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Using scenarios to strategically cope with supply chain disruptions in the hospitality industry: a case of losing ‘the breadbasket of Europe’

Master Thesis Strategic Management

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Abstract

The current conflict between Russia and Ukraine is causing disruptions in supply chains worldwide, such as delivery delays and continuous price increases. These two countries, also referred to as ‘the breadbasket of Europe’, are two of the world's largest grain suppliers. The loss of their supply will affect the hospitality industry, which is dependent on beer and bread supplies.

In this study, scenarios are created together with hospitality experts on the potential effects of supply chain disruptions in grain supply on the hospitality sector. Building on these scenarios, the experts are asked to evaluate certain strategic actions that are seen as important for companies to be robust and resilient in times of supply chain disruptions. This research uses the Delphi method, in which experts received two rounds of questionnaires in order to determine scenarios and eventually reach consensus on how to strategically cope with these scenarios. In addition to this, a content analysis is used to support the findings of the questionnaires.

The results show that currently, hospitality businesses are hardly applying any strategies to cope with supply chain disruptions. Based on the developed scenarios, experts rank openness and transparency as well as flexibility and adaptability as the most important strategic actions to implement in order to cope with the scenarios and to maintain performance levels. Additionally, interorganizational trust is important to handle problems in the delivery of supplies, whereas collaboration with competitors gains importance when the supply chain disruption becomes more severe.

Building on these results, it can be concluded that hospitality businesses should be more proactive in developing strategies to implement in case of a supply chain disruption, created through for example, facilitated sessions in which businesses come together to elaborate on possible scenarios and strategic reactions to these. Further research could shed light on the deeper reasoning behind the choices to implement certain strategies. A post analysis needs to confirm whether these strategies actually lead to the desired performance levels when the situation escalates.

The study contributes to the knowledge of supply chain disruptions and SC risk management. Additionally, it adds value to the hospitality industry on how to strategically cope with disruptions in order to have a resilient and robust supply chain and strategy.

Acknowledgements

The start of this journey has been arduous, however, I am proud to present my research to you as a reader. Examining the hospitality branch lays close to my heart as a former International Hotel Management student, and I would like to thank my network to participate actively in this research. To combine my knowledge and interest of the hospitality industry with my master in Strategic Management has given me great joy and has shown me that combining the two has considerable potential for further research.

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Introduction

This first chapter will introduce the problem context underlying the research motive. Furthermore, the research aim and the corresponding research questions will be introduced.

Context

Back in 2012, the world experienced a supply chain disruption that led to increased prices for products like wheat and soybeans produced in Eastern Europe and the United States. This was caused by extreme droughts, and food price of commodities increased by 6% globally on the World Bank's Food Price Index (Viveros et al., 2012). The World Bank expected high prices and also feared for health issues in poorer regions like Africa and the Middle East. Hence, programs were set up to handle the expected issues in Africa. The droughts affected wholesale food and beer prices, and caused water shortages for the hospitality industry in the United States (HVS, 2015). However, Europe did not experience any major effects that remained an issue.

Nonetheless, such a supply chain disruption of grain is currently developing again, causing similar issues worldwide. The current conflict in Eastern Europe between Russia and Ukraine has put pressure on the 'breadbasket of Europe', one of the world's largest grain supplies situated in Ukraine. Russia and Ukraine are in the top three largest delivering nations of grains, oil seeds and fertilizers. Due to the sanctions imposed on Russia, loss of harvest due to the conflict and the loss of good infrastructure, a shortage of sunflower oil and rapidly inflating grain and corn prices are looming (FAO, 2022). More severely, it can cause an undernutrition crisis for the Middle-Eastern and African regions whom heavily depend on these two countries for grain supply.

Ukraine is one of the three most important countries in the Netherlands for grain import (Jukema et al., 2022). In the Netherlands, supply chains may be disrupted causing price increases on bread, beers and even meat, because grains are often used as animal food (Menkveld et al., 2022). According to the consumer price index (CPI), flour and grain prices increase fast, increasing from a price index of 107.02 in November 2021 to 115.03 in February 2022 (year 2015 = 100) (CBS, 2022). As a result of the conflict, import of grain will rely more on other regions such as South America, which causes transportation costs to increase. These shifts in the supply chain can create complex problems which need to be reacted upon by organisations through strategic decision-making and supply chain risk management.

Supply chain management is a complex task involving many stakeholders and factors influencing the system. Lummus and Vokurka (1999) define the supply chain as “*all the activities involved in delivering a product from raw material through to a customer... Supply chain management coordinates and integrates all of these activities into a seamless process*” (p. 11). More specific is the agri-food supply chain. Agri-food supply chain (AFSC) is the supply chain of products produced through agriculture, often on land by farmers (Ketels & Protsiv, 2017). This includes fruit and vegetables, but also grains and the production of meat, poultry and dairy products. Closely linked to this, is the manufacturing and processing of these raw resources. The share of bread and beer manufacturing from grains in the Netherlands is high (Ketels & Protsiv, 2017). This leads to an important part of the hospitality supply chain, in which bread and beer demand and supply is high.

Combining the above developments with the increased prices of gas and the additional difficulties of finding employees due to the tight labour market, bring additional problems to businesses in the food and hospitality industry (*Personeelstekorten terug in de horeca*, 2021). Unfortunately, product prices have already increased due to the past two years of COVID pandemic and are expected to rise even further in the upcoming months. Heineken, one of the world's largest beer producers, has announced an increase of 3.4% increase in beer prices in 2022 due to increased transportation and production costs (“Heineken verhoogt bierprijzen horeca 2022 met 3,4%,” 2022). These significant price increases can have a major effect on the performance of hospitality companies, who are trying to recover from the losses made during the pandemic. Are those companies prepared to strategically cope with such a large supply chain disruption? And if not, how can they tackle this new issue? In order to answer such questions, identifying the potential effects and development of the situation on supply chains can help hospitality businesses to alter their strategies to ensure a long-term profitable and competitive strategy. Here specifically, we focus on food & beverage (F&B) companies, such as (hotel) restaurants, bars and brewers.

Research gap

While recent research has focused on supply chain risk management and the effects on decreasing demand and closures of restaurants caused by COVID-19, not many are based on political instability leading to issues in the supply chain of hospitality businesses (Ritchie & Jiang, 2021). Especially in the current situation in which hospitality companies are trying to recover from a difficult period due to the pandemic, looking at the effects of a second disruption caused by political conflicts can provide interesting findings. Research is often

focused on resilience capacities (Brandon-Jones et al., 2014; Coopmans et al., 2021; Habermann et al., 2015). However, working from a scenario perspective can offer new insights for the use of scenario planning in the hospitality industry and creating new innovative strategies. This is also suggested as a research opportunity by Ritchie and Jiang (2021). They proposed a focus on creativity and innovation for new research on strategic supply chain management in the hospitality industry in times of crisis or disruption. In addition, they found that most articles are focused on the tourism industry and less research has been done in the hospitality industry.

Shi and Liao (2013) examined joint teamwork in hospitality supply chains, suggesting further research on the effects of uncertainty in dynamic environments of the joint teamwork outcomes on relationship quality and how hospitality companies can cope with these uncertain situations in their supply chain management. Their perspective was based on the social exchange theory and the resource dependence theory. Because of the uncertain and changing environment the armed conflict in Ukraine poses, this research takes a more dynamic capabilities perspective in combination with the resource dependence theory. The resource dependence theory sees the supply chain as a net of interdependent, competitive companies who aim for obtaining scarce resources (Hillman et al., 2009). The dynamic capabilities perspective explains that organisations should be able to adjust and adapt their competencies to discontinuous change (Teece et al., 1997) and can thus be used to cope with disrupting events.

Research aim and research questions

Building on the problem definition and research gap, the aim of this research is to examine the robustness of hospitality business strategies during supply chain disruptions. More specific, the case of supply chain disruptions of grains as a result of the armed conflict between Russia and Ukraine is taken. The research is applied to the hospitality industry due to its dependence on beer and bread supplied by the F&B industry which is expected to be disrupted. By answering the research questions below, it becomes clear how hospitality businesses can alter their strategy in order to obtain performance outcomes during supply chain disruptions.

From the research aim and problem definition, the following research questions and sub-questions have been formed:

Should hospitality companies alter their strategies in order to be robust during grain supply chain disruptions?

SQ 1: What are the expected effects of the grain supply chain crisis on hospitality company performance?

SQ 2: Which possible scenarios in relation to the grain supply chain disruption could occur that would affect the hospitality industry?

SQ 3: What are the current strategies in place to deal with current supply chain disruptions?

SQ 4: Which strategies are helpful to be robust as an hospitality organization when coping with the identified scenarios?

Thesis outline

The remaining parts of this document include an outline of the relevant literature and theories on the AFSC, hospitality supply chain and supply chain risk management. The third chapter discusses the methodology used, the ethical considerations taken and limitations. This is followed by the results of the research. These results are discussed in relation to prior research and a conclusion is made. To end the report, relevant recommendations are provided together with an outline of future research directions and the limitations of the outcomes of this research.

Theoretical background

The following section will provide an outline of the literature on supply chain management of both agri-food and hospitality supply chains. This is followed by a section on supply chain risk management introducing the core concept of resilience together with robustness and viability.

Agri-food and hospitality supply chain management

The following section will give an introduction into supply chain management specified to the industry of agri-food and hospitality. The assessment tools and potential strategies of the supply chains will be highlighted as well.

Introduction to supply chain management

Supply chain management is defined by many. It is referred to as all the activities within the stream of a raw material that is processed to a product which is sold to the client (Lummus & Vokurka, 1999). It can also refer to the entities involved in the process, such as the manufacturer, distributor, retailer and customer (Lummus & Alber, 1997). Contrary to this, Monczka and Morgan (1997) see the integrated supply chain as a whole which competes with other supply chains, instead of the entities involved in the supply chains. Some point out the importance of information systems in monitoring supply chain management performance (Lummus & Vokurka, 1999). Cooper and Ellram (1993) even see supply chains as a philosophy. Integrated supply chain management gained popularity in the early nineties when national and international competition increased, customer demand became more dynamic and companies started to specialize (Lummus & Vokurka, 1999). The focus then was on performance outcome in terms of cost and revenue. This however changed over the years, in which became sustainable supply chain management. Within sustainable supply chain management, the focus shifted towards reducing the environmental and social impact of the supply chain whilst holding efficiency and financial performance high (Seuring & Müller, 2008).

Agri-food supply chain

Perishable food supply chains (PFSC) are dependent on many stakeholders and external forces (Zhu & Krikke, 2020). Disruptions in the external environment, such as the COVID-19 outbreak, can have a large impact on production and sales. The uncertainty for the producer on the quality of its products, but also on the possibility to sell for a reasonable price within the time-frame that the product can be stored, makes it a complex (Georgiadis et al., 2005). Furthermore, from the other side of the chain, the buyer experiences difficulty to determine

the reliability, quality and safety of the products bought. Therefore, Zhu and Krikke (2020) dived into the importance of decision-making strategies and claim that sharing accurate & complete information is needed to keep a sustainable supply chain.

More specific is the agri-food supply chain (AFSC). Yadav et al. (2022) simplified the agri-food supply chain (AFSC) by creating the figure below (figure 1). It shows the stakeholders involved directly in the chain. The produce flows forward, whilst the financial flow moves backwards, creating difficulty in keeping prices low and still creating profit margins for the producers and processors. Yang and Xu (2015) looked specifically at the grain supply chain, which is comparable to the overall AFSC visualized by Yadav et al. (2022), however, they do include an additional player at the beginning of the supply chain which are the input suppliers. They deliver fertilizers, chemicals and machinery to farmers. The processor is the key player in the stream. In case of harvest loss, farmers may be able to cope with this. Unfortunately, as goods run from upstream to downstream, the consumer will feel such disruptions in their pockets due to scarcity and increased prices (Yang & Xu, 2015). This is partially in contrast with Yadav et al. (2022), who saw more financial difficulties upstream. The difference here is that Yang and Xu (2015) looked at the grain supply chain specifically, which may be significantly different from e.g. the fresh fruit supply chain that is taken into consideration by Yadav et al. (2022). In the current situation of the grain supply chain however, both upstream and downstream are facing difficulties. Farmers upstream in Ukraine and Russia are unable to harvest and sell due to the political conflict. On the contrary, the scarcity of the produce causes prices to inflate significantly for consumers and retailers. For this research, the focus will lie on the latter.

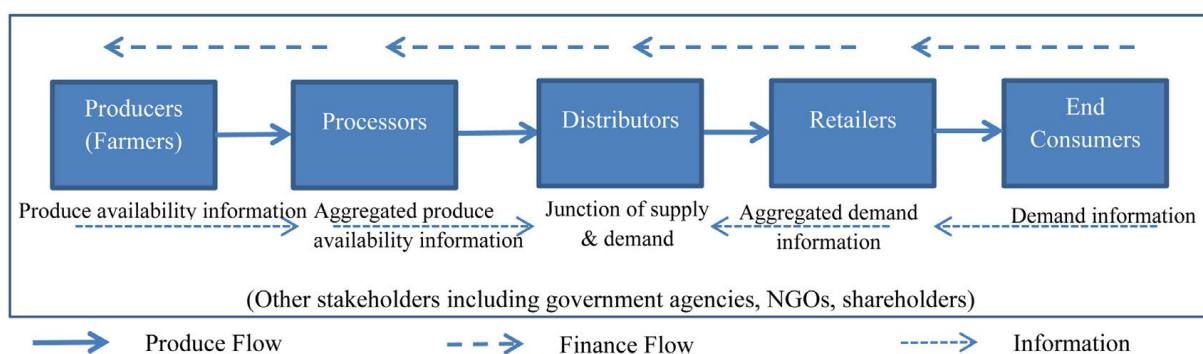


Figure 1 - Agri-food supply chain (Yadav et al., 2022)

To measure the performance of the supply chain, performance indicators need to be identified. Callado and Jack (2017) claim that the balanced score card (BSC) (Kaplan et al., 1997), which is a widely used tool in businesses to measure performance based on four perspectives

– financial, customer, internal processes and learning & growth -, is not easily adapted to the AFSC due to the lack of integration between the stakeholders involved and the low margins for those downstream. Furthermore, Callado and Jack (2017) suggest that the usage of most indicators differ among the stakeholders. The only indicator present at all parties was customer satisfaction, which is closely connected to the discussions on fair pricing and hence financial performance. Through more integrated information sharing, the stakeholder relationships can be improved which leads to better negotiations on fair pricing. Looking further at these indicators, Barnabè (2011) claims that the wrong indicators or too many indicators will result in a negative effect in strategy creation. This can lead to a misalignment of strategy and operational objectives.

The indicators however need to be modified according to Yadav et al. (2022). This is because of the increasing importance of sustainability and the technological development of the Internet of Things (IoT) and blockchain management. This technological change leads to the supply chain 4.0, a new revolution based on the cyber-physical system (Ivanov & Dolgui, 2021; Yadav et al., 2022). Within this new supply chain 4.0, disruption management is supported by big data analytics (Ivanov & Dolgui, 2021). A SC twin model, as developed by Ivanov and Dolgui, can create perfect visibility of a complete SC. It can help in testing contingency plans that help to improve resilience of a business, a major capability that has gained momentum since the pandemic and is worth investigating as a company. Supply chain resilience is the ability of a supply chain to return to its original performance after dealing with a disruption (Brandon-Jones et al., 2014). They place resilience next to supply chain robustness, which is the ability of a supply chain to keep operating accordingly during disruptions. These two concepts will be further discussed in a later section, where we will see how the two are intertwined concepts.

Hospitality supply chain

Not only food supply chains can be perishable. Services like the sales of airplane tickets or hotel rooms, require to be sold prior to their date to deliver revenue and are thus also listed as perishable goods (Anjos et al., 2005). These services also require a different approach in performance measurement and supply chain management. Due to changing demand, communication between supplier and customer are needed (Xu & Gursoy, 2015). Taking exceeding customer expectations, which has a significant effect on performance, into consideration is thus important (Rust & Oliver, 2000). Exceeding customer expectations is equal to meeting a certain service quality standard which is costly, yet needed to survive. This

also links to the performance indicator of customer satisfaction mentioned as an important factor in the AFSC (Callado & Jack, 2017). Hence the indicator is taken as an important aspect for further analysis in this research.

Within supply chain management, service quality is driven by good supplier relationships and good communication between both supplier and customer (Fantazy et al., 2010). This supply chain collaboration and communication is supported by information technology and knowledge management (Jalilvand et al., 2019). In addition, information systems help with fast and efficient decision-making (Jalilvand et al., 2019; Lummus & Vokurka, 1999). The importance of supplier relationship and communication is further discussed in the following section as a resilience attribute and will be one of the main attributes considered in the remainder of this research.

Measuring the performance of supply chains can be done by two measurements. These are financial performance, including sales and profit as key performance indicators, and non-financial performance, including customer satisfaction and lead time e.g. (Fantazy et al., 2009, 2010). In their research among manufacturing SMEs, they addressed the relationship between specific supply chain strategies, supply chain flexibility and the performance. Organizations pursuing a customer-oriented strategy have more flexibility in supply chains which leads to increased performance.

To measure these financial and non-financial performance, multiple measurement models can be used. Here again, the balanced score-card was used by Ribeiro et al. (2019) to monitor the performance of the Portuguese hospitality industry and to study the frequency and relevance of the different indicators. They found no significant differences between the four perspectives used. Nonetheless, other researchers have found shortcomings in the BSC, implementing the measurement of sustainability for many years (Figge et al., 2002) and even on to the materiality balanced score-card (Guix & Font, 2020). They include stakeholder management, and the relevance of certain issues that are needed to be addressed (Xu & Gursoy, 2015). Such a sustainable hospitality supply chain is given in figure 2 below and is the extended version of the regular supply chain (see Appendix 1, figure 1). Through this, value is created for all members involved in a business and is thus closely related to supply chain management and stakeholder relationship management. As the figure shows, three important concepts that need consideration are the social, the economic and the environmental aspects. The social aspect is strongly connected to the stakeholders, taking care of employees, customers and suppliers, but also governments, communities and NGOs. These are again

concerned with different social, environmental and economic goals. These goals are the motivators within the sustainable supply chain. The inhibitors may be costs associated with sustainable decision-making. Hence, the motivators and inhibitors create a balance within businesses which may reduce the actual actions and results of sustainable supply chain management and places more pressure on businesses and societies. One of the downsides of this pressure is the potential of greenwashing, in which businesses present themselves as businesses undertaking sustainable business practices whilst this may not be the truth, which leads to a misalignment between words and actions (Delmas & Burbano, 2011). Businesses implement such sustainable practices to be robust in the competitive field and to cope with the changing customer demand. However, as the following section will show, in some situations more is needed to survive as a business in the light of disruptive events.

