research participants during this research. Any topic which caused distress to the participant or triggered them was deviated from to ensure that they are at ease.

Confidentiality

Confidentiality of the research data and the participant information was ensured during the process of this research. They were told beforehand that their personal data such as names, education, etc., will be removed after assigning codenames to ensure that they are at ease. Some of the participants also felt that the name of their ventures are kept hidden as well from the research which was then removed from the document for all the participants to ensure that the participant needs are met.

Anonymity

The participants were ensured that their names will not be used in any part of the research as they were assigned codenamed such as '*participant 1*' etc.

Accessibility

For participants residing in far geological areas of Pakistan or were uncomfortable with meeting in person, they were given the option of having an online interview through MS Teams.

Assessment of Relevant Components

The data was only used for the relevant components of the research and probing questions were only asked in line with the research to ensure that the research is focused.

3.5.1 Ensuring Quality and Robustness in Research

Qualitative research has a special ability to offer researchers rich, story-based data that closely reflects human experiences. Just like how we trust a good storyteller, the level of trust we place in qualitative research findings depends on the trust we have in the research process. Building this trust is crucial. Thankfully, qualitative researchers have made efforts to explain how trust in their findings can be established and strengthened. However, it's important to note that ensuring trustworthiness is not an exact science. This discussion presents recommendations from various research experts on how to develop and rely on trust in someone else's research findings, with a focus on academic areas like developmental education and learning assistance. Insights from other scholars about trustworthiness are also included to provide a comprehensive perspective. In this study, rigor was meticulously maintained throughout the research process by adhering to Lincoln and Guba's framework (1985) of trustworthiness, which includes the criteria of credibility, transferability, dependability, and confirmability. These criteria were systematically applied to enhance the quality and reliability of the research findings:

Credibility

In the qualitative research paradigm the concept of credibility as defined by Cutcliffe (1999) is defined as the extent or level of believability (Lincoln and Guba, 1986) of the presented data and conclusions. Where by the generalisability tells the degree to which the results of the study can be

taken as true and real for the phenomenon under study. Thus the establishment of credibility is a critical component of quality and rigour of the qualitative studies.

Transferability

In the context of qualitative studies, transferability means the ability or the degree to which the conductive findings and the got insights of a given study can be transferred to other region, group, or situation to which the study was not conducted . In contrast to the quantitative research that generalizes in a bid to reach similar populace, the transferability in this method of qualitative research deals with the applicability (Anney, 2014) of the results in other similar settings. Transferability means acknowledging the fact that qualitative research aims not at establishing ideal-typified patterns and making generalisations in sense of creating ‘laws’ or ‘predictions’, but at providing fleshed out, context-sensitive understandings of a phenomenon in the world.

Dependability

This is as good as the dependability (Lincoln and Guba, 1986) of quantitative research. It aims at forming the stability and consistency (Kemperaj et al. , 2013) of the research, so as to trust the outcome (Anney, 2014) acquired from the research. Dependability is crucial in offering reliability in the quality research with qualitative study to be done.

Confirmability

Reliability is also known as conformability (Shenton, 2004), which means that the analysis and assertions of the researcher should be anchored on the data and not coloured by the prejudices or assumptions of the researcher.

Chapter Summary

This chapter outlines the research methodology for studying how startups use business model innovation and dynamic capabilities to navigate crises. Rooted in a subjective ontological position and interpretivist epistemology, it employs a qualitative approach with a multiple cross-sectional case study design involving 15 Pakistani startups. Data was collected through semi-structured interviews with founders, selected via purposive sampling. Thematic analysis, based on Braun and Clarke's (2006) method, was used to identify themes from the data. The study ensured rigor trustworthiness criteria, detailing ethical considerations and a transparent methodological process to ensure robust and reliable findings.

4 Chapter 4: Findings

The analysis of the interview data from startup founders and key personnel yielded rich insights into the experiences and strategies of startups navigating the COVID-19 pandemic. Three main categories emerged from the thematic analysis, encompassing the multifaceted challenges faced by startups, the innovative approaches they adopted to capitalize on emerging opportunities, and the lessons learned to build resilience for future crises.

The first theme, "Sensing Challenges Faced by Startups," delves into the formidable difficulties that startups encountered during the pandemic. This category is further divided into four sub-themes: 1) Changes in consumer behavior and purchasing trends, 2) Business operational challenges, 3) Employee-related challenges, and 4) Financial constraints. These sub-themes explore the profound shifts in consumer demand, supply chain disruptions, workforce management issues, and financial pressures that startups grappled with during the crisis.

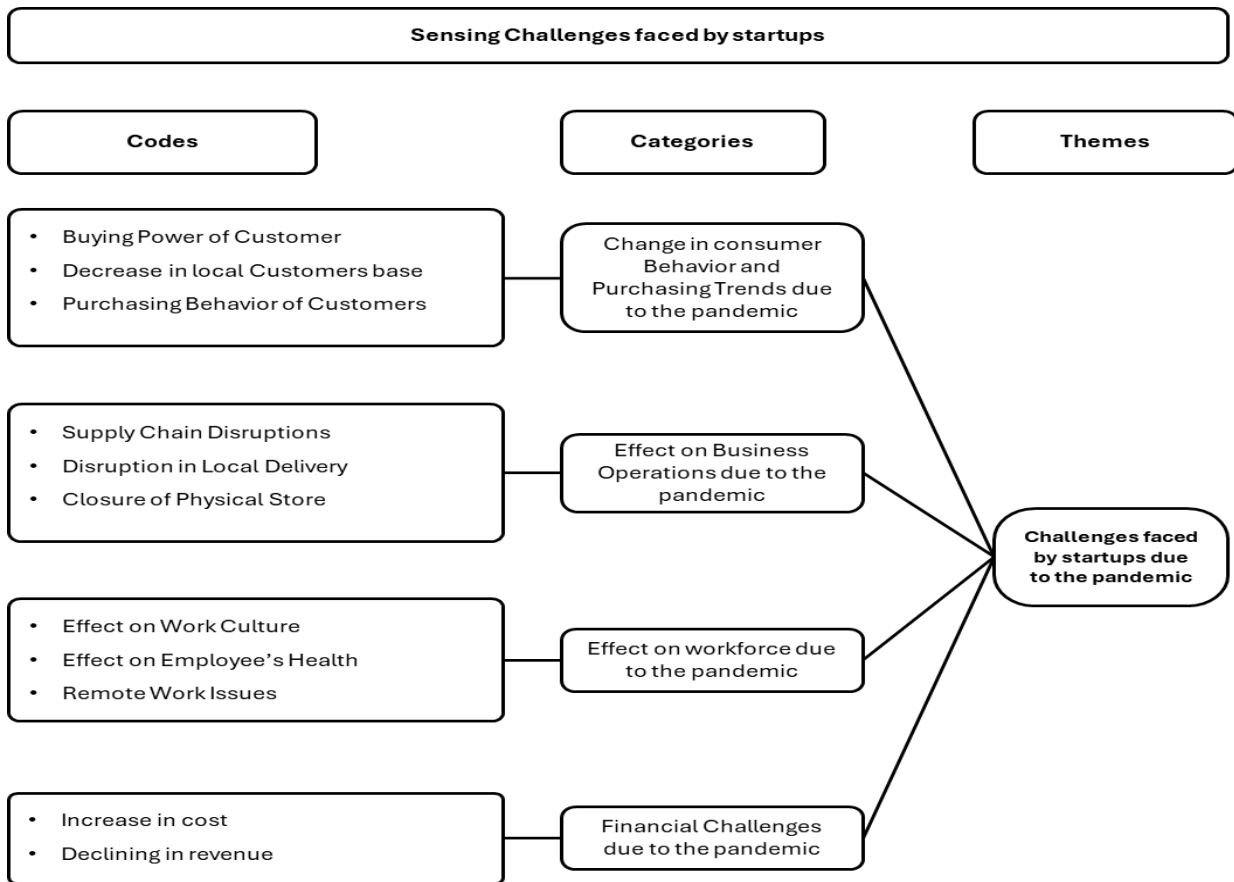
The second theme, "Seizing Opportunities through Business Model Innovation," highlights the inventive strategies and business model adaptations that startups embraced to navigate the uncertain landscape. This theme comprises three sub-themes: 1) Strategic resilience through value capture and resource-related practices, 2) Focus on customer interaction and supply chain enhancement, and 3) Response through product range expansion and quality. These sub-themes illustrate how startups reconfigured their value propositions, optimized customer engagement, streamlined supply chains, and innovated their product and service offerings to seize emerging market opportunities.

The third theme, "Reconfiguring for Future Crisis," examines the lessons learned by startups and their preparations for future challenges. It encompasses three sub-themes: 1) Learning from

the past, preparing for the future, 2) Digital transformation and customer engagement, and 3) Crisis preparedness and collaborative resilience. These sub-themes highlight the importance of strategic adaptability, digital transformation, customer-centric approaches, proactive crisis planning, and collaborative partnerships in building long-term resilience.

In the following sections, each of these categories and their respective sub-themes will be explored in detail, drawing insights from the experiences shared by the startup participants. The chapter aims to provide a comprehensive understanding of the challenges, opportunities, and strategic adaptations that startups navigated during the COVID-19 pandemic, offering valuable lessons for enhancing resilience in the face of future crises.

4.1 Sensing Challenges Faced by The Startups



4.1.1 Challenges Faced by Startups due to the Pandemic

The COVID-19 pandemic was not easy on companies big and small; however, startups felt the impact to the core because they are relatively new businesses, and they do not have as many resources as other established businesses. This section discusses each of the challenges faced by startups during the crisis to provide insights into the various ways that the pandemic affected young companies. There were many and it is not possible to ignore the impact of the following trends; changes in the consumer behavior and supply chain, the financial problems, and finally, the switching to remote working. Finding the narratives of startup founders and cofounders, this work obtains crucial information about such challenges and the corresponding coping mechanisms that can be useful to analyze the lived experience of entrepreneurship in this kind of environment. The following themes were highlighted in this category

4.1.1.1 Change in Consumer Behavior and Purchasing Trends due to the Pandemic

The collected data of the interviews with startup founders and co-founders identified a shift in consumers' behavior that greatly influences the startups. The shift primarily resulted from the impact of the COVID-19 outbreak. The following subtopics in this section outline these shifts and the impact on startups.

An aspect that negatively affected the startups was that the consumers purchasing capacity was reduced as this affected the revenue. One of the startup participants explained this challenge as follows: one of the startup participants explained this challenge as follows:

“Some of our customers who have bought our products or availed of our services in the past were physically unable to do so during the lockdowns or restricted movements caused by the pandemic Moreover, the overall bargaining power of the consumers was lowered by the uncertainties of the pandemic.” (P10)

The participant was quick to point out that the projection changed a consumer's interface with their startup substantially. Prior to the onset of COVID-19, the interaction was mostly face-to-face or through mail and other old-fashioned approaches. However, the measures taken to combat the COVID-19 pandemic, including the two rounds of lockdowns and other restrictions, have cut most conventional means of human interaction. This shift proved to be a challenge for entrepreneurship mainly where face-to-face communication or standard commerce models were essential. Among the questions raised by the participants, a critical one pertains to the buying power of customer whereby they have resulted to buying goods and services with lesser value due to the economic instabilities occasioned by the pandemic. Layoffs, wage reductions, and other forms of economic insecurity made consumer spending more conservative.

This reduction in buying power directly affected startups, especially those whose products or services were considered non-essential, such as startups offering luxury goods or discretionary services. With consumers tightening their belts, sales for these startups dropped, leading to decreased revenues.

A considerable decline in the local customer base was a common thread across the narratives of the interviewed startups, likely due to the lockdowns and restrictions imposed during the pandemic. One of the participants described the situation, stating:

"Since there was a smart lockdown in Pakistan, it heavily impacted our local customer base because when my startup was closed, those physical businesses in my locality were also closed, so the demand for our products and services decreased substantially." (P1)

This statement underscores a surging effect where the lockdown not only directly affected their startup but also the wider local business ecosystem. The closure of physical businesses led to a substantial decrease in local demand, indicating a tight interdependency among local enterprises.

The smart lockdown, aimed at controlling the spread of the virus, inadvertently created a ripple effect, significantly reducing customer footfall and, consequently, sales for local startups.

The impact was particularly pronounced for startups in their nascent stages. A participant illustrates this, noting,

"We had only spent two months on business, and we had seven clients at that time. In the first two months of the pandemic, they decided that they would be closed and shut down. Uh, so when they were closed, it meant the closing down for our business as well." (P2)

This highlights the vulnerability of early-stage startups during the crisis. Having been in business for only a short period, these startups had not yet established a broad or robust client base. The decision of their few clients to shut down amid the pandemic left these startups with little to no business, pushing them into a precarious position.

The COVID-19 pandemic brought about significant changes in customer purchasing behavior, presenting a unique set of challenges for startups. This impact is clearly articulated by one of the participants, who focused on the specific context of selling exotic items like saffron.

"However, it was important to acknowledge that certain products, particularly exotic items like saffron, often involve a tactile and visual component in the purchasing decision. Customers prefer to examine these products, scrutinize their quality, and assess their packaging before making a purchase. So, the purchasing behavior of customer was one of the challenges for our startup" (P7)

The participant points out that for certain products, especially those that are exotic or luxury items like saffron, the purchasing decision is heavily influenced by tactile (touch) and visual (sight) factors. This implies that customers often rely on physically handling and seeing the product to judge its quality and worthiness. Such sensory experiences play a crucial role in convincing customers of the product's value, which is particularly true for high-end, unique, or unfamiliar

products. The inability to physically examine products like saffron could lead to hesitation or reluctance in purchasing, affecting the sales of these startups.

