

Psychological resilience in long-term, man-made crises: the case of entrepreneurs in Groningen

*Masterthesis on how entrepreneurs in Groningen build psychological resilience
in response to recurring earthquakes*

Radboud Universiteit



Image 1, 'Bewogen dossiers' - Marchien Cordes

Jannes Beuker
S1066802
Jannes.beuker@ru.nl

Supervisor: Sibel Ozasir-Kacar
Second examiner: Nanne Migchels
12988 words

Content

Word of gratitude.....	3
Abstract.....	4
1. Introduction.....	5
1.1 Outline of thesis.....	7
2. Literature review.....	8
2.1 Psychological resilience.....	8
2.2 The context of the recurring earthquakes in Groningen.....	10
2.3 Psychological resilience in long-term, man-made crises.....	11
3. Methodology.....	12
3.1 Research method.....	12
3.2 Sample and data sources.....	13
3.3 Data Analysis.....	14
3.4 Research ethics.....	15
4. Results.....	15
4.1 Emotional damage support.....	17
4.2 Personal adaptive capacity.....	19
4.3 Institutional engagement and support.....	23
5. Discussion.....	25
6. Conclusion.....	27
6.1 Theoretical contributions.....	28
6.2 Practical implications.....	28
6.3 Critical reflection on the limitations of the research.....	29
6.4 Directions for future research.....	30
References.....	31
Appendix.....	36
Gioia structure.....	36
Interview guide.....	38

Word of gratitude

In front of you lies my master thesis on ‘psychological resilience in long-term, man-made crises: the case of entrepreneurs in Groningen’. This thesis is part of my masters in Innovation and Entrepreneurship at the Radboud University in Nijmegen. From January up to and including June, I have researched and answered the following research question: *‘How do entrepreneurs in Groningen build psychological resilience in response to recurring earthquakes?’*

In this word of gratitude, I first of all want to thank my supervisor Sibel Ozasir Kacar for guiding me through the process of writing a masterthesis. She was always (when I say always, I mean literally always) available to give feedback and answer my questions. This made this process very enjoyable for me. Thereby, I would also like to thank Nanne Migchels for being the second examiner and reviewing my thesis. Next to that, the students in my thesis group with who it was always good to talk and think about the direction of our thesis.

Thereby, thanks to all the entrepreneurs that took the time to do an interview with me and put effort into setting me up with new contacts. I counted the number of e-mails I sent to entrepreneurs in Groningen asking if they wanted to contribute to my masterthesis: 116 e-mails. A lot of entrepreneurs did not have time, were over-asked, or simply did not respond. So, that you did respond and wanted to contribute, means a lot to me.

Writing this word of gratitude also means the end of my studying career and the start of my working career. Therefore, I would like to thank everyone included in the master programme of Innovation and Entrepreneurship who made it a very enjoyable master that I would definitely do again. I would also like to thank my fellow students Tiemen Hoff and Lotte van der Veen in particular, for making this academic year a lot of fun. Thereby, also thank you to Herbert Cool, Paco Krom, and Jahna Ullrich of the Dutch Ski Federation who gave me the freedom to work on my thesis next to my internship and also for having the trust in me to offer me a job.

Lastly, I want to finish off by thanking my parents, my girlfriend and my friends who have always supported me and been there for me in my studying career and made cutting professional ski racing a lot easier. To the reader, have fun reading my thesis!

Jannes Beuker – June 2025

Abstract

This research explores how entrepreneurs in Groningen build psychological resilience while dealing with the long-term negative consequences of recurring earthquakes caused by gas extraction. Ten entrepreneurs were interviewed using a combination of life story and semi-structured interviews. Thematic analysis and the Gioia method were used to analyse the data. The results show that building psychological resilience is not a process that is done alone, but that it is built and shaped through interaction with the entrepreneurial ecosystem. Three main aggregate dimensions were identified: emotional damage support, personal adaptive capacity, and institutional engagement and support. While all the entrepreneurs showed psychological resilience, some also experienced negative effects such as overaccommodation or suppressing emotions. These results contribute to the growing literature on the emotional side of entrepreneurship and building psychological resilience in extreme environments. The results offer practical implications for support programmes and can also be relevant for other regions facing long-term, man-made crises.

1. Introduction

Entrepreneurship can be summarized under recognizing opportunities, mobilizing resources and pursuing innovation (Williams et al., 2017). Nevertheless, the context in which these activities are performed significantly shapes the outcome for entrepreneurs (Williams et al., 2017). Much research in the past has focused on entrepreneurs operating in stable environments, they mainly benefit from predictability, access to well-established markets and relatively robust institutional frameworks (Audretsch & Thurik, 2001; Shepherd & Patzelt, 2017; Zahra & Wright, 2016). Entrepreneurs in stable environments often rely on existing business networks to reduce uncertainty and mitigate risks (Zahra & Wright, 2016). Thereby, stable environments also provide entrepreneurs with opportunities to share knowledge and collaborate with other entrepreneurs, this leads to incremental innovation and sustained growth over time (Audretsch & Thurik, 2001). Furthermore, entrepreneurs in stable environments are also supported by effective institutional frameworks that provide trust (Shepherd & Patzelt, 2017).

Significantly less research has focused on entrepreneurs operating in extreme environments. But their challenges fundamentally differ from entrepreneurs operating in stable environments, who mostly have to deal with market dynamics and competition. Extreme environments, such as conflict zones, natural-disaster areas or regions with political instability offers entrepreneurs challenges like resource scarcity, extreme risks, and high uncertainty to deal with (Bayram, 2017; Boudreaux, 2022; Haar, 2022). For instance, conflict zones often do not have stable institutional frameworks to support the business activities of entrepreneurs, which makes it difficult for entrepreneurs to navigate uncertain environments, disrupted supply chains, and limited access to financial resources (Bayram, 2017). Natural-disaster areas also provide challenges for entrepreneurs in the form of rebuilding destroyed infrastructure and mitigating the uncertainty of possible future disasters (Boudreaux et al., 2022).

One such extreme environment exists in the province of Groningen in the Netherlands, where years of natural gas extraction have been leading to recurring earthquakes. These earthquakes have created long-term uncertainty and economic instability, which has made it difficult for entrepreneurs to sustain their ventures (Dost et al., 2017; Van der Voort & Vanclay, 2015). This is different to sudden, one-time natural disasters, where entrepreneurs have to focus mostly on rebuilding infrastructure (Boudreaux et al., 2022). The earthquakes in Groningen form more of a continuous, man-made crisis that makes entrepreneurs face challenges on the long-term. Entrepreneurs cannot simply rebuild their infrastructure and move on, but instead they have to develop long-term strategies to adjust their ventures and keep flourishing (Mulder & Perey, 2018). By ending the gas extraction, the cause of the earthquakes in Groningen has been stopped, but for the next thirty years the subsurface in Groningen will remain prone to earthquakes (Rijksoverheid, 2025). Therefore, it is worth to highlight how entrepreneurs mentally and strategically cope with this ongoing uncertainty in order to sustain their ventures (Koster & Van Ommeren, 2015). For entrepreneurs operating in such extreme environments to be able to survive

and be successful in these unstable conditions, psychological resilience has proven to be a crucial attribute (Ayala & Manzano, 2014; Linnenluecke, 2017; Williams et al., 2017).

Psychological resilience is the ability to adapt, recover, and thrive in the face of challenges (Williams et al., 2017). It does not just include bouncing back from setbacks but also learning from these experiences and improving responses to future setbacks. Thereby, it also allows individuals and organisations to adapt to both incremental changes and sudden, larger disruptions. (Williams et al., 2017). Psychological resilience can be an ability of both individuals and organisations, and it can be built via creating a culture of flexibility, innovation and continuous learning. It helps businesses to survive and come stronger out of crises (Linnenluecke, 2017).

As stated before, entrepreneurs operating in extreme environments face difficult challenges like resource scarcity, extreme risks, and high uncertainty that require the entrepreneur to be innovative and adaptive to be able to ensure the survival and growth of their ventures. Psychological resilience has proven to be an important attribute for entrepreneurs in the face of these challenges. It not only lets entrepreneurs adapt and recover from challenges, but it also provides them with opportunities to learn from them and thrive in the future. Despite the importance of psychological resilience, the specific processes through which it is built by entrepreneurs in extreme environments remain, to our knowledge, underexplored. Thereby, much research in the past has focused on resilience in sudden, one-time natural disaster environments, and not on man-made, long-term crises like the recurring earthquakes in Groningen. Without a clear understanding of these processes, actions to support entrepreneurs in these extreme environments have the chance to be ineffective and potentially overlook the important aspects that lead to success. This research dives into this research gap with the following research question: *‘How do entrepreneurs in Groningen build psychological resilience in response to recurring earthquakes?’*

By examining this question, this research has the goal to generate insights that enable entrepreneurs to sustain and adapt their businesses while facing the recurring earthquakes in Groningen. Thereby, it also wants to identify the factors that help entrepreneurs to build psychological resilience in this context, this can provide entrepreneurs with the understanding of how to navigate long-term uncertainty and unexpected challenges. And create a clearer understanding of psychological resilience as an important aspect of entrepreneurship and provide practical recommendations for supporting ventures in such extreme environments. This can help entrepreneurs in overcoming challenges and sustain and grow their ventures. Lastly, this research also adds to the existing knowledge of entrepreneurship by focusing on how traditional business strategies could fail in these extreme environments and thereby offering new perspectives on how these entrepreneurs manage uncertainty and resource limitations and thus ensure the long-term viability of their ventures.

This research is scientifically and socially relevant for several reasons. From a scientific point of view, it contributes to the understanding of how psychological resilience operates within

entrepreneurship, especially in extreme environments, which are underexplored in academic research. Thereby, it also contributes to literature by examining how psychological resilience functions in a long-term, man-made crisis environment like the recurring earthquakes in Groningen (Dost et al., 2017; Van der Voort & Vanclay, 2015). By analysing how entrepreneurs in this environment build psychological resilience, new knowledge on how these entrepreneurs make decisions under stress, deal with resource limitations, and manage uncertainty can be provided. And by examining the factors that shape psychological resilience, it comes clear how these entrepreneurs navigate and succeed in challenging environments. Overall, this research extends existing disaster entrepreneurship knowledge (Aldrich, 2018; Baker & Welter, 2020; Galbraith & Stiles, 2006; Shepherd & Williams, 2020) by analysing the role of long term, man-made crisis and the development of psychological resilience.