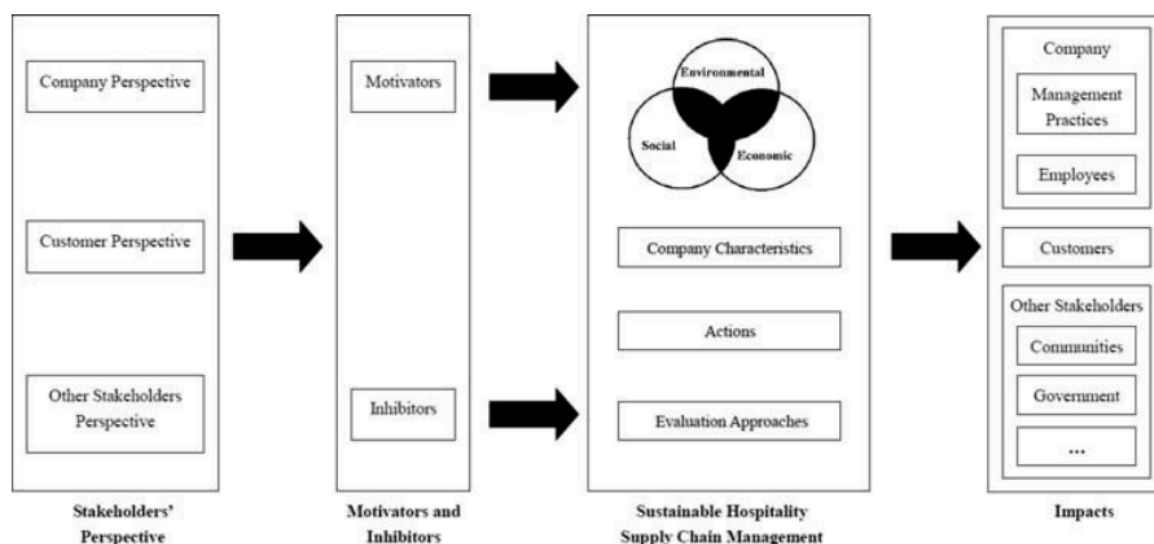


Figure 2 - Sustainable hospitality supply chain (Xu & Gursoy, 2015)

Supply chain risk management

The following paragraphs will provide background information on the theories related to supply chain risk and disruption management in general and within the AFSC and hospitality industry. The main concepts that will be explored are resilience, robustness and viability.

Current disruptions

Unforeseen events such as COVID-19, political instability or earthquakes cause risks for businesses worldwide. Such risks like the pandemic or a war are classified as systematic risks, which affect a large quantity of organizations (Aigbedo, 2021). More specific to the AFSC, climate change can highly affect the harvest of crops and the supply of food worldwide (Chatzopoulos et al., 2021). Chatzopoulos et al. studied the effects of climate change

scenarios and found evidence that extreme climate conditions in Russia would cause for unfavourable price increases in wheat, even if all other producing countries would not experience a loss in harvest.

Research on supply chain disruptions and risk management has been widely examined in many different industries, yet it has grown exponentially over the past couple of years. The development of the COVID-19 situation shed light on the potential of supply chain risk management within the hospitality industry and the AFSC, finding out how to react on disruptions and risks. The strategies to react on disruptions in order to re-establish the supply chain as soon as possible are called resilience attributes (Mathijs & Wauters, 2020).

Resilience framework

Coopmans et al. (2021) examined the resilience of farmers and food processor companies during the pandemic (see figure 3). Their research design was built on the resilience framework of Mathijs and Wauters (2020). The framework of Mathijs and Wauters (see Appendix 1, figure 2) is built to identify resilience actions, like anticipating, coping and responding to disruptions in order to fulfil the systems function, such as food production or food service delivery in the case of hospitality companies. These companies or industries need certain resilience capacities which are enhanced through a list of resilience attributes. This can be linked to dynamic capabilities, an important concept in strategic management (Alonso-Almeida et al., 2015). Dynamic capabilities support businesses in dynamic environments to cope with changing circumstances.

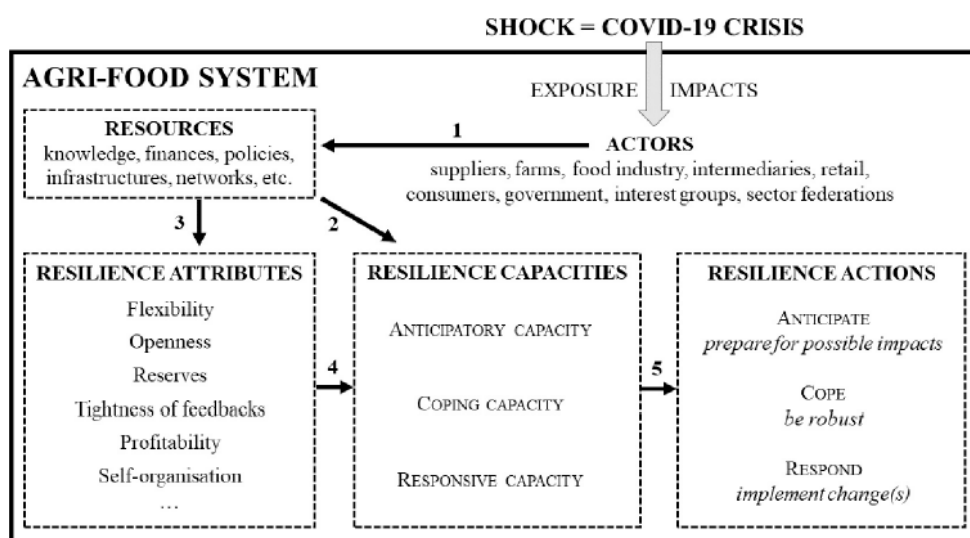


Figure 3 - Agri-food supply chain resilience framework (Coopmans et al., 2021)

Bundy et al. (2016) divides crisis management in two perspectives. Firstly, the internal perspective focusses on organizational preparedness for any crisis through the organisations cognitive behaviour, crisis leadership during crises and organizational learning after a crisis. On the other side is the external perspective, which includes stakeholder relationships that is needed prior to any crisis happening, stakeholder perceptions to be clear during a crisis situation and social evaluations with the external environment afterwards. The following section on resilience attributes is divided into the internal and external perspective.

Internal resilience perspective

One of the main findings of Coopmans et al. (2021), was that diversity and risk spreading is an important resilience capacity in uncertain times. Therefore, economies of scale and efficiency are factors that will not contribute to coping with such disrupting scenarios. In addition, pro-activeness and collaboration with stakeholders (including competitors) as a responsive capacity is needed to share scarce resources, especially if a worst case scenario becomes reality. That proactiveness is needed for resilience through dynamic capabilities is also supported by Alonso-Almeida et al. (2015). They looked into the results of proactive and reactive strategies of restaurants after the financial crisis in 2009. The development of dynamic capabilities also leads to competitiveness of businesses. The collaboration as a responsive capacity is enhanced by the self-organization of businesses (Coopmans et al., 2021). Nonetheless, to establish such collaborations, stakeholders need to be open and trustworthy to share information and resources, and to potentially put these collaboration rules in contracts.

Shi and Liao (2013) examined the effects of such interorganizational trust and interdependence on teamwork and relationship quality in supply chain management of hospitality companies. They suggest that hospitality companies should invest in employees with interorganizational capabilities in order to build trust and joint team membership with suppliers. These strong relationships can positively affect the collaboration with suppliers in times of supply chain disruptions. The importance of relationship management within supply chains of hospitality companies is supported by the findings of Fantazy et al. (2010).

Bruneau et al. (2003) and Mathijs and Wauters (2020) see robustness as one of the capacities of resilience. This differs from Brandon-Jones et al. (2014), who see it as a concept next to resilience. Bruneau et al. (2003) also add rapidity, redundancy and resourcefulness to these resilience capacities. This resourcefulness as a resilience capacity, the ability to change resources in order to prioritize issues and to reach goals, is partially supported by Ambulkar et

al. (2015). In times of high impact disruption, businesses with supply chain disruption orientation are better in adjusting resources to cope with the disruptions (Ambulkar et al., 2015). This is because they are aware of the need to dynamically shift in resources needed. This then leads to firm disruption resilience. However, if the disruption impact is low, this dynamic capability to reconfigure resources does not contribute to resilience, whilst better risk management infrastructure does.

External resilience perspective

Brandon-Jones et al. (2014) saw visibility as an important attribute for supply chain resilience and robustness in general, based on a contingent resource based view. Visibility is driven by supply chain connectivity and information sharing, which again links back to both studies of Coopmans et al. (2021) and Shi and Liao (2013). Information sharing is then defined as the transparent flow of information on inventory and demand whilst visibility is an extended term including the flow of goods and information in the whole chain (Brandon-Jones et al., 2014). Furthermore, they found that the scale complexity moderated the effect of visibility on robustness and resilience in a way that a higher number of suppliers increased the positive effect. However, when the number of suppliers was low, visibility hardly had any effect on robustness and resilience.

The above finding of Brandon-Jones et al. (2014) is partly in contrast with the findings of Bode and Wagner (2015) on horizontal supplier complexity. They showed that a higher amount of suppliers organisations cooperate with, the higher the potential of disruptions. Hence it is logical to say that the visibility capability is needed to deal with this higher number of disruptions, however, a broad network is also needed in times of supply chain risk and disruption. In addition, the geographical dispersion of suppliers in order to spread the risks can also increase the potential of disruptions (Habermann et al., 2015). This is because the more dispersed the suppliers, the longer the lead times and potential transportation delays.

Habermann et al. (2015) discuss the co-location of suppliers and the effect of disruptions on this clustering. According to Porter's cluster theory (1998), locating interconnected companies at a central location helps in creating a long-term competitive advantage through productivity optimization and efficiency. This is supported by the results of Habermann et al. (2015) who found evidence that co-location of suppliers leads to more resilience against disruptions. The benefits of co-locating of suppliers can be linked to the resilience dimension of redundancy (Bruneau et al., 2003), in which suppliers may be able to substitute for another players losses.

In some countries the government substitutes for certain losses. The government in China, for example, intervenes in grain supply through protective pricing (Yang & Xu, 2015). They purchase stocks in times of low prices and then sell this again on the market when prices are too high to lower the market price again. This however is against the beliefs of Chatzopoulos et al. (2021) that stock building does not contribute as a resilience technique in times of AFSC disruption. When the government owns grain stock, the government can be seen as a back-up supplier in times of crisis. In this way government aid can assist in the resilience of the supply chain upstream which causes benefits for downstream supply at the consumer side (Yang & Xu, 2015). The need for back-up suppliers is part of the supply chain viability measurement tool introduced by Ruel et al. (2021). A further assessment of supply chain viability is discussed in the following section.

Viability

Ivanov and Dolgui (2020) introduce a new concept related to supply chain disruption management, besides resilience and robustness, namely viability. They define viability as “*a system ability to meet the demands of surviving in a changing environment*” (p. 2905). Having the capabilities needed for a viable supply chain can lead to a competitive advantage for individual businesses (Ruel et al., 2021). On top of that, Ivanov and Dolgui (2020) introduce the term Intertwined Supply Network (ISN) which is a system of interconnected supply chains. The worldwide AFSC can be seen as such a ISN with many countries, products and stakeholder being interconnected. According to Chatzopoulos et al. (2021), trade can re-establish the supply chain after disruption, through trade diversion and policy adjustments for import barriers and tariffs.

Viability of the restaurant industry was studied by Brizek et al. (2021). They found that increased customer confidence is needed in the industry to recover and to stay viable in times of crisis. Nonetheless, viability has not been examined extensively in the hospitality industry and research often focussed on the effects of the pandemic on business closure and its specific health measurements which needed to be taken into account by the industry.

Methodology

The following section outlines the methods that are to be used to answer the research questions. In addition to the methods, the ethical considerations and the validity and reliability are discussed.

Methods

A mixed methodology is used for this research. Mixed methodology means combining more than one research technique. A mixed method research design includes both qualitative and quantitative data and analyses, which are integrated for result optimization (Creswell & Clark, 2017). However, a mixed method research design can also consist of both numerical and textual data analysis (Gray, 2021), which is the case in this research. According to Creswell and Clark (2017), mixed methods help to provide more evidence on phenomena and it compensates for the deficiencies within quantitative and qualitative research separately.

This research uses three methods, the first two being scenario planning and the Delphi method, which complement each other (Goodwin & Wright, 2014; Gordon, 1994; Grime & Wright, 2016). Additionally, content analysis is used to support the findings of the Delphi method.

A scenario is defined as a plausible future state of a system (Wright & Goodwin, 2009). Because the future development of the supply chain is uncertain, this method is chosen to evaluate possible situations and how to strategically cope with these situations. Scenario planning is a supported method for strategic decision-making and defining robust strategies in case of any future scenario (Wilson & Ralston, 2006). According to Bradfield et al. (2005), scenario planning consists of four main goals, namely to make sense of complex situations, to develop strategies which are needed for problem solving, and to anticipate and to enable adaptive organizational learning for ongoing surviving. It is often used in the tourism and hospitality industry research due to the complexity of the stakeholder networks and the possibility to create new innovative ideas (Seyitoğlu & Costa, 2022). The Delphi method complements the scanning and visioning of the scenario planning with creativity in idea generation for strategy development (Nowack et al., 2011).

The Delphi method is a structured group process which uses a panel of heterogeneous experts of the industry (Goodwin & Wright, 2014). The method consists of multiple rounds of questionnaires and can be used to find consensus amongst the panellists by looking into each other's responses and adjust their opinion if needed. The questionnaires are anonymously

taken and the researcher has control over the information flow between the experts. The Delphi method is often used when a physical group process is difficult due to the competing nature of the panellists or the cost of organizing such sessions, yet the outcomes may serve a collective issue of the group (Grime & Wright, 2016).

To add an additional layer of analysis, a content analysis is performed in which online publicly available data sources are coded and analysed in a deductive manner. This means pre-determined concepts and related words are searched for in the texts. The documents selected are news and blog articles, as well as a governmental document, which are related to the effects of the conflict between Ukraine and Russia on the supply of grain, beer and bread, as well as the economic impact. This content analysis is used to support the outcomes of the questionnaires and is often used as a secondary form of data collection to strengthen the results from other data collection techniques, in this case the Delphi method (Myers, 2019).

The data collection and analysis is further discussed in the following section.

Furthermore, the study is deductive, because the questionnaire and coding scheme for the content analysis are based on literature. However, the scenario planning and coding of the open questions is inductive by nature. The sub questions have an explorative form.

The Delphi method step-by-step: design and analysis

This research uses the Delphi method to analyse the expectation that a future event will happen, the expected impact it has on the industry and how to strategically respond to it. This data is collected through two rounds of questionnaires, which are created in Qualtrics survey software. A visualization of the process can be found in figure 4.

The first questionnaire starts with basic questions on the type of company the expert works for, the position of the expert and the experience they have in the industry. Following these introducing questions, the questionnaire works through the expected probability of future developments in relation to grain supply chain disruption and the potential impact it could have on the industry and/or company. These are measured on a Likert scale and supported by open ended questions in which the panellists can add any comments. The panellists are also asked about their current strategies and the expectations they have regarding the supply chain disruption. The time line taken into consideration is 2 to 5 years and the output helps in designing the scenarios. To design this part of the questionnaire, the researcher looks at previous research that includes analysis on scenarios and the measurement scales used. The

possible future developments are based on literature on hospitality supply chain disruptions and its effects as well as on publicly available data and news on the (grain) supply chain.

After completion of the questionnaire, the output from the software is altered to remove the preview and pilot responses, as well as the incomplete responses that were recorded in the excel/SPSS file. Afterwards, the variables that are not needed are excluded, which are the variables on location, date, time taken etc. The variable for type of company consists of two, due to the option to select namely. The two responses that were listed as 'other, namely ...' are added into the first variable to improve the readability of the variable and file in ATLAS.ti. In SPSS, a new variable is created with new values. Other variables that are recoded are the open questions on supply chain disruption and strategic actions taken.

The results are translated into statistical information, including the median, mode and mean of the answers. These are used to show to the panellists in the second round. However, it should be noted that statistical results cannot be produced that are generalizable for a larger population (Gordon, 1994).

The potential future developments are plotted on a graph with on the x-axis 'expected probability' and on the y-axis 'impact', both ranging from low to high, based on the mean of the questionnaire outcomes. From this, the two driving forces are chosen which are uncertain to happen and expected to have a high impact on the hospitality industry (Wilson & Ralston, 2006). Additionally, key factors that have an impact are selected to be included in the scenarios. Building on these forces, a matrix is formed. From this, four possible future scenarios are written up which are used as potential futures for the second round of the questionnaire. Having more than four scenarios limits the effectiveness of the method and increases complexity, whilst having only two scenarios causes a great loss of possible futures (Wilson & Ralston, 2006). Furthermore, it is important that all scenarios are distinctive in order to create robust strategies. The scenarios are written up as short story lines with a descriptive title and a clear build up. After the data analysis, the results are anonymously shared with all panellists.

The open ended questions are analysed to identify returning concepts, through an inductive process. Furthermore, some questions are recoded and correlation tables are created to identify any significant differences in gender or type of business. For this, a Chi-square test is used with a critical Chi-square of 7.81(df = 3) and 25.00 (df = 15), and an alpha of .05.

For the second round, panellists are invited to alter their opinion on the questions of the first round on the possible future developments or to comment on the findings. By reassessing, panellists who are in doubt of their response can change their opinion which leads to more consensus amongst the experts. These ‘swingers’ are smoothed out through the iterative process which would not happen if the researcher uses a single questionnaire which is filled out by a large group (Goodwin & Wright, 2014). Furthermore, the questionnaire includes a part in which resilience and robustness attributes identified in literature, are listed to see how viable they would be with the identified scenarios of questionnaire one. This part is designed with the research of Jafarnejad et al. (2019) as a basis. The panellists are asked to rank these attributes from high to low importance to cope with the scenario. Additional open ended questions are asked on strategic actions. The output of the first round provides input for the questions of the second round and hence questionnaire alterations are done between both rounds. Both questionnaire designs can be found in Appendix 2.

The open ended questions of the second round are coded based on an inductive approach. Collected data is entered into ATLAS.ti to identify overlapping concepts. The data is again translated into statistical information about medians and means.



Figure 4 - Delphi method process visualized

Content analysis

To support the findings of the Delphi method, a content analysis is performed using ATLAS.ti. To select relevant articles, trustworthy Dutch newspapers, as well as a large hospitality magazine, are used as search tools for documents relating to grain supply as a result of conflict in Eastern Europe. Words which are used are for example ‘bier’[beer], ‘brood’ [bread], ‘graan’ [grain], ‘graanschuur’ [breadbasket], ‘Oekraïne’ [Ukraine], ‘Rusland’ [Russia] & ‘horeca’ [hospitality]. Additionally, publicly available sources from institutions are used based on the search terms of ‘horeca’ and ‘oorlog’ [war]. Furthermore, only articles in the time frame between March and May 2022 are selected, because the conflict started at the end of February 2022. The list of documents can be found in Appendix 6, table 35.

To analyse the documents, a deductive coding scheme is developed based on the literature that is also used to build the questionnaires (see Appendix 6, figure 13 and 14). First, indicators are listed, which are words related to consequences and strategic actions. These words also link back to the questionnaire questions. Next, these coded words are grouped into pre-determined themes, and finally, concepts are created. For the coding, the online software ATLAS.ti is used.

The identified words, themes and concepts are linked to the results of the questionnaires, in order to see any overlapping expectations on the impact of the conflict and the strategic actions undertaken by the hospitality industry.

