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The Effect of Covid-19 on Norwegian Entrepreneurs

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Sincerely,

Anna Vathne and Monica Costa Gåseide

Executive Summary

Our qualitative study of 13 Norwegian startups, aim to answer how the entrepreneurial stage affects resilience in terms of opportunity recognition and exploitation, obtaining funding, and exploiting network ties. The sample is divided into three stages of business development and covers various sectors. Results confirm that startups in the early stages can more easily recognize and exploit arbitrage opportunities due to their size, hence, these firms are short-term resilient. Contrary, later stage startups with access to more resources and stronger networks can benefit from lasting market changes, consequently making them long-term resilient. Sector, governmental restrictions, and digitalization also played a significant role in the entrepreneurs' ability to perceive and act on opportunities, thus, affecting their resilience. Further, later stage firms hold strong and formalized ties that supply these firms with valuable information and resources. Contrarily, early stage startups have weaker ties and scarce networks that provide these ventures with general information and fewer resources. Later stage startups are therefore perceived as more resilient. As a result, early stage startups turned to institutional support and digital social networks to counter weak ties and increase resilience. Moreover, the strong social ties that later stage startups hold correspond with the ability to obtain funding, while weak ties and decentralized networks caused early stage startups to rely on institutional actors. Surprisingly, it became evident that the national schemes failed to sufficiently cater to new ventures, thus, making the entrepreneurs less resilient. Despite highly interdependent variables, the strongest link in found in the network exploitation factor. The ability of a startup to utilize its network was significant in all stages and increased the resilience in the other variables.

To increase resilience, early stage startups should focus on proactive network development. On the contrary, we recommend a more collaborative approach for later stage firms in terms of network and continuous development of their innovative culture. For all startups, we advise expanding and nurture potential investor ties to increase their resilience. Furthermore, institutional actors ought to tailor support schemes, frameworks, and procedures to advocate for new ventures' resilience. Lastly, startups must digitize their operations to adapt in the event of a similar crisis rapidly.

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1. Introduction

In December of 2019, an outbreak of a new coronavirus disease emerged from the Hunan seafood market in Wuhan in China (Chakraborty & Maity, 2020). The Chinese government became aware of the virus at the beginning of January 2020, and within months the virus had spread globally and caused a pandemic (Chakraborty & Maity, 2020; Helsenorge, n.d.). The World Health Organization named the virus SARS-CoV-2, which causes the disease Covid-19 (World Health Organization, n.d.). Covid-19 is characterized as a severe acute respiratory syndrome which can cause the full range of no symptoms at all, to mild flu symptoms, and in more severe cases, it can cause the need for intensive treatment and death for seriously ill people (Norwegian Institute of Public Health, 2020; World Health Organization, n.d.). As of 28/06/2021, globally there are 180 654 652 confirmed cases and 3 920 463 reported deaths resulting from the virus (World Health Organization, 2021).

At the end of February 2020, the first case of corona was registered in Norway, and by the 12th of March, the government enforced the most intrusive measures on its citizens since World War II (Kolberg et al., 2020; Norwegian Directorate of Health, 2020a). As a result, the Norwegian society shut down in almost all aspects, forcing several businesses to close down or downsize their operations (Norwegian Directorate of Health, 2020a). Industries that restrictions have heavily influenced include; retail and service sectors, tourism, fish and aquaculture, petroleum, maritime, transport, and the agriculture industry (Norwegian Directorate of Health, 2020b).

Since 2019, the number of firms announcing bankruptcy has declined (Bjørkholt, 2020; Statistics Norway, 2021). However, this can be explained by governmental grants, firms temporarily suspending their operations, as well as deferred taxes and fees (Nilsen, 2021). Further, experts believe that the number of bankruptcies will rise as accumulated payments are due, and opening the society will remove many of the grants and support schemes that startups are dependent on before they can generate sufficient revenues.

Throughout this pandemic, the government has implemented and removed various restrictions and policies to save as many human lives as possible while limiting the economic downturn (Norwegian Government, n.d.). Vaccines are thought to eradicate the Covid-19 virus effectively, and December 2020 marked a significant milestone as the first vaccine was injected in Norway (Kalajdzic et al., 2020). A continuous vaccination of the population allows the government to alleviate infection regulations and policies, consequently bringing society closer to everyday life (Norwegian Government, n.d.).

What differentiates the crisis of Covid-19 from the previous economic crises we have witnessed is that it did not emerge from a consumer lack of desire to buy nor deterioration of the desire to sell (Norman, 2020). Askvik (2020) compares it to the financial crisis of 2009 and predicts that the crisis of Covid-19 will be tougher on startups than what we have witnessed before. Closing the doors and being deprived of all of its turnovers brings more loss than postponed decisions and staff reductions when your business should be in growth mode. Many startups have lost their source of income but kept their costs throughout the crisis period, which results in a deterioration of equity (Steenstrup, 2020). While many Norwegian entrepreneurs overcame the financial crisis as it hit more gently than in other countries, the crisis of Covid-19 affects them to a profound extent (Askvik, 2020). The overall losses will probably be more significant, and more prolonged recovery is needed before we are back to normal. The most considerable difference from earlier crises is that individuals will be affected significantly both shortly and in the long term, either through temporary layoffs, resignations, or bankruptcies (Askvik, 2020). The government has established various loans and grants to aid startups through this challenging time; however, some of the proposed solutions are under critique (Askvik, 2020; Innovation Norway, 2021). The insecurity tied to the future is more prominent now than after the financial crisis, and we can predict that the repercussions will be more challenging and more prolonged than what we have experienced in previous crises.

1.1 Purpose of the Study and Research Questions

The majority of Norwegian firms are categorized as small and medium-sized enterprises (SMEs), and 9 out of 10 ventures have less than 20 employees (Sivam et al., 2018). Firms with less than 100 employees are responsible for a little more than 42% of the National State budget, 62% of employment, and 38% of the total tax contribution (Ministry of Trade and Industry & Office of the Prime Minister, 2019; Sivam et al., 2018). This highlights the significance that small ventures play in upholding employment and the level of welfare that the Norwegian society is accustomed to. How vulnerable SMEs are to internal and external changes is highly dependent on their size (J. Freeman et al., 1983). Smaller firms typically control fewer resources, and thus, when a crisis affects the economy, it is likely to have a significant impact on these businesses. A study conducted by Stephan et al. (2021) found that 40.8% of Norwegian entrepreneurs felt that the pandemic threatened the existence of their business. Further, more than half of the Norwegian entrepreneurs in the study applied for governmental support, while 47.2% implemented temporary layoffs. According to Stinchcombe (1965), startups' resilience during a crisis is affected by their agility, low levels of legitimacy, and dependence on outside parties. Thus, understanding how a startup's life cycle stage and its resilience affect certain factors during a disruptive crisis becomes essential to create best practices for similar shocks in the future.

The entrepreneurial process is a perpetual process of the identification of new opportunities. To identify such opportunities and execute them, it is vital to obtain an extensive network where information, resources, and capital can efficiently be shared (Venkataraman, 1997). Hence, we have identified the three main factors for an entrepreneurial venture to succeed as *opportunity recognition and exploitation, ability to obtain funding, and network exploitation*. Therefore, this research will answer the following principal research question and sub-questions:

RQ 1: How does the entrepreneurial stage affect resilience?

RQ 1.1: How does the entrepreneurial stage affect resilience in terms of opportunity recognition and exploitation?

RQ 1.2: How does the entrepreneurial stage affect resilience in terms of the ability to obtain funding?

RQ 1.3: How does the entrepreneurial stage affect resilience in terms of exploitation of network ties?

RQ 1.4: How are the variables opportunity recognition and exploitation, network exploitation, and the ability to obtain funding interdependent?

We will incorporate literature from several disciplines such as the entrepreneurship field, finance, network, and resilience theory to answer these questions. Through an in-depth literature review, research on the link between the business stage, resilience, and financing during a crisis is limited within the entrepreneurial field. Further, the disciplines have not yet been reviewed in relation to each other. Combining the respective theoretical aspects with entrepreneurial literature and empirical evidence of Norwegian startups, our research will provide an overview of how capable startups are to bounce back to normal or new directions and to what extent the mentioned factors influence their ability to do so. Hence, supplementing the present literature gap.

The Covid-19 pandemic has become an interesting research topic as it is a new and still ongoing pandemic, meaning that at this point, there is not yet a large body of literature that can explain the effects it has had on entrepreneurial ventures. Moreover, our narrow focus on Norwegian entrepreneurs makes our research unique, as there is limited research on how crises affect the startup environment in this country. Further, we hope that this study can be valuable for policymaking bodies, institutional organizations, and entrepreneurs to efficiently counter disruptive times. Finally, in a larger perspective, we believe that this research can contribute to the resilience literature within the entrepreneurial field.

2. Literature Review

2.1 Entrepreneurship

2.1.1 Traditional Entrepreneurship

The field of entrepreneurship draws on several disciplines such as economics, sociology, psychology, management, and business administration studies (Carlsson et al., 2013; Landström et al., 2012). Early contributions to the literature are made by scholars such as Knight, Schumpeter, and Kirzner. They all ground their work in economics and in "the function of entrepreneurship in the creation of new markets" (Landström et al., 2012, p. 1164). Kirzner (1973) believes that entrepreneurship is done by alert individuals who discover profit-making opportunities in the market and effectively coordinate resources to act on these situations, and by doing so, the entrepreneur leads towards a new equilibrium. Comparably, Schumpeter (1934) argued that innovations or "new combinations" had to be made to create a disequilibrium in the market to achieve economic growth. Knight (1921), on the other hand, viewed entrepreneurship as a consequence of unpredicted activities and related entrepreneurial competence to the individual's ability to deal with uncertainty. Prior research on entrepreneurship has focused on discerning the essence and origin of uncertainty that govern entrepreneurial pursuits and examining how entrepreneurial actions decipher amid uncertainty.

At its core the field is concerned with (1) why, when, and how opportunities for the creation of goods and services in the future arise in an economy; (2) why, when, and how some are able to discover and exploit these opportunities while others cannot or do not; and, finally, (3) what are the economic, psychological, and social consequences of this pursuit of a future market not only for the pursuer, but also for the other stakeholders and for society as a whole (Venkataraman, 1997, p. 6).

The framing given by Venkataraman (1997) highlights the importance of the opportunity recognition process, the network the entrepreneur is part of and the role financing has in the entrepreneurial pursuit.

2.1.2 Opportunities

The entrepreneurial process is central within the field. Bygrave (2004) states that "the entrepreneurial process involves all the functions, activities, and actions associated with perceiving opportunities and creating organizations to pursue them." (p. 2). Based on the contribution to entrepreneurial behavior made by Moore (1986), Bygrave (2004) conceptualized essential factors that influence the entrepreneurial process. These are; personal, sociological, organizational, and environmental. The critical factors drive the development of the business, build on each other, and influence every part of the process. Furthermore, Bygrave (2004) argues that at the beginning of the entrepreneurial journey, one of the most critical skills of a successful entrepreneur is the ability to identify opportunities. Thus, explaining the need to study why, when, and how opportunities are created and the factors that determine which individuals are able to discover and exploit these opportunities and which individuals cannot or do not (Venkataraman, 1997). Entrepreneurial opportunities emerge whenever the introduction of new goods, services, raw materials, or organizing methods can generate revenue that exceeds production costs (Casson, 1982).

Based on the view of entrepreneurial opportunities, the literature can be separated into three different schools. These are the economic, cultural cognitive, and sociopolitical schools. The schools believe that opportunities arise from various sources of change and focus on diverse strategies of discovery and exploitation (Companys & McMullen, 2007). The economic school argues that entrepreneurial opportunities exist due to information asymmetry regarding material resources in society (Arrow, 1962; David & Foray, 2003). Opportunities are furthermore considered objective situations awaiting to be discovered (Companys & McMullen, 2007). However, discovery and exploitation require information and material resources. The cultural cognitive school credits the existence of entrepreneurial opportunities to environmental ambiguity, cultural knowledge, and experiences used to interpret and define these opportunities (Companys & McMullen, 2007). Opportunities are viewed as subjective situations that require an interpretation based on cultural resources. Lastly, the sociopolitical school where network and political structures are crucial in discovering and exploiting

entrepreneurial opportunities (Companys & McMullen, 2007). Opportunities are thought of as being objective due to the formation of alliances and the development of networks and subjective because of changes in governance structures.

