



CHALMERS

Rethinking crisis management for unexpected events at SMEs

Investigation of Swedish SMEs crisis management in comparison with the RESPIRE model

Bachelor Thesis in Technology Management and Economics

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Pånyttänkande av krishantering för oväntade händelser för SMEs

Undersökning av krishantering i jämförelse med RESPIRE-modellen för svenska SMEs

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Summary

The COVID-19 pandemic impacted society worldwide, spanning national and global companies. As it reached the manufacturing sector, uncertainties abounded. Demand, delivery, supply chains, and transportation underwent significant shifts. This highlights the critical importance of crisis management. Currently, many companies lack specific tools and comprehensive understanding of crisis management and its consequences. To extract generalized insights into their operational approaches and additionally defining and delineating the consequences of crisis management, can facilitate broader application and dissemination of knowledge across companies through an examination and characterization of companies' crisis management strategies. The aim of this study is therefore to examine Small and Medium- sized Enterprises (SMEs) proactiveness during crisis management, and explore whether there is a potentially more effective way to prepare for a crisis and improve their crisis management. It will also present ways to elevate their resilience and flexibility for future unexpected events that significantly affects their operations.

The thesis consist of a literature study and an interview study, as well as an analysis on the complied information. The applied research approach was predominantly deductive in nature. The systematic literature study provided a theoretical understanding and a deeper knowledge about different business management perspectives, concepts, and approaches. Hence, the literature explains the importance of, how to evaluate, and assessment within crisis management, business continuity management and resilience management. The perspectives is fulfilled with insight in implemented measures due to COVID-19 and other crises. A further addition to the literature is the considerations of environmental sustainability in crisis management. The literature was complemented with twelve interviews of CEOs in Swedish SMEs in the manufacturing sectors steel, plastic, wood, and electronics. The interview data was transcribed and sorted within a research model for analysis; RESPIRE and the three phases preparation, response, and recovery. The interviews together with the literature provides answers of the research questions to fulfill the aim.

The outcome of this study is that the crisis management differ among Swedish SMEs within the same sector. Companies are proactive with known crises but less so with the unexpected. Some use methods to forecast future events, but more effective approaches are needed. Improving business continuity involves reviewing internal and external connections, integrated into daily operations. With better analysis of the surrounding heightens awareness of changes and risks. Leveraging past crisis management models aids in addressing new challenges and external support like the RESPIRE model complements internal strategies. With continuous focus on business continuity, it enhances the flexibility with clear plans for various scenarios. Thus, faster, more precise decisions can be made. Emphasizing a solution-oriented mindset fosters responsiveness and may result in competitive advantages. This can be achieved with the help of a scenario-based training and gained knowledge from other companies refine preparedness.

Keywords: Small- and medium-sized enterprises (SMEs), manufacturing, crisis management, COVID-19

Note: The report is written in English.

Sammanfattning

COVID-19 pandemin påverkade samhället samt de nationella och globala företag världen över. När det nådde tillverkningssektorn florerade osäkerheten för företagen. Efterfrågan, leverans, leveranskedjor och transporter genomgick betydande förändringar vilket understryker den avgörande betydelsen av krishantering. För närvarande saknar många företag specifika verktyg och övergripande förståelse för krishantering och dess konsekvenser. Att utvinna generaliserade insikter i deras operativa tillvägagångssätt och dessutom definiera och avgränsa konsekvenserna av krishantering, kan underlättas av en bredare tillämpning och spridning av kunskap mellan företag, samt genom en granskning och karakterisering av företags krishanteringsstrategier. Syftet med denna studie är därför att undersöka Små- och Medelstora företags (SMEs) proaktivitet under krishantering, och undersöka om det finns ett potentiellt mer effektivt sätt att förbereda sig för en kris och förbättra sin krishantering. Den kommer också att presentera sätt att höja deras motståndskraft och flexibilitet för framtida oväntade händelser som avsevärt påverkar deras verksamhet.

Uppsatsen består av en litteraturstudie och en intervjustudie samt en analys av den erhållna informationen. Den tillämpade forskningsansatsen var övervägande deduktiv till sin natur. Den systematiska litteraturstudien gav en teoretisk förståelse och en djupare kunskap om olika företagsledningsperspektiv, koncept och förhållningssätt. Därför förklarar litteraturen vikten av hur man utvärderar och bedömer inom krishantering, affärskontinuitetshantering och resilienshantering. Perspektiven tillgodoses med insikt i genomförda åtgärder till följd av COVID-19 och andra kriser. Ytterligare ett tillägg till litteraturen är förhållningssätten till miljömässig hållbarhet i krishantering. Litteraturen kompletterades med tolv intervjuer av vd:ar i SMEs inom tillverkningssektorerna stål, plast, trä och elektronik. Intervjudata transkriberades och sorterades inom en forskningsmodell för analys; RESPIRE och de tre faserna förberedelse, respons och återhämtning. Intervjuerna tillsammans med litteraturen ger svar på forskningsfrågorna för att uppfylla syftet.

Resultatet av denna studie är att krishanteringen skiljer sig åt mellan svenska små och medelstora företag inom samma sektor. Företag är proaktiva med kända kriser men mindre med det oväntade. Vissa använder metoder för att förutsäga framtida händelser, men effektivare tillvägagångssätt behövs. Att förbättra kontinuiteten i verksamheten innebär att se över interna och externa kopplingar, integrerade i den dagliga verksamheten. Med bättre analys av omgivningen ökar medvetenheten om förändringar och risker. Att utnyttja tidigare krishanteringsmodeller hjälper till att hantera nya utmaningar och externt stöd som RESPIRE-modellen kompletterar interna strategier. Med kontinuerligt fokus på affärskontinuitet ökar det flexibiliteten med tydliga planer för olika scenarier. Därmed kan snabbare och mer exakta beslut fattas. Att betona ett lösningsorienterat tankesätt främjar lyhördhet och kan ge konkurrensfördelar. Detta kan uppnås med hjälp av en scenariobaserad utbildning och inhämtad kunskap från andra företag förfinar beredskapen.

Nyckelord: Small- and medium-sized enterprises (SMEs), tillverkning, krishantering, COVID-19

Notera: Rapporten är skriven på engelska.

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Preface

This Bachelor thesis was written during the spring of 2024 at the Supply and Operations Management division in the Technology Management and Economics department at Chalmers University of Technology. The thesis was carried out by six students specializing in Mechanical Engineering and Global Systems Engineering.

We would like to thank our supervisor Martin Kurdve, RISE, Research Institutes of Sweden, Materials & Production division, for guidance through the entire work process. We also want to thank Ala Arvidsson, Chalmers University of Technology, Technology Management and Economics, Supply and Operations Management and Research Institutes of Sweden, RISE, for the opportunity to do this bachelor thesis. We are grateful to have had the chance to gather experience and knowledge in the subject as well as guidance during the course of the work. Lastly, a big thank you to the participating companies and representatives. The explained experiences and perspectives have been helpful and interesting to discover.

1 Introduction

Cyber incidents and business interruption are two of the most important global business risks for companies (Allianz Commercial, 2024). Cyber-attacks include, among other things, data breaches, malware attacks, and IT disruption. Business interruption includes supply chain disruption and refers to when an organization can't operate or experiences challenges with the supply chain due to an event. Business interruption is linked to many of the crises that have occurred in the last five years. The COVID-19 pandemic spread to Sweden at the beginning of 2020 and affected both individuals as well as companies. The pandemic resulted in supply chain disruptions around the entire world which in turn led to a global shortage of components and raw materials, such as semiconductors and silicone. The war between Russia and Ukraine that broke out in 2022 has also contributed to business interruptions and supply chain distribution. The energy crisis became a consequence of the war when Russia cut gas suppliers to Europe and several countries had to deal with major economic challenges. During the last five years, other crises regarding supply chain disruptions have occurred in the geographical area around the Red Sea. For instance, hijacker attacks on vessels have forced container ships between Asia and Europe to take an alternative transport route. Another crisis in this area occurred when the container ship Ever Given was wedged across the Suez Canal and blocked the maritime trade route for several days in 2021 (BBC, 2021). Both these events have reduced traffic through the Suez Canal which is considered as an important trade route, as well as the shortest, between Asia and Europe. Instead, ships were transported around Africa, which led to longer delivery times and higher costs (International Monetary Fund (IMF), 2024).

In 2022 the Swedish market of business consisted of over 1 million companies, where over 90% were classified as SMEs. SMEs stand for Small and Medium-sized enterprises and are defined as those with a maximum of 249 employees. A medium-sized enterprise consists of 50-249 employees, a small enterprise consists of 10-49 employees, a micro-enterprise consists of less than 10 employees, and finally the sole proprietorship. In 2022 about 65% of the job market for private enterprises consisted of SMEs. Between the years of 1993 to 2019, 82% of all newly created jobs were created by SMEs (Svenskt Näringsliv, n.d.). SMEs have a significant impact on the Swedish market and are responsible for creating a substantial amount of job opportunities. The gap between the share of companies classified as SMEs on the Swedish market and the share of jobs on the market is derived from the fact that the number of SMEs does not coincide with the number of jobs, since the companies are small in nature. The company size also affects their risk management, as they are more preoccupied with their day-to-day operations rather than assessing external risks and the big picture, according to a survey made by Allianz, Allianz Commercial (2024).

According to CFI Education Inc. (n.d.), risk management is the process of identifying, assessing, controlling, and lastly reviewing risks through a business perspective. A risk consult at Allianz Commercial states in a report that small companies tend to be exposed to risks. This is due to a lack of time and resources. SMEs also have a higher tendency to be dependent on one single customer or one single supplier and therefore run a higher risk of supply chain disruption affecting the operations. The survey mentioned consists of 1729 small and medium-sized enterprises and reports the biggest risks companies are facing according to the businesses themselves and risk consultants, among others. The biggest risks identified in the report are cyber-attacks, natural disasters, supply chain disruptions, and macroeconomic developments. according to the survey, SMEs are increasing their resilience regarding cyber-attacks by outsourcing services. Outsourcing and third-party involvement are not an uncommon factor in crisis management (Allianz Commercial, 2024).

A risk management certification helps companies to identify opportunities and threats, as well as effective help during allocations and resource appliance. ISO-certification is a type of third party involvement since a third party examines and assesses the company's operations to certify them. An ISO-certification indicates that a company has met international standards; quality, environment, and working environment. ISO-9001 is a foundational framework within quality management systems that refers to an organization's implementation of business processes and training of employees. The processes and training are implemented to strive for quality products and services focusing on continuous improvement. ISO-14001 is a certification within environmental management systems that provides a framework focusing on environmental performance improvements. The certification helps organizations to reduce their environmental impact, with usage and waste management (International Organization for Standardization (ISO), n.d.).

Another common third party involvement during the COVID-19 pandemic was when the Swedish government issued temporary grants and changes in the law to support the companies. As mentioned above, the COVID-19 resulted in hardships for many companies. According to Ekholm et al. (2022), the four main supports distributed by the Swedish government during 2020 due to the COVID-19 pandemic are the temporary reduction of social security contributions, short-time work allowance, reorientation support and rental support. Overall, the support was aimed at facilitating maintained relationships between employers, employees, companies, suppliers, landlords, tenants, borrowers, and creditors. Nevertheless, the external pressure that normally drives innovation and development can be inhibited due to extensive direct support without counter-compensation from the companies. Finally, it is assessed in the report that governmental support has been an important measure in preventing the reduction of Swedish labor and Swedish companies in the market. An indication of the positive result is the rapid decline in the number of bankruptcies following the implementation of support measures despite the deepening crisis throughout May 2020.

1.1 RESPIRE - a theoretical model

This thesis is a part of the research collaboration project RESPIRE. The RESPIRE project aims to contribute to a more enhanced crisis management approach for SMEs during crises and unexpected events (Vinnova, 2022). The project has developed a model to examine actions taken and decisions made, operating in the realm of crisis management. The model is also used to examine how well SMEs adapt to crises. The blueprint model takes both company-specific events and external events into consideration. A company-specific event can be a disruption in the supply chain or a loss of an important customer among others. An external event is specified in the model as a pandemic, cyber-attack, economic crisis, or climate event. Further in this report, the model is solely referred to as the RESPIRE model. The RESPIRE model consists of six steps, separated into three different main phases *Preparation*, *Response* and *Recovery*, see Figure 1. The phases are each divided into two steps. The first phase, *Preparation*, consists of step zero and step one. Step zero is regarding crisis preparation and refers to the assessments and plans done as a preventive measure. Step one is when the company receives indications of an impending crisis in the near future. It is during this step a window of opportunity becomes available. The following step, step two, is the first reaction to the crisis and the beginning of phase two, *Response*. During step three the company adjusts its day-to-day operations and implements extraordinary measures. The last phase of the RESPIRE model is the *Recovery phase*. During the fourth stage, the companies start to industrialize and ramp up production. It is during this stage the companies start to scale up production towards either a new level or back to the old one. In the fifth stage, a new normal condition is reached, and the companies can begin an evaluation and feedback process to prepare further.

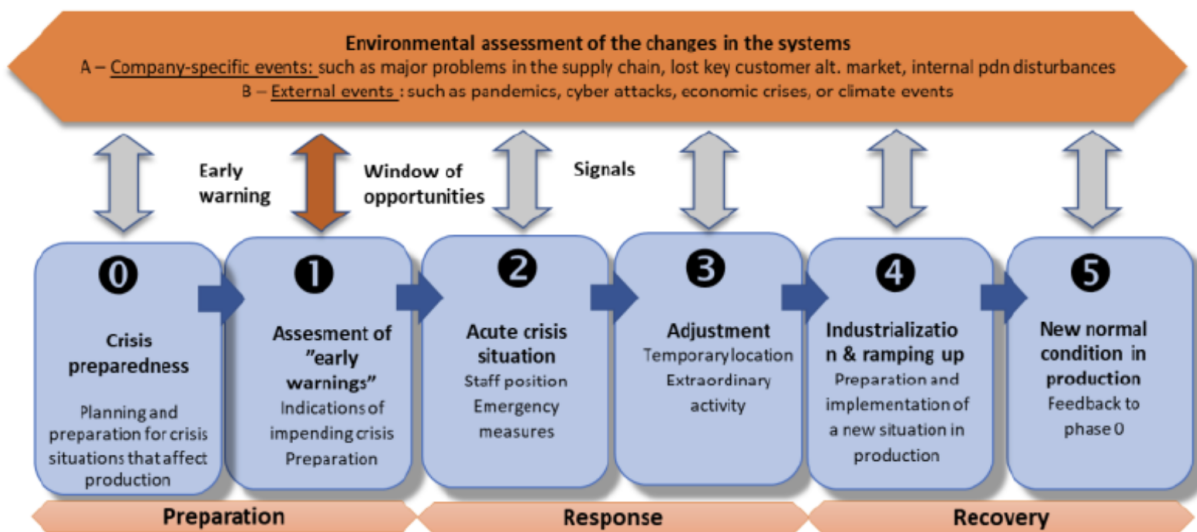


Figure 1: RESPIRE-model the initial blueprint to crisis management in production.

1.2 Problem analysis

At the moment, many companies are missing concrete tools including general and theoretical knowledge of crisis management and the subsequent consequences. To analyze crisis management, the aim has been divided into partial study purposes and aims.

By defining the challenges, needs and opportunities SMEs face when encountering unexpected events, similarities and differences between the SMEs and their crisis management can be analyzed. By defining and characterizing the consequences following crisis management, the material can also be applied further and bring general knowledge to the companies and RESPIRE. The purpose of characterizing the consequences of a crisis is to gain insight into the companies' way of working. This information is an important part of theorizing crisis management, to give tools to companies, RISE, and other RESPIRE-project partners.

If links between the corporate crisis management of the companies and the RESPIRE model can be established, the RESPIRE model's utility can be confirmed. Established links also confirm the RESPIRE model's roots in reality and result in increased areas of usage and applicability. Investigating the links themselves, and concluding, is an important step in developing the model. By potentially comparing the RESPIRE model with other models visualizing crisis management, the RESPIRE model's utility is further investigated. A comparison between different models and the companies' actual crisis management strategies will give insight into developing the model. This investigation can bring knowledge regarding whether the model is missing something, is superfluous in any way, or can be developed and changed in any other way.

Through investigating whether insights can be found from comparing various industries and companies, the goal is to generate general knowledge, as well as sector-specific theories, that can be applied to better assist companies in crisis management. By exploring which parts of the crisis management that differ and which parts that stay the same depending on sectors and industries, the model can be developed regarding sector-specific management. Mainly similarities and differences in the crisis management of sectors can be identified, to develop the model.

Exploring the consideration of the environment in crisis management decisions aims to reveal the companies' attitudes and values towards the environment in crises. The exploration also aims to reveal if environmental consciousness affects the companies' crisis management and outcome. Further, this insight can be used in future reports to explore if there exists a will to consider the environment and if environmental values are possible to incorporate into crisis management.

To summarize, by investigating and characterizing the companies' crisis management strategies the goal is to generalize and gain insight into the companies' way of working. This information will then be compared to the RESPIRE model and additional literature, to find similarities and differences as well as material used to develop the RESPIRE model. This will hopefully contribute with concrete tools including general and theoretical knowledge of crisis management and the subsequent consequences.

1.3 Aim

The purpose of this report is to examine SMEs proactiveness during crisis management and explore whether there's a potentially more effective way to prepare for a crisis and improve their crisis management. It will also attempt to present ways to elevate their resilience and flexibility for future unexpected events that significantly affect their operations.

1.4 Research questions

To investigate the mentioned problem and to fulfil the aim, following research questions are used:

RQ1: *What conclusions can be drawn by defining the challenges, needs and opportunities SMEs face when encountering unexpected events?*

RQ2a: *Is it possible to draw connections between the companies corporate crisis management, the RESPIRE model and possible additional crisis management theories? If possible, what connections can be drawn?*

RQ2b: *Can conclusions be drawn by comparing the crisis management strategies of companies within the same sector? If so, what conclusions can be drawn?*

RQ3: *Is the environment taken into account when choosing crisis management approach?*

To answer the research questions stated in the introduction, the RESPIRE model, additional crisis management frameworks, and material from the interviews will be used.

1.5 Delimitations

The thesis's time frame required that delimitations were made to focus on the primary goals of the project. This thesis is limited to study exclusively SMEs within the manufacturing industry. The studied companies and interview objects act within four sectors of the manufacturing industry, plastic, steel, wood, and electronics. By comparing different manufacturing sectors a deeper understanding of similarities and differences between industries is achieved.

The time aspect of the study was limited to a span of five years, from 2019 to 2023, inclusively. This implies that only crisis management actions during this period were taken into account. Due to the delimited period presented above, only companies that were established before 2019 were included. This is because the main crisis in this study, the COVID-19 outbreak occurred in 2019, and for the companies' crisis management to be compared fairly, it was considered significant that the companies were active during and before this period.

