

Traits and Trust: Exploring Startups' Response to Critical Sense- Breaking Feedback



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Preface

I pridefully present my master's thesis, ' Traits and Trust: Exploring Startups' Response to Critical Sense-Breaking Feedback.' This thesis is written to fulfill the final stage of my Master's in Business Administration, specializing in Marketing, at Radboud University in Nijmegen.

Over the past six months, I have been working on this thesis, and I found it both challenging and rewarding. Throughout this thesis, I experienced in-depth learning and personal growth. I delved into the fascinating world of feedback and entrepreneurship, focusing on startups and personal traits. This trajectory significantly enriched my understanding of the complex landscape of feedback and the dynamic field of entrepreneurs.

I would like to take the opportunity to thank my supervisor, Dr. ir. N.G. Migchels, who provided me with valuable feedback and supported me throughout these months, which has led to continuous improvement in my progress. In addition, I would like to thank my second supervisor, Prof. Dr. B. Hillebrand, for his feedback and especially for helping me structure my conceptual model. Last, I would like to thank my family, friends, fellow students, and all others involved in this process for their feedback and support.

Nadine van Ham

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Abstract

This study explores how three personal characteristics—self-esteem, psychological ownership, and cognitive dissonance—influence startup entrepreneurs' response to sense-breaking critical feedback. Furthermore, it explores whether the entrepreneurs' trust in the feedback giver moderates these relationships. Deductive quantitative research is used to answer the research question and hypotheses that were derived from theory. Existing measurement scales were used for the personal traits variables, and new measurement scales were made for entrepreneurial response and trust to fit the context of this study.

The findings suggest that cognitive dissonance is the only significant predictor of entrepreneurial response, indicating that higher levels of cognitive dissonance lead to more negative entrepreneurial responses like ignoring feedback, avoidance behavior, escalation, and seeking confirmation from others. Self-esteem and psychological ownership did not show significant effects on the entrepreneurial response. Additionally, trust did not moderate the relationships between personal characteristics and entrepreneurial response. However, the results should be considered with caution since the factor analysis shows an unclear structure for the personal traits, especially psychological ownership, which also does not meet the threshold for the reliability analysis. Nevertheless, this research contributes to the literature by highlighting the influence of cognitive dissonance on entrepreneurial response while receiving critical sense-breaking feedback, thereby indicating the insignificance of trust when the feedback becomes sense-breaking and critical.

Keywords: Startups, Entrepreneurs, Personal characteristics, Self-esteem, Psychological ownership, Cognitive dissonance, Entrepreneurial response, Feedback, Sense-breaking, Critical, Trust

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1 Introduction

Startup entrepreneurs try to discover, evaluate, and exploit opportunities that lead to profitable goods and services (Shane & Venkataraman, 2000). Adapting to the dynamic environment is crucial in identifying opportunities (Brettel & Rottenberger, 2013). The survival and longevity of a startup depend on the strategic decisions made by the entrepreneur and are often based on personal values and beliefs (Joseph et al., 2021). While entrepreneurs make strategic decisions, they may be influenced by the feedback they receive. However, whether entrepreneurs adapt to feedback may depend on their personal traits and trust in the feedback giver.

1.1 Feedback

Feedback allows entrepreneurs to shape and further develop their ideas, minimize risks, reduce environmental uncertainty, and stay more flexible, especially in the early stages of the startup (Chugh et al., 2011; Berends et al., 2013; Grimes, 2018; Drencheva et al., 2022; Toivonen et al., 2023). However, it is essential to differentiate and prioritize feedback since not all feedback is valuable during the starting phase (Hossain et al., 2019). Feedback is often focused in a positive, developmental way, but it can also be destructive (Toivonen et al., 2023). This suggests there are different forms of feedback, which are positive and negative (Kaffka et al., 2021). Individuals are more receptive to positive feedback as it helps formulate the startup's offerings. Conversely, negative feedback challenges the entrepreneur's assumptions, is often emotionally charged, and is usually perceived as a rejection of ideas. Nevertheless, not all negative feedback is expressed negatively. This is referred to as critical feedback (Audia & Locke, 2003; Kaffka et al., 2021).

When entrepreneurs act on the received feedback and modify their ideas based on it, the feedback is sensemaking. The feedback giver is then considered a sense giver (Grimes, 2018; Kaffka et al., 2013). However, when the feedback is critical, it often changes in sense breaking. Sense-breaking behavior occurs when the sensemaking activity of an entrepreneur is interrupted by new information that challenges the entrepreneur's assumptions. This means that entrepreneurs experience meaning void, and due to conflicting evidence or values, the entrepreneur cannot or does not want to make sense of the received feedback (Grimes, 2018; Kaffka et al., 2013; Kaffka et al., 2021). How entrepreneurs respond to this type of feedback depends on personal characteristics, the message's nature, and the feedback giver's characteristics (Ilies et al., 2007). However, the extent to which personal characteristics influence the reaction and how they influence the entrepreneurial reaction has yet to be studied.

1.2 Trust

The level of trust between the feedback giver and the entrepreneur is essential since entrepreneurs constantly seek feedback (Kaffka et al., 2021; Toivonen et al., 2023). Because trust can fluctuate, these relationships are dynamic and change over time (Goel & Karri, 2006; Bi et al., 2021). Most entrepreneurs rely on strong informal connections in their personal networks, which are considered more critical to the survival and success of a startup entrepreneur than weak connections (Welter & Smallbone, 2006). This means that entrepreneurs have more trust in stakeholders closer to them.

Startup entrepreneurs often require relational exchanges and partnerships, making trust in the feedback giver important (Bi et al., 2021). Trust can provide information, eliminate opportunistic behavior, and reduce transaction costs (Bi et al., 2021). However, it has yet to be studied whether trust remains an essential feedback factor when the feedback is critical and sense-breaking and when it includes personal characteristics suited to entrepreneurs.

Based on the information, this study aims to answer the following research question: *“How do personal characteristics of startup entrepreneurs influence the entrepreneurial response to critical sense-breaking feedback with different levels of trust involved?”*

1.3 Relevance

This research offers a better understanding of the role of personal characteristics and the entrepreneurial response in the startup process. It examines entrepreneurs' responses during sense-breaking periods and how these responses differ or correspond with different levels of trust and various personal characteristics. Furthermore, this study contributes to creating new measurement scales for the variables of entrepreneurial response and trust.

Entrepreneurs can gain practical insights into decision-making strategies, innovation processes, and handling critical feedback. In addition, it offers insights into how startup entrepreneurs can more effectively manage their personal characteristics and reactions to critical, sense-breaking feedback.

Overall, this study contributes to a better understanding of entrepreneurship, innovation, and decision-making, which are essential for social development and economic growth. It emphasizes the significance of trust in entrepreneurial networks and its impact on collaboration and decision-making. Finally, it also identifies potential challenges relevant to enterprises' functioning.

1.4 Thesis outline

This study consists of five chapters. Chapter 2 describes the theoretical framework, establishes hypotheses, and ends with a literature-supported conceptual model. Chapter 3 details the research methodology used for gathering data. Chapter 4 elaborates on the research results conducted through several analyses. Lastly, chapter 5 includes the conclusion, discussion, limitations, implications, and recommendations for further research.

2 Theoretical background and hypotheses

The response to critical sense-breaking feedback depends on personal characteristics, the message's nature, and the feedback giver's characteristics. This study focuses on the personal characteristics involved in the reaction process. The literature identifies three personal characteristics influencing the entrepreneurial reaction to such feedback: self-esteem, psychological ownership, and cognitive dissonance (Audia & Locke, 2003; Ilies et al., 2007; Grimes, 2018).

2.1 Entrepreneurs and feedback

This study examines how personal characteristics affect entrepreneurial responses to critical sense-breaking feedback. Therefore, understanding the nature of this type of feedback is essential.

Feedback can be defined as providing information by external people intended to improve task performance (Gatewood et al., 2002; Pati & Garud, 2021). Feedback is relatively easy to implement and low-cost, making it popular for startup entrepreneurs to confirm, examine, validate, and test ideas, decisions, and strategies before making critical decisions (Drencheva et al., 2022; Panadero & Lipnevich, 2022). Startup entrepreneurs seek feedback on various subjects, including strategy, marketing, finance, and people management issues. However, the content and quality may vary widely (Chatterji et al., 2018).

Entrepreneurial reactions vary by the type of feedback. Feedback's effectiveness depends on its fit between the type of feedback and the context (Pati & Garud, 2021). While critical feedback aims to improve performance, it often has the opposite effect (Ilies et al., 2007). Entrepreneurs often expect positive feedback (Audia & Locke, 2003). However, startups often receive critical feedback, leading to lower entrepreneurial expectations (Gatewood et al., 2002).

Critical feedback provides entrepreneurs with valuable ideas and information to improve task performance (Pati & Garud, 2021). This broadens the entrepreneur's knowledge, offers new important strategies, and makes correcting mistakes easier. Critical feedback also encourages entrepreneurs to view problems from a new perspective and reconsider their basic assumptions or other concepts that may need to be noticed (Pati & Garud, 2021).

Feedback aims to provide information that fills a gap between an entrepreneur's current understanding and what is aimed to be understood (Hattie & Timperley, 2007). However, if the feedback contradicts the entrepreneur's values and beliefs, it becomes sense-breaking, disrupting their sensemaking process and potentially having negative effects, leading to

negative entrepreneurial responses. For this reason, critical feedback is only effective when well-understood by the entrepreneur (Hattie & Timperly, 2007; Kaffka et al., 2013; Pati & Garud, 2021). Misunderstood feedback may be caused by ambiguity, inconsistency, incompatibility with the given feedback, or by the values and beliefs held by the entrepreneur (Audia & Locke, 2003). Entrepreneurs react to sense-breaking feelings through questioning, reframing, and redirecting (Kaffka et al., 2013).

Nevertheless, critical feedback can also encourage sense-breaking breaches, prompting entrepreneurs to redirect their strategy and focus on new approaches. This shift can transform existing ideas or behaviors (Kaffka et al., 2021). Occasionally, entrepreneurs must let go of their ideas to make room for new ones, even if the feedback is critical or challenging to observe (Toivoinen et al., 2023).

2.2 Personal characteristics

2.2.1 Self-esteem

Self-esteem is a personal characteristic shaped by previous experiences (Arora et al., 2013). It is a motivational trait and influences how people receive and react to critical feedback (Ilies et al., 2007). It may be defined as the extent to which people prize, value, approve, and like themselves (Robinson, 1991). It is about the confidence someone has in their thinking and everyday abilities. Furthermore, it is about confidence to have the right to be happy, worthy, deserving, and entitled to have one's needs met (Branden, 1992). In short, self-esteem is a judgment about your worth, providing continuous feedback about someone's relational value (Arora et al., 2013; Laguna, 2013).

Without a healthy level of self-esteem, individuals cannot envision their potential (Branden, 1992). High self-esteem is associated with transparent decision-making and a positive and confident self-image. Such individuals are more effective in self-regulation and more independent of situational conditions. Furthermore, these individuals typically hold positive attitudes regarding themselves (Laguna, 2013; Chen et al., 2016). Consequently, these entrepreneurs are more persistent after a single failure. However, persistence is not always the right strategy (Laguna, 2013). Entrepreneurs with high self-esteem are more likely to take risks, focus on positive opportunities, and approach goals. They would take the opportunity to excel despite the risk of failure (Laguna, 2013; Chen et al., 2016).

Entrepreneurs with high self-esteem focus equally on positive and negative social cues, while those with low self-esteem tend to focus on negative social cues and are often associated with a negative and uncertain self-image (Chen et al., 2016). Low self-esteem entrepreneurs

experience negative effects and feel worse about themselves when receiving critical feedback (Audia & Locke, 2003). Low self-esteem entrepreneurs tend to take ambiguous messages as an insult. Additionally, they are more easily influenced by others and are more likely to hold negative attitudes towards themselves (Chen et al., 2016). This group of entrepreneurs is more likely to avoid activities that might involve risks (Laguna, 2013; Chen et al., 2016). As a result, they minimize risk and reduce the likelihood of regret (Chen et al., 2016).

Increasing levels of uncertainty held by the entrepreneur may be associated with a larger need for feedback. Concurrently, receiving more critical feedback leads to an increased loss of an entrepreneur's self-esteem caused by their increased expectation gap (Audia & Locke, 2003; Newbery et al., 2018). The level of uncertainty depends, among other things, on performance history. Entrepreneurs who have performed poorly may experience more uncertainty and a greater need to know how they performed on their last attempt (Audia & Locke, 2003). Meaning they have less confidence in themselves and low self-esteem. Furthermore, critical feedback leads to lower entrepreneurial expectations (Gatewood et al., 2002). This results in startup entrepreneurs having lower self-esteem and confidence and being dissatisfied with previous performance (Hattie & Timperly, 2007). When entrepreneurs with lower self-esteem fail, their career choices are more easily influenced, as failure may be perceived as overwhelming (Chen et al., 2016). Therefore, entrepreneurs tend to avoid failure (Carsrud & Brännback, 2010). As a result, they may distort the message as a defense mechanism to protect their self-esteem and themselves (Audia & Locke, 2003; Woodhouse, 2023). Startup entrepreneurs experience lower self-esteem and confidence. Therefore, they are likely to ignore feedback (Audia & Locke, 2003).

2.2.2 Psychological ownership

Entrepreneurs often perceive feedback as personal criticism because it is hard for them to depersonalize feedback and feel psychological and social ownership of their work (Grimes, 2018). Psychological ownership can be defined as the extent to which the entrepreneur develops a strong sense of attachment to identification with their business (Yitshaki, 2021). This sense of ownership includes feelings of possession and efficacy (Townsend et al., 2009; Chugh, 2013; Yitshaki, 2021). Psychological ownership is an emotion-related behavior that affects an entrepreneur's ability to manage emotions associated with business development (Yitshaki, 2021). Entrepreneurs often see their business as a reflection of their personality, goals, and identity, making it challenging to depersonalize feedback. Therefore, the outcomes will reflect their skills and abilities (Townsend et al., 2009; Kessels, 2022).

One aspect of psychological ownership in relation to entrepreneurs is that entrepreneurs experience higher psychological ownership when they share less formal ownership with others (Yitshaki, 2021). This strong attachment often emerges because entrepreneurs invest significant physical, psychological, and emotional effort into their business (Chugh, 2013). Because they invest time, ideas, knowledge, and personal style into creating it, feelings of psychological ownership emerge (Kessels, 2022). In their early stages, startups tend to foster deep emotional connections, viewing their business as an extension of themselves. Creating a high level of psychological ownership, which will only increase over time (Yitshaki, 2021).

Another feature of psychological ownership is that it can help entrepreneurs' resilience after business failure and enhance their focus on new opportunities (Yitshaki, 2021). In addition, it correlates with better financial performance and organizational effectiveness, driven by increased responsibility, commitment, satisfaction, and time investment in the business (Townsend et al., 2009; Kessels, 2022). However, a high level of psychological ownership may hinder entrepreneurs from exiting underperforming businesses, fostering resistance to change, reluctance to share control, and territorial behavior (Townsend et al., 2009; Chugh, 2013; Yitshaki, 2021; Kessels, 2022). Founders also tend to see their business as an extension of the founder's identity, impacting the decision-making process, as the founder may be more concerned with maintaining their lifestyle over business improvement (Kessels, 2022).

A final point emphasizing psychological ownership concerns self-efficacy, accountability, belongingness, and self-identity (Avey et al., 2009). It increases as entrepreneurs build self-efficacy, gain insider knowledge, and invest more in themselves (Grimes, 2018). Self-efficacy is the belief in one's ability to control actions and outcomes. It is a psychological component that gives people freedom of control over actions (Avey et al., 2009). Control is about the legal and formal control entrepreneurs have and contributes to psychological ownership, which increases the longer an entrepreneur controls an organization (Townsend et al., 2009). Emotional attachment, combined with entrepreneurial emotions, can lead to territorial behaviors that hinder organizational growth by reinforcing a sense of belonging (Yitshaki, 2021). A study by Grimes (2018) suggests that psychological ownership reduces the willingness to give up control of ideas or reassess them based on external feedback. Besides, accountability is the expectation that someone may be called to justify actions, beliefs, and feelings. Individuals with high psychological ownership are more likely to hold someone accountable. Entrepreneurs with high feelings of accountability are expected to receive more insider information. The more insider knowledge an entrepreneur has, the more ownership they feel (Avey et al., 2009). Insider knowledge includes information on the firm's opportunity set,

core technology, and relationships with external stakeholders (Townsend et al., 2009). In addition, the need for belonging drives people to take ownership and feel satisfied within an organization where they perceive ownership. When they feel like they own the organization, the feeling of belongingness is met, which, as a result, leads to entrepreneurs obtaining a greater sense of psychological ownership over that organization (Avey et al., 2009). Lastly, people often act as symbols through which they identify themselves. They establish, maintain, reproduce, and transform their self-identity through organizations (Avey et al., 2009). They do this through self-investment. Self-investment involves investing time, ideas, skills, and psychological, physical, and intellectual energies. As this investment grows, the business reflects more of the entrepreneurial self, and the idea becomes part of the psychological owner's identity (Townsend et al., 2009; Chugh, 2013). It is about the tendency for people to define themselves and express their definitions to others. Doing so ensures the continuity of their identity when merged with their business over time, creating an extended self (Townsend et al., 2009; Yitshaki, 2021).