Sample

The sample population for the Delphi method are (hotel) restaurant and bar managers or owners. In addition, beer brewers are also approached to be included in the sampling to have a multi-echelon perspective. The panel consists of 12 panellists, which is between the recommended amount of 5 to 20 experts given by Goodwin and Wright (2014). They are personally contacted by the researcher as suggested by Gordon (1994). Furthermore, the selection is aimed at creating a heterogenous field of experts. According to Goodwin and Wright (2014), a heterogenous group is required to prevent the results from framing. Framing means that people look through the same lens at a problem, and causes concern for researchers. Most managers are located in Noord-Brabant and Limburg, two southern regions in the Netherlands. However, they are from a wide range of age and experience which also helps to prevent framing. Furthermore, in order to broaden the response rate for the second questionnaire, the survey was distributed to more hospitality managers and owners in the Netherlands to strengthen the results.

Validity & Reliability

Important aspects to consider are the validity and reliability of the data analysis. An important aspect is the external validity, which measures if the research results are generalizable (Bleijenbergh, 2016). This research is very specific to a certain event and industry. Hence, external validity is difficult to reach because the results may not be generalizable for future events or other industries. Furthermore, internal validity is taken into consideration. For this, a critical reflection of the researcher on the influence of personal mental maps and constructs is required. This is covered due to the sharing of the output amongst all panellists. Another way to improve the validity of the research is by applying triangulation (Bleijenbergh, 2016). This

is done by using multiple research techniques, in this case the questionnaires of the Delphi method and the content analysis strengthens the results.

Reliability is the concept of reaching the same outcomes when doing the analysis multiple times (Gray, 2021). In other words, the output from this research is in line with the results if a comparable research would be performed. The iterative process of Delphi is one way to ensure reliability. Furthermore, the data is scanned to find any missing values or outliers which could affect the accuracy, reliability and validity of the data (Hair et al., 2019). Finally, to ensure reliability of the documents selected, only trustworthy news websites, magazines and institutions are included. By assessing the time and source, the accuracy of the information in the documents is assured.

Intra-judge reliability includes the existence of bias from the panellist (Gray, 2021). In the questionnaires, there is a possibility of panellists feeling the urge of answering in favour of their company, and therefore, answers would not be honest. This is however limited because all responses are given anonymously. Also, framing bias could occur when the questions are incorrectly formulated. Therefore, a pilot survey is send out to a small selection of panellists prior to sending out the survey to all panellists (Gordon, 1994). This filters out unclear and ambiguous questions.

Ethical considerations

In the current environment, it is highly important to consider ethical implications when doing research. Especially when working with individuals directly, the communication style is important to adjust to the panellist's preference. Taking the cultural background into account is important for making the person feel comfortable to participate. If this is not reached, the panellist may not feel like answering the questions fairly or is tended to drop out after the first round.

Furthermore, confidentiality is important. All personal information about the panellists are kept anonymous. Additionally, the data collected is stored in a secure place and, if needed, deleted to ensure that data is not used after the completion of this research for other purposes without the panellists consent. Hence when sending the first questionnaire, panellists are informed about providing consent when going to the next page, in order to use the data and to share the responses anonymously to the other experts involved. Additionally, panellists are allowed to pull out of the research at any moment and the final output is shared prior to publication in case any adjustments are needed from the panellists' perspective.

Results

This section presents the results of the first questionnaire which were used for the scenario planning. Furthermore, the second questionnaire is analysed and results on the strategic actions are provided. These results are supported by the findings of the content analysis.

Experts' background

The first questionnaire was distributed to 18 panellists, of which 12 responded (response rate of 66.7%). As mentioned in the previous section, it is important to have a heterogeneous group of panellists. As shown in table 1, the gender of the panellists is equally distributed between male and female, with an age range between 23 and 60 years. Most panellists worked in (hotel) restaurants and bars (83%), two panellists worked in education, one panellist also works at a brewery in combination with restaurant and bar and one panellist owns a catering company. The functions of the panellists differed from being the owner, to (floor)manager, to lecturer. 75% worked in the industry for more than 10 years, and the remaining 25% worked in the industry for 7-10 years. Therefore, we may conclude that the experts' background is sufficiently diversified and different perspectives are included in the research.

Table 1 - background panellists

Question						
Gender	50% male			50% female		
Age	23 to 60 years old (mean = 38.58)					
Type of company	41.6% restaurant	8.3% hotel	33.3% bar	8.3% brewery	16.7% university/education	8.3% other, namely catering
Function	33.3% owner	41.6% manager	16.7% lecturer	8.3% director		
Years of experience	0% < 1 year	0% 1-3 years	0% 4-6 years	25% 7-10 years	75% > 10 years	

The second questionnaire was answered by only 7 out of the 12 panellists. Therefore, an additional 9 responses were collected by distributing the questionnaire to experts who did not participate in the first round. These included 6 male and 3 female panellists within the age range of 23 to 60. A total overview of the background of the 16 panellists of the second questionnaire can be found in Appendix 3 table 8. It has to be noted that the additional respondents did not contribute to finding consensus which is part of the Delphi method, as they were unable to comment on the results of the first questionnaire. Nonetheless, their responses strengthen the knowledge gathered about the strategic actions. Furthermore, they showed to be a heterogeneous group of reliable experts.

Results on expected probability and impact

The mode and mean of the possible future events are analysed for both the expected probability and impact. From these, two driving forces are selected on which the scenarios are based. For this, the expected probability should not be too high (maximum mode = 3), yet the impact needs to be significant (minimum mode = 3). Furthermore, the future events that will be included in the scenarios as indicators are selected. These are however not the driving forces behind the disruption described in the scenarios.

Results from matrix questions

Analysing the responses, it is noticeable that the range of answers is quite large for each question. Most cases have a range between 2 and 5, followed by a range between 2 and 4. This could suggest that panellists have very different views on the possibilities and developments of the current situation. The results are plotted in graphs combining expected probability and impact and can be found in Appendix 4, figures 5, 6 and 7. The graphs for the mean and mode are shown below (figure 5 and 6).



Figure 5 - Results expected probability

The increase of delivery times is taken as one of the driving forces for the scenario planning. The expected probability is moderate (mean = 3.08, mode = 3), and the impact is high (mean = 3.33, mode = 4). The other selected driving force is costs exceeding revenue. They score the same on the mean for expected probability and impact (3.08 and 3.33 respectively). However, the mode is 3 for both expected probability and impact.

The least expected development to happen is a shortage of beer (mean = 2.33, mode = 2), followed by the shortage of bread (mean = 2.58, mode = 2), however, they also score low on

the impact ranking (mode of 3 and 2 respectively). Therefore, these two factors are excluded as driving forces for the scenario planning.

Based on the results of the possible future developments, the mean for impact appears to be the highest for ‘beer price increases by more than 20%’ (3.50), followed by ‘decline in customer satisfaction’ and ‘bread price increases by more than 20%’ (both 3.42). Moreover, these three also score high on the expected probability and thus are very likely to happen. The mode of ‘beer and bread price increasing’ is 4, together with ‘a decline of customer demand’ and ‘increase of delivery times by more than a week’. Because of the high expected probability, price increases of beer and bread, as well as customer demand, are also not selected as the driving forces for scenario planning, however, they are important indicators that are added to the scenarios.

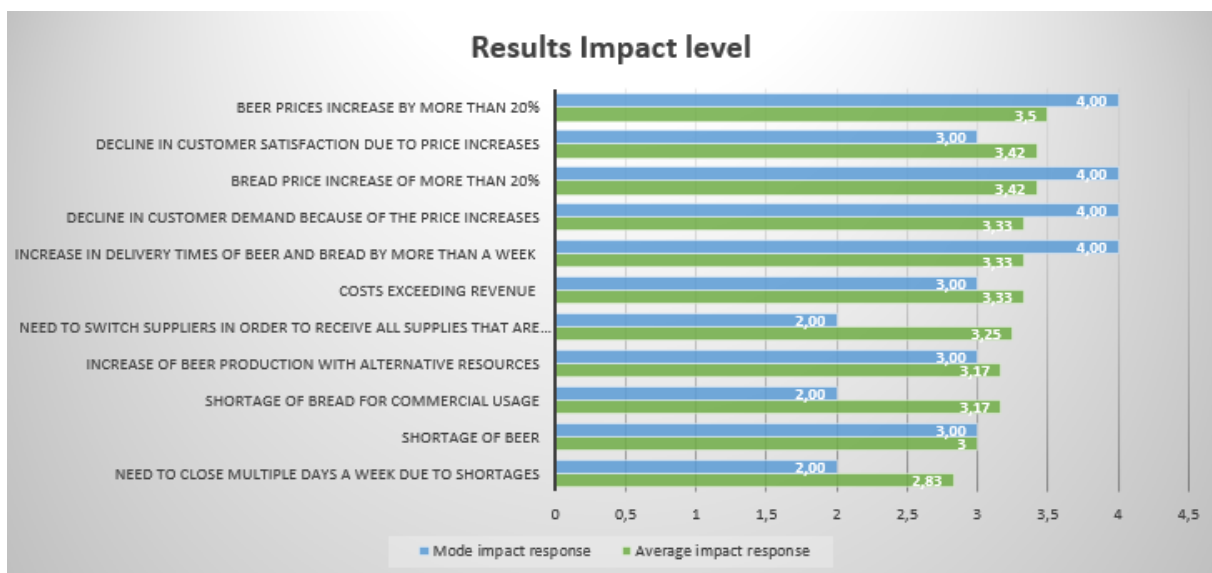


Figure 6 - Results impact

Both ‘increase in production with alternative resources’ and ‘decline in customer satisfaction’, score average on impact (mean = 3.17 & 3.42 respectively, mode = 3 & 3) and high on expected probability (mean = 3.33 & 3.83 respectively, mode = 4 & 3 respectively). They are included in the scenarios as indicators, however, they are not selected as driving forces.

The ‘need to switch suppliers’ scores average on expected probability (mean = 3.17, mode = 3). Nonetheless, a large difference exists between the mean and mode of the impact, on which it scores low to average (mean = 3.25, mode = 2). The mean and mode for ‘need to close multiple days a week’ score the lowest for both expected probability and impact (mean = 2.58

& 2.83 respectively, mode = 2 & 2). Hence, these future developments are not taken into consideration for the scenario development.

The two driving forces are plotted in a graph and four scenarios are built around this, including one scenario that represents the current situation. The graph and the scenarios can be found in Appendix 4, figure 8.

Results of open questions and content analysis

The findings on the expected probability and its impact are supported by the results of the content analysis. High inflation in bread and beer prices are already happening and expected to continue steadily (De Reuver, 2022; Jessurun, 2022; Prummel, 2022; Simon, 2022; Tuentier, 2022; "Vlees, groente en koffie duurder; inflatie (9,6 procent) blijft pieken," 2022). This is also in line with the results on question 10 of the first questionnaire, 'How do you believe the costs of beer and bread will develop in the next 5 years?' (most important responses can be found in Appendix 4, table 12). Eight panellists believe that prices will keep increasing from now on. Some expect them to stay stable afterwards, and others expect a linear line of price increase over the years. Three panellists believe that we will get used to the higher prices as the new standard.

Three panellists mention that it all depends on the developments in Ukraine and the oil prices. The importance of the energy prices was also pointed out as a side note on the impact questions by one of the panellists. Furthermore, these issues were also addressed in the articles. According to the articles, restaurants already experience a loss of revenue. It is however important to note that this loss is caused by many other factors, such as the increase in gas and oil prices, and the shortage of employees in the industry ("ABN AMRO: Gevolgen oorlog Oekraïne zetten herstelperiode leisure verder onder druk," 2022; De Munnik, 2022; Kooyman, 2022; Prummel, 2022; Yip, 2022). Hence, the rise of other prices have also been included in the third scenario.

The anticipated effects of the disruption on demand is divided in the findings of the content analysis, which is line with the responses of the panellists. The mode and mean on this topic differ largely from each other in the questionnaire results, and as found in the content analysis, some articles mention that customers will strive for cheaper options (De Munnik, 2022; De Reuver, 2022; Kamsma, 2022; Prummel, 2022), while other articles mention the growth of demand for bars and restaurants (Adriaansens, 2022; Bluiminck, 2022). These results show that customers are understanding of the price increases.

One of the panellists believes that the hospitality service will become an exclusive product. Again, this is supported by findings of the content analysis in which ‘downgrading’ or ‘downtrading’ is mentioned because customers are unable to pay for the services they are used to and will settle for a cheaper option or will decide to have a dinner at home instead of outside the door (Kamsma, 2022; Prummel, 2022). It is also mentioned that it is not possible to switch to luxury bio produce at this moment, because all the production is needed to secure enough supply is available (Kamsma, 2022).

Nonetheless, not all panellists believe a large supply chain disruption will take place. Analysing Q12, ‘Do you foresee a supply chain disruption as a result of the political conflict in Ukraine and Russia?’ (most important responses can be found in Appendix 4, table 13), one panellist believes that local supplies will become more important and can cover the shortages for import products. Two panellists mention we are already in it, whilst four panellists believe a supply chain disruption will happen and five people are in doubt. They mention that it could become a disruption, however, the current situation is not as severe yet. However, others already believe that we may speak of a supply chain disruption. The responses were recoded into a numerical variable to identify if any significant differences occurred between the type of company or gender on their perception of supply chain disruptions. However, no patterns were identified ($\chi^2(3) = 3.33$, $p = .343$ and $\chi^2(15) = 14$, $p = .526$). The results can be found in Appendix 4, tables 14 to 19.

Surprisingly, only three panellists believe that businesses are prepared for scenarios like the ones introduced in the questionnaire. The remaining panellists believe that business should prepare themselves better for such supply chain disruptions. The question was also asked whether scenario planning would be beneficial for the industry in order to create robust strategies. 10 out of 16 panellists believe it would be good to use these scenarios (see Appendix 4, table 20). Nonetheless, they are not making use of it at the moment. Two panellists mention that it depends on the type of company whether it is useful.

Only one comment was made after sharing the results of the first questionnaire. The panellist mentioned that a distinction may be needed between European and global beer prices in order to agree with the results.

Results on strategies

Results from ranking questions per scenario

Looking at the results of the ranking of strategic actions (or i.e. the resilience attributes), a wide range of rankings were given (almost all between 1 and 7). For the second scenario, the means are much closer and answers are more dispersed compared to the first and third scenario.

The first scenario, which focused on the increase of delivery times, showed the importance of openness/transparentcy and interorganizational trust (seen Appendix 5, table 27). These two factors had a mean score of 3.19 and 3.25 respectively and a mode of 1 and 2. The focus is heavily dependent on information sharing and working closely with suppliers. Competitor collaboration and supplier scale complexity seem to score the lowest on average with a mean ranking of 4.81 and 5.56 respectively. It should however be noted that the mode of competitor collaboration is higher than the one for resourcefulness and even to supplier proximity.

In the second scenario, openness/transparentcy and interorganizational trust are still the most valued strategic actions to implement (mean = 3.44 for both), however, the mean has increased and lays closer to the other values. Supplier scale complexity is again the least preferred option. Please see Appendix 5, table 28.

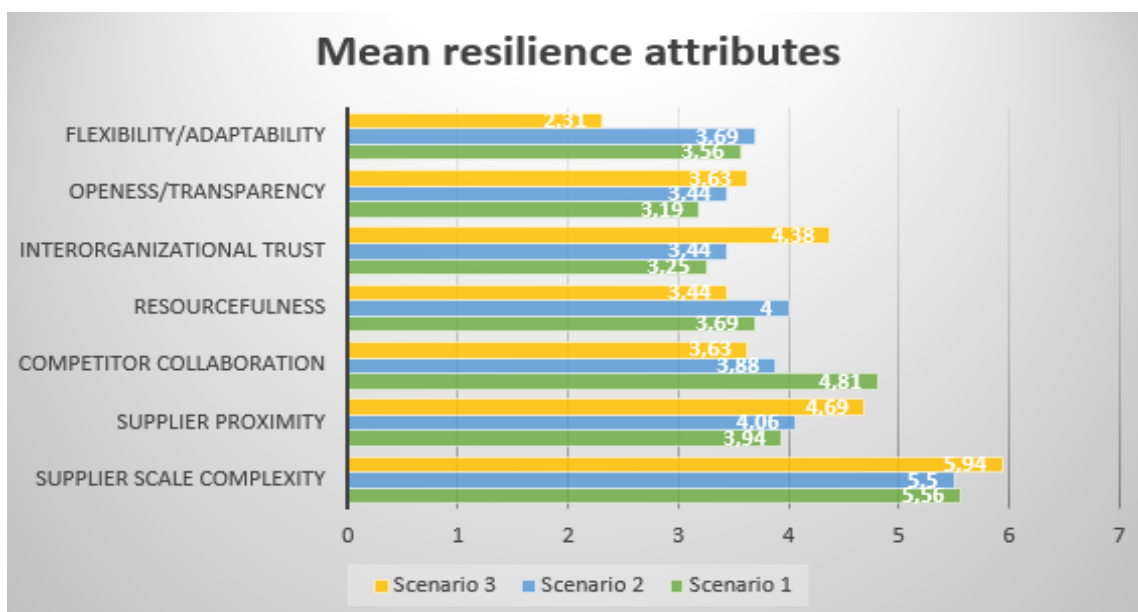


Figure 7 - Mean results

The final scenario, in which both costs and delivery times play a crucial role, shows a clear increase in the importance of competitor collaboration (mean = 3.63 and mode = 2) (see Appendix 5, table 29). Interorganizational trust on the other hand becomes less important and

scores a mean ranking score of 4.38 and a mode of 4 and 6. Flexibility/adaptability is the most important strategic action to implement in this scenario with a mean of 2.31 and a mode of 1. Furthermore, resourcefulness becomes more important in the most severe scenario (mean = 3.44, mode = 2). Repeatedly, supplier scale complexity scores the lowest (mean = 5.94, mode = 7), together with supplier proximity (mean = 4.69, mode = 7).

Overall results on strategies

The question ‘Which strategic actions do you currently have in place to deal with supply chain disruptions (if applicable)?’ showed that mainly the bar/brewery panellists had changed strategies (most important answers can be found in Appendix 5, table 21). They have either increased prices for beer, or changed their supplier of kegs due to the current supply chain disruptions. The panellist working at the hotel also increased prices and mentioned “*Prices already have a certain margin that will cover price changes however there will be a certain point that even these margins do not cover all the price increases*”. One of the panellists who works at a bar also mentioned agreements with their suppliers, which can be seen as interorganizational trust which improves the supply process. Noticeably, all panellists that work in or own restaurants have not implemented any strategies and a small statistical correlation exists between the type of company and the action undertaken ($\chi^2(15) = 25.33$, $p < .05$, Cramer’s $V = .839$) (see Appendix 5, table 23 to 25). Hence, it can be concluded that bars who are more dependent on beer supplies are undertaking action whilst restaurants are not yet taking strategic actions.

