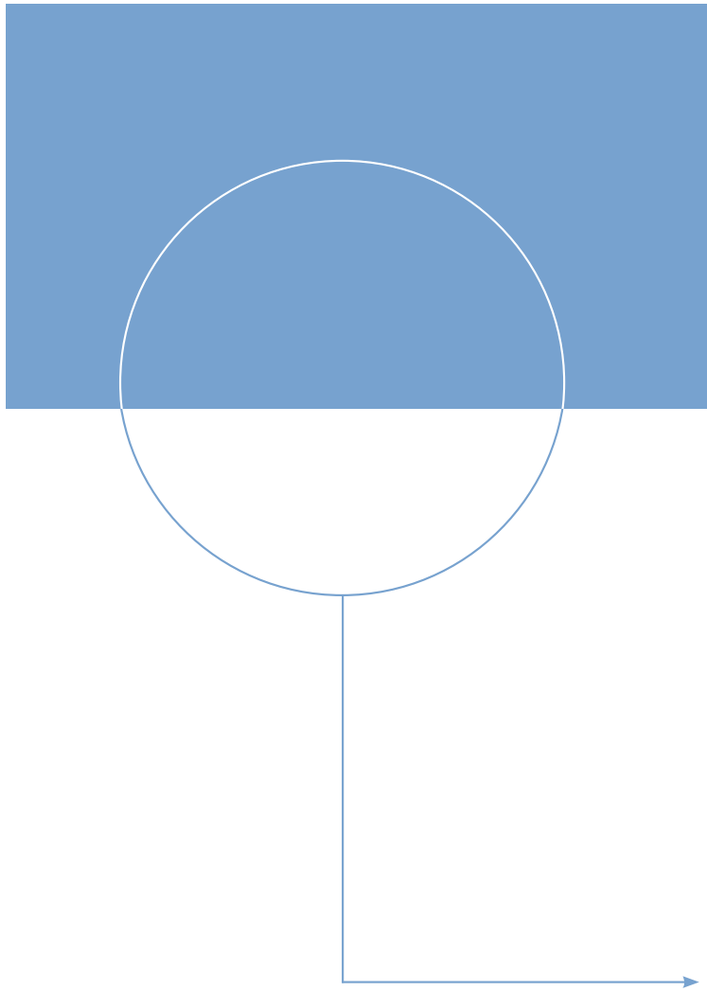

Master's thesis

2019

Niklas L. Barre, Mats H. G. Jønland, Mons A. Langaard

NTNU
Norwegian University of
Science and Technology
Faculty of Economics and Management
Department of Industrial Economics and Technology
Management

Niklas L. Barre
Mats H. G. Jønland
Mons A. Langaard

Team dynamics in the new venture context

How contextual factors specific to new ventures influence within-team verbal interactions

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How contextual factors specific to new ventures influence within-team verbal interactions

Niklas L. Barre
Mats H. G. Jønland
Mons A. Langaard

NTNU School of Entrepreneurship
Submission date: June 2019
Supervisor: Arild Aspelund

Norwegian University of Science and Technology
Department of Industrial Economics and Technology Management

PROBLEM DESCRIPTION

This thesis explores how contextual factors associated with new ventures may affect verbal interactions between team members in new venture teams. Complimenting semi-structured interviews with both qualitative and quantitative data from meeting observations, we aim to generate insights that may be leveraged into deliberate strategies and tactics used to better handle influences that surround new venture teams.

Trondheim, June 9th, 2019

Mats H.G. Jønland

Mons A. Langaard

Niklas L. Barre

Supervisor: Arild Aspelund, IØT, NTNU

ACKNOWLEDGMENTS

Thanks to Arild Aspelund who has been our supervisor during the fall of 2018 and spring of 2019. A special thanks to Jørgen Veisdal for acting as our co-supervisor. His availability and insightful feedback have been much appreciated.

We would also like to thank the participating teams that trusted us to conduct our research. Without their collaboration, this thesis would not have been possible.

