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Navigating the innovation landscape at Open Brains

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Preface

This research is part of my Master Business Administration, with a specialization in Innovation and Entrepreneurship, at the Radboud University. After the past few months of literature review, data collection, data analyzing and interpreting, and concluding the results, I proudly present my master thesis with the title ‘Navigating the innovation landscape at Open Brains’. The process of making this thesis has taught me a few lessons, but it also gave me the opportunity to develop my research skills in quantitative research.

Therefore, I would like to thank my supervisor Prof. dr. Bas Hillebrand for the pleasant meetings and the guidance he provided for my thesis. He was supportive and strict, this helped me to keep on track. The feedback provide by my supervisor was always helpful, and very clear. I would also like to thank my second examiner, dr. R.A.W. Kok, for the time and effort in reading my thesis and giving useful feedback. I would like to thank Bluehub, especially Bart Verlegh, and all the respondents who filled in the survey at Bluehub. Finally, I would really like to thank my friends and family for the support, guidance, and motivation.

I hope you will enjoy reading my master thesis.

Alexandre Facon

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Abstract

This research investigates the influence of the 'perceived threat of feedback' on the relationship between an entrepreneur's 'commitment to the pitched idea' and the 'degree of pivot.' It gives managerial insights to organizations, such as Bluehub, into how their Open Brains program might be structured to support entrepreneurial pitches. The paper contributes to the ongoing literature on how feedback benefits entrepreneurs by affecting their degree of pivot. It fills this research gap, how feedback influences changes in the business model.

Data from 62 respondents of the Open Brain participants has been used. This study reveals that the 'commitment to the pitched idea' has a negative influence on the 'degree of pivot'. Furthermore, the interaction of 'perceived threat of feedback' is introduced on the base relation. It shows that the interaction effect has no significance, 'perceived threat of feedback' has been revealed as a direct effect on 'degree of pivot'.

Further research should explore the interaction effect of multiple types of feedback, and if social media has an influence on the perception of feedback.

Keywords: *commitment, pivot, threat of feedback, pitch*

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1. Introduction

It is a rarity that innovations emerge fully formed. Almost every entrepreneur needs to reiterate its initial idea a couple of times before the entrepreneurs have achieved their desired outcome. For example, Twitter, now a global microblogging service, first emerged as a startup as Odeo, an almost forgotten podcasting service that made it easy for individuals to discover and subscribe to podcasts. In response to a clear existential threat with the launch of iTunes' podcasting service by Apple, the team asked themselves the question: "What can we do that is something else?" That's how a 140-character text-based microblogging service was hatched. "In essence, the pivot is the radical transformation from podcasting to creating an online communication vehicle that will allow subscribers to send out short 140-character messages each". This turned Odeo's strategy into Twitter, one of the most explosive social media start-up on Earth (Carlson, 2011).

Although ideas are the source of innovation, their evolution remains a complex and mysterious process (Flechas Chaparro & De Vasconcelos Gomes, 2021). Transformations that occur during the lifespan of an innovation, are commonly referred to as 'pivots'. Pivoting in previous research has been defined as "a significant change to one or more of the following business model elements, typically in response to customer feedback, while retaining other elements: 1) target customer segments; 2) product features; 3) marketing approach; and/or 4) monetization approach." (Eisenmann et al., 2020) and are strategic decisions that alter one or more components of the business model in order to gain or maintain a competitive advantage (Snihur & Clarysse, 2022).

Pivoting plays a critical role in a company's success, entrepreneurs struggle with the complexities of the decision-making process. Biases, entrepreneurial traits, and unwavering commitment to their innovations all present challenges that can impact their ability to pivot. Biases make entrepreneurs stick to their initial ideas, entrepreneurial traits like persistence can lead to resistance to change, and unwavering commitment means they might not give up on their plans even when change is necessary. Existing research highlights that entrepreneurial decisions frequently depend on beliefs and are shaped by heuristics, confirmatory search, and trial-and-error (Camuffo et al., 2020; Pfeffer & Sutton, 2006). Recognizing worthwhile opportunities necessitates that entrepreneurs actively seek feedback on their early ideas. Feedback serves as a catalyst for shifting perspectives and creating opportunities for changes or new directions (Hattie & Timperley, 2007). Nonetheless, the effectiveness of feedback is determined by a variety of factors, including its nature, source, and the entrepreneur's

characteristics. While pivoting is widely recognized as an important component of innovation and business development, many entrepreneurs face significant challenges (Burnell et al., 2023; Grimes, 2018).

Existing research suggests that individuals who are deeply committed to an innovation project are less likely to pivot, even when feedback suggests a need for change (Sarangee et al., 2014; Schmidt and Calantone, 2002). Commitment of entrepreneurs who pitch their idea is defined as the extent to which an entrepreneur identifies with and/ or is engaged with its pitched idea (Tang, 2008). This research suggests that an entrepreneur who shows a higher level of commitment to their initial idea, will be less likely to pivot in their business model.

Research done by Baer and Brown (2012) suggests that individuals with a heightened sense of psychological ownership towards their ideas were more inclined to adopt suggestions that improved their ideas and less likely to accept suggestions that reduced aspects of their ideas. The feedback the individuals received that expanded their ideas are welcomed, but the received feedback that posed as a threat to the idea was less welcomed. Consequently, a moderator for this research is the perceived threat of feedback. Perceived threat of feedback in this context is defined as the degree to which an entrepreneur believes that the provided feedback challenges the pitched idea (Based on Green et al., 2017), and could be a moderator that explains how the ‘perceived threat of feedback’ influences the base relation between ‘commitment to the pitched idea’ and ‘degree of pivot’.

This research will be centered around Open Brains, which is a program set up by Bluehub. Bluehub is a consultancy firm located in Venlo. Twice a month they host a program called Open Brains where entrepreneurs can pitch their idea to an audience and receive feedback. Following the literature the research question is as follows:

“How does the perceived threat of feedback influence the relationship between commitment to the pitched idea and degree of pivot?”

1.1 Practical relevance

The research into how the ‘perceived threat of feedback’ affects the connection between an entrepreneur's ‘commitment to the pitched idea’ and their inclination to the ‘degree of pivot’ has important implications for managerial strategies, particularly in the context of giving feedback. Particularly for organizations such as Bluehub that help with the pitches of entrepreneurs. This study examines the factors that influence how entrepreneurs incorporate external feedback to make strategic changes in their business model, providing significant

insights to enhance the Open Brains program provided by Bluehub. Moreover, the findings offer valuable direction for both businesses and people seeking to improve their feedback procedures.

1.2 Theoretical relevance

This study enhances the current academic discussion by examining how entrepreneurs can benefit from incorporating diverse feedback. Additionally, it deepens our comprehension of how an entrepreneur's commitment to their original idea relates to the extent to which they are willing to make changes to their business models.

Although there is a significant amount of research on the dedication of entrepreneurs and its various consequences, as well as on the strategic intricacies of implementing business model pivots, there is still a noticeable lack of understanding regarding how feedback is integrated into significant business model transformations. Prior research has examined the experimentation process involved in pivoting, specifically by evaluating different pivot strategies (Burnell et al., 2023; Chen et al., 2024). However, there has been limited exploration of how entrepreneurs' perception of feedback influences the extent to which they are willing to make significant changes to their business models.

Prior studies have examined the process of incorporating feedback from emotional (Baer & Brown, 2012), cognitive (Kaffka et al., 2021), and combined viewpoints (Toivonen et al., 2023). Nevertheless, the academic community has not yet thoroughly examined the intricate connection between perceived feedback, entrepreneurial commitment, and the resulting extent of pivot in business models. This study seeks to address this significant deficiency by concurrently investigating these three concepts, providing novel perspectives on the impact of feedback on the development and transformation of company strategy.

1.3 Outline of thesis

In the next chapter the constructs previously introduced will be addressed. These constructs will help develop hypotheses to answer the research question, two hypotheses are presented. Methodology is elaborated in chapter three together with the analysis choices. In the fourth chapter the regression analysis has been conducted. Chapter 5 will include the conclusion with a summary of the findings, a discussion part where the findings and literature are compared. At last, the practical implications, limitations of the research, and the suggestions for further research will be displayed.

2. Theoretical framework

2.1 What is pitching and why is it done?

Pitching is an essential part of entrepreneurship and intrapreneurship, encompassing the art of presenting and persuading others about a business idea. The literature on pitching focuses on how entrepreneurs should effectively convey their ideas to various stakeholders, with works such as those by Elsbach (2003) and van Werven et al. (2019) emphasizing the micro-level language used to achieve narrative plausibility and resonance in pitching scenarios.

However, the post-pitch phase, particularly the reception and application of feedback, is an equally important but underexplored dimension. Feedback is essential to the pitching process, manifesting not only in rejections but also in more detailed assessments of aspects such as feasibility and assumptions. Furthermore, research such as Sjödin et al. (2019) investigates how entrepreneurs distribute and use feedback within their organizations, providing valuable insights into the internal dynamics of the feedback utilization process.

An important note is that this research is not focusing on the pitch as a persuasion tactic to ensure and secure any type of funding. Instead it is focused as a tactic to receive feedback at Bluehub in the Open brains program.

2.2 Degree of pivot

In the continuously developing field of entrepreneurship, the concept of a pivot is crucial, indicating a significant modification in a startup's business model, executed for both internal and external factors. Pivoting includes a range of changes, from little adjustments aiming at improving the current structure to radical changes that need a total rethinking of the company's core products and market strategies. The entrepreneur's ability to deviate from the initial idea, driven by emerging insights or changes in the market. Eisenmann's (2020) research demonstrates that a pivot could greatly impact a startup's success in its early stages. This suggests that carefully planned changes could significantly improve the startup's alignment with the market and its growth trajectory.

Expanding on this, the research conducted by Burnell et al. (2023) explores the phenomenon of business model experimentation in startup companies, demonstrating a recurring process of acquiring knowledge, adjusting strategies, and progressing. Startups gain useful information and refine their business models through iterative cycles to achieve market resonance and success. This iterative strategy emphasizes the importance of being agile and adaptable in the fast-paced startup environment, where the ability to pivot well can indicate long-term growth and sustainability.

In addition, Nowlis and Simonson (1996) contribute to this discussion by showing how even slight changes, like adding extra features to a product, can require a reassessment of the fundamental business model, resulting in a smaller-scale shift. This viewpoint emphasizes the subtle and complex nature of pivots, in which even small adjustments can have a significant impact on the entire company model. In contrast, Osterwalder et al. (2010) describe another level of pivot, which involves making substantial adjustments to major components of a company model, such as client groups, income streams, and distribution channels. Significant changes of this magnitude could have the opportunity to guide the startup towards an entirely different path, modifying its strategic trajectory and market position.

