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Importance of resilience and learnings from COVID-19

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Abstract

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The purpose of this study is to gain a deeper understanding of the concept of resilience. Furthermore, the research seeks to find how Finnish companies have presented resilience during the COVID-19 pandemic and how they have achieved it. Today's business world is a volatile environment, where disruptions are most likely to happen in the future even more often than before. Therefore, it is crucial to seek understanding of how companies can better protect themselves and their operations from such disruptive events.

This research is conducted by using explorative and qualitative methods, and moreover by utilizing secondary and primary data. A comprehensive literature review was conducted, to identify gaps in the existing knowledge and to lay the groundwork for the interviews conducted for this study. Interviews were conducted with company representatives who were able to shed a light on their company's resilience.

The findings show that resilience is created by the activities, characteristics and capabilities of companies. Especially during the ongoing pandemic, the respondents highlighted strong leadership, which leads to employee commitment, common purpose and effective communication. Moreover, efficient virtual solutions and IT infrastructure were also highlighted as important, when considering surviving the pandemic.

Keywords: Resilience, Finnish companies, disruptions, modelling resilience

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Appendix 1. Interview questions

1 Introduction

The world is a volatile place, where it is almost impossible to prepare for every possible scenario. In the spring of 2020, the world was almost stopped by a global pandemic, COVID-19. This brought a lot of difficulties for many industries and individuals. Governments were forced to issue restrictions to protect people from the virus. This led to major decreases in demand for many companies. Moreover, as companies faced extremely difficult times, the concept of resilience gained momentum. Over the course of the pandemic, resilience has been an asset for companies to survive the changes in the market.

The ongoing pandemic is not the first time that resilience has been needed. There have been big disruptions in the past, but while those disruptions ended in things returning to normal, the COVID-19 has created the concept of new normal. Therefore, companies do not only need to show resilience by being prepared for disruptions, and reacting to them, they also must think about how to adapt to the new normal and remain resilient in the ever-changing business environment.

This research seeks to find a more comprehensive view on what resilience is, what creates and maintains it, and how it has been presented in Finnish companies during the pandemic. The research is conducted by using explorative and qualitative methods and by utilizing secondary and primary data resources. The research is relevant since the world is now experiencing a major disruption that requires resilience. Moreover, since it is very likely that a crisis like this will arise again, it is crucial to examine how companies could create or develop their resilience, to better prepare for the future. The research will present the theory around resilience, how disruptions have affected the business world before, and the qualitative research section will present findings from interviews conducted by the author, to gain a deeper understanding of resilience in Finnish companies.

Companies create resilience in their internal environment, by strengthening their most important activities, knowledge and capabilities. Resilience can be derived from the people, processes, and characteristics of a company. By identifying and examining the

factors that create resilience and by measuring the level of resilience, companies can better set themselves up for the future. While it is important to remember that no one can predict the future, a resilient company is better prepared for what might come, than a company that has not considered this.

2 Theory

This chapter explores the most important concept of the thesis, which is resilience. This concept is examined through different fields of study, and it is sought to find the essence and most suitable definition of resilience. The concept of resilience has been a crucial and widely considered topic during the COVID-19 pandemic, since it is important to understand, what are the attributes of companies that keep them at float during difficult and exceptional times, while others have difficulties in staying in business and many cannot do it. The pandemic has presented businesses with a historical and exceptional time, where some companies are experiencing a downfall like never before, while some companies have had an unprecedented spike in demand.

2.1 Defining resilience

As mentioned, resilience is a term widely used in different fields of study, that all have their own understanding of what the concept holds and means. There are numerous definitions of resilience depending on the field of study, research traditions and disciplines. The common use of the resilience concept relates to the ability of an entity, individuals, community, or system to return to normal condition or functioning after the occurrence of an event that disturbs its state (Wiig & Fahlbruch 2019). It is nearly impossible to find or built a one-size-fits-all definition of resilience, and therefore it is crucial to explain how a specific research or researcher sees the concept and how it is defined in a certain publication. To be able to find out how resilience has affected the performance of companies during COVID-19, one must first know what resilience is and how others see it. In this section the definitions of resilience will be explored and summarized from the fields and viewpoints of social and ecological sciences, economics, supply chains and enterprises. It is also considered how and if these definitions could be applied when considering the resilience of companies and businesses during the pandemic.

In the social and ecological field, the first definition of resilience dates back to 1973 when C.S. Holling wrote an article about the stability and resilience of ecological systems. In this article, he sees resilience as the number of disturbances that can be sustained by a system before a change in system control or structure occurs (Holling 1973.). It could be measured by the magnitude of disturbance that system can tolerate and persist. This

definition of resilience could be utilized when considering the effects that the global pandemic has had on businesses. Some companies could have experienced disturbances before the pandemic, but this global health crisis has driven them to change their system or structure. A great example of this would be how companies have been forced to change their systems to operate almost fully digitally, since COVID-19 has forced significantly decreased or even eliminated non-digital business encounters. This form of resilience is especially important, since many predict that the “new-normal”, meaning the post pandemic time, will be highly focused around digital solutions in many fields of business.

The National Association of Counties (NACO) describes economic resilience as a community’s ability to foresee, adapt to, and leverage changing conditions to their advantage. Similarly, the U.S. Economic Development Administration’s (EDA) Comprehensive Economic Development Strategy (CEDS) Content Guidelines note that resiliency has three primary attributes: the ability to recover quickly from a shock, the ability to withstand a shock, and the ability to avoid the shock altogether (Georgia Tech 2017). While the attributes of resilience are crucial to consider, and are examined in the next sections, the overall definition here is certainly one that should be considered when discussing business resilience. The pandemic has been the downfall of vast number of companies, but for some it has been a possibility to adapt to the current conditions and leverage it to their benefit. This applies for example to online retailers, whose demand has increased enormously, and who have had to adapt their business to the change.

In their book Anbumozhi, Kimura and Thangavelu (2020) seek to find a definition for supply chain resilience and conclude that when looking at the various definitions of the concept most share the view that resilience means to respond and recover at the same or better share of operations and thus include system renewal. Furthermore, they see resilience as the ability to integrate and coordinate resources within supply chain. There is a need to understand that resilience in a supply chain consists of understanding the relationships and differences between resilience, supply chain vulnerability and supply chain risk management, which will lead to an increased supply chain resilience. Sheffi and Rice (2005) on the other hand see a company’s resilience as a function of its competitive position and the responsiveness of its supply chain. They state that supply chain resilience can be bolstered by building redundancy or building in flexibility. Supply

chains have been among the major victims of the global pandemic. There has been a scarcity of certain raw materials, difficulties in the transport sector, issues with workforce, and fluctuations in demand. These consequences of the pandemic have led companies to a situation where their established supply chains are not optimal anymore. New solutions must be found, and therefore the theories of supply chain resilience apply where companies have had to understand the vulnerabilities in their supply chains and build in flexibility to correct and prepare for the consequences of those vulnerabilities.

When considering the effects of the pandemic to businesses, resilience must be thought of from the viewpoint of companies and enterprises. While there are also multiple definitions of the concept within the business environment, the ability and capacity to withstand disruptions are highlighted in many cases. Starr, Newfrock and Delurey (2003) underline that a resilient organization effectively aligns its strategy operations, management systems, governance structure, and decision-support capabilities, so it can uncover and adjust to continually changing risks and endure disruptions to its primary earnings drivers. For the intents of this thesis, resilience is seen as the ability of a company to learn from the past, analyze the current state and predict future disruptions in order to increase resilience in each step of their operations in the least possible time, with the least possible expenses. To help gain the overall image of this multidisciplinary concept, the next sections will focus on defining in more detail the attributes that create, enforce, or uphold resilience, and seek to identify the ways in which resilience could be measured for the sake of identifying and comparing resilience in businesses.

2.2 Models of resilience

When considering what creates resilience for a company, there is no one way to determine the factors that are affecting it. This section of the thesis presents four different models, which seek to define how and where in the business the resilience of a company is generated. In the end further research of the topic will be presented to add on to the existing models.