From a social point of view, this research has practical implications for entrepreneurs, policymakers, and organisations that are working to stabilize the local economy in areas that are prone to earthquakes. By identifying the processes that are used to effectively build psychological resilience, it can help setting up programs that align with the specific needs of entrepreneurs and support them in overcoming the challenges faced in this extreme environment. Entrepreneurs can play an important role in driving recovery and providing jobs in these extreme environments. And therefore, further understanding psychological resilience can provide opportunities for reducing unemployment, promoting innovation and improving the living conditions (World Bank, 2021) in regions suffering from (recurring) earthquakes and other similar long-term, man-made disasters. Thereby, Fletcher & Sarkar (2013) state that entrepreneurs can suffer from burnouts and anxiety if they are exposed to economic instability and physical risk for a too long period. Therefore, this research can be used to develop initiatives that can improve the mental and physical health of entrepreneurs operating in extreme environments. Lastly, the results may be applicable beyond the recurring earthquakes in Groningen, since they give insight into how entrepreneurs respond and overcome unexpected challenges. Other regions that face long-term, man-made crises like climate change or political instability could also implement these results, so that ventures in similar conditions can benefit and learn how to cope with these extreme environments (Doern et al., 2019).

1.1 Outline of thesis

After this introduction, a review of the relevant literature will be presented. After that, the reasons for choosing the adopted methodological approach and a detailed description of how the research will be conducted will be presented. Then, the results of the research will be presented. Afterwards, the discussion will present the interpretation of the results. And lastly, the conclusion will include the contribution to existing knowledge, practical implications, critical reflection on the limitations of the research, and directions for further research.

2. Literature review

In this literature review, first psychological resilience will be described as a dynamic process, which is built up via economic, cognitive, and behavioural resilience. Then, the importance of psychological resilience for entrepreneurs will be described, but also the potential negative effects that they need to cope with. Afterwards, the extreme environment context will be described in the form of the recurring earthquakes in Groningen. Lastly, a short summary will be presented of the literature on psychological resilience.

2.1 Psychological resilience

Psychological resilience is the ability of an individual to adapt, recover, and thrive in the face of challenges (Williams et al., 2017). It is seen as a dynamic process of building and using capabilities and resources to adapt to difficult situations and continue functioning effectively before, during and after challenges (Shepherd et al., 2020; Williams et al., 2017). It does not just include bouncing back from setbacks but also learning from these experiences and improving responses to future setbacks. Thereby, it also allows entrepreneurs to stay in control, be flexible, and stay motivated when they are facing challenges, which helps them to effectively manage stress and uncertainty (Williams et al., 2017).

Several researchers see psychological resilience not as a personality trait, but as a dynamic process (Fletcher & Sarkar, 2013; Luthar et al., 2000; Williams et al., 2017). They add to this knowledge that it is a multi-dimensional construct that is built up by several interacting factors. They define psychological resilience as a combination of emotional, cognitive, and behavioural components that work together and allow individuals to withstand setbacks, regain stability, and continue growing (Fletcher & Sarkar, 2013; Luthar et al., 2000; Williams et al., 2017). Emotional resilience refers to the ability of an individual to regulate emotions, stay calm under pressure, and maintain emotional stability while facing challenges (Williams et al., 2017). In extreme environments this is especially important, since a long period of uncertainty can lead to mental fatigue, stress, and even burnout. Entrepreneurs with strong emotional resilience are less likely to experience these feelings, since managing their emotions effectively allows them to make rational decisions and maintain their motivation, which is essential in sustaining and growing their ventures (Hartmann et al., 2022). Cognitive resilience refers to the ability of an individual to think strategically, learn from setbacks, and remain solution-oriented while facing challenges (Fletcher & Sarkar, 2013). If entrepreneurs develop strong cognitive resilience, they are more likely to learn from setbacks and turn these into opportunities instead of seeing them as failures (Williams et al., 2017). This ability allows entrepreneurs to develop innovative business strategies while facing unexpected challenges (Shepherd & Williams, 2020). Behavioural resilience refers to the ability of an individual to actively solve problems, look for help, and adapt their businesses while facing challenges (Hartmann et al., 2022). Where emotional and cognitive resilience are internal processes, behavioural resilience is more an action-focused process that reflects how an individual acts practical

while facing challenges (Hartmann et al., 2022). Entrepreneurs with strong behavioural resilience are more likely to not stay passive but put effort in sustaining and growing their ventures (Ahmed et al., 2022). Overall, entrepreneurs must continuously build and use emotional, cognitive, and behavioural resilience to cope with the unexpected challenges that happen because of extreme environments.

For entrepreneurs, psychological resilience is especially important because it helps them to sustain their ventures and keep growing when facing unexpected challenges, such as wars, natural disasters or economic crises. Entrepreneurs who are more psychologically resilient, are more likely to stay determined, adapt their ventures, and produce creative solutions to overcome those unexpected challenges (Hartmann et al., 2022). The description of psychological resilience, where it is defined as a dynamic process, is much more consistent with the way in which entrepreneurs build it as they have to cope with unexpected challenges (Ahmed et al., 2022). Other researchers define it as a capacity that individuals can use when they are facing unexpected challenges, they see it more as a stable personality trait that individuals possess (e.g. Bullough et al., 2014; Doern, 2016; Obschonka et al., 2018). Since this research focuses on how entrepreneurs build psychological resilience while coping with recurring earthquakes in Groningen, defining it as a dynamic process is far more applicable.

As said, psychological resilience is not a fixed trait but a dynamic process that can be shaped by several factors. It is shaped by the past experiences of an individual, this indicates that entrepreneurs build it over a period of time through repeatedly facing unexpected challenges and the need to overcome setbacks that come from these. Entrepreneurs that have experienced past failures or financial difficulties are more likely to build stronger psychological resilience strategies, which makes them more likely to effectively manage future unexpected challenges (Fletcher & Sarkar, 2013). Thereby, entrepreneurial ecosystems also play a role in shaping psychological resilience. Access to these ecosystems such as mentors, financial support, and business networks, improve the ability of an entrepreneur to cope with unexpected challenges (Korber & McNaughton, 2018). These ecosystems not only provide physical resources but also offer social support, which is important for entrepreneurs to stay motivated and manage stress in extreme environments (Ahmed et al., 2022). Lastly, proactive coping strategies also significantly shape the process of building psychological resilience. Entrepreneurs that use coping strategies such as strategic planning, continuously learning new capabilities, and diversifying their revenue streams, are likely to be more resilient when facing unexpected challenges (Shepherd & Williams, 2020). Learning how to anticipate and mitigate potential risks allows entrepreneurs to keep adapting their ventures, even in extreme environments. This is especially relevant in the context of long-term crises, so also in the context of the recurring earthquakes in Groningen, where psychological resilience is not about just surviving the initial disaster, but also about sustaining and growing their ventures over time (Baker & Welter, 2020).

While psychological resilience is often seen as an important and maybe even crucial ability for entrepreneurs, it also has its negative effects. A good illustration of this is entrepreneurs over-persisting in their ventures, which indicates that they keep investing time, effort, and money into failing ventures

instead of recognizing the moment when to exit or go into a different direction (Holland & Shepherd, 2013). Hayward et al. (2006) add to this knowledge by stating that the overconfidence and emotional attachment of entrepreneurs increases the risk of them persisting in failing ventures. According to them, entrepreneurs overestimate their own ability and underestimate the risks and therefore keep going with their ventures when it is smarter to exit or go into a new direction. Entrepreneurs over-persist because they are emotionally committed to their ventures and do not want to give up on them because of all the money and effort they have already invested. This mostly leads to extra financial losses and emotional exhaustion (Holland & Shepherd, 2013). This negative effect is especially applicable in extreme environments, where entrepreneurs continuously face unexpected challenges and uncertainty (Doern, 2016).

Another negative effect of psychological resilience can be that it can suppress the actual feelings of an individual. Entrepreneurs often feel the pressure to stay motivated and show persistence in sustaining their ventures, thereby they also suppress the negative emotions that come from entrepreneurship. Suppressing negative emotions for a longer period of time increases the risk of decreased mental well-being and even a burnout (Hartmann et al., 2022). In this line of thinking, Feng et al. (2025) argue that too much psychological resilience can lead to entrepreneurs having the feeling that they must always stay positive about their ventures, even when facing unexpected challenges, when things are going not so well. This behaviour increases the risk of them not addressing their real emotions, which can lead to the failure of ventures.

To cope with these negative effects, entrepreneurs need to find a balance between the emotional, cognitive and behavioural aspects of psychological resilience. Entrepreneurs should learn how to regulate emotions, for instance via mindfulness (Feng et al., 2025), learn from setbacks, and develop practical solutions, so that they can sustain and grow their ventures (Ahmed et al., 2022; Fletcher & Sarkar, 2013; Hartmann et al., 2022; Williams et al., 2017).

2.2 The context of the recurring earthquakes in Groningen

The context of extreme environments in this research are, as said, the recurring earthquakes in Groningen. These have been happening for decades because of natural gas extraction. The depletion of gas reservoirs has caused the subsurface to be pressed together, which has led to continuous instability. (Dost et al., 2017; Van der Voort & Vanclay, 2015). The depletion of gas from the gas field in Groningen, one of the largest gas fields in Europe, started back in the 1950's (Mulder & Perey, 2018). Because of the continuous gas extraction, the first seismic activity was recorded in the 1990's, but the Huizinge earthquake in 2012 (3.6 on the scale of Richter) led to massive attention for the social and economic risks of the earthquakes (Mulder & Perey, 2018; Van Thienen-Visser & Breunese, 2015).

The earthquakes in Groningen are different to other earthquakes or different sudden, one-time natural disasters. They are caused by humanity and form a long-term crisis that has created unexpected

challenges and high levels of uncertainty for inhabitants and businesses. In response, the Dutch government has stopped with the extraction of gas in Groningen, but because of ongoing subsurface instability it is likely that the earthquakes will continue for at least the next thirty years (Rijksoverheid, 2025). The earthquakes have negative consequences for entrepreneurs in Groningen. Property gets worth less, the insurance costs have risen for business owners, and it has gotten difficult for entrepreneurs to secure investments and therefore make plans for their ventures on the long-term (Koster & Van Ommeren, 2015; Mulder & Perey, 2018; Trip & Romein, 2019). Because of the financial instability and the long-term uncertainty that the earthquakes bring, entrepreneurs can have troubles to build psychological resilience that can help them to deal with the unexpected challenges (Williams et al., 2017). They can start suffering from excessive stress, emotional fatigue, and even burnout (Hartmann et al., 2022; Postmes et al., 2024). Thereby, over-persistence in failing ventures also is a risk that comes from operating in these extreme environments (Feng et al., 2025).

Because of all these risks that come from the earthquakes in Groningen, simply recovering and rebuilding after the earthquakes is not enough for entrepreneurs to sustain and grow their ventures (Van der Voort & Vanclay, 2015; Williams et al., 2017). Entrepreneurs need to build and use psychological resilience to manage the uncertainty, regulate stress, and turn setbacks into new business opportunities to be able to survive in these extreme environments (Ahmed et al., 2022; Fletcher & Sarkar, 2013).