Table 2 - Overview results on strategies

	Importance	Support Open Questions	Support Content Analysis
Flexibility	High	Yes, see Q11 Questionnaire 2	-
Openness	High	Yes, see Q12 Questionnaire 2	-
Interorganizational trust	Dependent on situation	Yes, see Q11 Questionnaire 1	Yes
Resourcefulness	Average	Yes, see Q13 Questionnaire 1	Yes
Competitor collaboration	Dependent on situation	-	-
Supplier proximity	Average	No, conflicting results found in Q12 & Q13 of Questionnaire 1	Yes
Supplier scale complexity	Low	-	-

Interorganizational trust is the third most important attribute in the overall ranking but seems to loose importance over the scenarios (average mean = 3.69, mode = 3.25) (see Appendix 5, tables 30 to 21, and figure 10 and 11) . The mean decreased from 3.25 to 3.44 to 4.38 and the

mode changed from 2 to 1 to 4 & 6. The importance of the interorganizational trust is supported by the content analysis and panellist. The removal of activities in Russia causes large amounts of revenue loss for big beer suppliers like Heineken, AB InBev and Carlsberg, however, there is still enough trust from shareholders to invest in those companies ("Bierbrouwer Heineken vertrekt na wekenlange druk volledig uit Rusland," 2022; Simon, 2022; Tuenter, 2022). Remarkable is the response one of the panellists gave to 'Which strategic actions do you currently have in place to deal with supply chain disruptions (if applicable)?'. The panellists responded with: *"non we strongly believe in the power of inbev world wide"*.

The deals and contracts with these large suppliers are strong, and businesses tend to stay loyal to them. On the contrary, one of the articles says that farmers often have contractual agreements on their supply and delivery and are unable to change their production plans on a short notice. Hence why the supply time may increase and a change is caused in strategy from a *"just-in-time-principe naar het just-in-case-principe"* [just-in-time principle to a just-in-case-principle] (Adriaansens, 2022).

It becomes clear that supplier scale complexity is the least important attribute to implement (average mean for all three scenarios = 5.67, and mode = 7 for all three scenarios). This actions scores lowest on all three scenarios, followed by supplier proximity which is remarkable as it is against the findings of the first questionnaire. To the question 'Which strategic reaction do you expect in the next 5 years in the F&B/hospitality industry do deal with supply chain disruptions?' (most important answers can be found in Appendix 5, table 22), four panellists mention the move to more local of even self-produced supplies to cover the disruptions abroad. This is of course a form of decreasing the supplier distance and is also supported as an important development in the articles (Bluiminck, 2022; Jessurun, 2022). Local supply can help cut the logistical costs for businesses. Supplier proximity appears to be less important compared to other strategies which may not have been thought of by the respondents in the first questionnaire.

The most important factors appear to be openness/transparency and flexibility/adaptability (average mean = 3.42 and 3.19, average mode = 2.75 and 2.66 respectively). Panellist 14 adds employees to the list of stakeholders to be open with: *"Also be more transparent with your staff about the difficult situation. For better understanding and explanation to your guests."* This also links to maintaining customer satisfaction. Panellist 7 replied to Q12 (most important answers can be found in Appendix 5, table 34), 'Which strategic actions, that were

not included in the previous section, would you take to keep the desired performance?": *"Listening to your guests. Ask them what it is that would keep them away or how to keep them. Then, in combination with a good contact with your suppliers and flexibility in your menu, concept and opening hours."* Others also mention the importance of creating a group of regular guests on which you can build, and focussing on enhancing the customer experience. Competitor collaboration seems to become more important over the scenarios (average mean = 4.11, mode = 3.80). The mean went from 4.81 to 3.88 to 3.63.

Resourcefulness was very divided, and had an average overall rating. Nonetheless, looking for alternative resources was introduced by four panellists in the open questions. One of the panellists touched upon the dependence on resources of some businesses if the scenarios would occur. The person replied to the question 'If these scenarios would occur now, how well would hospitality companies respond with their current strategies?' (most important answers can be found in Appendix 5, table 33), that a gap will exist between companies who are innovative in findings new ways of working whilst others are hoping that they can depend on the usual supplies. An overview of results on the strategic actions is provided in table 2.

To 'Which strategic actions, that were not included in the previous section, would you take to keep the desired performance?', two of the panellists also replied to decrease the selection of produce. The focus should lie on quality instead of having a wide range of offerings at the bar or restaurant in order to survive a supply chain disruption. The fact that doses are cut is also visible in packages as is mentioned by one of the articles, the so-called 'krimpflatie' [shrinkflation] ("Andere verpakking, minder inhoud, zelfde prijs; dat is krimpflatie," 2022).

Through concept text analysis in ATLAS.ti, the word cloud of questionnaire 1 shows the importance of the word 'price', however, this concept was mentioned in many questions and is an expected concept to be identified. Another concept is supply/supplier which also shows that local suppliers is mentioned and hence, the concept local can also be added. Furthermore, 'source' and 'product' are two identified concepts which relate to finding alternative resources and more locally resourced products. For the second questionnaire, no concepts were identified. A word cloud was created, however, it did not provide meaningful additional information. Both word clouds can be found in Appendix 5, figures 9 and 12.

Discussion and conclusion

In this section, the results reported in the previous section are critically reviewed in the light of previous research. This also includes a critical reflection on the methodology used for this research. Finally, a conclusion of this research is presented.

Discussion

Looking at the results of the scenario planning, one of the results shows that massive price increases are expected to set through in the upcoming years, which could lead to a new standard price of beer and bread. From previous research by Chatzopoulos et al. (2021), it was already forecasted that loosing Russian grain supply would lead to large price inflations worldwide. This effect is thus expected to continue over the upcoming years as mentioned by most panellists.

Customer satisfaction and openness/transparency

The results show that customer demand and satisfaction are expected to be only slightly affected by the supply chain disruption. Restaurant visitors are currently understanding for the situation and hospitality businesses experience a high form of customer confidence.

Maintaining customer satisfaction is one of the most important performance indicators for the agri-food and hospitality supply chain (Callado & Jack, 2017). High levels of customer confidence are important for the resilience of a business according to Brizek et al. (2021).

The fact that hospitality businesses are transparent and open about the supply chain process to their customers can lead to more understanding of the change in prices. The results show that transparency is one of the most important factors to deal with the scenarios. This can be connected to the findings of Callado and Jack (2017), who found that customer satisfaction is closely linked to fair pricing. Customers visiting restaurants and bars may understand that the current prices are fair due to the situation. That customer satisfaction is maintained in restaurants when prices are valued as reasonable is also supported by Han and Ryu (2009). Additionally, the impact of an increase in beer prices is expected to be low on the performance. This is also supported by the finding of Nelson (2014), who found that beer is highly inelastic and price increases will not significantly affect the demand for the product.

Good communication between supplier and customers are needed in changing times (Xu & Gursoy, 2015) and Rust and Oliver (2000) claim that taking customer expectations into consideration is important to maintain performance. According to Fantazy et al. (2009), businesses aiming for a customer-oriented strategy also experience more resilience in their

supply chain. This further supports the findings of the importance of openness/transparency with the customers as well as their employees in order to know their customers' expectations and demand. Businesses need to know if their customers are willing to pay a higher price for their beer, or whether they would buy it in the supermarket and have their gatherings at home like the content analysis revealed.

Suppliers and interorganizational trust

Having increased delivery times is expected to have a large impact on the industry. Often restaurants work with a just-in-time principle way of ordering, or in other words working with a lean perspective (Wood, 2004). However, if beer and bread happens to increase in delivery time, larger stocks may be required which could lead to costs that are unable to be transferred into revenue if they are not sold in time due to the limited shelf time of the produce. Hence, having back-up suppliers or an increased supplier scale complexity as suggested by Ruel et al. (2021) and Brandon-Jones et al. (2014) is a better way to go. Nonetheless, increasing scale complexity is in contrast with the findings of this research, in which the increase of suppliers was the least important action to maintain performance in case of the suggested scenarios. This supports the results from Habermann et al. (2015) and Bode and Wagner (2015).

Moving from a just-in-time system is also contradictory to the findings of Weersink et al. (2021), who found that the resilience of the North American AFSC was supported by this just-in-time principle during the disruption caused by COVID-19. Hence, adapting supplies to the situation was more valuable than changing the just-in-time strategy. Additionally, the industry does not expect to deal with shortages of beer and bread, however, if the delivery time will increase, the openness and flexibility, as well as the interorganizational trust, strategies are important in the opinion of the panellists.

In case of increased delivery times, changing to suppliers in closer proximity or switching to alternative products is also possible. However, the results show that the interorganizational trust that is built with suppliers could be more beneficial than selecting suppliers in a closer proximity when supply delivery times increase. The trust in established suppliers Heineken and AB InBev is significantly large and they may also be able to offer more flexibility in contracts and agreements on payments as they showed during the pandemic.

Having contracts and bonuses to maintain performance, as one of the panellists suggested, is in line with the results of Li et al. (2015) who mention that risk information sharing and risk sharing mechanisms are important to deal with supply chain risk. These two SCRM

practices are also positively related with financial performance. They even find support that supplier trust positively moderates the effect of risk information sharing on financial performance, in which information sharing is seen as a form of visibility introduced by Brandon-Jones et al. (2014), and the mechanisms reflect the contractual and legal sharing of risk. The importance of information sharing was also as proved by the results of Sun et al. (2021) and Brandon-Jones et al. (2014). This enhances the interorganizational trust which is an important resilience attribute as suggested by Shi and Liao (2013) and supported by the findings of this study.

Stakeholder collaboration

The finding that collaboration with competitors appears to be highly valued to maintain performance in the severe scenario is supported by findings from Scholten and Schilder (2015). They found that competitors can assist in creating flexibility by sharing resources, This also leads to velocity and creates supply chain resilience. This finding is however not specific for the hospitality industry. This immediately links the competitor collaboration with flexibility and resourcefulness, which are also seen as important resilience attributes based on the results of this study. Duong and Chong (2020) imply that the more severe the disruption, the more adaption and collaboration is needed to create supply chain resilience. This is in line with the results of this study. Currently, hospitality businesses are mainly focussing on increasing their prices. The scenario on delivery issues showed the importance of information sharing and interorganizational trust. However, the more severe scenario showed an increase in the importance of collaborations also amongst competitors. Hence, it can be concluded that stakeholder management, as suggested by Xu and Gursoy (2015) to include in a sustainable supply chain, is important to deliver good performance.

Flexibility

Currently, the strategies appear to be reactive and not proactive as suggested by Alonso-Almeida et al. (2015). Building on the dynamic capabilities theory, and adding the importance of flexibility and adaptability to maintain performance to this theory, businesses should do more sensing and seizing. They would benefit from this as it will help them to adjust their strategies more actively in times of potential supply chain disruptions. Such adaptability is needed because different scenarios also requires different capabilities and strategic actions. Noticeably, many businesses who participated in this study, do not apply any large strategic actions to maintain performance levels in case a big supply chain disruption would occur.

They hardly have any dynamic capabilities and are slightly resource dependent, but willing to change with suppliers or supplies if that is needed to change the transactional environment.

Conclusion

Should hospitality companies alter their strategies in order to be robust during grain supply chain disruptions?

To conclude, hospitality experts believe a supply chain disruption is imminent and few have prepared themselves for this. The hospitality industry can still implement many new strategies to be prepared for big supply chain disruptions. Increasing prices is unavoidable, however, to maintain performance levels in regards to financial and customer aspects, businesses have to look at creating transparency and adaptability. In addition, collaboration will become more important.

In case of any shortages, alternative supplies will become more popular and the Dutch AFSC may move from import to more local supply of businesses. Hence, the resource dependence of hospitality businesses is small and they strongly believe that adjusting will help them in overcoming supply chain disruptions for beer and bread. Nonetheless, creating trust with suppliers and sharing information with them appears to be important when delivery times increase.

The two questionnaire rounds appear to give some conflicting results. Adding and changing suppliers seems to be important in the first round, especially adding more local suppliers. However, providing the respondents with alternative strategy options, they appear to find those more relevant for business survival in the second round.

Of course, all of this is heavily dependent on the developments abroad, not only for the political conflict itself, but also for the oil and gas price increases due to supply sanctions and the shortages of supply from other regions due to e.g. draughts. Looking into these variables and building scenarios with these effects may reveal other important strategies.

A short outline of the answers to the sub-questions is provided in the table below (table 3).

Table 3 - Conclusion of sub-questions

Sub-question	Result
1: <i>What are the expected effects of the grain supply chain crisis on hospitality company performance?</i>	- Expected is a large inflation in prices, however, they will not affect the satisfaction levels significantly

	- Demand may be reduced, however, people will start to choose cheaper options - Supply will become more local and more expensive - Revenue will decrease, however, this is mainly caused by other external factors
<i>2: Which possible scenarios in relation to the grain supply chain disruption could occur that would affect the hospitality industry?</i>	- Please see the developed scenarios in Appendix 4, figure 8
<i>3: What are the current strategies in place to deal with current supply chain disruptions?</i>	- New supplier agreements - Higher prices - More locally sourced products/change in suppliers
<i>4: Which strategies are helpful to be robust as an hospitality organization when coping with the identified scenarios?</i>	- Openness/transparency and flexibility/adaptability are important for all three scenarios - In very tough times, working closer with direct competitors becomes more important - Interorganizational trust is important when delivery times increase - Supplier scale complexity is the least important strategy to implement for the given scenarios

Practical implications, reflection and future research

This final section presents recommendations for the hospitality industry on the strategic actions in case of a grain supply chain disruption. Furthermore, a reflection on the research process is given, including some limitations. Finally, the potential for future research is outlined.

Practical implications

Based on the results it is recommended for restaurants and bars to consider applying some strategies for dealing with supply chain disruptions. They strongly focus on price increases and the selection of the suppliers. However, in light of the scenarios presented in this research, openness and flexibility appear to be more important to maintain performance levels. As suggested by one of the panellists, creating transparency is not only important towards your guests, but also towards your personnel. Therefore, having employee meetings is important, also for small restaurants and bars. Sharing the bottlenecks that managers deal with, which affect the menu prices and choices, can positively stimulate employees to think in solutions and to communicate accordingly with guests. Getting input from guests, not only about the quality and service they experience, but also what triggers them to visit a venue, could also help businesses in developing innovative and resilient strategies to cope with supply chain disruptions.

Furthermore, collaborating with competitors will be a beneficial strategy in very difficult situations. Hence, it is recommended to collaborate with competitors operating in similar regions to discuss the issues that others are facing and to work towards solutions to improve the preparedness of the industry. For example, organisations such as the AF&BM could initiate a focus group to discuss the supply chain issues. Alternatively, the KHN could facilitate sessions in regions in which hospitality companies can participate. Apart from forming a focus group, applying the Delphi method and scenario planning in a physical setting could help the industry to form strategies together. To develop scenarios and strategic actions needed to take when dealing with the scenarios, larger businesses could look into the use of a supply chain twin model, as developed by Ivanov and Dolgui (2021). Using data and the Internet of Things could add to the visibility of the whole supply chain and can assist in developing profitable strategies for the complete supply chain or industry.

More generally taken, the results show the importance of strategy implementations in case of supply chain disruptions. Hospitality businesses can be more proactive, focussing on the potential and development of the supply chain. Consequently, scenario thinking makes

entrepreneurs and managers more creative to deal with potential situations and to have strategic plans. Additionally, businesses can benefit from scenario thinking because it can lead to developing dynamic capabilities and hence adaptability.

Reflection

Reflecting back on the thesis process, the research idea was formed in quite a late stage. Nonetheless, the formulation of the methodology came along quickly when the research goal became clear. The methods used suit very well to a research design that focuses on uncertain events as well as for supply chain strategies. The use of scenario's and the Delphi method also shows how the two complement and support each other. Within the academic field, this study shows the usefulness of scenario planning to create strategic plans and to increase the preparedness of a business to cope with supply chain disruptions.

Preferably, the Delphi method consists of more than two rounds in order to create consensus amongst all panellists and their responses. Unfortunately, doing more than two rounds was out of scope due to the limited time and resources available for conducting this research. Therefore, it was not possible to include an additional round to find consensus on the likelihood and impact of certain future developments happening.

Another improvement point is the proactiveness in finding panellists. The response rate was underestimated which limited the amount of useful questionnaire responses. A big challenge when using the Delphi method is sustaining the response rate (Morakabati et al., 2016). Often, response rates drop in the second round, losing valid data, which was also seen in this study. This may also lead to further difficulty in finding consensus amongst panellists. Using a larger network at an earlier stage could have prevented this from happening. Nonetheless, the responses provided meaningful insides for this study.

Limitations and future research

To gain deeper insides in the reasons why panellists believe certain strategies were better to use than others, or why certain decisions are made within their business to deal with supply chain disruptions, interviews would have been needed. As these were not conducted for this research, this limits the results. However, it does not significantly affects the answer to the main question since this focuses whether hospitality businesses should alter their strategies and not their underlying reasoning why they believe this is important. Further analysis on the deeper reasoning of hospitality managers and entrepreneurs to deal with the scenarios in a certain way could shed new light on the results that could be interesting for both the academic

field as well as the industry itself. Many research in this field is based on quantitative data, and adding more qualitative data would assist in finding these underlying reasons.

Furthermore, the results are all assumptions and opinions made by hospitality experts. This means that it cannot be assured that the strategic actions will actually contribute in case of a supply chain disruption in grain as provided by the scenarios. However, the results do imply that businesses should consider these strategies more. Nonetheless, to validate the strategies as viable, only post-supply chain disruption research is possible.

Furthermore, the group of panellists is small and therefore, results cannot be statistically analysed. Extending the research to include a large sample of experts could offer the opportunity to find significant differences between certain clusters of panellists. In addition to the statistical tests, extending the sample size can make the results even more generalizable for the whole industry. The current panellists are mainly working for small to medium sized enterprises, and large hospitality businesses like branded hotels are excluded. These businesses can also provide deeper insights with international supply chain management and trade.

In addition, as mentioned by one of the panellists, it is difficult to place the research in a context where many other variables have an impact on the situation. For further research on supply chain disruptions in the hospitality industry, different cases can be included. For example, looking into the disruptions caused by extreme climate conditions could reveal different strategic approaches for hospitality companies. By combining political, environmental, social, technological and legal scenarios, the robustness and hence viability of the industry wide strategies could be reassured. It is however limited because every disruption situation is different, and other strategic actions may be more beneficial in different situations. This study only includes a total of three scenarios. This makes the results less robust for managerial implications, because not all possible scenarios are taken into account. However, working around a large set of scenarios and possible strategies is not always beneficial as mentioned by Wilson and Ralston (2006). Having five or more scenarios is not as effective as having four due to the complexity.