2.2.1 Integrated functions model

The integrated functions model focuses on the risk management capabilities of an enterprise and is illustrated in figure 1. In this model, risk management provides the foundation that links different organizational capabilities such as emergency, business continuity, security, and crisis management. Risk management provides a common understanding of how uncertainty arising from highly volatile environments can affect the organization's objectives and provides the means by which these specialized capabilities can then address that uncertainty.



Figure 1. Integrated functions model (Gibson & Tarrant 2010).

2.2.2 Attributional resilience model

Organizational attributes can help an organization deal with uncertainty and adversity. The attributional model of resilience is a good example of this sort of thought and an

illustrative image can be seen in figure 2. In this model the key drivers for creating organizational resilience are the organizational values that are meant to establish commitment, trust, strong internal alignment and create common purpose, and leadership that establishes clear strategic direction based upon an understanding of risk, empowering others to implement strategic vision and engendering trust (Gibson & Tarrant 2010). These organizational values help to create a culture in all levels of the organization that is aware, understands and has the capability to recognize and react to changes in their internal and external environment. This high level of change sensitivity or acuity (understanding the past, monitoring the present and foreshadowing the future) allows indicators to be identified in the lead-up to dramatic change (Gibson & Tarrant 2010). The attributional resilience model is established by strong and clear leadership, effective communication, cross functional operations between different activities and operations, and having a common goal throughout the company. The model highlights that when a company can establish a state where they work as one strong unit towards a common goal, they built up their resilience. In order to gain this state of togetherness, as mentioned strong leadership is important and employees must be aware of the past, present and possible future risks that the organization has and could face, and therefore increase their awareness of and ability to adapt to a volatile environment.

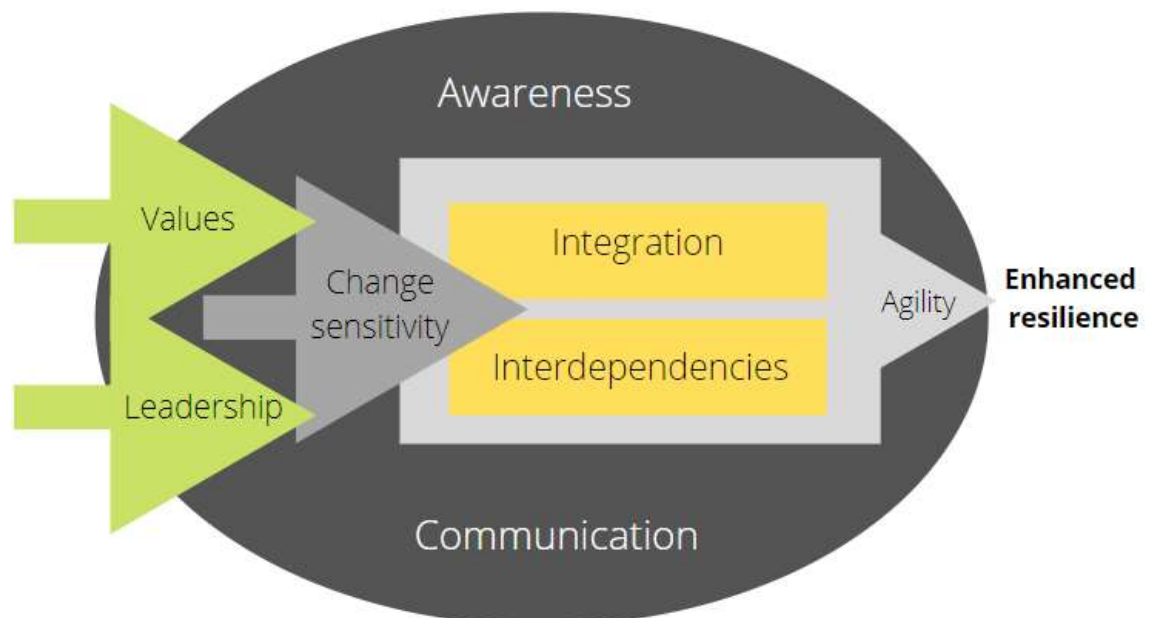


Figure 2. Attributional resilience model (Gibson & Tarrant 2010).

2.2.3 Composite resilience model

While the attributional resilience model focuses more on the company culture by means of values and leadership attributes, the composite resilience model also considers the operational side of an organization including processes, infrastructure, technology, resources, information, and knowledge. These operational processes are being controlled by policies and strategies, for the organization to be able to operate in both routine and non-routine environment. Here the aspect of emergent leadership is highlighted. Emergent leadership is the ability to create, and improved understanding of the volatile environment and any resulting changed organizational properties and is rapid in translating this information into decisions and actions (Gibson & Tarrant 2010). These decisions and actions provide a direction to which operational side need to be directed in volatile situations. This model is illustrated in figure 3.

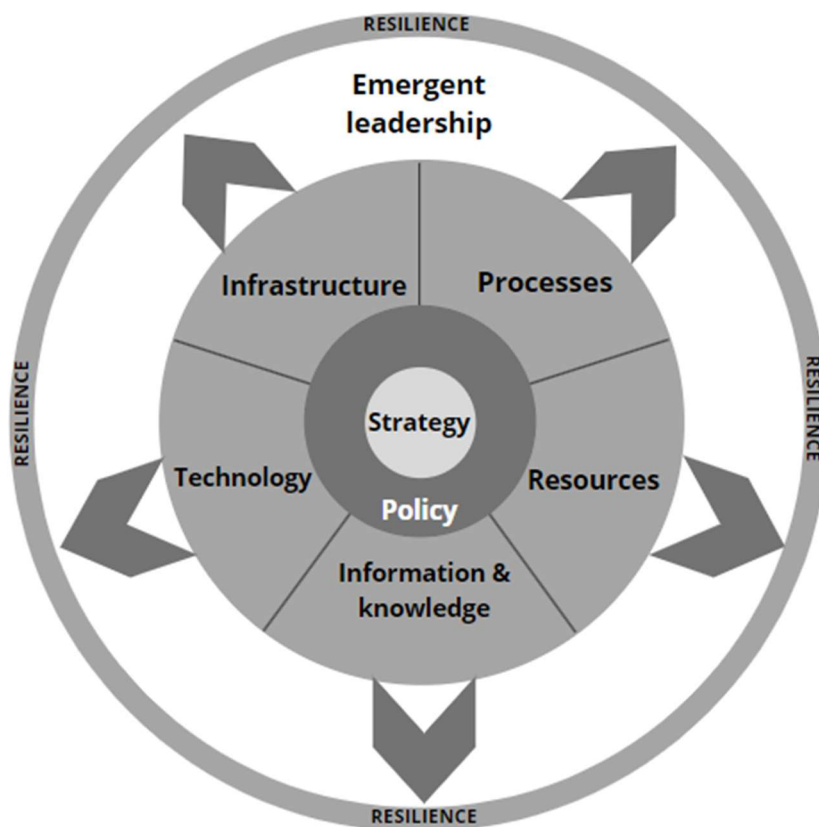


Figure 3. Composite resilience model (Gibson & Tarrant 2010).

2.2.4 Herringbone model of resilience

Now that three different models and attributional views of resilience have been established, there is not one right answer on which one is right and moreover the suitability and accuracy of a certain model depends on the organization under examination. To provide a more one-stop-shop model, the herringbone model was developed to encapsulate the concepts of the other three models and fill in some gaps (Gibson & Tarrant 2010). The herringbone model is built on the fact that every organization possesses within itself a different set of capabilities and activities that affect the level of its resilience and is illustrated in figure 4. The way that these capabilities and activities are being effectively utilized are affected by the specific traits and characteristics of the organization. Most of these traits and characteristics are being used in the routine operating conditions of the organization, while the ones recognized in the integrated functions model are mainly needed in the non-routine environment, these characteristics being emergency, business continuity, security, and crisis management. However, there are some critically important attributes and characteristics recognized that play a crucial part in making the organization resilient in all its operational activities in a volatile environment. These attributes are acuity that refers to the ability to consider information from the past, present and future, and use that information to decide how to act in a specific situation, ambiguity tolerance which is the ability to continue making decisions and taking action at times of high uncertainty, creativity and agility of operating in novel ways to work around problems at a speed that matches volatility and finally stress coping and learnability (Gibson & Tarrant 2010). As stated, the herringbone model is a hybrid of the three first presented models. It holds in itself critical attributes mentioned, but also the attributes from the previous models, these attributes being the ability to manage risk, leadership and values, and the efficiency of operational function.