2.1.2.1 Discovery and Exploitation of Opportunities

In the early phase of entrepreneurship, research on personal attributes found that prior knowledge, social capital, personality traits, entrepreneurial alertness, systematic research, personal values, and education will affect opportunity recognition and exploitation (Ardichvili et al., 2003; Baron, 2006; Bygrave, 2004; Cassar & Friedman, 2009; Garg et al., 2011; Nicolaou et al., 2009; Pekkala Kerr et al., 2017; Tominc & Rebernik, 2007). Possessing prior knowledge provides individuals with unique information on specific topics and allows them to recognize particular opportunities that others who lack knowledge or skills cannot (Hayek, 1945; Kourilsky & Esfandiari, 1997; Kourilsky & Walstad, 1998; Shane, 2000; Venkataraman, 1997). In addition, entrepreneurs can gather needed information and resources in the opportunity recognition process through social capital and access scarce resources which can aid exploitation (Alvarez & Busenitz, 2001; Ardichvili et al., 2003; Fuentes et al., 2010; García-Cabrera & García-Soto, 2009; Shane & Venkataraman, 2000).

The main personality traits of individuals who create new firms are self-efficacy, the propensity to assume risks, the need for achievement, and locus of control (Ardichvili et al., 2003; Baron, 2006; Bygrave, 2010; Cassar & Friedman, 2009; Chen et al., 1998; Garg et al., 2011; Nicolaou et al., 2009; Pekkala Kerr et al., 2017; Tominc & Rebernik, 2007). To identify niche opportunities in the market, creativity and high levels of intelligence are essential (Ardichvili et al., 2003; Baron, 2006; Nicolaou et al., 2009; Ramos-Rodríguez et al., 2010).

Self-efficiency characterizes a person's "belief that he/she can perform tasks and fulfill roles, and is directly related to expectations, goals and motivation" (Cassar & Friedman, 2009, p. 242). Literature asserts the hypothesis that an entrepreneur thrives on self-efficiency to execute ideas and has high personal self-efficacy towards risk-taking, innovation, management, and financial control (Chen et al.,

1998; Pekkala Kerr et al., 2017). Regarding entrepreneurs' attitudes towards risk, it is broadly agreed that entrepreneurs must tolerate risk and recognize and create business opportunities that can be brought to market (Pekkala Kerr et al., 2017). Knight (1921) proposes that entrepreneurs differ from others by their ability to be sagacious towards perceiving and acting on new opportunities regardless of risk and uncertainty. Entrepreneurs have a higher need for achievement and continuously seek to satisfy that need and their competitive urge (Bygrave, 2004; Pech & Cameron, 2006). An important entrepreneurial characteristic in literature is locus of control. Rotter was the first to introduce the concept in his theory of social learning. The concept conveys that people with an internal locus of control believe that they themselves can influence an outcome through their efforts, skills, and abilities (Rotter, 1954). On the contrary, people with an external locus of control believe that external forces control the outcome (Rotter, 1954). Past research has linked this belief of internal locus of control to the probability of engaging in entrepreneurial activity.

Entrepreneurial alertness is also crucial in opportunity recognition, and Mary George et al. (2016) defines alertness to be "the capacity to possess keen insights into identifying entrepreneurial opportunities." (p. 336). A mutual understanding in the field is that high levels of alertness can result in opportunity identification without active search or by just observing the phenomena (Mary George et al., 2016). Lastly is the systematic search for opportunities within a known information domain found to help in opportunity discovery (Fiet et al., 2005). When a discovery is made, there is a fit between prior knowledge about a specific domain and the venture creation idea (Baron, 2006). This prior knowledge stems from experience and social capital.

2.1.2.2 Opportunity Implications for the Entrepreneur, Stakeholders, and Society

The creation and exploitation of opportunities have different effects and implications on distinct actors. An opportunity for profit is created as the entrepreneur trades their time, money, and effort without knowing the future returns of those investments (Knight, 1921). According to Venkataraman (1997), entrepreneurs usually are resource and cash-poor, and thus, dependent on institutions and networks to gather resources. Moreover, the entrepreneur has to

drive business development to turn speculations into insights. When creating new markets, products, or services, there is a lack of readily available information for potential stakeholders. Usually, there is an information asymmetry between the parties involved in a project, as entrepreneurs have more knowledge about details (Venkataraman, 1997). This can cause buyers and suppliers to hesitate with necessary investments in assets or formal cooperative arrangements required to develop the company, consequently leading the market process to fail. Lastly, he argues that entrepreneurship is beneficial for the society in that it creates social wealth (Venkataraman, 1997). Even though selfish goals might fuel the entrepreneur, they also create benefits for society by establishing new markets, industries, jobs, and technology.

2.1.2.3 External Factors that Influence Opportunity Recognition

Mary George et al. (2016) lists external factors that can influence or affect opportunity recognition: a society's economic growth, social and political contexts, and geographical location. These findings are consistent with the environmental factors of economy, resources, and government policy, which Bygrave (2010) views as influential for the entrepreneurial process. Changes to the society's economy make opportunity recognition feasible, and economic stability is critical in creating a positive atmosphere for entrepreneurial activity (Bosma & Harding, 2006). However, information about a society's available resources is crucial for entrepreneurial opportunities (Singh et al., 2008). New information through changes in technology, social mores, the political climate, or demographic factors can ease opportunity discovery or creation (Schumpeter, 1934; Shane & Venkataraman, 2000). However, according to Kirzner (1973), individuals are, on average ignorant about these resources. Furthermore, Shane and Venkataraman (2000) emphasize that information is limited about how to use the resources for discovery and exploitation efficiently. Within the social and political context is the availability of capital, government regulations, and policies, which can affect the entrepreneur's recognition process (Tominc & Rebernik, 2007).

2.1.3 Financing an Entrepreneurial Venture

For a company to grow, financial capital is an essential resource (Penrose & Penrose, 1959). Bygrave (2003) explains that entrepreneurs are the engine that drives a new company, and financing is the fuel that propels them. Startups are generally wealth-constrained and obligated to probe for external investment to pursue their opportunities (Casson, 1982). Considering the capital market that funds new ventures, it is prominently entailed to risk on the one hand and a potential for a substantial return on the other. Drover et al. (2017) constructed an outline of the equity funding landscape and emphasize the following forms of equity funding; *venture capital (VC)*, *angel investor*, *accelerators*, and *crowdfunding*.

First and foremost, VC bears to be the most familiar form of equity. However, it is rare, and this type of investment is only acquired by a fraction of startups (Drover et al., 2017). Although funding from VCs is hard to obtain, the impact of this type of investment is immense (Bygrave, 2003). The role of a VC is to raise funds on behalf of a set of partners and provide returns from their investments in innovative companies (Gompers & Lerner, 2000). A VC tends to get actively involved in the startup they invest in and is often assigned a position as a board member with economic rights in the organization (Sahlman, 1990). Angel investors are affluent individuals who invest their own personal capital (Mason & Harrison, 2015). In addition to investing capital, the angels often share knowledge within their area of expertise (Sørheim & Landström, 2001). These investors are an important source of early stage funding as they invest in more businesses than VC funds (Gaston, 1989; Mason & Harrison, 2000; Sohl, 2012). Similar to an angel investor, an accelerator also provides a configuration of mentorship, and funding in exchange for equity, but also access to workspace (Drover et al., 2017). Powered by the internet, entrepreneurs can also use crowdfunding to gather funding from a relatively large group of individuals without enlisting the support of traditional investors or financial intermediaries (Belleflamme et al., 2014; Mollick, 2014).

2.1.3.1 Investing Criteria

Angel investors are heterogeneous compared to venture capitalists (Sørheim & Landström, 2001). As a result, it is challenging to define particular investment criteria that could easily be generalized for an angel investor's funding assessment. Though, Sudek (2006) attempts to generalize some criteria used in the process; (1) trustworthiness of the entrepreneur(s), (2) the level of enthusiasm of the entrepreneur, (3) quality of the startups' management team, and lastly (4) the opportunities for an exit for the angel. On the contrary, venture capitalists are, to one extent, more homogeneous. Sahlman (1990) presents the following criteria for assessment of a potential investment in regards to a VC; (1) a forecast of reflections of successful realization of achievable long-term goals, (2) conversion of terminal value to present value through applying a high discount rate, normally between 40-60%, (3) estimates of achievable value accumulated, and (4) a thorough calculation of the portion of company stocks that will be owned by the VC firm, depleted by dividing the required investment by the company's total present value (Sahlman, 1990). In addition to these criteria, Baum and Oliver (1991) stated that a more substantial network would increase the founder's probability of obtaining funding and resource securement.

2.1.4 Network

Previous research asserts that interaction with various actors and networks plays a critical role in the development of startups (Elfring & Hulsink, 2007; Hallen, 2008). Further, social capital is viewed as essential to entrepreneurs as it may influence a startup's performance, conduct, and survival (Aldrich et al., 1986; Hansen, 1995; Watson, 2007; Zhao & Aram, 1995). According to Maurer and Ebers (2006), social capital can be understood as "an asset available to individual or collective actors that draws on these actor's positions in a social network and/or the content of these actors' social relations." (p. 262). Thus, for startups, potential value can be found through social capital as actors can gain access to information and resources in their network.

The specific network that the founder and startup belong to and their location in the network is crucial (Gulati et al., 2000). A more central position in a strategic

network gives the entrepreneur superior information and opportunities than those on the network's outskirts. A startup will develop strong and weak ties as they initiate relationships with other actors (Elfring & Hulsink, 2007). Strong ties are characterized by reciprocity where resources and/or activities are mutual and joint, and there is significant trust and access to high-quality information through frequent contact (Uzzi, 1997). Oppositely, weak ties are described as new relationships or indirect connections to other actors (Granovetter, 1973; Thornton et al., 2013). Thus, these ties offer a lower level of trust and adjustment as interaction is less frequent.

In emerging startups, the entrepreneur's personal network is almost synonymous with the organizational network of the company, making it the firm's most valuable strategic asset for providing resources for further growth (Aldrich et al., 1986; Hite & Hesterly, 2001; Johannisson, 1986). Later stage companies formalize interpersonal network ties through routines and procedures (Bratkovic et al., 2009). These ties can turn into inter-organizational ties, which provide a different type of strategic resource. As the startup grows, these ties become more critical, consequently making the personal ties of the entrepreneur lose their importance.

A concerning high failure rate among startups opens up for intermediary organizations that want to help emerging firms. Incubators and accelerators represent actors that are established to help new businesses. The main reasons startups locate in incubators are to gain support for their entrepreneurial process, mobilize resources and establish legitimacy (McAdam & McAdam, 2008). Incubators can offer services such as access to physical or financial resources, administrative services, assistance with startup procedures, and access to networks (Carayannis & Von Zedtwitz, 2005). Usually, new ventures do not have a time limit in incubators as they operate as open-ended engagements (Cohen, 2013; Grimaldi & Grandi, 2005). On the other hand, accelerators offer the selected few in a cohort a fixed-time period experience where the startup can access mentorship, workspace, and/or financing, often in exchange for ownership (Drover et al., 2017). Through this experience, entrepreneurs can accelerate their concepts on-site and finish off pitching to potential investors and stakeholders at

the final event of the cohort, which is the "demo day" (Drover et al., 2017). Through both types of programs, startups build networks with other emerging firms, potential investors, and stakeholders.

Entrepreneurs can also build relationships online, and social media is increasingly important to connect with other entrepreneurs (Fischer & Reuber, 2014) as well as establish weak ties and nurture strong ties (Morse et al., 2007). C. Smith et al. (2017) found that entrepreneurs can find networks where participants are similar to themselves by using social network sites. By creating network content and making social judgment assessments, they can broaden their networks more efficiently. Moreover, information found in online networks allows the entrepreneur to develop relations that would not have happened offline, identify calculative ties, and visualize and broker structural holes. Lastly, the online context supports effective network deepening behavior as entrepreneurs can convert their weak ties to strong ties by finding common ground and shared attributes with others (C. Smith et al., 2017). Nurturing these strong ties can be less time-consuming when done online.