2.3 Psychological resilience in long-term, man-made crises

To conclude, entrepreneurs that are operating in long-term, man-made crises like the recurring earthquakes in Groningen could benefit largely from effectively building and using psychological resilience. It should involve continuously adapting to the unexpected challenges and long-term uncertainty that is caused by the recurring earthquakes. The psychological resilience of entrepreneurs is shaped by emotional resilience (regulating stress and staying motivated regardless of long-term uncertainty), cognitive resilience (learning from setbacks and thinking strategically), and behavioural resilience (actively adjusting their ventures and looking for external help). What we know so far from the literature on psychological resilience is that the crucial factors for entrepreneurs to build it are the skill of learning from setbacks, access to entrepreneurial ecosystems and proactive coping strategies such as mentors, financial support, and business networks. On the other hand, it is not yet clear how entrepreneurs consider these factors and use them to build psychological resilience, and if any other factors influence that in the case of long-term, man-made natural disasters like the recurring earthquakes in Groningen. Nevertheless, while building and using psychological resilience, entrepreneurs should watch out for potential negative effects such as excessive stress and over-persistence in failing ventures. If entrepreneurs find a balance between these factors and emotional regulation, then this will help entrepreneurs to navigate uncertainty, recover from setbacks, and keep developing.

3. Methodology

The main goal of the methodology section is to develop a clear strategy in order to find an answer to the research question. First, the research method that this research applied will be discussed. Then, the sample and data sources will be explained. Afterwards, the data analysis procedure will be described. And lastly, the research ethics will be presented.

3.1 Research method

This research used a qualitative approach because it focused on understanding and exploring the experiences of entrepreneurs in Groningen and how they build psychological resilience in response to the recurring earthquakes.

Because psychological resilience is a dynamic process and not a fixed trait, a qualitative approach helped to explore how and why entrepreneurs develop it over time and how this is influenced by personal characteristics and contextual factors (Hartmann et al., 2022). Personal conversations with these entrepreneurs therefore helped this research to capture subjective experiences and contextual influences (Creswell & Poth, 2018) that led to detailed and in-depth results (Rahman, 2017; Sutton & Austin, 2015). Sutton & Austin (2015) state that in-depth results are essential for academic research because they help researchers to understand how people make sense of their experiences within a specific context. This research also captured in-depth results, which helped to understand how entrepreneurs emotionally, cognitively, and behaviourally make sense of their psychological resilience experiences within the context of the recurring earthquakes in Groningen. Thereby, entrepreneurs use personal experiences, decision-making processes, and emotions to deal with long-term uncertainty (Fletcher & Sarkar, 2013), the qualitative approach was well-suited to capture these factors because it allows researchers to explore the depth and meaning behind certain experiences and feelings, rather than just identifying patterns that are visible on the surface (Sutton & Austin, 2015). Also, since we did not have a solid theorization yet in the case of the recurring earthquakes in Groningen, the qualitative approach allowed this research to capture in-depth results and be adjusted when new themes emerged during the data collection, this made sure that all important aspects of psychological resilience were covered (Queirós et al., 2017). By using a qualitative approach, this research generated valuable insights via personal conversations, so that the results were not only academically relevant but also useful for entrepreneurs, policymakers, and organisations that are working to stabilize the local economy in areas that are prone to earthquakes (Bryman, 2015).

3.2 Sample and data sources

The sample that this research focused on was entrepreneurs that are operating in Groningen and who have been directly affected by the recurring earthquakes. To select the right participants, a purposive sampling method was used. All the entrepreneurs were selected based on specific characteristics that are relevant to the research (Etikan et al., 2016), for this research we identified four different personal characteristics. Firstly, entrepreneurs who live or run a venture in the province of Groningen, especially in the areas most affected by the recurring earthquakes (Etikan et al., 2016). Secondly, entrepreneurs who have been actively running their ventures for at least five years, because this makes sure that they have experienced the negative consequences such as long-term uncertainty and financial instability of the recurring earthquakes and had time to build psychological resilience strategies (Van der Voort & Vanclay, 2015). Thirdly, ventures that are still operational at the time of the interview, which makes sure that the participants are currently facing and working the challenges caused by the recurring earthquakes (Bryman, 2015). And fourthly, willingness to participate in an interview and reflect on their personal and venture experiences, because qualitative research requires participants with relevant experiences in the research context to be able to capture in-depth results (Rahman, 2017). Purposive sampling is often used in qualitative research, because it helps to have a diverse range of entrepreneurs and via this way helps to understand the researched phenomenon more in-depth (Etikan et al., 2016).

The participants for this research were found and contacted via own research, personal connections, and a post on LinkedIn. To guarantee the anonymity of the participants, they were given fictitious names. The following table provides a list of all the participants, what kind of venture they have, and the years of operation.

Name of entrepreneur	Venture/industry	Years of operation
Thomas	Industrial climbing materials	27
Peter	Automation processes	28
Matt	Hairdressing salon	38
Karen	Beauty salon	18
Steve	Music products	29
Lisa	Dairy farm	16
Margaret	Ceramics artist	35
Anna	Sustainable fashion	5
Bryan	Architect	20
Zoe	Visual artist	45

Table 1, list of participants

The data for this research was collected in two parts. First, to get to know how entrepreneurs create meaning from their experiences in the context of psychological resilience, this research used the life story interview method. In this method participants divide their life experiences into different chronological phases and reflect on crucial events in these phases (McAdams, 2001). Then, a semi-

structured interview was conducted with the entrepreneurs. Because these kinds of interviews can lead to open discussions, where the participants share their experiences in depth, but also leave room for the interviewer to ask follow-up questions to make certain themes clearer or explore new ones (Bryman, 2015). In our interviews, entrepreneurs were asked to further elaborate and clarify on their emotional, cognitive, and behavioural resilience, how they regulate stress and stay motivated in times of long-term uncertainty and financial instability. They were also asked how they learn from setbacks and think strategically while facing unexpected challenges. Furthermore, they were asked about how they actively adjust their ventures and look for external help. Lastly, they were also asked to reflect on if their psychological resilience led to any potential negative effects. These questions were asked to the extent where the participants did not yet elaborate on certain topics in the life story interview, otherwise they were left out.

By combining these two methods, in-depth results were captured on how entrepreneurs build psychological resilience, and it strengthened the trustworthiness of the research via triangulation, which indicates that broader themes can be identified by using multiple data collection methods (Lincoln & Guba, 1985). Some entrepreneurs did not have the time to participate in a person-to-person interview. Therefore, we also conducted several e-mail interviews, which consisted of the same or a selection of the questions in the interview guide. The data that was collected via the e-mail interviews still had sufficient quality because they empower the participants to tell their story and give them the space to freely express their emotions and reflect on their experiences. Thereby, they also give the participant the opportunity to reread their answers, reflect on them and possibly edit them. (Roller & Lavrakas, 2015). Because of this, the e-mail interviews resulted in in-depth answers. Six interviews were conducted face-to-face, and four via e-mail.

3.3 Data Analysis

The interviews were audio-record with permission from the entrepreneurs, then transcribed, and analysed with thematic analysis. This method is often used in qualitative research and starts with familiarizing with the data, generating initial codes, searching for themes, reviewing and defining these themes, and lastly the final analysis and writing down of the findings. This method allows researchers to create meaning from data while maintaining transparency and rigor (Braun & Clarke, 2006).

For the coding process, the Gioia method was used. The Gioia method is a holistic, inductive approach of developing concepts that carefully balances the conflicting goals of generating new concepts inductively while preserving the rigorous standards expected by academia and society (Gioia et al., 2013). The Gioia method is well-suited for this research because it focused on how entrepreneurs themselves make sense of the situation, so that the personal experiences and contextual influences in building psychological resilience could be captured and linked to theory. Then in the data analysis, the first-order concepts were based on the sense-making of the entrepreneurs. Out of these, we interpreted

the words of the entrepreneurs according to theory and developed second-order themes. Lastly, the broader patterns and insights were formulated in the aggregate dimensions.

To maintain the transparency and rigor of the coding process, the Gioia method was accompanied with open and axial coding (Strauss & Corbin, 1998). Open coding was applied by examining the interview transcripts line by line and highlighting the sense-making of the entrepreneurs. This process was in line with the first-order concepts of the Gioia method, where the goal is to stay as close as possible to the own language of the entrepreneurs (Gioia et al., 2013). Thereby, axial coding was applied by exploring the similarities and relationships between the initial codes. This process helped in developing the second-order themes of the Gioia method, where the goal is to link the initial data to the theory (Gioia et al., 2013). Together these methods contributed to developing the aggregate dimensions that will be presented in the results section.

3.4 Research ethics

To make sure that research ethics were met, this research followed the APA's Ethics Code (American Psychological Association, 2017). Beneficence and nonmaleficence were reached through making sure that the data was collected in an ethical and respectful way, especially because the entrepreneurs were asked about stressful and emotional experiences in relation to the earthquakes. Fidelity and responsibility were reached through being transparent and accountable in the research process to build trust, this also helped the entrepreneur to talk about emotions, stress or failure. Integrity was reached through accurate reporting and honestly interpreting the data, so that the risk of subjectivity was addressed. Justice was reached through being fair to all diverse entrepreneurs operating in Groningen, so that different perspectives were taken into account. And lastly, respect for people's right and dignity was reached through receiving informed consent from participants and recognizing their worth, especially given the challenges they face because of the recurring earthquakes.

4. Results

This section will discuss the three aggregate dimensions that emerged from the first-order concepts and second-order themes in detail through the analysis of interview excerpts from the entrepreneurs as described in the methodology section. To start off, the aggregate dimension 'emotional damage support' will be discussed, this dimension shows how entrepreneurs received care and assistance to recover from the emotional damage and how this created the basis for building psychological resilience. Afterwards, 'personal adaptive capacity' will be addressed, this dimension highlights the personal process that entrepreneurs go through to build psychological resilience. Lastly, 'institutional engagement and support' will be presented, this dimension shows how different governmental institutions engage in supporting entrepreneurs in building psychological resilience.

All the earthquakes in Groningen have caused a lot of material, social, and emotional damage over the past decennia. Thomas stated how bad the situation was,

When the earthquake reached the city, we were in our new building. And then you have to imagine, the old building was two floors high, but the new building was four floors high with the drawing board at the top floor. Those people really came running down with the fear in their eyes, because the whole building was shaking.

Lisa also recognised these stressful times during the earthquakes,

You do not have the knowledge. Your house has to be taken down. Everything is subsiding. Parts of the floor are moving, which feels very unsafe. You want to be safe. But taking down your house with all the memories in it, is also not doable. Your son is sleeping in a room that is unsafe. But you do not have a choice.

