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"Pitching an idea: what is the role of perceived feedback in the relationship between commitment prior to a pitch and the speed of pivoting of an entrepreneur?"

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Preface

Hereby I proudly present my final work of the Master Innovation & Entrepreneurship at Radboud University Nijmegen called “Pitching an idea: what is the role of perceived feedback in the relationship between commitment prior to a pitch and the speed of pivoting of an entrepreneur?”

I would like to thank Prof. dr. Bas Hillebrand for his fine, structured supervision throughout this process. Additionally, I would like to thank my second examiner Dr. ir. Nanne Migchels, for the time and effort to read my thesis. I would like to thank the company Bluehub for the nice cooperation and provision of the data, and their further contribution to this thesis. Furthermore, I would like to thank all the respondents who participated in completing the pilots and the final survey. I would also like to thank the students for the great cooperation with whom I conducted the survey. Finally, I would like to thank my family and friends for all the support.

I hope you will enjoy reading my master thesis, and it will give new insights!

Eline Agterberg

Abstract

This research examines how perceived threat of feedback moderates the relationship between commitment to an idea prior to a pitch and the speed of pivoting. A quantitative study was conducted through an online survey method. 61 Dutch entrepreneurs who have pitched a new idea at the company Bluehub in recent years participated in the survey. Two live pitches were attended, and four pilot studies were conducted. Two hypotheses, derived from theoretical frameworks, were tested. The first hypothesis suggested a negative relationship between commitment to an idea and the speed of pivoting. The results confirmed the hypothesis and showed a significant negative effect, indicating that higher commitment leads to slower pivoting. The second hypothesis proposed that perceived threat of feedback positively moderates this relationship. The results showed a non-statistically significant positive relation, but a trend towards significance, possibly limited by the relatively small sample size.
Control variables perceived quality of feedback and innovativeness, were significant or near significant, indicating their importance in explaining variations in pivot speed. Additional analyses showed significant interaction effect within subgroups.
This study provides valuable insights into the dynamics of entrepreneurial commitment, feedback perception and the speed of pivoting.

Keywords: *Entrepreneurial commitment, speed of pivoting, perceived threat of feedback, pitching an innovative idea*

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1. Introduction

There is no doubt that feedback has many benefits for the validation and refinement of new ideas. Entrepreneurs can receive feedback when they have an idea for a new product or service, by doing a pitch. Especially in the early phases of developing an innovative idea, entrepreneurs need to pitch their idea to various audiences, including experts, investors, and potential customers (Grimes 2018). Pitching the idea for a community with different areas of expertise, can help entrepreneurs move forward and improve the development of the idea. However, research shows that when entrepreneurs who worked on an idea for a longer period of time, frequently tend to be committed to this idea, which can lead to errors of escalation (Staw, 1981). Commitment is the extent to which an entrepreneur identifies with and is engaged with its pitched idea (Tang, 2018). Results show that entrepreneurs who have a strong commitment to an innovative idea, are more likely to ignore the feedback they receive (Sarangee et al., 2014). Holding on to the original idea, resulting in escalation of commitment, is even a bigger problem in the development phase of a new product or service (Schmidt and Calantone, 2002). Even when entrepreneurs receive approval and validation of their ideas from their audience, they sometimes encounter disagreements and negative feedback (Perkins, 2019). Continuing to invest in these projects, without doing anything with the received feedback, leads to inefficient use of resources and lowers profits, while entrepreneurs actually have to adjust their initial idea several times before it is right.

Adapting innovative new ideas is called pivoting in the literature. Pivoting is defined as a substantive transformation of the company's business model to create or maintain competitive advantage (Grimes, 2018). Pivoting is about the process of further developing a new idea and the changes entrepreneurs make to this idea to improve it. Pivoting has attracted more attention lately and is considered as important in business development, but it is widely recognized that it is not easy for most entrepreneurs (Burnell et al. 2023, Grimes 2018). This comes as a result of resistance to change based on identity and eager to preserve and protect their idea. A strong commitment to an idea therefore makes it even harder to pivot, as entrepreneurs want to stick to their original idea. This research the focus is on the speed of pivoting, i.e. how fast an entrepreneur decides to make substantive changes to one or more elements in the business model (Grimes, 2018; Berends et al., 2021). After doing a pitch, an entrepreneur decides to do something with the received feedback, which can lead to pivoting. This decision can be quick or procrastinated, which is tested in this study. This is important because most literature currently focuses on the areas and implementation of pivots, however

the choice and speed to pivot is still understudied. This creates an incomplete picture of what constitutes a successful pivot. The few articles that address the speed of pivoting are about the timing of the entrepreneurial action, but not the time it takes to pivot (Berends et al., 2021). This gap in the literature is a problem because the speed of a pivoting decision affects the progress of the idea and leads to an inefficient entrepreneurial process. As a result, entrepreneurs may waste valuable time and resources and fall behind competitors.

Scholars acknowledge that not all the feedback entrepreneurs receive from experts, have the same effect (Grimes, 2018). Researchers have noted that positive and negative feedback have different effects on entrepreneurial self-efficacy and action (Clausen, 2019; Hsu et al., 2017). Positive feedback is unlikely to result in pivoting but is more likely to stimulate the entrepreneur to hold on to their idea. In contrast negative feedback can come across as a threat to entrepreneurs' pitched idea, which can influence their behavior to pivot. Perceived threat of feedback is here defined as the degree to which an entrepreneur believes that the provided feedback challenges the pitched idea (Green et al., 2017). When negative feedback is perceived as a threat, it may strengthen the tendency to be defensive and not change direction. Entrepreneurs may even consider feedback as a threat to their own identity, making them reluctant to change their course of action (Grimes, 2018; Toivonen et al., 2023). There is currently still a lack of micro-level understanding of how entrepreneurs respond to negative feedback (Kaffka et al., 2021).

Several studies have addressed the importance of feedback during pitches for entrepreneurs, and it is clear that there is a relationship between the entrepreneur's commitment prior to a pitch and the likelihood of pivoting. However, few have examined other factors that effect this relation. Not all entrepreneurs are equally reluctant to pivot as a response to feedback, some embrace feedback and change direction, while others persevere (Berends et al., 2021). The current literature lacks precise insight into when and why some founders can overcome resistance to pivoting (Burnell et al., 2023). That is why the objective of this study is to focus on the way how the feedback is perceived, if it is perceived as a threat, and how this affects the speed of pivoting. If the feedback is perceived as a threat, it may provide a greater chance that the entrepreneur might hold on to the original idea and not change directions.

Therefore, the main research question of this study is formulated as follows:

"How does perceived threat of feedback moderate the relationship between commitment to an idea prior to a pitch and the speed of pivoting?"

1.1 Theoretical relevance

It is important to highlight that pivoting is not always a positive thing (McDonald and Gao, 2019). This study does not delve into the question when and how entrepreneurs who pitched an idea should pivot. It aims to improve the understanding about the commitment entrepreneurs have prior the pitch leading to the speed of pivoting. This is examined without making claims about the correctness of pivoting decisions. Multiple studies have addressed the important role of entrepreneurial commitment to an innovation project on willingness to pivot (Sarangee et al. 2014, Schmidt and Calantone 2002). However, few studies focused on elements that can effect this relationship, such as the role of perceived threat of feedback. This moderating effect may emphasize the importance of giving feedback appropriately, so that entrepreneurs are more likely and more willing to pivot and the speed of this is affected.
By combining several existing literatures on these concepts and collecting new data from entrepreneurs, new knowledge is created.

1.2 Managerial relevance

The new insights created in this research about the importance of perceived feedback, when an entrepreneur is pitching a new idea, is beneficial for both entrepreneurs as organizations who organize pitch sessions. The insights provide understanding of how best to provide feedback so that entrepreneurs receive it not as a threat and are therefore more likely to pivot. Entrepreneurs can use these findings by creating awareness of these concepts and thereby handling feedback after the pitch more effectively.
Additionally, this study provides practical insights for organizations who organize pitch sessions for entrepreneurs. They can use this to improve their sessions in the future by ensuring that feedback providers approach entrepreneurs in the right way so that they are willing to change and accept the feedback. This may also be of interest to current investors of pitch sessions to see the importance of investing in them, and for attracting potential new investors.

1.3 Research outline

This study is presented into five main chapters. The first chapter discusses the main problem, relevancy, and the research question. In chapter two a theoretical framework is provided with an explanation of the important concepts of this study, and how they are related with each other. Chapter three, the methodology, discusses the quantitative approach of this study, the

data collection, the data analysis, the limitations, and the research ethics. Chapter four presented the results from all analysis. The final chapter concludes the study's conclusion, discussion, and limitations.

2. Theoretical background

This chapter provides an overview of the relevant theories and assumptions related to the main concepts of this research. In addition, hypotheses and a conceptual model are developed as a basis for the research.

2.1 Pitching and feedback

When entrepreneurs come up with a new creative idea, they can receive feedback on their idea in several ways. One important way in which they may be confronted with feedback, is by pitching the idea to experts. A pitch is a short oral presentation of an opportunity, delivered to potential stakeholders (Clark, 2008). Entrepreneurs often try to attract potential investors with a short verbal introduction to their businesses by doing a pitch (Getty 2014, Clark 2008). Besides pitches being used to attract investors, pitching a new idea is useful to receive feedback from experts. Entrepreneurs think that effective pitches are important to convince the audience of your idea and a lot of examples of success stories about pitches are on the internet. Given the importance of pitching, much literature is focusing on effective and successful pitching (Clingingsmith and Shane, 2018).