Lastly, we would like to thank NTNU and especially NTNU School of Entrepreneurship for allowing us to take part in this great program. Roger Sørheim, Øystein Widding and lately Even Haug Larsen are in the process of building something great.

ABSTRACT

Creation of new ventures is touted to be essential for promoting economic growth and for preparing Norwegian industry for the future. The success of new ventures has been shown to be largely contingent on the effective collaboration of the new venture team. However, demanding contextual factors that characterize work in most new ventures might detrimentally influence the inner workings of these teams. Knowledge regarding how these factors tend to affect team dynamics might therefore have managerial applications. As such, we studied how *resource scarcity, risk, time pressure* and *ambiguity* influenced patterns of verbal interactions in five Norwegian new venture teams. The following research question (RQ) was used to guide our work.

RQ: *How do contextual factors specific to new ventures influence verbal interactions between members in new venture teams?*

A methodological approach wherein semi-structured interviews were complimented by both qualitative and quantitative data from meeting observations was adopted. Our findings indicate that verbal interactions in the studied teams were influenced by contextual factors proposed to specifically affect new ventures teams. We propose three mechanisms for how specific contextual factors might have influenced these interactions in the studied teams.

1. How financial resource scarcity and risk of venture failure might have increased the occurrence of within-team criticism.
2. How exogenous time-pressure might have prompted conflicts, while internally motivated time-pressure might have increased team motivation.
3. How two different strategies of facing ambiguity yielded contrasting verbal interaction patterns when discussing topics characterized by high levels of uncertainty.

We propose that our findings may have practical, managerial implications. An understanding of how contextual factors impact the inner workings of teams may be leveraged into deliberate strategies and tactics used to face these influences. As contextual factors may generally be outside of new venture team members' loci of control, understanding how to mitigate these factors' potentially detrimental effects on within-team dynamics might be of significance for new venture teams.

SAMMENDRAG

Oppstart av nye bedrifter er antatt å være essensielt for å sikre økonomisk vekst og bærekraft for norske industrier i fremtiden. Suksessen til oppstartsbedrifter har blitt vist å være svært avhengig av hvordan teamet jobber sammen. Den krevende konteksten som omgir oppstartsbedrifter kan ha en negativ påvirkning på den indre dynamikken i oppstartsteam. Kunnskap om hvordan denne konteksten påvirker dynamikk i team kan derfor gi verdifull praktisk innsikt til ledere av nye bedrifter. På denne bakgrunn valgte vi å studere hvordan knapphet på ressurser, risiko, tidspress og usikkerhet påvirker hvordan fem norske oppstartsteam kommuniserer verbalt. Det følgende forskningsspørsmålet ble brukt til å veilede arbeidet.

FS: Hvordan påvirker konteksten som omringer nyetablerte bedrifter verbale interaksjoner mellom medlemmer av oppstartsteam?

Vi brukte en forskningsmetode der semi-strukturerte intervjuer ble komplimentert av både kvantitative-, og kvalitative data fra observasjoner av team-møter. Våre observasjoner indikerer at mønstre av verbale interaksjoner ble påvirket av kontekstuelle påvirkninger relatert til nyetablerte bedrifter. Vi foreslo tre mekanismer for hvordan kontekstuelle faktorer kan ha påvirket verbale interaksjoner i de studerte teamene:

1. Hvordan finansiell ressursknapphet og risiko kan føre til økt hyppighet av kritikk.
2. Hvordan eksogent tidspress kan føre til konflikter, mens internt konstruert tidspress kan øke motivasjon.
3. Hvordan to måter å håndtere usikkerhet på ga motstridende mønster av verbale interaksjoner under diskusjoner?