Furthermore, sustainability wasn't considered to be the main focus of this study and therefore, the companies' sustainability reports were not reviewed and analyzed. Still, one question regarding excursively environmental sustainability was included among the interview questions. The question is included to determine whether environmental sustainability was taken into account when implementing crisis management, as well as during a crisis. The only sustainability perspective analyzed in this thesis is environmental.

2 Method

This section includes the research approach and work process of the project. The work process contains research methods for data collection and how the data will be analyzed and processed by using the RESPIRE model.

2.1 Research approach

To fulfill the purpose of this thesis, the work process was characterized by collecting data in the form of interviews and a systematic literature study. The problems being investigated were based on complex circumstances, actions taken during these situations, and different approaches to the best practices. According to Olsson and Sörensson (2021), the qualitative research approach is suitable when the researcher, to collect a holistic understanding of a certain event, strives to gain as much knowledge as possible. Therefore, the research approach applied was qualitative. This approach was applied due to the complexity of the thesis and the characteristics described above. The aim was to generate objective associations and explore causality between parameters. To remain unbiased, the research approach applied, had an intention of being of positivistic nature.

Positivism claims that knowledge is built by gathering facts and information in an objective way (Bell et al., 2022). Due to the qualitative nature of the entire study, a positivistic approach was applied to objectively explore common themes and characteristics. However, since the information regarding the companies and their crisis management was qualitative, a qualitative approach was applied. This is a favorable method when there is a large amount of information in every unit of analysis. A qualitative method is also convenient when the information has different dimensions and possible categories, and the way of collecting data is done by doing an interview (Wallén, 1996). Therefore, the applied research approach cannot be stated to completely coincide with the research theory of positivism, still, this was an underlying intent.

Furthermore, the research method applied during the literature study is inductive. An inductive method implies that a new theory can be generated from data that is systematically collected (Dubois & Gadde, 2002). The literature study aimed to provide information about topics of interest, which is stated below in the section regarding the method used in the literature study.

The research approach applied during the interview phase is considered to be a qualitative research method. As stated previously by (Wallén, 1996), the data and information collected by interviews can be interpreted as qualitative data, and therefore a qualitative research approach was applied.

When discussing the literature in contrast to the interview findings, a deductive approach was applied, the flowchart can be seen in Figure 2. According to (Dubois & Gadde, 2002) a deductive method approach is described as an approach where theory is tested against reality by using preexisting literature, to gain insight and later present propositions of changes to new literature. This was applied during the analysis stage where the RESPIRE model was placed in comparison with the information gathered from the interviews.

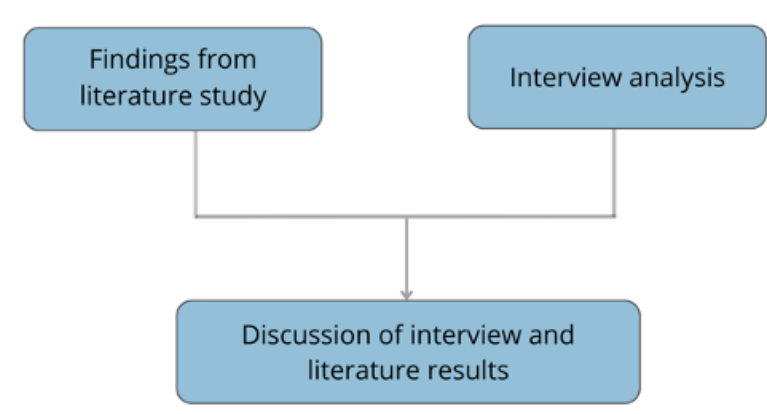


Figure 2: Flowchart of combining literature and interviews.

2.2 Data collection

The data collection phase did consist of a literature review and several interviews, connected through an analysis. The data collection consisted of three main phases, literature study, interviews, and analysis. Primary and secondary data did be collected through a literature review. This data served as the theoretical framework and partly as a foundation for the empirical framework. The theoretical data brought information on the subject, concepts and complement the RESPIRE model. The empirical material consists of interviews from relevant companies in selected industries and did result in an understanding of crisis management.

2.2.1 Literature study

A literature review was done by collecting data from various, relevant and reliable scientific sources to get a foundation for the report. Initially, a keyword search was completed within the defined subject area: crisis management. Also, crucial concepts, terminology, and synonyms found in the thesis proposal were used in the search to obtain the maximum number of search results (Chalmers Library, n.d.). The problem with keyword searches, however, was that bad search phrases by the user caused an unmanageable amount of irrelevant results. That was why it was crucial to specify as much as possible. The databases used in the research for literature were Scopus and Google Scholar. The search was made within the article title, abstract, keywords and the results were sorted by *cited by (highest)*. In some cases, *date (newest)* were used to find current/ up-to-date articles and reports. A list of the used keywords, number of articles, number of read titles, number of read abstracts, and number of used articles is shown in Table 1. The used sources in some cases overlap with several keywords and therefore they may be represented more than once in the last column.

Table 1: List of the keywords, number of results, read titles, read abstracts, and used articles.

Keywords	No. total articles	No. read titles	No. read abstracts	No. used articles
innovative AND practices AND sme	287	50	12	1
early AND strategic AND signals	454	50	11	1
conceptual AND framework AND vulnerability	2706	50	14	1
business AND continuity	7973	50	12	2
business AND continuity AND fmea	9	5	3	1
business AND continuity AND management	3288	50	13	4
business AND continuity AND sme	82	30	8	2
business AND continuity AND management AND risk	1265	50	10	1
smeAND covid-19 AND crisis AND management	670	50	8	2
crisis AND management AND sme	264	50	15	4
covid-19 AND crisis AND smes	539	50	10	3
black AND swan AND event AND assessment	102	30	4	2
black AND swan AND event AND innovation	25	10	5	2
pestel AND covid-19	25	10	3	1
crisis AND management AND resilience	3545	50	10	1
crisis AND management AND organizational	5843	50	10	1
crisis AND management AND organizational AND learning	665	50	11	1
covid-19 AND b2b	139	30	7	1
supply AND chain AND resilience AND adaptation	229	50	12	1
covid-19 AND business AND practices AND sme	57	20	8	3
"failure mode and effects analysis"	5939	50	10	1
"bowtie model"	36	10	3	1
resilience AND engineering AND covid-19	239	50	9	1

A quality assessment was carried out, where the articles obtained from the search were assessed based on their relevance. Initially, 5-50 titles were read and those without connection to the defined subject area were sorted out. Then the first 3-15 abstracts of the articles were reviewed. They were considered relevant if they contained the concepts according to the keywords. A few sources were involuntarily excluded due to lack of access. As a part of the data collection, upstream investigations are made to refer to knowledge gained through the investigation of references used in an interesting article. This approach was used three times in this study.

2.2.2 Interview method

The last part of the second phase was the interview phase. Interviewing is a flexible and adaptive method that is commonly used for qualitative research (Bell et al., 2022). The interview process included the actions of deciding the aim of the interviews, delimitating the study by deciding requirements for the interview objects, formulating interview questions, contacting relevant interview objects, conducting the interviews, and transcribing the interviews.

The interview study aimed to gain insight into the SMEs' approach to crisis management. As well as finding practical actions taken by the companies to gain resilience and flexibility. Another goal of the interview study was to determine subjective data such as the companies' size, age, revenue, sector, if they worked B2B, if they produced towards stock or made to order, and the export- and import share. Another parameter of interest was if the companies acted within a concern. The interviews were also anticipated to contribute information to be used to explore causality and connections between the companies including different manufacturing sectors. The manufacturing sectors studied in this thesis were plastic, electronics, wood, and steel.

The requirements were set up to limit the study, as well as to contribute towards the companies' comparability. A requirement made was that all companies had to be classified as SMEs, and therefore have an employee count below 250. A requirement was set up to find companies who acted during the COVID-19 pandemic. All interview objects also had to act within Sweden and align with one of the four manufacturing sectors studied, to contribute towards the aim of the interview study. It was determined that a company's affiliation with a larger concern was of interest. Therefore both companies that were a part of a concern, and companies that were not, was included in the study. To gain a holistic perspective from the interviews and the companies' actions during a crisis, the ideal interviewee was determined to be a person in a leadership position. This was motivated by the fact that to acquire knowledge of the entire company's operation, someone with comprehensive knowledge of the company had to be interviewed. By interviewing people in the same positions of the companies the interviews could be better compared to each other.

The companies asked for an interview were chosen through a comprehensive internet search through member lists of branch organizations, a list of registered companies in production-rich municipalities, and thought databases of registered companies. The database used to find potential interview objects was Business Retriever. When searching through the database, filters matching the requirements mentioned above were applied. The companies of interest were contacted via e-mail. Out of the 98 companies asked, twelve agreed to participate in an interview. Eight of the companies asked had female CEOs, which compared to about 8%. Out of the interviews held, 100% of the companies had male CEOs. All of the interviewees were people in a leadership position, such as CEOs. Out of the twelve companies interviewed, four were in the manufacturing sector of steel, two acted within the wood sector, two were categorized as electronic manufacturing companies and lastly, four of the companies acted within the plastics sector. A table of the interviewed companies and their parameters is presented below, see Table 2.

Table 2: Table of the parameters of the interviewed companies.

Company	Year of establishment	Revenue 2022 (million SEK)	No. Employees	Industry	Koncern
A	2001	30	50<	Manufacturing - Steel	Yes
B	2016	10	50-100	Manufacturing - Wood	Yes
C	1970	1 020	100>	Manufacturing - Electronics	Yes
D	1946	40	50<	Manufacturing - Wood	No
E	1987	60	50<	Manufacturing - Steel	No
F	1985	60	50<	Manufacturing - Electronics	Yes
G	1989	170	50-100	Manufacturing - Steel	No
H	1948	660	100>	Manufacturing - Plastic	Yes
I	1986	140	50-100	Manufacturing - Steel	No
J	1967	130	50<	Manufacturing - Plastic	Yes
K	1972	70	50<	Manufacturing - Plastic	No
L	1972	70	50<	Manufacturing - Plastic	Yes

Before the interviews the twelve companies were contacted and questions were pre-distributed. The pre-distributed questions were sent out with the intent of preparing the companies for the type of questions asked during the interviews. The pre-distributed questions can be found in Appendix A. After the pre-distribution of some of the interview questions, the interviews were conducted. Since the companies' approaches and reactions towards crises and interruptions in production were interpreted as qualitative data, semi-structural interviews with the companies were conducted.

The aim of the interviews was, among already mentioned objectives, to gather information about the companies' crisis management approach, the crises they have met, and eventual production interruption. In the opinion of Catherine Cassell in (Cassell, 2015), a structured interview is optimal when the aim is to gather information. However, when conducting qualitative research there are two main types of interviews, unstructured interviewing and semi-structured interview. To gather information and handle qualitative data, semi-structured interviews were conducted. The semi-structured interviews contained standardized questions to leave room for the companies to elaborate. Since the interviews had a clear aim and goal toward what information was deemed useful, the interviews can be described as distinctive. Cassell (2015) divides the distinctive interview methods further into event-based interviews, comparative interviews, narrative interviews, and biographical interviews. The difference in the interview constructions is the interview's aim. Since the aim was to investigate specific events and crises an event-based interview was well fitted. A narrative aim was to investigate the interviewees' own experiences of an organizational phenomenon through the communication that took place in the workplace. Therefore, when interviewing the companies about the events occurring, an event-based interview was conducted. However, when asking regarding the companies' choices and approaches a narrative interview method was used.

The interviews were, as mentioned above, conducted as semi-structural interviews. The interviews started with general questions regarding the subjective information of companies. Information such as company size, clients, and export and import distribution. Continuing, the questions asked regarded potential crises and production interruptions the company faced including follow-up questions such as eventual strategy implemented. The questions therefore had a high level of structure but a low level of standardized close-ended questions, to make it possible for interview objects to answer freely and give answers that match the asked question. When the interviews were conducted, it was considered important that the answers had a high validity. This means that the answers are answered according to the question to be used in the analysis (Olsson & Sörensen, 2021). To discover nuances and distinctions, the interviews were held in Swedish.

Due to the aim of later comparing the interviews to the semi-structured interview, the companies were asked the same questions, but were left room for elaboration and their reflections. Due to this goal, the questions concerning crisis management were formulated as open-ended and a flowchart were used, see Appendix B.

The question regarding what the companies perceive as crisis management was asked with the intent of broadening the companies' view of a crisis, with the hope of smaller interruptions being mentioned as well. The second question was presented to determine what crisis events, both external and internal, affected the companies' operations during the years studied. This was followed by questions regarding crisis management and warning signals, which were asked to procure information regarding the first and second steps of the RESPIRE model. The questions were posed to reveal any policies, concrete crisis management, general awareness of crisis management, or something in between. When asking if the companies' competitors experienced the same crises, the aim was to investigate if any connections could be drawn between sectors as well as investigating common external events affecting SMEs. The strategy question was asked with the intent of uncovering the companies' strategies during the crisis, and how they related to the strategy. The intent also included finding data corresponding to the third stage of the RESPIRE model, response. The question was also posed to gather information about concrete strategies and actions during the crisis experienced. The question following had an overlapping intent of gathering information regarding concrete actions, as well as if said actions remained.

When asking about remained changes the aim was to acquire insight in reference to the last step of the RESPIRE model, feedback. Subsequently the question regarding strategy, a question concerning perceived risks was asked. The aim was to acquire the most perceived risks the companies faced, and if the risks perceived

as biggest changed during the crisis. The next question concerned the companies' attitudes towards environmental prioritization during crisis management. This question was followed by a question about the companies' current thoughts regarding crisis management, after getting through a crisis. The aim was to determine the companies' awareness and attitude towards crisis management, and if anything changed after a crisis. This was followed by a question concerning changes made to increase resilience. The goal was to examine eventual changes both regarding resilience, but also guidelines and if any resources were needed. The interviews ended with a question about taking help from a third party. This question was asked to acquire information about possible help such as government support.

Before the interviews began, the interviewees were asked for permission to record. Each recording was transcribed by using a transcribe function in Microsoft Teams and Microsoft Word. These transcription tools were favorable because they enhanced the possibility of including the entire conversation from the meeting in the interview material.

2.2.3 Method for processing and analyzing data

The third main phase of the project was the analysis. During this activity, the data gathered from the literature review and the interviews were analyzed, both separately and in comparison with each other. Firstly, the information gathered from investigating the RESPIRE model and similar management strategy models and theories was analyzed. The analysis method used in the analysis of the literature material was mainly inductive since the information was gathered and general themes isolated (Graneheim et al., 2017). The research approach did include deductive perspectives as well since some concepts from the RESPIRE model were researched. The information gathered through the literature study was later used as a comparing agent during the comparison between the RESPIRE model and the interview answers.

Secondly, the information gathered through the interviews was analyzed mainly through a deductive perspective. The interviews were transcribed verbatim, this was done, according to Corden et al. (2006), to ensure that no information was lost in the transcription and to provide helpful context. After the transcription, the data gathered through interviews were reviewed. During this process, the companies' way of working was characterized and sorted. The analysis method used was deductive content analysis. The deductive analysis method's goal was to identify common themes and categories within the data. Since the categories' differences, similarities, challenges, needs, and opportunities were predetermined before the analysis phase the method fulfilled the criteria of the deductive analysis method according to Graneheim et al. (2017).

The answers were sorted after the questions asked and answers given and later compared with one another. But when comparing the sorted answers with each other a more induced approach was applied, to find similarities. Similarities both directly connected to the RESPIRE model, but concepts without a clear connection towards the model were sought out as well. This was done to discover common themes without excluding information that might be not found by only taking the RESPIRE model into perspective.

Thirdly, the analysis method used during the compiled analysis was considered primarily deductive. The deductive approach was present due to the use of the predetermined categories from the RESPIRE model (Graneheim et al., 2017). The analysis method concerning the models and crisis management was predominantly comparative with a grounded theory approach. (Strauss & Corbin, 1997). The comparative method was used to develop a sense of the similarities and differences between different already existing crisis management strategies, the applied actions by the companies during a crisis, and the RESPIRE model. However, since a part of the literature review and data collection stage was to gather quantitative data, such as company size and revenue, a quantitative analysis method was carried out as well. More specifically, a descriptive research method and a correlation research method. The descriptive research method aimed to describe the current status of a predetermined and identified parameter, such as the existence of warning sign policies. The correlation research method was used to determine a potential relationship between variables (Winston Salem State University, n.d.). Variables such as company sector and import- and export distribution. The aim was to determine possible patterns between the companies and the outcomes. When questioning and analyzing the companies, the goal was to gain insight into the companies' operations and determine if there were, e.g. any common crises the companies had encountered. As mentioned was the research approach applied to the interview analysis

predominately deductive in nature. The deductive approach was used when formulating the questions, as they were formulated with the RESPIRE model in mind. The deductive approach was also applied when sorting the companies' actions into the RESPIRE model since pre-determined categories existed. The interviews, in combination with the literature, were analyzed with the intent of finding differences and similarities including defining challenges, needs, and opportunities.

As mentioned, the last step in analyzing the data was to compare the qualitative data with the literature. The goal, besides finding causality, is to develop the RESPIRE model. The analytical method used was a comparative analysis with a grounded theory approach and was applied due to the aim of identifying similarities and differences and generating theoretical knowledge (Glaser & Strauss, 2017). The analysis was done deductively, with a predetermined framework and research questions. The comparative analysis was used to develop the model, therefore a grounded theory approach was appropriate, according to Khan (2014).

The central analysis approach in this thesis was the meso-perspective, which focused on companies and actions taken on an organizational level. The analysis units, used in the thesis, were the SMEs in Sweden. The SMEs were mainly analyzed through a meso-perspective since the organizations and their actions were in focus. The system that has been analyzed was made up of individuals who worked within the SMEs, the SMEs themselves, and the SMEs sorted into different industries. The perspective used most frequently was a meso-perspective. As mentioned above, the organizations and their action were analyzed. In addition, a macro-perspective was applied when analyzing the companies as a part of a whole industry.

2.3 Discussion of literature sources

The sources used in the literature study were exclusively from databases such as Scopus and Google Scholar. The majority of the sources stemmed from the Scopus database which consists of peer-reviewed literature such as scientific journals, books, and conference proceedings. The authors used in the article are published in journals such as *the Journal of Business Research*, *the International Journal of Business and Management* and *International Small Business Journal*. Some of the sources were published through universities such as *The Oxford University Press* and the *University of York*. As mentioned, the sources were sorted through the filter *most cited*. A cited source indicated that the source had been cited by others, in their publications. A high level of citations could also indicate the popularity of the search word.

As previously mentioned, the sources were used to present and showcase the concept of crisis management, which is considered relevant to the aim of the thesis and the research questions. The aim was to conclude the RESPIRE model, the companies' actions, and the other crisis management theories. In the literature study, several crisis management theories were presented. The topic of crisis management was relevant before the COVID-19 pandemic, but it started to play a bigger role in businesses day- to day operations after going through the pandemic. Many of the sources are recent and the mean value of the years of publication is 2015. As previously stated, many of the sources were recently published which correlated to the uprising relevance and interest in the subject of crisis management.