Feedback plays an important role in the development of a new idea. Feedback is an inextricably element of pitching, for example, entrepreneurs can gauge whether their idea will be embraced and found feasible. Early feedback meetings, like the interactions after an entrepreneur pitched a new idea to stakeholders who do not know each other well, are increasingly common, are beneficial and can create long-term relationships (Van Werven et al., 2022). However, research lacks knowledge of what pitchers eventually do with the feedback they receive from the audience.

Feedback is described as the information communicated to a person that is intended to modify his or her thinking or behavior for the purpose of learning (Shute, 2008). A lot of research is done about the importance of feedback for both individual and organizational learning. Research was conducted on entrepreneurs' sensemaking of critical feedback from their stakeholders and its effect on their entrepreneurial cognition (Kaffka et al. 2021). This shows that social exchanges with early stakeholders are an important source of information and feedback for entrepreneurs in the process of developing opportunities for their ideas. Entrepreneurs can benefit from the wisdom of stakeholders and early inclusion of feedback in jointly constructing entrepreneurial opportunities. Additionally, Sjödin et al. (2018) provide a process model of how individuals engage in absorbing and distributing of new external

knowledge. This process model clarifies how an entrepreneur's skill in external knowledge absorption activities can result in the utilization or termination of knowledge. This highlights the important role of individual involvement in recognizing, assimilating, and applying external knowledge, which also occurs after pitching an idea.

The speed of pivoting can vary depending on the feedback an entrepreneur receives and how they perceive this after a pitch, which is what this research focuses on.

2.2 Speed of pivoting

When an entrepreneur receives feedback after pitching an innovative idea, they must decide what course to take. The type of decision that redirects the course of action is labeled as a pivot (Hampel et al., 2020). Research indicates that pivoting is one of the most common and important entrepreneurial decisions that involves irreversible commitments and unknowable outcomes (Chaparro and De Vasconcelos Gomes, 2021).

Pivoting knows many definitions in literature and is becoming more popular. It is described as a change in a firm's strategy that reorient the firm's strategic direction through a reallocation or restructuring of activities, resources, and attention (Kirtley and O'Mahony, 2020), or in the lean startup method, as a structured course correction designed to test a new fundamental hypothesis about the product, strategy, and engine of growth (Ries, 2011). Business model pivoting is seen as a fundamental change to a business model component (Burnell et al., 2023). While the term pivoting is widely used in research, there is still little knowledge about when and how entrepreneurs choose to make strategic change.

In this study, pivoting is defined as a substantive transformation of the company's business model to create or maintain competitive advantage (Grimes, 2018). There can be made a distinction between the degree of pivoting in different areas, and the speed of pivoting. According to Eisenmann (2020) a pivot implements a significant change to one or more of the following business model elements: customer target segments, product features, marketing approach and/or monetization approach. This business model change is typically in response to feedback, while retaining other elements. The degree of pivoting focuses on which business elements are changed in the process to optimize the idea. This shows that startups that had an optimal rate of pivoting, had stronger seed equity valuation growth (Eisenmann, 2020).

However, in this study the focus is on the elapsed time between when an entrepreneur receives feedback after pitching an idea, and when it responds to that feedback. Since there is

no clear conceptualization of speed of pivoting in the literature yet, this study formulates the following definition: how fast an entrepreneur decides to make substantive changes to one or more elements in the business model (Grimes, 2018; Berends et al., 2021). Time is a defining feature of human activity but has often been understudied in theories about entrepreneurial action (Wood et al., 2021). Entrepreneurial action is the decision to take action toward entrepreneurial endeavors and introduce something new to the world, under conditions of uncertainty (Wood et al., 2021). This can be translated into speed of pivoting in this study. The key dimensions of time that entrepreneurs consider are 'initialization' (i.e., timing of action), 'pace' (i.e., time from action to outcome), and 'chronology' (i.e., sequencing of action). Because this study focuses on the time and speed an entrepreneur takes between receiving feedback after a pitch and making the decision to pivot, the dimensions pace and chronology are not applicable in this study.

By initialization is meant the point in time that an entrepreneur considers appropriate for beginning entrepreneurial action. Here, the focus is on when the time is right to act. When entrepreneurs perceive action as more immediate, they will be more likely to act (Berends et al., 2021). This study measures whether the entrepreneur was able to make a significant change to a business model element quickly, or whether it was procrastinated. It looks at how long it took to make this choice to pivot. How time plays a role in making decisions to pivot could help researchers understand the continuous development of opportunities for change in entrepreneurship (Wood et al., 2021). This dimension of speed is important to research because most literature on pivoting focuses on the different areas and implementation of a pivot. However, the process prior to the pivot, and deciding how long it takes to do something with feedback, is still understudied.

2.3 Commitment to idea

Several studies describe that commitment is characterized by a sense of loyalty, involvement, and willingness to exert effort and make sacrifices to maintain the relationship or achieve the goal (Kaffka et al., 2021). This commitment shows itself as a steadfast belief in the viability and potential success of the one's own idea. Entrepreneurs are known to bind strongly to tangible or intangible objects, for example, a new developed idea. In fact, research suggests that creating a new object or idea is one of the most powerful ways to create psychological ownership, which is a state in which an idea feels 'yours' (Van Dyne & Pierce, 2004). When someone experience feelings of psychological ownership, they seem to resist outside feedback

and others' suggestions for change (Baer and Brown, 2012). The feeling of psychological ownership ensures that entrepreneurs are more likely to persevere with their original idea rather than to pivot (Grimes, 2018).

In this study, commitment is described as the extent to which an entrepreneur identifies with and is engaged with its (initial) pitched idea (Tang, 2008). According to Tang (2008), entrepreneurial commitment has three key dimensions: affective, behavioral and continuance commitment. Affective commitment refers to the desire and aspiration of an entrepreneur to establish a new business idea. Behavioral commitment refers to the willingness of an entrepreneur to put significant efforts into the new business idea. Continuance commitment refers to an entrepreneur's intention to stick to the new business regardless of the uncertainties and unpredictability associated with the startup process (Meyer and Herscovitch, 2001; Mowday et al., 1979). This commitment often causes entrepreneurs to find it difficult to pivot or not see the need for it.

Commitment refers to an enduring desire to maintain something, a motivation to protect something one considers important because one feels emotionally attached to it and/or because one feels that doing so has beneficial consequences (or failing to do so has detrimental consequences). It examined why entrepreneurs are so committed to an idea that they are likely to refuse to change or pivot. This is a result of extreme commitment to their own idea and identity (Crilly, 2017), or because they fear it will threaten their relationships with other stakeholders (Grimes, 2018). These stakeholder pressures arise because entrepreneurs want to maintain their legitimacy, limiting their ability to revise ideas. As a result, an entrepreneur who is committed to an idea feels a degree of enduring desire for an innovation or new business, which he or she wants to protect. This desire to continue with the idea and not want to change things leads to loss of face.

Previous research has shown that entrepreneurs who have a strong commitment to an innovation project are more likely to ignore or resist the feedback (Sarangee et al. 2014, Schmidt and Calantone 2002). This ignored feedback leads to a smaller chance of pivoting, this resulted in the following hypotheses:

H1: Commitment to a pitched idea has a negative effect on speed of pivoting.

2.4 Perceived threat of the feedback

This research suggests that being strongly committed to a pitched new idea, does not necessarily always have an equally strong negative effect on pivoting. Instead, it argues that

the impact of commitment on pivoting depends on the degree to which the feedback received during the pitch is perceived as a threat.

Perceived threat of feedback is defined as the degree to which an entrepreneur believes that the provided feedback challenges the pitched idea (Green et al, 2017). Providing feedback that assesses learning performance, is proposed as a necessary process in optimizing (entrepreneurial) performance (Jellicoe & Forsythe, 2019). It is important after a pitch to focus on how an entrepreneur receives and responds to feedback, so they can assess what steps are needed to move forward and learn from this. When the received feedback is perceived as a threat, the entrepreneur believes that the provided feedback is a critical analysis that disconfirms the potential of the idea. When the feedback suggests to delete certain elements of the pitched idea, it can cause a sense of loss (Grimes, 2018).

Feedback received from the audience after a pitch can be positive in nature, and this kind of feedback is unlikely to result in pivoting. Rather, it will result in entrepreneurs believing more in their original idea and encourages to continue with it. However, feedback that is more negative in nature is more likely to indicate the adjustments that still need to be made to the idea. Negative feedback may rather come across as a threat, but unfortunately there is currently still a lack of understanding of how entrepreneurs actually respond to negative, critical feedback and which may imperil their prospect by failing to adapt (Kaffka et al. 2021; Wood et al., 2018).

Negative, threatening feedback can trigger an uncomfortable tension, which can lead to stronger intentions and goal commitment. This threatening feedback can be experienced as disorienting and can cause people to feel a need to protect their idea and, as a consequence, to reject attempt by others to shape them (Baer and Brown, 2012). Clausen (2020) proposes that although positive feedback helps entrepreneurs formulate the venture offerings, negative feedback from the stakeholders challenges their assumptions, thereby enabling them to assess the viability of the venture. Even though (negative) feedback that comes across as a threat can therefore also have positive consequences for an entrepreneur, this study assumes the negative consequences of perceived threat of the feedback. This is stated because when feedback is perceived as a threat it can lead to defensiveness that hinders goal related performance (Vitriol and Moskowitz, 2021) and this makes entrepreneurs reluctant to change course of action (Grimes, 2018).