The deliberate decision to change direction not only demonstrate a startup's ability to move quickly but also its strong dedication to expanding and ensuring long-term success. The ability to pivot strategically is crucial for the success of a startup in the constantly changing entrepreneurial landscape. This emphasizes the importance of being adaptable and making wise decisions to achieve a positive trajectory of growth and achievement for the startup (Eisenmann, 2020; Burnell et al., 2023; Nowlis & Simonson, 1996; Osterwalder et al., 2010).

Therefore, the 'degree of pivot' will be measured in 4 categories that have been pre-determined by Eisenmann (2020). The following metrics will provide insight into the long-term transformations and the creation of competitive advantages when altering ideas (Snihur & Clarysse, 2022):

1. Target customer segments
2. Product features
3. Marketing approach
4. Monetization approach (Eisenmann, 2020).

The first category contains the target customer segments, this involves the various groups of individuals and/ or organizations that the entrepreneur aims to attract with his/ her/ their products and/ or services, which can also be found in the Business Model Canvas (Osterwalder & Pigneur, 2011).

The second category being product features refer to the functionalities, attributes, or capabilities that a product offers to its users. These are crucial for enhancing the consumer's experiences and improving the product development (Zhang et al., 2018; Nowlis & Simonson, 1996).

The third category, the marketing approach describes how a company plans to sell or advertise its products to achieve its business goals, focusing on attracting potential customers and raising awareness to drive sales (Rosenberg & Czepiel, 1984).

Lastly, the monetization approach pertains to the value stream element in the Business Model Canvas, representing how an entrepreneur converts value into revenue from each customer segment (Osterwalder & Pigneur, 2011).

2.3 Commitment to the pitched idea

The construct of 'commitment to the pitched idea' consists of deep psychological attachment and profound determination toward the pitched idea (Tang, 2008). Tang (2008) describes that it goes beyond any temporary excitement; commitment presented is a constant intention, even if the obstacles could be enormous. 'Commitment to the pitched idea' takes several dimensions, such as continuance commitment, meaning there is a constant putting in of efforts in the venture, behavioral commitment, demonstrated by acting consistently in ways that would make the business grow, and affective commitment, which captures the emotional bond and passion felt by an entrepreneur in relation to his endeavor (Tang, 2008).

Meyer and Allen (1991) identified a model that stresses that when an individual's goals for themselves connect with the aims of the company, in this case the entrepreneurs' pitch, it can enhance their emotional commitment. Their work unveils that this alignment further intensifies the commitment of the entrepreneur (Meyer & Allen, 1991). Later works, focused more on the emotional side of entrepreneurial commitment (Cardon et al., 2009). These works take interest in passion for work and the increased willingness of the entrepreneur to identify with the pitched idea, strengthening his resolve and willingness to persevere. Baer and Brown (2012) have identified this willingness to preserve and possess as psychological ownership. It suggests that entrepreneurs are more likely to invest time and effort into developing an idea when they regard it as truly their own. In addition, the combination of psychological ownership and dedication might motivate entrepreneurs to display protective behaviors towards their goods, as demonstrated in research conducted by Crilly (2017), Grimes (2018), and Schmidt & Calantone (2002).

To encapsulate the info and make a definition for the variable; the notion of 'commitment to the pitched idea' in the entrepreneurial domain represents a deep attachment, dedicated steadfastness, and continuous endeavor of an entrepreneur for his/ her/ their idea. It involves the strongly held conviction regarding the desirability of, and potential viability for, the venture. It includes a willingness to invest large amounts of time, resources, and energy, many times to the detriment of the individual himself or herself, to further develop and grow the idea (Cardon et al., 2009). This further exhibits the true grit and, therefore, pinpointing the entrepreneur's determinations of overcoming obstacles and bouncing back from

disappointments. Commitment reflects focus to achieve long-lasting growth and success rather than being imminently rewarded or outcome oriented. Furthermore, from the entrepreneur's emotional attachment, it means the passion of the venture will be translated into a personal stake in the success of that venture (Tang, 2008). In a nutshell, 'commitment to the pitched idea' is defined as the extent to which an entrepreneur identifies with and is engaged with its pitched idea (Tang, 2008).

Being committed to an idea is a fundamental aspect of entrepreneurial passion and tenacity. However, ironically, this dedication can also hinder strategic pivoting and adaptation, which are crucial for successfully navigating the unpredictable challenges faced by early-stage companies. Tang (2008) explains that in an environment with limited resources, entrepreneurs need to be highly attentive and adaptable. Being too focused on a single idea can prevent entrepreneurs from recognizing new opportunities or threats, which hampers their ability to respond effectively to the fast-paced market. In a similar vein, Cardon et al. (2009) explore the ambivalent nature of entrepreneurial passion, suggesting that while it drives determination and hard work, it can also result in an excessive attachment to the initial business idea, thus hindering the ability to objectively evaluate and make necessary strategic changes when initial assumptions prove to be flawed. Meyer and Allen (1991) propose that commitment, specifically a strong emotional attachment to the original business idea, can hinder the ability to adapt and respond to feedback or changing market conditions. Therefore, based on these perspectives, it is important for entrepreneurs to have a strong dedication to their initial idea, but they must also be able to critically reassess and adapt their approach as needed. Therefore, it is necessary to ensure that their 'commitment to the pitched idea' helps, rather than hinders, the progress towards a long-term success.

H1: Commitment to the pitched idea has a negative influence on degree of pivot.

2.4 Perceived threat of feedback

The way feedback is received is crucial for how it is used, and whether it is seen as positive or negative has important consequences for entrepreneurial actions. Ilgen et al. (1979) establish the fundamental principles for understanding this process, stating that the recipient's knowledge and perception of feedback is essential for its successful integration. Within the field of entrepreneurship, feedback is commonly categorized as either positive or negative, indicating areas that might have the need to be improved or changed (Clausen, 2019; Fishbach et al.,

2010). Negative feedback is seen as a strong force for driving change, as it offers valuable insights about the weaknesses of an idea (Borchert & Rochford, 2009).

The literature classifies perceived feedback into two separate categories: perceived threat and perceived opportunity (Barr & Glynn, 2004; Dutton & Jackson, 1987). It is important to know that the literature has two perspectives of perceived threat of feedback, in this research the focus is on the perspective that the ‘perceived threat of feedback’ has a negative connotation. When feedback is seen as a threat by the entrepreneur, it often triggers defensive reactions based on psychological responses to possible harm or loss. This can undermine the recipient's competence or the success of the project, leading to resistance or rejection of the feedback (Barr & Glynn, 2004; Dutton & Jackson, 1987). On the other hand, feedback that is viewed as a chance for growth and improvement promotes a mindset that is receptive to new ideas and innovative problem-solving. This type of feedback is constructive and future-oriented (Evans, 2013; Grimes, 2018). The impressions are shaped by various aspects, including the attitude of the recipient, the context in which the feedback is given, and the method in which it is delivered. Supportive feedback is viewed as an opportunity, whereas harsh feedback is perceived as a threat. According to recent literature, there has been a change in how threats are perceived. They are no longer seen solely as possible losses, but rather as a sort of "wake-up calls" that might help in getting positive results. This highlights the significance of perception while using feedback to drive innovation and progress (Kaffka et al., 2021).

The notion of input being perceived as a danger has historically been linked to the possibility of experiencing loss, both on a personal and professional level. This can lead to a disorienting effect that may overpower an individual's ability to adjust and adapt (Baer & Brown, 2012). Nevertheless, as current research supports the idea of perceiving risks as beneficial wake-up calls that can lead to essential redirections or reframing of the idea (Kaffka et al., 2021). Entrepreneurs are encouraged to see challenging criticism as a valuable instrument for improvement, rather than something negative. This knowledge requires them to reevaluate their underlying assumptions and has the potential to lead to significant growth (Clausen, 2019; Jackman & Strober, 2003).

For this research the focus is whether the ‘perceived threat of feedback’ has challenged the base relation between the ‘commitment to the pitched idea’ and the ‘degree of pivot’.

Therefore, the second hypothesis is proposed:

H2: When the perceived threat of feedback increases, the relation between commitment to the pitched idea and degree of pivot will become weaker.

2.5 Conceptual model

In the model below, the conceptual model is portrayed. It consists of the direct effect of ‘commitment to the pitched idea’ on the ‘degree of pivot’, and it consists of the interaction effect of the ‘perceived threat of feedback’.

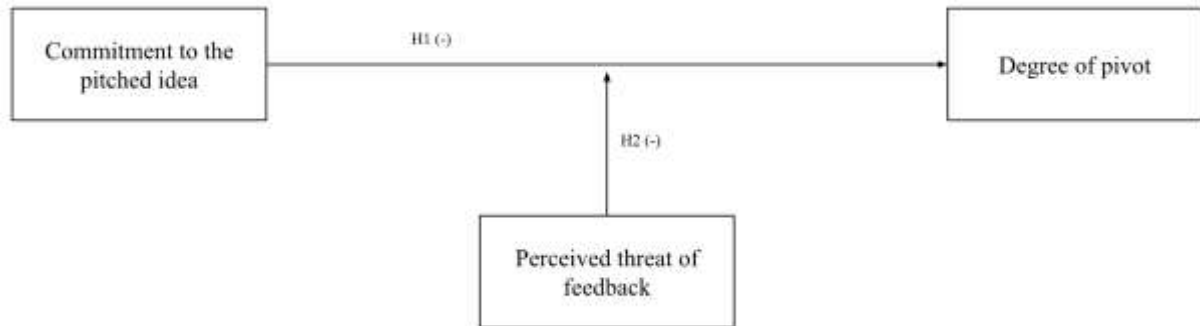


Figure 1: Conceptual model

3. Methodology

3.1 Research design

This study utilizes a quantitative methodology with a deductive research design to investigate the relationship between commitment to an idea and the likelihood of pivoting. The primary aim of this study is to methodically examine the hypotheses outlined in Chapter 2, which were developed using established theories and literature. These hypotheses provide a basis for examining the primary research issue, providing a methodical approach to evaluate the proposed connections within the constructs.

Myself and eight other Master's students from Radboud University have begun this academic endeavor. We are focused on comprehending the relation between an entrepreneur's commitment to their original business idea and the degree of pivoting, in response to feedback.