4.1.2 Effect on Business Operations Due to The Pandemic

The closure of physical stores due to lockdown restrictions posed a significant operational challenge for many businesses, including startups. One participant explained the impact on their startup:

"Yes, that's correct. We started in 2018, initially as an online business. However, in October 2018, we opened our own physical store. But a year later, when COVID hit, we had to close down our store due to lockdown restrictions, which meant no business could be conducted through our physical location." (P8)

The inability to operate physical stores meant a complete loss of revenue from in-person sales and customer interactions. For startups that had invested in physical locations or relied heavily on in-person sales, this forced closure dealt a severe blow to their operations and revenue streams. The lack of foot traffic and the inability to showcase products or services in a physical setting made it challenging to acquire new customers and maintain relationships with existing ones.

Supply chain disruptions emerged as a critical operational challenge for startups during the COVID-19 crisis, affecting various aspects of their business. One interviewee succinctly captured the nature of these disruptions:

"The COVID-19 crisis had an impact on our startup, as it did for many businesses. Particularly, it affected us in two significant ways. First, it disrupted the transportation and logistics industry, which had implications for our supply chain and ability to source materials and fulfill orders." (P11)

One of the major parts of the disruption was in the transport and supply chain management. The outbreak of the pandemic created strict measures such as lockdowns and restrictions, particularly the transportation of goods and services. This impact extended global, the international trade routes, as well as the local delivery systems were all affected.

For starters, especially for those who relied on timely supplies or deliveries, these disruptions were a severe operational threat. There were issues to do with late deliveries, higher costs in transportation, more complications in moving goods and densities among the many problems experienced. There are several effects of disruption of transportation and logistics, in that disruption interfered with the way the startup sourced raw materials as well as supplied its products to the market.

Local systems for delivering work also changed notably due to the measures taken to combat COVID-19, and such systems are particularly important for startups. Some of the start-ups due to limited capital resources lack their own delivery services and thus opt for employing local third-party providers. One of the participants explained it as:

"As for us, most of the local delivery services were shut down, thus posing some transportation problems, especially for the delivery of the orders that were placed. Disruption of supply chain occurred throughout the pandemic period thus finding materials and products from other vendors become a huge task." (P12)

Local delivery systems were either shut or greatly affected by the pandemic, which affected the startups in the sense that they were unable to deliver customer products effectively. In the case of startups, being on time is usually one of the determinants of customers' satisfaction and business' reputation. Restriction with local delivery impacted the operational environment of startups and their potential to fulfill consumer needs and demands effectively.

4.1.3 Effect On Workforce Due to The Pandemic

The changes resulting from the COVID-19 outbreak were significant and most organizations experienced a shift to compulsory remote working. This shift introduced several issues relating to employees particularly to start-ups which are discussed herein below. The nature of these challenges is rooted in the sudden switch from conventional workplaces to remote ones, which affected well-defined patterns of work and interactions. One participant explained the scenario as:

“Shifting to remote work also posed a challenge for our startup in terms of collaboration and workflow efficiency. We had to train our staff for a different mode of operation, which was a significant adjustment.” (P14)

Some of the following challenges are pinpointed as crucial concerns among the participants relating to remote work: These challenges result from the absence of direct contact as this affects timely and direct exchanges as well as quick decision making. There are certain benefits of using collaboration tools and the app that was used is also useful, but it will not be the same experience as being in the office and working together with the team. This can cause problems like slow flow of communication, misinformation or reduced coordination within certain teams.

Due to the COVID-19 outbreak, there was a shift to remote working which was a tall order to the startups. This transition was not geographical, but revolutionary – the transformation of workplaces and entire organizational cultures. One founder vividly describes their experience.

“Transitioning to remote work was tough, so at the start we received multiple problems and complaints from our employees who were shifted to work from home, they were having the problem of laptop battery, Wi-Fi, and light.” (P1)

The founder's statement underscores the initial difficulty in transitioning to remote work. This challenge was not unique to their startup but was experienced by many businesses worldwide.

Specific problems like laptop battery life, Wi-Fi connectivity, and adequate lighting are mentioned. These are fundamental requirements for efficient remote work, yet often overlooked in traditional office settings where such resources are readily available and standardized. These issues might seem minor in isolation, but collectively, they represent significant barriers to productivity and can cause frustration among employees, affecting their morale and work quality.

4.1.4 Financial Challenges Due to The Pandemic

The COVID-19 epidemic had a significant financial impact on startups since many of them saw a rise in operating expenses. This problem was especially noticeable in industries where specialist equipment was needed. A founder of a film production startup gives a thorough description of their expertise:

“..... the equipment used in the media and photography industry is highly expensive. This covers the cameras, lenses, filters, and above all the lighting that we must employ. When photographing outside, different lighting conditions apply than when shooting indoors. As a result, we had to spend a lot of money, first on lighting and then on costly camera gear, lenses, and filters. It was a significant financial commitment and a difficult task.” (P4)

The film production company's founder's experience highlights the financial difficulties that startups encountered during the pandemic, especially those in sectors that needed specialist equipment. A significant problem was balancing other operational expenditures with the requirement to invest in costly technology and equipment. Startups are under a lot of pressure from these rising costs and possible income drops, which makes them rethink their financial plans and look for creative ways to stay in business.

Startups faced until now unimaginable challenges as a result of the COVID-19 outbreak, which had an immense impact on their revenue sources. A participant who is a startup gives a direct account of how this pandemic impacted their startup:

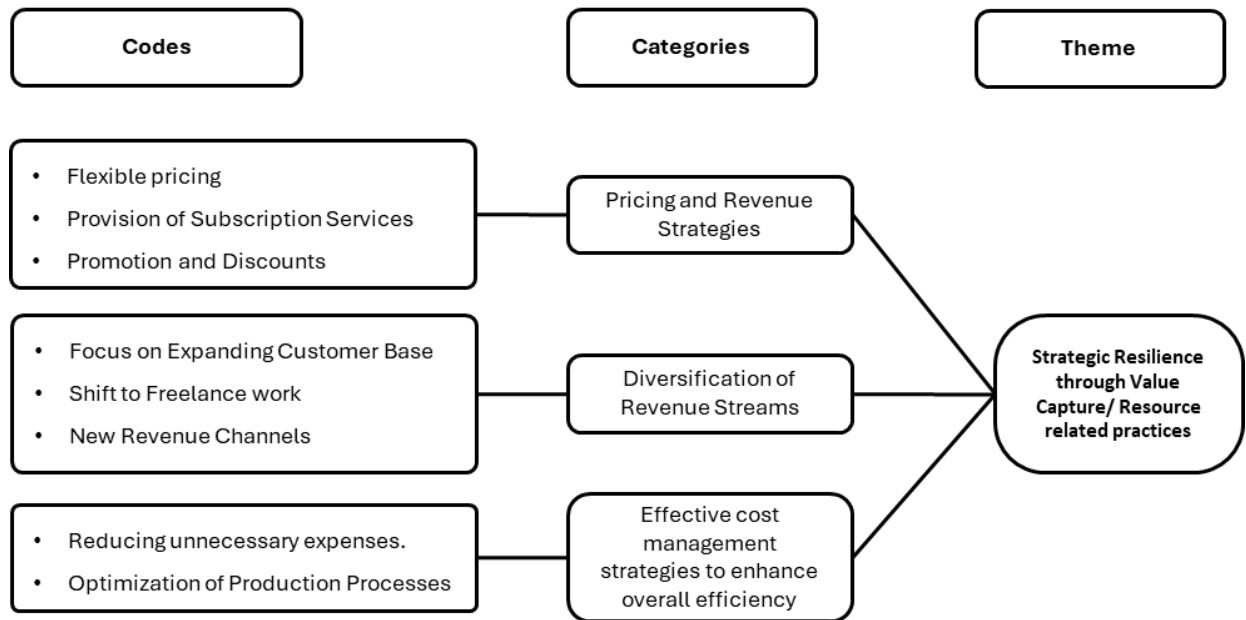
“The COVID-19 pandemic had a significant impact on our startup. Significant financial and operational issues were created by the limitations on gatherings and the slowdown in event-based employment, which were further exacerbated by our status as a startup without an established clientele. Our model had to be significantly changed in order to accommodate the new situation.” (P14)

The journey described by the participants is not unique or isolated but rather resonates with the general effect of COVID-19 on startups, especially those that rely heavily on face-to-face engagements and conventions. Many started experiencing financial setbacks even before the government-imposed measures due to the pandemic, and for those who could continue to operate amid the crisis, they had to reimagine and adjust their models for the new world.

4.2 Seizing through Business Model Innovation

The COVID-19 pandemic brought a level of disruption that was hard for businesses to manage, let alone cope with, especially among startups and SMEs. It was challenging for these businesses to operate under such extreme conditions where they faced severe disruption, instability, and fluctuation in the market. To be more specific, to survive and prosper in such conditions, many startups used business model innovation (BMI). Basically, business model innovation involves the process of changing the fundamental processes that underpin an organization so as to align it with current and emerging market opportunities. This section explores how BMI assisted them in the creation of an improved tactical robustness in value capture, value creation and value proposition of strategic launched startups.

4.2.1 Strategic Resilience Through Value Capture/ Resource Related Practices



The outbreak of COVID -19 has really brought strategic resilience to the attention especially for the starter/growth ventures. Strategic resilience can be described as the capability of an organization to survive and transform in the presence of adverse circumstances. Resource management and value creation are part and parcel of strategic resilience, and both involve winning. It entails modifying the pricing and revenue strategies; developing multiple strategies of revenues; and controlling expenses.

4.2.1.1 Pricing and Revenue Strategies

The pandemic forced unique challenges for SMEs including startups, which have significantly impacted their revenue and business models. In order to cope with these challenges imposed by COVID-19, startups implemented innovative pricing and revenue generation strategies, which is explained by the experiences shared by the startups.

“In order to cope up with the crisis our startups introduced subscription-based services for our seller partners. Sellers can now subscribe to our premium services that include

enhanced visibility, priority listing, and other promotional features for a monthly fee.... and we introduced 'Emergency Auto Parts Delivery' for our local clients, we implemented delivery fees for this service. Customers have to pay a certain fee for the delivery of auto parts to their location.” (P9)

P10's startup changed to a subscription-based model by providing premium services to customers. This model helped them in generating a steady revenue. The implementation of delivery fees for emergency services shown a strategic approach of the startup to take advantage of market needs during the crisis.

“Our startup recognized that many farmers were facing financial problems due to COVID-19 and disruptions in the supply chain because of the pandemic. We offered more flexible pricing, discounts, and packages for our loyal customer base in order to support them this hard times. This helped us in have constant generation of revenue and at the same time increasing loyalty of our customers” (P6)

P7's startup offered value to their customer through flexible pricing, discounts, and packages, specifically designed to meet the financial challenges of their customer and target market. This approach was not only considerate but also intelligent move from the perspective of business since it aided in keeping customers' loyalties and potentially appealing to get new clients.

“The innovation implemented by us is the adjustment of the startup financial model with the help of Reward Cards. This development was profitable for our startup, thanks to this method, we provided existing and potential customers with an opportunity to purchase our products much more profitable than usual. Such an approach contributed to developing customer loyalty and providing a repeated purchase of our product. It was a new service that provides a discount of up to 50% on all products in order to increase product purchases.” (P13)

One of the participants' startups implemented 'Reward Cards' program as a mean to provide discounts to the customers and encourage customer loyalty. This program was particularly important during crisis because the purchasing behavior of the customers was changed, people

were more likely to buy necessary items rather than spending on unnecessary products. This helped the startup not only maintaining the current customer base but also enhanced the accessibility of the items to potential new customers, which have potentially increased their market penetration.

Exploring the ideas that the above startups gave it is easy to understand the role of the COVID-19 pandemic as a negative force for startups. Some of the consequences were rather strict restrictions of the financial resources which impacted to put pressure on startups as well as forced them to search for new ways of pricing and revenues. These transformations were crucial for the startups' existence and it also combined the understanding of the customer's shortcomings, emerging markets opportunities and, mainly, the retention of the existing customer base in the new conditions.

4.2.1.2 Diversification of Revenue Streams

As a result of challenges presented by COVID-19 pandemic, startups were lean on to investigate and adopt diversification in their revenue streams. In order to achieve long term viability and to adjust to the evolving market dynamics, this strategic change was essential. Two startups offered insightful examples of how they successfully cope with the market change.

“The new processes were diversified by our startup. We started generating revenue from consultation fees, subscription models, home nursing and care fees, commissions from medicine and lab test services, and also, we focused on have regular income from partnerships with different stakeholders including insurance providers, hospitals, pharmacies, and laboratories.” (P12)

The startup was focused on the diversifying their revenue stream by offering multiple services and pricing models. The strategic inclusion of commissions from medicine and lab test services by the startup, and also partnerships with various stakeholders reflects a comprehensive approach to revenue generation. This diversification of the revenue streams not only helped mitigate risks

imposed by COVID-19 but it also helped in not reliance on a single income stream but also capitalized on emerging needs in the healthcare sector.