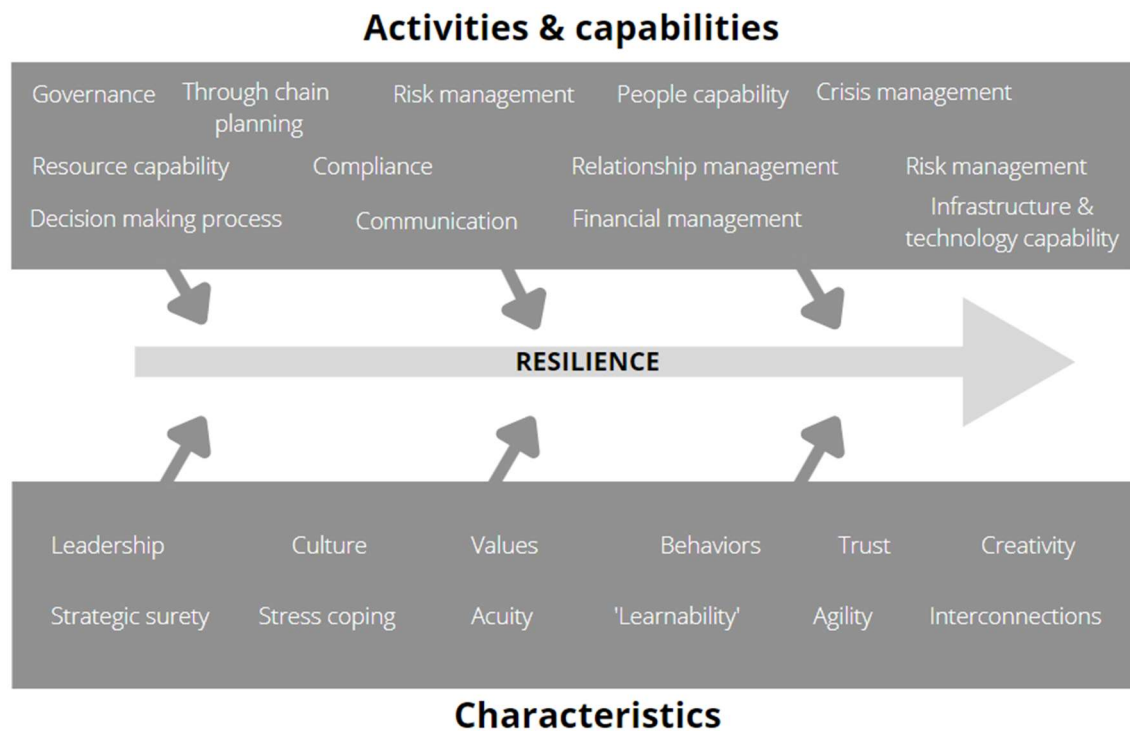


Figure 4. Herringbone model of resilience (Gibson & Tarrant 2010).

2.2.5 Further analysis

When considering the attributes that make up resilience there are other notable ones that are not mentioned in the previously addressed models. While there has been mentions of looking into the past, present, and future, these are often referred to from the volatility standpoint, meaning that information is being collected from past risks and future threats. However, rather than focusing on threats a study by Peter Granig and Kathrin Hilgarter (2020) considers trends and how they affect the business models of organizations. Their study indicated that one attribute of resilient companies, is the following and predicting of trends and proactive measures taken to accommodate the changes that those trends have on business. A proactive strategy towards everchanging trends is indexed by high activity level, which presents awareness of trends and includes higher stakeholder involvement, which enables higher level of agility and results in higher potential for differentiation (Garing & Hilgarter 2020).

Sheffi and Rice (2005) on the other hand find the resilient attributes of an organization from their competitive position and the level of responsiveness of the supply chain, by either building in redundancy or building in flexibility. When it comes to supply chains redundancy is most often shown as an adequate safety stock, maintaining low-capacity utilization and having multiple suppliers in case one cannot deliver. There are also five facets of flexibility recognized, which are suppliers, methods on conversion, distribution channels, control systems and corporate culture. Using these facets in an efficient way and having plans and backups in place help organizations to keep a great level on flexibility in their supply chains, thus increasing their resilience in volatile situations.

2.3 Measuring resilience

This section will seek to understand how such a multidisciplinary concept, such as resilience could be measured by inspecting and analyzing a range of different measuring frameworks. When exploring the ways to measure resilience, the concept of resilience engineering emerges often. This concept emphasizes the importance of measuring resilience and suggests the development of methodologies to analyze and prepare to improve the resilience of enterprises (Ozgur, Devanandham, Sauser & Mansouri 2010). The problem occurs when trying to find a way of measurement that applies to all companies, organizations, and communities. Finding an efficient way to measure resilience would not only help to determine the level of resilience within an enterprise or a company, but also with comparing companies and entities to each other. Therefore, it is crucial to look at different models and frameworks to measure resilience and seek to find the strengths and weaknesses in them.

2.3.1 Operational modelling

Organizations tend to focus on and are preoccupied with measurements of profitability and financial performance, and moreover to safety and quality. While focusing on these metrics of performance, companies can forget to consider the real factors that create resilience. These factors can often be found inside the business processes and need to be recognized and specified. To recognize these crucial processes, companies need to have an explicit understanding of the processes that underlie their business, by having

a specified model of their organization and its activities. The risks generated by these activities need to be assessed and managed to maintain control of the risk levels within tolerable bounds (Wreathall 2006). This organizational mapping of activities can be done from an individual worker level, all the way to national level. However, this sort of mapping does not necessarily mean that the enterprise is resilient to a volatile environment, but rather manages risks. Wreathall (2006) underlines that in order to be resilient, and not just managing risk, companies also must review and update their risk management tools and processes at a frequency such that changes in scope and performance are detected and accommodated sufficiently. Moreover, a resilient enterprise also has accommodated a level of anticipation and forecasting to their risk management to increase resilience, to be able to prepare for future hazards and conditions, and to act before any damage is done. While this simplistic and broad resilience model by Wreathall (2006) is a good base model for measuring resilience, he states in his paper that this is a layout to create resilience measuring process, but recognizes that these are first steps, not a complete recipe. Moreover, the model succeeds in taking into consideration the basic means of being resilient, which are being preventive, prepared, adaptive, and proactive in operations that are subject to risks.

2.3.2 Ability to predict

Another model of measuring resilience focuses on the disruptive powers of a crisis, and how organizations and enterprises foresee, react, and adapt to them. The model first asks the question of what a company must be resilient against and what is the nature of the possible threat. These threats have three aspects according to Westrum (2006) which are the predictability of the threat, the threats potential to disrupt the system, and the origin of the threat, this meaning whether it is internal or external. Here it is important to note that predictability does not mean that the exact time of the threat can be predicted, but rather that the threat happens often. These predictions can be made by processing signals, that can include symptomatic events, suspected trends, gut feelings, and intelligent speculation according to Westrum (2006). The ability to be able to predict and therefore prevent and be prepared to threat is going to be a crucial metric to measure resilience in the future. Disruptive events are likely to happen more frequently in the future, as McKinsey Global Institute states that companies can now expect supply chain disruptions lasting a month or longer to occur every 3.7 years, and the most severe

events take a major financial toll, and in an article published in the BBC news website by Victoria Gill, many scientists are positive that the COVID-19 pandemic is not the last or the most severe one that the world will face (Lund, Manyika, Woetzel, Barriball, Krishnan, Alicke, Birshan, George, Smit, Svan and Hutzler 2020; Gill 2020). The model seeks to increase resilience of companies by highlighting the importance to understand the past, present and future relationships between threats and risks, and the responsive actions taken, to enable an effective assessment and measuring of the company's resilience prowess at that moment in time. Moreover, this assessment can be done by classifying situations according to their severity and nature, and where the event lies in the organization's time horizon. Protecting the organization from trouble can occur proactively, concurrently, or as a response to something that has already happened (Westrum 2006.) A similar measuring tool has been developed by Walker and Meyers, who believe that the level of resilience in a company, can be defined by looking into past events and classifying disruptive events and their consequences, and with that information built a database of threshold changes (Walker & Meyers 2004). Both of these modelling tools therefore focus on classifying disruptive events, and with the use of data create preventive actions against threats and disruptions.