In order to efficiently tackle our study goals, we have implemented a cross-sectional research design. This method involves gathering data from a predetermined sample at a specific moment in time. The cross-sectional approach is highly appropriate for our exploratory investigation due to many factors. Firstly, it enables a streamlined and time-efficient method to collect a comprehensive overview of the variables of interest within a diverse sample.. Furthermore, a cross-sectional study offers a robust basis for detecting patterns and connections that can guide subsequent, more comprehensive longitudinal studies. This method is in line with the exploratory nature of the research, aiming to reveal insights and patterns that enhance our understanding of the strategic decision-making processes in dynamic and innovative business environments (Bryman, 2016).

3.1.1 Participants

The sample used for this study is from Bluehub which is a small consultancy firm based in Venlo, founded by Bart Verlegh and Pim Deuling. To be more precise the sample used is from one of its services that they provide, Open Brains. This is a platform for entrepreneurs of every stage who wants to pitch their idea to a small audience of around 10 to 15 of fellow entrepreneurs, product developers, and people of interest. Open Brains was launched in 2015 and is since been organized every Friday morning and since the beginning of 2024 they have changed it to Thursday morning twice a month, they have witnessed 250-300 pitches over the past 9 years. Now they want to know how successful they are and what improvements can be made to the service.

The sampling will be a sample where the participants can choose themselves to participate in the study. Recruitment for the study took place through established Open Brains channels, making use of the existing community structure via mail. Together with Bluehub we are gifting two consultancy hours for one of the respondents.

3.2 Data collection and sample

3.2.1 Data collection

The data collection for this study utilizes surveys, pilot interviews, and observations to capture the complex dynamics of entrepreneurial feedback and pivot decisions within the context of Bluehub's Open brains program.

To improve and test the survey (Appendix 1), pilot interviews are undertaken to further explore specific areas of interest that have been identified through literature. This approach enables researchers to thoroughly examine and analyze the experiences and decision-making processes of entrepreneurs. It allows for flexibility and in-depth investigation, as researchers may adjust their methods and ask further questions based on early findings. This ultimately leads to a higher level of data quality and depth. (Rubin, 2011). These four pilot interviews lasted between the 30 en 60 minutes each.

Two weeks prior of the survey (week 16), an introduction mail has been sent containing information about the research. The survey has been sent out in week 19, with the aim to reach around the 140 participants as that is needed based on the ratio described in Hair et al. (2010). The ratio says that there has to be a minimum of 5:1 ratio but a preferred of 20:1, meaning that it needs a minimum of 5 participants for every variable (Hair et al., 2010). In total four reminders have been sent, the first two were to the contact mail of Bluehub, the third reminder was a mail to Bart Verlegh, and the last reminder was sent to Bart Verlegh via LinkedIn.

Lastly, the use of observations in a session is used. Observations during the Open brains sessions provide a live insight into the dynamics of interaction and the instantaneous responses of entrepreneurs to criticism. This approach offers a comprehensive understanding of the social and environmental factors that influence the reception and use of feedback. In table 1 the structure of an Open brains session is displayed.

Table 1: Structure Open brains session

Slots	Time in minutes
Introduction	5
Pitch and questions	15
Brainstorm	30
Final advise	10

3.2.2 Sample

It was agreed upon with Bluehub that we were allowed to contact the entrepreneurs that have participated in the Open brains program. In total there are around 160 participants that have been approached via mail, and it would be Bluehub that sends the mail to ensure the privacy of the participants. The data retrieved from the online survey had 80 respondents. In this set it was found that 18 respondents did not fill in the survey, the decision was made to clean the data set and eliminate those 18 respondents (N=62). In table 1 can be seen that 79% of the data is male and 21% is female, also most of the respondents are between 36 and 45 years old. For the control variable ‘gender’ a dummy variable is made where male=1 and female=2 has been recoded to male=1 and female=0. It can also be seen that the biggest part of the sample (45.2%) had a combination of a service and a product. As the Open brains sessions continued during the COVID-19 pandemic, a few (27.5%) entrepreneurs had to do their pitches online.

Table 2: Descriptive statistic for the sample population (N=62)

Descriptive factor	N (%)
Gender	
Male	49 (79)
Female	13 (21)
Age	
18-25 years	1 (1.6)
26-35 years	10 (16.1)
36-45 years	20 (32.2)
46-55 years	16 (25.8)
56-65 years	14 (22.6)
65 + years	1 (1.6)
Product/ service	
Physical product	16 (25.8)
Service	13 (20.9)
Combination of product and service	28 (45.2)
Other	5 (8.1)
Pitch location	
Physical	45 (72.5)
Online	17 (27.5)

3.3 Measurement

3.3.1 Commitment to the pitched idea

In Table 3 the constructs and their respective items can be found. The first construct "commitment to the pitched idea" is measured by using items derived from Schmidt and Calantone (2002) and Mowday et al. (1979). The first three items are adapted from a scale developed by Schmidt and Calantone (2002) to assess commitment to a failing New Product Development (NPD) project. This scale is relevant for this study as it evaluates whether individuals are inclined to stay with their NPD project despite encountering setbacks.

Commitment to a pitched idea is defined, following Tang (2008), as the degree to which an entrepreneur identifies with and is engaged in their pitched idea. To capture the emotional and personal significance of the pitched idea to the respondents, two additional items based on Mowday et al. (1979) are included. All five items are measured using a 5-point Likert scale, ranging from "strongly agree" to "strongly disagree".

3.3.2 Degree of pivot

The degree of pivoting is measured based on the four areas identified by Eisenmann et al. (2011). Initially, respondents were asked if they had considered their revenue model, target group, product/service, or marketing approach prior to the pitch. If they answered "yes" to this question, a follow-up question would be presented, asking to what extent they had changed their revenue model, target group, product/service, or marketing approach. The response options ranged from "not changed" to "significantly changed" on a 5-point Likert scale.

3.3.3 Perceived threat of feedback

'Perceived threat of feedback' is measured using five items. As existing literature does not offer suitable scales for measuring perceived threat in the context of receiving feedback, we adapted existing scales to better fit this study's context. The first two items are based on Brandt et al. (2015) and measure the concept of "symbolic threat," defined as "conflict over deeply held values and beliefs" (Brandt et al., 2015, p. 560). Feedback suggesting the abandonment of well-developed ideas where entrepreneurs are confident and clear about the outcomes is likely perceived as threatening (Toivonen et al., 2023). Therefore, these items were adapted for this research context.

The third item, based on Jellicoe and Forsythe (2019), measures whether respondents felt that the feedback challenged their pitched idea. The fourth item assesses whether the pitchers felt that the audience had significant doubts about their pitched idea. This item is based on observations made during an Open Brains session, where audience doubts about the viability of an idea prompted immediate responses from pitchers, even without an opportunity to fully address the concerns. The fifth item is overarching and tests whether individuals perceived the given feedback as threatening. All five items are measured using a 5-point Likert scale ranging from "strongly agree" to "strongly disagree".

Table 3: Operationalization of the constructs and items

Construct	Definition	Items	Name	Source
Commitment to the pitched idea	The extent to which an entrepreneur identifies with and is engaged with its pitched idea (Tang, 2008)	<p>Before the pitch, I was committed to my initial idea</p> <p>Before the pitch, I was determined to stick to my initial idea, no matter what problems I would encounter</p> <p>Before the pitch, I felt a sense of loyalty to my initial idea</p> <p>Before the pitch, I felt emotionally attached to my pitched idea</p> <p>The idea I pitched idea had a great deal of personal meaning to me</p>	<p>C1</p> <p>C2</p> <p>C3</p> <p>C4</p> <p>C5</p>	Schmidt & Calantone (2002) & Mowday et al. (1979)
Degree of pivot	A pivot implements a significant change to one or more of the following business model elements, typically in response to customer feedback, while retaining other elements: 1) target customer segments; 2) product features; 3) marketing approach; and/or 4) monetization approach. (Eisenmann, 2020)	<p>After the pitch, I changed my revenue model, relative to the intended revenue model before the pitch.</p> <p>After the pitch, I changed my target customer segments), relative to the intended target customer segment(s) from before the pitch.</p> <p>After the pitch, I changed the functionalities of my product, relative to the intended product features before the pitch.</p> <p>After the pitch, I changed my marketing approach, relative to the intended marketing approach from before the pitch.</p>	<p>DP1</p> <p>DP2</p> <p>DP3</p> <p>DP4</p>	Eisenmann, 2020, Osterwalder & Pigneur (2011), Nowlis & Simonson, (1996), Burnell et al., (2023)
Perceived threat of feedback	The degree to which an innovator believes that the provided feedback challenges the	The feedback violated the core of my idea	PT1	Jellicoe & Forsythe (2019)

	pitched idea (Green et al., 2017)	The feedback rejected aspects of the idea that were important to me	PT2	
		I felt like a large part of the feedback challenged my idea	PT3	
		During the pitch the public had some serious doubts about my idea	PT4	
		During the pitch I experienced the feedback from the public as threatening to my idea	PT5	

3.3.4 Control variables

In Table 4 the control variables are showed that will be included in the research. The influence of these variables are not of primary importance. However a difference in a control variable might influence the results of the study, highlighting the importance of managing and accounting for these variables. The study incorporates gender as it offers valuable insight into the characteristics of the sample. Another important control variable is the perceived quality of feedback, which represents the innovator's assessment of the input they receive. According to Lizzio and Wilson (2008), feedback that is clear, relevant, and includes developmental components is more likely to be considered of good quality. The perceived quality of feedback refers to how feedback is viewed as being encouraging, clear, relevant, and improving the recipient's performance (Hallman et al., 2016). Perceived firm performance is the final control variable, which represents the innovator's assessment of how he/she/they perceives the performance and effectiveness of their startup/ company (Chandler & Hanks, 1993).

Table 4: Operationalization ontrol variables

Construct	Definition	Items	Name	Source
Perceived firm performance	Perceived firm performance refers to how individuals within an organization perceive the overall success and effectiveness of their firm and often involves subjective evaluations (Chandler & Hanks, 1993)	I am satisfied with the growth my idea/business has made after the pitch	PP1	Self-developed items based on Hallman et al. (2016)
		My idea has grown into a successful product/service	PP2	

Perceived quality of feedback	The degree to which the feedback is perceived as supporting, including elements such as clarity, relevancy and development of the recipient's performance (Hallman et al., 2016)	Gave feedback that I couldn't understand Feedback was provided that I could use in the future Feedback helped me focus on developmental improvements	PQ1 PQ2 PQ3	Lizzio & Wilson (2008)
Gender				

3.4 Analysis

To conduct a comprehensive statistical analysis of the collected data, the study will utilize the statistical software SPSS. Due to the exploratory character of the research, it is appropriate to employ a multiple regression analysis. This method is particularly relevant because the study analyzes how moderator affects the linear relationship between the independent and the dependent variables.