“Through the implementation of rental models, we can recover our initial expenses within the initial months and then generate supplementary income from consumers who derive advantages from our devices ---- hardware can be expensive, making it unaffordable for some individuals. Hence, we are investigating rental options to reduce the obstacles for clients to get started, while also optimizing profitability and income in the long term.” (P5)

The participants tactically adopted rental methods for its hardware, enabling them to swiftly recoup early expenses and earn continuous revenues. This renting strategy effectively tackled the problem of affordability, hence expanding the client base that may access their goods. The emphasis on value capture, which involves maximizing revenue while minimizing expenses and growing the customer base, is a clear demonstration of their inventive and enduring business approach.

The diversification of sources of income as shown by participants shows the reality of the need for responding to future shocks and adapting to occurrences such as COVID-19 infections. Besides that, such startups have learned to diversify, which was equally vital to meet the short-term demand while creating the foundation for the long-term future. By studying this approach, it reveals how market needs, affordability conditions, and potential system partnerships relate to creating more robust business models.

4.2.1.3 Effective Cost Management Strategies to Enhance Overall Efficiency

One of the most significant problems awaiting startup companies throughout the COVID-19 crisis was the question of how to control their costs to sustain viable businesses. Besides the issues related with the flexibility in concerning the pricing points and the maximization of operations, one more crucial element of their survival strategy mentioned there was the measures on the cutting of costs. Two of the participants; Participants 5 and 7, who claim to be CEOs outline their

objectives and plans in handling costs and the effects of the new economic reality with sometimes emphasize on cost reduction.

“Due to the above strategies and changes in costing models, we aimed to incorporate real costs of products, including labor costs, to enable the business sustain its sustainability agenda as well as its overall financial sustainability during and post-pandemic periods. The COVID-19 crisis led to an inflation of new prices and additional costs in many spheres. This of course had side effects in terms of our policies for pricing our products. It became apparent that prior to the crisis, we were not properly allocating some of the costs, let alone recording, where labour costs stood out the most. Where we lacked in our business model was the lack of a right price strategy that put into consideration the time taken to produce our products. For this reason, new pricing strategies were adopted that involved integrating labor charges and the actual cost of making each product. We also found that we could find other ways in which we could reduce costs but still not affect the quality of products or the achievement of our sustainability objectives like streamlining supply chain and minimizing avoidable overheads.” (P15)

From the case analysis, it is evident that P5’s startup not only had a renewed assessment of its pricing positioning but also sought opportunities to cut costs. These included the rationalisation of supply chain, cutting down overhead expenses which depicted a good managerial approach towards corporate finance. These efforts were accompanied by prohibitions on passing costs on to customers and remunerations for maintaining product quality and sustainability goals, which provided for an overall approach to business.

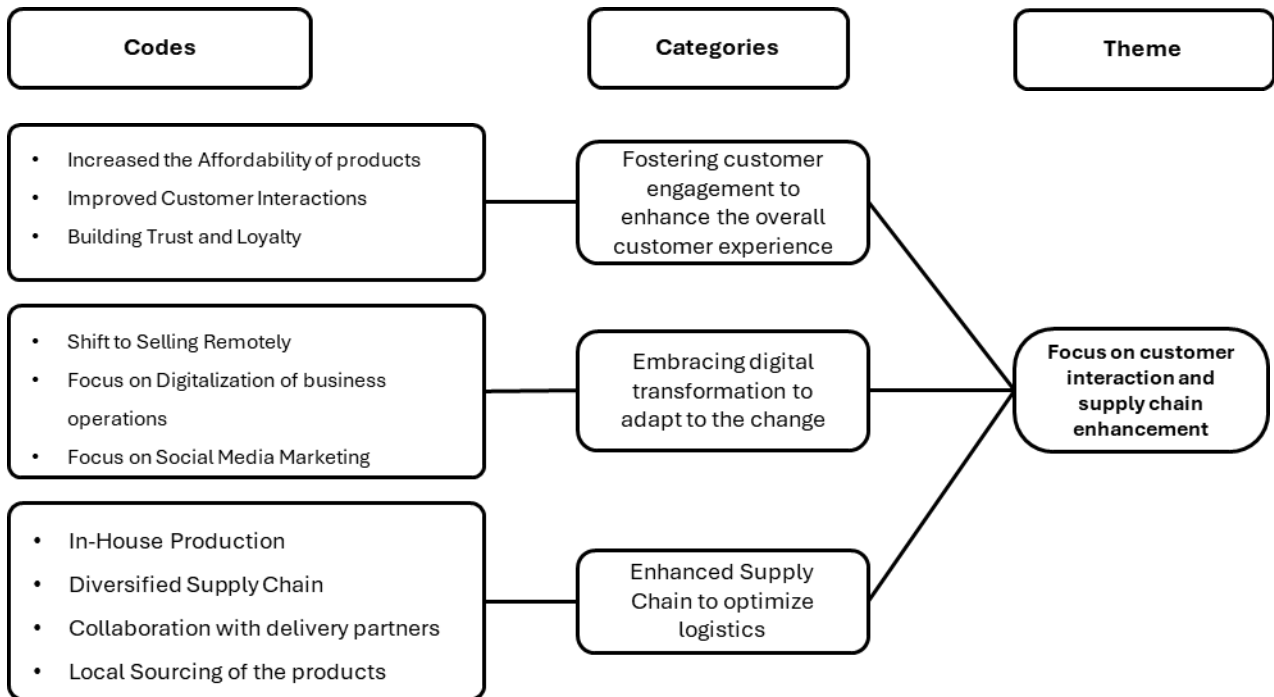
“Despite these challenges, the SMS service mentioned earlier played a pivotal role. By allowing people to get into direct contact with each other, we were able to enhance our order and delivery processes, lowering expenses attributed to order mishaps and misunderstood instructions. This was a plus to the company in terms of keeping cost down and at the same time improving the service delivery to the customers. Further, this made our human resource minimal by optimizing the manner in which we reached out to the customers and managed their orders to a level that eliminated the need for more staff, hence minimizing labor costs.” (P6)

P7 emphasizes the use of technology, specifically SMS services, to improve efficiency and reduce costs. The benefits of improved staff-patient communications were reflected in less order errors

and misunderstandings, resulting in lower costs. This dig communication tool also improved efficiency thereby helping the company cut on its workforce a facet of cost control.

Controlling costs, and more specifically controlling costs with the view to reduce them, were the significant factors that were fundamental for startups during the pandemic. Both participants 15 and 6 provided good examples that are evident by the fact that firms require revising their pricing models to remain in business thus stressing the importance of daily operations and known measures of cost control in areas that are most advantageous for the firm in the long run. All of these strategies highlight the need for flexibility and quick reaction in the management of businesses – not just now and here, present success is guaranteed, but the scenarios for the further development of the companies are also laid down.

4.2.2 Focus on Customer Interaction and Supply Chain Enhancement



The COVID-19 pandemic necessitated significant changes in how startups interact with customers and manage their supply chains. Enhancing customer engagement and optimizing supply chain logistics became crucial for maintaining business operations and meeting evolving customer demands. These efforts not only helped startups survive the immediate challenges but also laid the groundwork for future resilience and growth. This section delves into how startups strategically focused on these areas to adapt and thrive during the crisis.

4.2.2.1 Fostering Customer Engagement to Enhance the Overall Customer Experience

During the pandemic, startups faced the challenge of maintaining and enhancing customer engagement despite the limitations on physical interactions. Participants describe their strategies for adapting to these challenges through digital means and personalized approaches.

“However, we sharpened our portfolio according to the peculiarities and difficulties of independent farmers. In addition to adapting to the current problems caused by the outbreak, this individualized approach became a constant practice of offering efficient and targeted solutions to farmers as far as the implementation of innovative practices is concerned. To counter the current market conditions and limitations, we began to focus on direct consumer communication through online channels. It helped us to sustain a strong tether with the customers and be ready to support them and provide them with the relevant information even if we could not physically meet. It was a short-term solution that gradually became a norm as new advancements were made in the digital environment.”
(P6)

As a result, the startup offered tailored services to their target audience, specifically farmers, regarding particular pandemic concerns. The change in approach to use direct-to-consumer online communication supported the retaining of a good interpersonal connection with customers. This approach which was meant to be a temporary one, gradually became permanent, further reinforcing the significance of digital communication in the new era of the market.

“Since we deployed a new online interface, therefore, our interactions with customers have begun receiving obscure enhancement. It has benefitted customers and us by achieving key

goals this platform pursued when launched. In an effort to improve our customer service we have also developed educative videos which give more insight on our products and services. This point has been very helpful to our customers, and they have embraced these videos, thus helping to create loyalty towards our brand.” (P4)

P4 highlights the implementation of a platform, which enhanced customer interactions and provided mutual benefits. The production of the informative videos was also instrumental in increasing the level of understanding of their products and services hence increasing customer confidence and hence loyalty. This strategy brings out the fact that the use of content is useful in the improvement of customer relations and perception of the brand.

Customer outreach was another critical goal for startups to achieve during the pandemic, where online and customer-specific approaches dominated the scene. Participants 7 and 4 illustrate that the switch to digital engagement not only ensured customer contacts did not disappear during the crisis but also placed the basis for further stable business relationships and customer loyalty. These approaches demonstrate the growing significance of digital channels and targeted material in the contemporary landscape of business.

4.2.2.2 Embracing Digital Transformation to Adapt to The Change

COVID-19 crisis played a role of an enabler to the digital transformation across different types of startups, thereby forcing innovation and providing a new normal. Interviewees share their knowledge about how startups that are a part of adapted digital solutions to not only sustain their business during the pandemic, but also build up for the long term recovery.

“As a result of the crisis, we initiated a series of online photography workshops for the photographers represented in our company to improve their qualifications. This was not only favorable for our photographers but also published educational content for individuals into photography. We switched from being mere service providers to knowledge teachers to novices who came with raw talent.” (P3)

P3's startup pivoted from just offering photography services to providing online educational content. The introduction of online workshops not only supported their photographers in skill enhancement but also tapped into a broader audience interested in learning photography. This shift demonstrates a strategic pivot to content creation and education, expanding the startup's value creation.

“Being able to shift our operations swiftly, whether by expanding online sales, diversifying our services, or adjusting our product line to meet current demands, will be crucial. We've realized the importance of digital transformation, so maintaining a strong online presence and leveraging e-commerce platforms will be part of our strategy to ensure business continuity during disruptions. Our digital transformation, including social media and a dedicated website, has expanded our reach beyond Peshawar to customers across Pakistan. We've witnessed the power of an online presence, not only in terms of sales but also in creating brand awareness and credibility. This move was not just a response to a crisis; it was an investment in our future.” (P10)

P11 emphasizes the strategic role of digital transformation in expanding business reach and ensuring continuity. The startup also continued with online sales in addition to the services it offered, especially through reaching out to a wider market through social media platforms and a website to cover the whole of the country. This is considered as long term investment where-in developing one's brand online is viewed as a profitable endeavor with a great payoff.

“The decision to adapt to an online food delivery model highlighted the value of a digital profile and activity level: We ensured that we had a functional website. In addition, the need for a prominent and active online platform in combination with the massive consumer takeaway pushed us to continue the transformation during the pandemic.” (P16)

As highlighted in P16, the firm started up got to change to an online food delivery which speaks to the disruptions. For instance, during the pandemic, businesses that focused on creating an easy-to-use website and conducting targeted digital marketing landed on the customers. This change is admitted as being indispensable for future sustainability, and not simply as a way of providing a short-term solution.

This is a perfect example of how the COVID-19 crisis pushed the digitalization agenda in startups forward. These changes were from alternative services involving online education services, diversification through e-commerce and social media, to flight to digital delivery models. All these were not only necessary for coping with the hardships caused by the pandemic, but the mentioned strategies are also long-term, consistent investments into these businesses underlining the significance of the role played by digital platforms and flexibility in the current conditions of the market.

4.2.2.3 Enhanced Supply Chain to Optimize Logistics

The COVID-19 pandemic pushed the startups to revamp and build better strategies on the supply chain to cover the shocks and fluctuating trends. Attendees discuss tactics performed in rerouting supply chain so business can continue to run and cater for its consumers.

“Though, as the pandemic started to continue and the adoption of the e-commerce shifted to the new level, it was time to adapt again: ‘In terms of the delivery, they used to be a minor factor; with the pandemic, it became a major one.’ ‘This is why in terms of supply and delivery we worked through the concept of speed: offering such options as same-day or next-day delivery in some zones.” (P9)

To meet the new demand in the context of the Covid pandemic, P9’s startup of delivery focused on rapid deliveries. Another important investment area was supply chain and logistics to be able to realize same day or next day delivery. This adaptation shows that supply chain management requires great alertness and flexibility in case of a calamity.

“During the Covid 19 pandemic we had to bring about a major change in our target customer, while our earlier customers were individuals owning cars and the local car repair shops our new target customer was the local garages and mechanics. Also, during this same period, we also introduced a new service and used local suppliers and manufacturers to obtain components and reduce risks, complexity and overhead costs and support local industry.” (P9, 10)

P10 explained that its startup targeted local garages and mechanics as its customers. The move to adopt local procurement was towards minimizing the incidences of disruption of the supply chain and locally uplifting the economy. This strategy depicts flexibility in the target markets as well as the need to anchor it on local supply chain networks.