Through these aspects, entrepreneurs develop psychological ownership, and the idea becomes more tied to their extended self (Chugh, 2013). This ownership influences their response to critical sense-breaking feedback, requiring them to rethink their ideas and personality (Grimes, 2018). Psychological ownership increases when entrepreneurs invest in themselves (Townsend et al., 2009). In short, psychological ownership is an essential aspect of understanding entrepreneurial behavior, particularly for startup entrepreneurs, as they develop a strong sense of psychological ownership rather quickly (Kessels, 2022).

2.2.3 Cognitive dissonance

Cognitive dissonance is an inconsistency of two cognitions (Telci et al., 2011; Woodhouse, 2023). Those cognitions could be perceptions, attitudes, values, or beliefs (Brooksbank & Fullerton, 2020). However, it may also be about beliefs held by the entrepreneur and new information that challenges their beliefs and make them negatively react (Jermias, 2001). The inconsistency is a gap between perceived reality and expectations (Qin, 2021). Cognitions are related elements of knowledge about their behavior, attitudes, and environment (Telci et al., 2011). Cognitive dissonance may influence emotional expressions and lead to mental tensions and psychological discomfort. It can activate self-regulation to reduce psychological discomfort. However, not everyone can self-regulate, which might result in depression and counter-attitudinal behavior (Qin, 2021). Business owners with high success motivation are more likely to experience cognitive dissonance and are more easily led into failure. However,

it is a motivation to avoid disappointment when entrepreneurs are afraid to fail. This motivation increases when the entrepreneur feels shame and embarrassment (Carsrud & Brännback, 2010). Cognitive dissonance gives a deeper understanding of the psychological reasons and the likelihood of people making decisions based on personal gains (Telci et al., 2011).

Cognitive dissonance will likely arise in the decision-making process. This is the point at which a change in behavior and attitude is needed. People who feel free to change will be more likely to accept a change in their actions, whereas those who experience less freedom will be more likely to resist change (Telci et al., 2011).

When the dissonance brings difficulties, individuals experience increased motivation to exert effort towards reducing dissonance to transform feelings of tension, allowing for cognitive consistency again (Jermias, 2001; Audia & Locke, 2003). Feeling inconsistent is typically experienced as uncomfortable. Individuals may thus try to reduce inconsistency in the simplest way possible (Jermias, 2001). Cognitive dissonance may be reduced in three ways, but the preferable course of action depends on someone's motivation, personal traits, and the significance of the change. Firstly, entrepreneurs can remove cognitions by adjusting prior beliefs to match their behavior. Moreover, they can add new consonant cognitions and change their attitudes or beliefs. Lastly, it is also possible to minimize the importance of dissonant cognitions (Telci et al., 2011; Woodhouse, 2023). How individuals in organizations choose to reduce cognitive dissonance affects situations related to turnover, conflict, and business development (Woodhouse, 2023).

When loss of objectivity appears in the early stages of a startup entrepreneur, it creates risks for the entrepreneurs. They invest psychologically and financially into realizing an idea, hoping it will pay off. This cognitive dissonance leads entrepreneurs to seek decision-supporting information and avoid negative information (Telci et al., 2011). Entrepreneurs can seek for information by asking feedback. However, critical feedback increases cognitive dissonance, which decreases salience in the entrepreneurial identity (Newbery et al., 2018). As a result of the cognitive dissonance, entrepreneurs develop a self-criticism bias, which means that they evaluate their criticism more favorably than the criticism they receive from others (Audia & Locke, 2003). Additionally, it can lead to confirmatory bias, where individuals' responses to new information are biased toward their prior belief preferences (Jermias, 2001). Based on pre-established cognition, individuals decide how they accept and respond to dissonant feedback (Woodhouse, 2023).

2.3 Entrepreneurial response

Joseph et al. (2021) emphasize the importance of understanding entrepreneurs' thought processes and behaviors, including handling emotions, making strategic decisions, and interacting with their business environment and stakeholders. Entrepreneurs' willingness to adapt to feedback varies, and emotions are crucial in this adaptability (Ilies et al., 2007; Chatterji et al., 2018).

Entrepreneurs often react to negatively critical sense-breaking feedback, typically ignoring it. This can cause strategic change, decreased quality, business failure, and escalation (Joseph et al., 2021; Kaffka et al., 2021). Escalation means continuing a current behavior while adverse outcomes are predicted (Chugh et al., 2011). Suggesting that an entrepreneur continues to invest in an idea despite information that the outcome will be negative (Schmidt & Calantone, 2002). Chugh et al. (2011) emphasize that escalation is most associated with adverse outcomes, which result in many setbacks during the startup process. To avoid these issues, entrepreneurs should make themselves vulnerable to rejection, failure, and humiliation, preventing feedback from becoming sense-breaking and causing long-term problems (Dovey, 2009).

According to Audia and Locke (2003), individuals can respond to sense-breaking critical feedback in two ways. Firstly, they might dismiss the feedback and continue their current course, potentially leading to escalation and blaming the feedback giver. Secondly, they might seek additional elaboration while persisting with their current course, creating an environment where they are open to new opportunities (Audia & Locke, 2003). However, this questioning may lead to self-organizing behavior, resulting in disapproval, dissatisfaction, harsh rebuttals, and rejection (Kaffka et al., 2021).

Moreover, critical feedback may activate affective reactions. This can complicate the assessment process and affect entrepreneurs' attitudes and behaviors by influencing their emotions (Audia & Locke, 2003; Ilies et al., 2007). Critical feedback is undesirable and leads to a negative mood among the entrepreneur (Ilies et al., 2007). It can evoke negative emotions like anger, shame, worry, and sadness (Niemann et al., 2014). These emotions can cause blaming others and avoidance behavior, creating unfavorable situations since receiving critical feedback can be stressful and unsettling (Ilies et al., 2007; Niemann et al., 2014). Entrepreneurs who experience negative emotions tend to hold the feedback giver accountable for unfavorable situations and resist change (Niemann et al., 2014). Resistance to feedback suggesting changes is common (Grimes, 2018). To prevent these unfavorable situations, they decide to avoid it (Ilies et al., 2007). When feedback is misunderstood, it can lead to sense-breaking behavior,

and entrepreneurs may ignore it, leading to future task-avoidance behavior (Hattie & Timperley, 2007).

Entrepreneurs may ignore facts to protect their self-esteem because critical feedback might result in lower feelings of self-worth (Audia & Locke, 2003; Ilies et al., 2007). However, they often get detached from reality, which results in less ability to function, ignoring the truth and future task-avoidance behavior (Audia & Locke, 2003; Hattie & Timperly, 2007). Without the expectation of positive feedback, especially with low self-esteem, entrepreneurs often avoid critical feedback (Audia & Locke, 2003). This avoidance can cause missed opportunities since they want to avoid taking risks and diminish their enthusiasm for entrepreneurship (Chen et al., 2016).

Entrepreneurs often highly value their personal assessment and connection to their ideas, leading to sense-breaking reactions when receiving external feedback. In other words, entrepreneurs who feel psychological ownership cannot agree with the critical feedback received since the feedback does not suit their assessment and, therefore, do not accept it. Therefore, the feedback received might not be suited to the values and beliefs of the entrepreneur (Grimes, 2018). Psychological ownership affects the entrepreneurial response, resulting in negative responses like seeking control, resisting change, lack of collaboration, and territorial behavior (Avey et al., 2009; Kessels, 2022).

Because of cognitive dissonance, entrepreneurs often create a self-service bias, rating their own criticism more favorably than that of others (Audia & Locke, 2003). This results in entrepreneurs continuing with their current course and being likely to reject valid feedback. Potentially causing long-term problems and escalation (Grimes, 2018). Entrepreneurs experiencing dissonance tend to seek information that confirms their beliefs and ignore or discredit feedback that does not align with their prior beliefs (Jermias, 2001). Sense-breaking feedback increases entrepreneurs' dissonance, resulting in negative responses like ignoring or avoiding feedback and seeking confirmatory information (Jermias, 2001).

This theory suggests the potential for the following hypotheses:

Hypothesis 1: Self-esteem is expected to lead to less negative entrepreneurial responses.

Hypothesis 2: Psychological ownership is expected to lead to more negative entrepreneurial responses.

Hypothesis 3: Cognitive dissonance is expected to lead to more negative entrepreneurial responses.

2.4 Trust

The entrepreneurial context is characterized by many interpersonal relationships under conditions of uncertainty. The beginning stages of a startup are crucial because of high uncertainty and low predictability (Goel & Karri, 2006). Trust can be defined as the willingness of one person to be vulnerable to the actions of another. This is based on the trustor's expectation that the other person will perform some action important to the trustor, regardless of the trustor's ability to monitor or control the other person (Mayer et al., 1995). To reach a smooth process in the beginning stages of a startup, trust arises rather quickly (Goel & Karri, 2006).

Trust makes startup entrepreneurs more likely to succeed by providing access to resources and leveraging their networks. Trust also increases cooperation, solidarity, satisfaction, performance, and protection. (Goel & Karri, 2006; Fulmer & Gelfand, 2012; Kampkuiper, 2015). Moreover, trust contributes to entrepreneurship, networks, organizational change and survival, as well as mergers and acquisitions, all of which are important for startup entrepreneurs (Fulmer & Gelfand, 2012).

However, by trusting someone, entrepreneurs expose themselves to vulnerabilities and risks. According to Goel and Karri (2006) and Fulmer and Gelfand (2012), trust can be defined as a psychological state that consists of the intention to accept vulnerabilities based on positive expectations of the intentions and behavior of another. When individuals decide to trust someone, they accept that they are vulnerable and may be disappointed if expectations are not met (Goel & Karri, 2006).

Trust can be divided into three components (Goel & Karri, 2006). Firstly, cognitive trust. This involves faith in someone's professionalism and expertise and represents a belief or expression of faith and confidence (Goel & Karri, 2006; Kampkuiper, 2015). To form relationships, a small amount of cognitive trust is needed (Kampkuiper, 2015). Most entrepreneurs rely on informal sources, seeking people with whom they have a favorable relationship (Grimes, 2018). Cognitive trust in someone increases the entrepreneurial motivation to seek feedback (Kampkuiper, 2015). Entrepreneurs who trust their feedback giver are more likely to adapt to the feedback they receive, especially when they have a mutual social position (Grimes, 2018). Goel and Karri (2006) suggest that a strong bond of trust can reduce reliance and uncertainties, while shared moral values enhance trust (Audia & Locke, 2003). However, frequent negative feedback or violating or damaging trust can decrease cognitive trust. This leads to conflicts and skepticism about the feedback giver's abilities, thus reducing acceptance of feedback (Kampkuiper, 2015; Bi et al., 2021). Moreover, entrepreneurs do not rely on the judgment of the feedback giver when the entrepreneur thinks that the feedback giver

needs more expertise and knowledge. In this case, entrepreneurs are more likely to reject the feedback (Audia & Locke, 2003).

Secondly, trust includes the affective component, reflecting the physical and psychological emotions between the entrepreneur and the feedback giver. Affective trust emphasizes the working relationship, including honesty, integrity, and motivations (Goel & Karri, 2006; Kampkuiper, 2015). Affective trust becomes critical when relationships develop, providing psychological safety for discussions, criticism, and sharing thoughts (Kampkuiper, 2015). Entrepreneurs often accept feedback based on non-content cues like credibility and the affective relationship with the feedback giver. Valid feedback may be rejected when the source is disliked or not credible (Audia & Locke, 2003). In addition to that, when the entrepreneur experiences unfavorable events, they might hold the feedback giver accountable, which may result in a lower-quality relationship (Niemann et al., 2014).

Lastly, trust involves behavioral components, referring to the reliability of someone's words and actions, as well as the goodwill from the feedback giver regarding their intentions (Audia & Locke, 2003; Goel & Karri, 2006; Bi et al., 2021). Startup entrepreneurs are likelier to trust powerful people despite the uncertainty about their intentions (Audia & Locke, 2003). Entrepreneurs want the feedback giver to do what is best for them. However, entrepreneurs cannot be sure how such expectations will be met but hope they will not be disappointed and rely on the feedback giver (Welter, 2012). Entrepreneurs fear that feedback may damage their public image. Therefore, they seek feedback from less powerful individuals, who are considered the least dangerous and most trustworthy (Audia & Locke, 2003). The perceived trustworthiness is more important for entrepreneurs than the actual trustworthiness. The feedback giver can be very trustworthy, but when the entrepreneur cannot see that, the feedback will not be accepted (Kampkuiper, 2015). Responding to feedback can lead to mistrust, impacting interpersonal relationships (Cesário et al., 2022). According to Bi et al. (2021), a breach of trust occurs when evidence contradicts confident, positive expectations about the behavior of others, redefining the nature of the relationship in the mind of the aggrieved party.

The literature shows trust limits the relationship between personal characteristics and negative entrepreneurial responses. Therefore, we pose the final hypotheses as:

Hypothesis 4: Trust weakens the effect between self-esteem and negative entrepreneurial response.

Hypothesis 5: Trust weakens the effect between psychological ownership and negative entrepreneurial response.

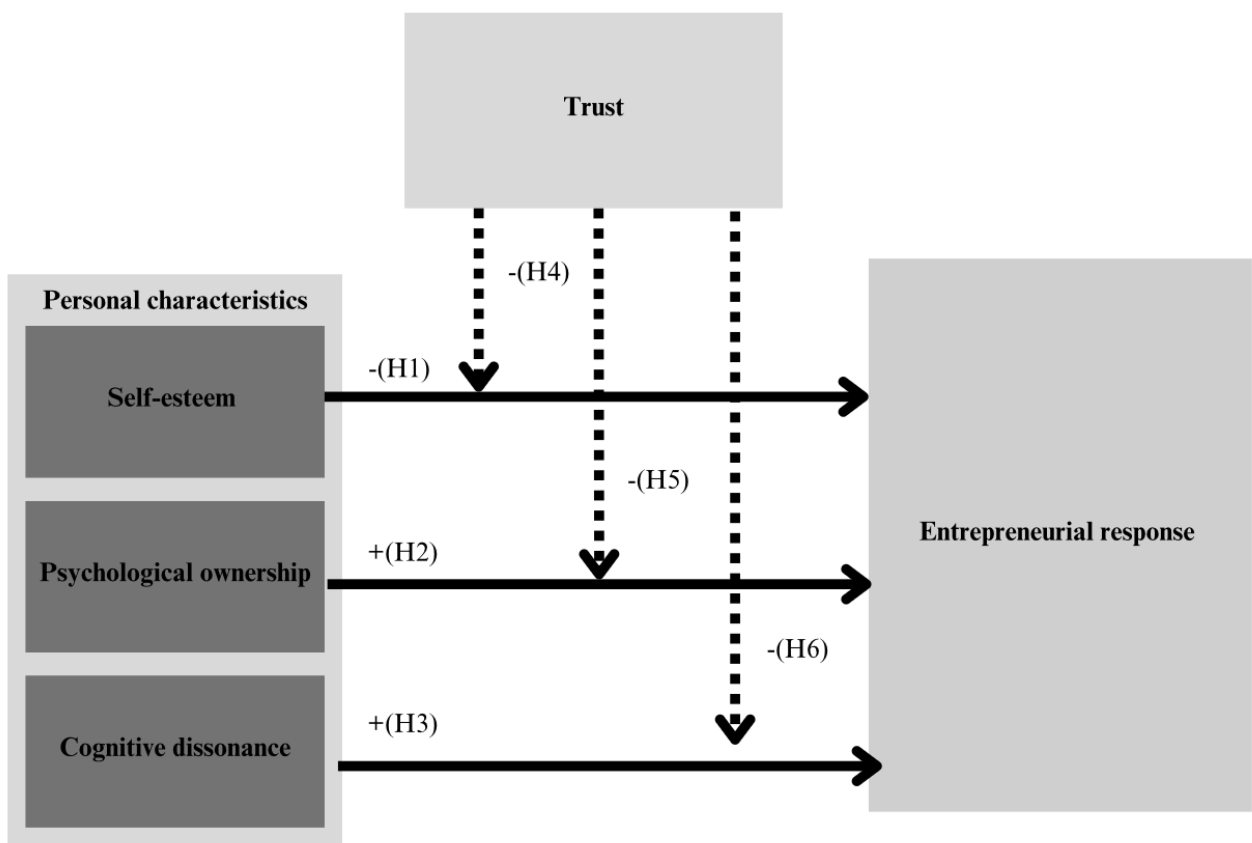
Hypothesis 6: Trust weakens the effect between cognitive dissonance and negative entrepreneurial response.