2.4 Discussion of interview method

The interviewees did have some common characteristics, which helped during the analysis since it made them compatible. Characteristics such as all being SMEs and all operating within Sweden were favorable when comparing the companies. However, since only companies operating within Sweden were interviewed the results may not be well applied elsewhere. As mentioned in the introduction, the Swedish Government granted economic help to companies during the pandemic, this governmental help was not the same everywhere. The number of interviews held, twelve, has a direct correlation with the validity of the connections made. Since as number of interviews increases, the number of perspectives arises as well. Few interviews also raise the risks of finding weak correlations, which later can be interpreted as causality. Since all companies had connections to Scandinavia, it makes the interview findings less representative of other parts of the world. In the same sense, all interviewees were male. The 100% male participation did not reflect the percentage of asked women, and not the distribution of male versus female CEOs of SMEs in general.

The interview consisted of mainly open-ended questions, which gave the companies a chance to answer freely and without the influence of what answer might be perceived as correct. However the open-ended questions also increase the possibility of being perceived as complex, and fundamental crisis management actions could have been left out.

The analysis method most applied, both during the interviews and during the compiled analysis, was predominately deductive. Even though an inductive approach was present, the deductive was the approach most applied. A risk with the deductive approach was the bias of wanting to fit concepts into categories. A possible risk with the method is that a connection could be drawn without enough support for causality.

An ethical aspect that is important for the study is anonymity. Trade secrets and sensitive information were perceived as an ethical aspect of the thesis. A risk recognized was an information breach, where information shared during interviews was not meant to be shared. As a measure, all the companies were given a letter, A, B, C, and further, to remain anonymous. Another measure made to ensure the companies' anonymity was to present the companies' revenue as rounded-off values and the number of employees in intervals.

3 Literature findings

This section consists of a systematic literature study, where relevant literature has been reviewed to provide an understanding and deeper knowledge about different crisis management perspectives. These concepts were investigated to find what could enhance the flexibility of SMEs at high-impact, unexpected events. The basis for the literature study was the RESPIRE model. The researched topics are illustrated in Table 3 to provide an overview of this literature study.

Table 3: Table presenting the covered topics in the studied literature.

Topics covered in the literature review	Topic description
Crisis management	Highlighting different approaches to crisis management and examine theories that are similar or different in comparison to the RESPIRE model.
Business Continuity Management	Investigating the concept of Business continuity management (BCM), and the connection it has with a company's crisis management strategy.
Resilience Management	Investigating the concept of Resilience management and its connection to a company's ability to adapt and transform its organization during a crisis.
Business practices during COVID-19	Examples of valuable approaches realized by SMEs
Environmental sustainability during a crisis	Difficulties when implementing environmental sustainability during a crisis in Business-to-business firms

3.1 Crisis management

To understand the meaning and importance of crisis management for SMEs when encountering unexpected events, an investigation was made to define what a crisis is and the impact it may have on an organization. A specified focus on SMEs management approaches during high-impact and unexpected events like COVID-19 characterized the research. When searching literature about crisis and crisis management, it was found that crises can be viewed from different perspectives; an event known to the company, known to some and unknown to others, or as an unexpected event. Different views on crisis management, and how it can be carried out in an organization's activities using business continuity strategies to enhance resilience before, during, and after a crisis were also found. It additionally became known that after a crisis incident, there is a high importance of learning from the crisis experience to prepare for future incidents. The examination of the effectiveness of a company's crisis management can be reviewed using different reviewing methods.

3.1.1 Crisis perspectives

Today, extreme crisis events are arising at an increased frequency than before. Companies and individuals need to develop the ability to navigate through this disruptive environment (Chua 2023). Traditional perspectives on crises have been discussed in previous literature. It was found that a crisis can be viewed as both an event and a process. Pearson and Clair (1998) lifts a perspective on an organizational crisis that states that it can be seen as an event threatening the vitality of an organization. If such an event arises it has a big impact on the organization, however it is also stated that the occurrence of the event is of low probability. Williams et al. (2017) discusses the process perspective on crisis and mentions that a crisis develops over a period of time. In contrast to the perspective presented by Pearson and Clair (1998), viewing crisis as a process emphasizes that there is more to a crisis than just the event.

Williams et al. (2017) adds weight to the existence of underlying factors that contribute to weakening the organizational system and making it more vulnerable to crisis-triggering factors. The crisis process is perceived in this article as linear and stated to be divided into a series of distinct phases where each phase differently affects the company. Strategic drift is the initializing phase of the crisis and is triggered when a company fails to pay attention to external changes in the market, where the caution can be for instance organizational imperfections in combination with managerial ignorance. The second phase is incubation, which is where underlying factors can contribute to a crisis. However, these factors are described as not yet being activated and a crisis can therefore

not break out at this state. For the crisis to outbreak it is outlined that there is a need for a triggering event, which can take the form of a natural disaster, financial crisis, new technologies out-compete the old ones, and political turbulence. The final phase of the crisis period is the resolution phase which starts when a solution is found.

However, the previously described crisis perspective belongs to the traditional linear viewpoint. Chua (2023) claims that a crisis in today's world has more complexity to it, and highlights the characteristics to be non-linear. Additionally, it is also stated that a crisis can arise in three different ways, the first one being creeping which is stated to often result in an acute crisis, the second being looming and the third one is called black swan event. The author explained a black swan event to be a metaphor used to illustrate an event that exhibits attributes such as being unexpected and unforeseen. It is described that this type of event can in a post-crisis state be perceived as predictable and the occurrence of it to even be explainable. Nevertheless, when it first arises the event can be either unknown to the scientific community or unknown to some and known to others. The black swan event is a crisis described to have a catastrophic impact and low probability.

Fabiano et al. (2024) discusses crisis when it is perceived as an unexpected event and refers to it as unpredictable, pointing out that undesired events can arise even under normal conditions. One unexpected event being widely discussed in recent years is COVID-19 which is stated by the authors to have exposed the vulnerability of organizational and infrastructural systems revealing its complexity and emphasizing the interdependence among different industry sectors. There is a debate about whether COVID-19 is of the character of a black swan event or not. Ni et al. (2022) states that since COVID-19 affected and disrupted global operations which generated a chain of negative responses and market breakdowns, it can be seen as a black swan event. Chua (2023) discusses on the other hand that it can be seen as a looming event because there existed knowledge about pandemics, and that such events occurred before COVID-19. Pearson and Clair (1998) mentions that the characteristics of a crisis event, in general, are uncertainty regarding ways of investigating and solving problems, what caused the crises, and the outcome of it. It is also mentioned that in times of crisis, rapid decision-making is of high importance. Despite this, Chua (2023) describes that when a crisis in the world of today is perceived as an unexpected event, it cannot be viewed as one single event containing a starting and ending point. Fabiano et al. (2024) highlight that in these types of events, there is a need for enhanced proactive and reactive management strategies to enable a better process of decision-making.

3.1.2 The concept of crisis management

In the face of a crisis, crisis management is applied and demonstrated in the actions a company takes to prevent a crisis from occurring or mitigate the effects when it emerges. Crisis management is strategically and operationally planned by organizational actors together with external stakeholders (Pearson & Clair, 1998). Communication between actors in the company and stakeholders is important for both parties because it enhances the awareness of roles and responsibilities (Gibb & Buchanan, 2006). When a potential crisis is avoided it is stated to be seen as effective. It is also stated to be effective when key stakeholders perceive that the benefits of crisis management surpass the negative consequences, encompassing both short-term and long-term perspectives. Further, the preparation is presented to for example include planning activities to minimize potential risks (Pearson & Clair, 1998).

3.1.3 Linear and cyclic approach on crisis management

Two different approaches to the process of crisis management have been found in the literature. These two perspectives are presented and compared to provide a better understanding of different views on the topic. Crisis management strategies have been described in the literature as a linear process. However, a linear approach is stated by Chua (2023) to be a traditional crisis perspective. Pearson and Clair (1998) further describes that this linear crisis process starts with companies' current crisis preparation. This preparation is based on the executive's viewpoint of the value and need of crisis preparedness. In enterprises where company leaders hold the belief that their business is protected from a crisis outbreak, there will exist a reduced priority for risk management strategies. The mindset of the decision-makers is therefore outlined as crucial for the company's response. In sectors governed by regulations and well-established management frameworks, the perceptions of executives together with the corporate culture shape and influence the approach to prioritize crisis management (Pearson & Clair, 1998).

From the linear point of view, the process continues into the second phase by implementing organizational crisis management plans and preparations. These plans are stated to build on the connection between the company's management strategies and the environmental context. This environmental context is based on industrialized practices and industry regulations (Pearson & Clair, 1998). In today's business world, there is an increased number of regulations and legislation, requiring companies to have for instance a crisis continuity management plan and strategy in place (Herbane, 2010).

Another approach to crisis management described in previous literature is to view it as a cyclic process. This approach starts with a signal detection phase, and during this initial stage, the opportunity to identify warning signals arises. This enables issues to be addressed and a crisis outbreak can possibly be prevented. The second phase in this cyclic process is called probing and prevention. In this stage, known risk factors are sought after to take action to reduce the potential damage (Veil, 2011). Returning to the linear perspective, it is stated that a triggering event is the breaking point between the preparation phase and the response phase. The response phase contains both reactions from organizational members and prepared strategical crisis response. It is stated that individual and collective reactions impact how the planned response is carried out. An executive's perception of risk and success may create a collective understanding among the organizational members for the company's robustness. If the organization's current situation does not harmonize with the collective view, the likelihood of the firm facing more severe consequences of a crisis grows. The outcome therefore is affected by previous planning, responses, and actions (Pearson & Clair, 1998). In contrast to the linear perspective Veil (2011) highlights in the cyclic perspective, the phase of damage containment as a response to a crisis. Organizational actors are working to minimize the damage caused by a crisis outbreak. The cycling process continues with a recovery phase characterized by attempts to restore the functions of the business without a delay to reach the condition in the pre-crisis stage. The last phase in the cyclic process is the learning phase connecting the cycle with its start point. In this phase, the aim is to examine and evaluate the crisis management system to provide improvements and evolve the organization's way of responding to a crisis.

In Figure 3 below was inspired by previously presented literature. The linear crisis management process described by Pearson and Clair (1998) and the cyclic management process described by Veil (2011) are related to the crisis perspective discussed by Williams et al. (2017). Figure 3 below illustrates an interpreted overview of these perspectives.

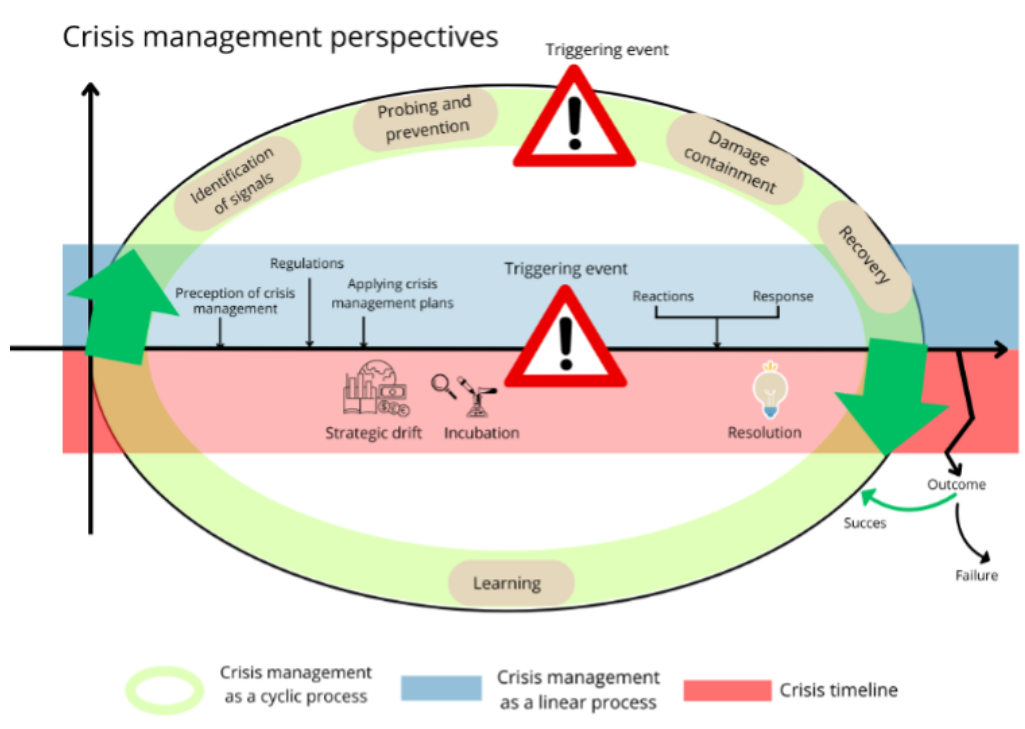


Figure 3: Interpreted view of the linear and cyclic crisis management process.

3.1.4 Approaching early warning signs

In the crisis management process, there should be a focus on paying attention to "weak signals". By adopting this focus the potential risks of a crisis can be minimized, by for example allocating resources to organizing activities and to other activities aimed at protecting the organizational system. By attempting this strategy, the expected outcome is stated to realign a disrupted or weakened organization system towards its normal condition during any stage of the crisis (Williams et al., 2017). Early warning signs are indicators of a crisis outbreak. It is stated that firms often overlook these signs which limit their ability to act appropriately, denying them the opportunity to recognize and respond to opportunities to mitigate the occurrence of a crisis (Veil, 2011). Despite this, if well prepared and reactions and response align with the situation of the crisis the outcome may be that the company survives the crisis without any remarkable damage impact (Pearson & Clair, 1998).

For a company to maintain its resilience the identification of warning signals in the context of unexpected events such as COVID-19 should be integrated with other company-specific information of importance (Fabiano et al., 2023). The window of opportunities where companies can identify early warning signs varies between different types of crises as illustrated in Figure 4. For a creeping event, the period is for instance longer than for a black swan event due to the reason that a creeping event is characterized by gradual changes enabling warning signs to be more easily detected. Despite this, the warning signs of a black swan event can be more difficult to notice due to them being characterized as weak, incomprehensible, and can arise at a random frequency (Chua, 2023). When encountering an unexpected event, the experience is out of line with current knowledge about crises and risks. The reason behind the lack of knowledge is that no past event illustrates its possibility making it unknown to the company. It is therefore more difficult to be prepared due to the events' unpredictability. Organizations should, even in this kind of situation, strive to be as prepared as possible and respond effectively. Preparedness in the context of an unexpected event is for a company to strive to become anti-fragile and robust (Hajikazemi et al., 2016).

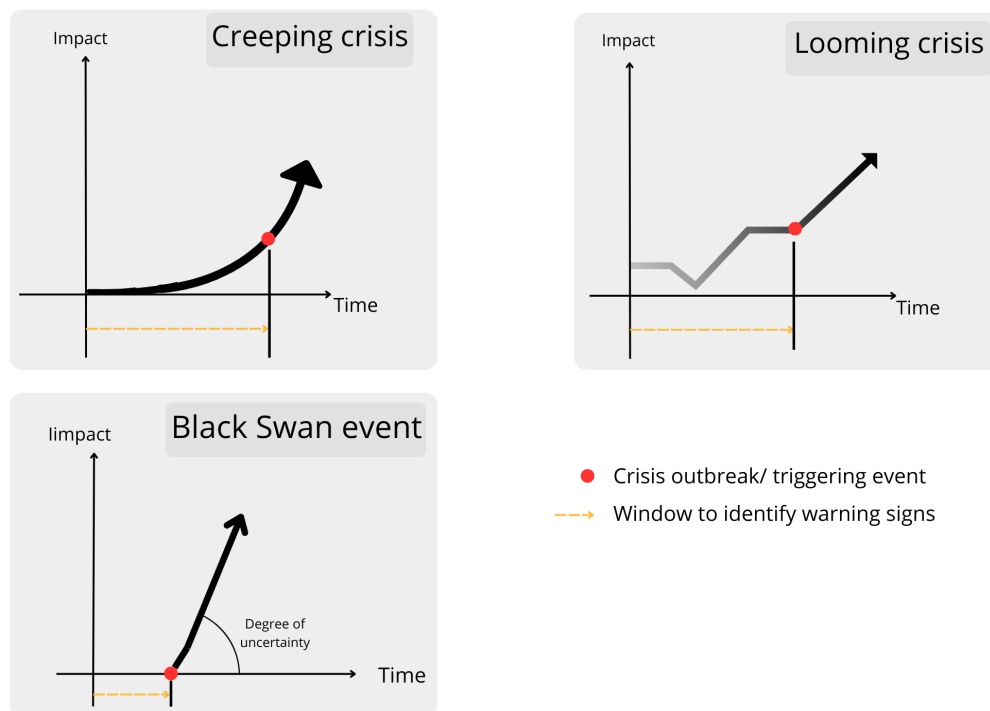


Figure 4: An illustration of how the different types of crises can be interpreted, in the context of triggering events and window of opportunities.

3.1.5 Crisis response and learning

Strategic plans must be made to identify the need for specific responses and evaluate the potential benefits that these will bring in the acute crisis. The timeline of the window of opportunities for response depends on

how large and quickly the threat affects the company. This will impact the planning time as well as the firm's growth, profits, and future opportunities. In the early stages of the threat, little is known about the future impact, therefore the responses need to be unspecified enabling space for increased flexibility. Nevertheless, when the situation becomes clearer and more precise, the decision-making is made more rapid to give an amplified response (Ansoff, 1975).

Veil (2011) points out that learning from past actions is of high value when examining the crisis management system. It is stated that when a company fails to identify potential warning signals during a crisis management routine, learning from these mistakes can be impeded. The author asserts that organizations that seize the chance to gain knowledge and develop new strategies and innovative tactics during times of crisis, can reclaim robustness in a post-crisis stage. Veil (2011) continues by stating that an acknowledgment of crisis management frameworks provides a company with the opportunity to learn from previous crisis events which will enable the responsiveness to a new one. It's also pointed out that the capacity of signal detection systems affects the company's way of recognizing potential warning signals.

3.1.6 Unexpected events and SME crisis management approach

The crisis management strategy of a company, when encountering an unexpected event, partly depends on the size of the firm. Anticipating a high-impact unexpected event will be more difficult for SMEs than larger firms due to the scarcity of higher levels of financial resources, diversity in supply chains, inadequate insurance coverage, and a smaller administrative planning system (Iborra et al., 2020). There is a mixed picture of the beliefs in the value and benefits of formal, systematic, and rational approaches to crisis management planning in SMEs sectors. Hubris and heuristics in entrepreneurial decision-making are common despite evidence illustrating the advantages of strategic planning (Herbane, 2019).