2.2 The Entrepreneurial Process

2.2.1 Stages of Growth in Small Businesses

Business growth is a central topic in the entrepreneurship domain (Shane & Venkataraman, 2000). The failure rate for startups paints a bleak picture of growth as 20% of startups fail within their first business year, 60% by their fifth year, 75% are unsuccessful by the tenth year, and a mere 10% survive past a decade. Understanding factors that influence how firms can survive and grow in their early years is vital to reducing new ventures' high failure rate (Lai & Lin, 2015). Scholars have long attempted to explain business growth through business life cycles. The following chapter outlines the first three stages within stage literature.

2.2.1.1 Stage 1

According to Picken (2017), the first business stage is all about defining and validating the concept of business, which concerns aspects such as the business model, market opportunity, the offering, and go-to-market strategy. The focus is

rather narrow, and the commitment in terms of time and resources is limited. Further, the economic risks are limited, and the organization is more fluid and unstructured. Similarly, Greiner's (1998) research focuses on creating a product and market. The founders are generally technically or entrepreneurially oriented and spend all their time and efforts on production and sales rather than managerial tasks. The organization is flat with frequent and informal communication, the decisions are highly influenced by market feedback, and most often, long hours are compensated with a modest salary. Scott and Bruce (1987) emphasize that usually, the focus is on establishing a commercially viable product or service, which generally results in one operating unit, putting all their efforts into a single market with limited distribution channels. Key issues, in the beginning, relate to obtaining customers and economic production. Financing is derived from the owner(s), their close personal network, and suppliers leasing. Moreover, the startup does not generate cash, and major investments relate to plants and equipment (Scott & Bruce, 1987).

The transition towards the next stage commences when the firm gains traction in the marketplace (Picken, 2017). Transitioning from the first stage to the other requires the entrepreneurs to complete the offering and establish a sound foundation to position the organization for rapid growth. When the firm is able to attract customers, the need for additional capabilities and resources increases. Greiner (1998) agrees with Picken (2017) that the firm needs additional resources as the production enlarges. Further, he argues that the founders need to find new ways to motivate and compensate employees as the organization grows, considering that new employees may not be motivated by the same dedication that the founders have. The founders need to take more managerial responsibilities, and additional funding is required to scale the business (Greiner, 1998). Scott and Bruce (1987) believe that to transition to the next stage the company will likely face one or multiple of the following crises; a change in focus towards an emphasis on profit, where the primary focus is on generating a positive cash flow, the administrative demands, and increased activity and its demands on time.

2.2.1.2 Stage 2

Picken (2017) argues that the second life cycle is when the organization transitions from being loosely structured to establishing the necessary structure and discipline needed for rapid growth. The entrepreneur has to focus on having a fully developed offer and position the organization for rapid scaling. The founders need to address hurdles relating to future growth, market responsiveness, and organizational concerns while building financial capabilities (Picken, 2017). The research of Greiner (1998) is similar in that more directive leadership is introduced at this stage. Likewise, the organizational structure becomes more formal with a separation between business areas, impersonal communication, and increasingly specialized tasks. Key supervisors are responsible for instituting direction, while lower-level supervisors are treated as functional specialists. Information systems such as inventory control are introduced, alongside budgets, incentives, and work standards (Greiner, 1998). Scott and Bruce (1987) view organizations that reach this stage to potentially be workable business entities. The firm is run with an entrepreneurial management style, but administrative roles are assigned, and the structure is still simple. The company focuses on one viable product or at least a limited range of products in one market. Scale is gained from sales growth and market expansion which causes the need for expanded distribution channels to reach the enlarged market. Revenues and expenses are the key issues. Financing still derives from the owner and their personal network. However, professional external sources of finance are commonly accessed at this stage (Scott & Bruce, 1987).

According to Picken (2017), increased traction and sales are the driving forces that push firms to the next stage. As customers engage with the startup, it needs to gather additional resources and new capabilities. This results in an increased scope and complexity of challenges the founders need to address in the following stage. Greiner (1998), on the other hand, claims that the growth is due to a crisis of autonomy. Employees with knowledge and experience, often more than the leaders at the top, can feel restricted by formal structures and a centralized hierarchy. Scott and Bruce (1987) believe that the next stage is reached by surviving one or more of these crises; overtrading, increased complexity of

expanded distribution channels, a change in the basis of competition, and pressures for information.

2.2.1.3 Stage 3

Entering the third stage in the life cycle, the firm should leverage partnerships and processes and seize compelling resources to scale the business (Picken, 2017). The main objective is to achieve rapid growth to establish a market position and obtain a competitive scale. Further, the organization must become more formal, roles should be established, and ad hoc decisions are replaced by processes and policies. Greiner (1998) argues that the decision-making and organizational structure becomes more decentralized in this stage, and top management is involved occasionally. Similarly, Scott and Bruce (1987) affirm that the organizational structure has become more formal with functional lines. However, they argue that the management style is still entrepreneurial, but more time will be used to coordinate activities between functional managers. The top management's role has turned to delegation and coordination of responsibilities and tasks. The firms still focus on one product or a limited range for a single market, however, multiple distribution channels are often used.

2.2.1.4 Factors that Accelerate Stage Transition

Literature has long tried to develop reasonable models for growth predictions within the entrepreneurial field (Gabrielsson & Gabrielsson, 2013). However, these earlier models have been criticized for being too linear and sequential. Due to rapid globalization and digitalization, firms within small home markets and limited trade barriers especially experience a need for rapid internationalization to become viable and survive (S. Freeman et al., 2006; Taylor & Jack, 2013). Many national markets are highly competitive, limited in size, mature, and too isolated to provide high-income growth opportunities for SMEs. The benefits of scaling operations internationally include access to new markets, economies of scale and scope, learning opportunities, and low-cost factor inputs (Kim & Aguilera, 2015). Moreover, Abdi and Aulakh (2018) explain that such an expansion increases the scale of operations which influences performance.

Within the last decade, new digital technology has altered the nature of entrepreneurial uncertainty regarding entrepreneurial processes, outcomes, and dealing with uncertainty (Nambisan, 2017). The two main implications are less predefined bearing of entrepreneurial agency and less bounded entrepreneurial processes. Furthermore, through digitalization, businesses are challenging the conduct of the economy, moving towards a more global and digital world (Soto-Acosta, 2020). Soto-Acosta (2020) describes digitalization as "turning interactions, communications, business activities, and business models into (more) digital ones." (p. 260). Accordingly, digital firms are referred to as all organizations that, to some degree, either partially or entirely, manage to incorporate digital means into their business processes and stakeholder management (Laudon & Laudon, 2019; Soto-Acosta et al., 2016).

2.3 Resilience During a Crisis

2.3.1 Crisis

Drawing on Pearson and Clair's (1998) definition, a crisis is perceived by critical stakeholders as a low-probability and high-impact situation that would threaten the entity of the venture. The threat is concerned towards both the organizational operations and the individuals involved as it could cause a setback or loss of common beliefs and shared meaning held by the individuals in the organization.

Model 1: *Six-phase event sequence of a crisis*



(Doern et al., 2019, p. 404)

Doern et al. (2019) presented the six-phase model above drawn from Buchanan and Denyer's (2013) research on *Tomorrow's Crisis*. The emphasis of their study is rather on the different segments than on the sequence entirely. The first segment considers the planning prior to a crisis, resilience, and preparedness (Turner & Pidgeon, 1997) and whether an extreme event can be avoided (Hollnagel et al.,

2006). The second segment is about identifying a crisis and its speed (Weick, 1993), while the third is about decision-making on crisis constraints (Weick & Sutcliffe, 2001). The fourth and fifth segments present why crises typically emerge (A. D. Brown, 2000; Carroll, 1998), and organizational learning and barriers of learning (D. Smith & Elliott, 2007; Toft & Reynolds, 2005). The sixth and last segment of a typical crisis event emphasizes active learning and implementation (Buchanan & Denyer, 2013). Toft and Reynolds (2005) argue that active learning can affect resilience. However, it is often ignored in cases of extreme events. Further, they argue that it may be advantageous for extreme circumstances to refer to lessons learned from previous events through isomorphic learning, meaning that lessons learned from one setting can be derived from similar settings (Toft & Reynolds, 2005). Isomorphic learning can be useful in terms of differing incidents through identical consequences, contrary organizations but similar industries or sectors, and firms in different sectors that use similar processes. Using isomorphic learning has proven more effective in acquiring knowledge and practices than traditional generalization of active learning in volatile times.

2.3.2 Resilience in Entrepreneurship

The concept of resilience is broad and frequently used in various fields, and whether used in relation to individuals or organizations, resilience typically involves "maintenance of positive adjustment under challenging conditions" (Vogus & Sutcliffe, 2007, p. 3418). Williams et al. (2017) articulate the concept as bouncing back from defeats, while Ortiz-de-Mandojana and Bansal (2016) emphasize the ability to "...anticipate, avoid, and adjust to shocks in their environment." (p. 1615). Beyond bouncing back and merely adapting to the situation, forward-oriented resilience refers to how entrepreneurs are able to dynamically respond by exploiting new opportunities or developing new identities (Hamel & Välikangas, 2003; Walker & Salt, 2012; Wastell et al., 2007). The literature is sparse on resilience research focused on small businesses and is a recognized subject for further research (Wishart, 2018).

Sullivan-Taylor and Branicki (2011) examine the resilience framework developed by Weick and Sutcliffe (2001), which introduces four categories of capabilities required for an organization to be resilient; resourcefulness, organizational preparedness to make decisions and take action, technical ability in terms of organizational systems and rapidity of managers decision making (Sullivan-Taylor & Branicki, 2011). The scholars found that new ventures have a tendency to fall short in all except rapidity. Moreover, managers of new ventures tend to get by without much planning due to limited capabilities and previous experience in preparing for disruptions (Weick & Sutcliffe, 2001). Thus, they are likely to be skilled in rapid change due to the uncertainty they face daily. Small ventures tend to cope with change when it commences, rather than proactively plan for disruption (Herbane, 2010), and the ability of these firms to change effectively by mobilizing and integrating external resources are essential to overcome crisis events (Ates & Bititci, 2011; Battisti & Deakins, 2017). A SME's capability to access external finance is vital for the firm's resilience (Wishart, 2018). The most resilient businesses in the face of a crisis are those with sufficient access to capital (Lee et al., 2015). McGuinness and Hogan (2016) note that the SME's financial positions prior to the disruption are considerably more important than the venture's size or age in terms of resilience. Resource and capability restraints are associated as obstacles in terms of a firm's resilience. However, Pal et al. (2014) assert that SMEs often have the ability to rotate strategic assets by focusing on, for instance, networking and access to finance and material assets. Literature has also treated globalization as a factor that could increase an SME's resilience, enabling them to expand quickly into new markets (Hilmersson, 2014).

Typically, the least risky business strategy is to stick to the status quo (Wishart, 2018). However, in times of disruption, the ability to adapt your strategy will offer the firm a better chance of survival. Resilient organizations tend to respond to disrupted environments by accommodating higher risk strategies in terms of product innovation rather than more safe strategies (Bamiatzi & Kirchmaier, 2014). Considering interventions to improve resilience for entrepreneurs, Gray and Jones (2016) assert that introducing organizational development and learning programs focusing on collaboration may improve the entrepreneur's resilience. The reason for this is the known phenomenon that entrepreneurs are often isolated

from others, and thus, creating a community of supporting peers may help these entrepreneurs to develop their skills and knowledge. In terms of networks, developing virtual communities of practice (Gimenez et al., 2017) and connecting with others in similar situations to generate predictions and strategies to overcome foreseen challenges may help the firm's resilience (Seville et al., 2008). Further, Baron and Markman (2000) find that the manager's social capital and skills influence the firm's resilience and success. The combination of social skills and capital is crucial in terms of resilience as the network is prone to bear opportunities and acts as a door opener for expanding the network.