Hence, the following hypotheses is created:

> H2: The relationship between commitment to a pitched idea and speed of pivoting is positively moderated by perceived threat of feedback.

2.5 Conceptual model

The conceptual framework of this study is shown in Figure 1.

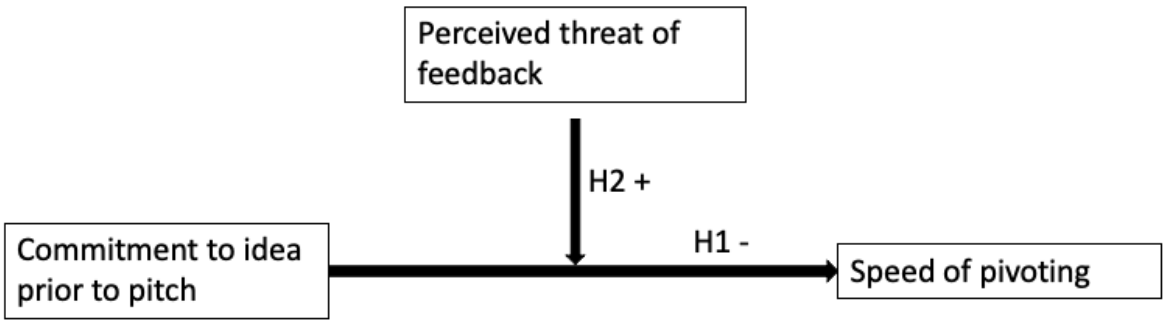

Figure 1. Conceptual framework

3. Methodology

This chapter discusses the methodology of this research. The research design of this study is explained, followed by the data collection procedure. Then the operationalisation of the constructs and control variables are described, followed by the data analysis procedure. Last, the research ethics of this study will be reported.

3.1 Research design

To conduct this quantitative research, a deductive research approach is used. The following research question is formulated: *"How does perceived threat of feedback moderate the relationship between commitment to an idea prior to a pitch and the speed of pivoting?".* The purpose of this study is to answer this research question by testing the previously mentioned hypotheses. The hypotheses were made based on literature and were empirically tested using existing scales.

Together with eight other master students from Radboud University, I studied the relationship between commitment prior to pitch and pivoting, all with a focus on other moderating effects. Together we developed a quantitative, online survey to collect data to test the hypotheses. Surveys are very suitable and feasible for surveying large and diverse populations within a relatively short period of time (Vennix, 2019). This study used a cross-sectional research design, meaning that the data is measured and collected at one point in time. This is appropriate for examining the relationship between variables.

This methodology section only focuses on the constructs that were relevant for this study.

3.2 Data collection procedure

3.2.1 Target population

The unit of analysis for this study are entrepreneurs with a new idea that they have pitched for experts. The target population here are entrepreneurs with an innovative idea within a company, a start-up or as a student, over the age of 18 years.

3.2.2 Sample and data collection procedure

This research is conducted in collaboration with the company Bluehub, based in Venlo, Netherlands. Innovation agency Bluehub is focused on advising and unburdening innovative and purpose-driven companies that respond to the commercial opportunities presented to

them by the fourth industrial revolution (Bluehub, 2024). Bluehub organises an opportunity for entrepreneurs to pitch a new idea in front of a small audience of experts and interested people, and brainstorm together after this, called Open Brains (Open Brains, 2024). Open Brains is an independent concept, which believes in the power of collaboration and knowledge sharing to improve innovative ideas. Open Brains started in 2015, with a pitch session every Friday morning. Since January 2024, Open Brains is organised twice a month on Thursday mornings. A session lasts an hour and is an entrepreneur's chance to receive feedback and turn an idea into a business model. The audience of a pitch consists of a community of different expertise, between 10 and 15 people on average. It is a free walk-in for interested parties, but sometimes Bluehub also invites specific experts of the respective topic. After the pitch, a brainstorming session and feedback moment takes place where the experts give advice and critical input on the idea.

The survey for this research was sent to entrepreneurs who pitched an idea during an Open Brains session of Bluehub. The survey was distributed from 8 May 2024 to 30 May 2024. In total, there have now been 250-300 pitches over the past years. However, Bluehub did not properly document all entrepreneurs' data in the first few years, resulting in the loss of some data. As a result, the survey was eventually sent to 160 entrepreneurs. In quantitative research, an appropriate sample has a direct impact on the researcher's ability to draw conclusions with confidence. To be able to make valid statements, there must be at least 20 respondents for each variable (Hair et al., 2018). For this study, the aim was to collect a minimum of 60 respondents.

The survey was created and sent via the programme Qualtrics. The questions are drafted in Dutch, as almost all entrepreneurs are Dutch. Completing the survey takes no more than 10 minutes. The survey was sent to Bluehub, they then forward it to the entrepreneurs who pitched an idea. The survey was sent to all entrepreneurs, regardless of whether they have continued with this idea and have a business now or have stopped doing so.

To get a better understanding of what a pitch at Open Brains looks like, 2 pitches were actively attended. A pitch session was attended in week 14 and one in week 21. The entrepreneurs who made a pitch were both a man and a woman, both with different questions and audiences. During the feedback moment, you were expected to actively participate and became very involved. It became very clear what the format of a session looks like and what kind of feedback was given. Brainstorming is done together, which also makes the feedback very comprehensive. In this way, for example, it already became clear how entrepreneurs

react to critical feedback, which can come across as threatening to their idea. This is very helpful for the continuation of the study.

Every two weeks, Bluehub sends out a newsletter to its network, included many entrepreneurs who have pitched in the past. In April, two weeks prior to the survey, the newsletter included an introduction of the researchers and this survey. This ensures that the entrepreneurs are already informed about the survey that will follow and know its purpose. The survey was sent out in May, by Bluehub's director. Since he knows the entrepreneurs personally, this will increase the chances of a high response rate. After two weeks, a general reminder message followed from Bluehub to the entrepreneurs. Due to too few responses, another personal email with a call to complete the survey follows a week later from Bluehub's director to the entrepreneurs. A final reminder was sent in the last week. Additional attention was also drawn to the survey via Bluehub's LinkedIn. In total, respondents have three weeks to complete the survey. To encourage and increase the response rate, a prize is available in the form of two free consultancy hours at Bluehub, which was randomly raffled off to one of the entrepreneurs who indicated their desire to participate at the end of the survey.

As a conclusion to this research process, the results will be presented to the management and stakeholders of Bluehub, as a thank you for making the data collection available.

3.2.3 Sample results

The survey was sent to 160 entrepreneurs who pitched their business idea at Bluehub in the past. 80 entrepreneurs responded. 19 were filtered out and deleted from the dataset, because of not completing the whole questionnaire. To determine the size of the missing values, each question was inspected for missing values and deviant numbers. The missing value analysis shows that all three constructs have a missing value of 0%, which means they are negligible. No deviant numbers were found, so nothing more needed to be deleted or analysed. 61 respondents remained, meaning a total response rate of 38,13% was achieved.

Table 1. Demographic variables

	Category	Frequency	Percentage
Gender	Male	49	80.3%
	Female	12	19.7%
	Different	0	0%
	Would rather not say	0	0%
Age	18-25	1	1.6%
	26-35	9	14.8%
	36-45	20	32.8%
	46-55	16	26.2%
	56-65	14	23.0%
	65+	1	1.6%
Year	2014	0	0%
	2015	1	1.6%
	2016	3	4.9%
	2017	5	8.2%
	2018	10	16.4%
	2019	15	24.6%
	2020	8	13.1%
	2021	12	19.7%
	2022	4	6.6%
	2023	0	0%
	2024	3	4.9%
Type of idea	Product	15	24.6%
	Service	13	21.3%
	Combination	28	45.9%
	Other	5	8.2%

Demographic variables (table 1) shows that the gender of respondents is not distributed equally. The genders male and female are present, with an overrepresentation of male (80.3%).
The demographic variables shows that all age groups of entrepreneurs are present, with an age group of between 36 and 45 being overrepresented (32.8%). For the distribution of age, many respondents are between 26 and 56, with almost no respondents under 26 or over 65.

The sample includes respondents from almost every year in which pitches took place, with a majority in 2019. It is explicable that there are no respondents from 2014 because no contact details were stored from these entrepreneurs', so they did not receive the survey. No pitches took place in 2023. The type of idea entrepreneurs pitch is in the majority a combination of a product and a service.

3.3 Measurements

3.3.1 Pilot study

Before the final survey is sent to the entrepreneurs, a pilot study is done. For the pilot study, four entrepreneurs who pitched their idea in the past at Bluehub have been interviewed individually to test the questionnaire and get a better picture of the entrepreneurs. The pilot interviews were conducted in week 17 and lasted between 30 and 60 minutes. Two pilot interviews were conducted online, and two interviews were conducted face-to-face.

Because the items of the constructs are adapted to this context and will be translated into Dutch, pilots are essential. During the pilot interviews, the Think Aloud method is used. The entrepreneurs are asked to speak aloud any words in their mind as they fill in the survey (Alhejaili et al., 2022). In this way, questions that are perceived as difficult or unclear can be heard directly. The resulting insights can help to eliminate unclear elements and errors and ensures validity of the scale items. This allows testing whether the questions are properly interpreted and can be answered. This increases the quality of the questionnaire.