2.3.3 Measuring costs

While the first two methods to measure resilience are highly focused on mapping and modelling the company's structure and performance within different levels of operations and in different situation, there is also a more quantitative approach to measuring resilience created by Christophe Béné. Even though Béné's theory is built upon research mainly focused on ecological and social devastations and measures of resilience, the theory can also be applied to business and enterprise resilience measuring. According to Béné (2013) resilience can be measured in terms of the costs that one has to 'pay' to pass through a particular shock. These costs can be divided into three categories which when added up will conclude the cost of resilience. These categories are the investments made as preparedness (anticipation costs), the costs of destruction following the impact of the shock, and the costs of recovery, including the replacement costs of what has been destroyed but also the various costs associated with change, adaption or transformation. The lower the resilience cost, the more resilient the system is. Béné

(2013) argues that a system or community that has acquired or developed resilience will face lower costs to pass through and recover from a particular shock than a system or community that is not resilient. This model of measurement could be used efficiently by categorizing different disruptions and seeing how they affect the cost of resilience. However, this model requires and focuses on historical data to be applied to the calculation, and therefore does not take into account the current state of operations as a source of resilience, nor does it focus on prevention as much as the previously mentioned models.

2.3.4 Metric model of measuring

The final model of measuring could be referred to as the metric model for enterprise resilience. This model proposes three metrics by which to measure the resilience of an enterprise. The first metric is recovery time, that can be considered as the time taken for an enterprise to overcome disruption and return to its normal state (Ozgur et al. 2010). When considering this metric as a measure of resilience, it is crucial to define the start and stop point. The start point can be thought of as (a) the moment in time when the disruption happens or (b) as the moment that the disruption affects the enterprise, although sometime these points can happen at the same time. A notable aspect to consider regarding the start point of a disruption is also the nature of the disruption, meaning whether it is direct/primary, or indirect/secondary. For example, a direct/primary disruption would affect the assembly line of a company, while an indirect/secondary disruption would affect their supplier. Defining a stop point of disruption can also be difficult and one must ask the question of when is the disruption over and enterprise recovered? Is it the point when sales are up to the level they were before the disruption, or is there a defined level of recovery, for example 80% recovery in sales? This brings up the next measure proposed by Ozgur and his colleagues (2010) which is the recovery level to which there are differences in the definitions of resilience. Some definitions indicate that it is sufficient to recover to a level lower than the original level, while other suggest that it is the same or higher than the original level (Ozgur et al. 2010). Once the appropriate recovery level is chosen, it is compared to either the original level, or the lowest level caused by the disruption. The most important factor is that especially when comparing enterprises, the metrics of measurement must be set by

using the same way of defining the recovery time and level. The final metric is the level of vulnerability to potential disruptions. This metric does not have quantitative features but could be a meaningful metric to measure resilience to certain types of disruptions if it can be integrated with the metrics of recovery time and level. This model has identified three major elements of resilience, and while it could be efficiently used by defining the details of the metrics, it still lacks to expand to the crucial area of correlation between the various aspects of enterprise resilience. Correlation of resilience measures could be the next step in the research of measuring resilience.

2.3.5 Conclusion of measurement

As concluded previously, resilience is a multidisciplinary concept that is used in various fields of study. Therefore, measuring the concept requires a deep understanding of what is being measured. As the concept of resilience engineering is gaining momentum in the discussion and leading a way to develop tools and methodologies to analyze, measure and monitor resilience there are now models of measurement being created, which highlights the importance of choosing the right model for a specific study, business sector or disruptive event. The most crucial aspect of measurement is to use the same methodology and models when comparing businesses, and not only prepare for the future, but also examine the past and present level of resilience.

3 History of resilience

As many know, the ongoing COVID-19 pandemic is not the first, nor last, major disruption to hit the global economy and companies all over the world. When considering the attributes of resilient companies, as mentioned, it is crucial to not only focus on the present and future, but also the past which also includes the mistakes and triumphs of other companies as well. The business implications of big disruptions are often one of the most discussed and examined topics during and after the disruptions, for example there are records regarding the influenza pandemic in the USA during 1918-1919. Reports from that time indicate that in Arkansas, USA some companies experienced a 70 percent decrease in their business, while businesses such as drug stores and mattress stores hit peak sales, since sick people needed medicine and bed rest (Garrett 2007). These sorts of events highlight the importance of business and enterprise resilience, and therefore it is crucial to know how certain companies have been able to survive and even thrive during such events. This section will seek to learn how resilience has presented itself during major economic disruptions in the past, and how companies have faced these disruptions and what has been the outcome. When considering the past disruptions, such as the financial crisis in the early 2000s, it is important to highlight the differences between the different disruptions. An article by Martti Malmivirta (2020) emphasizes that compared to the financial crisis of 2008, the ongoing pandemic produced a much faster downfall of the stock markets and has created an even bigger disruption to the economy. Moreover, it is evident that every disruption that the world has faced is unique and has different characteristics and consequences. However, there are still lessons to be learnt from those disruptions. When researching the impacts of past disruptive events, a gap in the literature can be seen. There is a vast amount of information of the devastating impacts and repercussions of economic depressions, pandemics, natural disasters, and financial crises, however information and literature about organizations that have persevered and shown resilience is very scarce.

After the financial crisis some scholars sought to find out what were the attributes that made other companies survive in Finland while others did not. In the research two attributes were seen as ones that were common among the successful companies: these attributes were a strong balance sheet before the crisis and the ability to drastically and actively cut costs in the midst of the crisis (Malmivirta 2020). The companies that

possessed these attributes were more likely to recover to their normal state, and more quickly. However, it is essential to state that during the financial crisis companies were waiting to get back to normal, while the ongoing pandemic has created the concept of a new normal, which means that it is not enough to recover to the original state, but rather innovate completely new strategies and ways of operating.

This section will present how three different Finnish companies were able to survive, maintain their operations and handle the repercussions of the financial crisis of 2008. Some of the findings are aligned with the observations and theory of Malmivirta, but a note can be made that for smaller companies, the surviving mechanisms can be different than for the bigger ones. Therefore, when discussing resilience, it is crucial to remember to establish what sort of companies are under the looking glass.

Statistics Finland published an article in 2011, written by the former deputy managing director of Suomen Yrittäjät Timo Lindholm, that analyzed how companies in the Helsinki metropolitan area had bounced back from the recession caused by the financial crisis. The article makes it clear that when comparing large and small companies a great divide could be seen in how the human resources of the firms were handled during the disruption. Lindholm noted that large international companies were able to face the financial crisis first and reacted quickly. Operational costs were cut down which could be seen in the decreasing number of employees located in Finland. According to Statistics Finland the number of employment relationships converted to full-time employment decreased the most in companies employing 500-1000 people, while in companies employing under 50 people the decrease was under one percent (Statistics Finland 2011). The findings of the article indicate that larger companies, especially international ones, are more open to making operational changes and cutbacks to better their financial performance due to a disruption, and this is also what Malmivirta stated in his report.

Sunit Oy is a company from Kajaani that operates in the field of making in-vehicle computers and in 2008 their revenue was almost 18 million euros. However, once the effects of the financial crisis hit the revenue decreased to a bit over 3 million euros (Pöysti 2020). While the decrease in revenue was drastic and could have been the end of the company, they still managed to make it through the difficult years. The company was established in the mid 90's and was able to claim big and lucrative clients from the

start. Moreover, by starting off strong they were able to save themselves from the disruptive powers of the financial crisis by having a strong balance sheet built during their years of success in the industry (Pöysti 2020). This form of gaining resilience from a strong balance sheet was also pointed out by Malmivirta and it seems that evidence supports his theories. A strong balance sheet can be a safety rail for a company during disruptions, since it gives them more flexibility and enables them to stay in business while making changes to their operations or waiting for the disruption to end.