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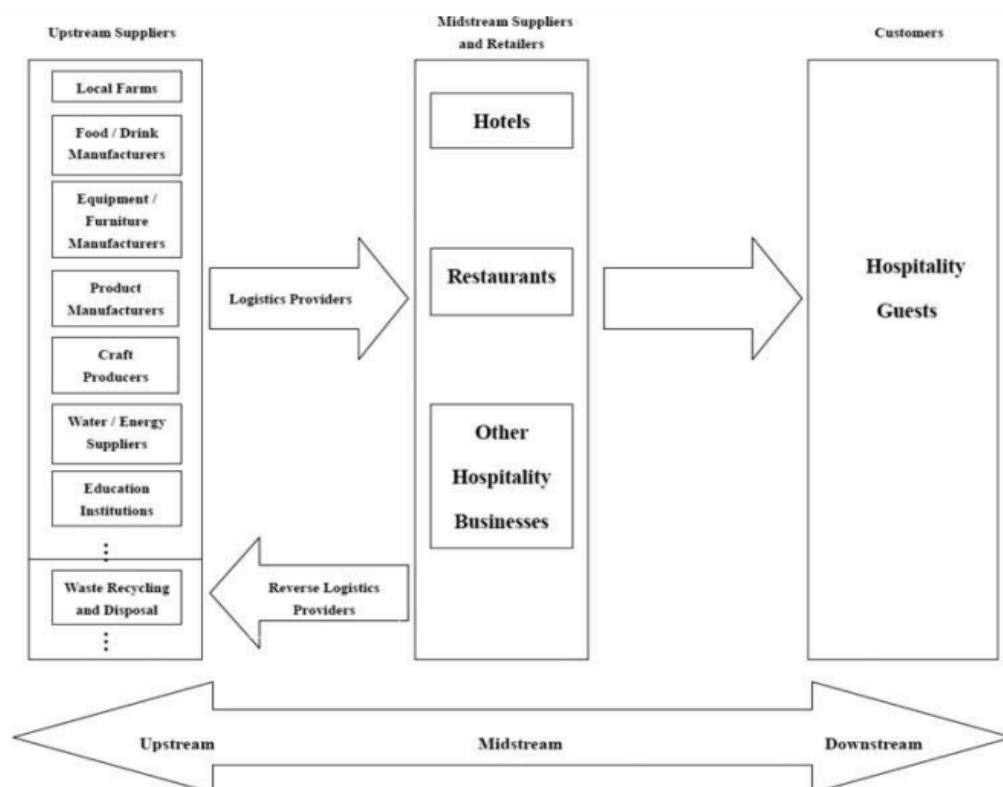


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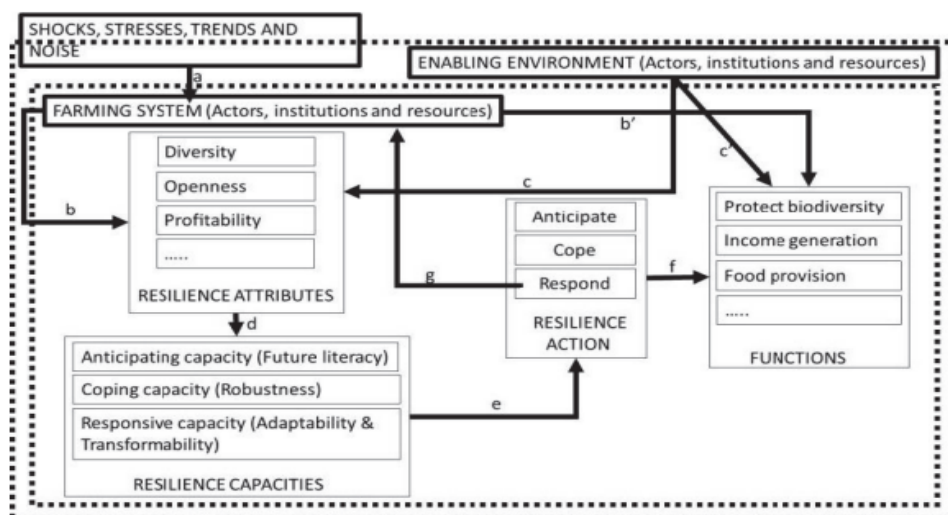


Figure 9 - Supply chain resilience framework (Mathijs & Wauters, 2020)

Appendix 2: Questionnaire design

Questionnaire design 1:

Introductory text:

Dear respondent,

Thank you for taking the time to fill out this first round survey for my thesis research. My name is Vera and I am a master student in Strategic Management at the Radboud University in Nijmegen.

The current conflict between Russia and Ukraine places a lot of pressure on the supply of grains. As one of the world's largest grain suppliers, the loss of the 'breadbasket of Europe' (de graanschuur van Europa) is leading to a significant increase in prices of beer and bread. For this study, I am looking into the possible future events that could occur from this grain supply chain disruption on the F&B/hospitality industry and how companies can strategically cope with this. Through this two round survey, I would like to develop future scenarios with you based on the case of losing the 'breadbasket of Europe'. The idea is to come to a consensus on the impact on prospect of certain future events and how to strategically deal with these supply chain disruptions and potential effects of these disruptions as a hospitality/F&B company.

Answering the survey will take approximately 10 minutes. You may withdraw from this research at any moment in time. The second round survey will be send after all responses are received and analysed.

This first survey will start with some introductory questions, followed by a section on possible future events. Finally, 5 open questions will be asked on current supply chain disruption strategies. The results of the future events section and the open questions will be shared anonymously with the other respondents in order to create consensus if needed.

By clicking on 'next', you will consent to participate in the research and that information may be shared anonymously.

Block 1; Introductory questions:

- *What is your gender?*
 - *male/female/non-binary/other*
- *What is your age?*
- *In what type of company do you work?*
 - *Restaurant/hotel/bar/brewery/university/other, namely...*
- *What is your function in this company?*
- *How long have you worked in the industry for?*
 - *< 1 year/1-3 years/4-6 years/7-10 years/>10 years*

Block 2 (scales are based on Roßmann et al. (2018)):

- *What is your **expected possibility** of the following events occurring as a result of the conflict between Ukraine and Russia in the upcoming two years, on a five-point scale?*

Table 4 - Questionnaire design 1.1

	1 = Very low	2 = Low	3 = Moderate	4 = High	5 = Very high
<i>Beer prices increase by more than 20%</i>					
<i>Shortage of beer</i>					
<i>Increase of beer production with alternative resources</i>					
<i>Bread price increase of more than 20%</i>					
<i>Shortage of bread for commercial usage</i>					
<i>Decline in customer demand because of the price increases</i>					
<i>Decline in customer satisfaction due to price increases</i>					
<i>Costs exceeding revenue</i>					
<i>Need to close multiple days a week due to shortages</i>					
<i>Need to switch suppliers in order to receive all supplies that are needed despite the good relationship that you may have with those suppliers</i>					
<i>Increase in delivery times of beer and bread by more than a week</i>					

7. Please feel free to add any comments to support the above choices

8. What **impact** will the following events have on the performance of the F&B/hospitality industry in the upcoming two years, on a five-point scale?

Table 5 - Questionnaire design 1.2

	1 = Very low	2 = Low	3 = Moderate	4 = High	5 = Very high
<i>Beer prices increase by more than 20%</i>					
<i>Shortage of beer</i>					
<i>Increase of beer production with alternative resources</i>					
<i>Bread price increase of more than 20%</i>					
<i>Shortage of bread for commercial usage</i>					
<i>Decline in customer demand because of the price increases</i>					
<i>Decline in customer satisfaction due to price increases</i>					
<i>Costs exceeding revenue</i>					
<i>Need to close multiple days a week due to shortages</i>					
<i>Need to switch suppliers in order to receive all supplies that are needed despite the good relationship that you may have with those suppliers</i>					
<i>Increase in delivery times of beer and bread</i>					

9. Please feel free to add any comments to support the above choices

Block 3; open questions (based on Oskam and Boswijk (2016)):

10. How do you believe the costs of beer and bread will develop in the next 5 years?

11. Which strategic actions do you currently have in place to deal with supply chain disruptions?
12. Do you foresee a supply chain disruption as a result of the political conflict in Ukraine and Russia?
13. Which strategic reaction do you expect in the next 5 years in the F&B/hospitality industry do deal with supply chain disruptions?
14. All questions have been asked. If you have any remaining comments that can be of importance to the research, please feel free to add them here.

Link to questionnaire 1: https://fmru.az1.qualtrics.com/jfe/form/SV_1BxOcKgvEYfyi8e

Questionnaire design 2

Table 6 - Questionnaire design 2.1

Concept	Brief explanation	Based on
Interorganizational trust	Creating trust amongst various actors in the supply chain (interorganizational trust)	(Shi & Liao, 2013)
Collaboration	Collaboration amongst (direct) competitors in the supply chain to share resources, rules and to spread risks	(Coopmans et al., 2021)
Openness/transparency	Openness about processes of the supply chain, and information sharing about performance and demand, mainly towards customers and suppliers, but also competitors	(Brandon-Jones et al., 2014; Coopmans et al., 2021)
Flexibility/adaptability	Being flexible to adjust the structure and products, e.g. opening hours, menu options, prices, employee and supplier contracts	(Ambulkar et al., 2015; Fantazy et al., 2010)
Resourcefulness	Having the ability to reconfigure resources within the organisation in case the supply chain changes drastically	(Bruneau et al., 2003)
Supplier distance	Decreasing the distance between the suppliers and the hospitality companies	(Habermann et al., 2015)

Diversifying/supplier scale complexity	Choosing a wider range of suppliers in order to spread the risk	(Bode & Wagner, 2015; Habermann et al., 2015)
---	---	---

Dear respondent,

First of all, thank you for participating in the first survey. The results of the first survey have led to the formulation of three possible future scenarios. These will be briefly introduced and questions on how to strategically react to these scenarios will be asked.

The survey again starts with the same introductory questions as the first survey to match your responses. This is followed by a section on the results of the first survey and if you have any remaining comments to this. This is followed by the scenarios and strategies section and finally, some open questions are asked.

The results from this survey will again be shared with you anonymously after the analysis is completed by the researcher.

Warm regards,

Vera Defesche

Block 1; introductory questions:

1. *What is your gender?*
 - a. *male/female/non-binary/other*
2. *What is your age?*
3. *In what type of company do you work?*
 - a. *Restaurant/bar/brewery/hotel/university/other, namely...*
4. *What is your function in this company?*
5. *How long have you worked in the industry for?*
 - a. *< 1 year/1-3 years/4-6 years/7-10 years/> 10 years*

Block 2; results from the first survey

Expected probability median/mean (1=very low, 2=low, 3=moderate, 4=high, 5=very high)

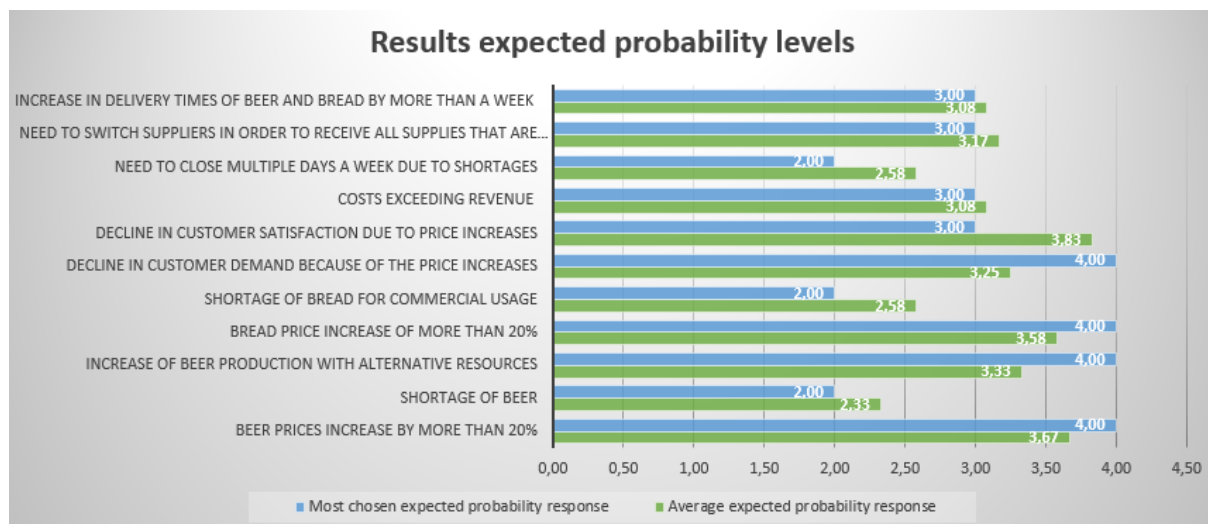


Figure 10 - Results expected probability

6. Do you have any comments on the results, e.g. because you do not agree with the outcome or because you have changed your perception on one of the questions?

Impact median/mean (1=very low, 2=low, 3=moderate, 4=high, 5=very high)

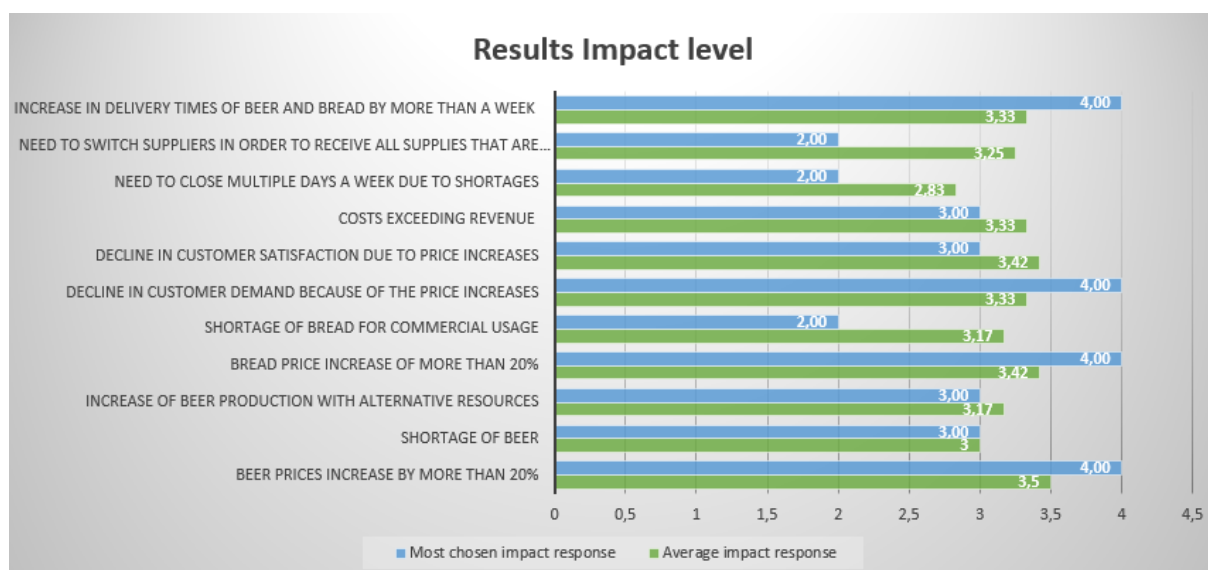


Figure 11 - Results impact

7. Do you have any comments on the results, e.g. because you do not agree with the outcome or because you have changed your perception on one of the questions?

Block 3; scenarios and strategies

Scenario 1: **Don't touch my beer/bread**

Issues start to rise with the delivery of beer and bread due to logistical issues and shortages. Therefore, prices of products increase for the customers and satisfaction will decrease due to the fact that restaurants and bars sometimes are short of supply and customers are unable to order their favourite beverage or dish. However, the costs are still reasonable to pay and customers are still happy to visit your venue.

8. Please rate the following strategic actions from most important (1) to least important (7) to implement, taking the above scenario into consideration

Table 7 - Questionnaire design 2.2

1	Creating interorganizational trust (=building trust between you and your suppliers to enhance the supply chain process and collaboration)
2	Collaborate closely with direct competitors in order to share resources and spread risks together
3	Increased openness/transparency with suppliers, customers and competitors (= more information sharing about the demand and performance of your business)
4	Increased flexibility/adaptability (= e.g. adapting opening times, menu options or prices on a more regular basis)
5	Creating resourcefulness (= being able and willing to change resources when the supply situation changes drastically)
6	Increasing supplier scale complexity (= adding more suppliers to potentially spread the risk)
7	Selecting suppliers that are closer in proximity to your business/more local

Scenario 2: **Living on the edge**

Due to the supply chain disruption in Eastern Europe, beer and bread supplies are transported from other regions in order to get them to your restaurant in time. However, the logistical costs are much higher and unfortunately, the prices for customers are about to exceed their willingness to pay. The external costs are rising and you are becoming desperate on how to get through this period where costs exceed revenue.

9. Please rate the following strategic actions from most important (1) to least important (7) to implement, taking the above scenario into consideration

Table 8 - Questionnaire design 2.3

1	Creating interorganizational trust (=building trust between you and your suppliers to enhance the supply chain process and collaboration)
2	Collaborate closely with direct competitors in order to share resources and spread risks together

- 3 Increased openness/transparency with suppliers, customers and competitors (= more information sharing about the demand and performance of your business)
- 4 Increased flexibility/adaptability (= e.g. adapting opening times, menu options or prices on a more regular basis)
- 5 Creating resourcefulness (= being able and willing to change resources when the supply situation changes drastically)
- 6 Increasing supplier scale complexity (= adding more suppliers to potentially spread the risk)
- 7 Selecting suppliers that are closer in proximity to your business/more local

Scenario 3: *Where did the good times go?*

The delivery of products causes issues for all organizations and due to the run on bread and beer, costs are rising through the rough. Together with the issues around the shortages of other products, and the fact that expectations cannot be met, and prices mislead the service level, customers are waving goodbye to your venue. Can anybody break this downward spiral?

10. Please rate the following strategic actions from most important (1) to least important (7) to implement, taking the above scenario into consideration

Table 9 - Questionnaire design 2.4

1	Creating interorganizational trust (=building trust between you and your suppliers to enhance the supply chain process and collaboration)
2	Collaborate closely with direct competitors in order to share resources and spread risks together
3	Increased openness/transparency with suppliers, customers and competitors (= more information sharing about the demand and performance of your business)
4	Increased flexibility/adaptability (= e.g. adapting opening times, menu options or prices on a more regular basis)
5	Creating resourcefulness (= being able and willing to change resources when the supply situation changes drastically)
6	Increasing supplier scale complexity (= adding more suppliers to potentially spread the risk)
7	Selecting suppliers that are closer in proximity to your business/more local

Block 4; open questions

11. If these scenarios would occur now, how well would hospitality companies respond with their current strategies?
12. Which strategic actions would you take to keep the desired performance, which were not included in the previous section?

13. Should hospitality companies consider these type of supply chain disruption scenarios more in order to create robust and viable strategies?

14. All questions have been asked. If you have any remaining comments that may be of importance, please feel free to add them here.