Strategic crisis responses made by SMEs are described to be effective when the capturing of early responses is done by applying actions in the form of cost-cutting, striving to preserve the status quo of operational activities by for instance financing debts and engaging in an innovative renewal in strategic crisis response activities (Clauss et al., 2022). The outcome of a crisis in an SME context depends on the post-crisis recovery, which in the absence of crisis strategy and practices in combination with a lack of risk management competence can mitigate or prevent the company from bouncing back from a disruption (Herbane, 2019). It has been shown that SMEs possess unique capabilities to effectively respond to a crisis that in the outcome of a crisis event will strengthen the company. There exist different factors that positively affect the crisis responsiveness of SMEs. These factors are: if the firm established in recent years, management expertise, and business orientation on the market (Clauss et al., 2022).

To enhance the flexibility in management strategies during an unexpected event companies need to understand that effective preparation and planning strategies are most useful when encountering crisis threats that are already known to the company. Developing new skills and capabilities to apply in crisis management strategies is, therefore, a requirement for contingency plans to be developed to mitigate potential disruptions (Chua, 2023).

3.1.7 Evaluating the crisis and performance

The occurrence of COVID-19 was for many SMEs unlikely, there was a lack of knowledge about access to assistance or support, they were not prepared for the consequences and their risk management itself was insufficient. Therefore, it's suggested for SMEs to focus on activities such as prevention planning, and risk identification and to seek experience and practical guidance from others when managing risks (Grondys et al., 2021). The approach to crisis management responses of SMEs can be influenced by other companies that earlier faced similar crises. Learning from actions taken by other organizations during a disruption in the surrounding environment can raise awareness of experiences in a larger business context that can foster resilience in companies (Herbane, 2019).

Furthermore, Steen et al. (2024) claim that scenario-based training can help to forecast human behavior during a crisis. It's highlighted as a dynamic process that aims to improve knowledge about the operational

context, working environment, strengths, and weaknesses of day-to-day operations. It will help to gain an understanding of existing practices and give individuals experience. According to the authors, three prerequisites are needed to be able to learn from the situation and create proactive learning. The elements are learning opportunities, whether there are any similarities between the events, and the ability to confirm that learning has occurred. The text argues that the number of things that go right, for example, successful improvisation, is larger than the number of outcomes of failure.

To be able to learn from past incidents, Shrivastava (1993) suggests that post-crisis activities should examine how the company was affected by the crisis. It is suggested by the author to study and evaluate the crisis by using a framework called the 4Cs. The method is described to encompass four key aspects of crisis which are: causes, consequences, caution, and coping. By examining the first key aspect which is the cause of a crisis, the underlying conditions that enabled the immediate malfunctions to take effect can be traced down. It is described by the author that by studying a crisis, short-and long-term damageable consequences can be detected, which encompasses the second key aspect (consequences). These damages are stated to often be connected to the global condition.

According to Thakur (2021) the macro-environmental effect on an organization can be mapped by using the PESTEL framework which also is helpful in the firm's decision-making. The author applied this framework to analyze healthcare waste management during COVID-19. The PESTEL framework is presented in the article and stands for political, economic, social, technological, environmental, and legal factors, which all have an external multidimensional impact on a company and can be the source of consequences. Shrivastava (1993) further presents the third key aspect in the 4Cs framework as a caution, which specifies the way a company has developed its skills in warning signal detections. This can for example be executed by developing an early warning system. Lastly, the author brings up coping as the fourth key aspect. This aspect includes how a company can build up a long-term recovery plan. This recovery plan involves how a crisis is communicated in the company, the establishment of crisis and emergency management teams, how disputes are resolved, and how assistance is provided to people suffering from the crisis consequences.

3.2 Business continuity management

In the matter of how a company survives a crisis disruption, business continuity is a framework of interest. Business continuity management (BCM) can be described as a conceptual framework with a main focus on how companies can maintain operations after experiencing a disruption (Gibb & Buchanan, 2006). To respond to an acute crisis, organizational and strategical structures, roles, processes, and resources are needed and established through BCM (Herbane, 2019).

BCM can during a crisis provide a company with tools that strengthen certainty in continuing to deliver products and capabilities of a process. It is advocated for companies to invest in BCM because the results of not doing so can be devastating for the company, following loss of revenue and at worst cessation of the operational business. It is mentioned that enterprises must identify the worst-case scenario for their business and how they will continue operating during and after the crisis. Additionally, the company needs to consider the time it would take, from the crisis outbreak until the cessation of business activities, and also the time taken to return to business as usual (Gibb & Buchanan, 2006). Roffia and Dabić (2024) described that before COVID-19, several SMEs did neither conduct crisis training in the context of unfavorable business conditions, nor did they have a business continuity plan in place. In recent decades, SMEs have become renowned for their speed, responsiveness, and adaptability, which indicates their robustness. Despite this, the adoption of a business continuity plan is uncommon among SMEs.

When implementing BCM into a company's management strategy, the process is according to Tammineedi (2010) divided into three phases. The three phases are presented in the article as pre-event preparation, event management, and post-event continuity. According to the author, when implementing business continuity (BC) several key activities need to be executed in each phase. The pre-event preparation phase is stated to focus on identifying risks, interpreting those risks based on the impact it has on the overall business and business processes, making a continuity plan and vendor agreements based on the generated information, and focusing on risk awareness, training personnel and review the company's maintenance plan. The author mentions that

the second phase, the event management phase is characterized by activities executed during the crisis for instance emergency response, coordinating and communicating with public authorities, damage assessment, salvage operations, and insurance cost tracking. In a post-crisis state, there is a shift in BCM activities to focus on the restoration of operations, review decision-making, update continuity plans, and settle insurance claims.

3.2.1 Risk assessment concerning known and unexpected events

In the pre-event preparation phase previously described, this phase can include a risk assessment activity aimed at identifying and reviewing known risks that could impact the company. The activity contains six key elements which are connected and performed in a sequenced loop. The loop is stated to include the following activities: identifying risks, evaluating and implementing countermeasures, and identifying resources, vulnerabilities, and threats. Failure mode and effects analysis (FMEA) is an additional methodology often used in the risk assessment process Tammineedi (2010). According to Liu et al. (2013), FMEA is a tool that can be used on systems, processes, and services to reduce the likelihood of potential failures. By applying this method, an analysis of identify and rank failure modes can be made. The analysis is executed by taking risk factors into account where the factors in a failure mode are multiplied to compute a risk priority number (RPN) of possible failure modes. Tammineedi (2010) suggest that when the methods are used in the risk assessment process, RPN should be used together with a criticality parameter. Tammineedi (2010) advocates that the criticality parameter would add value by giving higher priority to a more critical failure mode with the same RPN as another. According to the author, this would enable the avoidance of investing in low-severity risks.

Hajikazemi et al. (2016) mentioned that an attempt of predicting and evaluating the risk of an unexpected event by using various types of risk assessment tools is a method of unreliability. The reason behind this statement being the lack of knowledge about these types of unexpected events. Fabiano et al. (2024) added concepts to already established risk assessment processes by discussing how it can be implemented on unexpected events which never have been experienced by the company. It is presented that newly developed safety approaches enabling foreseeing high-impact and unexpected events such as COVID-19 can be integrated to improve the continuity of business activities. Such approaches are stated to for instance be the bow tie analysis (BTA). According to Lim and Won (2024), BTA is widely used in industries to identify interconnections between ongoing organizational activities and potential threats that are directly connected. This analysis can make out the base to establish an extended crisis preventive approach. Additional approaches which is discussed by Fabiano et al. (2024) is to analyze the root of cause, how strong the safety barriers are and to preform a modelling of the company's current resilience against different crises.

Werther (2013) sheds light to mainstreamed used models and analysis being built up to examine known changes. This is explained to be the reason for them to often fail when applied to unexpected events. It is claimed by the author that predictions of the future cannot be accurately forecasted in the context of a large scale, high impact, and rare event. Additionally, it is mentioned that the potential of solving unknown future dilemmas can in some extent be executed by using computers to gather information and process data. The author adds to this statement by arguing for difficulties in computerised foresight's and based this argument on the complex and dynamic characteristics of the real-world. Further, emphasising the reasons behind a company surviving an unexpected event being situational awareness. This type of awareness should consist of a reasonable seance making enabling the possibility to foresee an event that might occur in the future.

3.2.2 Product realization process

As a product are realized, several stages is passed. A product realization process starts from the idea of the product, through the concept phase, into industrialization phase and lastly the production. In operations management in automotive industries by Gobetto (2014), the industrialization phase is described in macro phases and macro stages. In operations management in automotive industries, the industrialization phase is defined as the process and action a product goes through product design, manufacturing engineering process and lastly the production. Gobetto (2014) goes into a deep description of the industrialization phase and where the production process is vulnerable. The industrialization process macro stages are further defined as a concept and style delivery, project validation, production process, delivery for production and lastly commercial launch. The first stage consists of forming an idea for the production, which is followed by the second stage where the

testing and refining the production is the main activities. When the product is determined and validated the production process starts. In the production process, begins with step three, the type of equipment and tools that will be used is determined, as well as the process of requiring the material and labor and the manufacture equipment and machines are determined and then developed or required. During the fourth step, Delivery for production, the product is ramping up to be created in a bigger scale and bigger number, so it can be delivered when the fifth step, commercial launch, is present. Gobetto (2014) identifies areas where the management can be prone to interruptions, and therefore make the operations and the company vulnerable. The purchasing of materials, which falls into the third step, is an area prone to delays which follows interruptions in production. The delay of material will affect the ramping up period.

3.3 Resilience management

A complementary concept to BCM is resilience management. Birkmann et al. (2013) stated that resilience is a concept generated from research fields such as ecology, psychology and social-ecological systems; and the term is addressing the capability to cope or bounce back from adverse circumstances. Herbane (2010) mentioned that in order to improve resilience in companies when implementing plans, it is insufficient to only apply a planning approach, measures to are also needed. Different types of approaches regarding the implementation of resilience thinking is discussed by Fabiano et al. (2024). By for example applying an analysis on the company's production plant, the authors mentioned that the company's management team can maintain an overview by approaching to identify different trends and change direction or transients if needed. This analysis approach on the production plant can provide the company with an improved perspective and grip on abnormal states in the process to avoid incidents. Steen et al. (2024) claims that by adapting a resilience analysis in the preparation phase, it is assumed that the complexity of an organization or system can be broken down and interconnections can be identified. It is alleged that it would provide a foresight into how changes can be foreseen, by for example reviewing operational activities in need of continuous improvement. It is alleged that it would provide a foresight into how changes can be foreseen, by for example reviewing operational activities in need of continuous improvement.

A study made by Herbane (2019) on SMEs in the United Kingdom showed that SMEs can survive a crisis in the absence of a preparedness strategy. However, it was identified that the capacity for an organization to respond to a crisis could increase with a preparedness plan in place. It was found in the study that an organizations resilience does not always relay on the preparedness strategy. It is stated that if there is a strong belief in the firm's ability to respond to and prevent a crisis situation, and it exists adequate resources to mobilize the organization, the resilience of the firm can be high.

Steen et al. (2024) claims that uncertainties are not being properly addressed and treated in standard BCM approaches. The authors suggests that there is a need to shift focus to a more proactive type of framework called resilience management. By fostering resilience in BCM, it would be possible to transition; from a mindset characterized by control and obligations to a more flexible and adaptable way of thinking. To make this incorporation, it is suggested that resilience thinking should to be implemented into the preparation phase, day-to-day operations and also the learning phase. All of these phases should be characterized by proactivity for instance when reviewing operational activities, formulating response procedures, evaluating conditions of an ongoing situations, making a cohesive plan of action and applying the outcome of a collaborative decision-making. Further, resilience thinking in the learning phase should be implemented in activities such as incident analysis, evaluation reasoning and scenario-based training.

Todesco and Klein (2021) discuss in their article about SME response to COVID-19 and organizational resilience. It is stated that in order for SMEs to be better equipped and adaptable in a crisis situation resilience behaviour can help them to prepare for a post crisis environment. Roffia and Dabić (2024) mentioned that in order to mitigate or avoid potential crisis effects, gaining knowledge about crisis situation will strengthen SMEs ability to respond to the crisis situation when searching for solutions. The fact that SMEs are small sized companies can enhance their flexibility making them more responsive.

3.3.1 Supply chain resilience

A resilience mindset is not only to be adapted into an organization's daily activities, nevertheless it can additionally be adapted into the supply chain. Wieland and Durach (2021) stated that resilience also illustrates the ability an organisation has to adapt and transform after a crisis event. Supply chain resilience can be described as the needed robustness and flexibility to manage disturbance to quickly return to an equilibrium state and reach stability.

Fabiano et al. (2024) described the same concept but shed light on factors such as cross-sector collaboration, agility and dynamic capabilities contributing to an increased resilience in organizations. Further, the author discussed limitations in the risk management of companies trying to implement continuity in their supply chain networks, which were revealed during COVID-19. Companies faced several challenges during this period of time, where the main ones being for example unavailability of raw materials, delivery delays and complexity in production. Resilience in supply chains is mentioned to increase if there is a strategical improvement of the relationships in both global and local supplier networks. In order to make this improvement there is a need of enhanced flexibility of machines, trucks and technicians in and outside of production.

Wieland and Durach (2021) adds a perspective that suggests returning to one best state may not always be the optimal case. It is alleged that resilience thinking can become meaningless if the previous best state is after external changes in the environment perceived as the old normal state. The concept of resilience thinking in the supply chain context is described to add weight on the two key points: the ability to adapt and the possibility to transform. Therefore, the authors suggests that it is not favorable to aspire to reach one fixed state, because it might not be the optimal one anymore when the circumstances have change. Fabiano et al. (2024) also points out that a recovery implies to return to the normal state after being exposed to a disruption can be developed to be more efficient, resulting in a company returning to an even better state than before.

According to Guntuka et al. (2024), complex supply chain network makes it difficult for companies to prepare for and recover from supply chain interruptions. It is mentioned that contemporary supply chain networks usually are complex, and the reason being the networks which are built up of numerous interconnected layers across extensive geographic areas. In order to be able to identify prospected causes of an interruption, the authors ads weight to the importance of examine different parts in the supply chain in the preparation phase. It is stated that this will add value to the company's supply chain management by enabling a reduction of negative impacts from a crisis disruption. Gantuka et al. (2024) also proposes that applying this type of activities to the preparation phase will contribute to a more adaptable supply chain. They also state that the possibility to quickly recover from a disruption would increase which results in the company becoming more resilient.

3.4 Business practices during COVID-19

In the current business environment characterized by intense competition and rapid change, organizations must adjust at an unprecedented pace. To maintain and develop a robust and competitive company, several business practices is found to be significant and additional examples of overall strengths, weaknesses, opportunities, and threats as SMEs navigate the pandemic. Finally, several examples of implemented actions are presented below.

3.4.1 Technological integration and advancement

According to Rao et al. (2023), the implementation of innovation and the use of digital support or assets is crucial for SMEs. The resources are described as a coordinator for research and networking, and they also mention that an interaction with customers using digital media will bring sustainability, continuity, and growth. Lack of administrative and technical resources makes SMEs more exposed to external disturbances. An example of technological integration was utilizing a banking app for the administration of business expenses. In addition to this, Klein and Todesco (2021) express that in a span of eight weeks, the pandemic has advanced the integration of digital technologies by roughly five years. Two presented examples by Rao et al. (2023) are the essential use of remote communications during the lockdowns and the affected supply chain management in general due to COVID-19. According to Klein and Todesco (2021), remote work became the new norm for the employees. Though, an aggravating aspect of SMEs catching up with investments in technology is the lack of liquid assets.

3.4.2 Business management and innovation

Rao et al. (2023) continues with aspects of entrepreneurship and management. With a creative and progressive management, the opportunities for survival during a crisis increases. The work must contain a positive learning culture which encourages knowledge sharing at all stages. A great cooperation between entrepreneurs and clients as well as an innovative leadership is significant for sustainable business development. The authors states that the internal communication and care being effective were essential during the pandemic. The employees sensed an affinity amongst each other when the employer provided a safe working environment, both financially, psychologically and for their health. They conclude that if the crisis was not promptly identified and addressed by the management, it caused a significant delay in the implementation of contingency strategies.

Klein and Todesco (2021) present the centralized leadership among SMEs as an advantage considering the rapidly evolving surroundings. With closer internal stakeholders; managers and employees, and external stakeholders; customers and suppliers, the information gathering gets easier. A mentioned example is the change in customer demands which entails both the act of obtaining, recognizing, and responding. Further, the rapid actions required are handled more easily because of their agility and broad scope of labor competencies. Generalist professionals, due to their broad skill, are better positioned to take on various projects and tasks.

As previously mentioned, the internal share of information between managers and employees is crucial. Klein and Todesco (2021) states that a successful sharing method maintains the knowledge and also involves employees in the development of innovative business ideas. A given example of providing this climate is to gather individuals who come together due to their interests and dedication to a specific topic. With the primary goal of enhancing their knowledge and expertise through knowledge sharing, different Communities of Practice (CoPs) support the growth of both innovative ideas and collaborative networks. The different professionals should share resources, innovations, and competencies to elaborate the business by adapting new technologies and explore different markets. Finally, Klein and Todesco (2021) describe that the close relationships in CoPs among local SMEs can provide benefit over competitors.

Lastly, Klein and Todesco (2021) state the liability of smallness as one of the most significant problems for SMEs. The impact of external and internal factors is described as more pronounced on smaller businesses due to lack of resources in both funds and expertise. For instance, the loss of key employees to larger companies, fewer financing opportunities, the emergence of new rivals, and significant crises is mentioned by Klein and Todesco (2021). Adam and Alarifi (2021) continues with that SMEs face potential harm during a socio-economic and health-related crisis due to their essential need for robust relationships with customers and suppliers.

Rao et al. (2023) describes the sudden demand of various face masks as an opportunity to sales and exportation. An approach where the companies change production rapidly to more requested items entail improved financial fulfilment. Klein and Todesco (2021) states several actions made by SMEs. They moved sales and advertisement to apps, websites and through social media and engaged with numerous networks to connect with potential customers. They also initiated the sale of goods directly to consumers and purchasing directly from suppliers and therefore remove intermediaries. This was carried out by local cooperative initiatives for coordinated sales and distribution. Clauss et al. (2022) presents a study actions taken by SMEs when responding to COVID-19. The study is made on companies in Austria, Germany, and Liechtenstein to illustrate examples of successful, adaptable and innovative management skills and ways of finding opportunities to develop their business model. A distiller and beverage producer seized the opportunity to operate in a different market segment by starting to produce bottles for disinfectants.

Another company developed specific online events in order to adapt to the changing business circumstances. There was also one example of a cooking company which responded to the crisis of COVID-19 by adapting its business by entering different markets. For example, the company started selling toilet paper, masks and working as a delivery service. Most of these solutions were supposed to be temporary, however the quick exploitation of new opportunities, resulted in mitigation of the crisis effect and increased their resilience. In the study made by Clauss et al. (2022) one company mentioned that experiencing a crisis event resulted in more generated knowledge about core competence. Learning to adapt business operations in order to survive allowed the company to be more strategically flexible and prepared for future high-impact and low-probability events.