2.5 Conceptual framework

Figure 1 demonstrates the conceptual model. This model shows three independent variables related to personal characteristics: self-esteem, psychological ownership, and cognitive dissonance. These independent variables form three main effects with the dependent variable entrepreneurial response. The main effects represent the first three hypotheses. According to the literature, self-esteem negatively affects entrepreneurial response, while psychological ownership and cognitive dissonance have positive effects.

The moderator trust shows how the direct effects are influenced while different levels of trust are involved. Literature indicates that the moderator weakens the main effects when trust is involved.

Figure 1: Conceptual model



3 Methodology

3.1 Research design

With the conceptual model in mind, it is crucial to understand how startup entrepreneurs respond comprehensively to answer the research question. This study used deductive research, meaning several hypotheses derived from theory will be tested. Valid and reliable data suited to the hypotheses is needed to test them. A multiple regression analysis was the most suitable research strategy because it uses the values of the independent variables and moderator to predict the value of the dependent variable (Berry, 2005).

The research was conducted quantitatively via an online survey. Quantitative research is characterized by larger sample sizes and is typically relatively less time demanding. However, it provides less in-depth information and snapshots of a phenomenon (Rahman, 2016).

3.2 Data collection

The data must be representative of the population. Several online platforms were used to distribute the survey, namely LinkedIn, Facebook, and Instagram. On LinkedIn, the survey was distributed through various groups such as Start-up Nederland, Young Entrepreneurial Minds Amsterdam, and Start-Up & Scale-Up Netherlands. The survey was shared on Facebook with entrepreneurial groups such as Amsterdam Entrepreneurs & Startups Forum, Startup Events Netherlands, and Startup without Borders Netherlands. Instagram was used for the survey, and a specific reference was made that only startup entrepreneurs were sought. The survey was also released at Startup Nijmegen, an incubator (Startup Nijmegen, n.d.). The survey was constructed using the online Qualtrics program. Information collected from this survey can be directly transferred to the statistical program SPSS. The survey was distributed during 12 days between 1 and 12 May 2024.

3.3 Sample and sampling

The population of this study comprises all startup entrepreneurs in the Netherlands. Startups are companies that exist for 0 to 5 years, are of limited duration, and aim to grow into large companies (Meinders, 2017; Joseph et al., 2021). To participate in this study, entrepreneurs must have at least one experience of receiving critical sense-breaking feedback. To ensure that all respondents meet the criteria, the survey asks two questions that give insights into whether they meet the criteria. Respondents who did not meet the criteria were excluded from the

analysis. At the beginning of the survey, participants were asked to consent for their data to be processed anonymously. In addition, it is mentioned that the data will be treated confidentially.

The sampling method for this research is non-probability sampling, meaning that the units are included with unknown probabilities, and not everyone in the population has an equal chance of being included in the sample (Etikan, 2016; Wolf et al., 2016). The type of non-probability sampling chosen for the survey is convenience sampling. Convenience sampling is an approach where units are selected at hand (Wolf et al., 2016). Units in convenience sampling met practical criteria. They are, for example, easily accessible, available at a particular time, and are willing to participate (Etikan, 2016). This study chose the units from online venues like LinkedIn, Facebook, and WhatsApp. Furthermore, all entrepreneurs affiliated with Startup Nijmegen were reached via email.

Multiple regression analysis was used to analyze the survey data. The sample of this research consists of 80 respondents and is based on the rule of thumb by Blazevic (2024). While this rule suggests that a regression analysis requires at least 50 observations, it preferably sets a minimum of 100 observations. In addition, the sample needs to contain at least five observations per variable, but it is recommended to have 15 to 20 observations per variable to obtain more power and significant results. This means this study needs at least a sample of 50 observations, but preferably between $(15 \times 5 = 75)$ 75 and $(20 \times 5 = 100)$ 100 respondents (Blazevic, 2024). A small sample size in multiple regression analysis is directly seen in the statistical power of the significance and in the generalizability of the results. Therefore, an adequate sample size is needed (Hair et al., 2018).

3.4 Measurement

The measurement scale of the independent variable, self-esteem, is measured using two dimensions and a 10-item scale by Monteiro et al. (2021). The second independent variable, psychological ownership, is measured using the measurement scale of Avey et al. (2009). This consists of four dimensions with an 8-item scale. The last independent variable, Cognitive dissonance, is measured using the measurement scale of Soutar and Sweeny (2003). This scale consists of two dimensions and 12 items. These measurement scales are slightly adjusted to better suit the entrepreneurial context. The moderator trust is measured through a self-conducted measurement scale using the dimensions of Goel and Karri (2006) described in the theoretical framework. The dimensions have a 9-item scale, which is derived from literature. The dependent variable, entrepreneurial response, still needs an existing measurement scale.

Therefore, the dimensions and items are derived from the literature. The scale consists of four dimensions with ten items.

Appendix A provides a detailed explanation of the definitions, dimensions, items, scales, and sources.

3.5 Pre-test survey

A pre-test is conducted before the final survey is distributed to ensure survey quality and improve the validity. Validity is enhanced by testing the comprehensibility of the questions and whether they are understood as intended.

Since the sample consists of Dutch entrepreneurs, the survey is translated from English to Dutch. Translation must be performed accurately to ensure the results are not influenced by translation errors (Maneesriwongul & Dixon, 2004). To overcome the language barrier, the survey must be pre-tested to identify and eliminate possible ambiguities (Forsyth, et al., 2006). Therefore, the forward and backward word translation method is used, meaning that all scales were translated into Dutch before the survey questions were created, and after that, the questions were translated back into English to ensure that the translation was correct (Maneesriwongul & Dixon, 2004). Ten people completed the pre-test, and their answers and interpretations were used to adjust the final questionnaire (Appendix B).

3.6 Research ethics

Research is not just about gathering data but also about ethics. Ethics includes, among other things, protecting the dignity, rights, safety, and well-being of the participants involved. It is also about practicing honesty, truthfulness, good traits, courage, and humility (Stuart & Barnes, 2005; Farrimond, 2012). The researcher should ensure that ethics is a central concept throughout the whole process of research (Stuart & Barnes, 2005).

Participants are essential to this study and must be treated with respect and honesty. It is also essential to ensure that the data remain anonymous and protected. Anonymity protects respondents' privacy. Participants are not asked to provide their names or personal information to ensure anonymity. This ensures privacy and allows them to complete the survey anonymously.

On the other hand, the security of the data is guaranteed, and it is particularly mentioned that the answers are exclusively used by a student for a master's thesis at Radboud University. The results are reported based on the collected data and are not fabricated or falsified. Additionally, the findings are used solely for this research purpose. Moreover, the study was voluntary, and participants were asked to confirm their willingness to participate before data

processing continued. Only participants who agreed with the participation were included in the analysis process. In addition, there was always an honest disclosure that the answers would be the subject of analysis by a student at Radboud University. Finally, participants were given the researcher's contact details so they could ask questions and comment.

3.7 Reliability and validity

Reliability and validity are essential aspects of research. They ensure the research is measured consistently and accurately (Fitzner, 2007). Several measures were considered to ensure the reliability and validity of this study.

There is time pressure during the survey. This could lead to fewer respondents than hoped for and less time to test and adjust the survey questions. To meet this time pressure most effectively, a tight schedule is used. However, this could harm the validity of the study. Valid measurement scales are used to combat this. They are valid since the concepts and measurement scales used are drawn from previous scientific research that has proved to be valid. This means that literature has already proven that these aspects are essential when measuring these specific variables. Furthermore, the validity of this research is strengthened by the pre-test survey and forward and backward translation method, ensuring that the questions are well understood. Thereby, the validity of this study is enhanced by the anonymity of the survey, which excludes socially desirable answers.

The results of the collected data might be biased, which negatively affects the generalizability and representativity of the results since some respondents are distributed through the researcher's personal network. Some respondents might have mutual friends or a similar network as the researcher. Moreover, the answers might be biased because convenience sampling is used. This may lead to the sample not being representative of the population. To rectify the generalizability and representativity, the distributed channels are carefully chosen to reach more diverse entrepreneurs and minimize the risks. It will also be rectified by meeting the rule of thumb for the required respondents.

4 Results

4.1 Descriptives

Before the final survey was distributed, a pre-test was conducted, which ten respondents completed. Based on these answers, minor adjustments were made to the translation and appearance of the survey.

A total of 108 respondents filled out the survey for this research. However, to participate in this study, respondents needed to consent to use their data and meet the requirements of ever having received sense-breaking critical feedback and being startup entrepreneurs. Respondents who did not consent or meet the criteria were removed, leaving a net sample of 84 respondents. Moreover, four respondents did not finish the survey and gave missing values. It has been decided that the respondents who did not complete all the questions are removed and not replaced with average values. Deleting these respondents completely decreases the analyses' complexity, making it easier to interpret results. Moreover, there is only a data loss of four missing values, which is a small part of the entire dataset and, therefore, has little influence on the results and representativeness. After deleting the missing values, a net sample of 80 is left.

When inspecting outliers, the scales and directions of the items must be the same. The variable self-esteem has five positive items and five negative items. Therefore, the negative items are transformed. The items for cognitive dissonance are all negatively formulated except for two, which are positively formulated. Therefore, the two positive formulated items are transformed. The outliers have been inspected using boxplots per item and variable (Appendix C, Figures 1-5). Looking at the boxplots, there are a few extreme outliers on the item level. However, there are no extreme outliers for the variables as a whole. Therefore, no data needs to be removed.

The amount of feedback that startup entrepreneurs receive ranges from rarely to very often. The descriptives show, however, that most startup entrepreneurs receive feedback sometimes or often and mostly about ongoing projects, new ideas, end products, or problems that they are facing. Furthermore, respondents commonly ask people with expertise, family, friends, or colleagues for feedback. However, regarding sense-breaking critical feedback, respondents primarily receive it from someone with expertise (Appendix C, Table 1).

Looking at the descriptives of the independent variables and the moderator in Table 1, the results indicate that startup entrepreneurs score 5.61 on a scale of 1-7 on self-esteem. This suggests that they have a high degree of self-esteem. In addition, startup entrepreneurs feel a high degree of psychological ownership (5.12) but do not often experience cognitive dissonance

(3.39). In contrast, startup entrepreneurs have high trust in the feedback giver, considering the high score of 5.44 (Appendix C, Table 2).

The survey asked questions about four possible entrepreneurial responses. The results indicate that startup entrepreneurs often do not show sense-breaking behavior since the mean can be linked to the answer: partly disagree. The data indicate that the responses are equally common (Appendix C, Table 3). Nevertheless, when startup entrepreneurs do show sense-breaking behavior they are most likely to ignore sense-breaking critical feedback (Table 1).

Table 1: Statistical means

Variable	Mean statistic
Self-esteem	5,61
Psychological ownership	5,12
Cognitive dissonance	3,39
Trust	5,44
Entrepreneurial response	2,86
- Dimension 1: Avoidance behavior	2,86
- Dimension 2: Ignoring	3,12
- Dimension 3: Escalation	2,83
- Dimension 4: Seeking confirmation from others	3,00

4.2 Factor analysis and Reliability analysis

4.2.1 Factor analysis

This study performs a confirmatory factory analysis since some priori ideas of the underlying factors are already derived from theory. Relations are already assumed and established through hypotheses.

First, examining whether the sample represents the population adequately and whether there are enough correlations to conduct a factor analysis is essential. Therefore, the data must meet the rule of thumbs of Kaiser-Meyer-Olkin (KMO) and Bartlett’s test of Sphericity (Appendix D, Table 1). KMO is accepted when the value is above .5. In this dataset, the KMO has a value of .66 and is therefore accepted, meaning that the sample adequately represents the population. Bartlett’s test of Sphericity must be smaller than .05. In this data, the value is smaller than .001, meaning there are enough correlations to conduct a factor analysis (Hair et al., 2018).

Hereafter, the communalities were inspected. Three communalities after extraction do not meet the rule of thumb $>.20$ (Hair et al., 2018), namely “SE3_2Transformed”, “SE3_4Transformed”, and “ER2_6” (Appendix D, Table 2). “ER2_6” has the lowest value of .047 and is therefore removed as first. The factor analysis was conducted again, and the KMO

improved to .675, while Bartlett's test of Sphericity stayed smaller than .001 (Appendix D, Table 3). The communalities of the items "SE3_2Transformed" and "SE3_4Transformed" still have a value below .20 (Appendix D, Table 4). However, removing the lowest value, "SE3_4Transformed", does not improve the KMO, and because the values are close to .20, no further items are removed.

The number of factors is predetermined since the theory expects five factors. These factors explain 49% of the variance. To show one-dimensionality, variance should explain more than 50%. However, since the construct nearly meets the criteria, continuing the analysis was deemed acceptable. This study used an Oblimin rotation since the factor correlation matrix has at least one factor with a score above .30 (Appendix D, Table 5). This means the pattern matrix is used when looking at the loadings (Hair et al., 2018; Appendix D, Table 6).

Looking at the moderator and dependent variable, all items only load on their own factor. However, the independent variables show some significant challenges. Although previous theory has shown the reliability of the measurement scales, the current analysis indicates a lack of clear structure and consistency within the independent variables in the dataset. This indicates that the items of these variables do not have a sufficient degree of distinctiveness to be reliably subjected to a factor analysis. There could be several reasons, including a sample size that is too small and model complexity (Perry et al., 2015). It is essential to critically look at these findings and identify possible limitations that may affect the interpretation of the results.

Despite the challenges, it was decided to continue with the current measures as they were reliable in previous research. Although it is challenging to establish discriminant validity in this study, confidence is placed in the solid foundation laid by the reliability findings of previous studies. The value and relevance of the scales in this study remain optimistic, although evaluating these findings and critically addressing potential limitations is essential. Further research and analysis will be conducted to show whether the results indeed lack structure.

4.2.2 Reliability analysis

Ensuring the trustworthiness of the item set is crucial. A reliability analysis is performed using Cronbach's alpha to assess this (Appendix E). Table 2 illustrates the Cronbach's alpha of all variables in the conceptual model and shows that the variable psychological ownership does not exceed the threshold of $>.70$ (Hair et al., 2018). Therefore, the Item-Total Statistics table was evaluated (Appendix E, Table 3). This table shows that Cronbach's alpha increases significantly if the item PO2_4 gets removed. However, after removing this item, the variable

still does not meet the threshold. Nevertheless, after removing three additional items, the variable meets the criteria (Appendix E, Tables 6 and 7). Since the data is of value and the criteria are almost met, it was decided to continue the analysis without removing further items and only remove PO2_4. However, it is important to note that this remains a point of attention.

All other variables meet the criteria. However, in the factor analysis, ER2_6 was already removed. The reliability analysis ran with and without this item to ensure this was a good decision (Appendix E, Tables 9-11). Table 2 shows that without ER2_6, Cronbach's alpha increases. It can be concluded that all constructs have sufficient reliability to continue further analysis.

Table 2: Cronbach's alpha of the variables of the conceptual model

	<i>Constructs</i>				
	Self-Esteem	Psychological Ownership	Cognitive Dissonance	Entrepreneurial Response	Trust
Cronbach's alpha	.761	.583	.877	.822	.840
Cronbach's alpha after removing an item		.655		.841	

4.3 Assumptions of Multiple Regression Analysis

Several assumptions must be assessed to perform a multiple regression analysis.

The first assumption that needs to be assessed is the linearity of the phenomenon measured. This assumption is checked by examining the skewness and kurtosis (Appendix F, Table 1). To meet the criteria, all values must be between -3 and +3 (Hair et al., 2018). Examining the descriptive table, all values lie within this range, which indicates that the variables are normally distributed. Moreover, when examining the scatterplots, no clear patterns can be deduced (Appendix F, Figure 1). This implies that the model can be considered linear.

Second, the constant variance of the residuals is examined through a scatterplot (Appendix F, Figure 1). The scatterplot shows no influential outliers, and since there are no clear patterns, it illustrates that the data is unbiased and homoscedastic. This means that the variance of the residuals is constant.