Link to questionnaire 2: https://fmru.az1.qualtrics.com/jfe/form/SV_1ZYGPSUoCsJZzCu

Appendix 3: Results panellists/respondents

Table 10 - Background panellists questionnaire 1

Question						
Gender	50% male			50% female		
Age	23 to 60 years old (mean = 38.58)					
Type of company	41.6% restaurant	8.3% hotel	33.3% bar	8.3% brewery	16.7% university/education	8.3% other, namely catering
Function	33.3% owner	41.6% manager	16.7% lecturer	8.3% director		
Years of experience	0% < 1 year	0% 1-3 years	0% 4-6 years	25% 7-10 years	75% > 10 years	

Table 11 - Background panellists questionnaire 2

Question						
Gender	56.3% male			43.8% female		
Age	23 to 60 years old (mean = 33.81)					
Type of company	50.0% restaurant	18.8% hotel	37.5% bar	6.3% brewery	6.3% university/education	6.3% other, namely catering
Function	18.8% owner	62.5% manager	12.5% lecturer	6.3% director		
Years of experience	0% < 1 year	0% 1-3 years	12.8% 4-6 years	18.8% 7-10 years	68.8% > 10 years	

Appendix 4: Results on scenarios

Table 12 - Results mean

	Mean EP	Mean I
<i>Beer prices increase by more than 20%</i>	3,67	3,5
<i>Shortage of beer</i>	2,33	3
<i>Increase of beer production with alternative resources</i>	3,33	3,17
<i>Bread price increase of more than 20%</i>	3,58	3,42
<i>Shortage of bread for commercial usage</i>	2,58	3,17
<i>Decline in customer demand because of the price increases</i>	3,25	3,33
<i>Decline in customer satisfaction due to price increases</i>	3,83	3,42
<i>Costs exceeding revenue</i>	3,08	3,33
<i>Need to close multiple days a week due to shortages</i>	2,58	2,83
<i>Need to switch suppliers in order to receive all supplies that are needed despite the good relationship that you may have with those suppliers</i>	3,17	3,25
<i>Increase in delivery times of beer and bread by more than a week</i>	3,08	3,33

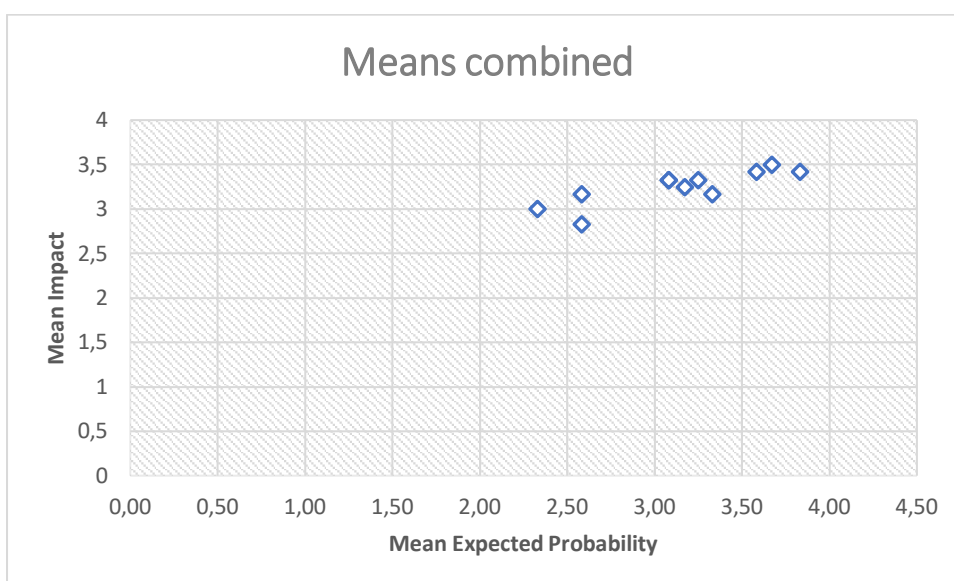


Figure 12 - Results mean

Table 13 - Results mode

	Mode EP	Mode I
<i>Beer prices increase by more than 20%</i>	4,00	4,00
<i>Shortage of beer</i>	2,00	3,00
<i>Increase of beer production with alternative resources</i>	4,00	3,00

<i>Bread price increase of more than 20%</i>	<i>4,00</i>	<i>4,00</i>
<i>Shortage of bread for commercial usage</i>	<i>2,00</i>	<i>2,00</i>
<i>Decline in customer demand because of the price increases</i>	<i>4,00</i>	<i>4,00</i>
<i>Decline in customer satisfaction due to price increases</i>	<i>3,00</i>	<i>3,00</i>
<i>Costs exceeding revenue</i>	<i>3,00</i>	<i>3,00</i>
<i>Need to close multiple days a week due to shortages</i>	<i>2,00</i>	<i>2,00</i>
<i>Need to switch suppliers in order to receive all supplies that are needed despite the good relationship that you may have with those suppliers</i>	<i>3,00</i>	<i>2,00</i>
<i>Increase in delivery times of beer and bread by more than a week</i>	<i>3,00</i>	<i>4,00</i>

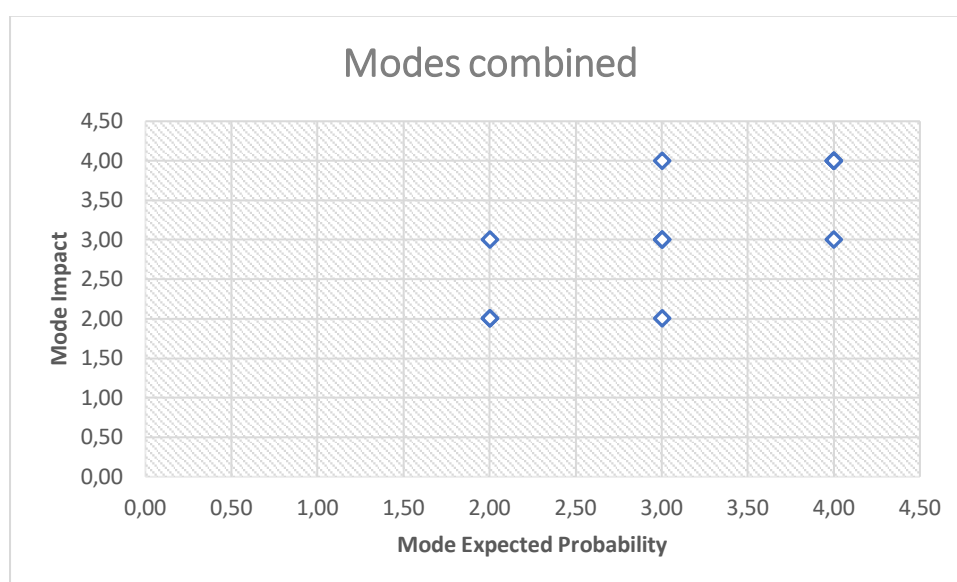


Figure 13 - Results mode

Table 14 - Results median

	Median EP	Median I
<i>Beer prices increase by more than 20%</i>	<i>4,00</i>	<i>4,00</i>
<i>Shortage of beer</i>	<i>2,00</i>	<i>3,00</i>
<i>Increase of beer production with alternative resources</i>	<i>3,50</i>	<i>3,00</i>
<i>Bread price increase of more than 20%</i>	<i>4,00</i>	<i>4,00</i>
<i>Shortage of bread for commercial usage</i>	<i>2,50</i>	<i>3,00</i>
<i>Decline in customer demand because of the price increases</i>	<i>3,50</i>	<i>3,50</i>
<i>Decline in customer satisfaction due to price increases</i>	<i>4,00</i>	<i>3,00</i>

<i>Costs exceeding revenue</i>	3,00	3,00
<i>Need to close multiple days a week due to shortages</i>	2,00	3,00
<i>Need to switch suppliers in order to receive all supplies that are needed despite the good relationship that you may have with those suppliers</i>	3,00	3,00
<i>Increase in delivery times of beer and bread by more than a week</i>	3,00	3,50

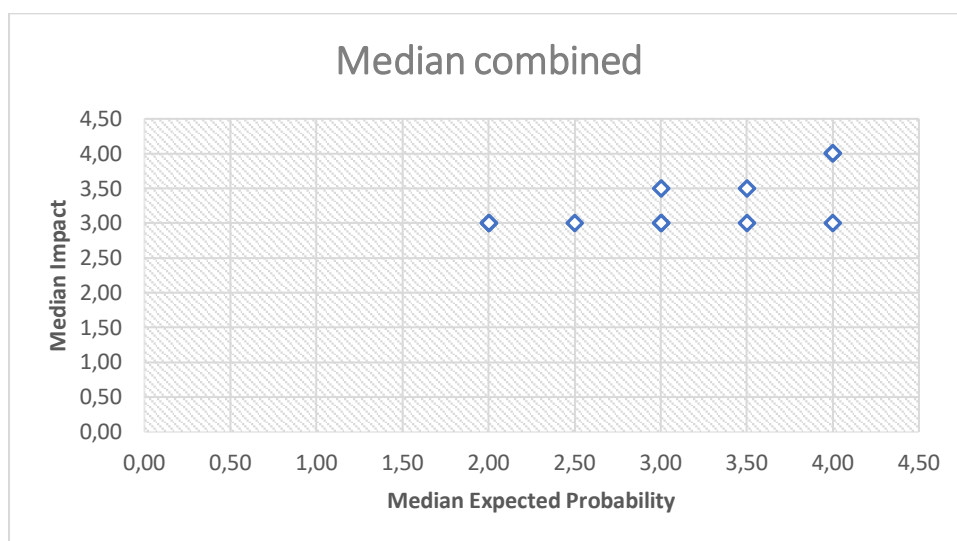


Figure 14 - Results median

Scenario 1 – Everybody happy

In this scenario, the situation is like the current situation. Prices of bread and beer have increased by about 6%. Nonetheless, there is enough supply worldwide and delivery of beer and bread is not yet causing massive impacts on the customer demand and satisfaction. People are still willing to pay the higher prices and support the hospitality business enough to keep them going.

Scenario 2 – Don't let those bastards touch my beer/bread

Issues start to rise with the **delivery of beer and bread**. Due to the situation in Ukraine and Russia, bread is supplied by South America and hence **supply times are becoming longer**. Therefore, running out of your customers' favourite beer or dish is unavoidable at times. This causes a significant decrease in customer satisfaction and because of scarcity, prices need to be increased. Nonetheless, your costs are still steady and revenue streams are flowing. The customer finds its way to your restaurant, but may not leave as satisfied as previously.

Scenario 3 – Living on the edge

Due to the supply chain disruption in Eastern Europe, beer and bread supplies are transported from other regions in order to get them to your restaurant in time. However, the logistical costs are much higher and unfortunately, the prices for customers are about to exceed their willingness to pay and demand drops hard. The external costs are rising and you are becoming desperate on how to get through this period where **costs exceed revenue**. Cost cutting is needed, however, this may also lead to unsatisfied customers and employees. Are there any possible solutions to avoid drastic cost cuttings and closing down for a few days a week?

Scenario 4 – Where did the good times go?

The delivery of products causes issues for all organizations and due to the run on bread and beer, costs are rising through the roof and shortages of bread and beer exist. Together with the issues around the shortages of other products, the fact that prices mislead the service level and expectations cannot be met, customers are waving goodbye to your venue. Your revenue streams are lower than your costs due to a loss of customers and the massive costs for the business in times of crisis. Can anybody break this downward spiral or is this the end of an era for your business?

Delivery time of beer and bread of only 1 day

Scenario 3 – Living on the edge

Due to the supply chain disruption in Eastern Europe, beer and bread supplies are transported from other regions in order to get them to your restaurant in time. However, the logistical costs are much higher and unfortunately, the prices for customers are about to exceed their willingness to pay and demand drops hard. The external costs are rising and you are becoming desperate on how to get through this period where costs exceed revenue. Cost cutting is needed, however, this may also lead to unsatisfied customers and employees. Are there any possible solutions to avoid drastic cost cuttings and closing down for a few days a week?

Costs exceed revenue

Revenue exceeds costs

Scenario 1 – Everybody happy

In this scenario, the situation is like the current situation. Prices of bread and beer have increased by about 6%. Nonetheless, there is enough supply worldwide and delivery of beer and bread is not yet causing massive impacts on the customer demand and satisfaction. People are still willing to pay the higher prices and support the hospitality business enough to keep them going.

Scenario 4 – Where did the good times go?

The delivery of products causes issues for all organizations and due to the run on bread and beer, costs are rising through the roof and shortages of bread and beer exist. Together with the issues around the shortages of other products, the fact that prices mislead the service level and expectations cannot be met, customers are waving goodbye to your venue. Your revenue streams are lower than your costs due to a loss of customers and the massive costs for the business in times of crisis. Can anybody break this downward spiral or is this the end of an era for your business?

Scenario 2 – Don't let those bastards touch my beer/bread

Issues start to rise with the delivery of beer and bread. Due to the situation in Ukraine and Russia, bread is supplied by South America and hence supply times are becoming longer. Therefore, running out of your customers' favourite beer or dish is unavoidable at times. This causes a significant decrease in customer satisfaction and because of scarcity, prices need to be increased. Nonetheless, your costs are still steady and revenue streams are flowing. The customer finds its way to your restaurant, but may not leave as satisfied as previously.



Increase in delivery times of beer and bread by more than a week

Figure 15 - Scenarios plotted

Table 15 - Results question 10, first questionnaire

ID	Q10: How do you believe the costs of beer and bread will develop in the next 5 years?
3	Bier blijft elk jaar stijgen. Over 5 jaar is €4,5 normaal voor een biertje. Brood zal snel vervangen worden als die over de €3/€4 gaat. Dus daarvan zullen denk ik de kosten laag blijven. [beer wil increase yearly. Over 5 years, 4,50 euros will be normal for a beer. Bread will be replaced quickly when it goes higher than 3 or 4 euros. So costs will stay low I think.]
6	It will increase several times per year, approximately with 3-5% each time
7	a dramatic rise in beer cost and sales price first, then staying at that price level for a long time, when supplies have recovered/ other sources found. High quality bread will be extra expensive, "our daily bread" will have to remain affordable for all
10	The costs of beer & bread will be increasing more and more. Aside from all the events happening in the world such as the war between Ukraine & Russia. Besides, once the prices have increased so far, and both the guest and the companies are used to these prices that I won't believe the prices will go down eventually

Table 16 - Results question 12, first questionnaire

ID	Q12: Do you foresee a supply chain disruption as a result of the political conflict in Ukraine and Russia?
1	Not really. Local will prevail
3	Het heeft nu al invloed op de markt, ik denk zeker dat dit meer gaat groeien. [It already has effect on the market now, I surely think this will continue to grow]
4	maybe for a short period
9	There might be, they will use their sources to feed there own people instead of export it.
10	Yes, absolutely. You can already see it now when ordering food & drinks, both in price & availability of the products
12	Yes, very much, this war could cost the whole world supply chain

Table 17 - SPSS output cross table gender*disruption recoded

What is your gender? * Do you foresee a supply chain disruption as a result of the political conflict in Ukraine and Russia? Recoded Crosstabulation

Count

		Do you foresee a supply chain disruption as a result of the political conflict in Ukraine and Russia? Recoded				Total
		No	Not yet	Yes	Maybe	
What is your gender?	Male	1	0	3	2	6
	Female	0	2	3	1	6
Total		1	2	6	3	12

Table 18 - SPSS output Chi-Square gender*disruption recoded

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	3,333 ^a	3	,343
Likelihood Ratio	4,499	3	,212
Linear-by-Linear Association	,103	1	,748
N of Valid Cases	12		

a. 8 cells (100,0%) have expected count less than 5. The minimum expected count is ,50.

Table 19 - SPSS output Pearson's R/Cramer's V gender*disruption recoded

Symmetric Measures					
		Value	Asymptotic Standard Error ^a	Approximate T ^b	Approximate Significance
Nominal by Nominal	Phi	,527			,343
	Cramer's V	,527			,343
Interval by Interval	Pearson's R	-,097	,297	-,307	,765 ^c
Ordinal by Ordinal	Spearman Correlation	-,182	,290	-,586	,571 ^c
N of Valid Cases		12			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Table 20 - SPSS output cross table company recoded*disruption recoded

Type of company recoded * Do you foresee a supply chain disruption as a result of the political conflict in Ukraine and Russia? Recoded Crosstabulation

Count

	Do you foresee a supply chain disruption as a result of the political conflict in Ukraine and Russia? Recoded				Total
	No	Not yet	Yes	Maybe	
Restaurant	0	1	1	2	4

Type of company recoded	Hotel	0	0	1	0	1
	Bar	1	0	1	1	3
	Brewery	0	0	1	0	1
	University/education	0	0	2	0	2
	Catering	0	1	0	0	1
Total		1	2	6	3	12

Table 21 - SPSS output Chi-Square company recoded*disruption recoded

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	14,000 ^a	15	,526
Likelihood Ratio	13,863	15	,536
Linear-by-Linear Association	,913	1	,339
N of Valid Cases	12		

a. 24 cells (100,0%) have expected count less than 5. The minimum expected count is ,08.

Table 22 - SPSS output Pearson's R/Cramer's V company recoded*disruption recoded

Symmetric Measures

		Value	Asymptotic Standard Error ^a	Approximate T ^b	Approximate Significance
Nominal by Nominal	Phi	1,080			,526
	Cramer's V	,624			,526
Interval by Interval	Pearson's R	-,288	,216	-,951	,364 ^c
Ordinal by Ordinal	Spearman Correlation	-,329	,262	-1,102	,296 ^c
N of Valid Cases		12			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Table 23 – Results question 13, second questionnaire

ID	Q13: Should hospitality companies consider these type of supply chain disruption scenarios more in order to create robust and viable strategies?
1	Offcourse yes, but they won't
2	Zeker! [Definitely!]
3	Yes
4	Probably, yes.
5	depends on business model i.e. group or individual business. Entrepreneur or centralized purchasing
7	They definitely should consider this. Only good can come from considering these type of scenarios. Maybe even new concepts
9	Yes
10	No, do not think so
11	Yes
12	I do believe they should consider those strategies. It will help either understand where the company need to improve or where the gap lies to improve.
13	Het ligt eraan wat voor bedrijf het is. sommige bedrijven kiezen al voor een alternatieve oplossing als de horeca bedrijven er tevreden ermee kan zijn [Depends on the type of company. Some companies already chose for alternative solutions as long as the hospitality businesses were satisfied with the alternatives.]
14	Yes
16	Yes I think it would always be wise to keep up to date with current market situations and changes

Appendix 5: Results on strategies

Table 24 - Results question 11, first questionnaire

ID	Q11: Which strategic actions do you currently have in place to deal with supply chain disruptions (if applicable)?
1	Raising prices to customer and I look to buy cheaper beers so prices won't rise as much
3	Veel nu inkopen, prijs verhogen per biertje, profijt maken van bier bonussen (afspraken met supplier) [purchase a lot now, increase price per beer, benefit from beer bonuses (arrangements with suppliers)]
4	None, we strongly believe in the power of inbev world wide
6	For the brewery we have different supplier when it comes to our kegs. We've switched several times already. For the restaurant we didn't need to take any actions
7	Take our loss: replace with something else
8	Not really a specific actions. Mostly we react when a problem occurs. We will always try to find a solution.
10	Prices already have a certain margin that will cover price changes however there will be a certain point that even these margins do not cover the all the price increases

Table 25 - Results question 13, first questionnaire

ID	Q13: Which strategic reaction do you expect in the next 5 years in the F&B/hospitality industry do deal with supply chain disruptions?
1	Local is key
2	Increasing overall prices to cover high costs
3	Overstappen naar bio (dit is nu toch al een trend), dus alles in eigen handen houden. Vooral binnen eigen land en/of EU. [Move to bio (this is already a trend), so keep everything in your own hands. Mostly within own country and/or EU]
4	we are depending on our suppliers to do the right thing
5	there might be buying cooperations in order to benefit from economy of scale. lower price negotiations. Also the lo/no alcohol trend may benefit from this
6	Mostly a search for different resources, local suppliers
7	manage supplies better, source from close by, even grow own supplies in large co-operatives for example
8	We will need to search for alternative products and maybe suppliers. And maybe accept the fact that beer and bread will be more expensive in the future.
9	Find more sources so there will be a 'guaranteed' supply of raw materials.
10	The hospitality will become something exclusive. Something that will become not affordable for everyone.
11	Find alternatives to substitute the products
12	Sportster of use, cut the doses in Which portions are served

Table 26 - SPSS output cross table company recoded*strategic actions in place recoded

Type of company recoded * Which strategic actions do you currently have in place to deal with supply chain disruptions (if applicable)? (Recoded) Crosstabulation

Count

		Which strategic actions do you currently have in place to deal with supply chain disruptions (if applicable)? (Recoded)				Total
		Price increase	Change product	Change supplier	N/a	
Type of company recoded	Restaurant	0	0	0	4	4
	Hotel	1	0	0	0	1
	Bar	2	0	0	1	3
	Brewery	0	0	1	0	1
	University/education	0	1	0	1	2
	Catering	0	0	0	1	1
Total		3	1	1	7	12

Table 27 - SPSS output Chi-Square company recoded*strategic actions in place recoded

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	25,333 ^a	15	,046
Likelihood Ratio	19,212	15	,204
Linear-by-Linear Association	,142	1	,707
N of Valid Cases	12		

a. 24 cells (100,0%) have expected count less than 5. The minimum expected count is ,08.