3.5 Environmental sustainability during a crisis

Tandon et al. (2024) highlight the difficulties for a B2B company to make the company more environmentally friendly. It is addressed that it exists little knowledge about the challenges that companies face when making an environmental transition, especially in the "new normal" business environment that has been created after COVID-19. It is also mentioned that there is a collective global sustainability goal which puts a great emphasis on the environment and sustainability to be the focus of business operations in today's companies. With B2B companies in focus, it is also discussed that a transition towards an environmentally sustainable business has been made significantly more difficult during COVID-19, as it has caused disruptions in significant parts of the business. The author adds weight to interrupted flows of goods and services in the supply chain networks and explains that these threatens the company to develop a strategical environmental response.

4 Interview findings and analysis

The data from the interviews is compiled below in the section Compiled interview responses 4.1. Each company that participated in the interview was anonymous with an assigned letter, A to L.

4.1 Compiled interview responses

Only interview questions connected to the literature and the RESPIRE model are compiled below.

4.1.1 Have the company encountered any interruption in operations during the time period 2019-2023?

In Table 4 below, all companies are listed together with whether they had a negative or positive impact due to a crisis. Negative and positive impacts are further divided into external and internal factors. External factor refers to demand and means that the demand has been affected in some way, positively or negatively. Internal factors account for production, employees, and logistics. Each crisis is marked under the impact and factor it contributed to the respective company.

Below the table is a deeper explanation of how each company has been affected by the crises and why they have been marked the way they have in the table.

Table 4: Table of how companies have been affected by crises.

	Positive impact		Negative Impact	
	Internal	External	Internal	External
Company A			RUS-UKR War	COVID-19
Company B			Other crises	RUS-UKR War
Company C			COVID-19, RUS-UKR war, Suez-Canal, Red Sea Crisis	
Company D		COVID-19	COVID-19, RUS-UKR war	
Company E		RUS-UKR war	COVID-19	COVID-19
Company F			COVID-19, RUS-UKR war	COVID-19, RUS-UKR war
Company G			COVID-19	RUS-UKR war
Company H		COVID-19, Red Sea Crisis,	COVID-19, Red Sea Crisis, RUS-UKR war, Other crises	RUS-UKR war
Company I			COVID-19, RUS-UKR war	COVID-19, RUS-UKR war
Company J			COVID-19, RUS-UKR war	COVID-19
Company K			COVID-19 RUS-UKR war Red Sea Crisis	COVID-19 RUS-UKR war
Company L			COVID-19, RUS-UKR war	COVID-19

COVID-19 pandemic

Only one company wasn't affected by the pandemic. Company B did not express that they in any way were affected by the pandemic other than small changes in their way of working. Five companies experienced a negative impact on demand, an external factor, as a result of the pandemic. Company A was negatively affected by the pandemic as its sales decreased significantly. Company G faced decreased sales indirectly due to their customers' difficulties in affected regions, leading to halts in products. Company L experienced a drastic reduction in demand at the beginning of the pandemic. Reduced attendance due to sickness, and some interference with incoming materials, the production flow was inconsistent. Company L refers to the pandemic and how the number of orders coming in drastically reduced at the beginning of the crisis but managed to recover after a short time. However due to reduced attendance, a consequence of sickness, and some interference with incoming materials, the production flow was inconsistent. Company E had a slow business during the pandemic as all their customers were in the same sector and were affected in the same way.

Two companies went through internal challenges where one company saw both an increase and decrease in demand and the other one only saw an increase in demand. Company D experienced challenges with the lack of tourism that decreased the sales of the majority of their products, one of their products experienced a surge in sales during the pandemic due to increased demand. Company H's factory was shut down during periods when sickness absence was so high during the pandemic. The pandemic contributed to more people staying at home and wanting to buy their products and thus they got an increasing demand. The challenge was to find healthy personnel who could come to work and produce these products.

Four companies had a negative internal impact due to the pandemic as their production, logistics or personnel went through challenges. Company I lost 30% of their production during the pandemic due to one of their customers stopping producing because of a halt in delivery. This also forced the company to terminate employees. Company J experienced shortages in accessories, mostly from Asia, which affected the production. Their customers also experienced shortages which halted the production. The production at company C was negatively affected due to the component crisis that was based on insufficient availability of Silicon. They also used trains for imports from China which experienced a lot of disruption during the crisis. Company F experienced supply disruptions and challenges in managing personnel due to the pandemic.

War between Russia and Ukraine

All the companies were affected by the war between Ukraine and Russia. Company B survives by taking in venture capital for financing as the sales are limited so far. An unstable environment such as the war in Ukraine and high interest rates have contributed to challenges with declining global risk appetite and recession, which therefore have affected the business negatively. Company L saw an increase in prices as a result of the war.

Five companies experienced a decrease in demand due to the conflict between Ukraine and Russia. Company I lost 50% of its production due to the war in one of its facilities and had to terminate personnel. Company G was indirectly impacted, their customers made many sales in the affected areas. Due to their customers being unable to sell products, they experienced a decrease in sales when their customers stopped their production. Company H was affected negatively due to its customer behavior. The interest rate rose, and the price of energy and raw materials rose, which contributed to a decrease in demand. Company K experienced a decrease in demand, all business in Russia was stopped due to the insecurities later followed by government sanction. Energy and gas prices increased, which made most of the costs increase. Company A noticed an increased cost from the energy crisis that became a consequence of the war. They also experienced a slight drop in sales due to Ukraine no longer being able to order as before.

Company E on the other hand, received an increased demand. Competitors to the company could not supply, therefore company E received more order requests. Four companies were negatively affected by internal factors, logistics, and production such as access to materials. Company C used some noble gases from Ukraine, which became difficult to access. They also used trains for imports from China which experienced a lot of disruption during the crisis. Company D was affected by rising prices for wood as Russia is a wood supplier. Company F was affected in terms of its supply chain. Russia was a significant global producer of titanium, but the conflict led to challenges in sourcing this material. Company J bought materials from Ukraine before the conflict but found other alternatives and suppliers during the crisis.

Red Sea Supply Crisis

Three companies experienced challenges and were affected both negatively and positively by the Red Sea Supply Crisis. Company C experienced distributions when the container ship Ever Given blocked the Suez Canal, as well as having to make detours to not be affected by hijackers. The consequence of that was longer lead times for supplies. Company H has been affected by the Red Sea hijackers. Transports from Asia had to go around Africa, which has contributed to more expensive transport costs and longer lead time. This has negatively affected raw material prices. However, it has had a positive effect on the company as customers who previously bought products from Asia instead order products from them. Company K faced difficulties in getting their deliveries during the 2021 Suez Canal obstruction.

Other crises

Company B had an accident on site where a module, far into the production chain, got damaged. This led to production being negatively affected and the development of a process to manage these types of accidents. Company H had to change their logistics and move their exports to trucks when the container traffic was on strike in Europe.

4.1.2 Was there any Crisis Management in place before the crisis occurred?

The question aims to investigate whether they had made any preparations for the crises they encountered. Table 5 presented indicates if the company had any crisis management before the triggering event and if they are ISO certified. All the companies answered with the approach that they see a difference in crisis management for the production, respectively overall strategy for the company. None of the companies had defined management strategy, however, some answered that they could utilize previously existing policies for the unexpected crisis. In the table, they have been defined as Partially. All companies had preparation for production issues.

Table 5: The result of existing crisis management.

	Production	Strategy	ISO-certification
A	✓	X	9001/14001/3834-2
B	✓	X	In process
C	✓	Partially	IATF-16949/9001/14001
D	✓	X	X
E	✓	X	In process
F	✓	X	9001/14001
G	✓	Partially	9001/14001/45001/3835-2/3834-4
H	✓	Partially	14001/9001/45001
I	✓	Partially	9001/14001/AS9100
J	✓	Partially	IATF-16949/9001/14001
K	✓	X	9001
L	✓	Partially	9001/14001

Company D was the only organization not to be ISO certified or in the process of obtaining a certification. The reason behind it was that the cost of certification outweighed the benefits. Company D’s preparation consisted of having an external company call when a machine broke down. Company B and E have developed according to guidelines a quality management system that is in the process of being certified. Two companies, I and C, utilized policies from the certification regarding short staff during the pandemic. Company J had a health survey of their staff that was mentioned to be helpful. Company G emphasized the difficulties of having a specific crisis management for unexpected events, nonetheless, the certifications required emergency plans, which led to documentation on how to act, including communication strategies. Company L’s management team had a systematic process for forecasting the upcoming 3-4 years based on external events.

4.1.3 Was there any early warning signals?

Only company B and I have ever noticed early warning signals regarding employees’ health due to their follow-ups, such as meetings or forms about employees’ mental health, stress, and workload. No other early warning signals have been noted for either company before a crisis occurred.

4.1.4 Did the company have any strategy or policy about identifying early warning signals?

Five companies had a strategy or policy to identify early warning signs to an extent. Four companies only partially had a policy, and the remaining three companies had none at all, see Figure 5 below.

Company A began, during the COVID-19 pandemic, to hold weekly meetings with their customers to get a picture of the world situation and discuss market sentiment. These weekly meetings were something the company continued to have since, as it was much easier to identify trends and potential upcoming crises with this communication.

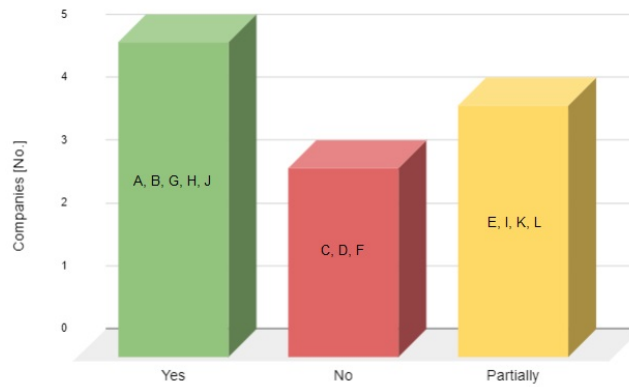


Figure 5: The result of how many companies that had a policy of identifying early warning signs.

Four companies (B, H, G, J) worked with risk matrices, for example, FMEA, where risks are identified, the probability of the risk occurring is assessed as well as the impact on the company. With this, companies could track changes and identify early warning signals - for example by a risk transitioning from a low probability to a sudden high probability of occurring.

Company B also conducted follow-ups such as meetings with the employees regarding their mental health, stress, and workload on a weekly-monthly basis. That helped to detect deviations and early warning signals regarding the work-environment and health.

Company I had the same type of strategy to identify warning signals regarding employees' health, but instead of meeting they used forms that were filled out by the employees. As this only concerned warning signs regarding employees' health and not in any other area, the company was considered to only partially have a policy. Company E had a strategy to study economic fluctuations and company K followed the development in the world by having regular contact with their bank regarding the economic situation in the world. They discuss interest rates and reasons for the effect of the economic situation. This allowed both companies to pick up warning signals from the economic perspective and therefore they were only considered to partially have a policy to identify warning signals. The board of company L didn't have a systematic process but tried to predict the upcoming three or four years to gain insight into eventual changes in the client base and therefore they are considered to only partially have a policy to identify warning signals.

4.1.5 Was there any strategy or plan to manage the crisis? How did it go to follow that strategy?

To be able to examine the companies' response to the various crises they were asked about their strategy. Table 6 presents the meaning of the abbreviations and summarize what measures the companies took to address the various crisis and in Table 7, it is presented various crises the companies have mentioned, and what measures were used to address the crisis. The different measures have been functionally categorized to be able to structure them in groups. For instance, everything supply chain related will be categorized in the same group.

Table 6: Explanation of abbreviations in Table 7.

Abbreviation:	Explanation:	Companies:
C	Communication	A B E F G H I L
CT	Customers tactics	J T
GL	Guidelines	C G I J
GS	Government subsidy	D E F I K L
LO	Layoffs	I
R	Regulations	A B C D G I
RW	Remote work	B D E F G H I J K L
SC	Supply chain	A C F H J K L
TL	Temporary layoffs	D E F J K L

Table 7: The result of measures.

	COVID-19		War in Ukraine		Red sea crisis		Other crisis	
	Production	Strategy	Production	Strategy	Production	Strategy	Production	Strategy
A	SC	R, C	SC	C				
B		RW, R, C		R				
C	SC	R, GL	SC		SC			
D	TL	GS, RW, R		GS				
E	TL	GS, RW, C						
F	TL	GS, RW, C	SC					
G		C, GL, R, RW						
H		RW, C					SC	
I	LO	GL, RW, C, GS, R,	LO					
J	TL	GL, CT, RW	SC					
K	SC, TL	RW, GS						
L	TL, SC	CT, RW, C, GS	SC					

Communication: During uncertain situations, companies (A, B, E, F, G, H, I, L) tended to increase their internal communication efforts, with the management teams holding more frequent meetings. The companies emphasized the benefits of having short, frequent meetings compared to longer, spaced-out ones. Additionally, company A also held more frequent meetings with their customers. These meetings covered topics such as the global situation, market conditions, and customer behavior, indicating a potential advantage in being able to quickly respond to new trends, and adapt strategies. The practice continued during the war in Ukraine. Eight out of twelve companies mentioned this as an important tactic.

Customers tactics: Company J and L stated that they had various market segments before the triggering events. They were able to increase production in other markets, thus minimizing the negative impact on the company.

Guidelines: Four out of twelve companies were able to utilize previous guidelines from their crisis management during COVID-19. All of the companies implemented these guidelines solely during the pandemic. The pandemic resulted in illness, and three of the companies (C, I, J) were able to benefit from previous crisis management or guidelines for staff shortages. Company G mentioned that they in general tried to follow the guidelines provided by ISO.

Government subsidy: Companies (D, E, F, I, K, L) exploited the subsidy provided by the government to be able to implement temporary lay off in production. Company D also utilized the subsidy for the energy crisis.

Layoffs: Companies (D, E, F, I, K, L) exploited the subsidy provided by the government to be able to implement temporary layoffs in production.

Regulations: Due to regulations imposed by the authorities the companies had to take measures. Six of the companies (A, B, C, D, G, I) mentioned that they implemented sanitary regulations to better hygiene and minimize the spread of infection.

Remote work: Specific to the COVID-19 crisis, remote work was implemented in the day-to-day operations due to the worldwide lockdown. Ten of the companies (B, D, E, F, G, H, I, J, K, L) emphasized their switch to remote work in their daily practices, both internally and with customers.

Supply Chain: The supply chain is directly connected to production and has encountered difficulties due to the various crises. The companies' answer regarding this issue was mostly during the war. Three companies (L, J, A) had to switch suppliers. L highlighted being able to buy raw material from colleagues in the industry. Company F tried in general to focus on examine their supply chain and company C had to change route due to initially transporting threw Ukraine. Company H had adjusted its logistics due to a strike and changed

transportation.

Temporary layoffs: With the subsidy provided by the government, six of the companies (D, E, F, J, K, L) were able to implement temporary layoffs or reduced working hours. Only company J did so without the subsidy because it was only relevant for a short while. They had enough resources to handle them anyway.

4.1.6 Did the change remain after the crisis?

This question was asked to explain how the previous measures have been utilized after the crises. This was to investigate if any of the improvised strategies were successful. Table 8 and Table 9 are similar to the two previous tables, however, in this section, the focus is the adjustment that, according to the companies, still are practice. Table 8 below presents the meanings of the abbreviations and summarize what measures remained. Table 9 display the different companies, the crises mentioned by the companies and what remained after the crisis. The remaining measures are functionally categorized, for example, all measured all related to communication will be in one group. Not all adjustments are shown as a measure in Table 9, due to the company not mentioning it as a measure in the interview.

Table 8: Explanation of abbreviations in Table 9.

Abbreviation	Explanation	Companies:
C	Communication	A H
CT	Customers tactics	E I
R	Regulations	D G I K
RW	Remote work	B F G H J K L
SC	Supply chain	A C F H K
WS	Warningsignals	A L

Table 9: The result of the remaining measures.

	COVID-19		War in Ukraine		Red Sea crisis	
	Production	Strategy	Production	Strategy	Production	Strategy
A	SC	SR,WS, C	SC	WS		
B		RW, R		R		
C			SC		SC	
D		R				
E		CT				
F		RW				
G		RW, R				
H	SC	C, RW				
I		CT, R				
J		RW				
K		RW, R			SC	
L		WS, RW				

Communication: Company A had maintained communication with the customers through more frequent meetings. Meanwhile, company H continued to have shorter and more frequent meetings instead of longer, spaced-out ones.

Customer tactics: Both company E and I had implemented strategic changes in response to changing market dynamics. Company E had appointed a new role dedicated to explore potential new customers and identifying unexplored markets. Company I had also shifted focus away from relying on a single major customer. Instead, they proactively expanded their customer base, aimed to diversify and strengthen their market position.

Regulations: Five companies (B, D, G, I and K) implemented COVID-19 regulations regarding hygiene and illness management. They mentioned that these hygiene measures helped to reduce sick leave, and at the same time there was a change in the mindset towards going home when you felt sick.

Remote work: Eight companies (B, F, G, H, J, K and L) have indicated that they embraced a completely new mindset and acceptance towards remote work, a practice they continued with afterwards. Remote work remained highly relevant for these companies which influenced job seekers to prioritize hybrid work options. Both internal operations and customer interactions were still conducted remotely, as they believed it enhanced their flexibility. Moreover, the implementation of more customer meetings remotely had led to reduced travel.

Supply Chain: Due to various supply chain issues, companies (A, C, H, F and K) maintained their changes in the supply chain resilience through the adoption of a diversified supplier base. This strategy aimed to mitigate risks associated with disruptions in logistics and ensured consistent deliveries. For instance, company C continued to explore alternative routes in response to ongoing issues in Ukraine. While company K had implemented two parallel suppliers to improve their supply chain resilience.

Warningsignals: Company A had taken note of all early warning signs and had instituted a discussion point in their meetings meant to actively identify these signals. Additionally, company L had adapted a mindset aimed at defining warning signals.

4.1.7 What was the biggest risks companies believe can negatively affect them?

The biggest risks companies believe exist that could negatively affect them are presented in Figure 6 below. The figure presents the number of times the risks have been mentioned as a percentage, along with the companies that have mentioned them. Some of the companies have mentioned more than one risk.