“Another one of the main difficulties that emerged because of the pandemic, was that supply chains with external suppliers were disrupted. In order to overcome this problem, we expanded on the in-house production of the company product which helped us guarantee timely and adequate supply of our products to fulfil customers’ needs.” (P6)

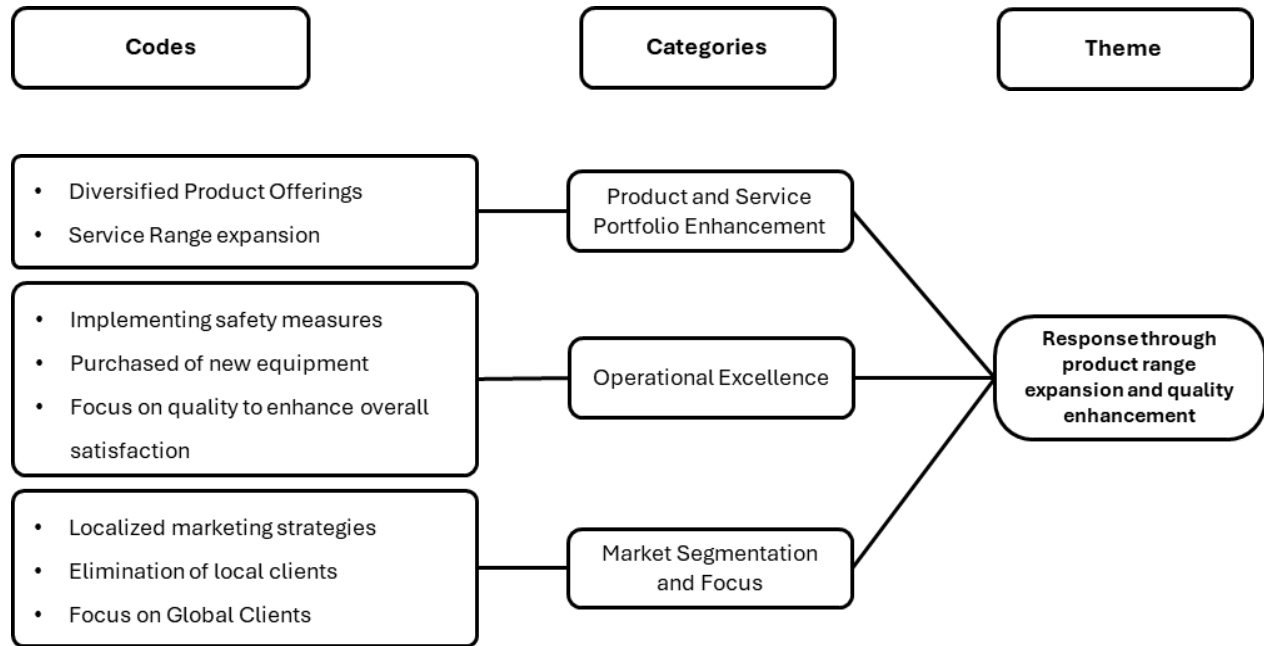
P7 it was evidenced that disruptions in the global supply chain posed major issues to P7’s startup. Laying greater emphasis on self-production was an efficient way of decentralizing the dependence on outside suppliers. It made the control of the supply chain to be more enhanced thus bringing about stability on issues relating to the stock of the products.

Thus, there is evidence of how supply chain reconfiguration was needed due to the recently started pandemic. These startups used these approaches in addressing some constraints, getting a more efficient way of delivering goods to the market, extending their markets, sourcing from within the region, and internal manufacturing. Many of these adaptations not only responded to issues created by the pandemic but also created a better base to build enhanced and far more efficient future supply chain structures.

4.2.3 Response Through Product Range Expansion and Quality

Amid the COVID-19 pandemic, startups faced the imperative to adapt their product offerings to meet shifting market demands while maintaining or enhancing quality standards. This section explores how startups strategically responded through the expansion of their product ranges and

the improvement of product quality, thereby ensuring relevance, competitiveness, and sustained growth.



4.2.3.1 Product and Service Portfolio Enhancement

Another emerging pattern identified from the COVID-19 disruption was the fact that startups shifted their business models regarding their value proposition in response to the pandemic drastically, especially through diversification of the provided offerings. This strategic shift enables them to respond well to change and keep abreast with newer market challenges and other forms of instability.

“Part of our crisis response entails a proactive management of diversification We try to analyse market conditions and possibilities and whether or not we could enter new service lines that are related to our strengths We found this approach useful during the COVID-19 situation where we had to switch to album printing and editing services Such shifts have made it possible for the company to keep on operating despite volatility.” (P14)

Due to hierarchical nature, P15’s startup involved expansion of portfolio in order to ensure that new products and services fit with the organisation’s strategic capabilities. Change in offering to

printing of albums and editing services was necessitated by changes in the market and opportunities that emerged because of the pandemic. Thus, the identified diversification within the value proposition helped to preserve the business and its prospects when the situation was rather unfavorable.

“However, our expansion to home-shifting services was an example of recognizing further changing customer needs This is because we developed the extra line of products and services as a hedge against the future market instabilities.” (P13)

P13’s startup offered home-shifting services as it stepped up to respond to other emerging customer needs. This diversification not only generated the extra sort of revenue but it also acted as the insurance against the shakeouts in the market. In my opinion, the introduction of new services as an element of value proposition is lessons of innovation, oriented to the demands of an emerging market.

The changes enacted by startups P15 P19 clearly indicate that one of the key ingredient of the business model for a startup involves innovating on the value proposition component. Here, the focus will be made on the fact that startups managed to respond to the shifts in the market landscape brought by the COVID-19 pandemic by extending their products and services offerings. Such strategic actions in the construction of business models protected them and made it possible for them to survive and perform given the various shocks, thereby underlining appropriateness and flexibility in business model dynamics.

4.2.3.2 Operational Excellence

The investment made by startups in improving the quality of their products during the COVID-19 is another important dimension of BMI. This methodology, dedicated to enhancing the

organisations' value proposition, was essential in sustaining competitiveness and addressing customers' newfound requirements.

“Moreover, another aspect of our BMI was the acquisition of printers which, while satisfying immediate organizational requirements, has brought about a longer-term effect on competitiveness and Company's overall performance: These printers are now an inalienable element of our production line, providing not only for organizational effectiveness but also for product quality – a crucial factor given the nature of our business.” (P11)

Porter's P11 identified investment in new printers as an operational requirement but grew to be a strategic one. This investment was absolutely crucial in improving the output productivity and the quality of production which are central issues in their operations. High quality production remained central to their value proposition, offering them a competitive advantage and enhancing the performance of their businesses.

“Moreover, we introduced measures that had to be followed during exterior photoshoots, and this created a new value proposition; safety for both the photographers and clients.” (P3)

Consequently, due to the disruptions brought about by the pandemic, P3 had to establish safety measures for photography shoots undertaken outdoors. This was one more aspect to their value creation story and one that was relatively timely given that the issue of safety was becoming paramount to both clients and photographers. Through implementing all these safety measures, the business did not only respond to health urgencies but also improved its quality delivery in services, a sign of safety for customers and employees.

Changes embraced by startups are a part of the strategic upgrade of value proposition, which is a segment of business model innovation. Since most of these startups were investing more on quality enhancement focusing either on the investment on technological equipment which enhanced their product and service quality or the enhancement and implementation of safety measures. Such an approach helped not only to address the short-term problems created by the pandemic but also to

outline the further path to the formation of competitive advantages and market positions. It underlines the value of flexibility, and the possibility of changing value offers to meet the new market requirements and customers' expectations in the long-term operation of businesses.

4.2.3.3 Market Segmentation and Focus

Probably the most important element of business model innovation during the COVID-19 crisis is a shift in targeting other categories of customers by startups. This shift was critical for startups to pull through new economic conditions to allow for consistent growth.

“We found out that it ‘s our 90% profitability that was being driven online.. the local clients were contributing a measly 10 % towards profitability And that was the transition from local to global customers.” (P1)

The decision by P1 to change its focus from local markets was as a result of differences in profit centre between local and global markets and online platforms. This strategic move pays attention to a new shift in their overall positioning specifically focusing on serving a global market instead of a localized one and therefore having to factor the wants and needs of a more versatile audience. This shift is transformative to their business model since they have to sell to other groups so as to increase their production and profitability.

“New direction to the target customers during COVID-19 crisis to limit consumer contacts and institutionalised procurement Among the new strategic direction taken in Covid 19 outbreak is the following... additionally targeting local garages and mechanics”. (P9)

In the case of P9, the strategy that was suggested was to broaden the core clientele, which focused mostly on individual car owners and repair companies, to include local garages and mechanics. The broadening of their target customers let them expand into increasingly distinct markets; they modified their products to begin appealing to these other consumers. The change is one of choice,

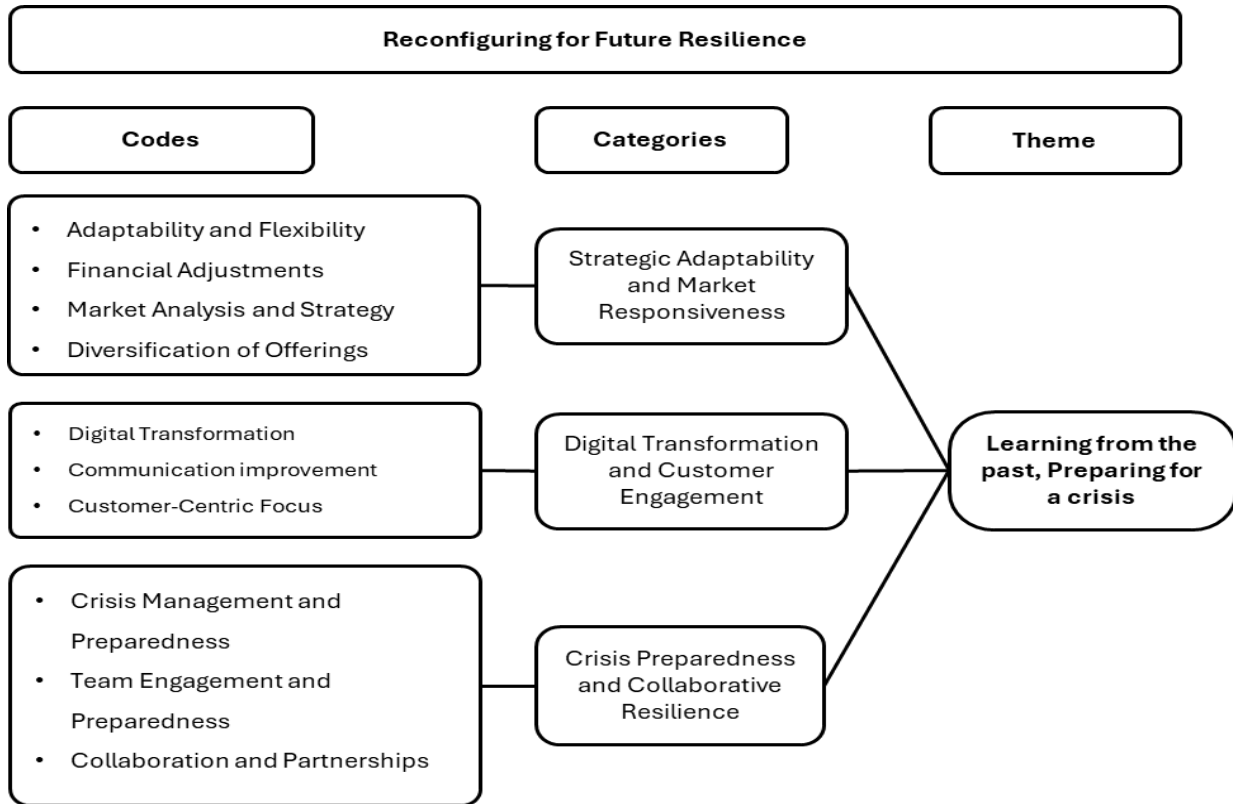
and can be seen as a strategic shift in their value proposition, to try to go after new opportunities, given the current market dynamics.

“By our concentration on the local market of Pakistan... New products in the form of fusion art products and other creative items have helped in adding more value by catering to the various segments of consumers with different requirements and interests.” (P11)

The decision of P11 to market its products within the local market and the introduction of products that include fusion art show that the firm has adopted a policy of giving the customer within this market segment variety. This suggests that the firm understands the local demand more proactively and adopts a strategic approach of repositioning their value proposition to appeal to a larger population. It presents one of the best examples of business model innovation, benefiting from product scope diversification and the understanding of market needs.

Such strategic changes demonstrated by startups are important for the perspective of the business model innovation in particular with respect to the value proposition. An advantage evident in the growth of these startups is that the identified new customer segments required redefinition of the products offered and, therefore, flexibility. Far from being a response to the Covid crises, this change was preparation for the future –new opportunities, stronger competitiveness, and sustainable development.

4.3 Reconfiguring for Future Resilience



In the face of uncertainty and rapid change, businesses are compelled to reevaluate their strategies to ensure resilience and sustainability. The category of "Reconfiguring for Future Resilience" encompasses a range of insights and strategies drawn from the experiences of various participants. Tapping on strategic flexibility and market sensitivity to digitalization and collaboration and recovery, these excerpts reveal how companies are responding to disasters and anticipating the next. Altogether, the insights provided in this category prove the importance of the constant and complex approach to the management of crisis situations in business. From the lessons that have been highlighted here, one can see that getting ready for the future means not just emulating the successes of the past, going digital, and being resilient through collaboration to confirm and ensure future success.