While it has been indicated that the two attributes that cause and increase resilience according to Malmivirta can also be seen in real life company cases during the financial crisis of 2008, these two attributes highly focus on the operational performance both before, during and after a disruption. Strong balance sheets are built before a disruptive event and making operational changes in a timely manner is a way of managing financial performance, by for example employee cutbacks, during and after the crisis. However, while some companies, especially the larger international companies, were decreasing the number of their employees, some have seen the employees as their most important asset to fight disruptions. While battling the disruptive forces of the financial crisis, a company named Ponsse from Vieremä in Finland sought to find resilience within their workforce. A loyal, competent and motivated staff that has seen the ups and downs of the company, was willing to be flexible for their employers during the crisis and have shown that the staff is the most valuable asset of the company (Iisalmen Sanomat 2015). As stated earlier, the data from Statistics Finland also supports the theory that smaller companies seek resilience from their workforce, since the data showed that companies with under 50 employees only decreased their number of employments converted to full-time contracts by only under one percent, following the financial crisis.

4 The effects of COVID-19 to businesses

This section will analyse the impact of the global pandemic to the overall capital market and companies. This is done to gain a more comprehensive view on what struggles companies have faced during this exceptional time, why resilience has been an asset to all, and how the pandemic has impacted almost every business in the world. Furthermore, this section will be a crucial base for the next section, which will present interviews with companies that have shown resilience. For the interviews to be as informative as possible, we need to have an overall look of the impacts that COVID-19 has had.

When the pandemic emerged as a global health crisis in the beginning of 2020, many governments reacted quickly by issuing curfews for people and strict restrictions for many business sectors, especially those operating in the fields of leisure, culture and entertainment. Many companies were forced to close their doors, either due to these restrictions or the lack of customers. Moreover, as people took shelter in their homes the consumption of goods decreased, leading to growing troubles for companies. For example, the paper industry has gone down to a level where they cannot climb back. The Finnish paper manufacturer Stora Enso reported that the paper industry has seen a five percent yearly decrease for a long time, however, due to the pandemic the decrease in 2020 was 18 percent (Lähteenmäki 2021). While the pandemic has had an effect in almost every company in the world, we must keep in mind that the magnitude of those effects has varied drastically. This observation was very clearly made in a report published by the European Parliament, which examines the impacts of the pandemic to various industries in Europe. A section of the report is dedicated to the cultural and creative industries, which have been highly affected and discussed during the pandemic. The report states that while video games increased their revenue by approximately 9 percent, music and performing arts were the worst-hit, with an expected revenue decrease by 90 and 76 percent (De Vet et al. 2021). However, while impacts of the pandemic have been terrible for some, it has left companies with a room to change, improve and show resilience. The director of the National Opera and Ballet Gita Kadambi stated in an interview that during 2020 opera and ballet reached 3,5 million contacts with their audience, which was triple compared to the previous year, all thanks to digital solutions to stream the performances (Korhonen 2021).

5 Research methodology

The previous chapters focused on the fundamental part of the research, these being the theoretical frameworks regarding resilience. To add on to the existing research on the topic, the author decided to conduct primary research to gain an even deeper understanding of how resilience presents itself during times of disruption. This section of the thesis presents how the most suitable research design and data collection methods were chosen and explains the reasoning behind the decisions.

5.1 Research design

Before thorough research can be conducted, a suitable research design should be identified to best suit the research question at hand. There are three general categories of research design, these being exploratory, descriptive, and causal research (Sreejesh, Mohapatra & Anusree 2014). By choosing the right research design and implementing careful planning, researchers can minimize the number of errors in their research and maximize accuracy.

The three research designs identified are fundamentally different and should be applied based on the research question and objective. Descriptive research utilizes quantitative data, to describe or learn from an ongoing activity by studying the changes in behavioral patterns of the subjects of interest. Moreover, the descriptive method is highly focused on the characteristics of the variables that are studied in the research (Sreejesh, Mohapatra & Anusree 2014).

As a research design, descriptive research is highly effective and often leads to easily quantifiable results. However, descriptive research does not take into consideration the causal relationship between the identified variables. This means that when one variable changes the effects to the other variables are not known. To research the effect that changing variables have between each other, one can apply the causal design to their research. The basic aim of causal studies is to identify the cause-and-effect relationship between variables (Sreejesh, Mohapatra & Anusree 2014).

The last of the three research designs is exploratory research. Unlike causal research, exploratory research is not used in cases where a definite result is desired, but rather it

can be used to obtain necessary information and to develop a proper foundation for conducting detailed research later. Moreover, exploratory research is conducted for three main reasons: to analyze a problem situation, to evaluate alternatives and to discover new ideas (Sreejesh, Mohapatra & Anusree 2014).

Since the aim of the thesis is not to understand the characteristics of different variables, nor to understand causal relationships between them, the exploratory research has been identified as the most suitable research design. Exploratory research is an efficient way of utilizing secondary and primary data to conduct qualitative research, which will be discussed more in the next chapter.

5.2 Data collection

The data collection of the thesis consists of using secondary data that has been represented in the previous chapters that presented the theoretical framework of resilience, and primary data collected by conducting one's own research about the topic. The primary data collection method was chosen to gain a perspective most comprehensively on how Finnish companies see the concept of resilience, and how it has been visible in their operations during the global pandemic. The first choice to make was between using either quantitative, qualitative, or mixed methods for the data collection. Quantitative and qualitative data collection can be differentiated by the outcomes and data that they will lead to. While quantitative research produces numerical data, for example by implementing questionnaires, qualitative research produces non-numerical data, such as words and images (Saunders, Lewis & Thornhill 2019). Quantitative research is a great way of producing numeric data which is often easier to bring together and analyze. However, this data collection requires a suitably large number of participants and a well-designed questionnaire so that every participant understands the questions in the same way, thus not resulting in bad data due to misunderstandings. Qualitative research on the other hand is an effective method to gain a deep understanding on the participants by using unstructured or semi-structured methods, so that the research process is both naturalistic and interactive (Saunders, Lewis & Thornhill 2019).

The data collection implemented in this thesis study was chosen to be qualitative research by conducting interviews with company representatives that had the required

knowledge of the company's operations. The level of standardization of a research interview can vary from structured, semi-structured and unstructured interviews.

For the resilience interviews a set of structured interviews was implemented, to test the findings of secondary data presented in the previous chapters. While some structured interviews are in their nature close to questionnaires with very specific questions, the interview questions were designed to be a little bit open-ended. This was done since respondents were from different sized companies and industries, and by making more open-ended questions, the goal was to let the respondents have more flexibility in what they wanted to talk about regarding their operations. The interviews were conducted with four companies, and all interviews had a set of pre-determined questions with which the participants familiarized themselves before the interviews. The set of interview questions can be found in the appendix section.

5.3 Data analysis

To analyze the data gained in the interviews, the author used written answers of the participants, video recordings, and meeting notes and transcripts. After each interview was conducted, the author made a transcript of the interview findings to recognize patterns and capture the similarities with the secondary data collected before the interviews. Moreover, the transcripts were made to capture in a written format the emotions and nuances that the participants presented during the interviews. According to Saunders, Lewis, and Thornhill (2019: 645) without the contextual information provided by a detailed transcript, important incidents that affect the conduct of an interview or observation may be missed.

When conducting research by using qualitative data, it is crucial to understand that analyzing the data is a continuous process all throughout the data collection, rather than being a task after all the data has been collected. After a transcript of an interview was written, the interview findings were analyzed. This process of continuous data analysis helps the researcher to find new perspectives to their research topic, and gain knowledge on how to improve, change or redirect their research to better suit the research question and objectives.