These quotes show in detail what the direct consequences of the earthquakes were and how stressful this was for the entrepreneurs. Listening to these anecdotes, we almost felt as if we were there, and how scary this must have been if we would have been there. Scary for the entrepreneurs themselves, but also for the people that are important to them: employees and family. The assumption can be made that these consequences caused social damage for entrepreneurs. Steve confirmed this assumption,

People that are threatening each other's lives. A man from the Chinese restaurant with my neighbour fighting with pitchforks, the police had to be called. Therefore, on that side of the neighbours we have bad contact.

Peter also stated about communities falling apart,

That is something that is not so obvious, but there have also developed some big differences between neighbours. There are people that have said: 'listen, I do not want to talk with my neighbour anymore because I have gotten less than him'.

These quotes show the social damage due to the earthquakes. This damage is mostly expressed by communities that are often driven apart because of the disputes between people over compensation-money. Steve told about two people that had an argument over the amount of compensation-money they received from the government. Thereby, Peter also talked about neighbours that are not talking to each

other anymore because one of them received more compensation-money than the other. The amount of compensation money was based on a 'dateline' where people got compensated based on their postal code. And this has caused all sorts of 'cracks' in different communities, this form of social damage is described by some entrepreneurs as the largest kind of damage. Next to the social damage, all of the entrepreneurs also stated how bad the emotional damage was. Peter stated the following,

But the fact is that you just get angry about it again and if I wake up in the middle of the night because of my wife who is crying, and she does not want to wake me up because she knows that I get angry again. Yes, that is very sad.

Karen told us a traumatic story,

And you know, sometimes you hear people say: 'that burn-out is the most beautiful thing that happened to you'. And you know, that is true. Because if you go down so badly, I can tell you that, I live close to the train rails here and at my worst moment I really thought: 'guys, I cannot do this anymore'. I had not slept for three days, and I really stood there, no train came but I really thought that it would be over then.

These overwhelming stories show how negative the consequences of the earthquakes were for several entrepreneurs and how emotional their reactions sometimes were. Outsiders may think that earthquakes only cause material damage, but all of the entrepreneurs that we interviewed were like-minded that the emotional damage is often as large or much larger than the material damage.

4.1 Emotional damage support

The dimension of emotional damage support is built up via two second-order themes. 'Financial compensation for emotional damage' highlights what kinds of financial compensation entrepreneurs received for their emotional harm. 'Support through collective experiences' refers to the strength that emerges when the entrepreneurs form a mutual understanding of the situation.

Entrepreneurs use these methods to recover from the emotional damage and create a basis for building psychological resilience. There is some financial support available for entrepreneurs to recover from emotional damage. Steve stated the following about that,

You cannot put money on immaterial damage. But everyone was able to get a compensation of five-thousand euros per person. That was based on what they do at lawsuits as well. And yes, you can give me a hand on that. I initiated that.

Peter stated something similar,

And that is not something that is easy to cover. There is a compensation arrangement for emotional damage at the 'Instituut Mijnbouwschade'. But that is about amounts that are based on compensations that people give for emotional damage at lawsuits, for violent crimes or similar. And this is not a violent crime, they call it a disaster in slow motion. But it is a whole situation for people in slow motion if you lose for twenty years because of uncertainty and different circumstances. What is a fair compensation for that?

These quotes show how difficult it is to recover from emotional damage and to find a fair, money wise, compensation for it. Especially if an entrepreneur has suffered from the emotional damage for a longer period of time. And thereby, if the entrepreneur gets compensated, they never get their time back. To recover from emotional damage, sharing experiences with other affected entrepreneurs can also prove to be beneficial. Karen stated the following about this,

Then I go into that trajectory together, not alone. Online first, and then you also meet up every month with others affected. And in the end, you manifest together, and you go and do that with all kinds of tools.

Anna also recognised the importance of this,

And that is also a bit my role as a shop owner. You also have a social role you know, and I think that it is very important to give someone the space if someone is feeling really gutted or if someone enters the shop after a setback. Because you can always talk about that with someone.

These quotes show how important it is for entrepreneurs to talk about their feelings with other affected people and together find a way forward. Karen told about how she and a couple of her, also affected entrepreneurial friends went into this trajectory together. They would meet up online weekly and in person once a month and would then talk about how they were feeling and what others did to cope with those similar emotions. This helped her to move forward and by manifesting together also find a purpose for the future again. Anna told about her social role to speak and share experiences with other entrepreneurs when times are tough. She emphasized the importance of not over-asking but giving someone the room to cope with the negative feelings and be there when they need comforting.

In the light of support through collective experiences, Peter told an anecdote about the time when a large group of entrepreneurs from Groningen that suffered from the earthquakes travelled to Limburg to meet the people that suffered from damage from the floods,

It was also very sweet from the people in Valkenburg that invited us, they arranged everything. Everyone had a place to sleep, everyday eating and drinking somewhere, leading us around, the whole deal. They now come and bring us a visit back this summer. This has shaped a nice connection, and then of course you have to see ‘nice’ as something sad.

Together with the quotes of Karen and Anna, this quote highlights the importance of support through collective experiences. The entrepreneurs stated that connecting with others that coped with similar disasters led to a relief of their emotions and also a feeling of being recognised, knowing that they are not alone. And also for the future, Peter told us that a real relationship formed between the people from Groningen and Valkenburg and that their new friendship led to positive feelings among the entrepreneurs, giving them the strength to move forward and the reassurance that they are not alone.

4.2 Personal adaptive capacity

The dimension of personal adaptive capacity is built up via six second-order themes. ‘Accepting the situation’ is about the ability of the entrepreneurs to embrace the ongoing uncertainty and emotional damage of the earthquakes. ‘Reasons to stay motivated’ highlights the ways in which the entrepreneurs try to maintain a positive perspective for the future. ‘Intrinsic motivation to make something happen’ shows how entrepreneurs develop a deeper, internal feeling that it is necessary to take action. ‘Learning from experiences and setbacks’ refers to how entrepreneurs reflect on the negative consequences and use that to make better decisions in the future. ‘Mental training’ includes the efforts that entrepreneurs make to regulate stress and become emotionally stable again. ‘Thinking in solutions’ highlights a cognitive shift for the entrepreneurs, where they focus on what is still possible and act on that.

All these different forms of personal adaptive capacity were used by the entrepreneurs to build psychological resilience. Matt, who owns his own hairdressing salon, stated the following,

I focus on the things that I can control which is my work, and sometimes that is hard because it takes very long. I accept it and continue with the things I am good at. I listen and I think and try to make sense for myself and then I find a way to continue again.

Bryan stated something similar,

But it is what it is. Work, family. The daily shenanigans take up enough time for me. My profession brings me in contact with a lot of diverse personal situations in the earthquake area, where I can mostly offer a good contribution to a solution. That is motivating.

These quotes show that building psychological resilience starts with accepting the situation. So, despite all the emotional damage and ongoing uncertainty, the entrepreneurs still stated that to continue they need to accept the situation rather than resist it. They focus on things that they can control such as work, family and being helpful, and are thus able to deal with the situation in the best possible way, which results in a more stable emotional well-being and a first step in building psychological resilience.

Besides accepting the situation, the entrepreneurs told us that they also need possibilities to stay motivated for the future. Thomas explained us the following about that,

That is, I think quite something, and something you really realise. Yes, the communication. It is not even the case that we say as a company: ‘so guys, round table conversations, how have you experienced it?’ But just the fact that you have short lines with your people, and if someone is not feeling well. Yes, you can do something about it.

Steve also described communication as an important reason to stay motivated,

Communicating with each other, trying to talk everything together and pull each other through.

Out of these quotes, it can be concluded that communication is an important reason for staying motivated. Where accepting the situation was the starting point for building psychological resilience, the entrepreneurs all talked about the need for good communication to maintain a positive perspective on the future. Where Steve was short and clear about it, on the other hand Thomas explained that entrepreneurs should not necessarily force communication but rather have the right set of norms and values available that fosters people to communicate. And this worked for them, by having short, informal connections between employees, early signals of anxiety could be picked up and addressed.

This reason to stay motivated for the entrepreneurs often changes into a deeper, internal feeling to take action and make something happen, which often comes from a feeling of responsibility for their region or other entrepreneurs. Thomas confirmed this to us,

But yeah, in that regard it is a region that if you want to keep it lively, then you really have to put effort into that yourself. Otherwise, everyone and everything will just leave.

Lisa also stated how important it is to take action and make something happen herself,

That varies during time. To date, we have acutely been declared unsafe five times. That brings enormous amounts of stress. But the years around it, it is mostly the art of staying calm and taking action yourself for your own safety. We have been busy with the reinforcements since 2018 and have damage since 2011. First time acutely unsafe was in 2014. But they lost that dossier, so we had to take action to resolve it ourselves.

Concluding from the quotes of these entrepreneurs, to keep the earthquake-prone regions lively and to resolve problems regarding damage, they need to take action themselves since nobody is going to do it for them. Thomas tried to tell us that if entrepreneurs do not put effort into keeping the region lively, customers will not come back because they think that it is too dangerous or boring, which will result in more entrepreneurs leaving and thus a vicious cycle. Lisa showed us that if entrepreneurs want to recover from the damage, they need to make it happen themselves, because if even employees from the government start losing dossiers, not much will happen. Together they created a complete picture of how intrinsic motivation can be used to make something happen for themselves and for a community or region.

Nevertheless, intrinsic motivation to make something happen is often not enough to recover fully from the earthquakes. Because of many unexpected consequences, not everything will always go according to plan, therefore entrepreneurs need to be able to learn from experiences and setbacks. Zoe told us how her quality of life at home decreased through all the reinforcements,

I really had to get used to the house after returning home. For fifteen years we had been rebuilding our house, and we put a lot of love and attention in beautiful details. But everything has been demolished with the reinforcements and inferior or cheaper materials have been placed back.

She stated how she learned from this setback,

We have not done any reports after the reinforcements, we are tired, still. We take the financial compensation if we can, but I do not want anyone on my property anymore if it is not needed. We handle it ourselves, basically with self-reliance. What happened, will not happen to us again.

Thomas also explained how they learned from previous experiences,

But that is also what the time has taught us. You can make plans for ten years plus, but that is more like a guideline than something else. But five years is really something that you use, because you write-off the most investments in five years.

These quotes show that learning from previous experiences and setbacks is not only a form of emotionally processing, but also a strategic adjustment to the new realities. Zoe stated how trusting others let her down, and how this helped her to become more self-reliant and persistent in knowing what she wants and realising this. Thomas told us about how within his company their mindset changed into a more flexible one, where long-term planning is less necessary. Learning from these previous experiences and setbacks helps the entrepreneurs to deal with the ongoing uncertainty and turn them into new opportunities.