Third, the independence of the residuals is evaluated. This assumption is checked by examining residual statistics and evaluating the mean value and standard deviation (Appendix F, Table 2). The mean value is 0.0, and the standard deviation has a value of 1.0. This means that the errors do not correlate with the independent variables and do not influence the regression model (Hair et al., 2018). Moreover, ensures the VIF values that no multicollinearity

can be found within the regression analysis since all VIF values meet the criteria <10 (Hair et al., 2018; Appendix F, Table 3)

The fourth and last assumption is the normality of residual distribution. This assumption is examined by evaluating the histogram and Normal Probability Plot (Appendix F, Figures 2 and 3). The histogram suggests that the data is normally distributed. The Normal Probability Plot illustrates that all dots are distributed along the line, which implies that the errors are normally distributed. Therefore, it can be assumed that the residuals are normally distributed.

4.4 Multiple Regression Analysis

4.4.1 Model summary

This section details the findings from the hierarchical multiple regression analyses conducted to test the hypotheses. An alpha of .05 is used to test the hypotheses. The analysis began with a base model (Model 1), which included only the direct effects. Subsequently, the interaction effects were added in Model 2, incorporating the moderator.

4.4.2 Results direct relationships

The multiple regression analysis was first conducted to examine Model 1, including the direct relationships of the independent variables (self-esteem, psychological ownership, and cognitive dissonance) with the dependent variable (entrepreneurial response). The model summary shows that 34.6 percent of the variation in the dependent variable, Entrepreneurial Response, can be explained by the independent variables, namely Self-Esteem, Psychological Ownership, and Cognitive Dissonance (Appendix G, Table 1). Considering the rule of thumb of Field (2018), this is a strong and high value that shows that the model demonstrates a significant fit to the data. The ANOVA table evidenced this and shows that the F-test is significant ($F(3,76)=14,940$, $P<.001$). This indicates a significant effect between at least one independent variable and the dependent variable (Appendix G, Table 2). Table 3 shows that self-esteem ($\beta=-.091$, $p=.401$) and psychological ownership ($\beta=-.096$, $p=.332$) have a weak effect and do not significantly relate to entrepreneurial response. Conversely, cognitive dissonance shows a significant positive relation with entrepreneurial response ($\beta=.529$, $p<.001$) (Appendix G, Table 3).

Table 3: Direct relationships

Variable	Beta	Significance
Self-Esteem	-.091	.401
Psychological Ownership	-.096	.332
Cognitive Dissonance	.529	<.001

4.4.2.1 Direct effects: Hypotheses 1, 2, and 3

Hypothesis 1: Self-esteem is expected to lead to less negative entrepreneurial responses.

The influence of self-esteem on entrepreneurial response when receiving sense-breaking critical feedback was assessed. The output shows that Self-Esteem has a small, non-significant negative relationship with Entrepreneurial Response ($\beta=-.091$, $p=.401$). Due to the non-significant effect, it cannot be stated that startup entrepreneurs react differently when low self-esteem is involved. Therefore, it can be stated that this hypothesis is not supported.

Hypothesis 2: Psychological ownership is expected to lead to more negative entrepreneurial responses. This hypothesis was tested and found a small, non-significant negative relationship ($\beta=-.096$, $p=.332$). Therefore, it can be concluded that psychological ownership does not seem to impact startups' entrepreneurial responses when receiving sense-breaking critical feedback. Consequently, Hypothesis 2 is not supported.

Hypothesis 3: Cognitive dissonance is expected to lead to more negative entrepreneurial responses. This hypothesis was tested and found to be significant ($p < .001$) with a positive effect of .529. These results show that the hypothesis is supported, which means that cognitive dissonance does lead to more negative responses from startup entrepreneurs.

4.4.3 Moderator relationships

After examining the direct relationships, the relationships are re-examined with the involvement of the moderator Trust (Table 4). The model summary shows that the explanatory power increased to 35.4%. The F-statistics is significant and indicates that at least one effect shows significant results ($F(6,73)=8,205$, $p<.001$). However, the significant relationship is the direct effect between cognitive dissonance and entrepreneurial response. The other values indicate no significant relationships when the moderator trust is involved (Appendix G, Tables 1-3).

Table 4: Direct relationships

Variable	Beta	Significance
Self-Esteem*Trust	.088	.935
Psychological Ownership*Trust	.372	.718
Cognitive Dissonance*Trust	-.958	.090

4.4.3.1 Moderator effects: Hypotheses 4, 5, and 6

Hypothesis 4: Trust weakens the effect between self-esteem and negative entrepreneurial response. This hypothesis yielded a small, non-significant positive result ($\beta=.088$, $p = .935$), indicating that it cannot be supported. Trust does not seem to influence the relationship between self-esteem and entrepreneurial response.

Hypothesis 5: Trust weakens the effect between psychological ownership and negative entrepreneurial response. The data showed that this relationship had a non-significant positive effect ($\beta=.372$, $p=.718$), indicating that trust does not influence the relationship between psychological ownership and entrepreneurial response. Therefore, this hypothesis is not supported.

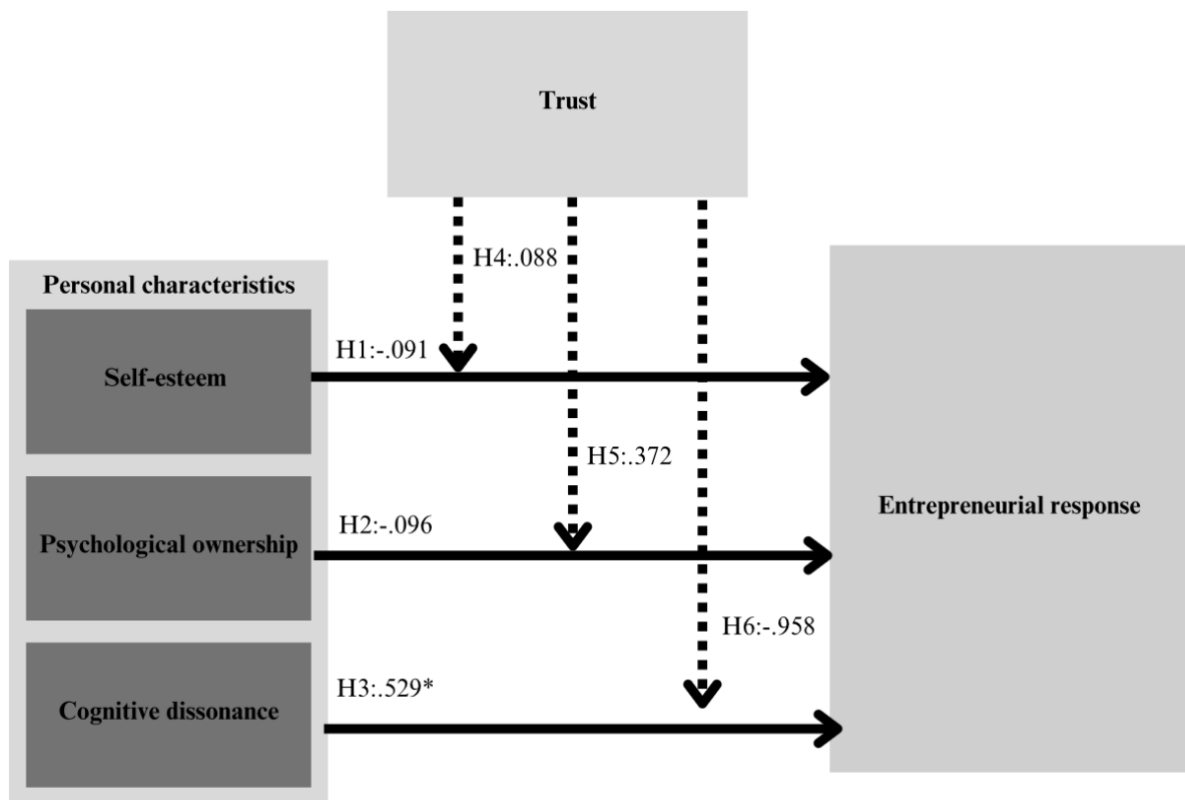
Hypothesis 6: Trust weakens the effect between cognitive dissonance and negative entrepreneurial response. This last hypothesis also has a non-significant positive result ($\beta=-.958$, $p=.090$). This suggests trust is unlikely to influence the relationship between cognitive dissonance and entrepreneurial response. Therefore, this hypothesis is not supported.

4.4.4 Overview of results

The output of the multiple regression analysis is now utilized to test the hypotheses. Figure 2 presents the results of the regression analysis within the conceptual model.

Figure 2: Conceptual model and results per hypotheses

** Indicates a significant relationship*



Cognitive dissonance positively and significantly affected entrepreneurial response, thus supporting Hypothesis 3. However, the other variables did not significantly influence the relationship, contradicting all other hypotheses (Table 5).

Table 5: Overview of results

Hypothesis	Relationship (Path)	Proposed Effect	Observed Effect	Decision
H1	Self-esteem → Entrepreneurial response	Negative	Non-significant	Not supported
H2	Psychological ownership → Entrepreneurial response	Positive	Non-significant	Not supported
H3	Cognitive dissonance → Entrepreneurial response	Positive	Positive	Supported
H4	Self-esteem * Trust → Entrepreneurial response	Negative	Non-significant	Not supported
H5	Psychological ownership * Trust → Entrepreneurial response	Negative	Non-significant	Not supported
H6	Cognitive dissonance * Trust → Entrepreneurial response	Negative	Non-significant	Not supported

5 Discussion and conclusion

5.1 Discussion

An important consideration is the need for clearer structure in the factor analysis conducted during this study since it impacts the entire study. While the self-developed measurement scales for trust and entrepreneurial response loaded correctly, the pre-existing measurement scales for the independent variables did not. The discrepancy implies that the measures designed specifically for this study may have been more accurately tailored to capture the intended constructs within the context of entrepreneurial feedback. The factor analysis did not reveal clear, distinct factors for the independent variables contrary to expectations, which could imply that the measures used did not capture the intended constructs accurately. This lack of structure might have implications for the reliability and validity of the results, as the underlying constructs may need to be more well-defined and adequately measured. Even though the measurement scales had already been slightly modified to fit the entrepreneurial context better, this was probably not enough. This might have been avoided if the pre-test had been conducted with entrepreneurs to get their insights and adapt the survey to their entrepreneurial context.

The reliability analysis showed that the measurement of psychological ownership was not entirely reliable since the variable nearly did not meet the criteria, confirming the lack of structure in the factor analysis for this variable. Although the variable did not meet the requirements, no further items were removed from the reliability analysis, suggesting that eliminating additional items would not significantly enhance the reliability and would result in much data loss. This near-threshold reliability highlights a potential fragility in the measurement of psychological ownership. Paying close attention to this issue is needed, as an imprecise measurement could lead to inaccurate conclusions about the influence of psychological ownership on entrepreneurial response. This could have been avoided if the measurement scale was better framed by context.

The results showed that experiencing cognitive dissonance leads to more negative entrepreneurial responses to critical sense-breaking feedback. This confirms the literature that experiencing cognitive dissonance can be uncomfortable and that startup entrepreneurs show sense-breaking behavior (Jermias, 2001). This reaction likely reduces the psychological discomfort of conflicting cognitions (Qin, 2021). Hence, startup entrepreneurs experiencing cognitive dissonance may react more intensely to such feedback as they seek to resolve the internal conflict it generates.

The literature stated that entrepreneurs with self-esteem are likely to react less negatively to critical sense-breaking feedback, and entrepreneurs with no self-esteem are likelier to show sense-breaking behavior (Audia & Locke, 2003). Moreover, the literature revealed that entrepreneurs with feelings of psychological ownership are likelier to receive feedback unsuited to their values and beliefs, therefore showing negative responses to critical sense-breaking feedback (Grimes, 2018). However, contrary to expectations, self-esteem and psychological ownership did not significantly influence the entrepreneurial response to sense-breaking critical feedback. This suggests that these personal characteristics might not be as crucial in determining how entrepreneurs respond to critical sense-breaking feedback as previously thought. It is possible that other factors, such as the specific context of feedback or the individual's prior experiences, have a more substantial impact on their responses. On the other hand, the insignificant results may also be the result of a lack of structure and, in the case of psychological ownership, including unreliability. This means it might be that the wrong measurement scales were used, the measurement scales were not well translated, not suited to the entrepreneurial context, or the questions were unclear for the respondents. However, the translation and clarity of the questions were tested in the pre-test. Therefore, it is unlikely that those are the reasons for the lack of structure. In contrast, it could be due to the questions not being suited to the entrepreneurial context. Although the scales were slightly adjusted to the context, they could have been better adapted. Besides, the insignificant effects can also be caused by a small sample size since regression analysis is sensitive to the sample size, and small sizes can directly affect the statistical power of the significance (Hair et al., 2018). Furthermore, it is also possible that the relationships do not exist. If the results were interpreted despite the insignificant effects, the results show minor, weak effects, indicating that the characteristics barely correlate with entrepreneurial response. In addition to that, the descriptives demonstrate that startup entrepreneurs have almost no negative reaction to sense-breaking critical feedback.

The absence of significant moderating effects of trust on the relationships between personal characteristics and entrepreneurial response is also contrary to expectations in the literature. While trust is generally considered crucial in feedback dynamics, its lack of significant moderating effects in this study might indicate that the type of feedback (critical and sense-breaking) could inherently outweigh the potential moderating effect of trust. Furthermore, the insignificant moderating effects between self-esteem and psychological ownership can also be caused by the fact that the initial direct relationships do not exist. In other words, trust cannot be a moderator of relationships that are not in existence.

5.2 Conclusion

This study aimed to explore how the personal characteristics of startup entrepreneurs influence their response to critical sense-breaking feedback, also considering varying levels of trust. In response to the research question, it can be concluded that cognitive dissonance is the primary personal characteristic influencing entrepreneurial response. Entrepreneurs experiencing higher cognitive dissonance tend to have a more negative reaction to critical sense-breaking feedback, which could be an attempt to reduce the psychological discomfort of conflicting cognitions. Self-esteem and psychological ownership do not significantly impact feedback response, and trust does not moderate the effects of these personal characteristics on entrepreneurial response.

The findings suggest that cognitive dissonance is the only significant predictor of entrepreneurial response, indicating that higher levels of cognitive dissonance lead to more negative entrepreneurial responses. These findings highlight the importance of addressing cognitive dissonance in entrepreneurship training programs to improve feedback reception and reduce negative reactions. Although the descriptives suggest that entrepreneurs do not frequently experience cognitive dissonance, it indicates that when they do encounter cognitive dissonance, they negatively respond to critical sense-breaking feedback. The most likely response is that startup entrepreneurs ignore the critical sense-breaking feedback received. However, a negative entrepreneurial response is barely shown since startup entrepreneurs do not often experience cognitive dissonance and because startup entrepreneurs do not often exhibit sense-breaking behavior at all.

The results indicate startup entrepreneurs usually receive feedback from someone with expertise, family, friends, or colleagues. However, when the feedback is critical and sense-breaking, it is usually given by someone with expertise, meaning negative responses are usually shown to people with expertise. Although startup entrepreneurs know the feedback giver has expertise, they still tend to show sense-breaking behavior, especially when they experience cognitive dissonance.

5.3 Limitations

Several limitations need to be acknowledged. First, the sample size of 80 respondents, though adequate, was relatively small and might limit the generalizability of the findings. A small sample size has less statistical power to discover real effects, which decreases the reliability of the analysis, contributing to the nonsignificant results for self-esteem and psychological ownership. A larger sample size could provide more robust findings and allow for more in-depth analyses (Heather et al., 2019). This limitation implies that the relationships detected in

the literature may be present but were not identified in this study due to insufficient statistical power. This limitation might be due to the limited time and lack of direct contact with the population.

Furthermore, the study's cross-sectional design limits the ability to draw causal conclusions. Longitudinal studies could clarify how personal characteristics influence entrepreneurial response to critical sense-breaking feedback over time.

Moreover, other unmeasured factors, such as the specific context of the feedback or the individual's prior experience, may contribute to the insignificant influence of self-esteem and psychological ownership on the entrepreneur's response to critical sense-breaking feedback. In addition to this, ignorance of how long it has been since respondents received critical feedback could also play a role. These factors may significantly impact how they respond, suggesting that future research needs to consider a wider range of variables.

Additionally, the lack of clear structure in the factor analysis indicates that the measures used may need to be more well-defined or adequately capture the context, potentially affecting the reliability and validity of the results. Self-developed scales loaded correctly, whereas pre-existing scales did not, indicating potential issues with the relevance or applicability of some measurement tools. This affects the reliability of the overall results and highlights the need for more refined measurement tools.