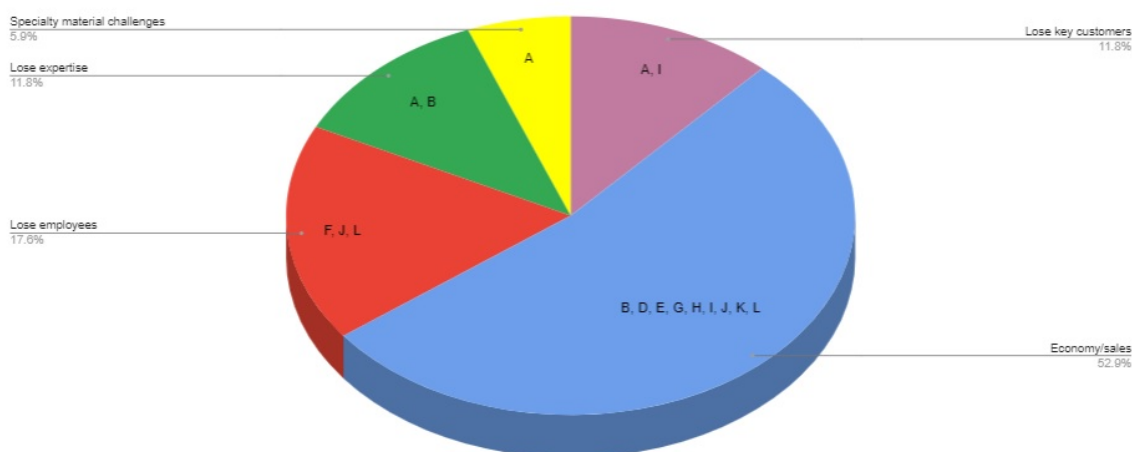


Figure 6: The results of the biggest risks companies believe can negatively affect them.

Nine of the companies believed that the biggest risk to negatively affect them was regarding the economy and sales. They meant that the economy and the sales were a fundamental part for the company to be able to continue. If the company wasn't profitable or would lose sales, there was a big risk that the company wouldn't survive. Three of the companies considered the loss of employees to have been a significant concern. They meant that the employees' health and attendance were very important. Without employees, it wouldn't have been possible to manage the business. Two of the companies considered loss of expertise were a big risk for the company. They mentioned that if experts and key people with specific competence in different areas were removed, it would have been challenging to piece everything back together and find someone with the same competence.

Two of the companies considered the loss of key customers to have been a big concern. They believed that if a major key customer were lost, an alarmingly large proportion of the company's sales could be lost. One company considered that specialty materials challenges were a big risk for the company. They used some special materials, and because of this, the prices were sometimes raised or the material was difficult to get hold of. Without these materials or too high prices, it would have been difficult to continue their business.

4.1.8 What were the thoughts on crisis management after going through crises?

Nine of the companies (A, B, C, E, G, H, I, K and L) mentioned that each crisis has made them more aware of possible risks in the future and that they understood how important it is with risk management. They believed that they had a greater understanding of how important it is to be prepared. The majority of these companies focused on strengthening or developing their existing risk management or strategies.

However, five companies took new initiatives or focused on new approaches. Company B said they were working on becoming ISO certified. Company E tried to spread competence among several people to reduce the risk of losing competence. They also highlighted the importance of always trying to make some savings. Company F mentioned that they will be provided with a business continuity plan. Company H worked on having more systematic risk management and company L considered that a list of possible crises and measures would be good to introduce. In contrast, companies D and K expressed their view that it is difficult to identify all possible crises and know how to deal with them. Company J was in line with this view as well, especially when it came to unexpected and global crises like the pandemic. However, they highlighted that their existing crisis management had been helpful in minor aspects, such as the management of personnel, transport and purchasing.

4.1.9 What were the thoughts on IT security, how did they work with it?

Many companies have become increasingly aware of the risks that cyber-attacks pose to their business. Table 10 below presents the companies and their preventive measures for cyber-attacks. All these measures show that companies have been taking cyber-security seriously and were willing to invest in safeguarding their businesses.

Table 10: The result of how companies work with IT security and counteract cyber-attacks.

Company	Experienced a cyber-attack	Preventive measures	Education
A	Has experienced an attempt. Sister company were exposed, have therefore invested more in preperation.	Strengthened their IT security. Takes backups.	
B	No	Brought in external support to focus on IT security.	
C	No	Brought in external support to focus on IT security. Conducted penetration tests and has implemented procedures for recovery and prevention.	Provide educations for employees
D	No	Has an external IT security system	
E	No	Has an external IT security system	
F	No	Strengthened their IT security.	Provide educations for employees
G	No	Takes backups.	
H	No	Invested and strengthened their IT security. Program that inspects the condition of their systems.	Provide educations for employees
I	No	Strengthened their IT security. Just updated IT supplier who has been maintaining their system. Uses software to be able to send confidential files	
J	No	Provided with resources from parent company to strengthen IT security.	Provide educations for employees
K	No	Takes backups. Cyber attack insurance.	Provide educations for employees
L	No	Takes backups.	Provide educations for employees (nano learning)

4.1.10 Was environmental sustainability considered into the management of the crises?

According to all the companies, environmental sustainability was part of the company's daily operations and overall work. But on the other hand, only company B and H states that they took environmental sustainability into account in their crisis management. Company K mentioned that they were not faced with that choice regarding crisis management. However, they highlighted that the environment should be prioritized in such a case. Because of this, the company was considered to partially take environment into account in crisis management. These three companies considered the environment to be a large part of the company's vision and one of their core values and therefore always prioritized. The other nine companies didn't prioritize

environmental sustainability in their crisis management, but solely focused on surviving the crisis, see Figure 7.

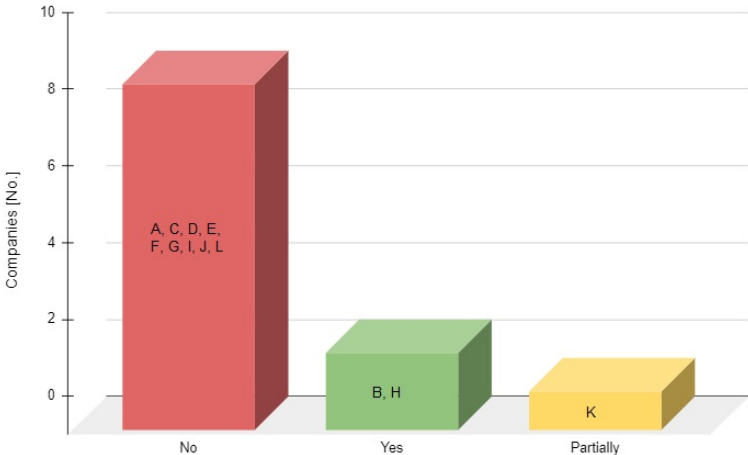


Figure 7: The result of how many companies take the environment into account in crisis management.

5 Discussion

This segment will explore the intersection between interviews and literature, examining similarities and differences through the RESPIRE model's various stages. The research questions will serve as a foundation for drawing insightful conclusions and offering practical recommendations for further development of the RESPIRE model. Ultimately, this section aims to provide ample background information to facilitate a comprehensive discussion of the research questions and give meaningful insights. The interviews were made with various SMEs ranging in size between zero to 250 employees, all of which are involved in manufacturing within diverse industries such as steel, wood, electronics, and plastic. The focus was on identifying strategies that enhance the agility of these companies during critical events. Additionally, any potential correlations were explored between these industries.

5.1 RESPIRE model and Preparation

The RESPIRE model includes a preparation phase, which consists of two steps, crisis preparedness (stage 0) and assessment of "early warnings" (stage 1). The goal of this phase is to plan, prepare, and detect early warning signs. According to Williams et al. (2017), the strategic drift and incubation phases of the linear crisis process are crucial to prevent or mitigate the effects of a crisis. It is important to pay attention to ongoing changes in the market and identify underlying factors and warning signs that can later become a bigger problem if not addressed correctly. However, Chua (2023) states that a crisis has more complexity to it than to be perceived as a linear process. By implementing the RESPIRE model with a basis in literature and interviews, different preparation strategies and crisis approaches can be identified and later used to understand companies' resilience.

5.1.1 Crisis preparedness

As Pearson and Clair (1998) outlined, a company's current crisis preparedness is based on the executive viewpoint of the value and need of crisis management. Therefore, to examine companies' crisis management approach, interviewees were asked regarding the existence of crisis management action plans in place before COVID-19, and other previously discussed crises. Different mindsets and approaches could be identified, for example, the majority of the companies mentioned having a preparation plan in place for production-related incidents. Further, six of the companies mentioned that before the crises broke out, they had a partly defined crisis management strategy. Which they were required to have as a part of being ISO-certified. An example is company L, which stated that they adopted a proactive mindset, by for example using forecasting in an attempt to predict events in the near future (3-4 years). Another example is company H, which mentioned that they work with risk matrices to identify crises and estimate the probability and impact that they may have on the business. In addition, the other half of the companies did not mention having a predefined crisis management strategy to use when encountering an external crisis event.

It is mentioned by Williams et al. (2017), that crisis preparation is especially important in the first and second phases of the crisis process. These stages are presented to be the timeline where opportunities to recognize early crisis indicators arise. However, none of the companies mentioned being prepared for COVID-19 and its following impacts. Fabiano et al. (2024) shed light to this matter and states that unexpected events are unpredictable and can arise even when the condition seems normal. Chua (2023) adds characteristics of an unexpected event by highlighting it as non-linear and difficult to predict. This may explain why none of the companies had a crisis management strategy for COVID-19 and why the crisis was perceived as unexpected.

Company L faced challenges regarding their risk preparedness connected to production during COVID-19. They stated that they didn't have a crisis management plan concerning difficulties with incoming supplies of materials, which was a problem they faced during the pandemic. Lim and Won (2024), highlight the importance of examining interconnections in the organization and potential directly related threats, for example by using a BTA approach. This crisis management method enables weak parts and connections in the organization to be identified. By applying such an analysis in the preparation phase, the opportunity of mitigating difficulties therefore arises.

Further, it is discussed in the literature by both Iborra et al. (2020) and Klein and Todesco (2021) that

scarcity in liquid assets in general make it more difficult for SMEs to anticipate unexpected high-impact events. Herbane (2019) presented additional factors of challenges for SMEs by referring to loss or lack of risk management competence. When investigating the answers from the interviews regarding this topic it was found that company D neither had the resources to invest in crisis management guidelines and policies such as ISO-certificates, nor did their customers put requirements on them to do so. Despite this, they highlighted their knowledge about the benefits generated from applying a crisis management approach. The fact that only one company highlighted, the lack of resources to be the cause of not implementing a crisis management guideline, can to some extent be described by a lack of support.

It could be identified that seven of the interviewed companies (A, B, C, F, H, J, L) were all part of different concerns which in general provided them with support and resources in the form of crisis preparation plan, contingency plan or action plan. However, Roffia and Dabić (2024) have stated that the adoption of a business continuity plan is uncommon among SMEs. This contradiction between the companies' answers and the literature could be explained by the fact of the low number of companies interviewed. This leads the discussion further onto the concept of BCM. In the preparation phase of SMEs' crisis management strategy, the concept of business continuity is highly relevant and discussed in literature. Business continuity is presented by Gibb and Buchanan (2006) to focus on how companies can maintain operations after experiencing a disruption. Three of the companies (company C, G and J) clearly stated that they had a business continuity plan. Additionally, two companies, company A and H, only emphasized working with the process, not mentioning the BCM by name. Out of the companies that mentioned that they had a business continuity plan three companies (C, H, L) stated that they were positively impacted by some of the crises in the context of an increase in demand.

Tammineedi (2010) addressed that to enhance the continuity management and a company's current resilience it is important that a continuity plan is made. A continuity plan with a focus on risk awareness, training of personnel, and, evaluation of the company's maintenance plan. The interviewed companies that worked with a BCM plan before 2019, described their risk analysis to be based on different risk assessment tools such as FMEA, an escalation ladder, and contact with mechanical support if a machine broke down. However, according to findings in the literature, these tools are used exclusively for known possible crises, not unknown and unexpected crisis events. Fabiano et al. (2024) state that when preparing for an unexpected event organizational continuity can be improved by approaching foreseeing methods, and analyzing the root cause of the event and different safety barriers.

According to Herbane (2019) crisis preparation of SMEs can strongly be influenced by other companies' former strategies, resulting in them learning how to take action in the future when encountering similar situations. When discussing preparation for cyber-attacks it noted that the companies being interviewed were aware and prepared to take action if under attack, to a larger extent than in the case of COVID-19. None of the twelve companies answered that they had experienced a cyber-attack. However, company A mentioned that there was a cyber-attack attempt on their business. Their sister company was exposed to a cyber-crime and explained that this incident enhanced their understanding of cyber-crisis. Company C added to this matter and gave an example of their protection plan for cyber-crimes, which included hiring consulting firms to test the security of their IT systems, to use preventative measures and also to educate their personnel about cyber-security. According to Herbane (2010), there is a high value, and it is beneficial to use preventative measures when implementing plans to improve organizational resilience. Additionally, Company F described that in their concern they possessed an IT security system to prevent cyber-attacks from striking. In this context, the whole concern has a crisis preparation plan functioning as a collective strategy guideline.

In order to be prepared for a high-impact and low-probability event, company A outlines them working with higher stocks and several suppliers in their sourcing strategy. This makes them according to Wieland and Durach (2021) more resilient and flexible to disturbances, enabling them to seize the opportunity to be able to return to a more stable state more quickly. It is mentioned by Guntuka et al. (2024) that complex supply chain networks make it more difficult for companies to prepare for supply chain interruptions. The author added weight to the benefits for a company to have a preparation plan including the ability to adapt and transform business operations to become more flexible, when encountering new external circumstances in markets and in their supplier networks.

According to Rao et al. (2023), it is crucial for SMEs to implement innovation and use digital support. One example is company F that outlined the opportunity of an easier transition to working remotely during the COVID-19, since they had already implemented Microsoft Teams in their day-to-day operation. According to Rao et al. (2023) lack of administrative and technical resources can enhance the exposure of SMEs to external disturbances. Klein and Todesco (2021) express that the pandemic has advanced the integration of digital technologies and enhanced companies flexibility. It can be assumed that the implementation of Microsoft Teams was largely beneficial for them when exposed to COVID-19.

To further develop the discussion an emphasis can be placed on literature that has presented risk assessment methods such as FMEA. The literature has stated that in order for these methods to be effective the company needs to encounter an already known crisis event. However, when preparing for an unexpected event such as COVID-19, it can be more difficult. With the interviews as a foundation, it can be identified that companies have noticed their lack of preparedness strategies when discussing these types of unexpected events. To be better prepared for an unexpected event it can be suggested that companies allocate resources to examine business interconnections in their production as well as outside of their company. This would enhance their resilience making it easier to detect and react to warning signals, which is the next step in the discussion.

5.1.2 Assessment of "early warnings"

Veil (2011) describes warning signals as early indicators of a crisis outbreak. It is discussed in the article that firms often overlook these signs which is confirmed from the interviews. This confirmation is based on the interview answers. All companies expressed that they did not detect any early warning signs of COVID-19. It can be identified that company B worked with a policy regarding follow-ups with personnel. These follow-ups aimed to identify warning signs of high work load and stress. Additionally company I mentioned to have a digital AI-based tool with the same purpose.

The linear crisis management approach discussed by Pearson and Clair (1998) and the cyclic approach presented by Veil (2011) both contain the assessment of early warning signals. William et al. (2017) states the importance for organizations to pay attention to external changes in the market, in order to make adjustments and minimize the risk of the initializing crisis phase, called strategic drift, to occur. Two companies (A, L), expressed that they payed attention to external changes.

William et al. (2017) describes in the same article the second phase of a crisis to be incubation as underlying, but not yet activated, factors that can contribute to a crisis occurring if these factors become active in interaction with a triggering event. Company A explicit said they focus on preventive maintenance work by carrying out regular inspections and machine controls. In these cases, the company can for example detect incubation factors such as technical problems developing into a full-scale crisis which William et al. (2017) explains to be used as an attempt of relining a disruptive system.

All companies except three (A, C, F) mentioned during the interview that their biggest concern during a crisis was the economy. In addition, company B relies on venture capital financing. All these companies can therefore be sensitive to external factors such as political instability or for example high interest rates. Political instability contributes to an uncertainty among investors especially for company B, followed by reduced capital availability. High interest rates can negatively affect the profitability of all the companies due to increased debt and higher costs. The factors mentioned can therefore be examples of potential incubation factors for the companies. All these companies were also negatively affected by both the COVID-19 pandemic and the war in the Ukraine due to challenges in sales and finances. This may confirm the theory in the article by William et al. (2017), that incubation factors and triggering events in combination can lead to a crisis outbreak.

None of the companies saw any warning signs of COVID-19. In addition, all companies claimed that it was a very sudden event, which stated by Chua (2023) coincides with the characteristic of a black swan event. When a black swan event is encountered, the warning signals are weak, incomprehensible and the time window to identify them is short. Ni et al. (2022) states that since COVID-19 largely effected and disrupted global operations which generated a chain of negative response as well as market breakdowns it can be seen as a

black swan event. Chua (2023) discusses on the other hand that the pandemic can be seen as a looming event because knowledge regarding pandemics existed and they have occurred before. However, all the companies expressed that from their experience COVID-19 came out of nowhere and no one knew the impact. Hajikazemi et al.(2016) explains that since encountering an unexpected event is an unknown event affecting the company and no such crisis event have occurred in the past, the experience of such an event is not in line with current knowledge about crises and risk.

According to Werther et al. (2013), it can be possible to utilize computers to gather information and process data. It is mentioned as a potential way of solving unknown future dilemmas, however the difficulties in computerised foresight's should not be overlooked. As previously mentioned company L has a systematical process for the management team to foresight three years ahead. Through external environmental monitoring, they examine market segments to predict their performance. This proves that it is possible to have a systematic process of forecasting, to an extent. Furthermore, the literature argues that there are ways to enhance the process. Clauss et al. (2022) mentioned for example business orientation on the market to be a factor that positively affects the crisis responsiveness of SMEs.

5.2 RESPIRE model and Response

The preparation phase in the RESPIRE model is followed by the response phase. The previous planning is central for the possibility to carry through a successful reaction (Pearson & Clair, 1998). This phase involves the steps Acute crisis situation and Adjustment, which indicated that emergency measures were taken as well as extraordinary and temporary actions. In the context of managing and preserving daily operations, Steen et al. (2024) describes that resilience thinking holds significant value in evaluating the current situation. They highlighted the necessity of incorporating resilience into day-to-day operations and underscored the importance of implementing this in activities predominantly concerned with crisis management procedures.