In conclusion, learning from experiences and setbacks helps entrepreneurs in building psychological resilience. But to recover fully from the consequences of earthquakes and start working towards solutions, mental training can also prove to be beneficial. Steve stated this,

I ended up at the psychologist, I came there via the general practitioner, I said: 'I cannot take this anymore'. And there you can talk it out. If you have a good psychologist that can really empathize in you, then you can do something with that. It was all too much, and if you can then create order in the chaos, you can do that there.

Karen also talked about a form of mental training,

I've done several trajectory's. They call that body work or coaching work. Not necessarily at a psychologist, but purely to learn to trust your intuition again, to recognise your triggers again and also to learn why? Why do you always want more?

These quotes highlight what different forms and advantages mental training has. Where Steve talked about psychological support from a psychologist to talk about all the negative feelings and experiences, Karen talked more about mental, self-awareness techniques to get to know herself better again and trust this self. Nevertheless, they both stated the advantages of mental training: empathy, order in the chaos, and trust. Therefore, it can be concluded that entrepreneurs use mental training as a way to effectively manage their emotions and maintain their motivation.

The last step of building psychological resilience is perspective for the future, all of the entrepreneurs told us about this. They need to move on and continue, and they do that by thinking in solutions. Thomas told about this mindset,

We really saw it as an opportunity like we are going to make something from it, which we also did. Because we could not stay in the city of Groningen in 2021, we bought a plot. We started building, and in the end of 2022 we moved there. And if you build, then you build earthquake proof first of all. That is a must.

Peter was also clear about this,

Being solution-oriented is very important. The handover of the venture would happen, and this would become a full living house. Which meant that again we had to make some choices differently, resulting in for instance that seventy thousand. So, those kinds of things. There is not a problem where there is no solution for, that is always the case within our company.

These quotes highlight the importance of thinking in solutions and how this helps entrepreneurs in maintaining a proactive and positive mindset for the future, where they do not focus on the damage, but on what can be rebuilt or improved. Thomas showed this in the form of a situation where they had damage to their building in the city of Groningen, which was too small anyway, and saw the solution of building a new, earthquake-proof building in a more rural area. Peter told about the situation where his companion would move to Peter's house, but that did not happen because the companion's wife was too scared to live in the earthquake-prone area. Peter saw the solution in renovating his roof for seventy-thousand euros, so he could keep living there himself. The entrepreneurs actively engaged with the challenges, and instead of seeing them as failures, they see solutions and opportunities for sustaining and growing their ventures.

4.3 Institutional engagement and support

The dimension of institutional engagement and support is built up via two second-order themes. 'Empowering role of governmental institutions' refers to the role of the government to empower entrepreneurs through support and access to opportunities. 'Rebuilding government-entrepreneur relationship' is about the effort of the governmental institutions to improve the relationship with the entrepreneurs in order to hear and therefore support them better.

These forms of institutional engagement and support create a more stable environment for the entrepreneurs, which helps them in building psychological resilience. Lisa stated the following about this,

We have now hired a team of contractors, support staff, and constructors to pull the reinforcements through. The agro team of the province is also very nice for this, they help with all the internal contacts. We now pull out what we deserve, but we cannot do that ourselves.

Thomas also told us about support from the government,

Then we were approached by the municipality of Midden-Groningen, which is actually the industrial heart of Groningen, that is really the construction-industry. And we actually got there by accident via a proactive policy of the municipality of Midden-Groningen. They were really looking for what kinds of company fit in this area, we had a lot of conversations, and they really helped us.

These quotes highlight the importance of governmental institutions for entrepreneurs. The entrepreneurs told us how a proactive government played an active role in offering support and opening up new opportunities. Lisa told about how she sometimes feels alone in trying to sustain her dairy farm, and how hard it is to find the right support. She stated that she spent a lot of energy on getting in contact with the right governmental institutions, such as the agro team of the province of Groningen, that really helped her. Thomas highlighted how the support of the government can open up new opportunities. When Thomas and his venture had to leave the city of Groningen because of damage and spatial issues, the proactive policy of the municipality of Midden-Groningen attracted Thomas to move there. This gave a large boost to his venture and the area. This shows that these governmental institutions provide the entrepreneurs with resources, support, and access to new networks, which helps them to stay motivated in these extreme environments.

That said, the connection between the government and entrepreneurs has not always been optimal. Zoe described how this feels,

The trust in the government and institutions is just zero-point-zero. I always say that the earthquakes destroy our houses, but the system that you then come in destroys the human. Especially the uncertainty, being strung along, again and again making new calculations, photo's, recordings. Promises that are not met.

This quote shows how low the trust of the entrepreneurs in the governmental institutions could be during the time of the earthquakes. Building psychological resilience also includes rebuilding the government-entrepreneur relationship. Peter told us about this,

At the national government they are really busy with looking if the new approach that they have been using here the last two and a half years also leads to an improvement of the relationship with the government. That was really bad, but now the national government has reached a position to become popular.

Steve also told an anecdote about the relationship that was rebuilt,

When I spoke to X (*politician on earthquake dossier*), he just came into the shop. And then you know, we were just talking in my shop for quarter of an hour about his son who plays guitar. That has been a really hopeful conversation, because we have also known that differently.

These quotes show how the relationship between the entrepreneurs in Groningen and the different governmental institutions, which has not been great for a long time, is being rebuilt and what benefits this brings. Peter told about the effort of the national government to improve that relationship and also to check if that relationship really improved in the end. Steve confirmed this statement by telling a real-life story about a politician closely related to the earthquakes, who just walked into his shop to have a nice conversation. This shows that the government is trying to rebuild the relationship with the entrepreneurs by talking to them in real-life to get to know how they feel and what is happening. By doing that, the government can create a better picture of what kind of resources, support, and networks the entrepreneurs need to sustain their ventures.

5. Discussion

This research has explored how entrepreneurs in Groningen build psychological resilience in response to the recurring earthquakes. In doing so, this research contributed to identifying the factors that help entrepreneurs to build psychological resilience in this context and thereby provide entrepreneurs with the understanding of how to navigate long-term uncertainty and unexpected challenges.

A first discussion point is that psychological resilience is not built alone. Because rather than seeing this process as an internal and mental strength, the entrepreneurs in this research described psychological resilience as something that is built and shaped through interaction with others. Entrepreneurs shared experiences, checked in on each other, offered practical help, and even acted collectively when facing the unexpected challenges of the recurring earthquakes. These forms of social support help the entrepreneurs with building psychological resilience by keeping them motivated and making them able to manage stress in extreme environments (Ahmed et al., 2022). These findings link to the ‘entrepreneurial ecosystem’ literature of Korber and McNaughton (2018). They state that entrepreneurial ecosystems play a role in shaping psychological resilience. Access to these ecosystems such as mentors, financial support, and business networks, improve the ability of an entrepreneur to cope with unexpected challenges. Thereby, the context of the recurring earthquakes in Groningen adds something extra to this discussion point. In extreme environments with long-term uncertainty, where governmental institutions can sometimes be slow or fail, the importance of informal networks based on

trust and shared knowledge increases (Baker & Welter, 2020). This challenges the more traditional view that psychological resilience is a stable trait that individuals possess (e.g. Bullough et al., 2014) and makes clear that entrepreneurs do not just rely on their own adaptive capacities but also make use of the interaction with others.

A second discussion point is the significant emotional toll that trying to sustain a venture in an extreme environment takes. Many entrepreneurs in this research described feelings of anger, sadness, and loneliness while managing the stress of the earthquakes, but felt they just had to keep going. While existing literature often frames psychological resilience in a positive way: as the ability of an individual to adapt, recover, and thrive in the face of challenges (Williams et al., 2017), it does not always acknowledge the emotional costs that come with this. Several entrepreneurs in this research stated that they kept going too long with chasing all the financial contributions and ways of support for rebuilding the damage they endured, without actually setting boundaries, asking for help, or talking about it. They also stated that they did this to appear strong and in control in front of their families or clients. This is in line with the article of Feng et al. (2025), who state that too much psychological resilience can lead to entrepreneurs having the feeling that they must always stay positive about their ventures, even when things are going not so well. This behaviour increases the risk of them not addressing their real emotions, which can lead to the failure of ventures (Feng et al., 2025). To navigate these risks and make sure that psychological resilience is built to help, it needs to be made clear that psychological resilience is not just about staying positive and motivated, but also about showing the emotional costs such as anger and sadness. Entrepreneurs should show their vulnerability and talk about their negative feelings that appear when building psychological resilience.

A third discussion point is how the support of governmental institutions has a positive and a negative side. On one hand, several entrepreneurs described how proactive policies and personal contacts with the government helped them to access the right resources and thereby build opportunities for the future. But on the other hand, they sometimes also described the difficulty of dealing with a slow, inconsistent government that does not keep up its promises. This is in line with the article of Van der Voort & Vanclay (2015), who state that a perceived lack of action, transparency, and fairness from responsible institutions lead to significant psychological and emotional stress. The findings indicate that access to support from governmental institutions is not equal for all entrepreneurs. The entrepreneurs with the right networks or communication skills could use these to get useful support, but others spent months or sometimes even years to reach the right people and then just gave up. One of the entrepreneurs, Lisa, captured this perfectly. She told about how her property got declared unsafe and how they lost this dossier at the government, and how she tried for years to reach the right people for the reinforcements, which did not work, so she realized that she had to take action herself. The findings also show that the efforts of the governmental institutions to rebuild the relationship between them and the entrepreneurs have made a step in the right direction, but this step was also made because the entrepreneurs got something out of it. This makes clear that rebuilding the relationship between

governmental institutions with entrepreneurs should not only be focused on rebuilding trust, but also be followed by real improvements in resources, support, and access to networks that entrepreneurs need to sustain and grow their ventures.

6. Conclusion

This section provides the contributions, implications, limitations, and directions for future research of this research and an answer to the research question: *'How do entrepreneurs in Groningen build psychological resilience in response to recurring earthquakes?'*

The results showed that the entrepreneurs build psychological resilience through three interrelated aggregate dimensions: emotional damage support, personal adaptive capacity, and institutional engagement and support. The first dimension, emotional damage support, first of all showed how hard it is to create a fair financial compensation for emotional damage. And how important it therefore is for the entrepreneurs to be able to express their emotions and feel recognised in what they are going through. Sharing experiences with other affected entrepreneurs helped them to relieve their emotions and also know that they are not alone, which makes it easier to stay motivated and engaged in their ventures.

The second dimension, personal adaptive capacity, reflected how the entrepreneurs found ways to adjust their ventures and move forward in the ongoing uncertainty caused by the recurring earthquakes. Many of the entrepreneurs developed a mindset that began with acceptance of the situation, but to stay motivated to keep their regions lively and resolve the damage issues, the entrepreneurs emphasized the need for communication within their ventures and with other entrepreneurs, and an intrinsic motivation to make this happen. They focused on what they can control, which is training and developing their mental skills and well-being, and used previous experiences and setbacks as learning moments to stay proactive in the future. They used this proactivity to stop seeing things as failures, but instead thinking in solutions, which helped to sustain and grow their ventures.