Last, the reliability analysis did not meet the threshold in the context of psychological ownership, also indicating that the measurement scale did not capture the intended construct. The borderline reliability of psychological ownership indicates a fragile measure that could lead to inaccurate conclusions about its influence on entrepreneurial response. This suggests potential problems with the measurement scale.

5.4 Practical implications

The findings offer various practical implications for startup entrepreneurs, feedback givers, and entrepreneurship training programs.

Awareness of cognitive dissonance is essential for startup entrepreneurs. They should understand this phenomenon to recognize why certain critical sense-breaking feedback might feel threatening and how it can lead to negative responses. By understanding this, they become more self-aware. Furthermore, startup entrepreneurs should strive to constructively develop their ability to receive critical sense-breaking feedback. This includes being open to different perspectives. Moreover, fostering reflection and self-evaluation of their feedback responses is

crucial. Awareness of their response patterns strengthens their ability to manage challenging feedback.

Feedback givers must recognize potential cognitive dissonance when delivering critical sense-breaking feedback. Specifying feedback delivery by learning techniques to reframe feedback, providing actionable steps to minimize perceived threats, and aligning feedback with the entrepreneur's values and beliefs can help mitigate negative reactions. Creating a supportive environment where feedback is viewed as a collective learning process rather than an individual critique can enhance feedback reception. This is particularly important for experts, who provide the most sense-breaking critical feedback.

Entrepreneurship programs should include sessions that help entrepreneurs recognize and manage cognitive dissonance. By understanding the discomfort associated with conflicting cognitions, entrepreneurs can learn strategies to manage cognitive dissonance, leading to more effective responses to critical sense-breaking feedback. Focusing training on feedback reception skills and viewing critical sense-breaking feedback, especially from experts, as opportunities for growth rather than threats. This shift can reduce defensive sense-breaking behavior and improve feedback acceptance and incorporation into business strategies. Additionally, understanding that self-esteem and psychological ownership might not significantly impact entrepreneurial response could help tailor personal development programs that focus more on contextual factors and the specific content of the feedback.

5.5 Theoretical implications

The results of this study provide valuable insights into the dynamics of feedback reception among startup entrepreneurs. The significant positive relationship between cognitive dissonance and entrepreneurial response highlights the importance of cognitive consistency for entrepreneurs. These findings align with existing literature on the discomfort associated with conflicting cognitions. This shows the need for cognitive consistency as a significant driver of behavior change in entrepreneurial response to feedback and a central consideration in models of entrepreneurial feedback reception.

The non-significant direct effects call for reevaluating their presumed importance in feedback reception. The insignificant direct relationships indicate that the influence of self-esteem and psychological ownership might be context-dependent or moderated by factors other than trust. This suggests that future theoretical frameworks should consider reevaluating the roles of self-esteem and psychological ownership in entrepreneurial contexts and broader factors, including situational and contextual variables.

In addition, the results found no moderating effects of trust, which is contrary to much of the literature that emphasizes the critical role of trust in feedback dynamics. This lack of significant results shows that the type and context of feedback might inherently overshadow the potential moderating effects of trust. This provokes a reexamination of the circumstances under which trust influences the reception of feedback.

Moreover, the self-developed scales of entrepreneurial response and trust are valuable additions to the literature, especially in the entrepreneurial context. The study highlights the importance of using well-structured and context-suited measurement scales. The pre-existing scales' lack of structure and psychological ownership's borderline reliability indicate that these measures may not have adequately captured the intended constructs. This highlights the need for more thorough development and validation of measurement tools in entrepreneurial research.

Finally, the results suggest that the interaction between personal characteristics and feedback reception is more complex than previously assumed. This complexity suggests that theoretical models of feedback reception should include a broader range of influences and consider the diverse nature of entrepreneurial behavior.

5.6 Ideas for future research

Future research could address the limitations identified in this study and expand the understanding of cognitive dissonance and entrepreneurial response to feedback. First, longitudinal studies could provide insights into how cognitive dissonance and entrepreneurial response to critical sense-breaking feedback evolve over time and in different stages of the entrepreneurial process.

Investigate other contextual factors that might influence the relationship between personal characteristics and feedback reception, such as exploring the specific context of feedback or the prior individual's experience. Moreover, investigating other moderators, personal characteristics, or other potential independent variables, such as the message nature and the characteristics of the feedback giver, could also yield valuable insights (Ilies et al., 2007).

Additionally, exploring the role of emotional intelligence and resilience as potential buffers in the feedback reception process might provide a more comprehensive view of how entrepreneurs navigate sense-breaking critical feedback.

Moreover, experimental studies could test specific interventions designed to reduce cognitive dissonance and improve feedback acceptance, providing practical strategies for supporting entrepreneurs' development.

Investigating the effectiveness of cognitive dissonance management training for entrepreneurs could be another fruitful area of research. Studies could assess how such training affects their ability to deal with critical, sense-breaking feedback and whether this leads to more positive entrepreneurial outcomes. In addition, interventions to improve the reception of critical feedback would also be valuable for future research. Such interventions could be designed and tested to explore different approaches, such as mentoring programs, peer feedback sessions, and workshops focusing on effective feedback techniques.

Last, given the lack of clear structure for the personal characteristics and psychological ownership measurement's mixed reliability, future research should aim to refine or develop new scales that more accurately capture this construct in the context of entrepreneurial feedback, especially for psychological ownership, to provide more reliable and valid results.

References

- Arora, P., Haynie, J. M., & Laurence, G. A. (2013). Counterfactual Thinking and Entrepreneurial Self-Efficacy: The Moderating Role of Self-Esteem and Dispositional Affect. *Entrepreneurship Theory And Practice*, 37(2), 359–385. <https://doi.org/10.1111/j.1540-6520.2011.00472.x>
- Audia, P. G., & Locke, E. A. (2003). Benefiting from negative feedback. *Human Resource Management Review*, 13(4), 631–646. <https://doi.org/10.1016/j.hrmr.2003.11.006>
- Avey, J. B., Avolio, B. J., Crossley, C. D., & Luthans, F. (2009). Psychological ownership: theoretical extensions, measurement and relation to work outcomes. *Journal Of Organizational Behavior*, 30(2), 173–191. <https://doi.org/10.1002/job.583>
- Berends, J., Jelinek, M., Reymen, I., & Stultiëns, R. (2013). Product innovation processes in small firms: combining entrepreneurial effectuation and managerial causation. *Journal of Product Innovation Management*, 31(3), 616-635. <https://doi.org/10.1111/jpim.12117>
- Berry, W. D. (2005). Probit/Logit and Other Binary Models. In *Elsevier eBooks* (pp. 161–169). <https://doi.org/10.1016/b0-12-369398-5/00176-6>
- Bi, Q., Boh, W. F., & Christopoulos, G. I. (2021). Trust, fast and slow: A comparison study of the trust behaviors of entrepreneurs and non-entrepreneurs. *Journal Of Business Venturing*, 36(6), 106160. <https://doi.org/10.1016/j.jbusvent.2021.106160>
- Blazevic, V. (2024). *Multiple regression analysis 3.2 process* [Video]. Nijmegen School of Management, Radboud university. Retrieved March 18, 2024, from Brightspace.
- Branden, N., Ph. D. (1992). *The power of Self-Esteem* [Book]. Health Communications, Inc. <http://dspace.vnbrims.org:13000/jspui/bitstream/123456789/5039/1/The%20Power%20of%20Self-Esteem.pdf>
- Brettel, M., & Rottenberger, J. D. (2013). Examining the link between entrepreneurial orientation and learning processes in Small and Medium-Sized Enterprises. *Journal of Small Business Management*, 51(4), 471–490. <https://doi.org/10.1111/jsbm.12002>
- Brooksbank, R., & Fullerton, S. (2020). Cognitive dissonance revisited. *Asia Pacific Journal Of Marketing And Logistics*, 32(8), 1759–1782. <https://doi.org/10.1108/apjml-01-2019-0068>
- Carsrud, A. L., & Brännback, M. (2010). Entrepreneurial Motivations: What Do We Still Need to Know? *Journal Of Small Business Management (Print)*, 49(1), 9–26. <https://doi.org/10.1111/j.1540-627x.2010.00312.x>

- Cesário, F., Rodrigues, A., Castanheira, F., & Sabino, A. (2022). The role of reaction to feedback in the relationship between performance management, job satisfaction and the leader–member exchange (LMX). *Euromed Journal Of Business*, 18(1), 129–144. <https://doi.org/10.1108/emjb-04-2021-0054>
- Chatterji, A., Delecourt, S., Hasan, S., & Koning, R.M. (2018). When does advice impact startup performance? *Strategic Management Journal*, 40(3), 331-356. <https://doi.org/10.1002/smj.2987>
- Chen, N., Ding, G., & Li, W. (2016). Do Negative Role Models Increase Entrepreneurial Intentions? The Moderating Role of Self-Esteem. *Basic and Applied Social Psychology*, 38(6), 337–350. <https://doi.org/10.1080/01973533.2016.1217223>
- Chugh, H., Nicolaou, N., & Barnes, S. (2011). How does VC feedback affect start-ups? *Venture Capital*, 13(3), 243–265. <https://doi.org/10.1080/13691066.2011.600285>
- Chugh, H. (2013), "The involvement of technology transfer officers in the development of university start-ups: A psychological ownership perspective", *International Journal of Entrepreneurial Behavior & Research*, Vol. 19 No. 4, pp. 387-403. <https://doi.org/10.1108/IJEER-11-2011-0149>
- Dovey, K. (2009). The role of trust in innovation. *The Learning Organization*, 16(4), 311–325. <https://doi.org/10.1108/09696470910960400>
- Drencheva, A., Stephan, U., & Patterson, M. (2022). Whom to Ask for Feedback: Insights for Resource Mobilization From Social Entrepreneurship. *Business & Society*, 61(7), 1725–1772. <https://doi.org/10.1177/00076503211057497>
- Etikan, I. (2016). Comparison of Convenience Sampling and Purposive Sampling. *American Journal of Theoretical and Applied Statistics*, 5(1), 1-4. <https://doi.org/10.11648/j.ajtas.20160501.11>
- Farrimond, H. (2012). *Doing ethical research*. Bloomsbury Publishing
- Field, A. (2018). *Discovering statistics using IBM SPSS STATISTICS* (5th ed.). SAGE.
- Fitzner, K. (2007). Reliability and Validity A Quick Review. *The Diabetes Educator*, 33(5), 775–780. <https://doi.org/10.1177/0145721707308172>
- Forsyth, B. H., Kudela, M. S., Lawrence, D., Levin, K., & Willis, G. B. (2006). Methods for translating survey questionnaires. *American Association for Public Opinion Research*, 4114-4119.

- Fulmer, C. A., & Gelfand, M. J. (2012). At What Level (and in Whom) We Trust. *Journal Of Management*, 38(4), 1167–1230. <https://doi.org/10.1177/0149206312439327>
- Gatewood, E. J., Shaver, K. G., Powers, J. B., & Gartner, W. B. (2002). Entrepreneurial Expectancy, Task Effort, and Performance. *Entrepreneurship Theory And Practice*, 27(2), 187–206. <https://doi.org/10.1111/1540-8520.00006>
- Goel, S., & Karri, R. (2006). Entrepreneurs, Effectual logic, and Over-trust. *Entrepreneurship Theory and Practice*, 30(4), 477-493. <https://doi.org/10.1111/j.1540-6520.2006.00131.x>
- Grimes, M. (2018). The Pivot: How Founders Respond to Feedback through Idea and Identity Work. *Academy Of Management Journal*, 61(5), 1692–1717. <https://doi.org/10.5465/amj.2015.0823>
- Heather, J., Shannon, E., & Pearson, S. (2019). Analysing a Resilience Development Program: Who benefits? <https://doi.org/10.24083/apjhm.v14i2.253>
- Hair, J., Black, W., Babin, B., & Anderson, R. (2018). *Multivariate Data Analysis* (8th edition). Andover, United Kingdom: Cengage Learning Emea.
- Hattie, J., & Timperley, H. (2007). The Power of Feedback. *Review of Educational Research*, 77(1), 81-112. <https://doi.org/10.3102/003465430298487>
- Hossain, S. S., Jubayer, S. A. M., Rahman, S., Bhuiyan, T., Rawshan, L., & Islam, S. (2019). Customer Feedback Prioritization Technique: A Case Study on Lean Startup. In *Lecture Notes in Computer Science* (pp. 70–81). https://doi.org/10.1007/978-3-030-24308-1_6
- Ilies, R., De Pater, I. E., & Judge, T. A. (2007). Differential affective reactions to negative and positive feedback, and the role of self-esteem. *Journal Of Managerial Psychology*, 22(6), 590–609. <https://doi.org/10.1108/02683940710778459>
- Jermias, J. (2001). Cognitive dissonance and resistance to change: the influence of commitment confirmation and feedback on judgment usefulness of accounting systems. *Accounting, Organizations And Society*, 26(2), 141–160. [https://doi.org/10.1016/s0361-3682\(00\)00008-8](https://doi.org/10.1016/s0361-3682(00)00008-8)
- Joseph, G., Aboobaker, N., & Zakkariya, K. A. (2021). Entrepreneurial cognition and premature scaling of startups: a qualitative analysis of determinants of start-up failures. *Journal Of Entrepreneurship in Emerging Economies*, 15(1), 96–112. <https://doi.org/10.1108/jeee-11-2020-0412>

- Kaffka, G., Singaram, R., Kraaijenbrink, J., & Groen, A. J. (2013). Sensebreaking and the Development of Entrepreneurial Cognition. *Social Science Research Network*. <https://doi.org/10.2139/ssrn.2251927>
- Kaffka, G., Singaram, R., Kraaijenbrink, J., & Groen, A. J. (2021). “Yes and. . . , but wait. . . , heck no!”: a socially situated cognitive approach towards understanding how startup entrepreneurs process critical feedback. *Journal of Small Business Management*, 59(5), 1050–1080. <https://doi.org/10.1080/00472778.2020.1866186>
- Kampkuiper, J. P. (2015). *The effect of positive and negative feedback on self-efficacy, cognitive trust and affective trust*. - University of Twente Student Theses. University Of Twente. Retrieved March 18, 2024, from <https://essay.utwente.nl/67488/>
- Kessels, L. (2022). The Combination of effectuation and Psychological Ownership in Shaping Entrepreneurial Behaviour. *Radboud University*. <https://theses.ubn.ru.nl/server/api/core/bitstreams/741e835f-c18e-4cef-8f18-7b34d14be1ee/content>
- Łaguna, M. (2013). Self-efficacy, self-esteem, and entrepreneurship among the unemployed. *Journal Of Applied Social Psychology*, 43(2), 253–262. <https://doi.org/10.1111/j.1559-1816.2012.00994.x>
- Maneesriwongul, W., & Dixon, J. (2004). Instrument translation process: a methods review. *Journal Of Advanced Nursing*, 48(2), 175–186. <https://doi.org/10.1111/j.1365-2648.2004.03185.x>
- Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. *The Academy Of Management Review*, 20(3), 709–734. <https://doi.org/10.5465/amr.1995.9508080335>
- Meinders, J. (2017). *Vestigingsoverwegingen van IT-startups in Amsterdam*. University Of Utrecht. Retrieved March 18, 2024, from [https://studenttheses.uu.nl/bitstream/handle/20.500.12932/25999/Masterthesis%20-%20Jeffrey%20Meinders%20\(5654300\).pdf?sequence=2](https://studenttheses.uu.nl/bitstream/handle/20.500.12932/25999/Masterthesis%20-%20Jeffrey%20Meinders%20(5654300).pdf?sequence=2)
- Monteiro, R. P., De Holanda Coelho, G. L., Hanel, P. H. P., De Medeiros, É. D., & Da Silva, P. D. G. (2021). The Efficient Assessment of Self-Esteem: Proposing the Brief Rosenberg Self-Esteem Scale. *Applied Research in Quality Of Life (Online)*, 17(2), 931–947. <https://doi.org/10.1007/s11482-021-09936-4>