5.2.1 Acute crisis situation

Stage two in the RESPIRE model is called Acute crisis situation. According to Pearson and Clair (1998), a triggering event is the breaking point between the preparation and response phases. The response phase contains both reactions from organizational members and prepared strategic crisis responses. Activities executed during this stage, according to Tammineedi (2010) includes emergency response, coordination and communication with public authorities, salvage operations, insurance cost tracking and damage assessment. Examples of emergency responses done by the interviewed companies include company C offering their employees to take PCR-tests at work. Company H experienced periods of high absence during the pandemic due to sickness, forcing them to shut parts of the factory down. Company I were not able to sell to one of their customers despite having contracts, this loss of business forced the company to terminate employees. This problem could, in combination with the research conducted Tammineedi (2010), be mitigated, and the company's flexibility could be enhanced, if in hindsight the company had based its supplier agreements on a continuity plan made during the preparation phase. Further, one of the major difficulties that company D faced during the pandemic was the lack of expertise in a crucial production stage. As a consequence the company had to halt its production due to the dismissal of personnel, leading to a severe shortage in competence. This posed a significant challenge to the company's ability to maintain production efficiency and meet its targets during the pandemic. Skills shortage can be seen as a threat to the companies since it hinders the production from running smoothly. According to Fabiano et al. (2024) an overview of a company's production plant can enhance their knowledge of their current state. This can provide them with the opportunity to easier approach difficulties in an abnormal situation.

Pearson and Clair (1998) further states that individual and collective reactions in the company, impact how the previously planned response is carried out. Therefore the outcome is also affected by previous planning, responses, and actions. As previously discussed in the context of crisis preparedness, a pre-defined crisis management approach is not always the source to a company's survival. According to Herbane (2019) the ability to respond to a crisis depend on companies utilization of resources in order to mobilize the organization. Therefore in order to respond to a crisis, a pre-defined crisis management is not always necessary, but the company needs to be able to utilize its resources.

In their 2024 publication, Fabiano et al. (2024) explore the integration of a novel risk assessment concept into established processes to address unforeseen events that a company may not have previously experienced. The study suggests that newly developed safety approaches, designed to anticipate high-impact and unexpected events like COVID-19, can be incorporated to enhance the continuity of business operations. The authors emphasize the importance and need of proactive and reactive management strategies in such situations, in order to facilitate better decision-making processes. During the interviews, it was stated by company C that a previous policy regarding staff shortage was helpful when the initial pandemic regulations affected the company. Similarly company G followed the guidelines that were provided by ISO-9001 during the pandemic. Company H had guidelines regarding the staff, company I had a crisis management team focusing on health and safety and company J had guidelines with staff policies that could be followed and applied during COVID-19.

Klein and Todesco (2021) argue that the centralized leadership structure of SMEs provides them with a competitive advantage in rapidly evolving business environments. An example of this is company L which mentioned their ability to act quick derived from being an SME. Compared to bigger companies that require standardized processes regarding staff and purchases. Because SMEs have closer proximity to their internal stakeholders, such as managers and employees, and external stakeholders, including customers and suppliers, they can, as mentioned, act quicker. As a result, SMEs can gather information more easily and respond quickly to changes in customer demands. This is an opportunity that larger companies can learn from in terms of organizational complexity. By reducing complexity, businesses can improve their overall flexibility, enabling them to quicker adapt to changes in the market and respond more rapidly to new opportunities. This approach can potentially result in significant benefits for companies seeking to enhance their competitive position and achieve long-term success.

Pearson and Clair (1998) mentions that a characteristics of a crisis event in general is uncertainties regarding ways of investigating and solving problems, brought about the crises and it's outcome. It is also mentioned that in times of crisis, rapid decision-making is of high importance. Company B for an example was still a start-up by the time COVID-19 came, this meant they had no strategies to handle the adjustments required regarding the ability to secure capital. This is an example of something SMEs has to handle. Company K mentions in their interview that they didn't have any routines on how to handle the pandemic, and that they had to be innovative. As per Rao et al. (2023), SMEs can benefit significantly from implementing innovation and utilizing digital support or assets. The authors suggest that such resources can act as a coordinator for research and networking and can also facilitate interactions with customers using digital media. Which can lead to sustainability, continuity, and growth. SMEs that lack administrative and technical resources are more vulnerable to external disturbances. Rao et al. (2023) provide two examples to illustrate their point. They emphasize the essential use of remote communications during the lock downs and the resultant supply chain management issues due to the COVID-19 pandemic. This can be observed in the experiences of four companies (F, E, G, and H), that adopted Microsoft Teams for remote work during the pandemic. This measure presented to be an opportunity for the companies, that made meetings more efficient and eliminated the need for travel, among other benefits.

5.2.2 Adjustment

The third stage in the RESPIRE model is called Adjustment and during this stage there has been a crisis outbreak and organizational actors are working to minimize the damage and adjust to the new situation.

According to Adam and Alarifi (2021), SMEs are vulnerable during times of socioeconomic and health-related crises due to their reliance on strong connections with customers and suppliers. According to Klein and Todesco (2021), remote work became the new norm for the employees. To mitigate the risk of affecting customer and supplier relations during the COVID-19 pandemic, many companies transitioned to remote work and the use of Microsoft Teams. Generally its is also noted from the interviews that many companies had more frequent meetings. For an example company A took proactive measures during the COVID-19 pandemic by initiating weekly meetings with their clients to gain insight into the global climate and discuss market sentiments. This practice has proven to be an invaluable opportunity, as it allows for early identification of patterns and potential future challenges through ongoing communication. An adjustment the company has continued to hold to this day. Further on, as a result of the ongoing conflict between Russia and Ukraine and the fact

that competitors have faced problems with their production and businesses, company E got order requests from their competitors clients. This meant they had to adjust to a higher demand which posed as a challenge as well as an opportunity for the company. Further, the challenges posed by the pandemic and the Red Sea Supply Crisis have resulted in an increased customer demand for company H. Meanwhile, company F has invested considerable effort and resources in better understanding its supply chain in light of mineral sourcing difficulties.

Rao et al. (2023) mentions that great cooperation between entrepreneurs and clients is significant for sustainable business development. Effective communication with customers is a crucial aspect of organizational success. Companies that maintain good communication channels with their customers are better equipped to manage crises and handle difficult situations as they arise. Strong customer relationships built on clear and transparent communication can help a company maintain customer loyalty and trust, even in the face of challenging circumstances. Therefore, an impotent need for companies face, is to establish and maintain effective communication strategies with their customers to ensure long-term success. This is something all companies except four (C, D, J, K) mentioned they managed to do. Company A mentions that during the pandemic, regular meetings with customers helped them stay informed and take appropriate measures to mitigate the impact. They prioritized market sentiment and discussed broader societal issues during these meetings. This adjustment of staying proactive in addressing issues that affect their business, is something they remain committed to. Another example is given by company H which stated that their closeness to their customers was largely beneficial during the Red Sea Supply Crisis. The reason being that customers bought from them instead of purchasing products from companies in Asia, giving them the possibility to seize new opportunities. Due to the pandemic, many individuals were required to remain at home, leading to a surge in demand for products that could be used for various home-based activities.

As mentioned in the crisis preparation part, the size of a company has a large impact on their ability to respond quickly. One example was company B who mentioned that as a small company, it was easier for them to adapt and transform if the circumstances in the external environment changed. This same statement was made by company L, as they saw this as an opportunity. The same argument can also be confirmed by a study made in the United Kingdom by Clauss et al. (2022) which showed that SMEs possessed unique capabilities of adapting their business. The two companies (B and L) also mentioned that they did not have a strategy to manage COVID-19. It is even outlined by Herbane (2019) that a company could have survived a crisis without a pre-crisis defined strategy. With this in mind company B and L are two examples of two SMEs that without an external crisis strategy, still could enhance their resilience and flexibility. On the other hand there was only two companies in the thesis work that have added weight to this matter, making space for a further investigation.

In their report, Clauss et al. (2022) showcases successful crisis response actions taken by SMEs in Austria, Germany, and Liechtenstein during the COVID-19 pandemic. One example involved a distiller and beverage producer pivoting to produce bottles for disinfectants, while another company adapted by creating specific on-line events. These solutions were intended to be temporary, but their quick implementation helped to mitigate the crisis's effects and increase the companies' crisis resilience. The crisis also provided an opportunity for SMEs to develop knowledge about their core competences and learn to adapt their operations to survive. This strategic flexibility will better prepare companies for future high-impact, low-probability events. Additionally, Rao et al. (2023) describes how the sudden demand for face masks allowed companies to improve their financial fulfillment by rapidly shifting production to meet the increased demand. Similarly, Klein and Todesco (2021) note that many SMEs moved their sales and advertising efforts to digital platforms, engaged with various networks to connect with potential customers, and even initiated direct sales to consumers and direct purchasing from suppliers, eliminating intermediaries. These changes were facilitated by local cooperative initiatives for coordinated sales and distribution.

5.3 RESPIRE model and Recovery

The Recovery phase in the RESPIRE model marks the fourth stage, where companies begin to industrialize and ramp up production. This phase entails scaling up production to reach either a new level or return to the previous one. Subsequently, in the fifth stage, a new normal condition is established, allowing companies to initiate an evaluation and feedback process to prepare for further developments in step 0.

5.3.1 Industrialization and ramping up

The recovery phase in the RESPIRE model begins with stage four, ramping up. According to Gobetto (2014) industrialization is the process of following and developing a product from concentrate to large-scale production ready for sales. The stages of the process is Style Delivery, Project Validation, Product Process, Delivery for Production and Commercial Launch. Ramping up coincides with step four of the industrialization process presented by Gobetto (2014).

Applied on the RESPIRE model, the ramping up period is interpreted as the period where the company is scaling up production again after scaling down. The concept of ramping up after a production interruption can be summarized as the concept of bouncing back. As stated by Veil (2011) the cycling process of a crisis continues with a recovery phase characterized by attempts to restore the functions of the business without a delay to the condition in the pre-crisis state. Fabiano et al. (2024) describes a fortunate recovery as a return to the normal state after crisis. It is also stated that a company which has gone through a fortunate recovery can evolve into a more efficient state. Gantuka et al. mentions that a company, after bouncing back, have a higher chance of developing resilience. According to (Herbane, 2019) the fallout from a crisis can be traced back to the crisis strategy and practices as well as the risk management. If crisis strategy in combination with risk management do not exist this can prevent the company from fully bouncing back. It can therefore be a challenge for the companies to fully bounce back, without crisis management and strategy. An important practice during crisis, stated by Shrivastava (1993), is the internal communication within the company. Which the majority of the companies (A, B, E, F, H, I, L) stated as an important strategy to manage the pandemic. Company A stated that implementing frequent meetings with their customers after the pandemic, were beneficial during the war. Since not having crisis management or a strategy can be perceived as a challenge, the existence of a crisis management strategy is recognized as a need.

Several of the companies stated that they have experienced a crisis effect resulting in a drop of production. Ten of twelve companies, excluding A and B, have experienced initial negative impacts of COVID-19. The company K and L experienced an initial loss in production, but after about 3 months instead increased their production, bouncing back. Company K speculated that since many companies experienced the supply chain interruption caused by COVID-19, their orders increased of companies trying to build up stock. Company L also stated that they implemented production changes after experienced a drop of demand. They changed their focus from automotive products to leisure products, which resulted in a recovery. This is a strategic regarding monitoring the companies different markets remains after crisis. This tactic can lead to companies being able to find new opportunities.

As stated by Guntuka et al. (2024), supply chain interruptions happening in a complex supply chain is more difficult for companies to prepare and recover from. Company K faced difficulty receiving shipments during the Red Sea Supply Crisis. As a measure the company introduced a new distribution change where two suppliers work alongside one another, in order for company K to ensure shipments. This helped the company to bounce back, and is a change which remains, and increases the company's reliance.

During the COVID-19 pandemic, all twelve of the interviewed companies had to face the restrictions and work remotely as much as possible. Many companies mentioned that the amount of distance meetings increased drastically, and five out of twelve stated that they still use distance meeting as a common meeting form. Company J stated that the option of having online meetings have resulted in a flexibility and less traveling for the employees. A majority of the companies who kept the distance meeting form as a regular meeting form are part of the plastic sector.

5.3.2 New normal condition in production

Step five in the RESPIRE model involves analyzing all the steps the company went through and providing feedback to the preparation stage, including suggestions. Veil et al. (2011) describe how learning from past actions, through examining the system and identifying potential warning signals, is crucial for creating new strategies and innovative tactics to reclaim robustness in the post-crisis stage. Thus, crisis management can be seen as a cyclical process, where step five becomes the foundation for a new and enhanced step zero, crisis

preparedness, in the RESPIRE model. A crisis can be perceived from various perspectives, if the crisis is experienced, step five will focus on evolving the already existing crisis management. Which is highlighted by Werther (2013), who stated that mainstreamed used risk assessment models are built to examine already known changes. If, on the other hand, the crisis is unexpected it can be described according to Chua et al. (2023) as a black swan event, where the triggering cause comes out of nowhere. All companies interviewed for this thesis viewed the crises they mentioned with similarities to characteristics of a black swan event, which were described by Chua et al. (2023). After experiencing a black swan event, it is possible to see it as a predictable crisis, and the occurrence becomes explainable. An example from the interviews is company J, which analyzed their strategy during the pandemic and subsequently enhanced their existing FMEA to cultivate resilience for similar crises.

Something worth noting, is that company E, H and K not only experienced challenges but were also positively affected by these external events. Triggering events does not always lead to only negative consequences, but can also create opportunities and contribute to certain positive things for certain companies. According to Clauss et al., (2022) SMEs possess unique capabilities to effectively respond to a crisis, which in a post-crisis stage can strengthen the company's operational business.

No company mentioned that they used a specified method to review their crisis experience. However, different learning methods were found in the literature. To evaluate how a company performed during a crisis with black swan characteristics the 4C method, described by Shrivastava et al.(1993), can be applicable for learning from past experiences. Additionally, combining description of proactive learning by Steen et al. (2024), which requires elements to be created to incorporate practical experience for individuals, can enhance the effectiveness of crisis management strategies. The prerequisites significant for creating proactive learning include opportunities for learning, identification of similarities between events, and the ability to confirm that learning has occurred.

The first "C" in the 4C method presented by Shrivastava et al. (1993), involves defining the causes that led to the crisis, becomes significant for identifying similarities between triggering events for the crisis (Steen et al., 2024). During interviews, several companies stated that they could not discern any warning signs, although some mentioned instances of illness among their staff. In hindsight, a rapid spread of infection can be interpreted as warning signals for pandemic-like crises. However, finding similarities between triggering events for the pandemic and the war is more challenging, therefore it could be concluded that causes for the different crises won't lead to the same consequences. All the triggering events presented by the companies were perceived as new, presenting opportunities for learning and offering new perspectives on how to approach potential crisis. A strategic suitable for finding causes for a crisis is company A's increased meetings with customers during a crisis. None of the other companies have a similar strategy to adapt to market changes and therefore can risk ending up in initializing the strategic drift phase.

The second "C", consequences, aims to explain the short-term and long-term repercussions that companies have faced due to the crisis. Shrivastava et al.(1993) assign the PESTLE framework for analysing consequences caused by the unexpected events. Due to COVID-19 did authorities implement regulations to the society that affected the companies. Additionally the war in Ukraine came with prohibition for working with Russia, which led to supply chain issues. The war also led to increased prices that had an impact on the companies. Thakur (2021) used the PESTEL-framework to analyze external multidimensional impact on healthcare waste management during COVID-19. This indicates that the literature's suggestion for connecting PESTEL analysis to damages is accurate, given the political, legal, and economic aspects that had an impact. From the interview it were stated that to company E was positively impacted by the war as it gained new business opportunities, due to competitors having supply chain issue.

The third part, caution, talks about identifying warning signs Shrivastava et al. (1993). All companies said they couldn't see clear warnings for the unexpected events. Company A mentioned that they started keeping up with the news, and it has had a positive impact on their understanding of global events. They introduced a discussion point for the meetings were they discussed potential warning signal. said the war got worse fast, but there were signs of trouble before it happened. Company L has emphasized the fact that they now

have a mindset where they actively seek to identify warning signals. Only two of the companies mentioned this approach indicating that it is challenge to implementing a standardized process for identifying early warnings signs in step one. Referenced earlier in terms of consequences, Shrivastava et al. (1993) suggest that PESTEL analysis can be linked to damages, which are consequences of warning signals. Therefore, PESTEL can provides a suitable perspective when combined with environmental monitoring for identifying early warning signals. According to Thakur (2021) the PESTEL-framework can be helpful in a firm's decision-making, the reason being that it enhances the company to map the macro environment and its effects.

The final factor in processing a crisis is coping, were a rehabilitation plan post-crisis should be described according to Shrivastava et al. (1993). Here, it becomes evident if the company conforms learning from the experience which Steen et al. (2024) placed great importance on the significance of proactive learning. Eight companies took measures to ramp up their communication as a strategy, indicating its effectiveness. Both company A and company H highlight it as a measure that benefited them after the crisis and continues to be utilized today, as they believe it enhanced their resilience. Another factor that companies (B, F, G, H, J, K, L) have highlighted as enhancing their flexibility is maintaining remote communication. Klein and Todesco (2021) states that several SMEs in order to coordinate sales and distribution, started working with sales and advertisement remotely. This gave them the opportunity to continue with business activities even under unfavorable circumstance.

When asked about the greatest risk during a crisis, most companies cited economics. They argued that without a stable economy, sustaining a business becomes untenable. Thus, having a risk buffer is the simplest solution to crisis management. Other companies argued that market share was fundamental to the economy, While others argued that the staff was the foundation of turnover. They stated that without market share, revenue cannot be generated, and without personnel fulfilling their roles, revenue cannot be generated. The different perspectives on the greatest risk provided different focuses on how they proceeded to work towards resilience. The approach to crisis management has differed among the companies after experiencing a crisis. One example is the difference between company E and company D. Both were negatively impacted by various crisis. However, the nature of the impact varied. Company D faced challenges primarily related to production, such as increasing prices and raw material shortages. The factors, such as prices and shortages, can pose significant challenges for crisis management in small or medium-sized enterprises (SMEs), particularly due to their limited control over external variables. According to Iborra et al.,(2020) it is probably more difficult for SMEs than for larger firms to anticipate a high-impact unexpected event, highlighting lack of resources and an uniformity in supply chains.

On the other hand, company E also experienced negative effects but was able to implement measures to mitigate the consequences of potential similar crises in the future. As a result, while neither company was ISO certified before the crisis, company D still does not see the value in investing in certification, whereas company E is currently in the process of obtaining certification. Herbane, (2019) stated that it exist a mixed belief in SMEs sectors, regarding the benefits of formal, systematic, and rational approaches to crisis management. However it is mentioned by Herbane (2019) that SMEs can survive a crisis without a preparedness strategy, if they have adequate resources to manage its impact.

5.4 Challenges, needs and opportunities faced by SMEs during COVID-19

RQ1: What conclusions can be drawn by defining the challenges, needs and opportunities SMEs face when encountering unexpected events?

A challenge SMEs often face is the limited resources and capabilities when it comes to crisis management, which can be detrimental to their operations. From financial and technical resources to competencies, workforce, and information, all these factors play a critical role in maintaining business as usual. To ensure business continuity, it's essential for companies to develop a comprehensive blueprint that outlines specific measures for emergency preparedness, communication, and risk mitigation.