4.3.1 Learning from the Past, Preparing for a crisis

In the business world, it is impossible to overestimate the importance of practical knowledge and anticipation of potential situations in terms of promoting efficiency, particularly when operating in conditions of instability and a crisis. The section “Learning from the Past, preparing for the Future” goes deeper into analyzing the experiences shared, with especial focus to the lessons that was learned from previous hardships and the plans made on preparation for forthcoming difficulties. Across this category, the importance of flexibility and preparedness as the key components to attain effective and sustainable business climates is stressed. Based on participants’ observations, it is crucial to work on permanent product enhancement, careful cost control, and the integration of the data analysis of the market situation to provide the necessary flexibility within the changing environment.

Furthermore, the narratives explain the importance of digital transformation and customer, while highlighting their ambitions about becoming the core of contemporary management strategies. Through embracing technology, improving the brands’ online image, and increasing communication efficiency, not only do companies adhere to the shifting consumer behavior patterns but also create a stable and strong ground for the long-term development. Also importantly, the section points to the need to prevent crises, and notes the concept of collaborative resilience.

4.3.1.1 Strategic Adaptability and Market Responsiveness

These experiences portrayed by the participants demonstrate the importance of flexibility and adaptability towards the achievement of business continuity and sustainability during crises. Prescriptions derived from them contain useful experience that could be useful in redoing corporate tactics to accommodate forthcoming difficulties.

“If you are presenting the best value, if you are creating the best value, if you are capturing the value in the best possible way and you are proposing it in the best value, but that product is not flexible and that product is not adjusting itself according as per the need of the market then it would die out.” (P2)

This is amplified in P2’s statement that ignorance to flexibility in business models is equivalent to suicide for a business. However, the c-functionality holds much potential for achieving high value and customer benefits and, consequently, defining a business success, it is critical to address the opportunities for responding to changing market needs. This has implied that progression and flexibility with regards to market transformation is crucial for sustainability.

“When a company experiences a crisis, the first management activity undertaken is cost control strategy that entails scrutinizing cost drivers and expenditure categories that are seriously claiming on a company’s resources without providing proportional returns.” (P5)

Furthermore, crisis resolution of P5 entails the bench marking of cost with deep awareness of product cost and cutting on costs that does not add value to the business. This method emphasizes on the concept of risk minimization and the process of right spacing in order to sustain and grow within an organization.

“First of all, the company will stay sensitive to the consumer tastes and buying behaviors in the local and international markets that we operate in and be ready to react quickly to changes in those markets. Additionally, the company will remain vigilant to trends in the Pakistan market, while keeping a look out for emerging demand. To this end, the company shall continue to partner with local artists and other local entities so as to come up with products that reflect the cultural.” (P11)

P11 describes a plan that entails the understanding of the local and the international markets by embracing data. This approach is important for fast response to changes in the customers’ needs and other circumstances on the market. It is revealed that localism and cultural relevance are

critical aspects because they mean that many business strategies should be designed with the given culture specifically in mind.

“The proactive aspects of our response to a crisis also entail an evaluation of market potential for the diversification of services and determination of the potential for introducing new services or products consistent with the company’s core competencies. Development of these types of directions was especially effective during the COVID-19 when the company switched to the production of albums and editing services during the crisis.” (P14)

P14 is another good example of the best strategy that is to diversify actively in response to a crisis and show how important it is to be agile and innovative. Where new services and products correspond to the key competencies, and if necessary adapting to the demands, one can open up new possibilities and stay afloat even during the crisis.

“The hardest lesson was learning how to adapt our menu for delivery purposes, it brought a very important lesson as it taught us the need to check the menu items and packaging so as to deliver good foods to customers’ homes. This showed the importance of having a flexible menu strategy to match the current situation created by the COVID-19 pandemic such as home delivery to the customers.” (P15)

Therefore, P15’s experience with the changes in the menu to allow for deliveries represents one of the business model strategies that Calls for organisations to adopt a business model that will be suitable for change to meet the needs of the consumers. Concern for maintaining quality in both Dine-in and Delivery means that there has to be a certain versatility in product portfolio and the way business functions with regards to customers’ preferences and current circumstances.

All these considerations together emphasize one major concept of future preparedness – the need for planned flexibility and sensitivity to market conditions. Since the future of business is characterized by many unforeseen events, proper strategies include the ability to change business models; diversification and timely actions based on proper cost control and knowledge of market

trends presented by data analysts. Anticipatory strategies make it possible for businesses to be ready and adapt to the changes that may occur in future, especially to increase their chances of continued success.

4.3.1.2 Digital Transformation and Customer Engagement

The emphasis on continued digital engagement, as highlighted by these quotes, reflects a comprehensive understanding of the evolving business landscape. From these findings, one gets important points about achievements from which one can obtain perspectives for reconsidering startups' methods of functioning during crises such as the COVID 19 pandemic, the reliance on customer orientation, the digitalization of operations, and communications.

“As history has taught us, we will embrace improvements in technology to support work from home and also ensure that business continuity is achievable even if the staff are working from home Further training of the staff regarding crises management and developing good work from home policies and procedures will be part of our readiness measures.” (P6)

With P6, it reveals that organizations need to make technological expenditures for supporting work from home. In order to reduce the impact of a disruption, it is necessary to train the staff in how to manage a crisis, and to incorporate a detailed disaster plan for working from home into the business strategy.

“Due to the change to an online delivery platform, the company had to focus on developing a website and employing digital marketing and advertising to build customer trust. This, in addition to not being able to generate enough foot traffic during the pandemic, also stressed the importance of being able to achieve a solid online platform in the future of the restaurant's success.” (P15)

P15 states that the shift to online delivery increases the importance of having an online presence bridging teaches students. Proper website layout and design, and optimization of Internet pages and other online services to use them was crucial not only in conditions connected with the COVID-19 pandemic but in general It is necessary to identify that website layout and design, as

well as Internet pages and other online services, their optimization to use them became crucial not only in conditions that are connected with COVID-19 but in general.

“Communication will be a cornerstone during any crisis. Transparent and timely communication with our employees, customers, and stakeholders will be paramount. Keeping everyone informed about our actions, safety measures, and any modifications in our services will instill trust and confidence.” (P10)

P10 emphasizes the role of communication in crisis management. Keeping stakeholders informed about safety measures and service changes builds trust and confidence, which is essential for maintaining business stability and customer loyalty.

“The most critical advice I can offer is the need to prioritize and focus on your customers, their needs, and their comfort. Imagine a startup dealing with a crisis. Rather than drastically cutting costs, the startup should emphasize the importance of customer retention. It's well-established that retaining a customer is generally more cost-effective than acquiring a new one. When your customers are already familiar with your brand and are satisfied with your services, they require fewer incentives to remain loyal. It paid off significantly. We have customers who placed orders with us over 150 times during the pandemic. These are customers who are comfortable with our brand and have continued to shop with us. This highlights the importance of customer loyalty and satisfaction.” (P8)

P8's insight stresses the importance of customer retention over cost-cutting. Building and maintaining customer loyalty, especially during crises, is crucial for sustained business success. Satisfied customers are more likely to remain loyal, reducing the need for extensive marketing efforts to attract new customers.

“Building up on trust, building up on values like customer trust, customer relationship, and customer experience. This is what Business model Innovation for me, and this has helped me and my startup at large” (P2)

P2 identifies trust, customer relationships, and customer experience as the pillars of their business model innovation. This approach recognizes the importance of deepening customer engagement and trust as key drivers of business resilience and growth.

These perspectives collectively illustrate a shift towards more digitally enabled, customer-centric business models. They highlight the importance of investing in technology, focusing on customer retention and satisfaction, maintaining robust communication channels, and building trust. Such strategies are not only crucial for navigating crises but also for fostering long-term business success and growth.

4.3.1.3 Crisis Preparedness and Collaborative Resilience

The insights from these quotes demonstrate the importance of a multifaceted approach to crisis preparedness and the role of collaborative resilience for startups and businesses. Each quote offers a different perspective on how to build and implement effective strategies to withstand and thrive during challenging times.

“Our approach to future crises will be a combination of proactive safety measures, ongoing communication, market adaptation, educational expansion, and financial resilience. These elements collectively form a holistic strategy to navigate uncertain times effectively.” (P4)

P4 emphasizes the importance of a comprehensive strategy encompassing safety, communication, market adaptation, and financial resilience. This approach suggests that crisis management requires more than just reactive measures; it necessitates a proactive and well-rounded plan that addresses various aspects of the business.

“This isn't limited solely to startups; it's imperative for all businesses to proactively prepare for any potential crises that may arise. Ultimately, the strategy for success is intrinsically tied to the specific characteristics and demands of a given business. During COVID-19, we had a head start in terms of awareness but didn't act on it promptly. Early signs should be taken seriously and worked on.” (P7)

P8 highlights the universal need for crisis preparedness across all types of businesses. Recognizing and acting upon early signs of crisis is crucial. This quote also underscores that the success strategy should be tailored to the unique aspects and needs of each business.

“All these are especially important, but this could only be possible if there is flexibility in the executive model or the executives of that startup. And we have goals or have an approach that is long term in nature, so then discuss it with your partners and take a decision on that, so it starts from talking and sitting down with your team.” (P2)

P2 points out that flexibility in leadership and a long-term strategic approach are essential for effective crisis management. Engaging in open discussions with team members and partners to make informed decisions is a critical step.

“Collaborating with local vendors and forming strategic partnerships helped us streamline production and distribution processes. Additionally, we relied on partnerships with food delivery platforms to expand our reach and streamline the delivery process.” (P5)

P6 speaks to the power of collaboration and strategic partnerships, particularly in streamlining operations and expanding reach. In a crisis, leveraging local networks and forming alliances can be instrumental in maintaining stability and ensuring continued service delivery.

These perspectives collectively underscore the need for a dynamic and comprehensive approach to crisis management, emphasizing financial agility, proactive measures, responsiveness to early warning signs, flexibility in leadership, and the value of collaborations and partnerships. Tailoring these strategies to the unique needs of a business can enhance its ability to navigate and thrive during challenging times.

4.4 Types of Business Model Innovation Opted by Startups

The typology of business model innovation opted by startup is based on the comparison of old and new business model components including value creation, value proposition, and value capture. The typology is mainly based on the presented types of business model innovation by Foss and Saebi (2017). Hence, main source of information for categorizing startups into different types of BMI was based on the table presented at end of thesis in Annex *Table 6: Difference Between Old and New Business Model of the Startups*.

Based on these findings, about four startups – P1, P2, P7, and P15 are among those that have made changes to the business model and therefore are among the firms that have engaged in adaptive business model innovation. Adaptive business model innovation entails a process by which firms modify a business model slightly, although without altering the general strategic framework of a business model.

Another four startups (P3, P8, P11, P12) opted for complex business model innovation. This type of innovation means radical transformation or even complete overhaul of the current established model, altering one or many aspects that include but not limited to value creation, capturing, and resources.

Total of five startups (P4, P5, P9, P10, and P13) opted for evolutionary business model innovation. This approach covers slow and progressive modifications of the business model gradually and in response to the new market conditions, changes in customers' demands or the appearance of new technologies.

Only one startup (P6) opted for focused business model innovation, which entails making targeted changes or improvements to specific components of the business model, such as the target customer segment or the distribution channel, while leaving the core model largely unchanged.