The third dimension, institutional engagement and support, showed that especially in the beginning the entrepreneurs did not feel heard by the governmental institutions or experienced a gap between their needs and the support from the government. Many struggled with the lack of communication and promises that were not met, on the other hand others received support via the local municipality or professionals of the province. The efforts of the governmental institutions to improve the relationship with the entrepreneurs benefited the entrepreneurs in the form of better resources, support, and access to networks, which they could use in building psychological resilience to sustain and grow their ventures.

In conclusion, the results show that psychological resilience is not something static or individual, but an interactive process that is built through emotional connection, adaptive thinking and behaviour, and support from the outside world.

6.1 Theoretical contributions

This research contributes to the literature by creating a better understanding of how entrepreneurs build psychological resilience in the context of long-term, man-made crises.

This research contributes to the literature that the ecosystems in which the entrepreneurs operate can either support or limit the process in which psychological resilience is built. Building psychological resilience in extreme environments is not only shaped by personal factors, but also by the environment. Many entrepreneurs in Groningen struggled with governmental institutions in the form of unclear communication and promises that were not met. On the other hand, small moments of recognition and local support played a positive role. Thereby, to make sure that governmental institutions support the process in which psychological resilience is built, they should not just focus on rebuilding trust, but also on delivering on their words in the form of real, visible improvements.

Going further on the contribution to the ecosystem literature, this research highlights the importance of expressing the emotional costs of sustaining a venture in extreme environments and feeling recognised by others. These forms of emotional damage support help the entrepreneurs to deal with stress and stay motivated for the future. This extends the literature on psychological resilience in extreme environments by showing that entrepreneurs should show their vulnerability and talk about their negative feelings that appear when building psychological resilience. With these findings, this research adds to the growing literature on the emotional side of entrepreneurship, which is still underexplored and therefore developing.

Lastly, this research also contributes to the literature by showing how entrepreneurs use their personal adaptive capacity to navigate and succeed in extreme environments. In light of this, psychological resilience includes accepting the situation, focusing on what they can control, and being solution oriented. These strategies help the entrepreneurs to stay proactive and maintain a positive perspective on the future, even in negative situations. This extends the literature on psychological resilience in extreme environments by showing that proactive and adaptive behaviour is a crucial part in this process. So, rather than waiting for the crisis to end and letting the reinforcements and financial compensations overcome them, the entrepreneurs build psychological resilience through continuously adjusting their ventures and proactively looking for opportunities.

6.2 Practical implications

This research has several practical implications for entrepreneurs, policymakers, and organisations that are working to support the economic and social recovery in regions that are affected by long-term, man-

made crises, such as the recurring earthquakes in Groningen. By identifying how psychological resilience is built in these extreme environments, the results can be used to develop initiatives that match better with the needs of the entrepreneurs that work in those conditions, so that they can be supported in a better way.

The results highlight how important emotional support and recognition is. This indicates that spaces need to be created where entrepreneurs can share their experiences, connect with others and also learn from each other, and that this can be just as important as financial support. Policymakers and support organisations can use these insights to develop initiatives that strengthen the emotional resilience of entrepreneurs and reduce feelings of stress and mental fatigue.

Thereby, this research highlights the need of initiatives that help entrepreneurs to strengthen their personal adaptive capacity. This could include training programs focused on accepting, communication, learning from setbacks, or solution-oriented thinking, but also providing the opportunity to entrepreneurs to talk with psychologists to engage in mental training and mental, self-awareness techniques. These efforts could reduce the risk of burnout and anxiety, which can occur if entrepreneurs are exposed to economic instability and physical risk for a too long period (Fletcher & Sarkar, 2013).

Lastly, the results show that reliable institutional engagement and support plays an important role for entrepreneurs in the process of building psychological resilience. To make a significant difference, governmental institutions should communicate well, build trust between them and the entrepreneurs, and act on their words. All of the above-mentioned implications can also be useful in other regions that face long-term, man-made crises (Doern et al., 2019), such as the nitrogen-crisis for the agriculture and construction in the Netherlands. In light of this, similar support initiatives can be implemented to help entrepreneurs to stay motivated, proactive, and future-oriented.

6.3 Critical reflection on the limitations of the research

While this research offers valuable insights into how entrepreneurs in Groningen build psychological resilience, several limitations must be addressed. Shortly stating the methodological limitations of this research includes that qualitative data analysis relies on the interpretation of the researcher, so there is a risk of subjectivity or bias while developing the themes (Braun & Clarke, 2006). This was addressed through using triangulation by combining the life story interview method with a semi-structured interview, which allowed for a more complete understanding of the researched phenomenon. Thereby, clearly documenting the coding process also made visible how results were developed from raw data (Lincoln & Guba, 1985). Lastly, because entrepreneurs were asked to talk about their past experiences, another limitation is the risk of retrospective bias. This sort of bias indicates that memories can be influenced by current emotions or be incomplete because entrepreneurs do not remember them well anymore.

Another limitation of this research is that all interviews were conducted with entrepreneurs who are still running their businesses. This implies that the findings reflect the experiences of the entrepreneurs who have managed to be psychologically resilient and adapt their ventures over time. This also implies that the experiences of the entrepreneurs who may have stopped with their ventures due to the long-term, negative consequences of the earthquakes are missing. If these experiences would have been included, this could have created a broader view on the boundaries of psychological resilience and the factors that caused entrepreneurs to make the decision to quit, instead of continuing.

Because it was stated in the literature that building psychological resilience can also have negative effects, entrepreneurs were also asked to reflect on this in the interviews. Several entrepreneurs showed signs of overaccommodation, overworking, or emotional suppression. For instance, some entrepreneurs stated that they kept going too long with chasing all the financial contributions and ways of support for rebuilding the damage they endured, without actually setting boundaries, asking for help, or talking about it. These are illustrations of entrepreneurs overaccommodating in building psychological resilience, which can result, as they described, in chronic stress, burnout, and physical or mental health problems. One of the entrepreneurs mentioned that it was difficult to see his children grow up in all this uncertainty, and another stated that he got heart-problems from going on too long, which shows the physical and emotional toll that building psychological resilience can take.

Lastly, several entrepreneurs also mentioned the so-called ‘Groningse nuchterheid’ as a cause of physical or mental health problems. The ‘Groningse’ character is described by the entrepreneurs as strong, quiet, and enduring, and could therefore also have led entrepreneurs to suppress negative emotions or play their mental struggles down. This cultural characteristic, while often seen as strength, can also lead to patterns of avoiding emotions.

6.4 Directions for future research

The above-described limitations lead to several directions for future research. Future research could explore how psychological resilience develops in long-term, man-made crises, while also taking into the experiences of entrepreneurs that stopped with their venture. Thereby, the findings of this research show that psychological resilience is not always positive, as it can lead to overaccommodation, overworking or suppressing of emotions. More research is needed to further understand when psychological resilience changes from helping entrepreneurs to harming them. Future research could also focus on how cultural characteristics, such as the ‘Groningse nuchterheid’, influence the way in which entrepreneurs deal with ongoing uncertainty and unexpected challenges.

Lastly, follow-up research could use a longitudinal design to investigate better how psychological resilience is built over time and how entrepreneurs deal with setbacks in the long run. This longitudinal research could include perspectives from professionals, governmental institutions, and

support organisations to create a broader perspective of the ecosystem around the entrepreneur, which helps entrepreneurs in long-term, man-made crises to get better support.

References

- Ahmed, A. E., Ucbasaran, D., Cacciotti, G., & Williams, T. A. (2022). Integrating Psychological Resilience, Stress, and Coping in Entrepreneurship: A Critical Review and Research Agenda. *Entrepreneurship Theory and Practice*, 46(3), 497-538. <https://doi.org/10.1177/10422587211046542>
- Aldrich, D. P. (2018). A research agenda for disaster entrepreneurship. *The Review of Austrian Economics*, 31(4), 457–465. <https://doi.org/10.1007/s11138-017-0393-0>
- American Psychological Association. (2017). *Ethical principles of psychologists and code of conduct (including 2010 and 2016 amendments)*. Retrieved from <https://www.apa.org/ethics/code/ethics-code-2017.pdf>
- Audretsch, D. B., & Thurik, R. (2001). Linking entrepreneurship to growth. *OECD Science, Technology and Industry Working Papers*, 2001/02. <https://doi.org/10.1787/736170038056>
- Ayala, J., & Manzano, G. (2014). The Resilience of the Entrepreneur. Influence on the Success of the Business. A Longitudinal Analysis. *Journal of Economic Psychology*, 42(3). <https://doi.org/10.1016/j.joep.2014.02.004>
- Baker, T., & Welter, F. (2020). *Contextualizing entrepreneurship theory*. Routledge.
- Bayram, A. S. (2017, January). *Entrepreneurship in conflict zones: Insights on the startups in Syria*. Retrieved from <https://ahmadsb.com/book/entrepreneurship-in-conflict-zones/>
- Boudreaux, C. J., Jha, A., & Escaleras, M. (2022). Natural disasters, entrepreneurship activity, and the moderating role of country governance. *Small Business Economics*, 60(4), 1483–1508. <https://doi.org/10.1007/s11187-022-00657-y>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. <https://doi.org/10.1191/1478088706qp063oa>
- Bryman, A. (2015). *Social research methods* (5th ed.). Oxford University Press.
- Bullough, A., Renko, M., & Myatt, T. (2014). Danger zone entrepreneurs: The importance of resilience and self-efficacy for entrepreneurial intentions. *Entrepreneurship: Theory and Practice*, 38(3), 473-499. <https://doi.org/10.1111/etap.12006>
- Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). SAGE Publications.
- Doern, R. (2016). Entrepreneurship and crisis management: The experiences of small