2.3.3 The Effect of Digitalization on Resilience

The Covid-19 pandemic enforced strict social distancing measures and lockdowns, consequently accelerating the adaptation and speed of digitalization (Soto-Acosta, 2020). Practically all aspects of business from production to consumption have been influenced, and the seamless connectivity has given access to a much more global reach of goods and consumers. The consequences of these restrictions have caused a rapid increase in internet traffic of 60% from December 2019 to May 2020, and the use of video conferences has increased by 120% (Soto-Acosta, 2020).

Digital transformation supports businesses' resilience, as digital transformation occurs when digital tools are adopted and new skills emerge (Fitriasari, 2020). Within the DNA of startups lay a culture and flexibility to take advantage of digitalization, thus countering the lack of business experience. Even though more established firms contain extensive business experience, their ability to digitize could be restricted due to an established organizational structure, culture, and values (Soto-Acosta, 2020). Digital transformation does not necessarily require a firm to abandon its current business model models (Soto-Acosta et al., 2018). This process rather complements and improves the traditional. Levkovskyi et al. (2020) explain that new ventures can experience improved processes through automation, time, and cost reductions by incorporating digital technologies. Furthermore, it allows for business model innovation which opens for increased market shares and profitability ratios. Finally, customer experiences can be elevated by

increasing consumer satisfaction and trust levels (Levkovsky et al., 2020). Therefore, knowledge becomes critical for companies to create new value streams.

As the rapid growth of digital technologies has emerged, work from home (WFH) has become increasingly common and acts as an important element of future work practice (Bai et al., 2021). The digital solutions that enable WFH practices are not necessarily new (Brynjolfsson et al., 2020). Nevertheless, the pandemic has accelerated the adoption of these solutions radically (Bai et al., 2021). The unanticipated outbreak of the Covid-19 pandemic has forced many ventures to adopt WFH practices and enlightened the importance of work flexibility. There is evidence of WFH practices as an enabling factor to continue business operations, as digital tools opened for effective communication with customers and suppliers during a lockdown. However, some firms are not as feasible to do so, making these firms less resilient (Bai et al., 2021). Consequently, findings demonstrate that organizations with higher degrees of WHF practiced prior to the pandemic hold higher resilience and proved significantly better results in net incomes and sales.

2.4 How does the Entrepreneurial Stage Affect Resilience?

2.4.1 How Does the Entrepreneurial Stage Affect Resilience in Terms of Opportunity Recognition and Exploitation?

When growing their business, entrepreneurs can face unsatisfactory results, which force them to improve their situation. The entrepreneur has to decide if they want to continue with the current action of the company, abandon it or redirect it (McMullen, 2015). A redirection of action is labeled as a pivot (Hampel et al., 2020). According to Ries (2011), a pivot can be defined as "structured course correction designed to test a new fundamental hypothesis about the product, strategy, and engine of growth." (p. 149). Linnenluecke (2017) asserts that crisis events often provoke unforeseen consequences for ventures, such as immediate declines in sales and resources. Previous health crises have forced small ventures to reduce the volume of their businesses, staff numbers, and profitability (Irvine & Anderson, 2004). Contrary, major exogenous shocks may also open for new

market opportunities for business expansion or create the need for alternative products and services, which may cause businesses to rethink their offers (Doern, 2016; Irvine & Anderson, 2004; Morgan et al., 2020).

To thrive in the event of a crisis, resilience theory explains that adaptability and flexibility in the ability to adjust resource inputs and processes are essential (Smallbone et al., 2012). The entrepreneur's response to a crisis depends on varying factors such as the entrepreneur's experience, the stage of business development, and resources in terms of how the entrepreneur utilizes and sustains these throughout the time of crisis (Doern et al., 2019). Knowledge about available resources is vital for opportunity recognition and exploitation (Singh et al., 2008). Changes in the availability of capital and the political climate affect the discovery process (Schumpeter, 1934; Shane & Venkataraman, 2000; Tominc & Rebernik, 2007). As startups have few resources, they must gather this from external actors and institutional support (Casson, 1982; Venkataraman, 1997).

According to Schreyögg and Sydow (2011), a startup still exploring opportunities is not locked into a particular trajectory. However, as the organization grows, it loses its agility and narrows the search for new opportunities, which may result in path dependency. A more established firm's ability to experiment can be subject to core rigidities, and exploration may result in inferior performance that can hurt the firm's capabilities (Argyres et al., 2019; Leonard-Barton, 1995). In the case of a crisis that opens up for arbitrage and innovation opportunities, a startup is better positioned to exploit arbitrage opportunities that are easily accessible as it has not yet developed core competencies (Anokhin et al., 2011). Disruptive changes caused by exogenous shocks that have a lasting effect on society make innovation a better option for more established firms (Devece et al., 2016). Their resource embeddedness, stakeholder obligations, and established resource base make the exploitation of arbitrage opportunities more difficult (Morgan et al., 2020). Consequently, established firms are advised to pivot with caution (Anokhin et al., 2011). The new direction and opportunities at hand should be demonstrably superior to the previous one and fit well with their competence-base.

2.4.2 How Does the Entrepreneurial Stage Affect Resilience in Terms of the Ability to Obtain Funding?

A new venture's capabilities to access funding during a crisis are fundamental (Wishart, 2018), as the most resilient firms are those with sufficient access to capital (Cowling et al., 2012). Mason and Harrison's (2015) study exploits the investment activities in the UK during the financial crisis and explains how new ventures are more likely to access finance in times of disruptions. In volatile periods, it has been recognized that small ventures often face major challenges in accessing rather small sums of risk capital. Nevertheless, the financial position of the startup prior to the crisis event is considered more important than the age and size of the venture in terms of the firm's resilience (McGuinness & Hogan, 2016).

In a crisis event, the need for capital gathered by friends, family, and fools (3F) increases (Mason & Harrison, 2015). After that, the startups tend to seek external capital from soft funding sources such as government grants. Institutional support is known to make firms more resilient (Korber & McNaughton, 2018). Finally, startups move on to equity funding that includes business angels, venture capital funds, and eventually stock market listings (Mason & Harrison, 2015).

Entrepreneurs who possess a vast network are expected to obtain funding and resources more efficiently; thus, increased social capital improves an entrepreneur's resilience (Baum & Oliver, 1991; Jia et al., 2020). Evidence shows that VC investments have been more difficult to access because they narrow their focus towards their core sectors (Conti et al., 2019). The total amount allocated to funded startups does not change; however, startups closer to the core sectors of an experienced VC will enjoy greater resources than the others. Yet, angels have proven to become more likely to partake in larger investment deals as they pursue funding opportunities that have previously been financed mainly by the venture capital territory (Gaston, 1989; Mason & Harrison, 2000, 2015; Sohl, 2012). Additionally, evidence shows an increase in investment behaviors within follow-on investments.

R. Brown and Rocha's (2020) research on the Covid-19 pandemic discloses that equity investments in SMEs in China across all stages of the investment process have decreased. The investments are down by more than half on a year-to-year

basis from quarter 1 in 2019 to quarter 1 in 2020. This severe decline of investments is three times the size of the decrease found following the financial crisis (Block & Sandner, 2009). The economic shock introduced by the Covid-19 pandemic, thus, surpasses the one created by the financial crisis of 2008-2009 (Baker et al., 2020). Nascent entrepreneurial firms are the ones who suffer the most due to information problems, newness, and the need for close investor-entrepreneur interaction (R. Brown & Rocha, 2020). Another study by R. Brown et al. (2020) determined that seed investments deals in the UK are down by almost 40% in the first quarter of 2020 compared to the year before. Later stage deals are more resilient as investors are familiar with the firms and necessary face-to-face interaction is already complete. In accordance with the findings of R. Brown and Rocha (2020), nascent entrepreneurs are again noted as the ones who suffer the most (R. Brown et al., 2020). External investments increase the firm's resilience and thus increase the probability of survival (Korber & McNaughton, 2018).

2.4.3 How Does the Entrepreneurial Stage Affect Resilience in Terms of Exploitation of Network Ties?

Startups operate under high levels of uncertainty while having a shortage of resources and knowledge, thus making them dependent on learning with and from their external networks for future prosperity (Dutta & Crossan, 2005; Franco & Haase, 2009; Jones & Macpherson, 2006). In the event of a major crisis, entrepreneurs are presented with a radically new environment to navigate in (Doern et al., 2019). The majority of entrepreneurs lack knowledge, resources, internal processes, and bargaining power to respond to disruptive events (Doern, 2016; Smallbone et al., 2012). Consequently, it becomes essential that entrepreneurial ventures learn with and from their external networks (Bruneel et al., 2010).

Klyver and Hindle's (2007) research on social networks at different business stages asserts that structural diversity in networks is more important to entrepreneurs in the earlier business stages, especially in the discovery phase. Structural diversity refers to the extent of people involved in the network and how their characteristics differ. Entrepreneurs with a higher degree of structural

diversity are more likely to obtain information necessary for success. As the startup grows, the structural diversity of its network increases in importance until the startup is more established (Klyver & Hindle, 2007). The literature points out that institutional support such as financial support, training, and mentoring will enable a firm to be more resilient during a crisis (Korber & McNaughton, 2018). Entrepreneurial resilience is improved through learning programs and interaction with other entrepreneurs (Gray & Jones, 2016). By engaging with others through interorganizational learning (IOL), startups can benefit from an increased capability to innovate (Olsson et al., 2010) and improved performance measures at the firm and collaboration levels (Kruckenberg, 2015; Manuj et al., 2013; Pratono et al., 2019; Seo, 2020). Similarly to isomorphic learning (Toft & Reynolds, 2005), IOL enables learning from other's successes, failures, and the routines of other organizations (Leung et al., 2019), which can be used to obtain knowledge of new markets and customer target groups (Bruneel et al., 2010). Institutions that provide accelerator and incubator programs may therefore increase the resilience of firms through the provision of network, physical resources, and support (Carayannis & Von Zedtwitz, 2005; Drover et al., 2017; McAdam & McAdam, 2008). Early stage startups without experience or networks can access ready-made networks through these institutions (Patton et al., 2009).

Further, the individual entrepreneur's social capital and psychological traits help predict the ability to bounce back to the normal or growth of the firm (Korber & McNaughton, 2018). Social capital derived from external networks is important to improve a firm's resilience (Baron & Markman, 2000; Jia et al., 2020). Thus, understanding how the concept influences the firm's resilience can be differentiated between structural and relational cognitive capital. First, structural capital refers to who the entrepreneur reaches out to and how they do it. These social ties may provide the entrepreneur access to valuable information and thus influence proactive resilience. Second, relational capital refers to the strength of ties between the internal network, being its supply chain partners and others directly involved in the firm (Baron & Markman, 2000; Jia et al., 2020). Evidence has shown that the more central position the entrepreneur holds in its network, the more valuable information and opportunities will be provided (Gulati et al., 2000).

During a crisis, the willingness to offer resources and facilitate recovery impacts the firm's reactive resilience (Jia et al., 2020).

2.5 Summary of Literature Review

As shown by the literature, startups' resilience is determined by their resourcefulness, organizational preparedness to make decisions and take action, technical ability in organizational systems, and rapidity of managers' decision making (Sullivan-Taylor & Branicki, 2011). How effectively startups are able to adapt to new circumstances by mobilizing and integrating external resources are proved vital to their survival when overcoming a crisis event (Ates & Bititci, 2011; Battisti & Deakins, 2017). Scholars argue that as a new firm grows, so do its internal capabilities, resourcefulness, and networks (Greiner, 1998; Picken, 2017; Scott & Bruce, 1987). When faced with a new market opportunity, the life cycle stage of the firm influence how easily it can pivot based on the type of opportunity as well as internal capabilities and core rigidities (Argyres et al., 2019; Leonard-Barton, 1995; Morgan et al., 2020; Schreyögg & Sydow, 2011). It appears that a startup's financial position prior to a crisis is more important than which life cycle stage the firm is currently at when it comes to resilience (McGuinness & Hogan, 2016). However, literature also asserts that as a startup grows, its usage of external capital follows (Mason & Harrison, 2015) and that external funding increases the resilience of firms (Korber & McNaughton, 2018). In terms of network, a central position in the network provides better access to information and opportunities through strong and weak ties (Elfring & Hulsink, 2007; Granovetter, 1973; Gulati et al., 2000; Thornton et al., 2013; Uzzi, 1997).