From the pilot study, important insights emerged for all constructs. For instance, it showed that the items on perceived threat should not come across as too threatening, because entrepreneurs who pitch at Open Brains come with the mindset deliberately to get feedback. Different words for threat were tried and asked during the pilot which fit best. In addition, the pilot showed that entrepreneurs are generally already open to pivoting, the questions were adjusted to this. Finally, some introduction questions were added to make the entrepreneur think back on their pitch properly, as they are asked about something from the past.

After the adjustments from the pilot study, feedback is requested from the director of Bluehub and the supervisor of this study. The adjustments from the pilot study and the feedback results in the final survey. The final survey can be seen in Appendix 3.

3.3.2 Operationalization of constructs

Designing the survey and collecting the data for this study, is done with eight other students from Radboud University. Together we research the relationship between commitment prior to a pitched idea and pivoting. We operationalized the constructs used in this research together. We used existing measurement items and scales, found in literature, and adapted them to the context of this study. The questionnaire was established in collaboration with supervisor Dr. B. Hillebrand and the company Bluehub, who provides access to respondents for data collection. This study uses a 5-point Likert scale, ranging from strongly disagree (1) to strongly agree (7).

Before the items of the constructs enter the survey, several introduction questions are asked. These questions are designed to make respondents think back and reflect on the moment of the pitch again, because this was sometimes years ago. This increases the likelihood of getting reliable and honest answers about the pitch.

The measurements used for the various constructs are showed per construct in table 2. The main constructs of the research consist of one independent variable, one dependent variable and one moderator.

The 5 items for the construct 'commitment' to the pitched idea are based on Tang (2008), Schmidt and Calantone (2002) and Mowday et al. (1979) representing de entrepreneurs' level of commitment. The 4 items for the construct 'speed of pivoting' are borrowed from the dimension initialization of Wood et al. (2021) and measures the how fast an entrepreneur decides to pivot after a pitch. The last construct, 'perceived threat of feedback' has 5 self-developed items, which are based on Brandt et al. (2015).

The original items of all constructs, on which the adapted items are based, can be seen in Appendix 1

Table 2. Conceptualization of constructs

Construct	Definition	Adapted Items	Source
Commitment (to idea prior to pitch)	The extent to which an entrepreneur identifies with and is	1. Before the pitch, I was very committed to my business idea.	Schmidt & Calantone (2002) and

	engaged with its (initial) pitched idea (Tang, 2018).	2. Before the pitch, I was determined to stick to my business idea. 3. Before the pitch, I felt very committed to my business idea. 4. Before the pitch, I felt very emotionally attached to my business idea. 5. The business idea I pitched meant a lot to my personally.	Mowday et al., (1979)
Speed of pivoting	How fast an entrepreneur decides to make substantive changes to one or more elements in the business model (Grimes, 2018; Berends et al., 2021).	1. After the pitch, I was quick to make a significant change to one or more elements of the business model. 2. After the pitch, it took me a while to decide whether I wanted to change aspects of the business model. 3. After the pitch, I procrastinated making decisions in response to the feedback received.	Wood et al., (2021)
Perceived threat of feedback	The degree to which an entrepreneur believes that the provided feedback challenges the pitched	1. The feedback I received during the pitch contradicted the core of my business idea. 2. The feedback I received during the pitch rejected	Self-developed items, based on Brandt et al., (2015)

	idea (Green et al., 2017).	aspects of my business idea that were important to me. 3. I felt that much of the feedback I received questioned my business idea 4. During the pitch, the audience had significant doubts about my business idea. 5. During the pitch, I experienced the feedback from the audience as threatening to my business idea.	

3.3.3 Control variables

In order to enhance the internal validity of this study, meaning that the independent variable is indeed the cause of the effects, two control variables were used. The control variables for this research are summarized in table 3. The first control variable is ‘perceived quality of feedback’, because the quality of feedback determines the clarity, relevancy, and development of the feedback, which ultimately affects the recipient's behavior (Halman et al., 2016). The 3 items for ‘perceived quality of feedback’ are adapted from Lizzio & Wilson (2008). The second control variable is ‘Innovativeness’ which is about the degree of newness of the pitched idea. The item for ‘innovativeness’ is self-developed.

Table 3. Control variables

Construct	Definition	Adapted Items	Source
Perceived quality of feedback	The degree to which the feedback is perceived as supporting, including elements	1. I was able to understand the feedback I received well.	Lizzio & Wilson, 2008

	such as clarity, relevancy, and development on the recipient's performance (Halman et al., 2016)	2. I was able to make good use of the feedback I received. 3. The feedback I received was productive.	
Innovativeness/ Idea novelty	The degree of 'newness' of an innovation (Garcia & Calantone, 2002).	1. The business idea I pitched was completely new to the market at the time.	Self-developed item

3.4 Analyses

This study uses IBM SPSS Statistics (version 26) to analyse the gathered data. The respondents who not filled in the full questionnaire, are removed from the data file. The data will be examined for extreme and multivariate outliers. For these analyses, the option 'Frequencies' in SPSS is used. Then, descriptive statistics are extracted, followed by a factor and reliability analysis. In order to answer the research question of this study, which exists of multiple constructs, a multiple regression analysis is chosen. The primary purpose of a regression analysis is to predict a single dependent variable using one or more independent variables. For this study, that means testing the effect of commitment to an idea on speed of pivoting and the moderating effect of perceived threat of feedback.

3.5 Reliability and validity

3.5.1 Reliability

The first step in the data analysis process is the internal consistency of scales from the actual data set. In order to verify that all the constructs are reliable, Cronbach's Alpha of each construct was performed. The results, as can be seen in Table 4, show that the construct Commitment has a Cronbach's Alpha of .804, and is therefore reliable.

Speed of pivoting has two items that are negatively formulated and therefore should be reversed, namely item2 and item3. The Cronbach's Alpha of speed of pivoting is negative, -.081. A negative Cronbach's Alpha is incorrect and indicates inconsistency within the scale. This can be explained by respondents not understanding the items properly or certain words

caused misinterpretation. When any possible combination of 2 items is used (Like item1 and item2 together and item3 removed), the Cronbach's Alpha remains negative. As a result, the choice is made to remove both item2 and item3. Item1 best measures the construct, however, no Cronbach's Alpha and percentage explained variance can be calculated from item1 only.

Perceived threat has a Cronbach's Alpha of .834, indicating good internal consistency. However, it was decided to remove item4 to increase convergent and discriminant validity, increasing the Cronbach's Alpha to .855 and the explained variance to 70%.

Table 4. Internal consistency and convergent validity

Construct	Original # items	Cronbach's Alpha	# of items deleted	Cronbach's Alpha after deletion	Percentage explained variance
Commitment to idea	5	.804	0		58%
Speed of pivoting	3	-.081	2	-	-
Perceived threat of feedback	5	.834	1	.855	70%
Perceived quality of feedback	3	.869	0		80%
Innovativeness	1	-	0		-

3.5.2 Validity

Once reliability is established, the next step is to consider the validity of each construct. Construct validity can be assessed through discriminant validity and convergent validity (Hair et al., 2018). Factor analysis is the statistical technique used to evaluate construct validity. To determine if the data is suitable for factor analysis, the Kaiser-Meyer-Olkin (KMO) value should be > 0.5 and Bartlett's test of Sphericity should be statistically significant with sig. < 0.05.

Discriminant validity is the degree to which a construct is different from other constructs. By putting all items of all constructs in one factor analysis model, each construct shows if they load only on one factor. Component analysis with Varimax rotation is conducted. The results show that KMO > 0.50, namely 0.76 which is a good value and Bartlett is significant ($p < .001$). The communalities after extraction are all above 0.536 and the factor loadings are all above 0.50. The model explained 69% of the variance together.

All items load on the factors they are expected to load, all items of commitment have positive high loadings. As indicated earlier, item2 and item3 of speed of pivoting are deleted, because of the negative Cronbach's Alpha, when these items do add in the factor analysis, these are both cross-loaders. The remaining item1 of speed of pivoting, now has a very high, positive factor loading.

Another deleted item is item4 of Perceived threat of feedback. Not only did this item have a cross-loading with a difference between the highest and the second highest loading <.20 (.426 and .598), but it also loaded quite low on its factor and highest on the factor Speed of pivoting. A possible explanation could be that the phrasing of 'doubt' in the item4 has something to do with decision making, which is covered in deciding in speed. As a result, it can be concluded that item4 does not accurately represent the definition of perceived threat of feedback.

Convergent validity is to confirm if the measurements of a concept are correlated with each other. All items of a construct are put in one factor analysis, to measure if all items in one construct are measuring that construct. KMO (>0.5) and Bartlett's test (Sig) for all constructs is appropriate as can be seen in table 4, the construct Perceived threat of feedback has a percentage explained variance above the desired explained variance of 60% (Hair et al., 2018), meaning that the construct has sufficient total variance explained. Commitment has high communalities and high loadings, however, it has an explained variance of 58%. This can be explained by the relatively small sample, so a few deviant respondents have a large impact. No factor analysis can be run for Speed of pivoting because only 1 item is used. To check convergent validity with item2 and item3 in it, Bartlett's test of Sphericity was insignificant, the items had low communalities and the percentage explained variance was only 39%. This is further confirmation that it is better to proceed with the analysis without these items. The results of the discriminant and convergent validity tests can be seen in Appendix 4.