- Newbery, R., Lean, J., Moizer, J., & Haddoud, M. Y. (2018). Entrepreneurial identity formation during the initial entrepreneurial experience: The influence of simulation feedback and existing identity. *Journal Of Business Research*, 85, 51-59.
<https://doi.org/10.1016/j.jbusres.2017.12.013>
- Niemann, J., Wisse, B., Rus, D., Van Yperen, N. W., & Sassenberg, K. (2014). Anger and attitudinal reactions to negative feedback: The effects of emotional instability and power. *Motivation And Emotion*. <https://doi.org/10.1007/s11031-014-9402-9>
- Panadero, E., & Lipnevich, A. A. (2022). A review of feedback models and typologies: Towards an integrative model of feedback elements. *Educational Research Review*, 35, 100416. <https://doi.org/10.1016/j.edurev.2021.100416>
- Pati, R., & Garud, N. (2021). Role of feedback on innovative outcomes: moderating role of resource-constrained environments. *Ieeexplore*, 68(3). <https://ieeexplore-ieee-org.ru.idm.oclc.org/stamp/stamp.jsp?tp=&arnumber=9187215&tag=1>
- Perry, J. L., Nicholls, A. R., Clough, P. J., & Crust, L. (2015). Assessing Model Fit: Caveats and Recommendations for Confirmatory Factor Analysis and Exploratory Structural Equation Modeling. *Measurement in Physical Education and Exercise Science*, 19(1), 12–21. <https://doi.org/10.1080/1091367X.2014.952370>
- Rahman, M. (2016). The Advantages and Disadvantages of Using Qualitative and Quantitative Approaches and Methods in Language “Testing and Assessment” Research: A Literature Review. *Journal Of Education And Learning*, 6.
<https://pearl.plymouth.ac.uk/handle/10026.1/16598>
- Robinson, J. P., Blazcovich, J., & Tomaka, J. (1991). Measures of Self-Esteem. In *Measures of Personality and Social Psychological Attitudes*. Elsevier. https://books.google.nl/books?hl=nl&lr=&id=5XjNCgAAQBAJ&oi=fnd&pg=PA115&dq=definition+self-esteem&ots=MbJa1lIhp-&sig=Un_-N0jB8q-LEkD38NwsL95Zwh0&redir_esc=y#v=onepage&q=definition%20self-esteem&f=false
- Schmidt, J. B., & Calantone, R. J. (2002). Escalation of commitment during new product development. *Journal of the Academy of Marketing Science*, 30(2), 103-118.
<https://doi.org/10.1177/03079459994362>
- Shane, S., & Venkataraman, S. (2000). *The Promise Of Entrepreneurship As a Field Of Research*. Retrieved January 29, 2024, from:
<https://web.p.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=0&sid=45af8d5d-119d-4982-848d-1b310e0a5417%40redis>

- Soutar, G., & Sweeney, J. (2003). Are there cognitive dissonance segments? *Australian Journal Of Management*, 28(3), 227–249. <https://doi.org/10.1177/031289620302800301>
- Startup Nijmegen. (n.d.). *About us*. StartUp Nijmegen. Retrieved on March 4, 2024, from <https://www.startupnijmegen.nl/over-ons/>
- Stuart, J., & Barnes, J. (2005). Conducting ethical research. *National Evaluation of Sure Start*, 1-51.
- Telci, E. E., Maden, C., & Kantur, D. (2011). The theory of cognitive dissonance: A marketing and management perspective. *Procedia - Social And Behavioral Sciences*, 24, 378–386. <https://doi.org/10.1016/j.sbspro.2011.09.120>
- Qin, S. (2021). Positionality of refugee business support and hospitality building under cognitive dissonance theory: an enterprising route of refugee entrepreneurship. *Journal Of Enterprising Communities*, 17(2), 242–260. <https://doi.org/10.1108/jec-04-2021-0055>
- Toivonen, T., Idoko, O., Jha, H. K., & Harvey, S. (2023). Creative jolts: exploring how entrepreneurs let go of ideas during creative revision. *Journal of product innovation management*, 66(3). <https://web-p-ebSCOhost-com.ru.idm.oclc.org/ehost/pdfviewer/pdfviewer?vid=0&sid=10b16b57-ef7d-4536-806d-ae46e253ecb8%40redis>
- Townsend, D. M., De Tienne, D., Yitshaki, R., & Arthurs, J. D. (2009). The psychological Ownership of Entrepreneurial Organizations Theoretical and Model Development. *Frontiers Of Entrepreneurship Research*, 29(6). https://d1wqtxts1xzle7.cloudfront.net/43690435/THE_PSYCHOLOGICAL_OWNERSHIP_OF_ENTREPREN
- Welter, F. (2012). All you need is trust? A critical review of the trust and entrepreneurship literature. *International Small Business Journal*, 30(3), 193-212. <https://doi.org/10.1177/0266242612439588>
- Welter, F., & Smallbone, D. (2006). Exploring the role of trust in entrepreneurial activity. *Entrepreneurship Theory and Practice*, 30(4), 465–475. <https://doi.org/10.1111/j.1540-6520.2006.00130.x>

- Wolf, C., Joye, D., Smith, T. W., & Fu, Y. (2016). The SAGE Handbook of Survey Methodology. In *Non-probability sampling* (pp. 229–230). SAGE. https://books.google.nl/books?hl=nl&lr=&id=g8OMDAAAQBAJ&oi=fnd&pg=PA329&dq=non-probability+sampling&ots=DAmFpAT-tX&sig=zNoD2nGuHWSzurUzKDxJONG_p9s#v=onepage&q=non-probability%20sampling&f=false
- Woodhouse, I. E. (2023). *Cognitive Dissonance During Performance Improvement Feedback From a Human Resources Perspective*, Thesis, Concordia University]. <https://www.proquest.com/openview/20e0f74c603daeecda186885231542ed/1?pq-origsite=gscholar&cbl=18750&diss=y>
- Yitshaki, R. (2021). Entrepreneurs' emotional intelligence as a factor explaining entrepreneurial psychological ownership and high-tech start-up growth. *Journal Of Small Business And Enterprise Development*, 28(4), 489–514. <https://doi.org/10.1108/jsbed-06-2019-0209>

Appendix A: Measurement scales

Variable Self-esteem					
Definition	The extent to which people prizes, values, approves, and likes themselves (Robinson, 1991).				
Dimensions	Negative Positive				
Items	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <ol style="list-style-type: none"> 1. I consider myself a bad entrepreneur. 2. I feel I have nothing to be proud of as an entrepreneur. 3. I feel useless as an entrepreneur. 4. I need to have more respect for myself as an entrepreneur. 5. I tend to think I am a failing entrepreneur. </td> <td style="width: 50%; vertical-align: top;"> <ol style="list-style-type: none"> 6. I am satisfied with myself as an entrepreneur. 7. I have good qualities to be an entrepreneur. 8. I can do entrepreneurship better than other entrepreneurs. 9. I am an entrepreneur who adds value. 10. I take a positive attitude as an entrepreneur. </td> </tr> </table>	<ol style="list-style-type: none"> 1. I consider myself a bad entrepreneur. 2. I feel I have nothing to be proud of as an entrepreneur. 3. I feel useless as an entrepreneur. 4. I need to have more respect for myself as an entrepreneur. 5. I tend to think I am a failing entrepreneur. 	<ol style="list-style-type: none"> 6. I am satisfied with myself as an entrepreneur. 7. I have good qualities to be an entrepreneur. 8. I can do entrepreneurship better than other entrepreneurs. 9. I am an entrepreneur who adds value. 10. I take a positive attitude as an entrepreneur. 		
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Scale	7-point Likert scale (1 – strongly disagree; 7 – strongly agree).				
Source	(Monteiro et al., 2021)				
Psychological ownership					
Definition	The extent to which the entrepreneur develops a strong sense of attachment to and identification with his or her business (Yitshaki, 2021).				
Dimensions	Self-efficacy Accountability belongingness Self-identity				
Items	<table style="width: 100%; border: none;"> <tr> <td style="width: 25%; vertical-align: top;"> <ol style="list-style-type: none"> 1. I am confident in my ability to contribute to organizational success. 2. I am confident I can make a positive difference in the organization. </td> <td style="width: 25%; vertical-align: top;"> <ol style="list-style-type: none"> 3. I would not hesitate to say when someone has done something wrong within the company. 4. I feel I need to protect my ideas from being used by others. </td> <td style="width: 25%; vertical-align: top;"> <ol style="list-style-type: none"> 5. I feel I belong in the organization. 6. I am comfortable being in this organization. </td> <td style="width: 25%; vertical-align: top;"> <ol style="list-style-type: none"> 7. I feel this organization's success is my success. 8. I feel this organization helps me define who I am. </td> </tr> </table>	<ol style="list-style-type: none"> 1. I am confident in my ability to contribute to organizational success. 2. I am confident I can make a positive difference in the organization. 	<ol style="list-style-type: none"> 3. I would not hesitate to say when someone has done something wrong within the company. 4. I feel I need to protect my ideas from being used by others. 	<ol style="list-style-type: none"> 5. I feel I belong in the organization. 6. I am comfortable being in this organization. 	<ol style="list-style-type: none"> 7. I feel this organization's success is my success. 8. I feel this organization helps me define who I am.
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Scale	7-point Likert scale (1 – strongly disagree; 7 – strongly agree).				
Source	(Avey et al., 2009)				
Cognitive dissonance					
Definition	Inconsistency between two cognitions which creates a gap between perceived reality and expectations				
Dimensions	Emotional Cognitive				
Items	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>After the inconsistency I:</p> <ol style="list-style-type: none"> 1. Felt disappointed with myself. 2. Felt scared of the consequences. 3. Felt angry. 4. Felt uneasy. 5. Felt annoyed. 6. Felt frustrated. </td> <td style="width: 50%; vertical-align: top;"> <ol style="list-style-type: none"> 7. I wonder if I had to respond after the feedback did not meet my expectations. 8. I wonder if I made the right response after the feedback did not meet my expectations. </td> </tr> </table>	<p>After the inconsistency I:</p> <ol style="list-style-type: none"> 1. Felt disappointed with myself. 2. Felt scared of the consequences. 3. Felt angry. 4. Felt uneasy. 5. Felt annoyed. 6. Felt frustrated. 	<ol style="list-style-type: none"> 7. I wonder if I had to respond after the feedback did not meet my expectations. 8. I wonder if I made the right response after the feedback did not meet my expectations. 		
<p>After the inconsistency I:</p> <ol style="list-style-type: none"> 1. Felt disappointed with myself. 2. Felt scared of the consequences. 3. Felt angry. 4. Felt uneasy. 5. Felt annoyed. 6. Felt frustrated. 	<ol style="list-style-type: none"> 7. I wonder if I had to respond after the feedback did not meet my expectations. 8. I wonder if I made the right response after the feedback did not meet my expectations. 				

9. I gave the best possible response to the critical feedback.
10. This response was exactly what I needed
11. In hindsight, I think I reacted wrongly to the unexpected critical feedback.

Scale 7-point Likert scale (1 – strongly disagree; 7 – strongly agree).
Source (Soutar & Sweeney, 2003)

Trust

Definition The willingness of one person to be vulnerable to the actions of another, based on the trustor's expectation that the other person will perform some action that is important to the trustor, regardless of the trustor's ability to monitor or control the other person (Mayer et al., 1995).

Dimensions	Cognitive trust	Affective trust	Behavioral trust
Items	<ol style="list-style-type: none"> 1. I believe the feedback giver. 2. I have confidence in the feedback giver. 3. I think the feedback giver has enough expertise. 	<ol style="list-style-type: none"> 4. I feel safe to start a discussion with the feedback giver. 5. I feel safe that I can express criticism against the feedback giver. 6. I feel comfortable to share thoughts with the feedback giver. 7. I think the feedback giver is honest. 	<ol style="list-style-type: none"> 8. I think the feedback giver is reliable. 9. I think the feedback giver has good intentions.

Scale 7-point Likert scale (1 – strongly disagree; 7 – strongly agree).
Source (Goel & Karri, 2006)

Entrepreneurial response

Definition How entrepreneurs deal with thoughts and emotions, make strategic decisions, and interact with the business environment and other stakeholders when receiving sense breaking critical feedback (Chatterji et al., 2018).

Dimensions	Avoidance behavior	Ignoring	Escalation	Seek other feedback that confirms your ideas
Items	<ol style="list-style-type: none"> 1. I avoid feedback from people I expect do not agree with me. 	<ol style="list-style-type: none"> 3. I ignore feedback when I do not agree with it. 4. I ignore the truth to 	<ol style="list-style-type: none"> 6. I continue my current course despite negative outcomes 	<ol style="list-style-type: none"> 10. I ask feedback from people I know agree with me.

2. I tend to avoid critical feedback when I do not want to take risks.
5. I ignore feedback when it is not suited by my values and beliefs.
7. I blame the feedback giver when I achieve negative outcomes.
8. I am often unwilling to change my behavior.
9. I rate my own criticism more favorable

Scale 7-point Likert scale (1 – strongly disagree; 7 – strongly agree).

Source Theoretical framework entrepreneurial response

Appendix B: Dutch translation of the questionnaire

[Introduction]

Beste ondernemer,

Bedankt dat u de tijd wil nemen om deze enquête in te vullen. Mijn naam is Nadine van Ham en voor mijn master thesis aan de Radboud Universiteit doe ik onderzoek naar startende ondernemers en het verband tussen persoonlijke eigenschappen (zelfvertrouwen, psychologisch eigenaarschap en cognitieve dissonantie) en de reactie van u op kritische feedback. Daarbij worden er ook enkele vragen gesteld over de mate van vertrouwen dat u heeft in de persoon die u feedback geeft.

Invullen van deze enquête kost ongeveer 5-10 minuten. Deelname aan dit onderzoek is volledig anoniem en vrijwillig. Uw gegevens worden veilig opgeslagen volgens de richtlijnen van de Radboud Universiteit conform Algemene Verordening Gegevensbescherming (AVG) en uitsluitend gebruikt voor dit onderzoek. Heeft u nog vragen over de enquête of over de toekomstige resultaten, dan kunt u contact op nemen via het volgende mailadres:

Nadine.vanham@ru.nl

Alvast hartelijk dank voor uw hulp.

Met vriendelijke groet,

Nadine van Ham

Wilt u doorgaan met het invullen van de enquête?

- Ja, ik wil doorgaan en geef toestemming voor mijn vrijwillige deelname aan dit onderzoek. Dit onderzoek bewaart en slaat mijn gegevens veilig op conform de richtlijnen van de Radboud Universiteit.
- Nee, ik wil niet doorgaan met dit onderzoek en geef GEEN toestemming voor mijn deelname aan dit onderzoek.

1. Hoeveel jaar bestaat uw bedrijf?

In getallen, maximaal 1 decimaal

2. Waarvoor vraagt u mensen om feedback? (Meerdere antwoorden mogelijk)

- Over lopende projecten binnen mijn onderneming

- Over nieuwe ideeën binnen mijn onderneming
 - Over nieuwe ideeën buiten mijn onderneming
 - Over eindproducten
 - Over mijn persoonlijke ontwikkeling
 - Over problemen waar ik tegen aan loop
 - Anders, namelijk ...
3. Wie vraagt u om feedback? (Meerdere antwoorden mogelijk)
- Iemand met expertise
 - Vrienden
 - Familie
 - Collega's
 - Iemand van buitenaf
 - Anders, namelijk ...
4. Hoe vaak ontvangt u feedback?
- Nooit
 - Zelden
 - Soms
 - Vaak
 - Heel vaak
5. Heeft u weleens feedback ontvangen met een kritische noot?
- Ja
 - Nee
6. Bent u het weleens oneens met de kritische feedback?
- Ja
 - Nee

[Self-esteem]

De volgende vragen gaan over zelfvertrouwen. Het betreft het zelfvertrouwen in uw kwaliteiten als ondernemer. In welke mate u zichzelf prijst, waardeert, goedkeurt en leuk vindt.

Geef aan in welke mate u het eens of oneens bent met de volgende stellingen

Onderstaande vragen gebruiken de seven-point Likert scale:

(1) Helemaal mee oneens – (2) Mee oneens – (3) Enigszins mee oneens – (4) Niet mee eens of mee oneens – (5) Enigszins mee eens – (6) Mee eens – (7) Helemaal mee eens

7. Ik ben tevreden over mijzelf als ondernemer.
8. Ik heb goede eigenschappen om te ondernemen.
9. Ik kan ondernemen beter dan andere ondernemers.
10. Ik ben een ondernemer die waarde toevoegt.
11. Ik neem als ondernemer een positieve houding aan.
12. Ik vind mijzelf een slechte ondernemer.
13. Ik heb als ondernemer niks om trots op te zijn.
14. Ik voel me nutteloos als ondernemer.
15. Ik moet meer respect hebben voor mezelf als ondernemer.
16. Ik ben geneigd te denken dat ik een mislukte ondernemer ben.

[Psychological ownership]

De volgende stellingen gaan over het voelen van psychologische eigenaarschap.

Psychologische eigenaarschap is de mate waarin u als ondernemer een sterk gevoel hecht aan de identificatie met uw bedrijf.