To eliminate multicollinearity, which is an important aspect in regression analysis, the variance inflation factor (VIF) will be calculated for each independent variable. A VIF value less than 10 is considered acceptable to alleviate difficulties associated with collinearity. The classical statistical assumptions of residual normality, homoscedasticity, and linearity will be tested. Outliers or incorrect observations in the dataset will be investigated visually using scatterplots and statistical tests. Residual normality will be checked to confirm adherence to a normal distribution, and scatterplots of residuals will be scrutinized for constant variance, indicating the lack of heteroscedasticity. Additionally, to investigate the presence of moderation effects, interaction terms will be included in the regression analysis. The importance of these interaction terms will be assessed to determine the potential influence of third variables on the connection between the independent and dependent variables. Cronbach's Alpha will be used to assess the internal reliability and consistency, with a target value of 0.70 or higher considered acceptable for reliability and a higher threshold, ideally 0.80 or higher, desired for increased robustness. This statistical measure will assess the questionnaire items' coherence and ability to reliably measure the construct within the study's context. The questionnaire employs a 5-point Likert scale, enabling participants to indicate their level of agreement or disagreement on a formative scale. Formative scales are used as they describe the model and the influences of the model.

In order to maintain the validity and reliability of the multiple regression analysis, it is necessary to verify specific assumptions. These factors involve establishing a direct correlation between the independent and dependent variables, ensuring that errors are independent, maintaining homoscedasticity where residuals have consistent variance, and verifying the normal distribution of the data (Field, 2018).

The study's validity is enhanced by developing the surveys using information gathered from pitch sessions and expert interviews, as well as by including measuring scales that have been previously developed. A pilot test will confirm the survey's validity and inclusiveness and must obtain authorization from Bluehub's directors and the Radboud University supervisor prior to being sent to participants.

Ensuring reliability in this research is crucial to prevent the collection of unclear data. To guarantee dependability, a variety of procedures will be put into effect. Participants will receive a detailed email containing all the essential information needed to complete the survey, including the amount of questions and the projected time it will take to finish, as well as a brief summary of the study objective. Consistency in the data collection process will be ensured by giving identical questionnaires to all responders, thereby maintaining uniformity. Interviews with experts will follow a standardized format, with additional questions asked only for clarification, in order to provide a consistent and dependable approach to collecting data.

3.5 Ethics

To ensure the ethical standards in this research involving human participants, we plan to implement several measures. First, we will clearly communicate to participants that their involvement in the study, whether through interviews, surveys, or other methods, is entirely voluntary and confidential. We are ensuring that they understand that they can withdraw from the study at any time without any repercussions. We will maintain an open and transparent communication about the research objectives, procedures, and potential impacts, including explaining the purpose of each question, the overall aim of the study, and how the collected data will be used and shared.

Additionally, we will provide clear information about how the research findings will be managed and used, including their inclusion in a master's thesis at Radboud University and any future presentations or publications. To build and maintain trust, we will create a safe and supportive environment where participants feel comfortable asking questions and receiving clear, straightforward answers.

Finally, we will ensure the anonymity of all participants, protecting their identities throughout the research process and in any published results. By adhering to these ethical guidelines, we aim to uphold the integrity of our study and respect the rights and well-being of all participants. However, we are gifting two consultancy hours to one of the respondents. Therefore, we needed the e-mail addresses of the respondents, we have asked in the survey if they wanted to be involved in this give-away. Respondents who wanted to be involved in the give-away have had the choice to fill in their e-mail address, once the winner has been picked all respondents info has been deleted.

3.6 Sample and data

With this new data set a missing value analysis has been done to make sure that the values are correct. In table 2 the missing values of the variable “Degree of pivot” can be found; all the missing values are acceptable except Marketing. This item has a missing value percentage of 35.4%, which is too high and therefore it has been decided that marketing will be eliminated from the analysis.

Table 5: Missing value analysis Degree of pivot

		Marketing	Monetization approach	Target customer target	Product features
N	Valid	40	57	56	61
	Missing	22	5	6	1
	%	35.4	8,1	9.7	1.6

3.7 Construct reliability and validity

To ensure the sampling adequacy for the variables the Kaiser-Meyer-Oklin (KMO) test and the Bartlett’s test of Sphericity where tested. These two tests were accepted as the KMO was above 0.5 and Bartlett’s test was significant, meaning that $p < 0.05$. These tables can be found in Appendix 2.1. The main results are for the dependent variable (0.642, $p < 0.001$), the independent variable (0.786, $p < 0.001$) and the control variables where also significant. Therefore the items the items of the constructs are adequate to conduct a Factor analysis (Field, 2018).

Secondly, the reliability analysis has been done, as the missing value analysis has already been done and the item marketing has been eliminated from this research, the Cronbach Alpha can be calculated. In table 2 the Cronbach alpha (CA) and the percentage of explained

variance can be seen, no items had to be removed. The independent variable Commitment has a CA of 0.818 which is acceptable because the CA needs to be > 0.7 for it to be acceptable. The dependent variable Degree of pivot has an acceptable CA of 0.695 and the moderator Perceived threat of feedback has an acceptable CA of 0.834. Meaning that the internal consistency of the model is acceptable. The control variables also had acceptable CA's, the internal consistency of the model is therefore accepted (Field, 2018). The percentage of explained variance has been achieved through Factor analysis (Appendix 2.2), this has been done by putting the items per construct in a factor analysis. The Principal component method is used with a varimax rotation. In Table 6 the explained variance can be seen for the variables, most of the constructs have an explained variance of above 60% which is accepted. However the variable Commitment has an explained variance that is just shy of 60%, which still considered accepted. Commitment has practically a percentage of 60 and thus will be accepted as is.

Table 6: Internal consistency and convergent validity

Construct	Original # items	Cronbach's Alpha	# of items deleted	Cronbach's Alpha	Percentage explained variance
Commitment to the pitched idea	5	0.818	0	0.818	59.727
Perceived threat of feedback	5	0.834	0	0.834	80.163
Degree of pivot	3	0.695	0	0.695	62.207
Perceived quality of feedback	3	0.872	0	0.872	80.163
Perceived firm performance	2	0.727	0	0.727	79.698

4. Analysis

In this chapter the analysis will be discussed, this is done to answer the hypotheses that have been described in chapter 2. Firstly the construct correlation matrix will be examined to understand the correlations between the constructs. Secondly, the descriptive table will be examined in order to accept or deny the parameters of skewness and kurtosis. Thirdly, the assumptions of regression and the regression analysis will be done and at last an analysis of variance

4.1 Descriptive analysis

To examine the relationship between the variables a correlation analysis was conducted, the correlations can be found in Table 7, the control variables are put under the line for a better overview on the main model and the control variables. There is no significant correlation between the independent variables. However ‘perceived firm performance’ and ‘commitment to the pitched idea’ has a significant positive correlation, a possible explanation for this correlation is that if a person views has a high ‘commitment to the pitched idea’ the person may be have a higher ‘perceived of firm performance’. The correlations that can be seen are only moderate and will not cause problems with the results (Field, 2018).

Table 7: Correlation matrix and descriptive statistics

	1	2	3	4	5	6
1. Commitment	1					
2. Perceived threat of feedback	-0.190	1				
3. Degree of pivot	-0.159	0.191	1			
4. Perceived firm performance	0.446**	-0.44	0.158	1		
5. Perceived quality of feedback	0.152	-0.384**	0.198	0.049	1	
6. Gender	0.175		0.186	-0.017	0.016	1
Mean	3.858	2.558	2.034	3.202	3.763	0.79
Standard deviation	0.629	0.681	0.923	0.871	0.628	0.41

** Correlation is significant at the 0.01 level (2-tailed)
 Gender coded 1 = male, 0 = female

4.2 Regression analysis

4.2.1 Assumptions regression

Before starting a regression analysis, the data set needs to meet the following five assumptions (Field, 2018). The first assumption that will be analyzed is the assumption that the variables need to be normally distributed, this can be done through skewness and kurtosis, but also by using probability-probability (p-p) plots. The plots, skewness, and kurtosis showed that the normality assumption has been met (Appendix 2.3)

The second assumption says that the scales need to be on a metric-level, since the variables have been measured by a five point Likert scale it can be concluded that this assumption has been met (Field, 2018).

The third assumption that has to be met is linearity, the variables independent and dependent must show a relationship on vertical and horizontal level. These assumptions have been met as can be seen in Appendix 2.4.

The fourth assumption is multicollinearity, the values of multicollinearity should be below 10. In the Appendix 2.5 can be seen that the VIF coefficients are all around 1 and thus are all accepted.

The fifth and last assumption is homoscedasticity, for this assumption the scatterplot needs to show that no pattern can be seen (Hair et al., 2010). In Appendix 2.4 can be seen that the scatter plots show no direct pattern and thus can be concluded that the assumption has been met.

4.2.2 Regression analysis

After the five assumptions are met, the multiple regression has been run. The regression has a hierarchical order of 3 models. In model 1 only the control variables 'perceived firm performance', 'perceived quality of feedback', and 'gender' are run against the dependent variable 'degree of pivot'.

In Table 8 the first hypothesis has been tested. Model 1 shows only the control variables and their relation to the dependent variable 'degree of pivot'. The control variables that have been included in the model are 'perceived quality of feedback', 'perceived firm performance', and 'gender'. None of the control variables has a significant effect on the dependent variables the β is positive but the p-values of the variables are not significant. The $R^2 = 0.105$ and adjusted $R^2 = 0.049$, this shows the explanatory power of model 1. It explains 10.5% of the variance in de dependent variable, the overall model is significant ($F(3,48) = 1.872, p = 0.147$).

Therefore, it can be concluded that the control variables on itself do not explain the dependent variable.