It must also be pointed out is that the various categories of business model innovations can be undertaken depending on several factors such as the stage of development of the startup, the environment within which it operates, the competition, and the kind of business model innovation

Participants	Business Model Innovation	Type of Business Model Innovation
P1	The shift from limited services to a comprehensive range adaptable to market demands signifies adaptation to changing market needs and preferences. Additionally, the emphasis on digital solutions and tapping into international demand through online platforms reflects a strategic adjustment to leverage new opportunities and reduce costs associated with physical office setup.	Adaptive BMI
P2	The participant's adaptation to bridge the gap between customers staying at home and local businesses, along with innovating strategies to address challenges posed by COVID-19, demonstrates an adaptive response to changing market conditions. Moreover, the continued focus on capturing value through monthly service fees for social media marketing and customer support indicates a retention of the revenue model while adjusting service delivery methods.	Adaptive BMI
P3	The participant's shift from traditional in-person photography services to offering online photography workshops, safety-focused outdoor photoshoots, and mentorship programs represents a significant architectural change in their business model. By expanding their value proposition to include skill enhancement and mentoring services, they are catering to a broader audience and creating additional revenue streams beyond traditional photography services.	Complex BMI
P4	The participant's transition to an enhanced digital presence and implementation of a digital platform represents a modular change within their existing business model. While there are adjustments to film production equipment for outdoor shoots, the core revenue model of charging clients for traditional film and photography services remains unchanged.	Evolutionary
P5	There is a shift towards software-based initiatives, the core value proposition of providing smart thermostats remains the same. This shift represents a modular change within their existing business model rather than a significant architectural change.	Evolutionary
P6	The participant has redefined its value proposition with a focus on product availability, reliability, safety, and sustainability, which represents a deliberate disruption of market conditions. Additionally, the increased emphasis on in-house production, flexible pricing options, and direct-to-consumer engagement through online platforms signifies a strategic effort to disrupt traditional distribution channels and capture value in new ways.	Focused
P7	The participant's shift from in-person shopping to robust online sales demonstrates an adaptation to changing consumer preferences. However, the core revenue model of generating revenue through traditional sales of saffron remains unchanged, indicating a more evolutionary rather than revolutionary change in their business model.	Adaptive

P8	The participant's shift from primarily in-store to online sales, along with the introduction of same-day deliveries, mobile payment gateways, and mobile apps, represents a significant architectural change in their business model. Additionally, the increased emphasis on online sales channels and incentivizing prepayment to reduce cash-on-delivery signify a deliberate disruption of traditional sales channels and a strategic effort to capture value in new ways.	Complex
P9	The participant's investment in website improvement, SEO, and digital advertising for increased visibility, along with streamlining operations for improved efficiency, represents a modular change within their existing business model. However, the core value proposition of connecting customers with used auto part sellers and charging for product sales remains unchanged, indicating an evolutionary rather than revolutionary change in their business model.	Evolutionary
P10	The participant's introduction of manufacturing printers for rapid order fulfillment and emphasis on accessibility and convenience represent a modular change within their existing business model. While these changes enhance manufacturing efficiency, the core revenue model of generating revenue through the sale of packaging materials remains unchanged, indicating an evolutionary rather than revolutionary change in their business model.	Evolutionary
P11	The participant's shift from focusing solely on traditional Pakistani arts and crafts products to offering a fusion of traditional and innovative products, collaborating with artisans, and simplifying online transactions represents a significant architectural change in their business model. Additionally, the emphasis on tailoring offerings to meet changing preferences within Pakistan signifies a deliberate disruption of their market approach and a strategic effort to capture value in new ways.	Complex
P12	The participant's expansion into telemedicine, home nursing, home care, mental health support, chronic disease management, medicine delivery, lab tests, and wearable technologies, along with extended coverage to underserved rural areas and customized health plans, represents a significant architectural change in their business model. Additionally, the diversification of revenue streams to include consultation fees, subscription models, home nursing and care fees, commissions from medicine and lab test services, and income from partnerships signifies a deliberate disruption of their traditional revenue model and a strategic effort to capture value across various healthcare services.	Complex
P13	The participant's introduction of the 'Reward Cards' program represents a modular change within their existing business model. While this program fosters loyalty and adds value to the shopping experience, the core revenue model of generating revenue through the sale of traditional handcrafted products remains unchanged. Therefore, this innovation can be categorized as evolutionary rather than revolutionary.	Evolutionary
P14	The participant's shift from solely providing event photography and videography services to offering a broader range of visual content solutions, including specialized photo/video editing and the creation of tangible memories through high-quality printed media albums, represents a significant architectural change in their business model. Additionally, the introduction of event-based contracts and revenue from album sales and freelance editing services signify a deliberate disruption of their traditional revenue model and a strategic effort to capture value in new ways.	Complex
P15	The participant's shift from providing meals for customers in the restaurant to cooking and delivering meals for customers to eat at home represents an adaptation to changing consumer behavior, likely influenced by factors such as the COVID-19 pandemic. While the core revenue model of getting paid for every meal served remains the same, the method of service delivery has been adapted to meet new consumer preferences.	Adaptive

Table 5: Participant Startups BMI Types

being introduced in the market. The choice of business model innovation type can have significant implications for the startup's growth, profitability, and long-term sustainability.

4.5 Summary of The Findings

In this chapter, the issues and actions that have been taken by new ventures in order to address the risks associated with the COVID-19 outbreak are described. The results emerged from interviews with founders and personnel of a startup and collected the essence of how the pandemic affected them. As the chapter brought out it, the pandemic affected the buying behavior of the consumers and the operations of businesses. To this, startups embarked on various methods in the pricing model, found other ways to generate an income besides the lost one, and went online to offer their services. External environment challenges such as supply chain disruptions, management of employees, and constraints in funds also targeted their durability.

In response, there was flexibility — in terms of prices, sources of income, possibilities for buying or managing human and consumer power, and services that occurred in new startups. Despite this, they had to face pandemic related disruptions of supply, and this also affected their purchasing capacity. The evidence allows for understanding a number of unobvious strategies applied by the startups for operational continuity management, management of logistical issues, and impact of COVID-19 in general. Their experiences might have revolutionized them in a positive or negative way. Depending on the nature of that crises, this might help to inform practice in the field.

However, it is necessary to state that different types of business model innovation can be developed based on different factors such as the stage of the startup, market conditions, competitors, and the type of innovation which is presented. Depending on which type of business model innovation is chosen, there may be consequences in terms of the further growth and profitability of the startup,

as well as its survival. Both have their strengths and weaknesses and should be considered and decided depending on the capabilities and needs of the startup.

5 Chapter 5: Discussion

5.1 Impact of COVID-19 on Startups

The COVID-19 pandemic presented huge challenges for businesses and entrepreneurs. The objective of this research was to analyze and describe the effects of the COVID-19 pandemic on the business processes and operations of startups, as well as the obstacles they faced in the market during the initial stages of the crisis. The negative impacts include a decline in market sales, challenges in obtaining comprehensive customer support, limitations in managing logistics, and disruptions in the global supply chain for various industries. Additionally, there are difficulties in maintaining operations, leading startups to delay negotiating deals or shut down their businesses. Furthermore, there is a lack of organizational support in dealing with administrative problems and restrictions in hiring skilled individuals due to the lockdown.

The results corroborate similar studies showing that some firms experienced particularly sharp shrinking of sales in specific sectors and were unable to respond to the emerging market shifts (Salamzadeh & Dana, 2021; Fairlie et al., 2023). Further, there were challenges like logistical and operational challenges which many start-ups experienced; disrupted supplies due to COVID-19 reduced across the world impacting many business industries has been observed (Ivanov, 2022; Queiroz et al., 2022). This has made it difficult to forecast resources and the likely demand because the nature of the market situation is unpredictable. Furthermore, COVID-19 epidemic and advice of lockdown and quarantine has led to number of psychological effects, especially with social relationships (Duan et al., 2023; Serafini et al., 2020). However, this has also led to emergence of opportunities for entrepreneurs to exploit creative goods, markets, and customers (Kuckertz, et al., 2020).

5.2 Positive Effects and Adaptations

The positive benefits primarily stem from the hurdles that startups must confront in order to endure and navigate an unexpected market shift with limited resources. businesses faced significant difficulties in surviving, primarily due to financial constraints (Eggers, 2020; Bartik et al., 2020). For certain businesses, receiving financial assistance from government initiatives was crucial in advancing the process of digitalization and promoting innovation. Companies who engage in innovation and allocate resources to the process of digitization appear to have an easier time navigating the challenges posed by the pandemic (Cone et al., 2022). The IT industry predominantly exhibited favorable outcomes as a result of the COVID-19 pandemic. The majority of them were already engaged in the process of digitalization, which resulted in an increase in their sales during this era. Furthermore, several startups had already utilized digital channels for communication prior to the onset of the COVID-19 pandemic.

Results indicate that several startup owners had feelings of disappointment or anger as a result of delays and missed chances during this period, as well as sadness stemming from the potential closure of their startup. Some individuals responded to the pandemic with resolve and tenacity, capitalizing on the chances that emerged during this period. To survive the COVID-19 pandemic, it was crucial to have strong customer relationships, prioritize self-improvement and education, demonstrate flexibility, and foster innovation. The outcomes of this study emphasize the importance of how startups respond to the pandemic problem by adopting technology-intensive measures. This study's primary conclusion is highlighted by these findings. Businesses that rely on technology and are supported by highly educated, talented, and multitasking entrepreneurs are essential for maintaining ongoing business operations. The existing research indicates that the primary obstacles faced by small firms in adopting technology in digital settings are the absence

of online technology preparedness and the difficulties associated with switching to online platforms. These issues have been highlighted in studies conducted by Nurhayati et al. (2021), and Arifi et al. (2023). The findings of our study have verified that the preparedness of startups to swiftly shift to digital environments and embrace IT during a crisis can enhance the resilience of small enterprises to face future crises. The ability to readily embrace new technologies is essential for ensuring uninterrupted support and fostering strong customer connections. It is crucial to have agile leadership and strategic flexibility, which stem from a strong internal adoption of technology, in order to succeed in digital transformation (Fachrunnisa et al., 2020).

5.3 Resilience and Innovation

The entrepreneurs in this study perceive resilience as a crucial factor for the success of their enterprises. Typically, this capability is associated with their aptitude for multitasking and their relentless pursuit of their objectives. It requires diligent labor, exertion, unwavering commitment, thorough investigation, rigorous experimentation, and ongoing refinements to enhance solutions and persistently persevere. Resilience capacities can help relieve the emotional consequences of crises and disasters by offering a feeling of regularity, stability, organization, and optimism for what lies ahead. The study conducted by Hutchinson et al. (2021) demonstrated that entrepreneurial resiliency is strengthened by factors such as personal and company experience of crises, optimistic outlook, personal faith, learning and leading, and relationships.

The results of our study confirm the findings of prior studies Archibugi et al. (2013), which demonstrate that external shocks can stimulate firms to adapt and innovate. The results of our study indicate two factors that promote the adoption of digital tools (Venkatesh et al., 2003). Initially, the circumstances and limitations prevent any form of face-to-face communication and compel even employees who are slow to embrace new methods to adjust to novel digital processes and

technology, such as virtual meeting technologies. Furthermore, this compelled adjustment provides a chance to demonstrate the capabilities and benefits of a technology, potentially persuading previously hesitant employees of the merits of incorporating digital technologies into their everyday work. As this personal belief becomes more widespread within a company, the cultural shifts that are typically seen as necessary but challenging to accomplish for the digital transformation of established firms begin to take place (Warner, 2019). The exclusive utilization of digital technologies alters employees' cognitive processes and enables startups to discover novel and unforeseen strategic possibilities (Nambisan et al., 2017; Tilson et al., 2010). These findings are consistent with recent research by Dwivedi et al. (2022) and Karmaker et al. (2023) on the adoption of digital technologies during the COVID-19 pandemic.

5.4 Business Model Innovation and Strategic Adaptation

Prior research has demonstrated that changes in the environment play a crucial role in driving business model innovation (Clauss et al., 2019; Lohse et al., 2022). We offer two justifications for this previously recognized phenomenon. In circumstances where the survival of a startup in the face of the economic challenges posed by COVID-19 is at risk, it is crucial for these companies to employ innovative methods to leverage their core competencies. This may involve pushing the limits of their established business model. Furthermore, the availability of additional resources and the newfound flexibility within the organization may allow startups to reevaluate their existing business model and actively participate in strategic business planning. Furthermore, our research reveals a greater level of approval for digital communication from the customer's perspective. Hence, it is crucial to utilize the opportunity to demonstrate to consumers, even with limited notice, the advantages of digital communication, such as the ability to conduct virtual meetings and having strong communications with them through different channels which is seen in the finding that most

of the startups employed different techniques to improve customer interactions. So these finding relates to research that indicates that a crisis might result in a modified connection with stakeholders (Cardoni et al., 2023).

In addition, companies must prioritize liquidity by minimizing costs and exploring options such as cutting working hours or seeking government assistance. Identifying inefficiencies in the company can assist in extending the short-term effects and also contribute to achieving long-term effects. All of the firms we examined are implementing employee-driven ideas in order to rapidly achieve cost reduction. Startups that are able to continue operating in following years of the crisis should use this chance and establish the necessary framework conditions. This encompasses context-specific modifications that primarily facilitate social distancing and enhance cleanliness, particularly in the context of COVID-19.

Furthermore, effective communication with staff is crucial. Employees desire reassurance and require regular updates regarding the current situation. In the context of a prolonged timeframe, the pursuit of further education plays a crucial role. Furthermore, companies utilize short-term opportunities and modify their business models, in addition to implementing these precautions for continuous operations. For numerous startups, crises present these chances for adaptation. External innovations can also occur (Chesbrough, 2020). Immediate prospects can also lead to enduring ones. Hence, it is imperative for startups to contemplate the enduring effects of the crisis and the prospective business models that will materialize in the forthcoming years. An essential aspect of these long-term considerations is to enhance the company's resilience to disasters.

5.5 Contributions and Implications

This study's findings encompass four significant contributions. This study aims to elucidate the factors that influence BMI, as suggested by Foss and Saebi (2017), and to explore the connections

between crisis management, dynamic capabilities, and BMI. In contrast to prior research that suggests market orientation influences the association between dynamic capability and BMI (Foss & Saebi, 2017), this study reveals that dynamic capabilities, in reaction to a crisis, have an impact on the BMI of small and medium-sized enterprises (SMEs). Our findings suggest that entrepreneurs employ various forms of business model innovation (BMI) as time progresses. A market-driving business model is a strategic approach that focuses on making modular adjustments to certain areas of the business model, as described by Foss and Saebi (2017). The founders and senior management of the SME actively participated in developing a novel business model for the industry. The BMI process was guided by an innovative and adaptive capability. Some startups are involved in a business strategy known as 'evolutionary BMI,' which is the outcome of a market-focused approach and the utilization of exploiting dynamic capabilities. This entailed implementing incremental modifications to elements of the business model in accordance with the articulated requirements of the customer base within the current target segments (Narver et al., 2004). At the same time, certain startups were engaged in what Foss and Saebi (2017) refer to as an 'adaptive BMI,' which involves modifying the structure of the business model in response to changes in the external environment (e.g., Teece, 2010). The study discovered that these strategies for BMI effectively addressed the changing demands of customers and the actions of competitors. This led to the development of innovative methods for creating, delivering, and capturing value, which were novel for the company, however not necessarily unique in the industry (e.g., Bock et al., 2012).