6 Limitations

The limitations of this research are mainly due to the number of respondents found to take part in the interviews. The author set a goal of conducting interviews with seven country representatives, who would be able to describe their views and actions regarding resilience before, during and after the ongoing pandemic, to gain a deeper understanding of how Finnish companies have survived the difficulties that have emerged due to the pandemic. It was also important to find the participating companies from different fields of business, to have a variety of perspectives.

Many people asked to take part in the interviews did not have time to participate due to their very busy schedules. Therefore, the original goal of having seven respondents was not reached, and interviews were conducted with four company representatives to gain further knowledge of the research subject.

All the interviews were planned to be conducted by using virtual platforms such as Zoom or Microsoft Teams. However, due to scheduling conflicts two interviews were done by using email. All the respondents received the questions before hand. As the goal was to have respondents from various fields the questions were designed fit all. Nevertheless, some questions were not applicable to all respondents; for example a company that sells services, did not respond to a question regarding their supply chain. Still, the author thinks that the interview findings were sufficiently comprehensive and will help in studying resilience more deeply.

7 Findings

This section of the thesis presents the results of the qualitative research conducted by the author. The research method chosen was to conduct interviews with company representatives, that could describe their company's resilience before, during and after the ongoing pandemic. The questions asked from all participants can be found in the appendix. Interviews were held virtually with two company representatives, them being the general manager of AbbVie Oy, Matthew Iles, and the visitor centre manager at Kyrö Distillery, Tony Sivula. Moreover, due to scheduling difficulties two participants chose to answer the interview questions by email but left the communication channel open for the author to ask more details if needed. The email interviews were conducted with the founder and owner of MI-design, Marika Ijäs and the virtual delivery administrator of Berlitz Finland, Jenna Mäkinen. The company's that took part in this interview operate in various fields of business. AbbVie operates in the pharmaceutical field, Kyrö Distillery's core business is the manufacturing and selling of alcohol, MI-design offers creative and design work, and Berlitz Finland specializes in teaching languages. The interviews were conducted in Finnish and the below answers have been translated to English by the author of this thesis.

Has creating or developing resilience been a part of your company's strategy before the pandemic?

Matthew Iles: Resilience and its development have not been a part of our strategy. Resilience altogether is an unknown concept, that I heard once in a training nine years ago, where one of the topics was Resilient Leadership. Of course, we have thought beforehand what we are going to do for example if a patent expires, but not resilience other than that.

Tony Sivula: No, the concept of resilience was not familiar to me, and I actually had to go to Google to check what it was about and then turned to my supervisor, who after a while of thinking was able to explain the concept to me. Resilience has never been talked about or been in my mind, at least as the specific concept of resilience. When I got to know what it meant, I knew that I had discussed similar topics, but not by using the word resilience.

Marika Ijäs: No, it hasn't been a part of the strategy of my firm. However, since the company is a one-person business, I have developed my personal resilience with my life experiences and age.

Jenna Mäkinen: Creating and developing resilience has not been a specific part of our strategy. I think it has more been a side product of how our company has built and developed its IT infrastructure.

In what ways has your company prepared for disruptions or sudden changes before the pandemic?

Matthew Iles: We have an up to date and effective continuity plan, that focuses on the continuity of our operations and possible risks that we might face. The plan deals with for example how the leadership team will assemble when a crisis emerges, and crisis communication. Possible crisis can be fire or cyber-attack to mention a few. Our continuity plan is updated yearly. When considering the possibilities of a crisis, we see for example a cyber attack as a realistic threat, since it has happened to a pharmaceutical company before in Finland.

Tony Sivula: Before the pandemic we had not discussed any disruptions coming from outside the company. Of course, we have discussed and prepared for internal situations caused for example when a machine breaks down or if suddenly a lot of employees are sick and unable to come to work. But before the pandemic we have never considered ways to handle an event with such major and long-term effects as the ongoing pandemic. We are aware that there is always a possibility for a flu that can increase the number of absences momentarily, but those situations don't affect in the long-term and do not have an effect on our sales.

Marika Ijäs: I have prepared my company to face disruptions by increasing the company's monetary funds, so that if there would be a couple of months with less business, the company would still survive it. My company only employs me, and therefore I think that I also increase the company's resilience by taking good care of myself, so that the business does not have to stop. If something were to happen to me, I will think about how to handle it then.

Jenna Mäkinen: We had not prepared ourselves for disruptions, at least not in Finland. It was very lucky for us that we had started to develop our digital channels before the pandemic, to be able to teach virtually.

How has the ongoing pandemic affected the revenue of your company?

Matthew Iles: The overall impact of the pandemic to our business has been quite neutral. Mostly the pandemic has affected the ways of which we face our customers, which is a crucial core function of our business. We needed to change the way that we encounter our customer to virtual formats with a very quick schedule. However, our overall business, the use of pharmaceuticals and import of our products was almost not affected at all. When it comes to starting treatments, some of the patients had to postpone their start due to the pandemic, which led to momentary decreases in our sales. Luckily there were no incidents where the import of our products was compromised, even though that was one of our biggest concerns.

Tony Sivula: When the Finnish government placed restrictions on the restaurants and bars, our alcohol sales plummeted. The manufacturing of hand sanitizer saved us and grew our business. However, the effects of that were quite short. We built the manufacturing line for hand sanitizer in the end of March 2020, and by the end of June, the demand had dropped. To compare, at the highpoint of the hand sanitizer sales in May, we sold over 50 000 bottles a week, and now we sell maybe 1000 bottles every other month. But while the demand for hand sanitizer dropped, the demand of alcohol increased. The only pre-pandemic part of our business that is still very much lacking is the visitation center. Last summer in 2020 we had a lot of domestic visitors, but the following autumn, winter and spring were very bad, with most of the visitor center employees either laid off or moved to manufacturing side of our operations.

Marika Ijäs: At first it looked like that the effects and consequences were big, but revenue grew almost to a normal amount towards the end of 2020. Also in the spring of 2021, revenue has been as a normal level. So, to conclude the impacts and affects have not been big.

Jenna Mäkinen: Before the pandemic, we had set ourselves very ambitious growth goals. Now of course the pandemic has greatly affected and slowed down us reaching those goals. However, despite these negative effects our revenue had grown compared to pre-pandemic levels.

How has the pandemic affected the day-to-day operations of your company?

Matthew Iles: Like most other companies, we also started to work remotely and conducted our meetings virtually. Due to these changes we started to have meetings for the whole company, to increase the effectiveness of communication. We use many virtual solutions that allow us to have internal and external meetings, training and events virtually. The drastic increase in the use of virtual platforms exposed that the ones we used before couldn't handle the capacity needed for all to be remote. Luckily, we had just moved to new office spaces, that had strong connections and new solutions.

Tony Sivula: We are working remotely and haven't had a companywide meeting since before the pandemic. When the pandemic started, we were very cautious and avoided contacts. This was done by dividing our teams to work in different workstations, and by timing our morning and evening shifts, so that the evening workers started half an hour after the morning shift had left, so in case of someone having the corona virus, they wouldn't make any contact. We have a very tight and close working community which is important for all employees, so the remote working was quite hard.

Marika Ijäs: My work has always been about living in the moment and that's why the affects have not been big. I also work from home and have been doing that since 2014. The only change has been that some meetings that used to be face-to-face are now virtual.

Jenna Mäkinen: We offer high quality and tailored language courses and education to mostly business clients. The pandemic has turned our classes to almost one hundred percent virtual. Also, the work conducted at our office has also changed due to the restrictions and remote work.

In what ways have you tried to increase your resilience during the pandemic?

Matthew Iles: Creativity and fast decisions have been very important. For example, we have found great opportunities within the virtual meetings and trainings, since the virtual solutions have allowed us to invite world class healthcare professionals to speak in our events, and therefore improved the quality of the data and information that the participants have received. Also, the ease of taking part in these events has increased for the participants. Moreover, our salespeople that work in the field have been able to work more efficiently, since they can "visit" more clients, in more cities in a day, since there is no travel time between the cities and clients. It is very important to communicate and interact in this situation, so that no one feels that they are alone.