3.6 Ethics

It is crucial to restrict research ethics in this study because data was collected from respondents. The ethical considerations of this study revolve around the collection and analysis of these data and sources. At the beginning of the survey, respondents can read about the purpose of the survey, the anonymity of the results and the time it takes. The purpose of the study was also highlighted through Bluehub's newsletter. If the respondents agree to

complete the survey, they give informed consent. In addition, respondents are always contacted via Bluehub, to ensure the privacy of their contact details. During this study, anonymity is sought from all respondents, so identity is anonymous and will always remain hidden. A respondent is free to stop completing the survey or skip questions if they cannot answer them, so they do not feel obligated. Participation in the study is motivated, but completely voluntary. The information will be used exclusively for this study and will be kept confidential.

4. Results

The results of all analyses are reported in this chapter of the report, including results of the correlation analysis, estimation results of the total hypothesized models, tests of the moderating effect and additional analysis.

4.1 Descriptive analysis

To examine the relationships between the constructs of this study, a Pearson correlation test was conducted. The descriptive statistics, including means, standard deviations, and correlations, for the three variables and two control variables are presented in table 5.

Table 5. Correlation matrix and descriptive statistics

Construct	1	2	3	4	5
1. Commitment to idea					
2. Speed of pivoting	-.315*				
3. Perceived threat of feedback	-.115	.102			
4. Perceived quality of feedback	.111	.234	-.402**		
5. Innovativeness	-.079	-.245	-.005	-.122	
Mean	3.88	2.80	2.54	3.78	3.28
Standard deviation	.60	.95	.73	.63	.84

$n = 61$, $^{**}p<.01$; $^{*}p<.05$

Commitment shows a significant negative, but relatively weak correlation (-.315) with speed of pivoting. Perceived threat of feedback shows a significant negative correlation (-.402) with the control variable perceived quality of feedback. Concluded from the correlation matrix is that there are not a lot of significant correlations, and correlation scores are weak or barely present.

The means range from 2.54 (perceived threat of feedback) to 3.88 (commitment to idea). The standard deviation scores range from .60 (commitment to idea) to .95 (speed of pivoting), indicating that the data is not very widely distributed from the mean.

4.2 Multiple regression analysis

4.2.1 Assumptions testing in multiple regression analysis

Before analysing the results, the assumptions of regression analysis must be checked. There are four basic assumptions that should be assessed in multiple regression analysis, linearity of the phenomena measured, constant variance of the error term, normality of the error term distribution and independence of the error terms (Hair et al., 2018).

The first assumption is the independence of the residuals, which is checked with the Durbin-Watson statistic. This statistic should be between 1 and 3, which is the case with a value of 1.734. Second, the Variance Inflation Factor (VIF) should be below 10 (Hair et al., 2018) and the tolerance values must not be lower than. Since both the direct effect of perceived threat and the interaction effect are examined, some high VIF values were observed. To reduce this multicollinearity, the interaction effect was centred. After centring, the VIF values decreased. By looking at several graphs and figures, it can be concluded that the assumptions regarding linearity, normality of the distribution of the residuals and constant variance of the residuals have also been met. This can be seen in Appendix 5.

4.2.2 Hypotheses testing

From the multiple regression analysis, it can be concluded that the model has reasonable explanatory power, but is not very high, and the model is significant so it can be used (Model 1: R^2 = .261, F(4.936) p<.01 and Model 2: R^2=.296, F(4.615), P<.01). This can be seen in Appendix 6.

Table 6: Effects of commitment and perceived threat on speed of pivoting

	Model 1: Main effects only			**Model 2: With interaction effects**		
	β	*SE*	*p*	*β*	*SE*	*p*
Commitment	-.35**	.18	.004	-.33**	.18	.006
Quality	.32*	.19	.014	.36**	.19	.007
Innovativeness	-.23^{+}	.13	.051	-.20	.13	.100
Perceived threat	.19	.16	.138	.14	.17	.296
Commitment * Threat				.21	.20	.105
R^2 (adjusted ^{R2})	.261** (.208)			.296(.231)		

n=61, ***p<.001; **p<.01; *p<.05; ^{+}p<.10

Multiple regression analysis was used to test if commitment and perceived threat significantly explained speed of pivoting (see table 6). Because the focus of this study is on understanding the data, the standardized parameters (β) are reported.

From the multiple regression analysis, it can be concluded from model 1 that commitment has a significant negative effect on speed of pivoting (β =-.35, p<.01), in support of hypothesis 1. The control variable perceived quality of the feedback has a significant effect (β =.32, p<,05) and innovativeness has a near significant effect (β =-.23, p<.10) meaning that there is a weak negative relationship between innovativeness and speed of pivoting. The direct effect of perceived threat is positive, but not significant. With an adjusted R^2 of 0.21, 21% of the variance in the rate of pivoting is explained by the independent variables.

Model 2 of the regression analysis includes the interaction effect. The direct effect of commitment remained significant (β =-.33, p<.01), as did the effect of quality (β =.36, p<.01). Innovativeness and perceived threat both show no significant effects, although innovativeness is almost significant (β =-.20, p=.10).

The interaction effect shows no significant effect, thus, hypothesis 2 is rejected. However, the effect is almost significant (β =.21, p=.105), which would suggest that there would be a weak positive relationship of perceived threat on the relationship of commitment on speed of pivoting.

4.2.3 Additional analysis

As no significant interaction effect was found in the regression analysis, additional analyses were conducted to see if this can provide new insights on the original model. These additional analyses are in the form of regression analyses, where the aim is to see if the interaction effect of perceived threat can change by looking at specific groups within the data. For this, it must be considered that the sample size of the groups does not become too small. In addition, the choice was made not to include any additional control variables. The regression analyses conducted using the subsamples met all the assumptions. The results of these analyses can be found in appendix 7.

Additional analysis 1

For the first additional analysis, it was examined whether the age of respondents affects the model. The age of respondents was split into 2 groups, 18-45 years, hereafter referred to as 'young' and the group 46-65+, hereafter referred to as 'old'. 2 groups were chosen because otherwise the group sizes become too small. For the group of young entrepreneurs, the interaction effect becomes significant (β =.41, p=.036). For the group of old entrepreneurs, the interaction effect is not significant (β =.09, p=.671). This indicates that the age of respondents has a considerable effect on the interaction effect. However, it is notable that for these subgroups, the direct effect of commitment on speed of pivoting is no longer significant (age old near significant) and the direct effect of perceived threat remains insignificant.

Table 7: Additional analysis 1

	Additional analysis 1: Age Young		
	β	*SE*	*p*
Commitment	-.22	.23	.229
Perceived threat	.01	.22	.970
Commitment * Threat	.41*	.23	.036
R^2 (adjusted ^{R2})	.25 *(.16)		

Dependent variable: Speed

n=30, ***p<.001; **p<.01; *p<.05; ^{+}p<.10

Table 8: Additional analysis 1

	Additional analysis 1: Age Old		
	β	*SE*	*p*
Commitment	-.32^{+}	.36	.098
Threat	-.03	.27	.864
Commitment * Threat	.09	.33	.671
R^2 (adjusted ^{R2})	.12 (.02)		

Dependent variable: Speed

n=31, ***p<.001; **p<.01; *p<.05; ^{+}p<.10

Additional analysis 2

As a second additional analysis, it is examined whether the degree of innovativeness has an influence on the model, as it has almost a significant effect in the original regression analysis. To see whether a high degree of innovativeness has an influence, only the answers of respondents who answered the question 'the business idea I pitched was completely new to the market at the time' on the 5-point scale with a 3 or higher, which is considered an 'innovative idea', were included.

From this analysis, it can be concluded that when only innovative ideas are included in the original model, the interaction effect becomes significant (β =.31, p=.027).

Table 9: Additional analysis 2

	Additional analysis 2: Innovativeness		
	β	*SE*	*p*
Commitment	-.28*	.21	.046
Threat	-.03	.18	.847
Commitment * Threat	.31*	.24	.027
R^2 (adjusted ^{R2})	.22* (.17)		

Dependent variable: Speed

n=52, ***p<.001; **p<.01; *p<.05; ^{+}p<.10

Additional analysis 3

As a third additional analysis, it is examined whether perceived quality of the feedback affects the model, as this was a significant control variable in the original regression analysis. The construct perceived quality of the feedback is split for people who answered the items on the 5-point scale with a 3 or higher, which is considered 'high quality of feedback'.

It can be concluded from the analysis that with high quality of feedback, the interaction effect becomes significant (β =.28, p=.046).

Table 10: Additional analysis 3

	Additional analysis 3: Quality of feedback		
	β	*SE*	*p*
Commitment	-.24^{+}	.21	.074
Threat	.07	.19	.622
Commitment * Threat	.28	.25	.046
R^2 (adjusted ^{R2})	.19* (.15)		

Dependent variable: Speed

n=56, ****p*<.001; ***p*<.01; **p*<.05; $^{+}$*p*<.10

5. Conclusions

The final chapter presents a general conclusion about the hypotheses and answers the research question. The results are then discussed in the light of the literature and practical implications for companies organising similar pitch sessions for entrepreneurs and those who think they could benefit from these results. To conclude, limitations and directions for further research are presented.

5.1 Conclusion

In this research the following research question was central: *"How does perceived threat of feedback moderate the relationship between commitment to an idea prior to a pitch and the speed of pivoting?"* To answer this question, two hypotheses derived from theory were formed and tested (see table 11).