Model 2 is an expansion on Model 1, now the main effects have been added in the regression. Adding the independent variables provides a more comprehensive analysis that influence the dependent variable. As can be seen in Table 8, all variables have a significance. The control variable 'perceived quality of feedback' now has a $\beta = 0.44$ with a $p = 0.003$, this is a significance at the level $p < 0.01$. It shows a positive relation between the control variable and the dependent variable if the independent variables are taken into account. The control variable 'perceived firm performance' shows a positive marginally significant relation to the dependent variable, however the significance is a bit less ($\beta = 0.25$ with a $p = 0.076$). The last control variable 'gender' also has a positive significant relation to the dependent variable ($\beta = 0.29$ with a $p = 0.009$). The independent variable 'commitment to the pitched idea' shows a negative significant relation to the dependent variable, where $\beta = -0.28$ with a $p = 0.05$. This relation supports H1, where 'commitment to the pitched idea' has a negative influence on 'the degree of pivot'. The second independent variable is the moderator 'perceived threat of feedback', this variable has a positive significant relation to the dependent variable, where $\beta = 0.19$ with a $p = 0.006$. This shows that there is a significant direct effect between the moderator and the dependent variable.

The $R^2 = 0.315$ and adjusted $R^2 = 0.240$, this shows the explanatory power of model 2. It explains 31.5% of the variance in the dependent variable, the overall model is significant ($F(2,46) = 7.052$, $p = 0.002$). Therefore, it can be concluded that the addition of the main effect have significantly improved the model's explanatory power.

Table 8: Effects of commitment to the pitched idea and perceived threat of feedback on degree of pivot

	Model 1: control variables only			Model 2: control variables with main effects		
	β	SE	ρ	β	SE	ρ
Perceived quality of feedback	0.218	0.205	0.120	0.440**	0.211	0.003
Perceived firm performance	0.141	0.147	0.307	0.248	0.147	0.076
Gender	0.211	0.309	0.132	0.350**	0.289	0.009
Commitment to the pitched idea				-0.279*	0.216	0.05
Perceived threat of feedback				0.415**	0.188	0.006
R^2 (Adjusted R^2)	0.105 (0.049)			0.315 (0.240)		

*p <.05; **p<.01 en ***p<.001

In Table 9 the effect of the interaction on the main effect can be seen. Model 2 is the same model as seen in Table 8, whereas Model 3 is now the complete model with control variables, independent variables, and the interaction effect. The results of Model 2 will not be explained now as it is already explained above Table 8, it is used as a reference. The interaction effect has some influence on the control variables, where ‘gender’ was significant at the $p < 0.01$ level and now significant at $p < 0.05$.

In Model 3 the dependent variable remains the ‘degree of pivot’, and the model includes the control variables, main effects, and an interaction (‘commitment to pitched idea’ * ‘perceived threat of feedback’) term to the pitched idea. It has a $\beta = 0.15$ with a $p = 0.29$, which has no significant relation to the direct effect of the independent on the dependent variable. This rejects H2 as there is no significant interaction effect that can be seen.

The overall model of the interaction effect has no statistical significance $F(1,45) = 1.13$, $p = 0.293$, this shows that the variable ‘perceived threat of feedback’ has no significant moderating effect on the relation between the independent variable ‘commitment to the pitched idea’ and the dependent variable ‘degree of pivot’. However, there is a slight improvement in the variance compared to Model 2. The variance of Model 2 $R^2 = 0.32$ and adjusted $R^2 = 0.24$ and the variance of Model 3 The $R^2 = 0.33$ and adjusted $R^2 = 0.24$.

Table 9: Effects of the interaction on the main effect

	Model 2: control variables with main effects			Model 3: control variables with main effects and interaction		
	β	SE	ρ	β	SE	ρ
Perceived quality of feedback	0.44**	0.21	0.003	0.44**	0.21	0.003
Perceived firm performance	0.25*	0.15	0.076	0.24	0.15	0.085
Gender	0.35**	0.29	0.009	0.32*	0.3	0.022
Commitment to the pitched idea	-0.28*	0.22	0.05	-0.25	0.22	0.088
Perceived threat of feedback	0.42**	0.19	0.006	0.35*	0.21	0.033
Interaction effect				0.152	0.33	0.293
R^2 (Adjusted R^2)		0.315 (0.240)		0.332 (0.243)		

*p <.05; **p<.01 en ***p<.001

4.2.3 Additional analyses

An additional analysis (Appendix 2.6) has been conducted where the control variable ‘gender’ has been split, in Table 10 the results can be seen. No significance can be seen, and the overall significance of model 1 $F(2,38)=1.637$, $p=0.208$ and model 2 $F(1,37)=0.315$, $p=0.578$. Insignificant influences include: the perceived threat of feedback or commitment to the pitched idea. The interaction effect is also not significant. However, the very low R^2 and adjusted R^2 values, combined with the non-significant F-statistics, show that perhaps there are factors other than those specified in the models that determine the pivoting degree of male entrepreneurs.

Table 10: Effects if of interaction and main effect with control variable gender (man)

	Model 1: control variables only			Model 2: control variables with main effects		
	β	SE	ρ	β	SE	ρ
Perceived threat of feedback	0.083	0.198	0.599	0.038	0.233	0.829
Commitment to the pitched idea	-0.263	0.240	0.100	-0.239	0.251	0.152
Interaction effect				0.102	0.415	0.578
R^2 (Adjusted R^2)		0.079(0.031)		0.087(0.013)		

*p <.05; **p<.01 en ***p<.001

5. Conclusions

This study adds to the expanding knowledge on entrepreneurial strategy by investigating the impact of ‘commitment to the pitched idea’ and the ‘perceived threat of feedback’ on the ‘degree of pivot’. Prior research has not sufficiently investigated the interaction between these factors and their influence on degree of pivoting. Therefore, this study employs an exploratory methodology to ascertain the presence of such associations.

This chapter presents the primary findings obtained from the research. To begin, a comprehensive summary of the results is provided. Subsequently, it compares the fundamental observations from the research with the present academic research. Following that, the practical implications are outlined. Ultimately, the chapter finishes by thoroughly analyzing the constraints of the research and providing recommendations for potential future research.

5.1 Conclusion

This research aims at answering the following research question: “*How does the perceived threat of feedback influence the relationship between commitment to the pitched idea and degree of pivot?*”. For this purpose, two main hypotheses were tested using hierarchical multiple regression models.

It was hypothesized in the first place that ‘commitment to the pitched idea’ negatively influences the ‘degree of pivot’. The data goes in line with such a hypothesis because results yield that the higher the commitment to the pitched notion, the less is the chance of pivoting. Or, to put it simply, those entrepreneurs who were committed to their ideas to a greater extent were likely to change their strategic course to a lesser degree.

It was also theorized that the ‘perceived threat of feedback’ would act as a moderator on this relationship of ‘commitment to the pitched idea’ to the ‘degree of pivot’. This effect was not detected in the analysis. Although the ‘perceived threat of feedback’ itself was significantly positively related to the ‘degree of pivot’, the ‘perceived threat of feedback’ by entrepreneurs only makes them prone to the interaction effect between the ‘perceived threat of feedback’ and ‘commitment to the pitched idea’ is insignificant. These results suggest that the ‘perceived threat of feedback’ does not alter this relation between ‘commitment to the pitched idea’ and the ‘degree of pivot’. In other words, as additional findings demonstrate above, it can be said that ‘commitment to the pitched idea’ and the ‘perceived threat of feedback’ are two distinct variables in this research.

‘Commitment to the pitched idea’ is negatively related to the ‘degree of pivot’, while the ‘perceived threat of feedback’ has a significant positive relation with the ‘degree of pivot’. However, the interaction effect is not significant in predicting the ‘degree of pivot’, suggesting that the impact of these two factors is additive rather than multiplicative.

Table 11: Summary of results

Hypothesis	Result
1. Commitment to the pitched idea has a negative influence on degree of pivot	Accepted
2. When the perceived threat of feedback increases, the relation between commitment to the pitched idea and degree of pivot will become weaker	Rejected

5.2 Discussion

The concept of a pivot is central in the field of entrepreneurship, representing significant modifications to a startup's business model in response to internal and external factors. Eisenmann (2020) highlighted that pivots can greatly impact a startup's success by aligning the business with market demands and improving its growth trajectory. This study confirms Eisenmann's findings by showing that the perceived threat of feedback, such as negative feedback, can drive a significant degree of pivot.

Burnell et al. (2023) discussed the iterative nature of business model experimentation, where startups continuously acquire knowledge and adjust their strategies to achieve market resonance. The current study supports this view by demonstrating that the perceived threat of feedback prompts startups to pivot, thereby emphasizing the importance of agility and adaptability in the fast-paced entrepreneurial environment. Similarly, Nowlis and Simonson (1996) noted that even minor adjustments, such as adding product features, can necessitate a reassessment of the business model, aligning with the findings that feedback can drive a significant degree of pivot.

Osterwalder et al. (2010) described substantial pivots as major adjustments to components like customer segments, revenue streams, and distribution channels. This study adds to this understanding by showing that perceived threat of feedback can trigger such significant changes, reinforcing the idea that pivots are essential for strategic trajectory and market positioning.

Commitment to the pitched idea constitutes deep psychological attachment and determination, which are crucial for a sustained effort and business success. High ‘commitment to the pitched idea’ means a lower likelihood of pivoting, supporting Tang's (2008) assertion

that commitment leads to perseverance. However, the findings also suggest that such high commitment might have negative consequences by making entrepreneurs strict about strategic alternatives. For instance, highly committed entrepreneurs may be less likely to alter their initial idea, even when faced with new information and challenges.

Meyer and Allen (1991) argue that harmony between personal and company objectives boosts emotional commitment, making an organization stronger. While this study highlights the value of emotional commitment, it also found a potential downside, as is said by Cardon et al. (2009), who discussed the unsure nature of entrepreneurial passion. The data show that while commitment drives determination and hard work, it can also result in overattachment to the original business idea, hindering the ability to make necessary pivots when initial assumptions prove flawed.

Negative feedback plays a crucial role in driving change in entrepreneurship. According to Ilgen et al. (1979), the influence of feedback depends on how it is interpreted by the recipient. This study found that the 'degree of pivot' is significantly enhanced when feedback is perceived as a threat. Entrepreneurs who view feedback as threatening are likely to adjust their strategies. This finding is consistent with Borchert and Rochford (2009), who pointed out that negative feedback can identify weaknesses and promote change.

The literature classifies feedback into perceived threat and opportunity (Barr & Glynn, 2004; Dutton & Jackson, 1987). This study focused on the negative connotation of perceived threat, finding that such feedback can lead behaviors to strategic changes. This aligns with Evans (2013) and Grimes (2018), who noted that threatening feedback can evoke innovative problem-solving. However, the finding that 'perceived threat of feedback' independently increases the 'degree of pivot', rather than moderating the relationship between 'commitment to the pitched idea' and 'degree of pivot', contrasts with Barr and Glynn's (2004) statement that perceived threat triggers defensive reactions influencing the pivot. This suggests that perceived threat serves as independent motivator for the degree of pivot.