Tony Sivula: Right now, we don't see the need for resilience, since demand for alcohol has reached almost the pre-pandemic level, and that is still our core business. One thing I see as an issue for us now is that we have at this moment approximately 400 000 empty hand sanitizer bottles in storage and we don't know what to do with them. So we have tried to find a solution for that. However, if considering resilience, I think that now we are more resilient than before, since we still have the preparedness to manufacture hand sanitizer, if needed. If I would start the machines now, we could start bottling the product after one hour.

Marika Ijäs: I haven't done a lot to increase the resilience of my company. As I mentioned I think that my wellbeing increases the company's resilience, and to add to that I have tried to spend my free time to exercise and take care of myself, and with that clear my head and increase resilience. I have consciously tried to think positive and see opportunities that this situation can bring.

Jenna Mäkinen: By even further developing out capabilities to teach virtually. This was our priority since we had to momentarily move all our classes to virtual platforms. Also, we have focused our efforts on marketing and selling those virtual classes.

What do you think are the strongest attributes in your company, when it comes to creating resilience?

Matthew Iles: We have very strong and open dialogue. Our employees have a low threshold to ask questions, and to give ideas and comments. We do not have a guidebook

for these sorts of special situations, but we actively ask the opinions of our employees and keep them updated on the current news and things. I have personally followed the global situation very closely regarding the vaccinations and how they are proceeding, the restrictions in different countries, and the actions of other companies. This way we can learn from others and give up-to-date information. When making decisions, I see that reasonableness and compromises are important. We strive to take into consideration different attitudes and end up to a solution that fits everyone.

Tony Sivula: We were able to move from making alcohol to making hand sanitizer very fast, and that was what saved the company. I think that the reason that we were able to do this change so fast and reach such high volumes of manufacturing was that we have great and strong team spirit. We were already given notices of being laid off, but those were cancelled because of the new product manufacturing, and I think that that really empowered and inspired everyone to work hard towards a common goal. During the tough times we always had the thought that if we just work together, we can survive this. When the company needed everyone to work hard, every employee was willing to work hard and be flexible, despite the team that they normally worked in or their rank in the company. When we were building the new manufacturing line in a hurry, to be able to complete our orders in time, no one was worried about their shift ending and were willing to sacrifice their free time to make sure we as a company survived.

Marika Ijäs: The company equals me. And my strongest attributes as an entrepreneur are the knowledge that I cannot affect everything, and if there is nothing to do about something, then it just must be accepted. I always strive for positive thinking. I also think that I have great relationships with my customers and a real desire to help them, since their success is what keeps the company at float. I believe in my own skills, am flexible and genuinely like what I do, and that's what motivates me the most.

Jenna Mäkinen: In my opinion the strongest attributes of the company are the products that we offer, our IT infrastructure and the employees. The quality of our product allows our customers to maintain some forms of human contact, even during this exceptional time. Many of our customers and teachers have become friends during our language courses. Many of our customers actually have kept our language courses as a priority during the pandemic, since they think that even these virtual relationships are very

important to them. When it comes to our IT capabilities, we have had great flexibility from our global management. Now that we are a part of our Nordic area franchise, we can tailor our products and services to fit the Finnish customers better, and that has been very important during the pandemic. For example, we have been able to use platforms that best suit our customers. We also have a great team here in Finland. For our staff in Finland, using technology has been easy and that's why using it has been more effective compared to other countries. The teachers as well as students have been very flexible and skilled in overcoming possible obstacles that the virtual setup has brought. I also think that we have very good internal and external communication.

Do you think that some certain functions of the company are in the forefront when creating resilience?

Matthew Iles: The leadership team has a crucial and central role, and it takes the responsibility of all our actions. During times of uncertainty the need for strong leadership is highlighted. The leadership team must think about the safety of the people, as well as the business that we are in. Also, HR and the managers of our team are in an important position when it comes to communication. A lot of employees find it easier to talk about their concerns to their own manager or our HR people, rather than voicing their concerns in a meeting for the whole company.

Tony Sivula: I personally don't see the need to systematically build resilience. But in the case of a similar event than the ongoing pandemic, I trust that the founders of this company are very resourceful and creative and will always seize new opportunities and find them. I sense that if there is a new major disruption, they are the sort of people that find ways to survive it. Also, they are leaders, who have the support of our whole team to stand behind their ideas. For example, when the founders had the idea to manufacture hand sanitizer, our whole team of approximately 30 people trusted them and started to make it happen.

Marika Ijäs: I don't think that any function of a company is the sole creator of resilience. I believe that at least my resilience has come from somewhere else. The positive feedback from clients and all the successful projects increases my motivation and positive spirit, and by that create resilience.

Jenna Mäkinen: The training of our IT infrastructure to our employees (especially the teachers) has been extremely important to developing our resilience. Also, the global communication between countries and locally has been a priority for our resilience.

How has your supply chain reacted to the changes brought on by the pandemic?

Matthew Iles: Luckily our supply chain has not faced any changes or delays due to the pandemic. At some point we were concerned, when there was a high possibility and risk that an employee in our factory could be infected with the corona virus, which could have stopped the whole manufacturing process in the factory. Also, a concern was that the restrictions regarding entering the country could affect the import of our products.

Tony Sivula: I was surprised by how quickly we got all the components and materials to manufacture hand sanitizer, this was probably because we ordered massive quantities. If we would have ordered less, we wouldn't have been gotten what we needed. When it comes to our alcohol production, we almost had a situation where we almost shut down for a few days, but luckily our CEO was able to save the day and we got the delivery on time.

Marika Ijäs: This is not applicable since my company offers services only.

Jenna Mäkinen: We offer services that used to be face-to-face teaching, but now classes have moved to virtual settings. Our teaching is mostly conducted in a virtual platform provided by a third party, or in our own virtual school Berlitz Live Online.

Has the pandemic increased your resilience? If yes, then how?

Matthew Iles: It definitely has, when it comes to both individuals and also the whole organization. When things are good, it is difficult to keep in mind that they could be much worse. This way of thinking is certainly going to change in the future.

Tony Sivula: It has. No one saw this pandemic coming. Now that we have all been through this exceptional time and seen that this is possible, we can be almost certain that there will be more similar situations. But at this moment we are focused on increasing our alcohol sales to the level that they were in 2019. When this pandemic is over for good, I am sure that we will sit down and talk about what needs to be done for us to be prepared for the next disruption, and who knows maybe then we will make hand sanitizer again or even face masks.

Marika Ijäs: I don't think the pandemic specifically has increased it.

Jenna Mäkinen: It has. Our capabilities to teach virtually and our whole IT infrastructure has been developed and will keep on being developed, to best suit the needs of our staff and customers. A good IT infrastructure allows us to maintain our operations during disruptions, when we have to keep our social contacts to a minimum.

Do you think that the pandemic will change your business permanently? If yes, then how?

Matthew Iles: Yes. The use of digital channels for internal and external meetings and trainings will stay with us. During the pandemic we have learned a lot about how to use and utilize different channels. Business travel is also one thing that will change permanently. We no longer need to travel to other countries to attend a meeting. Remote work will also stay. I can't say yet what portion of work will be done remotely and what portion in the office, but I don't think that we will continue to work from the office every day.

Tony Sivula: I don't think that anything will change permanently. As I have mentioned the production of alcohol is our core business, and once that recovers to normal, so will our company. We will return to how we did things before and that works for us. Of course, the amount of travelling between our offices in Isokyrö and Helsinki will probably decrease, since now we can have some meetings virtually.

Marika Ijäs: I don't think it will, since my job has always been home based remote work, and that is probably what will be a change for other companies.

Jenna Mäkinen: Yes. The development of our virtual platforms is still ongoing and even after the restrictions brought by the pandemic have lifted, we are going to keep offering our customer better and more flexible services virtually, than what we had to offer before the pandemic when it comes to online teaching.

How will you prepare for possible disruptions or sudden changes in the future?

Matthew Iles: There has been a change of attitude towards our business continuity plan. We have always taken it seriously, but in the future, it will be thought of as a tool that will most likely be used and should be up to date all the time, since the pandemic has proven that you can never know what happens.