Hypothesis 1 suggested that entrepreneurs who are very committed to their pitched new idea has a negative relationship on the speed of pivoting. A significant negative effect was found from commitment to speed of pivoting (β =-.35, p<.01). This means that an entrepreneur who is very committed to his idea prior to pitching, will take longer to pivot. The beta coefficient showed a medium effect, which means that commitment is a good predictor of speed of pivoting. Therefore, hypothesis 1 is accepted.

Hypothesis 2 suggested that the relationship between commitment to a pitched idea and speed of pivoting is positively moderated by perceived threat of feedback. The effects found for the interaction effect were positive, but not significant (β =.21, p=.105). Since the relationship is non-significant, the hypothesis is rejected. This suggests that entrepreneurs experiencing some form of threat in response to the feedback they receive, does not significantly influence the relationship of commitment to speed of pivoting. Although the interaction effect does not meet the significance level of p<.05, it does indicate that there is a trend towards significance and given the rather small sample size (N=61) the statistical power may be limited.

The control variables perceived quality of the feedback and innovativeness were added in the regression analysis. Perceived quality of the feedback shows a significant effect in both models. The innovativeness of an idea shows a near significant effect in both models. This means that the control variables are important factors to consider in explaining the variation in the dependent variable.

To discover additional insights into the original model, additional analyses were conducted. The results show that, when control variables are not taken into account, the interaction effect is significant for the specific subgroups of young entrepreneurs (age=18-45 year), relatively high perceived quality of the feedback and relatively high innovative ideas.

Based on these findings, an answer to the research question is formulated. Commitment to an idea has a negative influence on the speed of pivoting. However, perceived threat of feedback does not significantly affect the relationship of commitment to an idea to speed and pivoting.

Table 11. Hypotheses testing results

Hypothesis	Results in SPSS	Conclusion
Hypothesis 1: Commitment to a pitched idea has a negative effect on speed of pivoting.	Significant negative effect	Accepted
Hypothesis 2: the relationship between commitment to a pitched idea and speed of pivoting is positively moderated by perceived threat of feedback.	Insignificant positive effect	Rejected

5.2 Discussion

The results of this research have provided insights into the effects of commitment prior to an idea on the speed of pivoting of entrepreneurs. First, the scale with five items combined from Schmidt & Calantone (2002) and Mowday et al. (1979) has been tested with a reliability and factor analysis. Based on the results it can be concluded that the five items together measure commitment well. However, the 3 items used of Wood et al. (2021) do not appear to measure speed of pivoting well. An explanation could be that only part of the items of wood et al. (2021) are used in this study. The study of Wood et al. (2021) focus on a broader aspect of entrepreneurial action, which may not match this study anyway. The negative Cronbach's Alpha indicates an inconsistency within the scale, due to two items being negatively phrased. It may be that respondents perceive and interpret the items differently as intended, due to

translation and word choice. The first item is the most specific and best measures the construct, so only this item will be continued. Despite this choice being made in good consideration to proceed with one item, it offers a significant limitation that must be considered when interpreting the results.

Several studies described that a high level of commitment includes a steadfast belief in the potential success of a new idea and the feeling of psychological ownership. According to Grimes (2018), this feeling of psychological ownership entrepreneurs experience, leads to sticking with the original idea and delaying pivoting. The effects found between commitment and speed of pivoting were negative and significant. This negative relationship is in line with previous research (Sarangee et al., 2014; Schmidt and Calantone, 2002) which tell us that strong commitment ignores more usual feedback and reduces the probability of pivoting. As a result, the hypothesis is supported.

The second hypothesis of this study suggests that the relationship between commitment to a pitched idea and speed of pivoting is positively moderated by perceived threat of feedback. The scale with the five items measuring perceived threat is self-assembled and based on Brandt et al. (2015). The composite scale was tested in the pilot study. However, item4 did not load well in the factor analysis and was removed.

The interaction effect between perceived threat of the feedback and the effect of commitment on the speed of pivoting was positive, but not significant. The positive relationship found is in line with previous research (Baer and Brown, 2012; Vitriol and Moskowitz, 2021). The positive effect was expected because threatening feedback can lead to stronger goal commitment and makes entrepreneurs reluctant to change course of action (Grimes, 2018). However, since the relationship is not significant the hypothesis can not be supported.

Although the interaction effect does not meet the significance level of $p<.05$, it does indicate that there is a trend towards significance. This is also visible in the additional analyses showing that for certain subgroups the interaction effect is already significant. There could be several reasons why in the basic model the interaction effect is not significant despite the theoretical expectations of the positive interaction effect. First, it is a relatively small sample ($N=61$), which may reduce statistical power and make it more difficult to detect significant effects. In addition, the sample may not be representative and generalizable because respondents have a certain bias. The context in which feedback is given and perceived is very specific in this study, in which it may be that these entrepreneurs are so open to feedback that they do not easily feel threat. This was also observed during the pilot study

and while attending two pitches, when the audience had considerable doubts about the idea and the feedback questioned the idea, the entrepreneur did not receive this as a threat. This is because there is an informal and open atmosphere. However, in a different setting, such as another company organizing pitches, it may be different. It may also differ, what exactly the purpose of the pitch is. If an entrepreneur is pitching to an audience of investors, where there is more pressure and obligation behind it, the model might be significant. Literature already shows that entrepreneurs with a new idea gathering external feedback from an audience that can provide new resources and capital investment opportunities does make entrepreneurs reluctant to change course (Grimes, 2018). This is different from the audience providing the feedback in this study, which is perceived more as opportunities and perhaps less as threats.

Finally, the scale may not measure the construct with sufficient accuracy. The pilot studies showed that the word 'threat' was perceived as something negative, and pitchers took it personally, making them misinterpret it difficult to measure. The words used to measure threat in the items may not accurately reflect the actual threat experienced by entrepreneurs.

The additional analyses conducted provide deeper insights into how the interaction effect of perceived threat on commitment to the speed of pivoting becomes significant in different subgroups. These findings not only confirm the previously observed trend of an almost significant effect in the basic model but also validate the initial hypothesis. First, we see a significant interaction effect among younger entrepreneurs, indicating that the perceived threat affects their speed to pivot. In contrast, this effect is not significant among older entrepreneurs, indicating age-related differences in response to perceived threats. In addition, when looking at respondents receiving high-quality feedback, the interaction effect also found to be significant. This finding highlights the importance of perceived feedback quality. The same applies to entrepreneurs who perceive their pitched idea as innovative, here again the interaction effect becomes significant. These subgroup-specific insights indicate the nuanced relationship in this model and this context should be explored further in the future.

5.3 Practical implications

The findings of this research provide several practical implications. This study is of interest to entrepreneurs who want to pitch an idea to an audience in the future to receive feedback and makes them aware of the possible effects. This study helps to create consciousness around the fact that a high commitment of entrepreneurs to their idea leads to a lower speed of pivoting. Because of the importance of quicker pivoting decisions of entrepreneurs for the future of

their idea, it adds value to become aware of this and act according to it. In addition, it can help entrepreneurs effectively process and learn to use feedback. For example, entrepreneurs can benefit from training on understanding possible negative emotional reactions to feedback and learning how to turn it into pivot faster and more effectively.

Since there were no significant effects found for the interaction effect of perceived threat, there should be caution in giving practical implications about this. However, the results show an almost significant effect, and on a larger scale it might become significant. It is known from the literature that feedback received as a threat can have negative effects on the actions of entrepreneurs. Therefore, this study contributes to making this issue more widely known and, for example, can organisations organising pitch sessions, such as incubators, accelerators, and investor networks, use the findings of this study to improve their feedback processes. By being aware of the potential threat feedback can pose to entrepreneurs, they can develop training programmes for feedback givers to give feedback in a constructive and non-threatening way. This can help entrepreneurs become more open to feedback and move more quickly to pivot their ideas.

Individuals who give feedback to entrepreneurs, such as investors, experts and interested parties, could be trained to give feedback that encourages entrepreneurs to be open to change. This can be done by highlighting the positive aspects of the idea and giving constructive criticism without attacking the core identity of the idea or the entrepreneur. This should take into account that entrepreneurs who participate in such a pitch session have often been working on their idea for a long time and are therefore committed.

5.4 Limitations and further research

This study has several limitations. First, there are some limitations regarding the sample of this study. The sample was quite small (N=61), resulting in a minimum number of respondents necessary. Secondly the sample was conducted for Dutch entrepreneurs, from a particular region, therefore the results might differ depending on the country or culture. Most of the respondents were male (80%), this might also affect the results. The data is collected via one company, where all the entrepreneurs pitched their idea. This might create a bias, because they came to pitch for a particular reason and their expectations of, and reactions to the feedback were often open-minded. This could have affected the generalizability of the research. In addition, the survey asked about a pitch that took place in the past. Because it was sometimes years ago, it can be difficult for respondents to think back properly to that moment

and give good answers. This may affect the correctness of the answers. The research instrument used in this research is a survey. The items are based on English items, or sometimes adapted to this context. In addition, they have been translated into Dutch. The chosen words may have a slightly different meaning from the original words and, as a result, they may sometimes have been misinterpreted by respondents, resulting in incorrect findings. The construct speed of pivoting was measured with only one item because the other two items caused inconsistency in the scale. Using a single item may reduce the reliability and validity of the measurement. Future research should aim for a more comprehensive measurement of speed of pivoting, with a better scale. This will allow more accurate conclusions to be drawn.