Geef aan in welke mate u het eens of oneens bent met de volgende stellingen

Onderstaande vragen gebruiken de seven-point Likert scale:

(1) Helemaal mee oneens – (2) Mee oneens – (3) Enigszins mee oneens – (4) Niet mee eens of mee oneens – (5) Enigszins mee eens – (6) Mee eens – (7) Helemaal mee eens

17. Ik heb vertrouwen in mijn vermogen om bij te dragen aan het succes van het bedrijf.
18. Ik vind dat ik een positief verschil maak in het bedrijf.
19. Ik zou niet aarzelen om iemand binnen het bedrijf aan te spreken op zijn of haar gedrag of resultaten
20. Ik moet mijn ideeën beschermen tegen gebruik door anderen.
21. Ik hoor thuis in dit bedrijf.
22. Ik voel me op mijn gemak in dit bedrijf.
23. Het succes van dit bedrijf is mijn succes.
24. Dit bedrijf is een verlengstuk van mijn identiteit.

[Cognitive dissonance]

De volgende stellingen gaan over cognitieve dissonantie. Cognitieve dissonantie is een inconsistentie tussen twee cognities (Cognities kunnen percepties, houdingen, waarden of overtuigingen zijn) waardoor er een verschil ontstaat tussen de werkelijkheid die u heeft waargenomen en de verwachtingen die u had.

Graag vraag ik u om bij de volgende stellingen een scenario in te beelden waarbij u positieve feedback had verwacht, maar kritische feedback kreeg. Wanneer u de vragen beantwoordt gaat het over uw gevoel en e reactie die u heeft gegeven nadat u de onverwachte kritische feedback ontving.

Geef aan in welke mate u het eens of oneens bent met de volgende stellingen

Onderstaande vragen gebruiken de seven-point Likert scale:

(1) Helemaal mee oneens – (2) Mee oneens – (3) Enigszins mee oneens – (4) Niet mee eens of mee oneens – (5) Enigszins mee eens – (6) Mee eens – (7) Helemaal mee eens

25. Na de kritische feedback was ik teleurgesteld in mezelf.
26. Na de kritische feedback was ik bang voor de gevolgen.
27. Na de kritische feedback was ik boos.
28. Na de kritische feedback voelde ik me ongemakkelijk.
29. Na de kritische feedback was ik geïrriteerd.
30. Na de kritische feedback was ik gefrustreerd.
31. Ik vraag me af of ik moest reageren nadat de feedback niet aan mijn verwachtingen voldeed.
32. Ik vraag me af of ik de juiste reactie heb gegeven nadat de feedback niet aan mijn verwachtingen voldeed.
33. Ik heb op de kritische feedback de best mogelijke reactie gegeven.
34. Deze reactie was goed voor me.
35. Achteraf denk ik dat ik verkeerd heb gereageerd op de onverwachte kritische feedback.

[Entrepreneurial response]

De volgende stellingen gaan over de reactie die u geeft wanneer u kritische feedback ontvangt. Kritische feedback is in dit onderzoek feedback waar u het niet mee eens bent en

daardoor niet wilt of kan begrijpen. Ik vraag u daarom een persoon in gedachte te nemen die u weleens dit soort kritische feedback heeft gegeven.

Geef aan in welke mate u het eens of oneens bent met de volgende stellingen

Onderstaande vragen gebruiken de seven-point Likert scale:

(1) Helemaal mee oneens – (2) Mee oneens – (3) Enigszins mee oneens – (4) Niet mee eens of mee oneens – (5) Enigszins mee eens – (6) Mee eens – (7) Helemaal mee eens

36. Ik vermijd feedback van mensen van wie ik verwacht ze het **niet** met mij eens zijn.
37. Ik heb de neiging feedback te vermijden wanneer ik risico's wil vermijden.
38. Ik negeer feedback wanneer ik het er **niet** mee eens ben.
39. Ik negeer de waarheid om mezelf te beschermen.
40. Ik negeer feedback wanneer het **niet** past bij mijn normen en waarden.
41. Ik ga door met mijn huidige koers ondanks dat er negatieve uitkomsten zijn voorspeld.
42. Ik geef de feedback gever de schuld wanneer ik negatieve resultaten behaal.
43. Ik ben vaak **niet** bereid mijn gedrag aan te passen na het krijgen van kritische feedback.
44. Mijn eigen kritiek is van meer waarden dan de kritiek die ik van iemand anders krijg.
45. Ik vraag feedback van mensen van wie ik verwacht ze het met mij eens zijn.

[Trust]

Tot slot gaan de stellingen over het vertrouwen dat u heeft in de persoon die u kritische feedback geeft. Daarom vraag ik u om dezelfde persoon in gedachte te nemen als bij de vorige stellingen die gingen over uw reactie op het krijgen van kritische feedback.

Geef aan in welke mate u het eens of oneens bent met de volgende stellingen

Onderstaande vragen gebruiken de seven-point Likert scale:

(1) Helemaal mee oneens – (2) Mee oneens – (3) Enigszins mee oneens – (4) Niet mee eens of mee oneens – (5) Enigszins mee eens – (6) Mee eens – (7) Helemaal mee eens

46. De persoon die mij feedback geeft, geloof ik.
47. De persoon die mij feedback geeft, vertrouw ik.
48. De persoon die mij feedback geeft, heeft genoeg expertise.
49. De persoon die mij feedback geeft, geeft mij een veilig gevoel om een discussie te starten.

50. De persoon die mij feedback geeft laat mij op mijn gemak om mijn gedachtes te delen.

51. De persoon die mij feedback geeft is eerlijk.

52. De feedback gever is betrouwbaar.

53. De persoon die mij feedback geeft heeft goede intenties.

54. De persoon die ik in gedachte had is

- Iemand met expertise
- Een vriend
- Familie
- Een collega
- Een persoon van buitenaf
- Anders, namelijk...

[End of questionnaire]

Bedankt voor uw tijd en deelname aan deze enquête. Uw antwoord is geregistreerd.

Dankzij uw antwoorden wordt er meer inzicht verschaft naar het gedrag van ondernemers omtrent kritische feedback en vertrouwen in de feedback gever.

Indien u vragen heeft of de resultaten graag wil inzien, kunt u contact met mij opnemen via:
nadine.vanham@ru.nl.

Appendix C: Descriptives

Figure 1 : Boxplot Self esteem

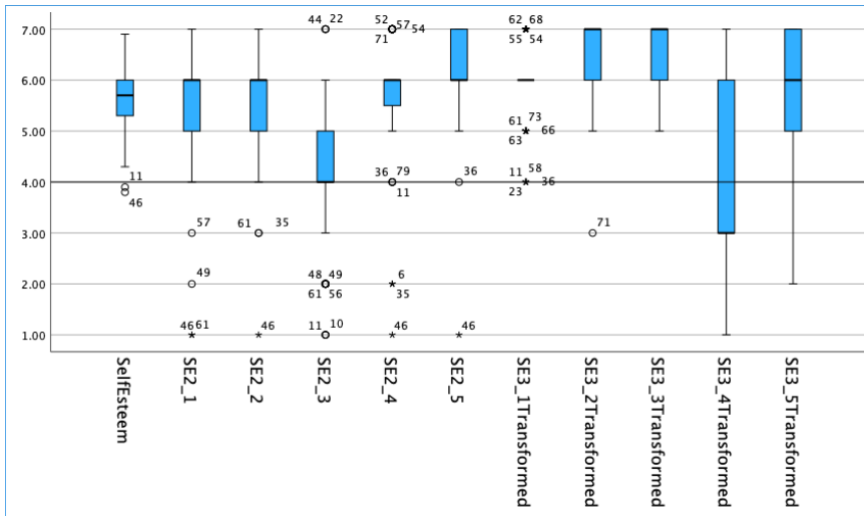


Figure 2: Boxplot Psychological ownership

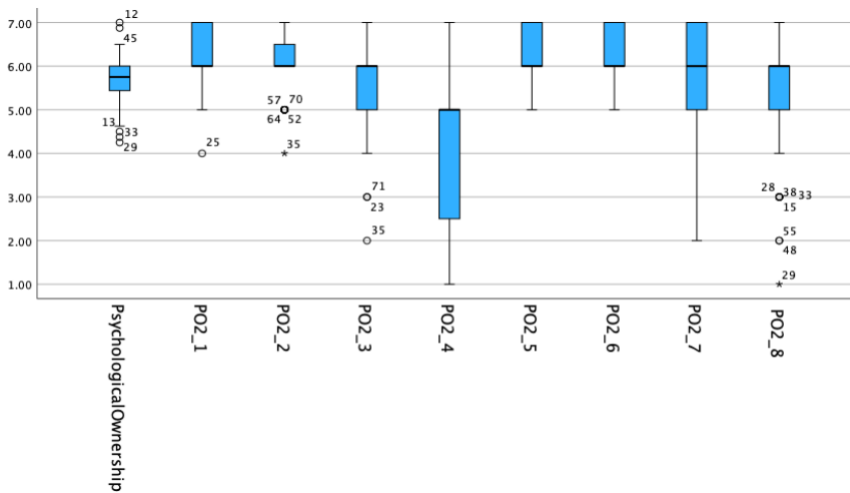


Figure 3: Boxplot Cognitive dissonance

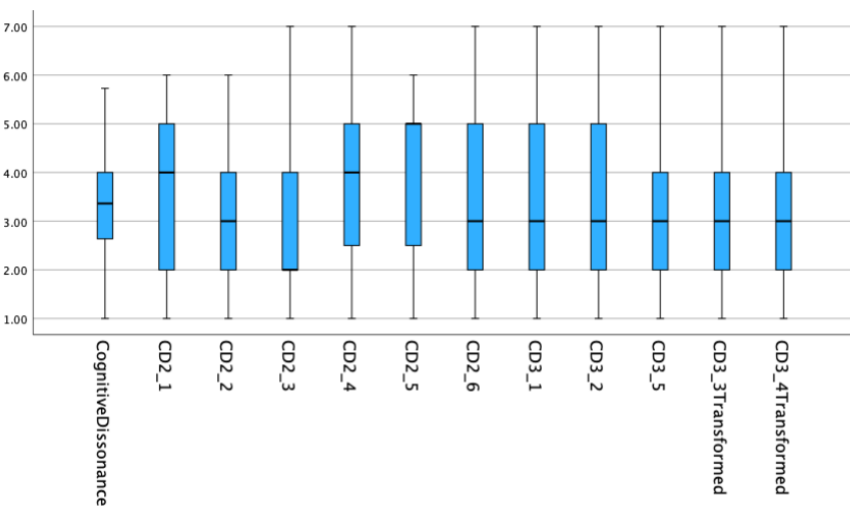


Figure 4: Boxplot Entrepreneurial response

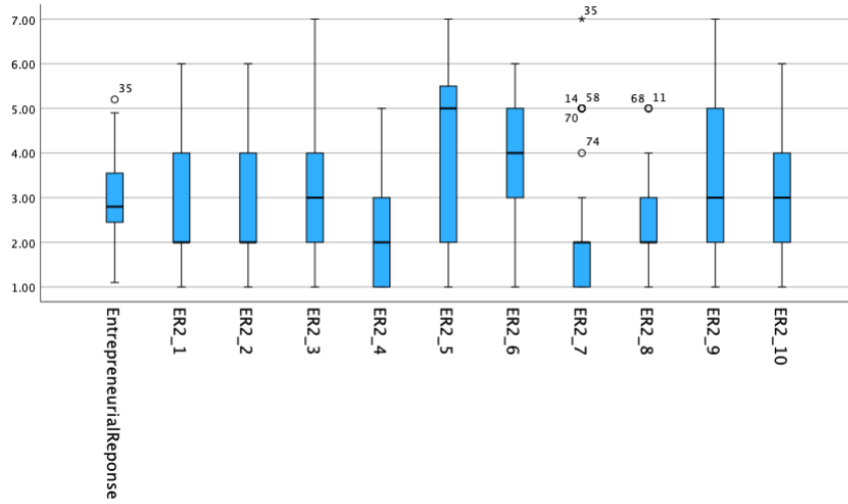


Figure 5: Boxplot Trust

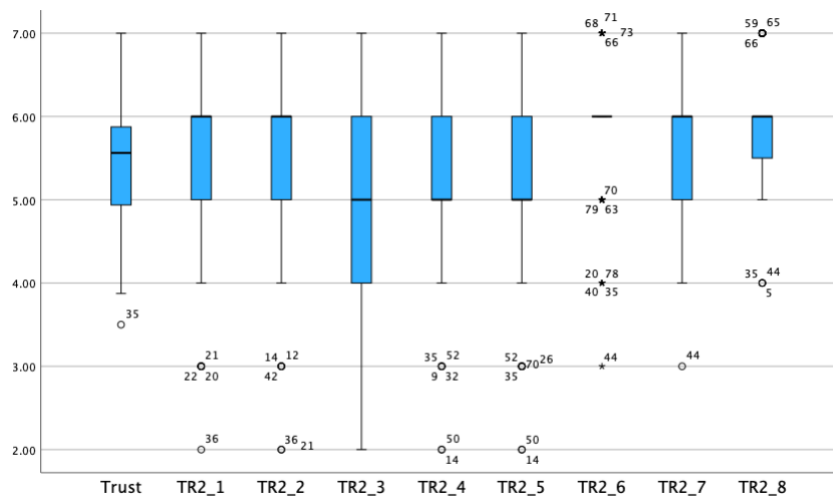


Table 1: Frequency table introduction and outro questions

Answer	Frequency	Valid percent
What do you ask people for feedback on?		
About ongoing projects within my company	53	66,3
About new ideas inside my company	65	81,3
About new ideas outside my company	27	33,8
About end products	44	55,0
About my personal development	29	36,3
About problems I encounter	60	75,0
Otherwise, namely	3	3,8
Who are you asking for feedback?		
Someone with expertise	65	81,3
Family	54	67,5
Friends	44	55,0
Colleagues	43	52,5
A person from external parties	22	27,5
Otherwise, namely	9	11,3
How often do you receive feedback?		
Rarely	2	2,5
Sometimes	37	46,3
Often	34	42,5
Very often	7	8,8
The person I had in mind is (considering receiving sense-breaking critical feedback)		
Someone with expertise	26	32,5
Family	9	11,3
Friends	13	16,3
Colleagues	15	18,8
A person from external parties	10	12,5
Otherwise, namely	7	8,8

Table 2: Descriptives of independent variables and moderator

	Descriptive Statistics									
	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness		Kurtosis		
						Statistic	Std. Error	Statistic	Std. Error	
SelfEsteem	80	3.80	6.90	5.6138	.61433	-.681	.269	.665	.532	
Psychologicalownership	80	3.88	6.13	5.1984	.47430	-.304	.269	.542	.532	
CognitiveDissonance	80	1.00	5.73	3.3920	1.03081	.217	.269	-.183	.532	
Trust	80	3.50	7.00	5.4375	.69725	-.420	.269	.205	.532	
Valid N (listwise)	80									

Table 3: Descriptives of entrepreneurial response and dimensions

Descriptive Statistics									
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
ER_Dim1	80	1.00	6.00	2.8562	1.36686	.543	.269	-.681	.532
ER_Dim2	80	1.00	5.33	3.1167	1.12396	-.037	.269	-.734	.532
ER_Dim3	80	1.00	5.25	2.8250	.87276	.215	.269	.035	.532
ER_Dim4	80	1.00	6.00	3.0000	1.38710	.555	.269	-.653	.532
EntrepreneurialResponse	80	1.00	5.33	2.8556	.93756	.267	.269	-.112	.532
Valid N (listwise)	80								

Appendix D: Factor analysis

Table 1: KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,660
Bartlett's Test of Sphericity	Approx. Chi-Square	2343,763
	df	1081
	Sig.	<,001

Table 2: Communalities

Communalities		
	Initial	Extraction
SE2_1	,814	,369
SE2_2	,803	,577
SE2_3	,724	,384
SE2_4	,717	,418
SE2_5	,741	,382
SE3_1Transformed	,772	,372
SE3_2Transformed	,710	,195
SE3_3Transformed	,677	,335
SE3_4Transformed	,609	,165
SE3_5Transformed	,847	,483
PO2__1	,772	,446
PO2__2	,815	,452
PO2__3	,704	,292
PO2__4	,627	,287
PO2__5	,678	,335
PO2__6	,690	,370
PO2__7	,788	,420
PO2__8	,693	,258
CD2_1	,773	,420
CD2_2	,823	,444
CD2_3	,859	,628
CD2_4	,725	,461
CD2_5	,797	,393
CD2_6	,810	,661
CD3_1	,704	,230
CD3_2	,786	,356
CD3_3Transformed	,896	,448
CD3_4Transformed	,876	,555
CD3_5	,902	,553
ER2_1	,883	,665
ER2_2	,807	,587
ER2_3	,674	,284
ER2_4	,765	,420
ER2_5	,667	,306
ER2_6	,638	,047
ER2_7	,749	,518
ER2_8	,775	,497
ER2_9	,698	,330
ER2_10	,687	,386
TR2__1	,764	,328
TR2__2	,830	,486
TR2__3	,777	,413
TR2__4	,826	,540
TR2__5	,802	,569
TR2__6	,821	,737
TR2__7	,887	,685
TR2__8	,760	,496

Extraction Method: Principal Axis Factoring.