Tony Sivula: We have seen that our most valuable asset is our team, and that's why we will focus on keeping it strong and communicating. We will keep up the good team spirit and together have a workshop on how we could prepare for exceptional events in the future.

Marika Ijäs: I would like to increase the financial stability of the company, to be able to worry less and be resilient in a case of a disruption.

Jenna Mäkinen: We are going to keep building and bettering our IT infrastructure and developing our products to be even more flexible and better suited to any needs our customers might have.

How important do you think increasing and developing resilience is for the sake of business continuity?

Matthew Iles: Very important. When unexpected changes and events happen for whatever reason, a resilient organization is better than one not capable of change. I hope that the lessons we have learned will lead us a long way.

Tony Sivula: Now that I understand what the concept of resilience means, I also understand the need to consider it for the future and think about how it might be needed and utilized when other disruptions happen, that are as major and long-term as the ongoing pandemic. If the world stops for a day, we can survive that, but this pandemic has been with us for 1,5 years and has been a challenge or the end for many, and that's why I think that resilience is important.

Marika Ijäs: My own personal resilience is of course important because my company is a one-person business. I think that I have a fairly good ability to overcome obstacles and hardship, but on the other hand there can never be enough of that ability. I believe that my business will continue fairly normally and therefore I don't see a reason to increase resilience consciously. This maybe more for me brings forward the question of should I try to knowingly or with specific actions increase resilience, just to be sure. I will continue to contemplate this.

Jenna Mäkinen: Growing our resilience is extremely important, but for Berlitz Finland we think it happens at the same pace as our IT infrastructure grows and develops.

8 Analysis and discussion

The answers by the respondents clearly indicate that as a concept resilience was not something that companies thought of before the pandemic. While the companies had some level of preparedness for disruptions, such as a continuity plan, the research shows that none were prepared for such major disruption such as the ongoing pandemic. Moreover, Marika Ijäs from MI-design told that she had prepared for possible disruptions by increasing the company's monetary funds. This way of increasing resilience was also pointed out by Malmivirta, who in his research stated that companies with a strong balance sheet performed better than other, when considering the outcomes of the 2008 financial crisis (Malmivirta 2020). This method of creating and increasing resilience is also supported by the company example of Sunit Oy, that have stated that they were able to survive the 2008 financial crisis, by having a strong balance sheet that was built during their successful years.

When it comes to the day-to-day operations of the companies, most say that remote working has been established and virtual solutions have been utilized, for example for meetings, trainings, and providing services to customers. Out of the companies that participated in the research conducted by the author, Kyrö Distillery is the one that faced the most drastic changes to their operations once, the pandemic emerged. They had to very quickly change their operations from making alcohol to making hand sanitizer, since the demand for alcohol plummeted when the government issued restrictions closed bars and restaurants in Finland. Tony Sivula from Kyrö Distillery stated that this change was possible, because they have a strong team that is willing to work hard to reach a common goal, and moreover the company has strong leadership that the employees trust.

This finding indicates that the resilience of the company could be a great example of the attributional resilience model, where a company's resilience is driven by commitments, trust, common purpose and strong leadership, that creates and communicates the common purpose. Furthermore, this approach to resilience is also supported by the finding made in chapter three of this thesis, where a company example of Ponsse was presented. The company was able to make it through difficult times by using their most important attribute, this being their committed workers. Moreover, when considering the attributional model of resilience, Matthew Iles also stated in the interview that their resilience is being created by their leadership team, which has a central role during times of uncertainty.

Also, when examining the interview findings from the viewpoint of resilience models, an example of the composite resilience model can be seen. Jenna Mäkinen from the language school Berlitz Oy indicated in her answers that the company relies on their IT-infrastructure and knowledge when creating resilience. Especially for a company that sells services that were conducted face-to-face before the pandemic, their IT capabilities and knowhow have been crucial for their success. Based on these findings it can be stated that to create and increase resilience, companies benefit from having strong leadership, which leads to employee commitment, innovative solutions, common purposes, and with these attributes other company assets presented in the composite resilience model such as infrastructure, knowledge, and processes can be strengthened. This combination of the attributional and composite model is referred to as the herringbone model, which brings together both the attributes and characteristics, and the activities and capabilities. These together can create a strong company, that can be prepared, adapt to, and overcome disruptive events and situations.

The respondents were also asked to think about their company's operations after the pandemic is over, and the importance of resilience. Resilience has been defined as an organization's capability to return to its original state, now when considering the pandemic, that definition can be seen as outdated, since the pandemic has created the concept of new-normal, and many might not be able or even willing to return to their pre-pandemic state. The virtual solutions that have been implemented and developed during the pandemic are here to stay for many companies. Matthew Iles identified that being able to have trainings, meetings, and congresses virtually has increased the effectiveness of their in-field sales team, since they can use their time efficiently by not having to commute between meetings. Moreover, the virtual setting has allowed them to improve their congresses and trainings by having the possibility to invite international professionals, and therefore improve the information and data that participants receive.

Furthermore, now that companies have seen that these major disruptions are possible, and will most likely happen again, the respondents see that improving and maintaining the resilience is important, and it must be thought of and discussed. The respondents stated that they will seek to increase their resiliency by improving their continuity plan, keeping up great teamwork and togetherness, and developing IT capabilities.

9 Conclusion

This research was conducted to gain a deeper understanding of how companies can create resilience and how resilience has shown itself during the COVID-19 pandemic. Today's business world is a volatile environment where companies should not only focus on the present, but also prepare themselves for various scenarios that might arise. The author sought to research this topic by conducting research by using secondary data and conducting primary research using interviews as a qualitative method. The interviews were conducted with four company representatives, who answered questions regarding their organization's resilience before, during and after the pandemic.

Resilience is a multidisciplinary concept that stretches to various fields of study. For the intents of this thesis, resilience is seen as the ability of a company to learn from the past, analyze the current state and predict future disruptions in order to increase resilience in each step of their operations in the least possible time, with the least possible expenses.

The ongoing pandemic has raised the concept of resilience and shown that major disruptions are not only possible but even likely in the future as well. This indicates that companies must identify the attributes, activities and capabilities that create, maintain and increase their resilience, to be able to use those to their advantage when needed. It is also important to identify possible weaknesses and learn from mistakes made. A company that can harvest its strengths and understand its weaknesses, is one that can create and develop resilience.

The qualitative research results indicated that before the pandemic, the concept of resilience was not familiar to the company representatives. However, now that the pandemic has shown how volatile our environment is, the respondents see that considering and developing resilience is crucial for their future. Many companies have implemented virtual solutions to keep their operations going during restrictions and see that now once the pandemic is coming to an end, these solutions are now an important part of their resilient organizations. Moreover, resilience can be found in the attributes of the companies, for example strong leadership, which leads to the strengthening of other important attributes such as teamwork and commitment. Nevertheless, while attributes and capabilities are crucial, some companies have also found resilience is their balance sheet. A strong balance sheet can help companies to overcome disruptions.

To conclude, the author believes that the factors that create resilience are different for each organization and must be separately identified with each of them. Moreover, it is crucial to consider resilience now, to prepare for future disruptions. Resilience will be an asset that is not only important, but also required in order to survive.

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Appendix 1. Interview questions

1. Has creating or developing resilience been a part of your company's strategy before the pandemic?
2. In what ways has your company prepared for disruptions or sudden changes before the pandemic?
3. How has the ongoing pandemic affected the revenue of your company?
4. How has the pandemic affected the day-to-day operations of your company?
5. In what ways have you tried to increase your resilience during the pandemic?
6. What do you think are the strongest attributes in your company, when it comes to creating resilience?
7. Do you think that some certain functions of the company are in the forefront when creating resilience?
8. How has your supply chain reacted to the changes brought on by the pandemic?
9. Has the pandemic increased your resilience? If yes, then how?
10. Do you think that the pandemic will change your business permanently? If yes, then how?
11. How will you prepare for possible disruptions or sudden changes in the future?
12. How important do you think increasing and developing resilience is for the sake of business continuity?