Table 28 - SPSS output Pearson's R/Cramer's V company recoded*strategic actions in place recoded

		Symmetric Measures			
		Value	Asymptotic Standard Error ^a	Approximate T ^b	Approximate Significance
Nominal by Nominal	Phi	1,453			,046
	Cramer's V	,839			,046
Interval by Interval	Pearson's R	-,114	,232	-,361	,725 ^c
Ordinal by Ordinal	Spearman Correlation	-,214	,284	-,693	,504 ^c
N of Valid Cases		12			

war	4	"the war (2)" "this war (1)" "war (1)"
bread	4	"bread (2)" "high quality bread (1)" "our daily bread (1)"
dat	3	"dat (3)"
<i>product</i>	3	<i>"the products (2)" "alternative products (1)"</i>
<i>supplier</i>	3	<i>"different supplier (1)" "local suppliers (1)" "maybe suppliers (1)"</i>
Ukraine	3	"ukraine (2)" "the ukraine (1)"
world	3	"inbev world (1)" "the whole world (1)" "the world (1)"
owner	3	"owner (3)"
storm	2	"a good autumn storm (1)" "this storm (1)"
point	2	"a certain point (2)"
margin	2	"a certain margin (1)" "even these margins (1)"
situation	2	"the current situation (1)" "the situation (1)"
<i>increase</i>	2	<i>"increase (1)" "the all the price increases (1)"</i>
action	2	"any actions (1)" "not really a specific actions (1)"
lecturer	2	"lecturer (2)"
restaurant	2	"restaurant manager (1)" "the restaurant (1)"
<i>Local</i>	2	<i>"local (2)"</i>
scale	2	"a unbearable scale (1)" "scale (1)"
Russia	2	"russia (2)"

Table 30 – SPSS output results first scenario

		Statistics					
		Creating interorganizational trust (= building trust between you and your suppliers to enhance the supply chain process and collaboration)	Collaborate closely with direct competitors in order to share resources and spread risks together	Increased openness/transparency with suppliers, customers and competitors (= more information sharing about the demand and performance of your business)	Increased flexibility/adaptability (= e.g. adapting opening times, menu options or prices on a more regular basis)	Creating resourcefulness (= being able and willing to change resources when the supply situation changes drastically)	Increasing supplier scale complexity (= adding more suppliers to potentially spread the risk)
N	Valid	16	16	16	16	16	16
	Missing	0	0	0	0	0	0
Mean		3,25	4,81	3,19	3,56	3,69	3,94
Std. Error of Mean		,423	,430	,518	,465	,546	,433
Median		2,50	5,00	3,00	3,00	3,00	4,00
Mode		2	4	1	3	6	4 ^a
Std. Deviation		1,693	1,721	2,073	1,861	2,182	1,731
Variance		2,867	2,963	4,296	3,463	4,763	2,996
Range		5	6	6	6	6	6
Minimum		1	1	1	1	1	1
Maximum		6	7	7	7	7	7
Percentiles	25	2,00	4,00	1,00	2,25	1,25	2,25
	50	2,50	5,00	3,00	3,00	3,00	4,00
	75	5,00	6,00	5,00	4,75	6,00	5,00

a. Multiple modes exist. The smallest value is shown

Table 31 – SPSS output results second scenario

		Statistics						
		Creating interorganizational trust (= building trust between you and your suppliers to enhance the supply chain process and collaboration)	Collaborate closely with direct competitors in order to share resources and spread risks together	Increased openness/transparency with suppliers, customers and competitors (= more information sharing about the demand and performance of your business)	Increased flexibility/adaptability (= e.g. adapting opening times, menu options or prices on a more regular basis)	Creating resourcefulness (= being able and willing to change resources when the supply situation changes drastically)	Increasing supplier scale complexity (= adding more suppliers to potentially spread the risk)	Selecting suppliers that are closer in proximity to your business/more local
N	Valid	16	16	16	16	16	16	16
	Missing	0	0	0	0	0	0	0
Mean		3,44	3,88	3,44	3,69	4,00	5,50	4,06
Std. Error of Mean		,555	,547	,491	,498	,342	,508	,442
Median		3,50	5,00	3,00	3,50	4,00	7,00	4,00
Mode		1	2 ^a	3	1 ^a	3	7	4
Std. Deviation		2,220	2,187	1,965	1,991	1,366	2,033	1,769
Variance		4,929	4,783	3,863	3,963	1,867	4,133	3,129
Range		6	6	6	6	4	6	6
Minimum		1	1	1	1	2	1	1
Maximum		7	7	7	7	6	7	7
Percentiles	25	1,00	2,00	2,00	2,00	3,00	4,00	3,00
	50	3,50	5,00	3,00	3,50	4,00	7,00	4,00
	75	5,00	6,00	5,00	5,75	5,00	7,00	5,75

a. Multiple modes exist. The smallest value is shown

Table 32 – SPSS output results third scenario

		Statistics						
		Creating interorganizational trust (= building trust between you and your suppliers to enhance the supply chain process and collaboration)	Collaborate closely with direct competitors in order to share resources and spread risks together	Increased openness/transparency with suppliers, customers and competitors (= more information sharing about the demand and performance of your business)	Increased flexibility/adaptability (= e.g. adapting opening times, menu options or prices on a more regular basis)	Creating resourcefulness (= being able and willing to change resources when the supply situation changes drastically)	Increasing supplier scale complexity (= adding more suppliers to potentially spread the risk)	Selecting suppliers that are closer in proximity to your business/more local
N	Valid	16	16	16	16	16	16	16
	Missing	0	0	0	0	0	0	0
Mean		4,38	3,63	3,63	2,31	3,44	5,94	4,69
Std. Error of Mean		,507	,539	,455	,338	,398	,309	,472
Median		4,50	3,50	3,50	2,50	3,00	6,00	4,50
Mode		4 ^a	2	2 ^a	1	2	7	7
Std. Deviation		2,029	2,156	1,821	1,352	1,590	1,237	1,887
Variance		4,117	4,650	3,317	1,829	2,529	1,529	3,563
Range		6	6	5	4	4	4	6
Minimum		1	1	1	1	2	3	1
Maximum		7	7	6	5	6	7	7
Percentiles	25	3,25	2,00	2,00	1,00	2,00	5,00	3,00
	50	4,50	3,50	3,50	2,50	3,00	6,00	4,50
	75	6,00	5,75	5,00	3,00	4,75	7,00	7,00

a. Multiple modes exist. The smallest value is shown

Table 33 - Results mean per resilience attribute

<i>Resilience attribute</i>	Scenario 1	Scenario 2	Scenario 3	Average
Interorganizational trust	3,25	3,44	4,38	3,69
Competitor collaboration	4,81	3,88	3,63	4,11
Openness/transparency	3,19	3,44	3,63	3,42
Flexibility/adaptability	3,56	3,69	2,31	3,19
Resourcefulness	3,69	4	3,44	3,71
Supplier scale complexity	5,56	5,5	5,94	5,67
Supplier proximity	3,94	4,06	4,69	4,23

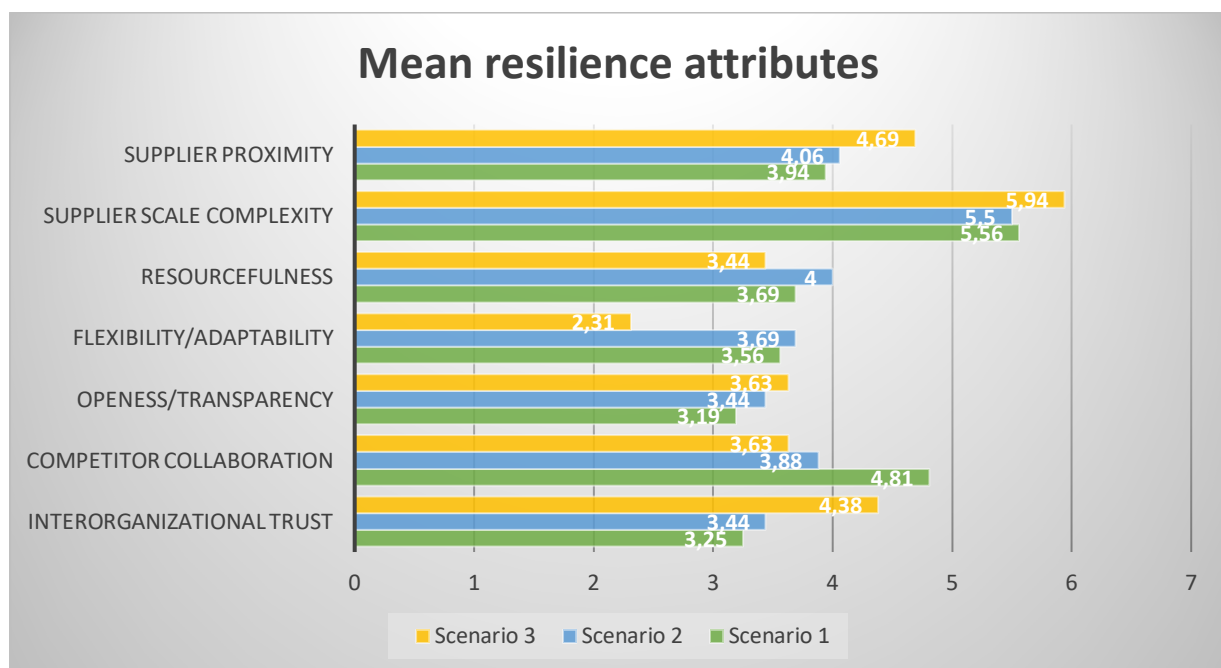


Figure 17 - Mean results resilience

Table 34 - Mode results per resilience attribute

<i>Resilience attribute</i>	Scenario 1	Scenario 2	Scenario 3	Average
Interorganizational trust	2	1	4 & 6	3,25
Competitor collaboration	4	2 & 5 & 6	2	3,80
Openness/transparency	1	3	2 & 5	2,75
Flexibility/adaptability	3	1 & 3 & 6	1	2,60
Resourcefulness	6	3	2	3,67
Supplier scale complexity	7	7	7	7,00
Supplier proximity	4 & 5	4	7	5,00

Table 35 - Median results per resilience attribute

<i>Resilience attribute</i>	Scenario 1	Scenario 2	Scenario 3	Average
-----------------------------	------------	------------	------------	---------

Interorganizational trust	2,5	3,5	4,5	3,50
Competitor collaboration	5	5	3,5	4,50
Openness/transparency	3	3	3,5	3,17
Flexibility/adaptability	3	3,5	2,5	3,00
Resourcefulness	3	4	3	3,33
Supplier scale complexity	6	7	6	6,33
Supplier proximity	4	4	4,5	4,17

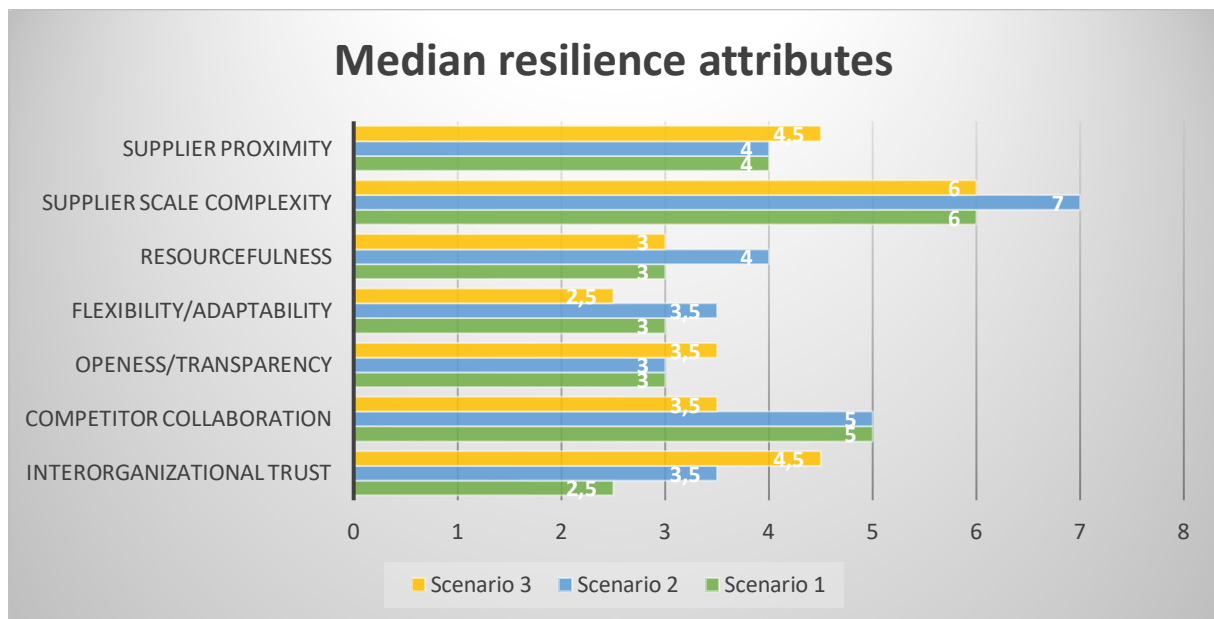


Figure 18 - Median results resilience

Table 36 - Results question 11, second questionnaire

ID	Q11: If these scenarios would occur now, how well would hospitality companies respond with their current strategies?
1	Don't know, I think companies underestimate the consequences coming up
2	Veel bedrijven zullen eerst aan zichzelf denken en later op hulp vragen. Waardoor er denk ik echt een gat ontstaat tussen goedlopende bedrijven die innovatieve ideeën hebben en die hopen dat er de bestande producten terug komen. [Many companies will think of themselves first before asking for help which creates a gap between companies that are doing well and have innovative ideas, and those who hope that existing products will return.]
3	I believe hospitality companies can actively respond on forehand since they are well-informed about the issues
4	Not that well, we are used to high demand the last time due to the fact that people really want to go out for drinks and food after the COVID lockdown. Serious adaption is necessary.
5	depends on size and back up
7	I believe that companies are not yet prepared for such a situation. Or at least not as prepared as they would be given some time to strategize.

12	I think some companies definitely need to improve on all the scenarios. There is a slight chance that all companies perform adequately as I don't believe that everyone performs that well especially after the COVID crisis.
13	Kijken of we locale bedrijven kunnen ondersteunen met betreft voedsel prijzen. Het aanbod veranderen of iets aanpassen zodat de kwaliteit en kwaliteit er niet op achteruit gaan. En betaalbaar blijft voor beiden partijen. [See if we can support local businesses regarding their food prices. Change the offer or change something so quality will not go down and will stay affordable for both parties.]
14	I'm afraid it will be very difficult for a lot of companies.
16	It will be hard but I think by staying flexible and adoptable to new market situations will be important if one of these scenarios would come true

Table 37 - Results question 12, second questionnaire

ID	Q12: Which strategic actions, that were not included in the previous section, would you take to keep the desired performance?
1	Have a much smaller selection of products but make the quality much better
3	Focus on the experience satisfaction of the customers
4	Cutting costs as much as possible and trying to stand out from your competitors with for example a higher level of service and creating a broad group of regular guests
7	Listening to your guests. Ask them what it is that would keep them away or how to keep them. Then, in combination with a good contact with your suppliers and flexibility in your menu, concept and opening hours.
9	Smaller portions for the same retail price
10	Happy employees
11	Using more local companies
12	I am not exactly sure. I do believe most of it has been mentioned.
13	Kijken of ons land zelf graan kunnen verbouwen het exporteren naar Nederland is volgens mij geen probleem. [See if our country can grow wheats ourselves, the export to the Netherlands does not seem a problem.]
14	Also be more transparent with your staff about the difficult situation. For better understanding and explanation to your guests.
16	Train staff better to enhance the customer experience, so people do not get the feeling they are paying 'too much'