This research will study the research question, "*How does the entrepreneurial stage affect resilience?*". To investigate this, several sub-questions focusing on opportunity recognition and exploitation, network exploitation, and the ability to obtain funding are developed. These factors are known to impact each other significantly, and they all need to be in place simultaneously. Thus, there might as well be a circular interdependency between the factors. While the business stage may influence a firm's resilience, the resilience of one factor can also impact the resilience of another factor (i.e., higher resilience in terms of network may influence the ability to obtain funding and thus ease the exploitation of

opportunities). This thesis will also address where we find the strongest interdependence between the variables.

3. Research Methodology

The following chapter illustrates the methodological measures used to answer our research questions. To sufficiently answer the research questions, acquire a deep understanding, and ensure that the findings are generalizable, we have applied a qualitative research approach. In total, we conducted 13 semi-structured interviews of startups from different sectors within the first three stages of business development.

3.1 Research Strategy

The overall research strategy can be explained as the general sense of direction of business research (Bryman & Bell, 2011). The two main research strategies are qualitative and quantitative, where the fundamental differences between the two are the approaches applied, being inductive for qualitative research and deductive for quantitative. While quantitative research focuses more on a deductive approach to testing the theory, qualitative research strategies focus on an inductive approach by generating theories based on findings (Bryman & Bell, 2011). Often a qualitative research design is initiated with an inductive approach for theory development (Saunders et al., 2019). However, some qualitative research strategies may also start with a deductive approach to test existing literature by using qualitative measures. Thus, to efficiently test our predictions formed by existing literature, a qualitative research design has been applied.

3.2 Research Design

To uncover the phenomena in this study, an exploratory design has been applied. An exploratory design is valuable because of its nature to ask open questions to discover and gain valuable insights into an issue or phenomenon (Saunders et al., 2019). The methods used in this study include a search of the literature and conducting semi-structured individual interviews. Furthermore, due to the circumstances caused by the pandemic being uncertain, an exploratory design has

the advantage of being flexible and adaptable to change, meaning that we were able to start with a broad focus that became narrower and more focused over time (Saunders et al., 2019).

3.3 Methods of Data Collection

3.3.1 Semi-Structured Interviews

Our primary data was collected through semi-structured interviews. When in an interview setting, the researcher can ask the interviewee(s) questions, listen to their response, pursue interesting information and clarify statements (Saunders et al., 2019). Moreover, the use of semi-structured interviews provides the interviewer with adaptable key questions to guide the conversation. In addition, this method allows for a natural dialogue between the researcher and the participant where the researcher can probe deeper into interesting comments. Further, by comparing data from the sample, one can detect themes or questions that are more important than others and adjust the interview guide accordingly (Saunders et al., 2019).

Prior to the interviews, we made an interview guide that included questions about the Covid-19 crisis in relation to our factors; opportunity recognition and exploitation, ability to obtain funding, and exploitation of networks. Due to a geographically widespread sample and infection measures, the interviews were conducted online through the video conference tools named Zoom and Google Hangouts. In agreement with the participants, all interviews were recorded and uploaded to an external hard drive to ease the transcription process. After our first round of interviews, we made some adjustments based on the information we had gathered. The new questions were used in the second round of interviews and gave us more tailored insights into our research topics.

3.3.2 Sample

To appropriately answer the research questions, we have used the non-probability sampling method called quota sampling. Using this method, one divide the sample into subgroups known as quotas, and the main purpose of using this method is to construct a sample capable of reflecting the population in the extent of different

categories (Bryman & Bell, 2011). Initially, we established a set of criteria based on digital and non-digital startups involved in an accelerator or incubator program in order to research whether being affiliated in such a program would affect the survival of the startups. Our sample was set to 7 participating startups. However, after conducting the first interview round, we found insufficient evidence regarding the anticipated network effects. Thus, we changed our research focus from network effects of accelerator and incubator programs towards the effect of business stage on startups resilience. We, therefore, extended our sample by 6 additional startups with the criteria of being in the later stages of business development. In total, we have interviewed 13 entrepreneurs from ventures in the first three stages of business development. An overview of the startups, their industry, and stage number can be found in appendix 1.

Allocation of sample in the business life cycle model

To appropriately assign each startup in our sample to particular stages, existing stage literature has been merged into a new and more applicable model. The literature used to draw the model has more than three stages. However, since none of the participating firms has grown past stage three, these are not included in this research. The theory is based upon the three scholars; Picken (2017), Greiner (1998), and Scott and Bruce (1987). Following, we will describe what criteria have been used to allocate the startups into stages.

Startups (1-5), (7), and (10) are either in the process of, or have already validated their concepts, business models, market opportunities, and go-to-market strategy. Moreover, they all have an unstructured and fluid organization, with a flat communication structure where the founders are primarily technically or entrepreneurial oriented. The time and efforts in these startups are focused on production and sales rather than managerial tasks, while their key issues revolve around customers and economic production. Further, the mentioned startups, excluding startup (5), still have a narrow focus, the commitment is limited in terms of time resources, and the economic risk is sparse. Considering how the startups are funded, startups (1, 2, 3, 5) and (10) are financed entirely from bootstrapping or additional capital such as soft funding, while (7) have accessed investor funding and (4) have activated a loan through institutional support. The

ventures further reported none, to modest revenues, and thus their working hours are compensated by shares, modest salaries, or no compensation at all. In accordance with stage theory, these firms are therefore categorized as stage 1 startups.

The participating startups allocated to stage 2 (9, 6, 11, 12) all have the following criteria in common. They all possess a fully developed offer and are positioned for rapid growth. Further, their key focus is maintaining customers and building financial capabilities, while revenues and expenses are key issues. These startups are funded through their owners' capital, 3F sources, and external funding. Considering startup (9) and (6), their organization has transitioned from being loosely structured to establishing the necessary structure for growth. The management team is still entrepreneurial, and these startups have allocated roles and more specialized tasks. The startups differentiate in their offerings, where startup (9) offers one viable product in one market, startup (6) offers two viable products in one market, startup (11) offers a limited range of viable products in one market, and startup (11) offers one viable product in several markets. Nevertheless, all of the startups above fit most of the criteria in stage 2 of the business life cycle.

The two following startups (8, 13) have leveraged partnerships and processes and seized compelling resources to scale their businesses. Their main objectives are to grow in order to achieve competitive scales. Further, their organizations have become formalized with structured roles and functional lines, and the management roles have become more delegative. Both startups offer more than one product or multiple versions of their product and have scaled into several markets. Regarding financing, both startups have access to investor capital. These startups have therefore been allocated to stage 3 of the business life cycle.

3.3.3 Pre-Test

A pre-test of the interview guide was conducted on an experienced test person working closely with several startups in the entrepreneurial environment in Oslo both prior to and during the crisis. The test interview was conducted to verify whether the questions were understandable and focused enough to generate

valuable information. Following the test interview, some changes were made in line with the feedback from the test person and our supervisor.

3.3.4 Secondary Data

To draw further conclusions on how the pandemic has impacted Norwegian startups, secondary data has been used. This includes statistics from Statistics Norway and reports from the Norwegian Government.

3.4 Ethical Considerations

When conducting research, it becomes imperative to manage the ethical aspects (Saunders et al., 2019). Some of these concerns relate to general data protection regulations and legal concerns. To comply with all ethical standards and the BI Norwegian Business School's requirements, an application was sent to the Norwegian Centre for Research Data before collecting data. This process involved answering several questions, creating a consent letter for respondents, and an interview guide.

Fundamental to our research are informed consent, anonymity, confidentiality, privacy, and data handling. When contacting respondents, email correspondence happened first, and those who were eager to participate were sent the informed consent form. This form was created by a template that the Norwegian Centre for Research Data provided on their website; it explains the research, process, and ethical considerations. After receiving consent, interview dates were scheduled. Further, anonymity is essential and provides the respondents with the freedom to express their true feelings without the fear of repercussions (Oliver, 2010). From the interviewer's perspective, it also puts the respondents more at ease to answer unpopular or sensitive questions. To protect the identity of respondents in the thesis, referrals are done by coded terms such as "entrepreneur x" and "startup x".

Moreover, confidentiality is essential and relates to anonymity. Confidentiality includes data handling and data access and is a part of the consent process (Oliver, 2010). The confidentiality of the data which are collected during the thesis is specified in the informed consent letter. Details explain that data is being treated

according to General Data Protection Regulation (GDPR) regulations, who has access to the collected data, a date for data destruction, and information on data handling. Additionally, it specifies that respondents are free to withdraw their participation at any moment without consequences and that the data given by them will then be destroyed. The form also mentions recordings, and the files have been stored on an external hard drive. This information is provided before the interview and approval was asked for again before starting the conversation. If the respondents accepted, the recording began, and if they declined, the interview would have proceeded without recording, and we would write notes solely.

3.5 Assessment of Qualitative Research

Validity and reliability are commonly known as important criteria for establishing and assessing quantitative research quality (Bryman & Bell, 2011). Reliability refers to the consistency and replication of the study, while validity refers to the suitability of the measures used, the accuracy of the analysis, and the ability to generalize the results (Saunders et al., 2019). There is an ongoing discussion, however, on whether these measures are relevant for establishing quality in qualitative research.

To establish internal reliability, both researchers have participated in all parts of this study, including the composition of literature review, designing the interview guide, and conducting the interviews. Further, we tested our interview guide on an objective individual, received feedback from our supervisor, and justified the interview guide to measuring our research questions properly. We have also recorded each interview and transcribed them first individually and after that discussed them collectively. Moreover, we have been working on our research collectively, meaning that we have written chapters such as literature review, analysis, and conducted interviews simultaneously. Going back and forth and making valid changes, we have established coherency, hence, increased the validity.

4. Analysis of Findings

4.1 How Does the Entrepreneurial Stage Affect Resilience in Terms of Opportunity Recognition and Exploitation?

4.1.1 Opportunity Recognition and Exploitation

When the global corona pandemic hit, governments introduced regulations that reduced consumer activity in many markets. The consequence of this was declining revenues and stagnation in current growth opportunities. This forced startups to search for new opportunities in order to survive the disruption. As the startups in the early part of stage 1 do not necessarily have validated concepts yet, they focused their capabilities on product development. They expressed that the pandemic gave them more time to define and validate their products and services thoroughly. A concern shared by startups in later phases of stage 1 that had validated concepts was related to delays in planned activities and events. Some of these startups had already made plans to attend industry events and fairs to showcase their solutions to potential customers. When these events were rescheduled or canceled, the startups missed opportunities to network, potentially sell goods and get customer feedback.

Considering new opportunities arising from the pandemic, it is evident that the firms in stage 1 and 2 have been able to leverage opportunities to a greater extent than the firms in stage 3. Some of the opportunities that arose due to the pandemic were temporary product and service opportunities and included the creation of equipment and technological solutions in the medical field. Other opportunities that arose across all stages due to the political decisions and restrictions included moving products and services online, finding new potential target markets, conducting digital sales meetings, and leveraging ties to stay afloat. For some ventures, this was required to remain alive and did not yield superior results, while other startups experienced renewed interest when shifting focus.

Considering the startups in stage 1, one entrepreneur (5) stated that she experienced severe restrictions and shutdowns in the commercial sector, consequently restricting her business-to-business (B2B) customers' purchasing

power. Attempting to turn the situation into something positive, she organized a collaborative digital event to gain traction in the market. This enabled her to demonstrate how the service can be used alternatively during the corona pandemic. Prior to the crisis, another startup (4) had completed a pilot project at a hospital. When the pandemic came, the need for their services remained, resulting in a long-term partnership between the startup and the hospital. Despite not yet offering their products on the market, startups (1, 10) were optimistic about the effects that the crisis may create for the companies. Entrepreneur (1) mentions that the increased focus on hygiene can positively affect post-crisis demand for her product. Moreover, entrepreneur (10) had a positive attitude and a belief that the pandemic could be turned into a benefit for the company. The customer need might not be instant, meaning during the crisis, but the startups are optimistic that new habits and concerns that consumers have adapted will last even after the crisis and make customers more open to their value proposition.