For further research, it could be interesting to conduct the study on a larger scale and see if the effects remain the same. With a larger sample, it is possible that near-significant effects might change, and the study might be more generalizable. Since the interaction effect now indicates a trend towards significance, it is possible to test on a larger scale whether the hypothesis becomes significant.

In addition, it might be interesting to test this research model in another environment where entrepreneurs pitch ideas. Such as at another company, or a context where pitching is done to win money. This could provide new insights and conclude whether the effects would then remain the same or there would be a significant interaction effect.

Finally, it may be interesting to examine other variables that influence speed of pivoting, as this has been little researched and may provide important insights.

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Appendixes

Appendix 1. Original scales of constructs and control variables

Construct	Original items	Source
Commitment (to idea prior to pitch)	-I am committed to this new product -I will stick with this new product no matter what problems are encountered -I feel a sense of loyalty to this new product -I do not feel 'emotionally attached' to this organization -This organization has a great deal of personal meaning for me	Schmidt & Calantone (2002)
Speed of pivoting	-The time to milestone achievement took much longer than originally anticipated -I was overwhelmed which resulted in procrastination toward action.	Wood et al., (2021)
Perceived threat of feedback	-To what extent do you think the following groups violate your core values and beliefs? -To what extent do you think the following groups	Brandt et al. (2015)

	reject moral values that are important to you?	

Control variable	Original items	Source
Perceived quality of feedback	-Gave feedback that I couldn't understand. -Feedback was provided that I could use in the future. -Feedback helped me focus on developmental improvements.	Lizzio & Wilson, (2008)

Appendix 2. Scales translated

Construct	Adapted Items	Translated items
Commitment (to idea prior to pitch)	1. Before the pitch, I was very committed to my business idea. 2. Before the pitch, I was determined to stick to my business idea. 3. Before the pitch, I felt very committed to my business idea. 4. Before the pitch, I felt very emotionally attached to my business idea. 5. The business idea I pitched meant a lot to my personally.	1. Voorafgaand aan de pitch was ik erg toegewijd aan mijn business idee. 2. Voorafgaand aan de pitch was ik vastbesloten om bij mijn business idee te blijven. 3. Voorafgaand aan de pitch voelde ik me erg gehecht aan mijn business idee. 4. Voorafgaand aan de pitch voelde ik me emotioneel zeer verbonden met mijn business idee. 5. Het business idee dat ik pitchte betekende persoonlijk veel voor mij.
Speed of pivoting	1. After the pitch, I was quick to make a significant change to one or more elements of the business model. 2. After the pitch, it took me a while to decide whether I wanted to change aspects of the business model. 3. After the pitch, I procrastinated making decisions in response to the feedback received.	1. Na de pitch heb ik spoedig besloten om één of meer elementen van het businessmodel aanzienlijk te veranderen. 2. Na de pitch duurde het even voordat ik besloot of ik elementen van het businessmodel wilde veranderen. 3. Na de pitch stelde ik het nemen van beslissingen naar aanleiding van de ontvangen feedback uit.
Perceived threat of feedback	1. The feedback I received during the pitch contradicted the core of my business idea.	1. De feedback die ik kreeg tijdens de pitch was in strijd met de kern van mijn business idee.

	2. The feedback I received during the pitch rejected aspects of my business idea that were important to me. 3. I felt that much of the feedback I received questioned my business idea 4. During the pitch, the audience had significant doubts about my business idea. 5. During the pitch, I experienced the feedback from the audience as threatening to my business idea.	2. De feedback die ik kreeg tijdens de pitch verwierp mijn aspecten van mijn business idee die belangrijk voor mij waren. 3. Ik had het gevoel dat een groot deel van de feedback die ik kreeg mijn business idee ter discussie stelde. 4. Tijdens de pitch had het publiek flinke twijfels over mijn business idee. 5. Tijdens de pitch ervaarde ik de feedback van het publiek als bedreigend voor mijn business idee.

Appendix 3. Final survey

Enquête Bluehub

Beste ondernemer,

In het verleden heeft u uw idee, innovatie of businessmodel gepresenteerd bij Open Brains. In deze enquête vragen we u hierop terug te blikken.

Met deze enquête onderzoeken wij wat ondernemers vinden van Open Brains en hoe Open Brains verbeterd zou kunnen worden. Uw mening is daarbij uiteraard erg belangrijk. Wij willen graag van u weten hoe u uw Open Brains sessie heeft ervaren en wat u gedaan heeft met de feedback die u toen heeft gekregen. **Het is van groot belang dat u zich de Open Brains sessie zich zo goed mogelijk probeert te herinneren.** Let wel, het gaat ons om de Open Brains sessie waarin u zelf presenteerde, niet een sessie waarbij u in het publiek zat. **Mocht u meerdere pitches hebben gedaan bij Open Brains, vragen wij u om terug te blikken op de meest recente pitch.**

Wij zijn negen studenten van de Radboud Universiteit in Nijmegen en wij voeren een onderzoek uit in opdracht van Bluehub. Wij rapporteren de uitkomsten van het onderzoek aan Bluehub, maar we delen uw gegevens niet met Bluehub. Uw anonimiteit is ten alle tijden gegarandeerd.

Waarom zou u meedoen?
- Onder de deelnemers verloten wij twee gratis consultancy-uren met Bluehub;
- U krijgt, op verzoek, een management summary van de resultaten van het onderzoek;
- U helpt ons bij het afstuderen.

Wij danken u bij voorbaat voor uw deelname.

Mocht u vragen hebben over het onderzoek dan kunt contact opnemen met Bente, de contact persoon van het onderzoeksteam, via het mailadres: Bente.Horsting@ru.nl

Vriendelijke groeten,

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

○ 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

Deze vraag weergeven:

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

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

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

- ○ Ja
- ○ Nee

Deze vraag weergeven:

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)...

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

- Ja
- Nee

Deze vraag weergeven:

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 ...

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

- Ja
- Nee

Deze vraag weergeven:

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

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

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?

_____

_____

_____

_____

_____

Q73 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 4. Output reliability and factor analysis

Commitment

Reliability statistics

Cronbach's Alpha	N of items
.804	5

Convergent validity commitment

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.781
Bartlett's Test of Sphericity	Approx. Chi-Square	104.367
	df	10
	Sig.	<.001

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.894	57.874	57.874	2.894	57.874	57.874
2	.838	16.760	74.634			

Extraction Method: Principal Component Analysis.

Speed of pivoting

Reliability statistics

Cronbach's Alpha	N of items
-.081	3

Convergent validity speed of pivoting

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.525
Bartlett's Test of Sphericity	Approx. Chi-Square	1.158
	df	3
	Sig.	.763

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.159	38.634	38.634	1.159	38.634	38.634
2	.959	31.977	70.610			

Extraction Method: Principal Component Analysis.

Perceived threat of feedback

Reliability statistics

Cronbach's Alpha	N of items
.834	5

Reliability statistics

Cronbach's Alpha	N of items
.855	4

Convergent validity perceived threat of feedback

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.801
Bartlett's Test of Sphericity	Approx. Chi-Square	128.040
	df	10
	Sig.	<.001

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.055	61.096	61.096	3.055	61.096	61.096
2	.839	16.781	77.877			

Extraction Method: Principal Component Analysis.

Convergent validity after deletion item4 threat of feedback

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.776
Bartlett's Test of Sphericity	Approx. Chi-Square	112.554
	df	6
	Sig.	<.001

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.807	70.179	70.179	2.807	70.179	70.179
2	.516	12.901	83.080			

Extraction Method: Principal Component Analysis.

Discriminant validity

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.757
Bartlett's Test of Sphericity	Approx. Chi-Square	240.098
	df	45
	Sig.	<.001

Communalities

	Initial	Extraction
Commitment1	1.000	.564
Commitment2	1.000	.536
Commitment3	1.000	.668
Commitment4	1.000	.707
Commitment5	1.000	.662
SpeedofPitvoting1	1.000	.838
PerceivedThreat1	1.000	.762
PerceivedThreat2	1.000	.837
PerceivedThreat3	1.000	.735
PerceivedThreat4	1.000	.606

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.325	33.246	33.246	3.325	33.246	33.246
2	2.593	25.932	59.178	2.593	25.932	59.178
3	.996	9.961	69.138	.996	9.961	69.138

Rotation Sums of Squared Loadings		
Total	% of Variance	Cumulative %
2.849	28.485	28.485
2.813	28.131	56.616
1.252	12.522	69.138

Extraction Method: Principal Component Analysis.