Finally, certain firms transitioned to a business model that encompasses a 'complex BMI' process. The management of the startups prioritized modifications to the components and structure of their company's business model and created novel ideas that were previously unseen in the sector (Foss

& Saebi, 2017). Overall, our research indicates that the innovations in the BMI process initially focus on a limited number of components, but eventually encompass all components of the business model and the architecture that connects them. In general, the process of transforming into a market-oriented startup involves making adjustments to the firm's value proposition (such as the core offering, customer segments, and value proposition), value creation (including core competencies and resources, internal and external value creation, and distribution), and value capture or revenue model (the logic of earnings and costs) (Spieth et al., 2016). Startups strategically coordinate the implementation of their flexible abilities with their focus on the market in order to drive improvements to their business model, emphasizing the concept of alignment.

5.6 Types of Business Model Innovation opted by Startups

Our analysis of the startups' business model innovations (BMI) reveals a diverse range of approaches, reflecting the complex and dynamic nature of entrepreneurial strategies. Based on the typology derived from Foss and Saebi (2017), this study categorized the startups into four distinct types of BMI: adaptive, complex, evolutionary, and focused. These findings suggest several key insights: the startups in our sample demonstrate a wide range of BMI strategies, indicating that there is no one-size-fits-all approach to business model innovation in the startup ecosystem (Amit & Zott, 2012). The majority of startups (9 out of 14) opted for either adaptive or evolutionary BMI, suggesting a preference for incremental changes over radical transformations. This aligns with Demil and Lecocq's (2010) observation that gradual business model evolution can be less risky and more manageable for firms. The distribution of BMI types indicates that startups are navigating the delicate balance between maintaining stability in their core business model and innovating to stay competitive and responsive to market changes (Teece, 2010). The choice of BMI type likely depends on various factors such as the startup's stage of development, market

environment, competitive landscape, and the nature of the innovation being introduced. This underscores the importance of considering contextual factors when studying and implementing business model innovations, as highlighted by Schneider and Spieth (2013). The type of BMI adopted can significantly impact a startup's growth trajectory, profitability, and long-term sustainability, highlighting the critical nature of BMI decisions in the strategic management of startups (Chesbrough, 2010; Sosna et al., 2010). These findings contribute to our understanding of how startups approach business model innovation and provide a foundation for further research into the drivers, processes, and outcomes of different BMI strategies in entrepreneurial contexts.

Participant	BM	Value proposition	Value creation	Value capture
P1	Old	The startup provided very limited range of digital services, and their focus was on the traditional markets.	The main focus was on the local clients and the startup was operating with physical office setup.	Startup was capturing value through physical setup and charging clients for the services provided.
	New	Started operating in comprehensive range of digital services, which was adaptable to market needs and demands at that time. More emphasis was on providing digital solutions, branding, and advertising for clients around the world.	Started catering the international demand through online platforms like Fiverr, Upwork etc.	The Cost savings with virtual setup of the employees which resulted in no office expenses and diversified revenue streams from a global customer base.
P2	Old	Digitizing local firms to increase the firms' market presence and extend their market access.	Making sure that the clients understand importance of social media marketing and digitizing their brands.	Monetising the value with monthly service fee for social media marketing and management, content curation, and customer support to our clients.
	New	Reducing the gap between customers who are home based and businesses by creating awareness of services offered online for our clients.	Due to COVID -19 new methods of problem solving are used with emphasis on customer centered solutions. Since Covid already raised awareness of digital importance	Monetising the value with monthly service fee for social media marketing and management, content curation, and customer support to our clients.
P3	Old	Specialised services in event photograph and videography. Talented artists who takes beautiful pictures and documents important occasions and events with stylization.	Photography services offered as a part of standard services that involve face to face interaction for events.	Income earned from billing clients on normal photographic services provided. Event type and client specific prices.

	New	Professional photography services for various events, online tutorials to improve the knowledge and skills of photographers, and safe outdoor photoshoot. Additional value proposition of a group as their mentors who helps young photographers improve their work.	Paid training for professional photographers through online photography workshops. Precautions taken while undertaking outdoor photography or film shooting. Recommended investment in product: Outdoor photography equipments. Going beyond service delivery and generating even more value for customers.	Earnings that stem from the conventional photographic services are still generated. Extra revenue generated from online photography masterclasses.
P4	Old	The startup provided professional film and photography production services to clients with a focus on commercial and documentary style work. A very high-quality services designed to meet the unique needs of our customers.	On-site services, having focus on meetings, physical premises, and location photography and filming.	Startups revenue generated by charging customers for the traditional film, video, and photography services provided as per their requirements. Mainly prices based on event type and client needs.
	New	Easy accessibility for the customers through improved online visibility. This means that proper working conditions and term and conditions notices that facilitate the usage of the services should be clearly stated.	The expansion of customers' access with an emphasis on digital platform implementation. Changes that are made to motion picture equipment for outdoor shoots.	Revenue generated by charging clients for traditional film and photography services. Prices based on event type and client requirements.
P5	Old	Smart thermostats for home users, serving home consumers, industrial clients, and defense-related organizations.	Initial focus on hardware development for automation solutions.	Revenue generated through product sales, subscriptions, and possibly licensing technology.
	New	Core value proposition remains same	Shift towards software-based initiatives during COVID-19 disruptions.	Emphasis on innovative software development to potentially reduce costs and increase flexibility.
P6	Old	Import and distribute agricultural products, acting as intermediaries between manufacturers and retailers.	Import and distribute agricultural products, ensuring quality and reliability.	Revenue generated through the import and distribution of agricultural products.
	New	Redefined value proposition with a focus on product availability, reliability, safety, and sustainability. Enhanced customer support and engagement through remote channels.	Increased emphasis on in-house production for a stable supply chain, more flexible pricing options, direct-to-consumer engagement through online platforms, and personalized solutions.	Capturing value through more flexible pricing options, bundled packages, cost-effective solutions.

P7	Old	Source saffron from Afghanistan, enabling cost-effective procurement. Focusing on in-person shopping experiences in physical stores.	Emphasize in-person shopping experiences and quality examination of saffron in physical stores.	Revenue generated through traditional sales of saffron
	New	Shift from in-person shopping to robust online sales, adapting to changing consumer preferences.	Showcase products online to adapt to the growing trend of online purchasing.	Revenue generated through traditional sales of saffron
P8	Old	Offer unique and high-quality home decor and gift items. Emphasis on in-store shopping experiences.	Import and manufacture diverse products with a focus on quality. Collaborate with artisans for local manufacturing. Optimize supply chain and logistics. Maintain a diverse product range.	Revenue generated through traditional in-store sales.
	New	focusing on quick delivery, easy returns/exchanges, and the lowest possible prices. Shift from primarily in-store to online sales.	Import and manufacture diverse products with a focus on quality. Collaborate with artisans for local manufacturing. Optimize supply chain and logistics. Maintain a diverse product range.	Increased emphasis on online sales channels. Introduce same-day deliveries, mobile payment gateways, and mobile apps. Incentivize prepayment to reduce cash-on-delivery.
P9	Old	Connect customers with used auto part sellers, offering a wide range of parts for various vehicles. Emphasis on the convenience of online shopping, variety, and efficiency.	Providing an online platform for efficient browsing, comparison, and purchase of used auto parts.	Charging for a product sales
	New	Connect customers with used auto part sellers, offering a wide range of parts for various vehicles. Emphasis on the convenience of online shopping, variety, and efficiency.	Investing in website improvement, SEO, and digital advertising for increased visibility. Streamlining operations for improved efficiency and reduced costs.	Implementing fees for "Emergency Auto Parts Delivery" to local garages.
P10	Old	Emphasis on providing high-quality packaging products to ensure the safety and security of goods during transportation.	Focused on the traditional manufacturing and distribution of packaging products.	Revenue generated through the sale of packaging materials.
	New	Introduction of manufacturing printers for rapid order fulfillment, meeting customer demands promptly. Emphasis on accessibility, convenience, and a robust online presence. Offering a holistic solution for those relocating residences.	Acquisition of printers significantly improves order fulfillment time, enhancing overall manufacturing efficiency	Revenue generated through the sale of packaging materials.

P11	Old	Emphasis on selling traditional Pakistani arts and crafts products, reflecting the cultural heritage. Initial focus on international markets.	Sourcing traditional products and listing them online for global sales.	Revenue generated through the sale of traditional products.
	New	Fusion of traditional and innovative products, offering a broader range. Simplified sending of gifts and greeting cards. Tailoring offerings to meet the changing preferences and latent demand within Pakistan.	Collaborating with artisans to enhance the quality of products. Introduction of fusion art products. Simplifying online transactions, and focusing on local market preferences.	Revenue generated through the sale of traditional products.
P12	Old	Basic consultations and prescriptions, limited scope primarily in urban areas.	Limited Service Offerings Basic telemedicine services with revenue primarily from consultation fees.	Primary revenue source from basic telemedicine services.
	New	Telemedicine, home nursing, home care, mental health support, chronic disease management, medicine delivery, lab tests, and wearable technologies. Extended coverage to underserved rural areas. Customized health plans.	Diversified Healthcare Ecosystem: Creation of value through a wide array of services generating revenue	Consultation fees, subscription models, home nursing and care fees, commissions from medicine and lab test services, and income from partnerships. Diversification of revenue streams to capture value across various healthcare services.
P13	Old	Traditional Handcrafted Products: Peshawari Chappals, handmade shoes, slippers.	Handcrafted Excellence: Delivering high-quality traditional products.	Revenue from Product Sales: Mainly through the sale of traditional products.
	New	Introduction of 'Reward Cards' program for customers, providing discounts of up to 50%, fostering loyalty, and adding value to the shopping experience.	Handcrafted Excellence: Delivering high-quality traditional products.	'Reward Cards' program contributes to revenue through card purchases.
P14	Old	Event Photography and Videography: Capturing and preserving moments	Photography and Videography Services: Shooting events and delivering edited content.	Charging for event photography and videography.
	New	Event coverage, specialized photo/video editing, and the creation of tangible memories through high-quality printed media albums.	Diversified Services: Event-based photography and videography, album design and printing, specialized photo and video editing. Offering a broader range of visual content solutions.	Event-based contracts, revenue from album sales (design and printing), and freelance editing services for both event-based and external clients.

P15	Old	Provide place, food and service for a good time	Create, cook and serve meals for customers in the restaurant	Get paid for every meal served
	New	Provide meals to eat at home	Cook and deliver meals	Get paid for every meal served

Table 6: Difference Between Old and New Business Model of the Startups

5.7 Finding link to research gap:

The findings of this study directly address the research gap identified in the thesis, providing valuable insights into how startups leverage dynamic capabilities and business model innovation (BMI) to navigate crises, specifically in the context of the COVID-19 pandemic.

5.7.1 Dynamic Capabilities in Crisis Response

The first theme, "Sensing Challenges faced by startups," aligns with the 'sensing' aspect of dynamic capabilities as outlined by Teece (2007). Our findings extend this concept by detailing how startups specifically sense and interpret challenges in a crisis context. The sub-themes identified – changes in consumer behavior, operational challenges, employee-related issues, and financial constraints – provide a comprehensive framework for understanding the multifaceted nature of crisis-induced challenges for startups. This addresses the gap in literature regarding how dynamic capabilities manifest in startup companies during external crises.

5.7.2 Business Model Innovation as a Crisis Management Strategy

The second theme, "Seizing Opportunities through Business Model Innovation," directly addresses the core of our research gap. It demonstrates how startups operationalize the 'seizing' aspect of dynamic capabilities through BMI, as conceptualized by Chesbrough (2010) and Foss and Saebi (2017). Our findings provide empirical evidence of how startups, despite their resource constraints, innovate their business models to adapt to crisis conditions. This contributes to the limited literature on the interplay between dynamic capabilities and BMI in startup contexts, especially under the influence of major external crises.

5.7.3 Building Resilience for Future Crises

The third theme, "Reconfiguring for Future Resilience," addresses the 'reconfiguring' component of dynamic capabilities and extends it to crisis preparedness. This theme contributes to the literature on crisis management in entrepreneurship, as called for by Doern et al. (2019). By identifying key areas of focus for startups in building long-term resilience – such as digital transformation, customer engagement, and collaborative partnerships – our findings offer practical insights for enhancing startup adaptability and crisis response strategies.

By focusing on Pakistani startups, this study provides unique contextual insights that were previously lacking in the literature. This addresses the gap in understanding how startups in emerging economies leverage dynamic capabilities and BMI to navigate crises, offering a more nuanced and globally representative view of entrepreneurship in crisis. The qualitative approach adopted in this study responds to the call for in-depth, contextual research on crisis management, as highlighted by journals like *R&D Management* (Ferasso et al., 2020). Our thematic analysis provides rich, detailed insights into the lived experiences of startups during a crisis, offering a depth of understanding that quantitative studies might not capture. By linking theoretical concepts (dynamic capabilities and BMI) with practical crisis management strategies employed by startups, this research bridges the gap between academic theory and practical application. The findings offer actionable insights for startup founders, managers, and policymakers on enhancing resilience and adaptability in crisis situations.