Moreover, in stage 2, there was evidence that the corona pandemic triggered a need for the service that startup (9) offers, causing a rapid increase in demand and forcing the firm to scale up its operations fast. The pandemic resulted in massive traction for their service. Thus, the entrepreneur is curious whether the demand will decline or endure when the world returns to normal. Similar to the belief of startup (1), startup (6) assumes that the medical staff's immense workload during the pandemic can create a demand post-crisis for its service. Social distancing and travel restrictions limited opportunities of startup (11) as its value proposition relies on face-to-face human interactions. The venture took its offers digital. However, this did not fully cover the needs of their customers.

In stage 3, startup (8) was initially negatively affected as its primary target markets were severely affected by the pandemic. This forced the firm to search for alternative segments to survive. Even though the firm experienced a loss of its primary market, the change positively affected demand and interest in its solution. Nevertheless, it created an increased workload for the business and validated product-market fit in various markets. Further, the startup considers the sector's future to be very bright as it becomes increasingly digital to cater to sustainability and conscious consumerism, and this sector will only continue to grow due to this

trend. Startup (13) are already experiencing the effects of digitalization as its sales processes have become increasingly effective due to the restrictions on social distancing and travel. Before the crisis, this sector experienced strict governmental restrictions in terms of sales processes. The diminish of these restrictions has resulted in the ability to reach an increased number of customers through digital solutions. Finally, both startups in stage 2 and 3 mentioned a concern of the predictability of international markets. Some firms hold larger customer bases of international customers, and due to differing regulations and national schemes, the future of these markets is uncertain.

4.2 How Does the Entrepreneurial Stage Affect Resilience in Terms of the Ability to Obtain Funding?

4.2.1 Capital Structure

In stage 1, the startups have accessed various sorts of capital. One of the startups (2) is in the very beginning of gathering investments from the 3F sources. However, most firms have already gotten financing from external sources, both from their personal network and through other network ties. Two ventures (4, 10) have gotten to the point that they can take out loans from the government. These loans had several criteria and required that the startups matched the granted loans with their own capital. External sources also include support from Innovation Norway and local authorities, the Research Council of Norway, Design and Architecture Norway, accelerators and incubators, angel investors, corporate investors, educational organizations, and a minority organization.

In stage 2, one of the startups (11) is financed solely on equity and gifts from people that believe in their concept. The two others (9, 12) are funded through 3F sources and soft funding, including grants from Innovation Norway, FriStudent, and SkatteFunn. In addition, they have also acquired external capital in the forms of venture capital, preseed capital received from accelerator programs, loans, and crowdfunding.

In stage 3, the startups are funded through a combination of 3F sources, angel investors, national economic support schemes, and venture capitalist funding. In addition to this, one of the ventures (13) has attended pitching competitions with monetary awards and has taken out a loan to finance further growth.

4.2.2 Investment Needs

In stage 1, all startups need capital to grow their business and take it to the next stage. However, few startups express a desire to obtain external capital from investors and mention that public support schemes and other alternatives to "free" capital should be exhausted before turning to the private market. The reason for this is to maintain as much equity in the business as possible. Due to this focus on public support schemes and funding alternatives where it is more difficult to survive long term, these firms mainly focused on cost-cutting to reduce the need for external capital. This includes restructuring fixed costs and temporarily laying off team members. The startups that were in the early phases of stage 1 generally did not have many fixed costs.

In stage 2, one of the startups (12) has managed to raise a new round of investments in the earlier months of the pandemic to sustain its future. All of the startups express a need for additional funding to accelerate growth. Startup (9) needs additional funds for scaling their business internationally, while another startup (12) mention a need for funding to further scale their business in the belief that they will reach a positive bottom line before their current capital is drained.

In stage 3, both startups (8, 13) have enough capital to sustain them at the level they are, but their aspirations to expand further internationally create a demand for financing. Even though 2020 was an economically sound year for startup (13), it is now experiencing a lagging effect of the corona pandemic. This affected the company's start in 2021 negatively and made the next fundraising even more vital to execute the planned expansion. Moreover, the firm wants to conduct the next investment round with a few resourceful investors and have them join another round within the next few years. Being part of trending industries, both of the ventures have interested investors that want to join in. Startup (8) ticks off several

of the popular criteria that investors are looking for (i.e., woman in entrepreneurship, sustainability) while having environmental forces pushing the development of the industry forward in terms of the favorable regulatory and legal framework. This helps the startup get noticed and investments directed towards the firm.

4.2.3 The Consequences of Covid-19 on the Process of Obtaining Capital During the Pandemic

Startups in all stages worried about the effect the crisis would have on investors and whether it would become more difficult to access funding. These concerns were magnified by the effects caused by regulations on their target markets, the financial landscape, and national economic support schemes. Many startups have fixed costs that need to be managed regardless of the economic crisis, thus the entrepreneurs share the perception that it will not be as easy as before the crisis.

4.2.3.1 Investor Capital

The majority of startups across all stages believe that investors are more reluctant to invest during the pandemic, and it is a prerequisite to have a Covid-friendly product or service to receive any capital. Industries that have experienced a boost during the pandemic are thought to have investors lined up to spend money. One startup (13) believes that investors are more selective with their investment prospects, as they contribute with a more significant amount of capital in fewer ventures. It can therefore be more challenging to find the right investors.

However, once found, it will be easier to gather the amount that the startup is looking for. A positive effect caused by increased digitization relates to increased access to lucrative investors. One entrepreneur (4) explains this by saying that short video meetings have made it easier and made it more likely for startups to pitch for important investors as they do not have to travel and spend time at long-lasting events. Further, the entrepreneur described how he was able to talk to a well-known investor in Norway because of the effectiveness of digital investor meetings.

Multiple startups in stage 1 assume that investors pay more attention to the team than ever before. Hence, it is essential that the team has the right capabilities and can work effectively and remotely. Although none of the startups in stage 2 have experienced any change in investment criteria, only one startup has carried out an investment round during the crisis. The entrepreneur (12) mentioned that it was difficult to compare the current round with the previous in terms of criteria. The reason for this is that he was familiar with a previous investor and because the startup had grown, he had significant results to refer to. Consequently, it was a more straightforward process of being granted new investments, regardless of being amid a pandemic. Nevertheless, the entrepreneur mentioned the importance of cost-cutting to demonstrate to investors their determination and ability to take action. The most significant cost-cutting factor in the firm is the payroll, yet cutting other minor expenses is important to show external investors that they are taking active measures to preserve capital.

4.2.3.2 National Scheme

At the beginning of the crisis, the entrepreneurs were worried if any of the national support schemes would include them and what they would cover. As the support schemes began to unravel, the entrepreneurs generally felt that local and national authorities failed the startup community in terms of assistance and economic support. The proposed national support schemes required that the startups prove a loss in revenue or initiate completely new innovation projects. However, firms in an early stage do not necessarily have incoming revenues nor the resources to abandon their projects to start from scratch. Yet, they cannot build their business and sales during the pandemic, leaving them without any support options and a belief that the authorities are more concerned with saving larger corporations than startups. Furthermore, entrepreneurs had differing experiences on how easily the information about support schemes, deadlines, and other essential details was distributed.

The entrepreneurs felt as though the amount of money set aside to support businesses and entrepreneurs were skewed toward specific industries and do not include support schemes for entrepreneurs who are not entitled to other care packages. The startups in stage 3 (8, 13) enticed that being a startup in growth, it

may seem like the firm has growing revenues compared to the last year when in reality, they are struggling with their bottom line. Further, the grants given to employees on temporary layoffs commence from the past years' payrolls. Being a growing firm, one of the startups (13) had just recently started to compensate their employees through regular salaries. However, due to the criteria that the payouts from the government are based on, the employees now received extremely low economic support compared to the employees of established companies. All startups recognize that it cannot have been easy for the government to establish criteria that fit most. Yet, there is a common desire for an alternative solution for firms in the earlier stages of business that are not solely based on a decrease in revenues as the point of reference.

Despite the negative aspects, it is reported that the government grants for new firms are positively impacted, as there is more money available for innovation and entrepreneurship. The startups are generally positive about the regulations and schemes that the authorities have created in a short amount of time. Several entrepreneurs mentioned that grants have increased both in terms of monetary value and amounts after the disruption. One startup (2) in particular mentioned that they were even higher and easier to obtain in the first year of the pandemic. When discussing whether the government could have done anything differently when handling the corona pandemic, one startup (1) mentioned that the coping mechanism was ineffective. Laying off people temporarily is a waste of human capital, and other subsidies should have been used to entice change in organizations.

4.3 How Does the Entrepreneurial Stage Affect Resilience in Terms of Exploitation of Network Ties?

4.3.1 Personal Networks

Considering the network ties of the startups in stage 1, the establishment of networks and their abilities to leverage the network ties differ. The startups that are still developing ideas or establishing a concept to be validated generally have a more challenging time establishing an initial network. While those who have had

more time to initiate contact through, for example, an accelerator program has had more ease in leveraging network ties. Ultimately, most startups relied on impersonal networks to obtain information and knowledge.

In stage 2, the main concern in consideration of personal networks was the loss of social contact, and the informal conversation as the recommendations of home offices arose. Entrepreneurs often value the social aspects that shared office space offers as they are not surrounded by many colleagues internally. One entrepreneur (12) mentioned that he mainly used his personal network to figure out how other firms were affected by the pandemic. Another startup (6) has taken advantage of personal networks during the crisis and acquired valuable information regarding a product opportunity.

The networks of the entrepreneurs in stage 3 are being used more actively for specific purposes. One of the entrepreneurs (8) stated that its network has been very solution-oriented, and those directly involved in the firm have offered a helping hand when it comes to the need for capital, prospects of customers, and strategic changes. Moreover, the startup has also used its international network to understand the effects of the pandemic in other countries and learned from that. The other startup (13) used its alumni network to discuss solutions to business problems with other entrepreneurs and find software programs that aid business development.

4.3.2 Accelerators and Incubators

Considering the three stages, only startups in stage 1 had recently been or planning to participate in an accelerator or incubator program. The firms that have attended such programs have had both positive and negative experiences related to those networks. The entrepreneurs were pleased with the speed at which the networks created digital programs and solutions for them. Further, many entrepreneurs (1-6) experienced access to more counsel and guidance than they would have in a normal situation. The guidance in writing applications for support schemes and planning on getting through the pandemic has been helpful for the startups.

Entrepreneurs who have had previous startups hold higher expectations and demands from the accelerator or incubator they were a part of. One entrepreneur (7) stated that serial entrepreneurs or entrepreneurs who have in-depth industry knowledge experience a lack of expertise in mentors and consultants that operate in the startup environment. Many of the mentors and consultants who guide new ventures do not have entrepreneurial experience themselves. Lack of industry-specific knowledge and entrepreneurial experience is viewed as a disadvantage for some when using the accelerator network for advice and counsel. Contrary, some very early stage startups (2) experience a lack of guidance from their mentors as they are not necessarily sure of what they need or what the programs can offer them. Furthermore, it is reported that there are considerable differences between accelerators and incubators in terms of how they handled the crisis. Entrepreneur (7) stated that the accelerator caused significant trouble for startups as they provided incorrect information about funding and withdrew promised capital for the startups. To access this capital, startups needed to provide several additional documents, which caused much stress for the enrolled participants. After this instance, it was uncovered that the accelerator had no right to withhold capital and change the agreement between the participants and the accelerator itself.

4.3.3 Digital Networks

Several startups (1, 6, 7, 9, 12) have experience working digitally and remotely due to international partnerships or employees located worldwide. Thus, there was no need to modify how the firms worked or communicated when restrictions on offices came. However, infection measures forced many startups to turn their networks digital. The effect of digital meetings has had both positive and negative effects. The main positive effects revolve around efficiency, customer reach, as well as a reduction in time and costs related to travels. One startup (13) describes that their internal meetings have become more efficient as the team can cut to the chase. It is also mentioned that many social customs and norms are put aside online as startups notice that people are interested in helping or partnering with each other to get through the crisis together.