- businesses during the London 2011 riots. *International Small Business Journal: Researching Entrepreneurship*, 34(3), 276-302.
<https://doi.org/10.1177/0266242614553863>
- Doern, R., Williams, N., & Vorley, T. (2018). Special issue on entrepreneurship and crises: Business as usual? An introduction and review of the literature. *Entrepreneurship & Regional Development*, 31(5–6), 400–412. <https://doi.org/10.1080/08985626.2018.1541590>
- Dost, B., Ruigrok, E., & Spetzler, J. (2017). Development of seismicity and probabilistic seismic-hazard assessment for the Groningen gas field. *Netherlands Journal of Geosciences*, 96(5), s235–s245. <https://doi.org/10.1017/njg.2017.20>
- Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, 5(1), 1-4.
<https://doi.org/10.11648/j.ajtas.20160501.11>
- Feng, X., Long, T., & Han, P. (2025). How and When Team Mindfulness Enables Us to Navigate Adversity: Survey and Field Experimental Evidence. *J Bus Psychol*.
<https://doi.org/10.1007/s10869-024-10004-5>
- Fletcher, D., & Sarkar, M. (2013). Psychological resilience: A review and critique of definitions, concepts, and theory. *European Psychologist*, 18(1), 12–23.
<https://doi.org/10.1027/1016-9040/a000124>
- Galbraith, C. S., & Stiles, C. H. (2006). Disasters and Entrepreneurship: A Short review. *International Research in the Business Disciplines*, 147–166. [https://doi.org/10.1016/s1074-7877\(06\)05008-2](https://doi.org/10.1016/s1074-7877(06)05008-2)
- Haar, J. (2022, December 5). *The challenges to entrepreneurship in post-conflict environments*. The National Interest. Retrieved from
<https://nationalinterest.org/feature/challenges-entrepreneurship-post-conflict-environments-205951/>
- Hartmann, S., Backmann, J., Newman, A., Brykman, K. M., & Pidduck, R. J. (2022). Psychological resilience of entrepreneurs: A review and agenda for future research. *Journal of Small Business Management*, 60(5), 1041–1079.
<https://doi.org/10.1080/00472778.2021.2024216>
- Hayward, M. L. A., Shepherd, D. A., & Griffin, D. (2006). A hubris theory of entrepreneurship. *Management Science*, 52(2), 160-172.
<https://doi.org/10.1287/mnsc.1050.0483>
- Holland, D. V., & Shepherd, D. A. (2013). Deciding to persist: Adversity, values, and entrepreneurs' decision policies. *Entrepreneurship Theory and Practice*, 37(2), 331-358.
<https://doi.org/10.1111/j.1540-6520.2011.00468.>

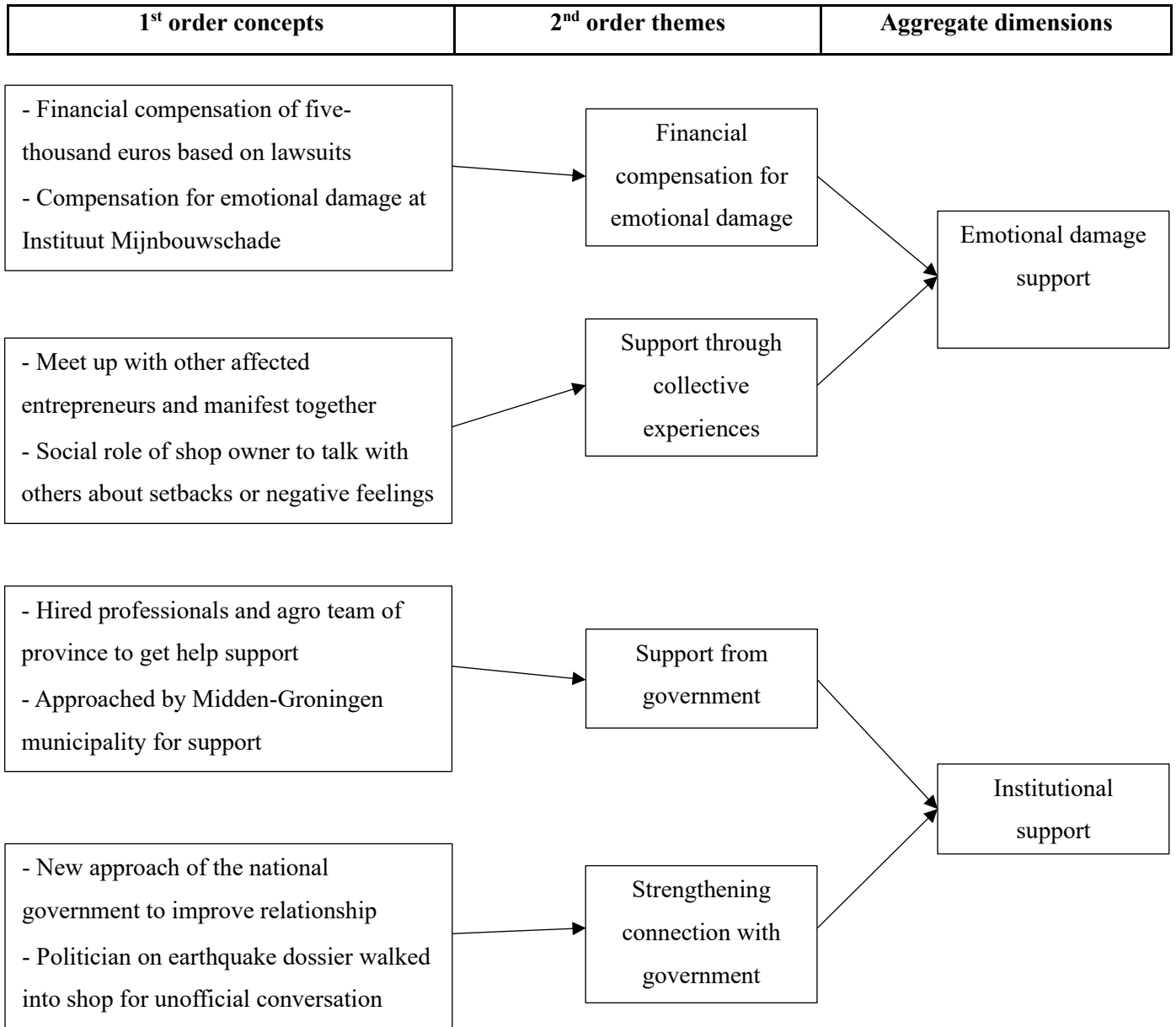
- Korber, S., & McNaughton, R. B. (2018). Resilience and entrepreneurship: a systematic literature review. *International Journal of Entrepreneurial Behavior & Research*, 24(7), 1129-1154. <https://doi.org/10.1108/IJEER-10-2016-0356>
- Koster, S., & van Ommeren, J. (2015). A shaky business: Natural gas extraction, earthquakes, and house prices. *Energy Policy*, 88, 495–503. <https://doi.org/10.1016/j.euroecorev.2015.08.011>
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. SAGE Publications.
- Linnenluecke, M. K. (2017). Resilience in business and management research: A review of influential publications and a research agenda. *International Journal of Management Reviews*, 19(1), 4–30. <https://doi.org/10.1111/ijmr.12076>
- Luthar, S. S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development*, 71(3), 543–562. <https://doi.org/10.1111/1467-8624.00164>
- McAdams, D. P. (2001). The psychology of life stories. *Review of General Psychology*, 5(2), 100–122. <https://doi.org/10.1037/1089-2680.5.2.100>
- Mulder, M., & Perey, R. (2018). Economic implications of gas extraction and induced earthquakes in the Netherlands. *Energy Economics*, 72, 93–103. <https://research.rug.nl/en/publications/gas-production-and-earthquakes-in-groningen-reflection-on-economi>
- Obschonka, M., Hahn, E., & Bajwa, N. ul H. (2018). Personal agency in newly arrived refugees: The role of personality, entrepreneurial cognitions and intentions, and career adaptability. *Journal of Vocational Behavior*, 105, 173-184. <https://doi.org/10.1016/j.jvb.2018.01.003>
- Postmes, T., Busscher, N., Hupkes, S., De Julio Pardo, A., & Vojvodic, E. (2024). The Groningen Gas Field: The Role of Science in a Slow-Onset Disaster. In C. Bieder, G. Grote, & J. Weyer (Eds.), *Climate Change and Safety in High-Risk Industries* (1 ed., pp. 63-75). (SpringerBriefs in Applied Sciences and Technology). Springer. https://doi.org/10.1007/978-3-031-56995-1_7
- Queirós, A., Faria, D., & Almeida, F. (2017). Strengths and limitations of qualitative and quantitative research methods. *European Journal of Education Studies*, 3(9), 369-387. <https://doi.org/10.5281/zenodo.887089>
- Rahman, M. S. (2017). The advantages and disadvantages of using qualitative and quantitative approaches and methods in language "testing and assessment" research: A literature review. *Journal of Education and Learning*, 6(1), 102–112. <https://doi.org/10.5539/jel.v6n1p102>

- Roller, M. R., & Lavrakas, P. J. (2015). *Applied qualitative research design: A total quality framework approach*. Guilford Press.
- Rijksoverheid. (2025, February 19). *Dashboard Groningen > Aardbevingen Groningen*.
Rijksoverheid. Retrieved from <https://dashboardgroningen.nl/aardbevingen-groningen>
- Shepherd, D. A., & Patzelt, H. (2017). Researching at the intersection of innovation, sustainability, and entrepreneurship. *Academy of Management Journal*, 60(3), 896-924.
https://doi.org/10.1007/978-3-319-48701-4_4
- Shepherd, D. A., Saade, F. P., & Wincent, J. (2020). How to circumvent adversity? Refugee-entrepreneurs' resilience in the face of substantial and persistent adversity. *Journal of Business Venturing*, 35(4), 105940. <https://doi.org/10.1016/j.jbusvent.2019.06.001>
- Shepherd, D. A., & Williams, T. A. (2020). Entrepreneurship responding to adversity: Equilibrating adverse events and disequilibrating persistent adversity. *Organization Theory*, 1(4). <https://doi.org/10.1177/2631787720967678>
- Strauss, A. L., & Corbin, J. M. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (2nd ed.). Sage Publications.
- Sutton, J., & Austin, Z. (2015). Qualitative research: Data collection, analysis, and management. *The Canadian Journal of Hospital Pharmacy*, 68(3), 226-231.
<https://doi.org/10.4212/cjhp.v68i3.1456>
- Trip, J. J., & Romein, A. (2019). *Northeast Groningen. Confronting the Impact of Induced Earthquakes, Netherlands.* (RELOCAL Case Study N° 19/33). Joensuu: University of Eastern Finland. https://relocal.eu/wp-content/uploads/2019/06/19_NL_RELOCAL-Case-Study-Report-Northeast-Groningen.pdf
- Van der Voort, N., & Vanclay, F. (2015). Social impacts of earthquakes caused by gas extraction in the Netherlands. *Environmental Impact Assessment Review*, 50, 1–15.
<https://doi.org/10.1016/j.eiar.2014.08.008>
- Van Thienen-Visser, K., & Breunese, J. N. (2015). Induced seismicity of the Groningen gas field: History and recent developments. *The Leading Edge*, 34(6), 664-671.
<https://doi.org/10.1190/tle34060664.1>
- Williams, T. A., Gruber, D. A., Sutcliffe, K. M., Shepherd, D. A., & Zhao, E. Y. (2017). Organizational response to adversity: Fusing crisis management and resilience research streams. *Academy of Management Annals*, 11(2), 733–769.
<https://doi.org/10.5465/annals.2015.0134>
- World Bank. (2021, May 20). *Resilience, Entrepreneurship and Livelihood Improvement Project*. World Bank Group. Retrieved from <https://projects.worldbank.org/en/projects-operations/project-detail/P175820>