Challenges with crisis management are mainly the uncertainty of new crises that the company has not previously experienced. For example, pandemics are unpredictable, but here companies need to create guidelines for all

conceivable ways a crisis can occur. Even after the crisis, the lessons learned can differ depending on the attitude towards the crisis and how the company was. The fact that the companies were affected in production (higher prices), meant that they felt that nothing could be done about this, which led to them not thinking that crisis management was as important. On the other hand, they realized that crisis management is important and they should be more prepared. The companies did not mention government support as an important part of their success. Additionally, there is an enormous challenge to identify an unexpected event due to infrequent and weak warning signals. Worth noting is that mainstream risk assessment models are hard to apply to unknown events, which risks creating a false sense of security.

Challenges with personnel and competencies affect manufacturing companies a lot during crises where lock-downs are decided. Their production requires personnel on site physically and therefore clear guidelines must be set, for example, prioritizing which products are to be produced or which departments are to be kept running. Here there is also a social responsibility and expectations because SMEs often operate locally. Relationships inside and outside the company can be close, which can make tough decisions about layoffs or contract renegotiation more difficult. When the crisis has subsided and labor is needed again, skills shortages can affect the company.

Challenges within the supply chain and sales during or as a result of a crisis, have proven to be primarily material and component shortages. Many of the companies are dependent on imports and this makes them more susceptible to international crises. Many of the SMEs in this study have a less complex supply chain, meaning that they are closer to the sourcing of raw materials. This has proven to make them more flexible and adaptable to changes. A further challenge is the number and distribution of customers. If the company operates within one market, and if few customers account for most of the turnover, they become more exposed to risks.

Effective communication is vital for the survival and growth of any organization, as it facilitates interaction and collaboration among different stakeholders both within and outside the company. When a crisis occurs, internal and external communication must be increased and optimized. One example is to have even more meetings with customers to detect warning signals and to be able to respond swiftly to changing trends, adjust strategies, and therefore make decisive choices. Else, the company may make decisions based on information that is no longer current. It is also important that the companies have sufficient resources in place to be able to respond to crises.

Another need is the mapping and insight into the company's logistics system, supply chain and production plant. In the case of rapid changes, companies must be able to quickly make decisions to change and solve the problem. A well-established system for crisis management regarding the supply chain can also lead to opportunities in the form of competitive advantages. The company that can offer its products the fastest when others still cannot produce or sell becomes more sought after. Keeping up with technology development gives a greater chance for flexibility. However, if companies implement more technical and Internet-based solutions, they may also become more susceptible to cyber-attacks.

Further, organizations need to draw insights and learn from past experiences and actions taken by other companies to ensure their resilience to unforeseen events. A combination of proactive and reactive management strategies is highly preferred to effectively navigate through uncertain times.

Opportunities regarding companies' crisis management, concern competitive advantages resulting from the application of ISO-certifications and risk assessment models such as FMEA. With increasing threats from crises, potential customers may see certifications as an advantage for themselves and then choose these companies for new contracts. Utilizing risk assessment models as a foundation can further enhance a company's competitive edge.

Another opportunity is to expose oneself to crises, this can lead to the development of the company's structure, direction, and market. They can thus benefit from the change, for example, reach larger market shares when changing market segments or products. Another opportunity for the companies is to adopt a proactive mindset by trying to foresee the future with the help of a PESTEL analysis, this will make them more prepared for

unexpected events.

Further opportunities include a geographical closeness when the global market changes due to political, financial, or environmental causes. To have a more diverse market strategy creates more resilience against loss of market segments.

5.5 Discussion of the RESPIRE model

RQ2a: Is it possible to draw connections between the companies corporate crisis management, the RESPIRE model and possible additional crisis management theories? If possible, what connections can be drawn?

The original RESPIRE model described in the background was used as a basis when researching different crisis management theories in literature. It was found that there exists a linear and cyclic approach to crisis management. The linear process was described by Pearson and Clair (1998) to focus on the mindset of managers regarding their view of the importance of crisis management. The cyclic perspective on the other hand was described by Veil (2011) to highlight the importance of learning and to examine the crisis impact on the company. As discussed before, Chua (2023) described an unexpected event to be unknown and characterized by weak warning signs that are difficult or almost impossible to detect.

Reconnecting to the original RESPIRE model, recommendations of how it can be improved will aim to make it more suitable for an unexpected event, this is illustrated in Figure 8 below.

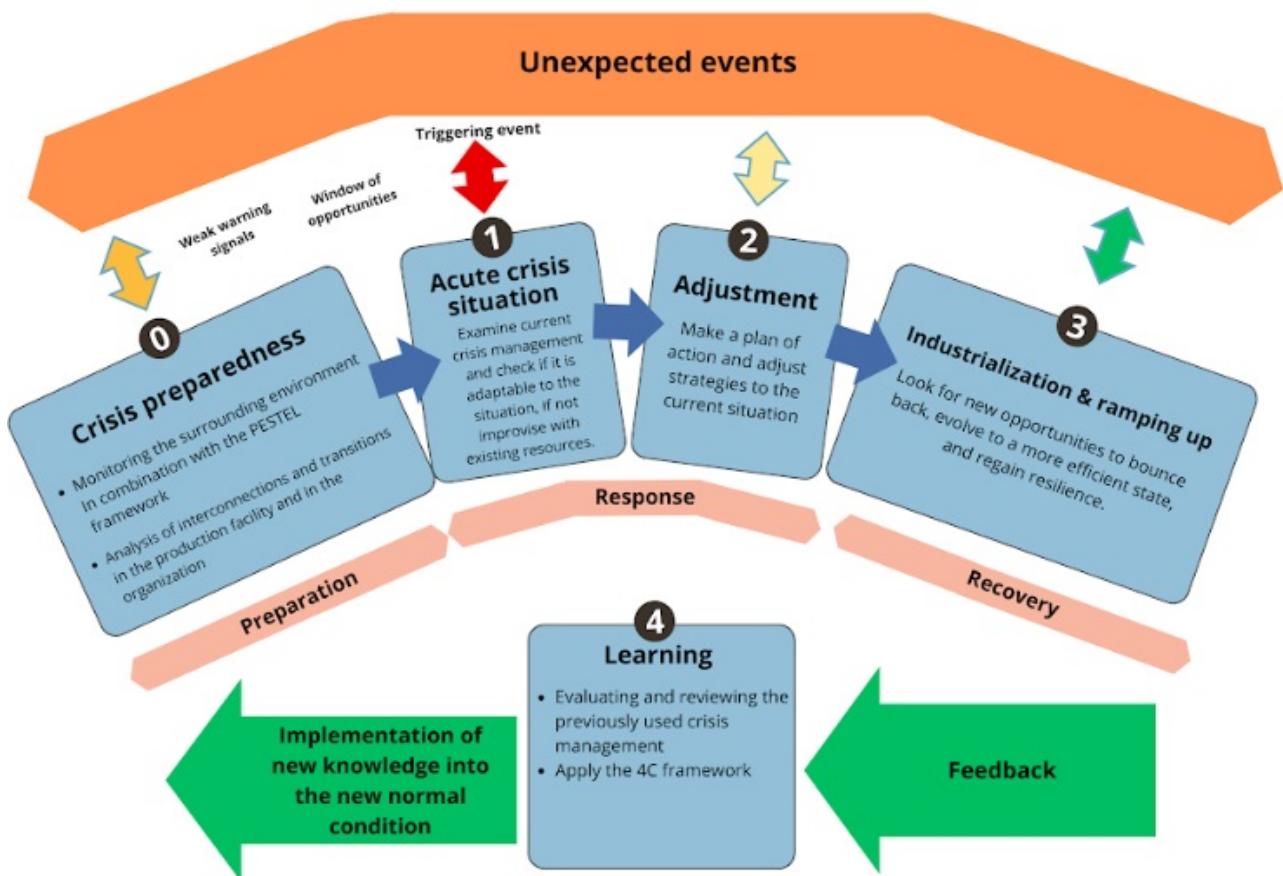


Figure 8: The updated version of the RESPIRE model for an unexpected event.

Due to the weak warning signals, a suggestion is to merge stage 0 and stage 1 together. This newly merged phase should focus on crisis preparedness such as an analysis of internal and external business connections and transitions, with the purpose of identifying weak parts and reallocating resources. This phase should also focus on monitoring the surrounding environment in combination with using the PESTEL framework. With an

overview of the organization and an insight into changes in the surrounding environment, the company can try to be as prepared as possible.

In the original RESPIRE model, it was hard to differentiate stage 2 and 3 in the Response phase. It is therefore suggested that stage 2 is defined as a shorter stage with the aim of examining the current crisis management plan and investigating if it is adaptable to the unknown situation, which can be seen in 8. If it is not possible to adapt any current strategies it may be possible to improvise by utilizing existing resources. In stage 3, it is suggested that the company should make a cohesive plan of action adjusted to the current situation.

Further, the two stages 4 and 5 and creating stage in the Recovery phase are also suggested to be merged. This merged version would focus on searching for new opportunities to bounce back, evolve to a more efficient state and regain resilience. This change has been made because the original stage 5 is supposed to contain feedback to stage 0. Instead, a new phase was made called Learning, which should take in feedback to review the applied crisis management by for instance using the 4C framework to investigate a crisis cause, consequence, caution and coping. The output from this step should consist of generated knowledge that is to be implemented into the new normal post-crisis condition. This knowledge is later incorporated into stage 0, closing the crisis management cycle, to evolve the company's crisis preparedness and enhancing the possibility to be flexible and resilient when encountering an unexpected event in the future.

5.6 Regarding the sectors

RQ2b: Can conclusions be drawn by comparing the crisis management strategies of companies within the same sector? If so, what conclusions can be drawn?

Successfully navigating a crisis is crucial for a company's survival and can depend on several factors, such as preparedness, the nature of the crisis, and the actions taken in response. However, an essential determinant of a company's ability to survive a crisis may be the level of demand for its products. In the manufacturing sector, companies processing different materials have varying degrees of flexibility in handling supply chain disruptions and increased demand for their products. For instance, companies in the plastics industry demonstrated higher adaptability to the changing landscape during the pandemic. It is worth noting that companies in the same sector may have different capabilities and methods for handling a crisis, depending on whether they are part of a larger concern or not.

In this study, we conducted interviews and reviewed relevant literature to gain insights into the factors that determine a company's ability to survive a crisis. However, the limited selection of companies and uneven representation of different sectors made it challenging to draw conclusive results, highlighting the need for further research in this area.

5.7 Environmental sustainability

RQ3: Is the environment taken into account when choosing crisis management approach?

Tandon et al. (2024) mentioned that there is a collective global sustainability goal that puts a great emphasis on environmental sustainability to be incorporated into business operations. To answer the third research question, companies' approach to environmental sustainability, when applying their crisis management plan were investigated. The majority of the companies mentioned during the interview that environmental sustainability was not actively prioritized when encountering an unexpected crisis event. It was also stated that their focal point was to navigate through the disruption and maintain turnover. Additionally, it is discussed by Tandon et al. (2024) that COVID-19 caused disruptions in significant parts of the business that obstructed a transition towards an environmentally sustainable business for B2B companies, which all of the interviewed companies were. Company F is an example of a company that experienced these difficulties. They outlined that their main focus during COVID-19 was to secure the safety of personnel and to ensure that the business could continue, which was stated to be enough for them.

However, three companies (B, H, K) mentioned that environmental sustainability was embedded their core values. They therefore described the importance of an alignment between these values and their crisis management approach. It is mentioned by the companies that actions taken in times of crisis that are not consistent

with these values can damage the company's reputation. In the long run, this may result in increased difficulties for them to continue their business operations. Nevertheless, company K did not experience any major effects of the crises. This resulted in them not having to actively prioritize environmental sustainability in their crisis management strategy.

6 Conclusions and recommendations

The purpose of the study was to examine SMEs proactiveness during crisis management, and explore whether there's a potentially more effective way to prepare for a crisis and improve their crisis management. It also attempted to present ways to elevate their resilience and flexibility for future unexpected events, that significantly effects their operations. With the discussion of the literature study and the interview analysis, has led to the possibility to finally draw conclusions regarding the aim and the research questions.

The companies proved to be proactive when encountering an already known crisis, but not in the case of unexpected events. However, some companies mentioned that they used forecast methods in an attempt to foresee future events. There are though more effective ways to prepare and maintain crisis management. To improve the company's business continuity, they can review internal and external connections within their business. It should be implemented in day-to-day operations. With better analysis of their surrounding, they become more aware of changes and dangers, both internally and externally. By taking support from their own, previously used crisis management models and finding similarities with previously experienced crises, this can be used to their advantage as they approach the event. Also bringing in external help in the form of the RESPIRE model is a good complement to the own models.

Constantly working with business continuity and having clear plans for various conceivable scenarios can increase flexibility. Then faster and more efficient, more precise decisions can be made with an already accepted workflow. The plans can be prepared through scenario based training, learning from previous events and other companies' crisis management. It can also be emphasized that a fast solution-oriented approach to finding new opportunities can result in the company becoming more responsive. This can enhance their resilience against unexpected events and bring advantages compared to competitors.

Several of the interviewed companies practice crisis management, but to different extents. The companies' responses and findings in the literature showed that it is more common to work cyclically. Therefore, suggestions are given for clearer information with a response to step zero, crisis preparedness, that contains the lessons learned by the company.

Answers to research question RQ1, RQ2a, and RQ3 was well discussed in the previous section within the aim and delimitations. RQ2b could not be discussed and answered with a lot of examples due to a too small sample of interview responses.

One opportunity companies can have regarding their crisis management is the competitive advantages resulting from the application of, for example, ISO certifications. With increasing threats from crises, potential customers may see certifications as an advantage for themselves and then choose these companies for new contracts.

6.1 Suggestion on further research

This thesis primarily consists of a national companies. On the other hand, the interviews gained insights from companies involved in the global market. Nonetheless, it is important to note that all the interviewed companies are Swedish-based, which is acknowledged as a limitation of this study. Thus, it is recommended for future research to apply a broader spectrum of companies operating within the industry to enhance a more comprehensive perspective. For example, extend the research to various sectors and includes both national and international companies.

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Appendix

A Pre-distributed Interview Questions

The pre-distributed questions were:

How does the organization look?

How many employees does the company have?

Who are your customers?

What does your export and import distribution look like? What does your production chain look like?

Where is your operation located?

Do you manufacture products on order or for storage? Are your products standardized?

What do you consider a crisis?

Have you encountered anything that has caused interruptions in operations during the years 2019-2023?

Was there crisis management in place before the crisis occurred?

Were there any warning signs/early signs?

Do you have any policy regarding how you identify early warning signs?

Have similar crises affected your competitors or similar companies?

What was your strategy/plan for handling the crisis, and how do you relate to the strategy/plan?

Did your work methods change during the crisis?

What were the biggest risks you perceived before, during, and after the crisis?

When the crisis was no longer relevant, did you make any changes which remained?

Have any of your suppliers experienced interruptions in business operations?

How were you affected?

Was environmental sustainability considered when you handled the crisis?

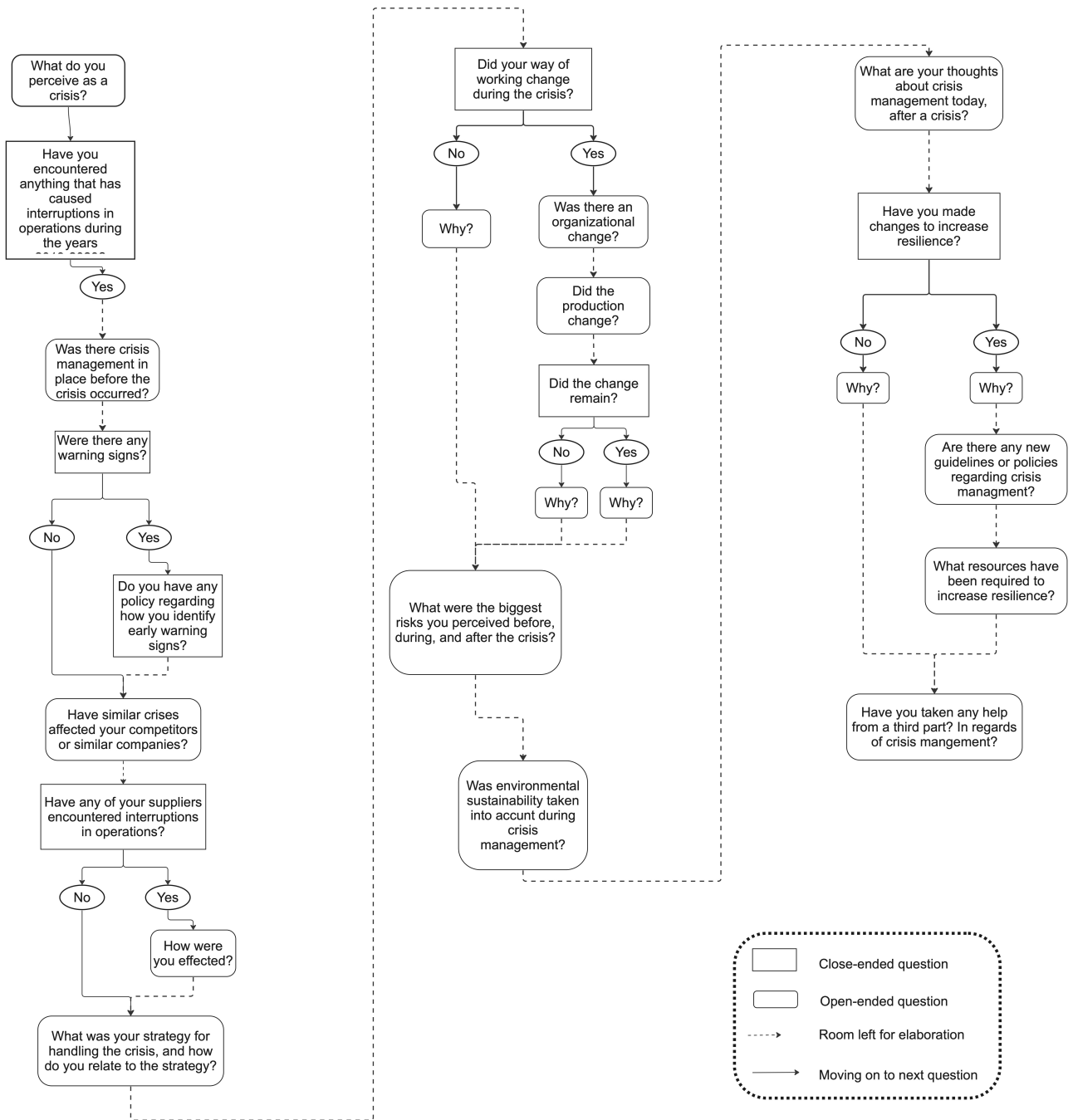
How do you think about crisis management today, after a crisis?

Have you made changes to increase resilience?

What are the new guidelines for crisis management? What resources have been required to increase resilience?

B Flowchart of the Interviews

Table 11:



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