The interaction effect between 'perceived threat of feedback' and 'commitment to the pitched idea', hypothesized to weaken the base relation between commitment and pivoting, was not significant. This finding contrasts with Barr and Glynn's (2004) perspective, which suggests that perceived threat triggers defensive reactions that significantly influence 'degree of pivot'. Instead, this study indicates that while both 'perceived threat of feedback' and 'commitment to the pitched idea' independently influence the 'degree of pivot', their interaction does not significantly alter the relationship. This implies a direct effect rather than a moderator effect,

where each independent variable affects the ‘degree of pivot’ without significantly modifying the impact of the other.

5.3 Practical implications

Based on the findings of this research, several practical implications can be made for different stakeholders. Managers should balance their commitment to initial business ideas with the flexibility to adapt based on feedback. This involves implementing a regular review process to assess and integrate feedback, thereby enhancing decision-making and business agility (Eisenmann, 2020; Burnell et al., 2023). The study found that ‘commitment to the pitched idea’ negatively influences the ‘degree of pivot’, suggesting that managers need to foster and create an environment that values the continuous improvement and innovation while maintaining strategic flexibility.

Public policymakers should develop and support programs that encourage entrepreneurs to actively seek and utilize feedback. This can be achieved by offering workshops, training sessions, and resources that emphasize the importance of feedback and adaptability in the entrepreneurial process (Osterwalder et al., 2010; Burnell et al., 2023). The findings indicate that the ‘perceived threat of feedback’ positively influences the ‘degree of pivot’, highlighting the need for policies that support the creation of feedback-rich environments to drive innovation and growth.

Consumers play a vital role in the success of startups by providing feedback from their point of view. Constructive feedback helps businesses to adapt and improve their products and services, leading to a better customer satisfaction and higher product quality (Nowlis & Simonson, 1996). The research suggests that even minor changes driven by consumer feedback can necessitate a reconsideration of the business model, emphasizing the importance of an active consumer engagement in the feedback process.

Entrepreneurs should cultivate a mindset that values both commitment to their vision and adaptability to feedback. Building strong networks with mentors and advisors who can provide critical feedback which is essential (Meyer & Allen, 1991; Cardon et al., 2009). The study's findings on the non-significant interaction effect of ‘perceived threat of feedback’ between the base relation of ‘commitment to the pitched idea’ and ‘degree of pivot’ underscores the importance of viewing feedback as an opportunity rather than a threat. Entrepreneurs should foster a company culture that embraces feedback for continuous improvement and innovation.

By addressing these practical implications, stakeholders can enhance their strategic capabilities, promote sustainable business growth, and foster a resilient entrepreneurial

environment. These recommendations, influenced by the study's findings, highlight the importance of balancing dedication with flexibility, utilizing feedback effectively, and creating supportive ecosystems for innovation and business development.

5.4 Limitations and further research

Future research should differentiate between various types of feedback, such as negative, positive, formative, and summative, to understand their distinct impacts on pivoting behavior. For instance, formative feedback may promote iterative improvements, while summative feedback might lead to more significant strategic shifts. This differentiation can help identify which types of feedback are most effective in promoting beneficial pivots (Ilgen et al., 1979).

Additionally, examining the role of context in moderating the effects of commitment and feedback on pivoting is crucial. Industry-specific factors, market conditions, and organizational culture might influence how feedback is perceived and acted upon. Understanding these contextual variables can provide deeper insights into the situational dynamics that affect strategic decision-making in startups (Barr & Glynn, 2004; Dutton & Jackson, 1987).

Longitudinal studies could further investigate how commitment and feedback perception evolve over the lifecycle of a startup, revealing patterns of persistence and adaptation over time. This would offer a dynamic view of entrepreneurial commitment and degree of pivot. Exploring the psychological mechanisms underlying feedback perception and commitment, such as cognitive biases, emotional resilience, and personality traits, could provide a more nuanced understanding of why some entrepreneurs are more receptive to feedback and more willing to pivot than others (Evans, 2013).

Investigating team dynamics, including how team commitment, collective feedback perception, and group decision-making processes influence pivoting, could offer valuable insights. Understanding how diverse team compositions and leadership styles affect strategic flexibility is essential for comprehensive entrepreneurial studies. The impact of external advisors and mentors on shaping feedback perception and commitment could be another fruitful area of research. Mentors often provide critical guidance and feedback, and understanding their influence on strategic decisions can help design better support systems for startups.

Lastly, examining the influence of digital and social media feedback on entrepreneurial decision-making can provide insights into modern entrepreneurial practices. As startups

increasingly use online platforms to engage with customers and stakeholders, understanding how digital feedback impacts strategic pivots is crucial (Grimes, 2018; Kaffka et al., 2021).

Furthermore, the data collected in this study were self-reported, which can introduce biases such as social desirability bias and recall bias. Social desirability bias occurs when respondents provide answers that they think are more socially acceptable rather than what they truly believe or do. Recall bias happens when respondents do not accurately remember past events or experiences. Future studies could incorporate more objective measures of pivoting behavior and feedback perception, such as observational data or third-party assessments. For instance, tracking actual changes in business models, customer feedback, and performance metrics over time could provide more reliable and valid data. Additionally, using feedback from mentors, investors, or industry experts can complement self-reported data, providing a more holistic view of the pivoting process and the influence of feedback.

By addressing these limitations and exploring these suggested areas for further research, scholars can build a more comprehensive understanding of the dynamics between entrepreneurial commitment, feedback perception, and strategic pivoting. This knowledge can inform the design of more effective feedback mechanisms and support systems for entrepreneurs, ultimately enhancing their ability to navigate the challenges of innovation and business development.

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Appendices

Appendix 1: Questionnaire

Enquête Bluehub

Beste ondernemer,

In het verleden presenteerde u uw idee, innovatie of businessmodel bij Open Brains. We nodigen u uit om zo goed mogelijk terug te blikken op deze sessie, om vervolgens de vragen te beantwoorden. Het gaat specifiek om de sessie waarin u presenteerde, niet een sessie waar u in het publiek zat. Als u meerdere keren heeft gepitcht, focus dan op de meest recente keer. We zijn benieuwd naar hoe u de sessie heeft ervaren en wat u heeft gedaan met de feedback.

Wij zijn 9 studenten van de Radboud Universiteit in Nijmegen en doen onderzoek in opdracht van Bluehub, waar we ook de uitkomsten aan rapporteren. Uw antwoorden blijven uiteraard anoniem. Waarom meedoen? - Kans op twee gratis consultancy-uren met Bluehub; - Mogelijkheid om een managementsamenvatting van de resultaten te ontvangen; - U helpt ons enorm bij het afstuderen.

Alvast grote dank voor uw deelname!

Met vriendelijke groet,

Alexandre Facon, Bente Horsting, Chris van As, Eline Agterberg, Joost Koelewijn, Leon van Deursen, Michelle Hannisse, Niels van den Bekerom, Tamara Koggel

Vragen over het onderzoek? Neem contact op met Bente via Bente.Horsting@ru.nl.

Meedoen aan onderzoek

Hartelijk dank dat u aan het onderzoek mee wilt doen. Voordat we van start gaan zijn we verplicht u te informeren over het onderzoek en over uw rechten en om formeel te vragen of u akkoord bent met deze informatie. Als u niet akkoord bent, dan kunt u zich (zonder opgaaf van reden) terugtrekken uit het onderzoek.

Deze enquête gaat over uw mening over de Open Brains sessie waar u een innovatie of een idee voor een nieuw bedrijf heeft gepresenteerd en wat u daarna met de feedback heeft gedaan. De enquête duurt ongeveer 10 minuten. Het is belangrijk om te benadrukken dat er geen goede of foute antwoorden zijn: het gaat om uw mening!

We vragen u (geheel vrijwillig) alleen om uw naam en contactgegevens om u de management summary te sturen en/of om u te berichten als u het gratis consultancy-uur heeft gewonnen. Als u hier geen belangstelling voor heeft dan hoeft u deze gegevens niet in te vullen. We zullen uw naam en contact gegevens verder nergens voor gebruiken en verwijderen zodra we ze voor bovenstaande doeleinden niet meer nodig hebben.

De data die we verzamelen zullen anoniem worden geanalyseerd. We behandelen uw gegevens met zorg. De gegevens zijn alleen toegankelijk voor het onderzoeksteam, de begeleider van het onderzoeksteam en toezichthouders op de kwaliteit van het onderwijs (zoals de examencommissie aan de Radboud Universiteit). De gegevens zullen niet gedeeld worden met Bluehub. In publicaties en rapporten zullen alleen geanonimiseerde gegevens worden gebruikt. De onderzoekers garanderen uw anonimiteit en volgen de richtlijnen van de Nederlandse code van wetenschappelijke integriteit en het beleid van de Radboud Universiteit aangaande data management en opslag. Aangezien gegevens anoniem worden opgeslagen is het niet mogelijk om uw gegevens te verwijderen wanneer de data eenmaal verzameld zijn. De gegevens voor dit onderzoek zullen gedurende minimaal 10 jaar worden bewaard om controle op wetenschappelijk onderzoek mogelijk te maken. Als u vragen heeft over uw privacy, dan kunt u contact opnemen met de Data Protection Officer van de Radboud Universiteit via privacy@ru.nl.

Deelname aan het onderzoek is geheel vrijwillig. U bent geheel vrij om deelname aan het onderzoek te weigeren of te stoppen gedurende het onderzoek zonder opgave van reden en heeft geen negatieve consequenties voor u. Stoppen van het onderzoek heeft wel consequenties voor de kwaliteit van ons onderzoek, dus we verzoeken u vriendelijk om alleen deel te nemen aan het onderzoek als u de intentie heeft om de gehele vragenlijst in te vullen.

Het onderzoek bevat geen klinische of diagnostische testen.

Het onderzoek is bedoeld voor iedereen die eerder gepresenteerd heeft op een Open Brains sessie en bevat verder geen restricties.

Als u vragen of opmerkingen heeft over dit onderzoek, dan kunt u zoals vermeld contact opnemen via Bente.Horsting@ru.nl. Als u vragen of opmerkingen heeft die u liever niet deelt met de onderzoekers, dan kunt u contact opnemen de Academic Confidentiality Advisor via vertrouwenspersonen@ru.nl, die onafhankelijk is en niet betrokken bij dit onderzoek.

Ik heb deze informatie begrepen en ga akkoord

- Ja
- Nee

Q1 In welk jaar heeft u gepitcht bij Open Brains?