In conclusion, this study significantly contributes to filling the identified research gap by providing a comprehensive exploration of how startups leverage dynamic capabilities and business model innovation to navigate crises. The findings offer both theoretical contributions to the fields of entrepreneurship and crisis management, and practical insights for enhancing startup resilience.

Future research can build on these findings to further explore the long-term impacts of crisis-induced innovations on startup success and the broader entrepreneurial ecosystem.

Summary of The Chapter:

This discussion chapter analyzed how startups adapted their business models and operations in response to the challenges and opportunities presented by the COVID-19 pandemic. Major findings highlighted the negative impacts faced, such as declining sales, supply chain disruptions, and operational difficulties during the initial crisis stage. However, the pandemic also created opportunities for innovation, digitalization, and developing new products/services aligned with changing customer needs. Factors like technology adoption, customer relationships, flexibility, and continuous learning were crucial for resilience and survival. The study revealed startups employed varied business model innovation strategies - market-driving, evolutionary, adaptive, and complex - facilitated by dynamic capabilities to modify value propositions, creation, and capture mechanisms. Crisis management was related to cost-saving measures; liquidity management; changes to operations for safety reasons; and, general business continuity planning. Finally, this chapter shows how dynamic capabilities and business model innovation were used as two outlet strategies for startups to deal with the unprecedented pandemic challenges.

6 Chapter 6: Conclusion:

The study on how startups in Pakistan responded to the challenges posed by the COVID-19 pandemic by implementing Business Model Innovation (BMI) emphasizes the vital importance of dynamic capabilities - specifically, sensing, seizing, and configuring - in effectively adjusting to crises and turning challenges into opportunities. These characteristics have demonstrated their importance for startups to effectively adapt to swiftly evolving settings. The results emphasize the importance of BMI as a crucial instrument for companies to adjust to crises and convert obstacles into opportunities. The fundamental components of BMI, including value capture, value proposition, and value production, have become prominent focal points in empowering businesses to effectively adapt to swiftly evolving circumstances.

The pandemic posed distinctive obstacles that necessitated companies to reconsider their methods of generating income. The participants have underscored the need for new approaches to pricing and revenue models. It also ensured that whichever market segment was performing poorly for a period would be paid a price that is less than the cost of the service yet it would still generate for the company a steady inflow of revenue. Also, the application of cost control tools including efficiency of procurement systems and engorging the company's use of online systems were also crucial in continuing the operation of the business. Such changes stress the importance of the more relaxed financial planning process and the more sensitive pricing strategies in creating value during a crisis.

There was also remarkable flexibility among the startups regarding the changes of value offerings to suit the new environment. Management embarked on crucial strategies relative to product and/or service differentiation, better quality and segments of customers. This transformation was not only an out come of crisis but also an opportunity that was seen in the light of the crisis. For instance,

diversification into similar services and focusing on increasing the quality of services allowed startups to work with their existing clients and gain new ones. These strategic shifts clearly demonstrate the importance of ability to continuously align the value proposition to the evolving consumers' needs and the market conditions.

It is evident from the study that digital transformation plays a vital role in the generation of profit during the epidemic. Those companies that embraced digital platforms early were able to maintain client relations, and reach larger audiences even with restricted face-to-face interactions. This is because most of the firms, which were able to sustain their operations and expand depended on the use of online platforms, digital marketing strategies, and e-commerce integration. Moreover, these digital activities are on-purpose and not merely a transient organized response, rather it is an intentional transformation toward a more adaptive and robust corporate infrastructure model in the long run.

Ultimately, the COVID-19 pandemic has highlighted the significance of dynamic capacities in business model innovation (BMI) via the lens of Pakistani startups. Startups rely on the crucial processes of perceiving changes in the environment, grabbing advantageous chances, and organizing resources and operations to successfully adapt and prosper in times of crisis. The knowledge gained from this time is extremely significant, offering a detailed plan for startups to create strong, adaptable, and creative business models that can effectively handle and take advantage of the difficulties of a constantly changing business environment or a pandemic.

6.1 Research Contributions

This research has theoretical and empirical and practical contributions, that are being discussed below.

6.1.1 Theoretical Contributions

The study extends the literature on business model innovation (BMI) and dynamic capabilities by exploring their interplay in the context of startups navigating the COVID-19 crisis. It provides insights into how startups align their deployment of dynamic capabilities (sensing, seizing, and reconfiguring) to pursue BMI. The research sheds light on the different types of BMI (focused, evolutionary, adaptive, complex) that startups engage in over time, expanding the understanding of BMI as a process. The main theoretical contribution of this study are in the following areas of the literature.

6.1.1.1 Extension of Dynamic Capabilities Theory in Crisis Contexts

This research significantly extends the application of dynamic capabilities theory (Teece, 2007) to crisis situations, specifically within the startup ecosystem. By delineating how startups sense, seize, and reconfigure in response to a major external crisis like COVID-19, the study provides a more nuanced understanding of dynamic capabilities in extreme environments. This contribution is particularly valuable as it demonstrates how the theory applies to resource-constrained entities (startups) under severe external pressures, a context that has been underexplored in previous literature.

6.1.1.2 Refinement of Business Model Innovation Framework for Startups

The study advances the theoretical understanding of business model innovation (BMI) as conceptualized by Chesbrough (2010) and Foss and Saebi (2017) by providing a startup-specific lens. It offers a more view of how BMI manifests in startups during crises, detailing specific innovations in value capture, resource allocation, customer interaction, supply chain management, and product development. This refined framework contributes to a more robust theoretical model of BMI that accounts for the unique characteristics and constraints of startup operations.

6.1.1.3 Integration of Dynamic Capabilities and BMI in Crisis Management

A key theoretical contribution lies in the integration of dynamic capabilities and BMI theories within the context of crisis management. The study demonstrates how these two theoretical frameworks interplay in practice, with dynamic capabilities driving the process of BMI in response to crisis conditions. This integrated model provides a more comprehensive theoretical basis for understanding organizational adaptation and resilience in turbulent environments.

The research introduces and develops the concept of crisis-driven innovation specific to startups. This theoretical construct encapsulates how external crises act as catalysts for rapid and radical business model innovations in entrepreneurial ventures. It extends existing innovation theories by highlighting the unique patterns and processes of innovation that emerge under crisis conditions in resource-constrained environments.

6.1.1.4 Expansion of Entrepreneurship Theory in Crisis Contexts

Building on the work of Doern et al. (2019), this study expands entrepreneurship theory by providing insights into how startups navigate and potentially thrive during crises. It contributes to a more robust theoretical understanding of entrepreneurial resilience, adaptability, and opportunity recognition in adverse conditions, enhancing our conceptualization of entrepreneurship as a dynamic, crisis-responsive process.

6.1.2 Empirical Contributions

The study offers empirical evidence from Pakistani startups on how they innovated their business models in response to the COVID-19 pandemic, specifically in terms of value capture, value creation, and value proposition. It highlights the strategies adopted by startups, such as diversifying revenue streams, enhancing customer engagement, digital transformation, supply chain reconfiguration, and product/service range expansion. The research provides valuable insights into

the role of entrepreneurs' resilience, adaptability, and crisis management approaches in enabling BMI during turbulent times.

6.1.3 Practical Contributions

The findings offer practical implications for startups and entrepreneurs, providing a blueprint for developing resilient, agile, and innovative business models to withstand and capitalize on crisis situations. The study emphasizes the importance of strategic adaptability, market responsiveness, digital transformation, customer engagement, and collaborative resilience for startups to navigate uncertainties and seize new opportunities. It highlights the significance of crisis preparedness, proactive measures, and flexible leadership in managing crises effectively.

6.2 Limitations:

6.2.1 Geographical Scope:

The study is focused solely on Pakistani startups, which may limit the generalizability of the findings to other geographical contexts and startup ecosystems.

6.2.2 Industry Scope

The research covers startups from various industries, but there might be industry-specific nuances and challenges that are not fully captured in the broader analysis.

6.2.3 Methodological Limitations

As the study employs a qualitative approach, the findings may be influenced by the researchers' interpretations and subjective biases. This study also faces some limitations common to qualitative research in business contexts. The relatively small sample size, while allowing for in-depth analysis, may not fully represent the diverse startup ecosystem in Pakistan. The qualitative

approach, though providing rich insights, introduces potential researcher bias in data interpretation. Self-reported data from interviews may be subject to participants' personal biases or inaccurate recollections. Additionally, the focus on specific geographic areas may limit the generalizability of findings to other regions or contexts. These limitations, while not undermining the study's value, should be considered when interpreting the results and planning future research in this field.

6.3 Future Research Directions

Conducting cross-cultural and cross-regional studies to explore the impact of cultural and regional factors on startups' BMI and crisis management strategies could provide valuable comparative insights. Carrying out industry-specific research to explore the unique challenges, opportunities, and BMI approaches within different sectors could yield more tailored and actionable recommendations. Complementing the qualitative findings with quantitative analysis could help establish correlations and causalities between BMI, dynamic capabilities, and startup performance during crises. Given the prominent role of digital transformation in startups' responses to the COVID-19 crisis, further research could delve into the specific technologies, digital platforms, and strategies that enable effective BMI and crisis management.

Overall, this research contributes to the growing body of knowledge on BMI, dynamic capabilities, and crisis management in the context of startups, while also providing practical guidance for entrepreneurs and policymakers. Future research can build upon these findings by addressing limitations, exploring new contexts, and incorporating complementary methodological approaches to deepen our exploring of this critical domain.

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8 Appendices

8.1 Consent Form

Participant Consent Form

- I voluntarily agree to participate in this research study.
- I understand that even if I agree to participate now, I can withdraw at any time or refuse to answer any question without any consequences of any kind.
- I have had the purpose and nature of the study explained to me in writing and I have had the opportunity to ask questions about the study.
- I understand that participation involves giving information about my venture, how I started it and how the network around me helped through my journey.
- I understand that I will not benefit directly from taking part in this research.
- I agree to my interview being audio-recorded.
- I understand that all information I provide for this study will be treated confidentially.
- I understand that in any report on the results of this research my identity will remain anonymous. This will be done by changing my name and disguising any details of my interview which may reveal my identity or the identity of people I speak about.
- I understand that disguised extracts from my interview may be quoted in this research which will be published later
- I understand that signed consent forms and original audio recordings will be retained in the laptop of the researcher until the result of the dissertation is announced.
- I understand that under freedom of information legalisation I am entitled to access the information I have provided at any time while it is in storage as specified above.
- I understand that I am free to contact any of the people involved in the research to seek further clarification and information.

8.2 Interview Guide

Introduction:

Can you tell us about your role and responsibilities in the Startup?

Can you give us an overview of the Startup's main products and markets?

What are the services that your Startup offers to its customers?

How many employees does the Startup have?

What industry does the Startup operate in?

When was the Startup founded?

Business Model Changes

Can you tell me about your startup's business model?

How has it been affected by the COVID-19 crisis?

Have you considered any changes to your business model in response to the COVID-19 crisis? If so, what are they? If not, why not?

How did these changes help your startup to cope with the crisis?

What resources have you utilized to implement business model innovation during the COVID-19 crisis?

Can you tell me about any challenges you have faced when trying to implement business model changes during the COVID-19 crisis?

How have you overcome these challenges?

What is the most important factor to consider while implementing those changes to the business model?

How has the crisis affected your Startup? Would you say it was partly affected or highly affected?

Was the reason for integrating changes into your business model an opportunity or a necessity?

Can you tell us about the source of the Business Model Innovation? Was it an employee, external consultant, or owner?

This section will help us in understanding whether the startup changed their business model or not and will also contribute to understanding how the startup changed their business model.

Crisis Response Strategy

1. What were the crisis responses that your Startup implemented? Were they short- or long-term response strategies?

This section will help in understanding the startup engagement focus of crisis response strategy.

Business Model Innovation:

1. Can you tell us about the old and new value creation processes in your Startup?

a. How has the COVID-19 crisis impacted the startup's access to customers?

- b. Has the startup been able to maintain its partnerships with suppliers, distributors, and other stakeholders during the COVID-19 crisis?
 - c. If yes, can you describe how the startup was able to maintain these partnerships during the COVID-19 crisis?
 - d. If not, how has the COVID-19 crisis impacted the startup's partnerships with suppliers, distributors, and other stakeholders?
2. How has the value proposition changed with the new BMI?
- a. Can you tell me about the recent changes in your target customer or the introduction of a new product/service?
 - b. What was the motivation behind these changes?
 - c. How do you anticipate these changes will impact on your business in the short and long term?
 - d. Can you walk me through the decision-making process that led to these changes?
3. Can you discuss the old and new value capture methods in your Startup?
- a. How has the COVID-19 crisis impacted the startup's revenue?
 - b. How has the COVID-19 crisis impacted the startup's costs?
 - c. Has the startup been able to secure funding during the COVID-19 crisis?
 - d. If yes, how has the COVID-19 crisis impacted the startup's funding efforts?
 - e. If not, how has the COVID-19 crisis impacted the startup's ability to secure funding?

This section will help us in understanding the startup business model innovation. Mainly focused on the business model components i.e Value Creation, Value Proposition, and Value Capture. This section will also help us in understanding the type of business model innovation used by the startup.

Conclusion:

Are there any other insights or information that you would like to share with us about your Startup's BMI?