Figure 19 - Word cloud second questionnaire

Appendix 6: Coding scheme content analysis

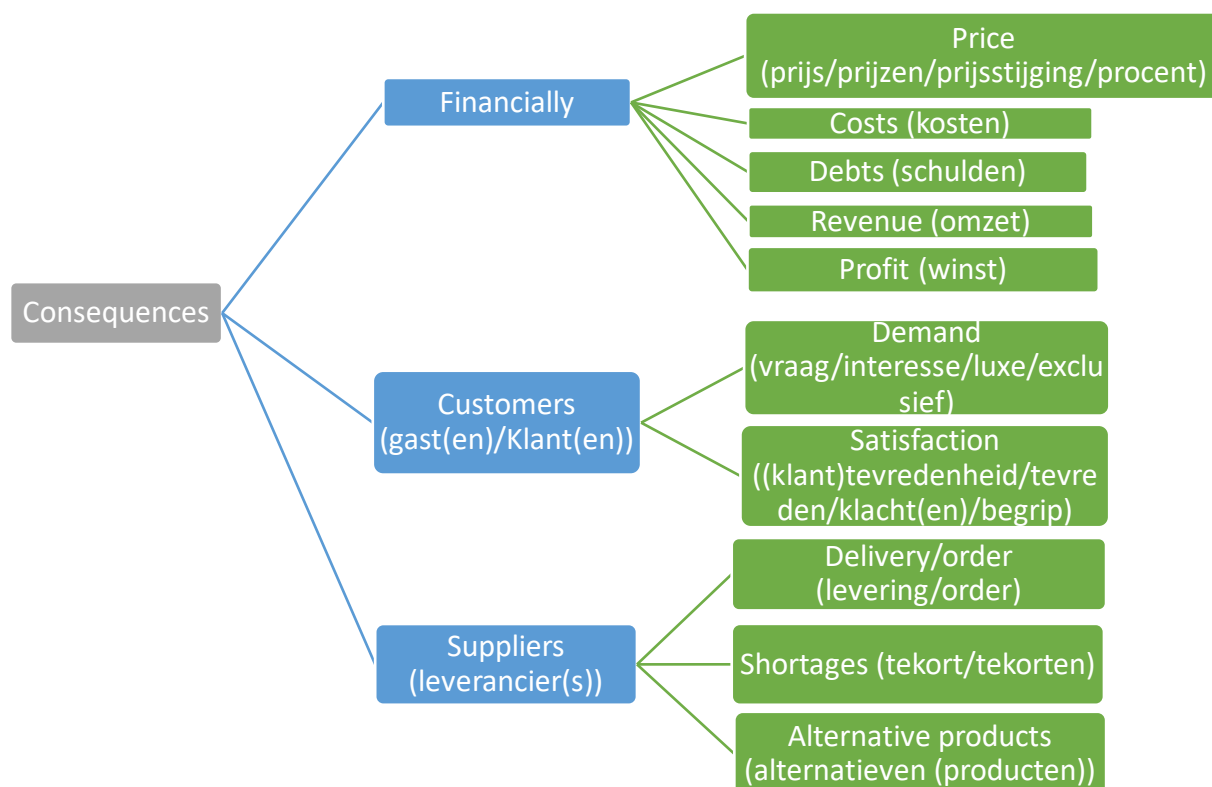


Figure 20 - Coding scheme first concept

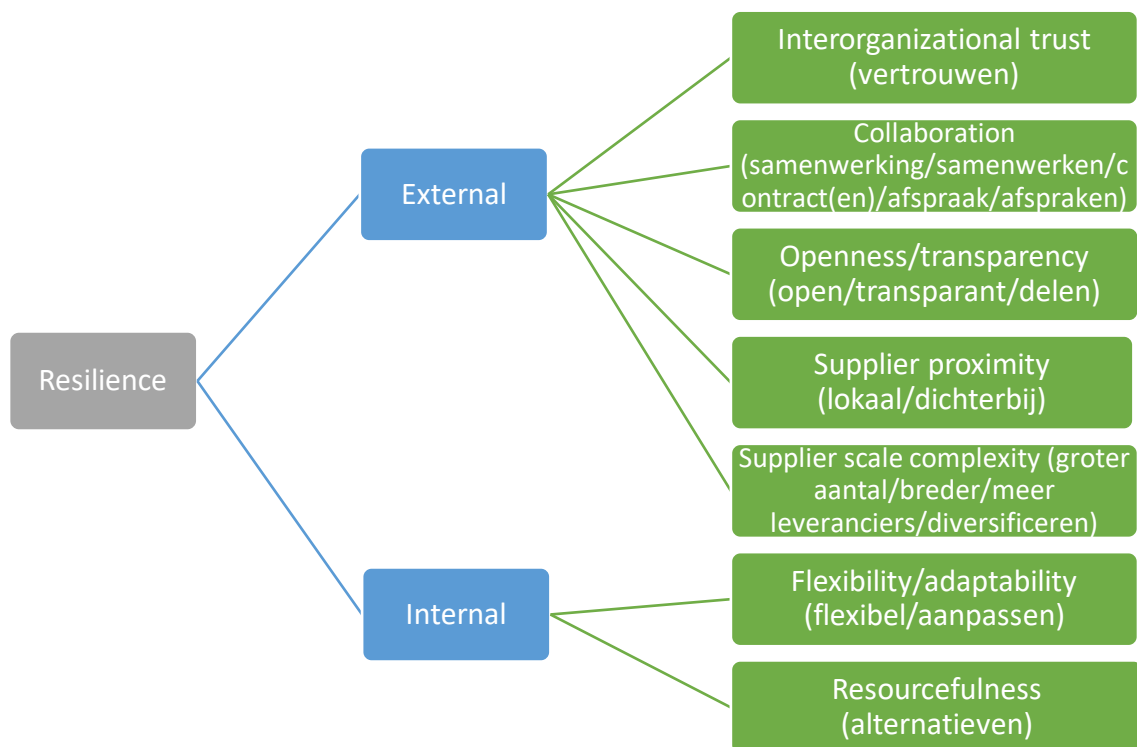


Figure 21 - Coding scheme second concept

Table 38 - List of articles for content analysis

Title	Author	Source	Type of source
Bierbrouwer Heineken vertrekt na wekenlange druk volledig uit Rusland	-	NOS	Article in Dutch news (webiste)
Graanteelt wordt aantrekkelijker, 'maar boeren gaan het niet massaal meer verbouwen'	Jules Jessurun	NOS	Article in Dutch news (website)
Andere verpakking, minder inhoud, zelfde prijs; dat is krimpflatie	-	NOS	Article in Dutch news (website)
Vlees, groente en koffie duurder; inflatie (9,6 procent) blijft pieken	-	NOS	Article in Dutch news (website)
Vertrek uit Rusland kost brouwer AB Inbev miljard euro	Geertje Tuentier	NRC	Article in Dutch newspaper
Bij veel horeca-ondernemers in Rotterdam 'is de rek eruit'	Marjolein Kooyman	NRC	Article in Dutch newspaper
Duurzaam eten? Heel belangrijk, ná de crisis	Martine Kamsma	NRC	Article in Dutch newspaper
AB InBev verkoopt meer bier, maar winst daalt 'door Rusland'	Michael Simon	Misset Horeca	Article in hospitality magazine
Rabobank: 'Horeca krijgt door oorlog in Oekraïne amper tijd om te herstellen'	Marjon Prummel	Misset Horeca	Article in hospitality magazine
Restaurant monitor 2022: zo denkt de gast over de prijsstijgingen	Nathalie Bluiminck	Misset Horeca	Article in hospitality magazine
ABN AMRO: Gevolgen oorlog Oekraïne zetten	-	Hospitality Management	Article in digital hospitality magazine

herstelperiode leisure verder onder druk			
Won Yip over corona en Oekraïne: 'Horeca opnieuw uitvinden, personeel straks ook uit Oost- Europa'		De ondernemer	Blog on business news website
De broers achter Brothers: 'Horeca moet de prijzen durven verhogen'	Rodrick de Munnik	De ondernemer	Article on business news website
Economische gevolgen van de oorlog in Oekraïne en gerelateerde (tegen)sancties voor het Nederlandse bedrijfsleven	Adriaansens, M.A.M., Schreinemacher, E.N.A.J., Staghouver, H.; Jetten, R.A.A. (Ministerie van Economische Zaken en Klimaat)	Government	Governmental letter published on governmental website
Welke impact heeft de oorlog in Oekraïne op het food-landschap?	Maaïke de Reuver	Food Inspiration	Article in digital food magazine

Part of coding report



o kosten

2 Groups:

Costs / Financial performance

12 Quotations:



4:6 ¶ 13 in Andere verpakking

Ook zijn er ondernemers die openlijk aan klanten laten weten dat ze minder krijgen voor dezelfde prijs. Een voorbeeld daarvan is bakkerij KEEK in Utrecht. In de zaak hangt een briefje waarop staat de producten soms kleiner zijn door de gestegen kosten.



4:7 ¶ 15 in Andere verpakking

Volgens Sebastiaan Schreijen, analist consument en voedsel bij RaboResearch, is het verkleinen van de verpakking niet de meest voor de hand liggende oplossing. Want de fabrikant heeft nog steeds de vaste kosten van bijvoorbeeld de verpakking. "Maar de psychologie van het prijspunt kan meespelen: als je bijvoorbeeld op 1,99 voor 500 gram zit, wil je niet voorbij de 2 euro."



4:8 ¶ 16 in Andere verpakking

Ook zegt Schreijen dat krimpflatie een internationaal fenomeen is. "Het verschilt per producent, maar uiteindelijk is het een van de mogelijke oplossingen om de sterk gestegen kosten door te belasten aan de consument."



10:1 ¶ 4 in AB InBev verkoopt meer bier

Door de prijzen te verhogen proberen brouwers de gestegen kosten van bijvoorbeeld graan enigszins te compenseren. Heineken gaf onlangs al aan dat de prijs van een biertje daarom komende tijd kan blijven stijgen.



12:4 ¶ 6 in Rabobank

Stijgende kosten



12:5 ¶ 7 in Rabobank

Al vóór de oorlog had de horeca te kampen met een enorme stijging van kosten. Niet alleen voedingsmiddelen, maar ook verpakings-, transport- en personeelskosten liepen flink op. Horecaondernemers hebben geprobeerd deze kostenstijgingen grotendeels op te vangen door de menuprijs te verhogen of door het menu aan te passen.



16:3 p 4 in economische-gevolgen-van-de-oorlog-in-oekraïne-en-gerelateerde-tegensancties-voor-het-nederlandse-bedrijfsleven

De indirecte effecten op onze economie zijn groter. Nederland importeert namelijk wel veel fossiele brandstoffen en bepaalde grondstoffen, zoals nikkel en palladium, uit Rusland. Vaak zijn er alternatieven voorhanden uit andere delen van de wereld, maar dit gaat regelmatig gepaard met hogere kosten. De sterk gestegen kosten voor grondstoffen en energie, in aanvulling op eerdere verstoringen en vertragingen in internationale waardeketens, raken in het bijzonder delen van de machine-industrie, landbouwsector, bouwsector en energie-intensieve bedrijven, zoals de basismetalen, chemie, kunstmestfabrikanten en glastuinbouw. Sommige bedrijven en sectoren kunnen deze prijsstijgingen doorberekenen aan de klant.



16:4 p 5 in economische-gevolgen-van-de-oorlog-in-oekraïne-en-gerelateerde-tegensancties-voor-het-nederlandse-bedrijfsleven

Het laatste onderzoek laat zien dat de verwachting is dat voor veel bedrijven de hogere kosten goed gecompenseerd worden door hogere opbrengstprijzen. De effecten zullen voor verschillende bedrijven anders uitvallen en zijn erg afhankelijk van de individuele situatie van het desbetreffende bedrijf. Ook in de prognoses van bijv. ING Research en ABN AMRO Insights¹² zijn deze verschillen zichtbaar, zo

wordt er een kleine krimp verwacht voor de agrarische sector in de komende twee jaren, maar is de verwachting dat de horeca na eerdere krimp in het kader van corona flink zal groeien in deze periode. Het ondernemersvertrouwen is in april 2022 vrijwel alle sectoren nog positief.¹³ Instrumentarium verduurzaming De overheid stimuleert bedrijven om (versneld) te verduurzamen en om minder afhankelijk te worden van fossiele energiebronnen en energie-efficiënter te kunnen produceren. Met de website www.MKBKlimaatwerk.nl met interactieve tool en de Subsidie Verduurzaming MKB (SVM) worden mkb'ers geholpen hun mogelijkheden tot verduurzaming in kaart te brengen. Ter realisatie van die mogelijkheden kunnen zij en grootbedrijven inschrijven op diverse verduurzamingssubsidies. Voorbeelden hiervan zijn de SDE++ (voor CO₂-reductie) en de volgende maand heropende VEKI, maar ook de subsidieregeling Emissieloze Bedrijfsauto's (SEBA) voor het vervangen van hun bestelwagen(s).



17:3 ¶ 9 in Welke impact heeft de oorlog in Oekraïne op het food

Broodbakkers en koekproducenten hebben naast de stijgende gasprijs ook te maken met een stijgende graanprijs. Die prijs is sinds de start van de oorlog omhoog geschoten met ruim 25%. Nu gebruiken Nederlandse bakkers nauwelijks Oekraïens graan, maar Oekraïne en Rusland zijn samen goed voor zo'n 30% van de wereld-exportmarkt voor graan. Doordat die markt nu zo goed als stil ligt, stijgt de wereldwijde graanprijs. Want de vraag wordt niet minder, maar het aanbod wel. Hogere graanprijzen kunnen daarnaast ook leiden tot hogere kosten voor diverse soorten groenten, omdat die producten om dezelfde akkerbouwgrond concurreren.



17:4 ¶ 11 in Welke impact heeft de oorlog in Oekraïne op het food

Deze hoge prijzen als gevolg van de oorlog staan niet op zichzelf. Al voor het begin van de oorlog was er sprake van flinke kostenstijgingen. Sinds medio 2021 signaleren analisten een ongekende kostprijsinflatie vanwege onder andere: geopolitieke spanningen, verstoringen van de handelsstromen door corona, lockdowns, het gestrande containerschip in het Suezkanaal, een onverwacht fors herstel van de consumentenvraag na het opheffen van lockdowns, het weer, personeelsschaarste en lage voorraadniveaus in de ketens. Voedingsmiddelenproducenten gaven in oktober 2021 aan ongeveer 10% hogere verkoopprijzen nodig te hebben om de gestegen kosten te dekken. En toen moest de oorlog nog beginnen.



19:1 ¶ 7 in De broers achter Brothers'Horeca moet de prijzen durven verhogen'

Personeelstekort, kostenstijgingen en toch weer de twijfel over corona in het najaar maken de nabije toekomst voor de Brothers Horeca Groep (BHG) onzeker. Peek: „Ondernemen in de horeca is op dit moment risicovol. We kunnen een kerstmarkt plannen in onze locatie in Fort Vechten, maar daar moet ik investeringen voor vastleggen. En wie betaalt deze als het uiteindelijk niet doorgaat?”



19:2 ¶ 10 in De broers achter Brothers'Horeca moet de prijzen durven verhogen'

Werd een feest door de maatregelen geannuleerd, dan draaiden Peek's bedrijven voor de kosten op. Eigenlijk is dat geen haalbare kaart. De horeca kan dat helemaal niet betalen, meent Peek. „Normaal deel je dan de kosten. We hebben ervoor gekozen dat

niet te doen, om de klant aan ons te binden. Nu komen die evenementen deze zomer wel weer terug, maar het is eigenlijk uitgestelde omzet.”



○ levering

2 Groups:

Delivery / Supplier performance

2 Quotations:



3:8 ¶ 12 in Graanteelt wordt aantrekkelijker

Ook hebben boeren vaak al afspraken over levering van bepaalde hoeveelheden producten. Zo kunnen suikerbietentelers bijvoorbeeld niet zomaar overschakelen op tarwe, omdat ze een leveringsplicht hebben aan een suikerfabriek, legt akkerbouwonderzoeker Bert Smit van onderzoeksinstituut Wageningen Economic Research uit.



3:9 ¶ 18 in Graanteelt wordt aantrekkelijker

De graanprijs legt een "bodem in de markt", zegt hij. "Graan wordt over de hele wereld geteeld en is relatief eenvoudig te telen. Iedere boer heeft het als vruchtwisselingsgewas. Een boer die normaal ook andere gewassen verbouwt, kan dan ook zeggen: ik ga alleen tarwe verbouwen. Daarom wordt de graanprijs altijd als referentie gebruikt bij bijvoorbeeld contractonderhandelingen over levering van aardappelen aan de frietfabriek."



○ leveringen

2 Groups:

Delivery / Supplier performance

1 Quotations:



16:7 p 3 in economische-gevolgen-van-de-oorlog-in-oekraïne-en-gerelateerde-tegensancties-voor-het-nederlandse-bedrijfsleven

Daarnaast maken bedrijven zich weerbaarder tegen verstoringen in de leveringen van grondstoffen en halffabricaten door over te stappen van het just-in-time-principe naar het just-in-case-principe.^{9,10} Alhoewel aanpassing nodig is, realiseert het kabinet zich dat aanpassingen niet voor elk bedrijf makkelijk zijn. Het is onvermijdelijk dat door de mondiale ontwikkelingen bepaalde bedrijfsmodellen niet meer rendabel zullen zijn. Daarom faciliteert het kabinet aanpassing van de economie onder meer met verduurzamingssubsidies, omscholingsprogramma's en hulp aan ondernemers door middel van coaching en advies. Deze ondersteuning bij de aanpassing van de economie is nodig om toekomstige welvaartsgroei te waarborgen,

waarbij zowel onze werknemers als ons kapitaal op de juiste plek worden ingezet. Gezien de huidige arbeidsmarktkrapte is het essentieel dat werknemers terecht komen waar ze hun potentie kunnen bereiken en de beste bijdrage kunnen leveren aan Nederland.



o lokaal

2 Groups:

External resilience / Supplier proximity

2 Quotations:



18:11 ¶ 18 in Duurzaam eten

Nee, je hóeft niet duurder uit te zijn als je rechtstreeks van de boer koopt. Maar tijd en aandacht voor eten kost ook iets – alleen al mentale energie. En als je tot op de cent nauwkeurig weet hoeveel duurder een fles zonnebloemolie is geworden, of aangewezen bent op de voedselbank, heb je andere prioriteiten dan lokaal eten, zelf brood bakken of tomaten kweken op je eigen balkon.



18:15 ¶ 2 in Duurzaam eten

Eten Tijdens corona namen veel consumenten zich voor om vaker duurzaam en lokaal te eten, voor een eerlijke prijs. Wat blijft er over van goede bedoelingen als alles duurder wordt?



o lokale

2 Groups:

External resilience / Supplier proximity

4 Quotations:



13:6 ¶ 13 in Restaurant monitor 2022

74 procent zegt naar een restaurant te gaan omdat het een unieke beleving oplevert. De waarde van het restaurantbezoek wordt hoog ingeschat als het gaat over drie onderdelen: nieuwe smaakcombinaties ervaren, gerechten bereiden die je thuis zelf niet kunt maken en het koken met lokale producten welke voor een duurzamere ervaring zorgen.



17:10 ¶ 15 in Welke impact heeft de oorlog in Oekraïne op het food

Wat betekent dit verhaal voor de horeca? Uit het verleden blijkt dat consumenten die hoge inflatiecijfers niet zomaar over zich heen laten komen. Consumenten zullen gaan downgraden. Vanwege een minder brede beurs zijn ze linksom of rechtsom

gedwongen om goedkopere keuzes te maken. Een kop koffie buiten de deur wordt ingeruild voor een kop koffie thuis. Een restaurantbezoek gaat van drie naar twee gangen, of wordt vervangen door een thuisdiner. Een avond in de kroeg maakt plaats voor een avond in de woonkamer. De meeste producten voor die thuisconsumptie worden niet bij lokale horecaondernemers gehaald of besteld, maar bij de supermarkt. Gevolg: in de komende maanden zullen – net als in de afgelopen twee jaar – relatief meer bestedingen naar foodretail toestromen, en minder naar foodservice.



18:16 ¶ 3 in Duurzaam eten

Een vrijdagmiddag in april 2020. Voor de ingang van een boerderijwinkel in Baambrugge stond een lange rij geduldige klanten. Ze hadden tijd om op een doordeweekse dag een stuk te fietsen om lokale en duurzame producten rechtstreeks van de boer te kopen. In kookwinkels vlogen de rijsmantjes voor brooddeeg de deur uit. Molenaars konden de vraag naar meel niet aan.



18:17 ¶ 4 in Duurzaam eten

Corona had laten zien wat er mis kon gaan in het voedselsysteem, toen grenzen werden gesloten, aardbeienplukkers en aspergestekers wegbleven en producenten niet meer aan de horeca konden leveren. Het was voor veel consumenten het moment om de bakens te verzetten. Voortaan zouden ze vaker zelf koken, met duurzaam geproduceerde lokale producten. Minder naar de supermarkt, support your locals en zo. En daar zouden ze een ‘eerlijke prijs’ voor betalen, zodat de boer zijn werk kon doen op een manier die goed was voor dier, mens en planeet. Kon ook best, want in de horeca kon je je geld toch niet uitgeven. En het gebeurde: aanbieders van voedselboxen groeiden als kool. Kazen, worsten en andere lokale producten die de horeca nu niet af kon nemen, vonden hun weg naar de keukentafel thuis.