- Mocht u meerdere pitches hebben gedaan, kies dan de meest recente pitch.

- Mocht u niet meer precies weten in welk jaartal u gepitcht heeft, maak dan een schatting.

- 2014
- 2015
- 2016
- 2017
- 2018
- 2019
- 2020
- 2021
- 2022
- 2023
- 2024

Q2 Sommige Open Brains sessies waren online (met name gedurende Corona). Was uw pitch fysiek of online?

- Fysiek
- Online

Q3 Hoe groot was het publiek tijdens uw pitch?

- 0-5
- 6-10
- 11-15
- 16-20
- 20+

Q4 Tijdens de pitch heeft u een product - of business idee gepresenteerd, kunt u in een paar woorden uw idee beschrijven?

Q5 Mijn gepitchte business idee betrof...

- Voornamelijk een fysiek product
- Voornamelijk een dienst
- Combinatie van een product en een dienst
- Anders, namelijk... _____

Q6 Voorafgaand aan de pitch had ik al veel tijd besteed aan mijn business idee.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q7 Het business idee wat ik gepitcht heb was zeer specifiek.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q8 Voorafgaand aan de pitch was ik erg toegewijd aan mijn business idee.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q9 Voorafgaand aan de pitch was ik vastbesloten om bij mijn business idee te blijven.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q10 Voorafgaand aan de pitch voelde ik me erg gehecht aan mijn business idee.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q11 Voorafgaand aan de pitch voelde ik me emotioneel zeer verbonden met mijn business idee.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q12 Het business idee dat ik pitchte betekende persoonlijk veel voor mij.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q13 Naar aanleiding van de pitch heb ik mijn business idee aanzienlijk veranderd.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q14 Voorafgaand aan de pitch had ik al nagedacht over mijn verdienmodel.

- Ja
- Nee

Display This Question:

If Voorafgaand aan de pitch had ik al nagedacht over mijn verdienmodel. = Ja

Q15 Naar aanleiding van de pitch heb ik mijn verdienmodel ...

Niet veranderd

Aanzienlijk veranderd

0 1 2 3 4 5



Q16 Voorafgaand aan de pitch had ik al nagedacht over te benaderen klantensegment(en).

- Ja
- Nee

Display This Question:

If Voorafgaand aan de pitch had ik al nagedacht over te benaderen klantensegment(en). = Ja

Q17 Naar aanleiding van de pitch heb ik te benaderen klantensegment(en)...

Niet veranderd Aanzienlijk veranderd

0 1 2 3 4 5



Q18 Voorafgaand aan de pitch had ik al nagedacht over mijn product/dienst.

- Ja
- Nee

Display This Question:

If Voorafgaand aan de pitch had ik al nagedacht over mijn product/dienst. = Ja

Q19 Naar aanleiding van de pitch heb ik mijn product/dienst ...

Niet veranderd Aanzienlijk veranderd

0 1 2 3 4 5



Q20 Voorafgaand aan de pitch had ik al nagedacht over mijn marketingaanpak.

- Ja
- Nee

Display This Question:

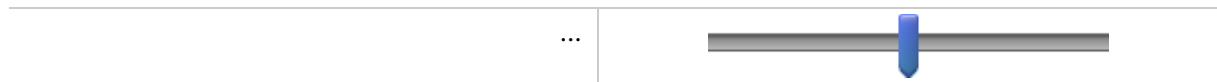
If Voorafgaand aan de pitch had ik al nagedacht over mijn marketingaanpak. = Ja

Q21 Naar aanleiding van de pitch heb ik mijn marketingaanpak ...

Niet veranderd

Aanzienlijk veranderd

0 1 2 3 4 5



Q22 Na de pitch heb ik spoedig besloten om één of meer elementen van het businessmodel aanzienlijk te veranderen.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q23 Na de pitch duurde het even voordat ik besloot of ik elementen van het businessmodel wilde veranderen.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q24 Na de pitch stelde ik het nemen van beslissingen naar aanleiding van de ontvangen feedback uit.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q25 Ik heb de pitch gebruikt om specifieke assumpties ten aanzien van mijn business idee te testen.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q26 Ik heb de pitch gebruikt om te zien of mijn aanname(s) correct waren.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q27 Ik heb de reacties van het publiek bij de pitch gebruikt om te beoordelen of bepaalde verwachtingen ten aanzien van mijn business idee klopten.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q29 De feedback die ik kreeg tijdens de pitch was in strijd met de kern van mijn business idee.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q30 De feedback die ik kreeg tijdens de pitch verwierp aspecten van mijn business idee die belangrijk voor mij waren.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q31 Ik had het gevoel dat een groot deel van de feedback die ik kreeg mijn business idee ter discussie stelde.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q32 Tijdens de pitch had het publiek flinke twijfels over mijn business idee.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q33 Tijdens de pitch ervaarde ik de feedback van het publiek als bedreigend voor mijn business idee.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q34 Als ondernemer vind ik het belangrijk om veel geld te verdienen.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q35 Als ondernemer vind ik het belangrijk om mijn professionele carrière vooruit te helpen.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q36 Als ondernemer vind ik het belangrijk om mijn business te managen op basis van gedegen managementmethoden.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q37 Als ondernemer vind ik het belangrijk om voorafgaand aan mijn business idee een financieel plan op te stellen.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q38 Als ondernemer vind ik het belangrijk om te focussen op wat mijn bedrijf kan bereiken ten opzichte van de concurrentie.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q39 Als ondernemer vind ik het belangrijk om een concurrentievoordeel te creëren.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q40 Als ondernemer vind ik het belangrijk om een maatschappelijk probleem op te lossen (bijv. sociale onrechtvaardigheid, vernietiging van het milieu).

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q41 Als ondernemer vind ik het belangrijk om een proactieve rol te spelen in het veranderen van de wereld.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q42 Als ondernemer vind ik het belangrijk om een verantwoordelijke burger van onze wereld te zijn.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q43 Als ondernemer vind ik het belangrijk om van de wereld een "betere plek" te maken (bijv. door sociale rechtvaardigheid na te streven, het milieu te beschermen).

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q44 Als ondernemer vind ik het belangrijk om een sterke focus te hebben op wat het bedrijf kan bereiken voor de maatschappij in het algemeen.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q45 Als ondernemer vind ik het belangrijk om anderen ervan te overtuigen dat private bedrijven in staat zijn maatschappelijke uitdagingen aan te pakken.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q46 Ik kon de feedback die ik kreeg goed begrijpen.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q47 Ik kon de feedback die ik kreeg goed gebruiken.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q48 De feedback die ik kreeg was productief.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q49 Het business idee dat ik pitchte was destijds volledig nieuw op de markt

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q50 Ik ben tevreden met de groei die mijn idee/bedrijf heeft gemaakt na de pitch.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q51 Mijn business idee is uitgegroeid tot een succesvol product/een succesvolle dienst.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q52 Ik heb voldoende ondersteuning gehad van Bluehub bij de pitch.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q53 Bluehub heeft mij goed geholpen ten aanzien van mijn pitch.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q54 Ik was tevreden over de ondersteuning van Bluehub bij de pitch.

- Helemaal oneens
- Oneens
- Eens noch oneens
- Eens
- Helemaal eens

Q55 De voornaamste reden waarom ik heb gepitcht bij Open Brains was ...

- Om feedback te ontvangen.
- Om te netwerken.
- Omdat ik was benaderd door Open Brains.
- Om mijn presentatievaardigheden te verbeteren.
- Anders, namelijk: _____

Q56 Wat is uw geslacht?

- Man
- Vrouw
- Anders
- Dat zeg ik liever niet

Q57 Wat is uw leeftijd?

- 18-25
- 26-35
- 36-45
- 46-55
- 56-65
- 65+

Q58 Wat vond u goed aan Open Brains?

Wat vond u minder goed aan Open Brains?

Hoe kan volgens u Open Brains verbeterd worden?

Q58 Wilt u een management summary van ons onderzoek ontvangen? Bij antwoord "Ja" kan u onderstaand uw mailadres toevoegen.

Ja _____

Nee

Q59 Wilt u in aanmerking willen komen voor een gratis consultancy uur van Bluehub? Bij antwoord "Ja" kan u onderstaand uw mailadres toevoegen.

Ja _____

Nee

Appendix 2: SPSS output

Appendix 2.1: KMO and Bartlett

Commitment tot he pitched idea

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.786
Bartlett's Test of Sphericity	Approx. Chi-Square	118.425
	df	10
	Sig.	<.001

Degree of pivot

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.642
Bartlett's Test of Sphericity	Approx. Chi-Square	26.777
	df	3
	Sig.	<.001

Perceived threat of feedback

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.803
Bartlett's Test of Sphericity	Approx. Chi-Square	128.114
	df	10
	Sig.	<.001

Perceived quality of feedback

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.677
Bartlett's Test of Sphericity	Approx. Chi-Square	107.133
	df	3
	Sig.	<.001

Perceived firm performance

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.500
Bartlett's Test of Sphericity	Approx. Chi-Square	25.888
	df	1
	Sig.	<.001

Appendix 2.2: Factor analysis

Commitment

Total Variance Explained

Component	Total	Initial Eigenvalues		Extraction Sums of Squared Loadings		
		% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.986	59.727	59.727	2.986	59.727	59.727
2	.800	15.998	75.726			
3	.566	11.313	87.039			
4	.386	7.725	94.763			
5	.262	5.237	100.000			

Extraction Method: Principal Component Analysis.

Degree of pivot

Total Variance Explained

Component	Total	Initial Eigenvalues		Extraction Sums of Squared Loadings		
		% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.866	62.207	62.207	1.866	62.207	62.207
2	.670	22.318	84.526			
3	.464	15.474	100.000			

Extraction Method: Principal Component Analysis.

Perceived threat of feedback

Total Variance Explained

Component	Total	Initial Eigenvalues		Extraction Sums of Squared Loadings		
		% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.053	61.059	61.059	3.053	61.059	61.059
2	.804	16.071	77.130			
3	.513	10.260	87.389			
4	.418	8.351	95.740			
5	.213	4.260	100.000			

Extraction Method: Principal Component Analysis.