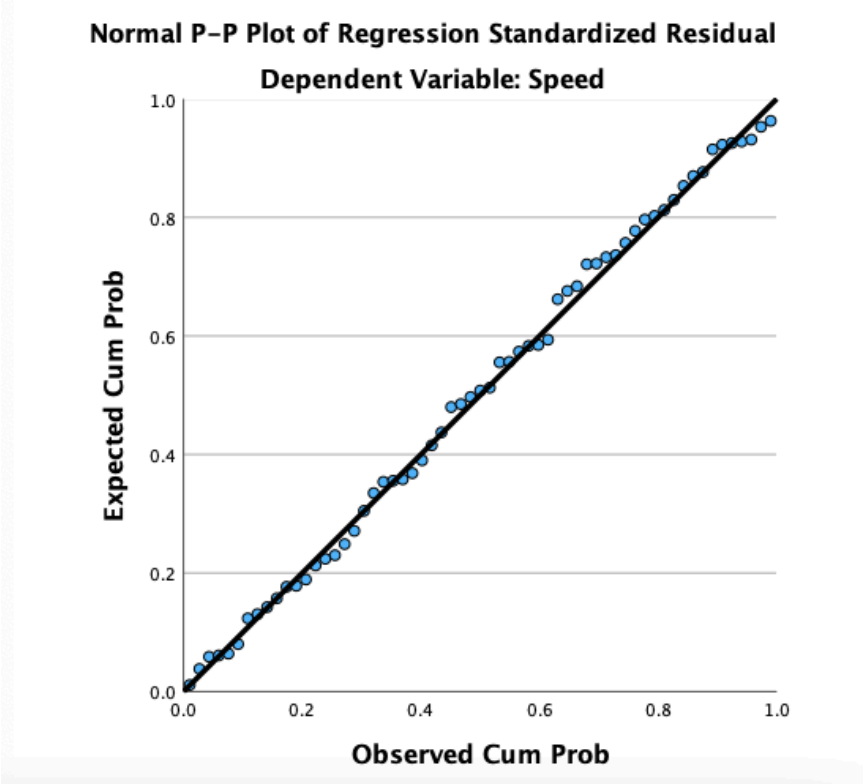
Rotated Component Matrix

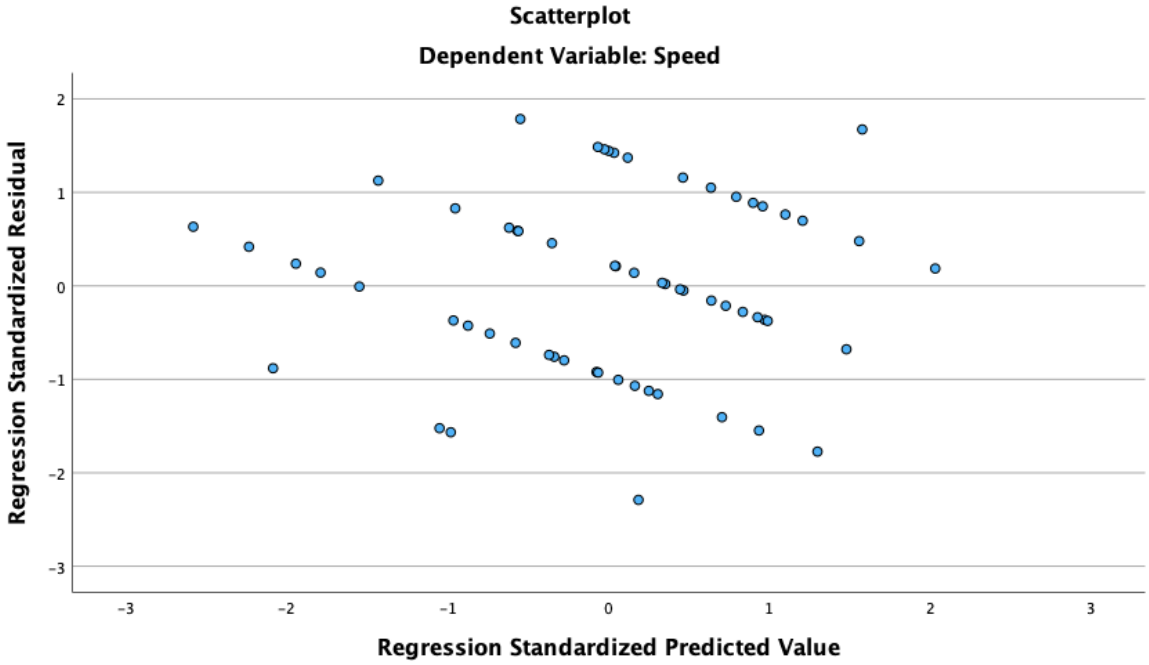
	Component		
	1	2	3
Commitment1	.735		.147
Commitment2	.722	.117	
Commitment3	.766	-.275	
Commitment4	.799	-.190	-.177
Commitment5	.686	-.435	
SpeedofPitvoting1	-.151	.902	
PerceivedThreat1		-.199	.845
PerceivedThreat2	-.142		.899
PerceivedThreat3		.272	.812
PerceivedThreat4			.776

Appendix 5. Output assumptions multiple regression analysis

Statistics

		Commit	Speed	Threat	Quality	Mentor	Innovat
N	Valid	61	61	61	61	61	61
	Missing	0	0	0	0	0	0
Mean		3.8820	2.8033	2.5410	3.7760	3.6612	3.2787
Median		4.0000	3.0000	2.5000	4.0000	4.0000	3.0000
Std. Deviation		.60484	.94551	.73055	.62575	.70051	.83927
Variance		.366	.894	.534	.392	.491	.707
Skewness		.052	.043	.798	-.948	-.980	-.048
Std. error of skew.		.306	.306	.306	.306	.306	.306
Kurtosis		-.350	-.733	-.150	1.819	2.592	.140
Std. Error of kur.		.604	.604	.604	.604	.604	.604





Model		Tolerance	VIF
1	(Constant)		
	Quality	.820	1.220
	Innovativeness	.977	1.024
	Threat	.830	1.205
	Commitment	.977	1.024

Model		Tolerance	VIF
2	(Constant)		
	Quality	.793	1.261
	Innovativeness	.941	1.063
	Threat	.775	1.290
	Commitment	.966	1.035
	Int_Threat	.818	1.222

Appendix 6. Output multiple regression analysis

Model summary[c]

Model	R	R^2	Adjustued R^2	Std. Error of the Estimate	R^2 Change	F Change	Sig. F Change	Durbin Watson
1	.511[a]	.261	.208	.91119	.102	3.303	.004	
2	.544[b]	.296	.231	.82888	.035	2.721	.105	1.737

a. Predictors: (Constant), Innovativeness, Quality, Commitment, Threat

b. Predictors (Constant), Innovativeness, Quality, Commitment, Threat, Int_Threat

c. Dependent Variable: Speed of pivoting

ANOVA [a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.983	4	3.496	4.936	.002[b]
	Residual	39.656	56	.708		
	Total	53.639	60			
2	Regression	15.852	5	3.170	4.615	.001[c]
	Residual	37.787	55	.687		
	Total	53.639	60			

a. Dependent Variable: Speed of pivoting

b. Predictors: (Constant), Innovativeness, Quality, Commitment, Threat

c. Predictors (Constant), Innovativeness, Quality, Commitment, Threat, Int_Threat

Coefficients[a]

Model		Unstandardized B	Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	3.312	1.328		2.495	.016
	Quality	.484	.192	.321	2.527	.014
	Innovativeness	-.261	.131	-.232	-1.994	.051
	Commitment	-.543	.182	-.347	-2.986	.004
	Threat	.246	.163	190	1.506	.138
2	(Constant)	3.041	1.318		2.307	.025
	Quality	.542	.192	.358	2.821	.007
	Innovativeness	-.220	.131	-.195	-1.671	.100
	Commitment	-.512	.180	-.328	-2.846	.006
	Threat	.176	.166	.136	1.056	.295
	Int_Threat	.325	.197	.206	1.649	.105

a. Dependent Variable: Speed

Appendix 7. Output additional analysis

Additional analysis 1
Subgroup Age

Model summary[c]

	Model	R	R^2	Adjustued R^2	Std. Error of the Estimate	R^2 Change	F Change	Sig. F Change	Durbin Watson
Young	1	.496[a]	.246	.159	.77995	.142	4.881	.036	1.461
Old	1	.345	.119	.021	1.00743	.006	.184	.671	2.137

a. Predictors: (Constant), Threat, Commitment, Int_Threat

c. Dependent Variable: Speed of pivoting

ANOVA [a]

	Model		Sum of Squares	df	Mean Square	F	Sig.
Young	1	Regression	5.150	3	1.717	2.822	.058[b]
		Residual	15.816	26	.608		
		Total	20.967	29			
Old	1	Regression	3.694	3	1.231	1.213	.324[b]
		Residual	27.403	27	1.015		
		Total	31.097	30			

a. Predictors: (Constant), Innovativeness, Quality, Mentor, Commitment, Int_Age

b. Dependent Variable: Speed of pivoting

Additional analysis 2
Subgroup Innovativeness

Model summary[c]

Model	R	R^2	Adjustued R^2	Std. Error of the Estimate	R^2 Change	F Change	Sig. F Change	Durbin Watson
1	.466[a]	.218	.169	.87747	.085	5.209	.027	2.141

a. Predictors: (Constant), Commitment, Threat, Int_Age

c. Dependent Variable: Speed of pivoting

ANOVA [a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.273	3	3.424	4.448	.008[b]
	Residual	36.957	48	.770		
	Total	47.231	51			

a. Predictors: (Constant), Commitment, Threat, Int_Age

b. Dependent Variable: Speed of pivoting

Additional analysis 3
Subgroup Quality

Model summary[c]

Model	R	R^2	Adjustued R^2	Std. Error of the Estimate	R^2 Change	F Change	Sig. F Change	Durbin Watson
1	.440[a]	.194	.147	.88787	.065	4.164	.046	1.666

a. Predictors: (Constant), Commitment, Threat, Int_Threat

c. Dependent Variable: Speed of pivoting

ANOVA [a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.865	3	3.288	4.171	.010[b]
	Residual	40.992	52	.788		
	Total	50.857	55			

a. Predictors: (Constant), Commitment, Threat, Int_Treat

b. Dependent Variable: Speed of pivoting