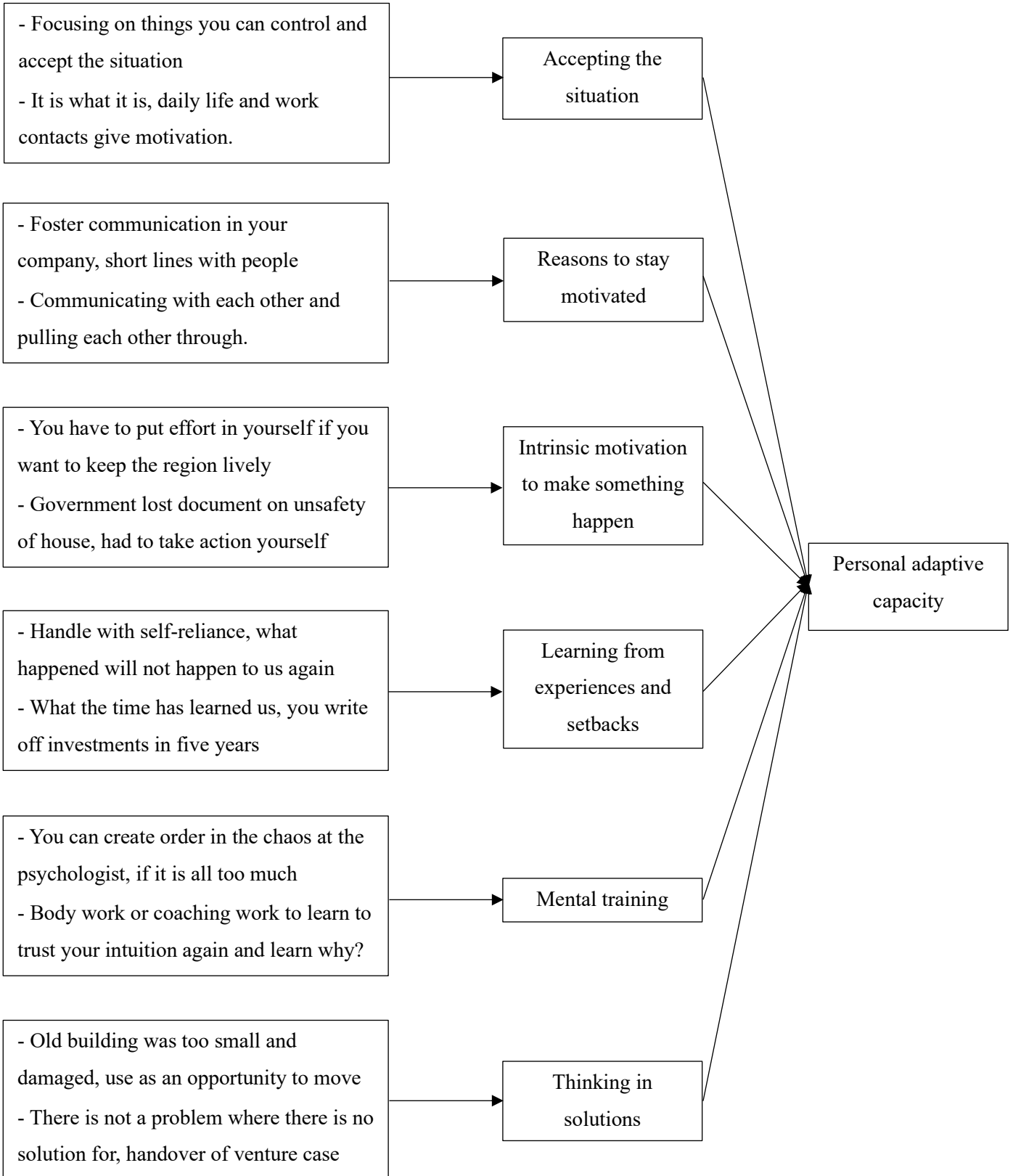
Zahra, S. A., & Wright, M. (2016). Understanding the social role of entrepreneurship. *Journal of Management Studies*, 53(4), 610-629. <https://doi.org/10.1111/joms.12149>

Appendix

Gioia structure



See next page



Interview guide

Introductie

Ik ben Jannes Beuker, 22 jaar, en ik ben masterstudent Innovation & Entrepreneurship aan de Radboud Universiteit te Nijmegen. Voor mijn masterthesis doe ik onderzoek naar ondernemers in crisisgebieden. Ik vind de psychologische karakteristieken achter bepaalde keuzes van mensen heel interessant en daarom bestudeer ik de specifieke richting hoe ondernemers psychologische veerkracht opbouwen, terwijl ze te maken hebben met de terugkerende aardbevingen in Groningen. Mijn doel van dit interview is dus ook om inzicht te krijgen in hoe ondernemers in Groningen psychologische veerkracht opbouwen en inzetten binnen de context van terugkerende aardbevingen.

Om uw anonimiteit en vertrouwelijkheid te garanderen, doe ik een tweetal zaken. Allereerst zal u nooit met naam en toenaam genoemd worden in het onderzoek, en daarnaast zal de verkregen informatie uit dit interview opgeslagen worden in RIS for students. Dit is een intern, gesloten archief, ontwikkeld door de Radboud Universiteit, waar alle verkregen data van bachelor en master studenten wordt opgeslagen. De verkregen data wordt niet openlijk gepubliceerd for hergebruik, maar intern gearchiveerd om zo de wetenschappelijke integriteit te waarborgen. Ten slotte, wordt de data na 8 jaar automatisch verwijderd, en in die tijd kan deze alleen bekeken worden door de betrokken studenten en supervisors en met hoge uitzondering ook een klein support- en IT-team. Is dit duidelijk voor u? En geeft u daarbij ook toestemming dat dit interview wordt opgenomen? Zodat ik de data verder kan gebruiken om te transcriberen, coderen, analyseren en vervolgens te verwerken.

Dit interview zal uit twee delen bestaan en tussen één uur en anderhalf uur duren. In het eerste deel hanteer ik de life story methode, waarin ik u ga vragen om uw verhaal te vertellen aan de hand van vijf fases. Het doel hiervan is om uw loopbaan als ondernemer te verkennen en zo inzicht te krijgen in cruciale gebeurtenissen en betekenisgeving in die loopbaan. In het tweede deel zal ik een semigestructureerd interview afnemen, waarin we wat meer een open gesprek hebben, ik u wat open vragen kan stellen, zodat u uw ervaringen grondig kan toelichten en er voor mij ook nog ruimte is om eventuele vervolgvragen te stellen.

Mocht u tussendoor vragen hebben, ergens op terug willen komen, of iets verder willen toelichten, laat het dan vooral niet na om mij te onderbreken of deze vragen te stellen. Na het interview zal er uiteraard ook nog ruimte zijn voor vragen.

Life story interview

1. Begin van ondernemerschap – *‘Hoe bent u begonnen als ondernemer en heeft u uw bedrijf verder uitgebouwd?’*
2. Periode voor de aardbevingen – *‘Welke cruciale gebeurtenissen hebben invloed gehad op de ontwikkeling van uw onderneming?’ -> ‘Welke hoogte- en dieptepunten heeft u hierbij meegemaakt?’*

3. Omgaan met de aardbevingen en de gevolgen daarvan – *‘Hoe heeft u periode van aardbevingen beleefd als ondernemer?’ -> ‘Welke momenten waren hierin het meest uitdagend voor u en uw onderneming?’*
4. Huidige situatie en visie voor de toekomst – *‘Hoe gaat het nu met u en uw bedrijf?’ -> ‘Wat zijn uw verwachtingen en hoop voor de toekomst?’*
5. Moraal van het verhaal – *‘Wat heeft u hiervan geleerd of wat wil u meegeven aan eventuele andere ondernemers in dezelfde situatie?’*

Semigestructureerde interview

1. Emotionele veerkracht (omgaan met stress en motivatie)
 - ‘Hoe ervaart u stress of andere emotionele belasting door de aardbevingen?’*
 - ‘Hoe reguleert u uw emoties in lange periodes van onzekerheid door de aardbevingen?’*
 - ‘Hoe blijft u kalm onder de druk die aardbevingen met zich meebrengen?’ -> ‘Heeft u hier bepaalde routines of mechanismen voor?’*
 - ‘Wat helpt u om gemotiveerd te blijven in lange periodes van onzekerheid?’*
 - ‘Kunt u een voorbeeld noemen van een moment dat u emotioneel sterk/gemotiveerd moest blijven, en hoe deed u dat?’*
2. Cognitieve veerkracht (leren van tegenslagen en strategisch denken)
 - ‘Hoe gaat u om met tegenslagen, door de aardbeving, binnen uw onderneming?’*
 - ‘Kunt u een voorbeeld noemen van een moment dat er iets misging, maar u er van leerde en het omdraaide in een mogelijkheid voor succes?’*
 - ‘Hoe denkt u strategisch vooruit in lange periodes van onzekerheid?’ -> ‘Heeft dit geleid tot innovatieve strategieën of oplossingen?’*
 - ‘Hoe blijft u zoeken naar oplossingen in lange periodes van onzekerheid?’*
3. Gedragmatige veerkracht (aanpassen van ondernemingen en het zoeken van externe hulp)
 - ‘Hoe lost u actief problemen op die veroorzaakt worden door de aardbevingen?’*
 - ‘Wat heeft u gedaan om uw onderneming aan te passen en zodoende draaiende te houden?’*
 - ‘Wat voor hulp heeft u gezocht bij anderen in tijden dat het moeilijk ging?’ -> ‘Wat voor hulp heeft zich voorgedaan vanuit externe bronnen van steun?’*
4. Potentiële negatieve affecten
 - ‘Zijn er situaties waarin u te lang bent doorgedaan met iets wat eigenlijk niet werkte?’*
 - ‘Heeft u het gevoel dat u soms te veel van uzelf vraagt of heeft gevraagd of dat u uw emoties onderdrukt?’ -> ‘Hoe zorgt u voor uw eigen mentale welzijn?’*

Afsluiting

Om even alles samen te vatten, heb ik het volgende begrepen. Heb ik dit allemaal goed begrepen? En is er nog niets wat u hieraan wil toevoegen? Of heeft u nog andere vragen? Dan wil ik u heel hartelijk bedanken voor uw tijd, energie en het openhartelijk toelichten van al uw ervaringen. Alles wat u

gedeeld heeft, is onwijs behulpzaam voor mijn masterthesis, dus onwijs bedankt daarvoor! Zoals gezegd, zal ik nu verder gaan met het verwerken en analyseren van de data. De door u gegeven data blijft natuurlijk vertrouwelijk en anoniem. Mocht u interesse hebben in de uiteindelijke resultaten of samenvatting van mijn masterthesis, laat het mij dan gerust weten, dan kan ik deze naar u opsturen.