Table 3: KMO and Bartlett's Test after removing ER2_6

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,675
Bartlett's Test of Sphericity	Approx. Chi-Square	2292,467
	df	1035
	Sig.	<,001

Table 4: Communalities after removing ER_6

Communalities		
	Initial	Extraction
SE2_1	,795	,370
SE2_2	,802	,574
SE2_3	,723	,372
SE2_4	,714	,428
SE2_5	,741	,380
SE3_1Transformed	,764	,373
SE3_2Transformed	,710	,197
SE3_3Transformed	,651	,346
SE3_4Transformed	,595	,170
SE3_5Transformed	,829	,485
PO2__1	,769	,449
PO2__2	,813	,457
PO2__3	,704	,292
PO2__4	,608	,246
PO2__5	,677	,335
PO2__6	,687	,364
PO2__7	,786	,384
PO2__8	,693	,252
CD2_1	,771	,440
CD2_2	,821	,463
CD2_3	,858	,626
CD2_4	,718	,470
CD2_5	,792	,398
CD2_6	,810	,665
CD3_1	,703	,214
CD3_2	,783	,357
CD3_3Transformed	,886	,441
CD3_4Transformed	,876	,554
CD3_5	,900	,554
ER2_1	,881	,673
ER2_2	,805	,586
ER2_3	,671	,297
ER2_4	,730	,419
ER2_5	,664	,310
ER2_7	,746	,516
ER2_8	,765	,517
ER2_9	,660	,321
ER2_10	,685	,402
TR2__1	,753	,325
TR2__2	,817	,486
TR2__3	,769	,415
TR2__4	,795	,540
TR2__5	,785	,565
TR2__6	,818	,735
TR2__7	,879	,684
TR2__8	,758	,492

Extraction Method: Principal Axis Factoring.

Table 5: Factor Correlation Matrix

Factor Correlation Matrix					
Factor	1	2	3	4	5
1	1,000	,117	-,284	-,200	-,223
2	,117	1,000	-,117	-,012	-,151
3	-,284	-,117	1,000	,324	,136
4	-,200	-,012	,324	1,000	,101
5	-,223	-,151	,136	,101	1,000

Extraction Method: Principal Axis Factoring.

Rotation Method: Oblimin with Kaiser Normalization.

Table 6 Pattern Matrix

Pattern Matrix^a

	Factor				
	1	2	3	4	5
SE2_1	,178	-,002	,627	,023	-,090
SE2_2	,004	-,030	,743	-,075	,143
SE2_3	,089	-,022	,464	,279	-,228
SE2_4	-,116	-,153	,556	,078	-,128
SE2_5	-,072	-,044	,576	-,077	,120
SE3_1Transformed	-,199	,091	,344	,308	-,047
SE3_2Transformed	,068	,023	,178	,340	,115
SE3_3Transformed	-,349	,020	,099	,365	-,056
SE3_4Transformed	-,075	,093	-,024	,347	,148
SE3_5Transformed	,050	,109	,163	,598	,161
PO2__1	-,168	-,058	-,011	,624	-,093
PO2__2	-,058	-,092	,198	,565	-,132
PO2__3	-,364	,021	,186	,139	,097
PO2__4	-,139	-,027	-,063	-,104	-,482
PO2__5	-,030	-,083	-,068	,588	-,057
PO2__6	,014	-,129	-,082	,609	,032
PO2__7	-,155	,171	,059	,149	-,575
PO2__8	,050	,174	-,002	,426	-,220
CD2_1	,253	-,014	-,179	-,176	-,412
CD2_2	,234	,070	-,102	-,241	-,434
CD2_3	,459	,172	-,062	,143	-,487
CD2_4	,318	-,122	-,259	-,049	-,406
CD2_5	,263	,066	-,185	,016	-,425
CD2_6	,531	-,019	-,067	-,097	-,452
CD3_1	-,019	,015	,001	,056	-,466
CD3_2	,122	,002	-,412	-,043	-,281
CD3_3Transformed	,139	,032	-,581	-,040	-,045
CD3_4Transformed	,200	,136	-,593	,018	-,139
CD3_5	,316	-,093	-,461	-,036	-,284
ER2_1	,736	-,036	,090	-,146	-,208
ER2_2	,660	,107	,238	-,157	-,227
ER2_3	,515	-,069	-,022	-,086	-,007
ER2_4	,470	-,136	-,025	-,286	-,135
ER2_5	,561	,063	-,032	,095	,080
ER2_7	,499	,114	-,212	-,142	-,131
ER2_8	,618	-,058	-,302	,073	,167
ER2_9	,517	,120	-,113	,015	,178
ER2_10	,582	,100	-,138	,003	,148
TR2__1	,178	-,544	,123	,046	-,012
TR2__2	,134	-,652	,202	,007	,032
TR2__3	,280	-,458	,043	,389	,142
TR2__4	-,383	-,502	-,112	,060	,216
TR2__5	-,404	-,564	-,120	,021	,126
TR2__6	-,196	-,825	,016	-,032	-,222
TR2__7	-,100	-,775	,013	,070	,104
TR2__8	-,064	-,687	-,056	-,129	-,009

Extraction Method: Principal Axis Factoring.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 16 iterations.

Appendix E: Reliability analysis

Table 1: Cronbach's alpha Self-Esteem

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,761	,790	10

Table 2: Cronbach's alpha Psychological Ownership

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,583	,667	8

Table 3: Item-Total Statistics Psychological Ownership

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Ik heb vertrouwen in mijn vermogen bij te dragen aan het succes van het bedrijf.	39,46	17,315	,232	,487	,568
Ik vind dat ik een positief verschil maak in het bedrijf.	39,51	16,886	,330	,505	,550
Ik zou niet aarzelen om iemand binnen het bedrijf aan te spreken op zijn of haar gedrag of resultaten.	40,01	16,038	,217	,181	,572
Ik moet mijn ideeën beschermen tegen gebruik door anderen.	41,59	14,397	,128	,334	,655
Ik hoor thuis in dit bedrijf.	39,28	16,835	,358	,382	,546
Ik voel me op mijn gemak in dit bedrijf.	39,23	17,468	,265	,400	,564
Het succes van dit bedrijf is mijn succes.	39,86	13,133	,465	,425	,482
Dit bedrijf is een verlengstuk van mijn identiteit.	40,17	12,247	,567	,400	,437

Table 4: Cronbach's alpha after removing PO2_4

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.655	.718	7

Table 5: Item-Total Statistics Psychological Ownership after removing PO2_4

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PO2__1	35.46	11.948	.405	.615
PO2__2	35.51	11.721	.485	.600
PO2__3	36.01	11.304	.255	.658
PO2__5	35.28	11.797	.490	.600
PO2__6	35.23	12.253	.424	.617
PO2__7	35.86	10.424	.276	.665
PO2__8	36.17	8.855	.491	.576

Table 6: Cronbach's alpha Psychological ownership meeting the criteria

Reliability Statistics	
Cronbach's Alpha	N of Items
.765	4

Table 7: Item-Total Statistics after removing four items

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PO2__1	18.75	2.266	.606	.685
PO2__2	18.80	2.365	.591	.694
PO2__5	18.56	2.578	.498	.743
PO2__6	18.51	2.582	.566	.710

Table 8: Cronbach's alpha Cognitive Dissonance

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,877	,880	11

Table 9: Cronbach's alpha Entrepreneurial Response

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,822	,830	10

Table 10: Total-Item Statistics Entrepreneurial Response

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
ER2_1	26.54	57.973	.674	.786
ER2_2	26.48	59.923	.606	.795
ER2_3	26.41	62.018	.497	.807
ER2_4	27.19	65.648	.582	.803
ER2_5	25.14	58.702	.495	.810
ER2_6	25.70	71.200	.127	.841
ER2_7	27.34	62.707	.601	.797
ER2_8	27.00	64.937	.573	.802
ER2_9	26.11	60.911	.500	.807
ER2_10	26.36	62.361	.527	.803

Table 11: Cronbach's alpha after removing ER2_6

Reliability Statistics	
Cronbach's Alpha	N of Items
.841	9

Table 12: Cronbach's alpha Trust

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,840	,851	8

Appendix F: Assumptions Multiple Regression Analysis

Table 1: Descriptive statistics

		Statistics				
		SelfEsteem	Psychologicalownership	CognitiveDissonance	EntrepreneurialResponse	Trust
N	Valid	80	80	80	80	80
	Missing	0	0	0	0	0
Mean		5.6138	5.9411	3.3920	2.8556	5.4375
Skewness		-.681	-.304	.217	.267	-.420
Std. Error of Skewness		.269	.269	.269	.269	.269
Kurtosis		.665	.542	-.183	-.112	.205
Std. Error of Kurtosis		.532	.532	.532	.532	.532

Figure 1: Scatterplot

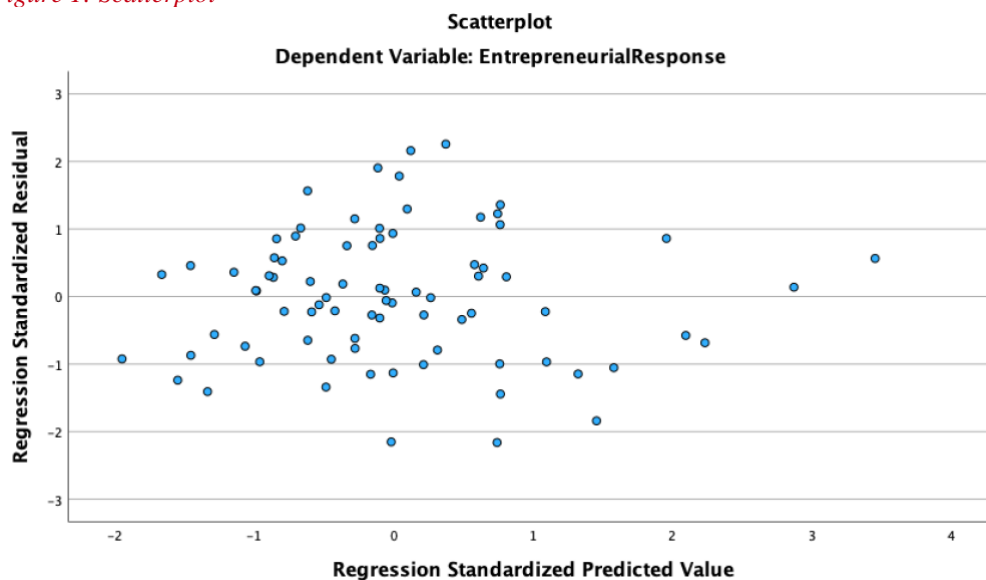


Table 2: Residuals statistics

Residuals Statistics ^a					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.6960	4.9086	2.8556	.59502	80
Residual	-1.62936	1.70066	.00000	.72455	80
Std. Predicted Value	-1.949	3.450	.000	1.000	80
Std. Residual	-2.162	2.256	.000	.961	80

a. Dependent Variable: EntrepreneurialResponse

Table 3: Assessing multicollinearity by VIF

		Coefficients ^a						
Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance VIF	
1	(Constant)	2.992	1.286		2.326	.023		
	Psychologicalownership	-.167	.171	-.096	-.977	.332	.849	1.177
	SelfEsteem	-.139	.164	-.091	-.844	.401	.714	1.401
	CognitiveDissonance	.482	.093	.529	5.187	<.001	.794	1.259

a. Dependent Variable: EntrepreneurialResponse

Figure 2: Normality histogram

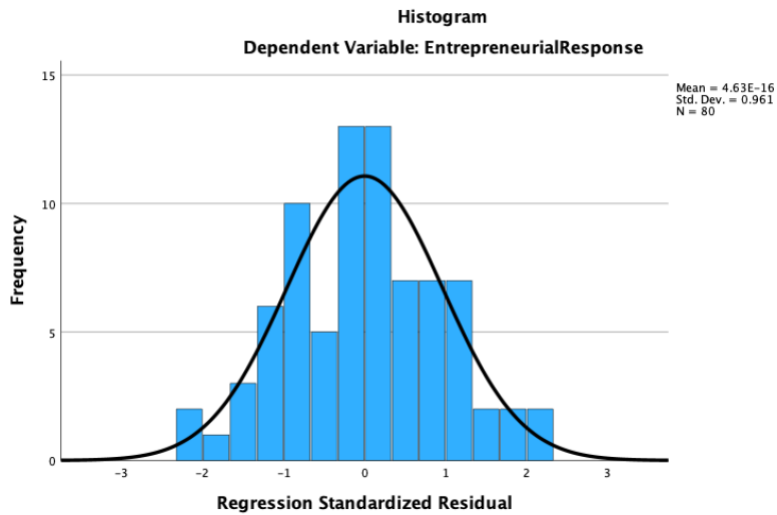
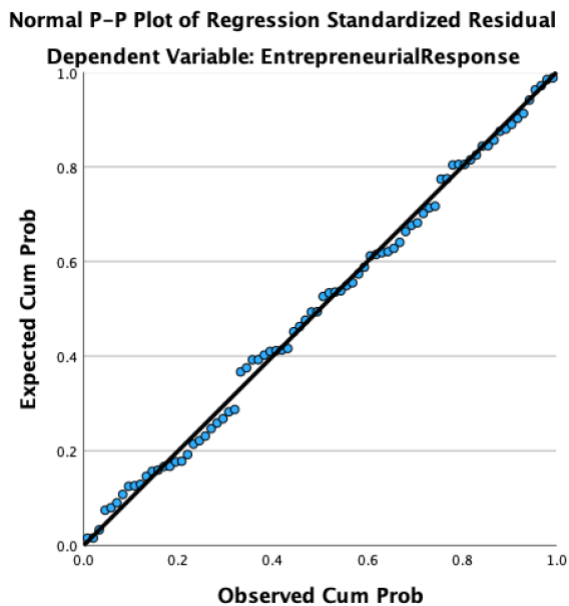


Figure 3: Normal P-Plot



Appendix G: Multiple Regression Analysis

Table 1: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			Sig. F Change	Durbin-Watson
						F Change	df1	df2		
1	.609 ^a	.371	.346	.75812	.371	14.940	3	76	<.001	
2	.635 ^b	.403	.354	.75373	.032	1.296	3	73	.282	1.891

a. Predictors: (Constant), CognitiveDissonance, Psychologicalownership, SelfEsteem

b. Predictors: (Constant), CognitiveDissonance, Psychologicalownership, SelfEsteem, PO_Trust, CD_Trust, SE_Trust

c. Dependent Variable: EntrepreneurialResponse

Table 2: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	25.761	3	8.587	14.940	<.001 ^b
	Residual	43.681	76	.575		
	Total	69.442	79			
2	Regression	27.970	6	4.662	8.205	<.001 ^c
	Residual	41.472	73	.568		
	Total	69.442	79			

a. Dependent Variable: EntrepreneurialResponse

b. Predictors: (Constant), CognitiveDissonance, Psychologicalownership, SelfEsteem

c. Predictors: (Constant), CognitiveDissonance, Psychologicalownership, SelfEsteem, PO_Trust, CD_Trust, SE_Trust

Table 3: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	2.992	1.286		2.326	.023					
	SelfEsteem	-.139	.164	-.091	-.844	.401	-.366	-.096	-.077	.714	1.401
	Psychologicalownership	-.167	.171	-.096	-.977	.332	-.251	-.111	-.089	.849	1.177
	CognitiveDissonance	.482	.093	.529	5.187	<.001	.592	.511	.472	.794	1.259
2	(Constant)	2.750	1.308		2.103	.039					
	SelfEsteem	-.190	1.000	-.124	-.190	.850	-.366	-.022	-.017	.019	52.484
	Psychologicalownership	-.530	1.037	-.306	-.511	.611	-.251	-.060	-.046	.023	43.955
	CognitiveDissonance	1.366	.539	1.502	2.536	.013	.592	.285	.229	.023	42.878
	SE_Trust	.015	.183	.088	.082	.935	-.403	.010	.007	.007	142.567
	PO_Trust	.069	.190	.372	.362	.718	-.363	.042	.033	.008	128.895
	CD_Trust	-.165	.096	-.958	-1.717	.090	.457	-.197	-.155	.026	38.073

a. Dependent Variable: EntrepreneurialResponse