Nevertheless, there are some negative impacts of turning physical networks digital. National recommendations and the encouragement of home offices, the loss of social gatherings, network events, and physical pitching events reduces the amount of casual small talk with other entrepreneurs and investors are reported to affect the startups adversely. One entrepreneur (10) expressed that digital video meetings create difficulties for small talk outside of the scope of scheduled meetings, resulting in a loss of group spirit. Video meetings were reported by another entrepreneur (1) to only work for quick decision-making and shorter meetings because the attention span is negatively impacted in more extensive webinars and creative meetings. Thus, online meetings are thought to affect the motivation, creativity, discussion, and problem-solving in the startups' teams. Consequently, these digital alternatives led to stagnation in progress for many firms. Furthermore, not all industries can be fully digitalized, as physical meetings are needed to execute business processes. The national and international restrictions, therefore, negatively affected startup (2), as a central part of their activities revolves around traveling and negotiation with suppliers. The exemplified startup performs within an industry where digital solutions can never be fully sufficient, and therefore it created hurdles for their operations during the crisis. Certain activities are either too costly, inefficient, or simply do not have the same effect online as they do in person.

When asked how the startups have utilized their networks during the pandemic, dissimilarities were found. In stage 1, the startups primarily used their digital network to obtain general information regarding the current situation. The networks are less personal and mainly consist of events hosted by participants in remote networks such as accelerators, national and local authorities, and industry organizations. For those involved in an accelerator or incubator program, digital alternatives for physical events were created. Although, their success varied. Webinars that address support schemes for startups are considered valuable. One of the entrepreneurs (7) thought that the digital program was more beneficial than the physical one, as one does not have to attend physical workshops or events and can use the time more efficiently. Digital demo days are reported to be negatively affected as much of the value of these events includes networking opportunities with other entrepreneurs and investors. The move to digital solutions has helped

one entrepreneur (1) to save costs as the incubator got additional support so that their members did not have to pay office costs.

In stage 2, the entrepreneurs engaged in similar events as those in stage 1. The startups used a weave of personal and impersonal networks to a larger extent than those in stage 1. An example of how the entrepreneurs used informal networks are forums on social media platforms. One entrepreneur (12) mentioned actively being involved in conversations for help on social media such as founder's network groups on Facebook. Considering stage 3, these startups did not note the use of impersonal networks to a large extent due to their personal networks being more helpful in obtaining information and attaining resources.

4.3.4 Network Exploitation

In stage 1, two startups (7, 5) have harnessed the power of their networks to find new markets and usage for their core products and services. Startup (7) used its international network to participate in a research study, which led the firm to niche down while also discovering a new area of use for its software technology. However, they have not acted on the opportunity yet due to national laws and regulations that make this problematic. Startup (5) used its network to launch a digital event that was replicated physically later on in the pandemic with great success. The firms' networks were incredibly important in discovering and co-creating solutions to seize these new market opportunities in stage 1.

The firms in stage 2 have primarily used their networks for help to further develop their products. One exception was startup (6), which one of its board members notified about an opportunity to use the firm's capabilities to create medical equipment for employees at hospitals and municipalities. Startup (9) experienced reputational effects by being well-known within the entrepreneurial environment in Norway. This caused the company to land a well-known international investor, which resulted in greater traction from other investors. Startup (12) also managed to utilize its network in order to obtain further investments during the crisis by an investor that had previously participated in earlier funding rounds.

In stage 3, one of the startups (8) has used its network to remodel its entire business strategy. The helping hand from its network enabled the startup to act more rapidly towards the change of the pandemic. It also helped with the adjustment of roles to better fit their new business strategy and sales towards new market segments. Some startups report that participating in events and competitions are gateways for contact with investors and expanding the firms' networks. Startup (13) participated in a large pitching competition where one of the awards included access to an extensive investor network.

5. Discussion

This study explores the correlations between a startup's life cycle stage and resilience on opportunity recognition and exploitation, ability to obtain funding, and exploitation of its network during a crisis. The findings of the previous chapter will now be discussed in relation to prior literature to uncover potential alignment or inconsistencies.

5.1 How Does the Entrepreneurial Stage Affect Resilience in Terms of Opportunity Recognition and Exploitation?

The first research question explores how the entrepreneurial stage affects resilience in terms of opportunity recognition and exploitation. The literature explains that younger startups still in the discovery phase are not locked in a particular trajectory and are more agile towards new opportunities than startups in later stages (Schreyögg & Sydow, 2011). Early stage startups have not developed core competencies (Anokhin et al., 2011). Thus, they are more capable of exploiting arbitrage opportunities that emerge in a crisis. Our findings show how startups in stage 1 and 2 were more prone to pivot and explore arbitrage opportunities during the crisis. As a startup grows, it becomes increasingly subject to core rigidities (Argyres et al., 2019; Leonard-Barton, 1995), which reduces its agility and essentially leads to path dependency (Schreyögg & Sydow, 2011). Resource embeddedness, stakeholder obligations, and an established resource base (Morgan et al., 2020) make opportunities created from long-lasting effects on society more beneficial for later stage firms (Devece et al., 2016). Our data

describe a more difficult time for startups in stage 3 to pivot their ideas. These firms rather focused on digitizing their offers, finding new potential target markets for current offers, and leverage ties for strategic advice and collaborations. The results are in line with previous research as nascent and agile startups were more capable of exploiting new opportunities, whereas later stage firms were increasingly bound by their internal processes and external responsibilities.

Depending on the short and long-term changes that arise from the specific crisis, the various startups will be influenced differently. On the one hand, early stage firms are more capable of pivoting to a radical new direction. According to resilience theory, adaptability and flexibility in terms of the ability to adjust resource inputs and processes are important means to thrive during a crisis (Smallbone et al., 2012). On the other hand, it is important to note that these startups also have fewer resources to build a strong foundation from scratch. Consequently, these firms inhibit short-term resilience due to their agility. However, if the opportunity is somewhat in line with the current value proposition of a later stage company and the long-term changes are beneficial, they would have more resources to pivot in that direction. Thus, making them more resilient in the long-term, compared to early stage firms.

Furthermore, information about a society's available resources (Singh et al., 2008), as well as changes in technology and political climate, affects opportunity recognition and exploitation (Mary George et al., 2016; Schumpeter, 1934; Shane & Venkataraman, 2000; Tominc & Rebernik, 2007). Through our interviews, it was evident that opportunity recognition and exploitation were influenced by information from the startups' networks as well as changes in the technological and political climate. Crises can spark creativity among entrepreneurs, resulting in alternative products and services or even business expansion (Doern, 2016; Irvine & Anderson, 2004). Especially startups in stage 1 and 2 were able to pivot and expand their operations based on information gathered from their networks. Startups that provided trendy or highly needed products when the pandemic hit experienced increased interest and demand for their products and services. A boost in demand gave these firms more to do during the pandemic and positively affected their operations. Nevertheless, the response of the entrepreneurs will

depend on the stage of business development, the entrepreneurs' skills, and their ability to utilize resources (Doern et al., 2019). Restrictions and infection control have caused negative consequences on startups that mainly operate in markets hit hard by lockdowns and reduced consumerism. None of the startups has experienced a permanent decline in product demands. However, many needed to adapt to the new market conditions.

On a more positive note, restrictions and infection guidelines have accelerated the need and speed of digitalization in several industries, consequently creating new products and services for markets that were hesitant towards new processes before the pandemic (Soto-Acosta, 2020). This has also accelerated the speed of adaptation of already existing products and services. These effects were disproportionately distributed in markets, resulting in benefits for some and disadvantages for others. Our findings confirm the association between startups who accessed valuable information about available resources, the rapid change of digitalization, and political restrictions that disproportionately affected various sectors. Negative effects are felt by the startups that are in industries that are not digitized and might never be fully digitized, as they struggle to validate their concept and continue with their mission. The results are significant in some respects by explaining that network ties, the value proposition of the particular startups, and industry characteristics are more determining factors than the startup's stage of development. Moreover, how different sectors will recover and bounce back to a normal situation also depends on how regulations change, the speed of vaccination of the population, investors, and essentially how quickly firms can get sales that stimulate the market and make businesses operational again.

Finally, the entrepreneur's opportunity recognition process is affected by the availability of capital, government regulations, and policies (Mary George et al., 2016; Tominc & Rebernik, 2007). Startups are generally wealth-constrained, hence, required to probe for external resources and institutional support to pursue opportunities (Casson, 1982; Venkataraman, 1997). Accessible capital, as well as favorable regulations and policies, create a more resilient startup environment. Our research uncovered that, generally across all stages, entrepreneurs were

unsatisfied by the economic care packages and policies developed for new ventures. Due to the nature of these regulations and policies, many startups felt that it favored firms that were more established rather than new businesses. Further, as many did not meet the financial requirements nor had the resources to pivot to an entirely new product or service, they were unable to apply for governmental grants. These results draw a rather negative link between institutional aids and policies affecting entrepreneurs by establishing limitations on their opportunity recognition and exploitation, consequently decreasing the startups' resilience.

5.2 How Does the Entrepreneurial Stage Affect Resilience in Terms of the Ability to Obtain Funding?

The second research question aims to discover the effect entrepreneurial stage and resilience have on the ability to access funding. First, we attempt to examine what type of investments the startups are most likely to obtain during a crisis event. According to Mason and Harrison (2015), new ventures have an increased need for capital obtained by 3F sources in times of disruptions. Further, they aim to access soft funding, including government grants and institutional loans, before moving on to acquiring capital from business angels and VCs. The scholars also argue that in times of crisis, business angels are more likely to engage in larger investment deals and follow-on investments (Mason & Harrison, 2015). Considering previous events, the reason for this may be that VCs tend to narrow their focus to their core sector (Conti et al., 2019), which opens up larger investment opportunities for angels. Our findings are consistent with the literature as most of the startups first moved towards seeking additional funding during the crisis event were soft funding, governmental grants, and loans, as well as follow-on investments from familiar angel investors. Our findings further suggest that some sectors are more capable of accessing funding, including the technology and medical health sector. However, the question remains whether it has become more challenging to obtain VC and angel investments during Covid-19.

Our analysis presents evidence of later stage firms having more ease in obtaining additional funding during a recession. These findings are complemented by the

literature of R. Brown and Rocha (2020), who determined that later stage deals are more resilient because of familiarity. The firms in stage 1 generally grounded their investment opportunities in governmental grants, which might be because of difficulties in creating new ties as the digital solutions are not as sufficient in terms of persuasion as face-to-face interaction. Further, the startups in stage 2 and 3 articulated that it has not been nor would be a problem to access more capital due to familiarity with investors or acknowledgments of previous interest for their products and services. Similarly, Jia et al. (2020) argue that the structural and relational cognitive capital the entrepreneur holds improves its resilience when it comes to funding. Further, Baum and Oliver (1991) argue that entrepreneurs with extensive networks have a higher probability of obtaining funding and resource securement. The entrepreneurs in stage 2 and 3 seem to have leveraged their structural capital as they commonly reached out to their network to access capital. Further, the relational capital at these stages consists of stronger social ties and a greater willingness for support in terms of access to funding through their networks. If a startup manages to get well-known investors on board, it has been proven that others join more easily. Moreover, investors with large networks are preferred, as they act as gatekeepers to more extensive networks and other investors. It is viewed as strategically important to build a relationship early with potential investors and keep in contact, even though one might not ask for capital for several months or even years later.

The most resilient firms in the face of a crisis are those with sufficient access to capital (Cowling et al., 2012). These results align with previous studies where later stages more easily access essential funding opportunities and thus are recognized as more resilient. The size of a startup's network and the type of ties can indicate whether a startup will need to rely on institutional actors or can gather financing from private investors and funds. This may have been negatively influenced by the digital alternatives to physical investor meetings, as personal interaction has proven to be crucial.