Perceived quality of feedback

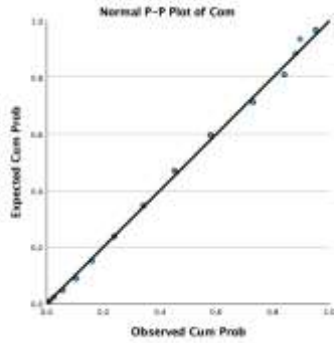
Total Variance Explained

Component	Total	Initial Eigenvalues		Extraction Sums of Squared Loadings		
		% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.405	80.163	80.163	2.405	80.163	80.163
2	.441	14.696	94.859			
3	.154	5.141	100.000			

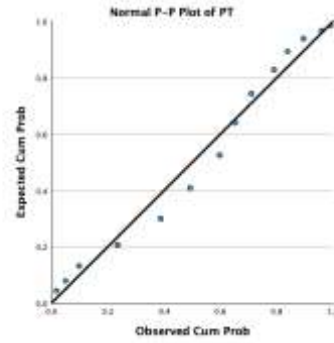
Extraction Method: Principal Component Analysis.

Appendix 2.3: P-P plots

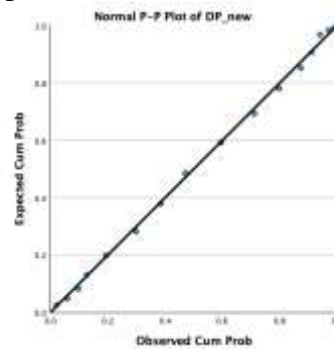
Commitment the pitched idea



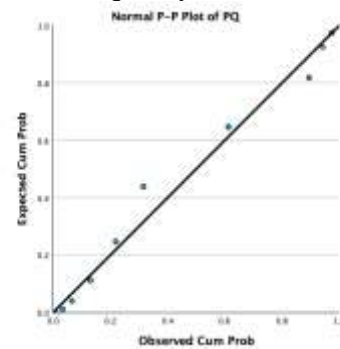
Perceived threat of feedback



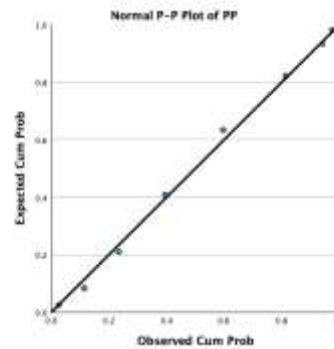
Degree of pivot



Perceived quality of feedback

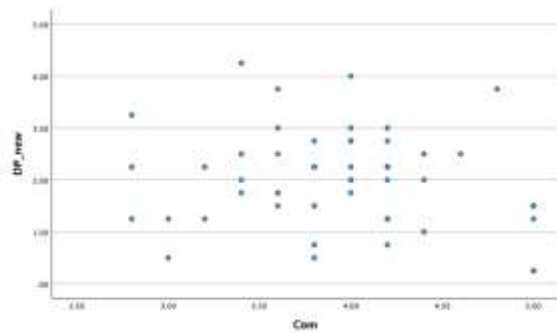


Perceived firm performance

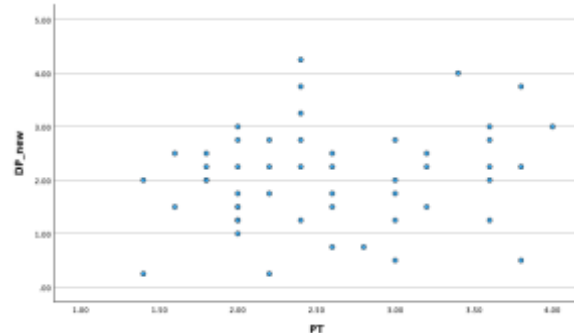


Appendix 2.4: Scatterplots

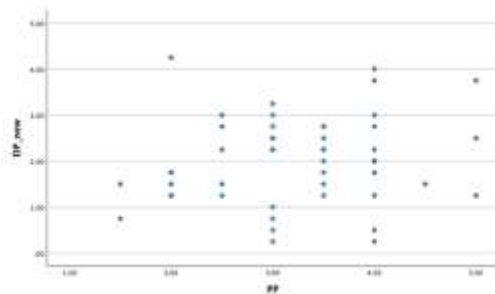
Commitment



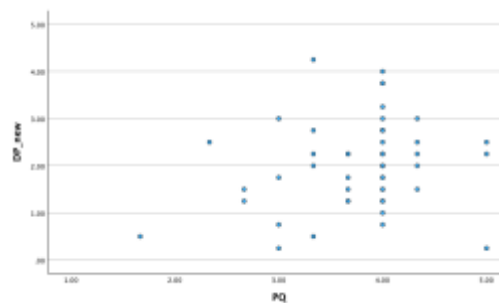
Perceived threat of feedback



Perceived firm performance



Perceived quality of feedback



Appendix 2.5: Regression output

	Coefficients	B	SE	Beta	t	Sig	Tolerance	Vif
1	(Constant)	-.064	.954		-.067	.947		
	Gender	.474	.309	.211	1.533	.132	.981	1.019
	PQ	.324	.205	.218	1.582	.120	.980	1.021
	PP	.152	.147	.141	1.033	.307	.996	1.004
2	(Constant)	-1.604	1.433		-1.119	.269		
	Gender	.785	.289	.350	2.715	.009	.897	1.115
	PQ	.654	.211	.440	3.098	.003	.737	1.356
	PP	.266	.147	.248	1.817	.076	.801	1.248
	Com	-.434	.216	-.279	-2.012	.050	.778	1.286
	PT	.540	.188	.415	2.872	.006	.714	1.400
3	(Constant)	-1.475	1.436		-1.027	.310		
	Gender	.708	.298	.316	2.380	.022	.844	1.185
	PQ	.657	.211	.442	3.116	.003	.737	1.356
	PP	.258	.147	.240	1.758	.085	.799	1.252
	Com	-.385	.221	-.247	-1.744	.088	.743	1.347
	PT	.452	.205	.347	2.202	.033	.598	1.673
	Interaction_center	.347	.326	.152	1.063	.293	.727	1.376

a. Dependent Variable: DP_new

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	0,83	3,26	2	.53263	52
Residual	-1,12	2,51	0	.75615	52
Std. Predicted Value	-2,26	2,29	0	1.000	52
Std. Residual	-1,39	3,12	0	.939	52

a. Dependent Variable: DP_new

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.571	3	1.524	1.872	.147 ^b
	Residual	39.058	48	.814		
	Total	43.629	51			
2	Regression	13.736	5	2.747	4.228	.003 ^c
	Residual	29.892	46	.650		
	Total	43.629	51			
3	Regression	14.468	6	2.411	3.721	.004 ^d
	Residual	29.160	45	.648		
	Total	43.629	51			

a. Dependent Variable: DP_new

b. Predictors: (Constant), PP, Gender, PQ

c. Predictors: (Constant), PP, Gender, PQ, Com, PT

d. Predictors: (Constant), PP, Gender, PQ, Com, PT, Interaction_center

Model Summary^d

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			Sig. F Change
						F Change	df1	df2	
1	.324 ^a	.105	.049	.90206	.105	1.872	3	48	.147
2	.561 ^b	.315	.240	.80612	.210	7.052	2	46	.002
3	.576 ^c	.332	.243	.80499	.017	1.130	1	45	.293

a. Predictors: (Constant), PP, Gender, PQ

b. Predictors: (Constant), PP, Gender, PQ, Com, PT

c. Predictors: (Constant), PP, Gender, PQ, Com, PT, Interaction_center

d. Dependent Variable: DP_new

Appendix 2.6: Additional analyses

							Collinearity Statistics		
			B	SE	B	t	sig	Tolerance	VIF
Man	1	(Constant)	3.471	1.118		3.106	.004		
		PT	.105	.198	.083	.530	.599	.994	1.006
		Com	-.404	.240	-.263	-1.685	.100	.994	1.006
	2	(Constant)	3.473	1.128		3.080	.004		
		PT	.049	.223	.038	.218	.829	.794	1.259
		Com	-.367	.251	-.239	-1.464	.152	.926	1.080
		Interaction_center	.233	.415	.102	.561	.578	.742	1.348

ANOVA^{a,b}

Gender	Model		Sum of Squares	df	Mean Square	F	Sig.
Man	1	Regression	2.480	2	1.240	1.637	.208 ^c
		Residual	28.785	38	.758		
		Total	31.265	40			
	2	Regression	2.723	3	.908	1.177	.332 ^d
		Residual	28.542	37	.771		
		Total	31.265	40			

a. There are no valid cases in one or more split files. Statistics cannot be computed.

b. Dependent Variable: DP_new

c. Predictors: (Constant), Com, PT

d. Predictors: (Constant), Com, PT, Interaction_center

Model Summary^{a,d}

Genderx	Model	R	R Square	Adjusted R Square		Std. Error of the Estimate	Change Statistics			Sig. F Change	
				R Square	R Square		F	Change	df1		df2
1.00	1	.282 ^b	.079	.031	.031	.87035	.079	1.637	2	38	.208
	2	.295 ^c	.087	.013	.013	.87830	.008	.315	1	37	.578

a. There are no valid cases in one or more split files. Statistics cannot be computed.

b. Predictors: (Constant), Com, PT

c. Predictors: (Constant), Com, PT, Interaction_center

d. Dependent Variable: DP_new

Appendix 3: Research Integrity Form

Research Integrity Form – Master thesis

Name:	Alexandre Facon	Student number:	s1041655
RLU e-mail address:	alex.facon@ru.nl	Master specialisation:	Innovation and Entrepreneurship

Thesis title: Navigating the innovation landscape at Open brains

Brief description of the study:

This research examines how the perceived threat of feedback influences the relationship between commitment to the pitched idea and the degree of pivot in startups. It finds that higher a commitment to the pitched idea reduces the likelihood of the degree of pivoting, but perceived threat of feedback increases it. However, the interaction effect between these factors was not significant.

It is my responsibility to follow the university's code of academic integrity and any relevant academic or professional guidelines in the conduct of my study. This includes:

- providing original work or proper use of references;
- providing appropriate information to all involved in my study;
- requesting informed consent from participants;
- transparency in the way data is processed and represented;
- ensuring confidentiality in the storage and use of data;

If there is any significant change in the question, design or conduct over the course of the research, I will complete another Research Integrity Form.

Breaches of the code of conduct with respect to academic integrity (as described / referred to in the thesis handbook) should and will be forwarded to the examination board. Acting contrary to the code of conduct can result in declaring the thesis invalid.

Student's Signature: _____



Date: _____

14/06/2024

To be signed by supervisor

I have instructed the student about ethical issues related to their specific study. I hereby declare that I will challenge him / her on ethical aspects through their investigation and to act on any violations that I may encounter.

Supervisor's Signature: _____



Date: _____

14/6/2024