In terms of resilience, the literature points out that institutional support such as financial support enables a firm to be more resilient (Korber & McNaughton, 2018). However, findings from the interviews show that entrepreneurs in all

stages are dissatisfied with the governmental economic support schemes and the requirements to access this capital. Considering that these aids theoretically were created to counter for lack of capital, they impacted firms differently based on their life cycle stage. More established firms were able to document their financial declines and reallocate resources more easily than startups, which resulted in a skewed distribution of capital. This contradicts the literature because the institutional aids did not yield any significant results for early stage firms as they were not able to meet the criteria set by the government. The government was supposed to help firms in terms of capital loss. Yet, in reality, the startups experienced difficulties in attaining information about schemes and accessing grants. The result of not being secured through these schemes made operations difficult for many startups. Hence, it made them less resilient.

5.3 How Does the Entrepreneurial Stage Affect Resilience in Terms of Exploitation of Network Ties?

The third research question intends to discover whether the entrepreneurial stage affects resilience in terms of network ties. According to the literature, a startup will develop strong and weak ties (Elfring & Hulsink, 2007), and there is evidence that more centralized positions in a strategic network will provide the entrepreneur with valuable information and opportunities (Gulati et al., 2000). Strong ties entail high levels of trust and mutual access to resources and information, while weaker ties are characterized as new relations or more indirect connections with a lower level of interaction (Granovetter, 1973; Thornton et al., 2013; Uzzi, 1997).

In stage 1, the entrepreneur's personal network is equivalent to the firm's network (Bratkovic et al., 2009). We found that the startups in this stage mainly used decentralized networks characterized by weaker ties to obtain information during the crisis. However, the entrepreneurs who had former experience within the entrepreneurial field, either from former venture creation or from entrepreneurial educational institutions, already had established more centralized networks with other actors, hence, leveraged stronger ties to access information and capabilities.

In stage 2 and 3, the interpersonal network ties become stronger and more formalized, thus, providing for more strategic resources (Bratkovic et al., 2009). As the firm grows, the personal network of the entrepreneur becomes less important. Further, our insights enable us to anticipate that the entrepreneurs' willingness to reach out to their network aligns with the perception of networks' willingness to support. This aligns with Baron and Markman's (2000) argumentation for the entrepreneurs' social capital and skills as an important factor for firms' resilience. While the startups in stage 2 used their network to develop their products further, stage 3 firms primarily used their network for advice regarding strategies and coping mechanisms. Taking advantage of isomorphic learning, later stage startups observed others and drew useful predictions and strategies on overcoming the crisis (Toft & Reynolds, 2005). The results from our analysis are in line with theory in most aspects. Stage 3, and to a certain extent stage 2 startups, experienced an advantage by accessing resources and information from their strong ties on particular business topics. Moreover, stage 3 also leveraged isomorphic learning by reaching out and observing different coping mechanisms in their networks. Hence, these firms were able to increase their resilience. The startups in stage 1 did not enjoy the same effects as they could only access general information due to a lack of stronger ties. The results, however, need to be interpreted with caution. The entrepreneurs in stage 1 with previous experience or connectedness through entrepreneurial education are exceptions from the theory of early stage firms. These have already built stronger ties in large and more professional networks from the beginning and thus experienced the same benefits to some extent.

Scholars argue that accelerators and incubators offer access to physical resources, network, and administrative services to support the entrepreneurial process, mobilize resources and establish legitimacy (Carayannis & Von Zedtwitz, 2005; Drover et al., 2017; McAdam & McAdam, 2008). In terms of resilience, the literature points out that institutional support enables a firm to be more resilient, these include training and mentoring (Korber & McNaughton, 2018). The insights from our analysis indicate that being part of an accelerator or incubator program during the crisis would not be inherently positive in terms of the firm's resilience. The entrepreneurs agreed that the accelerators and incubators managed to provide

sufficient workshops by using digital solutions. However, there was evidence of unpleasant actions causing more stress for the startups as well as insufficient mentoring. The results are partly consistent with prior literature, as results are mixed with both positive and negative experiences. Some of the startups affiliated with such programs were positive about the program's ability to digitize rapidly. They expressed gratitude for access to valuable information in terms of strategic advice and useful workshops. On the other hand, some startups had negative experiences, where the program created more concerns and exhaustion for the participating startups. The present result may vary based on the various types of accelerators and incubators that were accessed as the programs differ.

Gray and Jones (2016) claim that entrepreneurial resilience is improved by interactions with other entrepreneurs through organizational development and learning programs. The findings of the study reveal that being part of social programs has been noticeably important for entrepreneurs, particularly in stage 1 and 2, where the interpersonal networks dominate, and it is needed to look beyond their networks for information. According to scholars, online social networks are important to connect with other entrepreneurs, broker structural holes in their networks, and effectively convert weak ties to stronger ones (Fischer & Reuber, 2014; Morse et al., 2007; C. Smith et al., 2017). For those startups that are not affiliated in and can leverage from programs such as an accelerator or incubator program, the virtual communities have been increasingly important during the pandemic. Therefore, it seems possible that the resilience of the entrepreneurs in the two first stages may have been increased due to the ability to access information through these types of networks.

6. Concluding Remarks

Based on the discussion, early stage entrepreneurs are not locked into a particular trajectory, thus, capable of exploiting arbitrage opportunities. This gives them short-term resilience, however, resource restraints and scarce networks may present as obstacles to exploit new opportunities. On the contrary, later stage ventures have greater access to the necessary resources and networks, though they have a harder time pivoting to new ideas due to their path dependency. These results show that early stage firms are often more short-term resilient, and later stage firms tend to be more long-term resilient in terms of opportunity recognition and exploitation. Further, our research uncovered that sector, governmental restrictions, and digitalization were significant factors in describing how exploitation and exploration of opportunities were affected by the pandemic.

Concerning the ability to obtain funding, our findings show that familiarity plays a considerable role in the probability of additional funding during the pandemic. This benefits later stage firms more than it does early stage startups. Further, the sector is also found to have a significant effect on the capability of acquiring capital and may counter the familiarity aspect. Moreover, evidence explains that strong network ties in later stage businesses corresponded with the ability to gather support in their networks. On the contrary, weak ties and sparse networks made startups at an early stage more reliant on institutional actors, as digital solutions make persuasion of potential investors more difficult. Thus, these firms aim at acquiring government schemes to support them financially. Surprisingly, it became evident that the national schemes that were supposed to ease the economic burden of businesses failed to sufficiently cater to new ventures, thus, making them less resilient.

Later stage startups leveraged from stronger ties and more formalized networks and are able to sufficiently obtain resources and information that increase their resilience. Contrary, early stage startups access general information from their weak ties in decentralized networks. These startups have gathered resources and information from institutional support such as accelerator and incubator programs to counter weak ties. However, the perception of these programs' value in terms of resilience is differing. Digital social networks, on the other hand, have proven

to be helpful for these startups to access information and resources, thus, making them more resilient.

Finally, we found that all factors are highly interdependent, yet, the strongest interdependence is found in the variable of network exploitation. Without strong network ties, the startups are less capable of obtaining funding and limited in terms of opportunity recognition and exploitation. The advantages of having sufficient networks, including structural diversity and strong ties with other actors, were prominent in all stages and increased the resilience in all variables.

6.1 Practical Implications

The findings of our research comply with existing literature to a certain degree. Hence, we aspire to add new aspects and reflections to the entrepreneurial field. Further, we aim to provide valuable recommendations for both entrepreneurs and governing institutions. Theoretical and empirical evidence demonstrates the interconnectedness between a startup's network ties and its ability to access information and resources in order to explore and exploit opportunities. Accordingly, early stage startups should focus on building and nurturing relationships with knowledgeable and experienced actors within the startup's field. To do so, they ought to be aware and active in pursuing forums, industry events, and groups where these individuals are participating. Contrarily, later stage firms should monitor market changes carefully and strive to become more open to a change of direction. This involves continuous development of an innovative culture internally, investigating innovations in their ecosystems, and potentially teaming up with other organizations. Additionally, digitalization and infection control mechanisms significantly affected the startups' ability to pivot and adapt. Thus, entrepreneurs should be aware of digitalization in terms of solutions, processes, and opportunities to quickly adapt to digital solutions if required. Considering if we were to face a similar type of crisis once again, the world would most likely turn utterly digital very rapidly.

Furthermore, investing time and resources in the development of entrepreneurs' networks is important in order to access additional capital during a disruption. To

increase the resilience of startups, entrepreneurs should actively expand their network and nurture their relationships to more easily obtain the necessary funding and support in the event of a crisis. Moreover, the nature of economic support schemes caused many startups to miss out on important financial aid that should supposedly have made them more resilient. Being excluded from grants influenced the startups' everyday operations, opportunity recognition, and exploitation negatively. For future purposes, it is recommended that governmental bodies tailor support packages differently to better fit the specific needs of distinct sectors and the startups themselves. Notably are changes to the criteria on which grants are distributed, removing deferred taxes and fees for startups to ease their financial burden, in addition to making information about the schemes and deadlines more available.

Interacting with other entrepreneurs is understood to be important to boost resilience. For early stage firms that have networks that consist of close personal relationships, expanding their circle and building stronger ties becomes vital to access useful information and resources. It is suggested that these entrepreneurs proactively nurture their relationships and connect with others for beneficial learning. During the pandemic, social digital networks have proven to be good alternatives. Examples include digital forums, events, and social media groups where like-minded individuals gather to discuss topics of interest. Accelerators or incubator programs help startups connect and provide them with resources and guidance. To prepare for future crises, we highly recommend organizations that offer such programs to develop frameworks and procedures to overcome unforeseen events. These should include coping mechanisms for both the participating startups, but also for the accelerator or incubator itself so that the participants are not burdened by the worries and insecurities of the accelerator or incubator during unstable times.

6.2 Limitations

The results of our research may have been influenced by gaps in the literature and concerns regarding the sample. The literature is sufficient on several of the topics that our research investigates. However, we experience that several theories are sparse within the field of entrepreneurship. The more insufficient topics in terms of entrepreneurship are resilience, financing, and stage theory. Resilience theory within entrepreneurship mainly focuses on the entrepreneur and overlooks the importance of the organizations' behavior in total. Further, we struggled to find adequate literature on funding criteria, and behavior of investors during a crisis, especially the decision-making of VCs and angel investors are of interest. Lastly, we observed that the current stage theory is outdated and inadequate for present startups as it does not consider the rapid globalization and digitalization that we are faced with today.

Considering our sampling method, quota sampling has received criticism because the researchers may not include quotas to represent the population entirely but rather interview those available to be approached (Bryman & Bell, 2011). Based on low availability and responsiveness, a limitation of our study is not including ventures from sectors such as the tourism, service, maritime, fish, and aquaculture industries. Our research gives insight into various sectors, yet, we assume that our results may have been different if we had included sectors that restrictions had severely impacted. Still, we believe that our research adds valuable results to the literature as the entire economy is affected, and our sample includes several sectors spread across the nation.

6.3 Future Research

As mentioned in limitations for our study, several areas of literature should be further researched. First and foremost, we highly recommend scholars develop a new and updated framework for business stage theory. Second, more descriptive studies on what and how investors consider when investing in startups during a crisis. The question remains on what their primary focus is during disrupting events, whether some sectors are more popular and the criteria for funding opportunities change. Lastly, our study aspires to add to the literature on resilience

within the entrepreneurial field. Our study only considers Norwegian entrepreneurs. Therefore, to build on our research, we inquire more focus on organizational resilience on an international basis. Thus, a proposal for further research concerns further investigation comparing how startups in different business stages bounce back to normal or pivot during disruptive events, especially emphasizing similarities and inconsistencies between different countries.

7. References

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8. Appendix

8.1 Appendix 1:

Entrepreneur/startup #	Industry	Stage
Entrepreneur/Startup 1	Medical Equipment	1
Entrepreneur/Startup 2	Fashion industry	1
Entrepreneur/Startup 3	Biotech	1
Entrepreneur/Startup 4	Software tech	1
Entrepreneur/Startup 5	Commercial Retail	1
Entrepreneur/Startup 6	Medical equipment	2
Entrepreneur/Startup 7	Software technology	1
Entrepreneur/Startup 8	Software technology	3
Entrepreneur/Startup 9	Software technology	2
Entrepreneur/Startup 10	Software technology	1
Entrepreneur/Startup 11	Mental healthcare	2
Entrepreneur/Startup 12	Video and Camera	2
Entrepreneur/Startup 13	Medical Equipment	3