Vi fremlegger at våre funn kan ha implikasjoner for ledere av nyetablerte bedrifter. En forståelse av hvordan kontekstuelle faktorer påvirker den interne dynamikken i team kan bli brukt til å lage strategier for å håndtere disse faktorene. Siden kontekstuelle faktorer generelt blir oppfattet som utenfor team-medlemmer sin kontroll kan en forståelse av hvordan man minsker den potensielle negative påvirkningen fra disse faktorene gi verdi til nyetablerte bedrifter.

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1 INTRODUCTION

> *"It is very challenging to survive as a startup I think, because there are so many ways we can fail. There are a lot of questions we have that we can't really answer before we launch something on the market. But since we have limited resources, I still feel like we only have one shot to launch a successful product. So, that makes it important to question everything that we do. It's better to be critical than to do mistakes."*
>
> - Entrepreneur interviewed in this study

Creation of new ventures is touted to be essential for sustaining economic growth and for preparing Norwegian industry for the future (Nærings- og fiskeridepartementet, 2015). In 2018, the government funded organ "Innovation Norway" supported new ventures with over 1.7 BNOK of which 192 MNOK were handed out to ventures less than 3 years old (Innovation Norway, 2019). In the same time period, 61 533 new ventures were founded in Norway (SSB, 2019).

Lead founders have for several decades been regarded as the driving force behind new venture creation and success (Klotz et al., 2014). However, a body of research shows that teams, more often than individuals, create and lead new ventures and should thus be a focal point of scientific inquiry (Lechler, 2001; West, 2007; Carland and Carland, 2012). Indeed, Beckman (2006) found that 90% of the new ventures sampled in her research were started by teams, not solo entrepreneurs. Nowadays, new venture teams are often called an *"omnipresent phenomenon"* in modern economies and

touted to be *"the superior entrepreneurial start-up concept"* (Lechler, 2001, p.263–264).

1.1 New venture teams are social constructs

Although constituted by individuals, teams are social constructs in which people interact and collaborate. One may argue that whatever the competencies and resources of the individual team members, they will not be able to leverage these assets optimally unless they manage to collaborate efficiently (Ensley, Pearson and Amason, 2002; Olson, Paravitam and Bao 2007; Klotz et al., 2014; Diakanastasi, Karagiannaki and Pramatari, 2018). Supporting this theory, Muñoz-Bullon, Sanchez-Bueno and Vos-Saz (2015) argue that a well functioning team is of critical importance for survival and success of new ventures. Similarly, Ensley, Pearson and Amason (2002) note that: "*superior venture performance will follow as teams utilize their resources and diversity while also promoting satisfaction and commitment to their group"* (p. 366).

While the relationship between team dynamics and new venture outcomes has been a popular topic of scientific inquiry, little work has focused on how the unique context that engulfs new ventures might influence these dynamics (Ancona and Caldwell, 1989; Simons and Pelled, 1999; Schjoedt and Kraus, 2009; Klotz et al., 2014). Ensley, Pearson and Pearce (2003) note that this is an important oversight, seeing as contextual factors might significantly influence the inner workings of NV teams.

1.2 Insights regarding how contextual factors influence new venture team dynamics may have managerial implications

According to Eisenhardt and Schoonhoven (1990), new ventures are operating under extreme circumstances that present them with unique challenges. These circumstances tend to be dramatically different from what teams in more mature firms experience (Stinchcombe, 1965; Schjoedt and Kraus, 2009; Klotz et al., 2014). Ensley, Pearson and Pearce (2003) suggest that studying how contextual factors special to NVs may influence the inner workings of their teams could yield valuable insights for the growing body of new venture literature.

To support their claim, Ensley, Pearson and Pearce (2003) cite previous work that relates resource constraints (Grant, 1991; Greene, Brush and Hart, 1999), risk (Busenitz, 1999; d'Amboise and Muldowney, 1988), time pressure (Bird and West, 1997, Shapira, 1995) and ambiguity (Morris and Zahra, 2000; Zhou, Hu and Zey, 2015) to heightened levels of stress and strife in work groups as well as NV teams. The authors identify these factors as characteristic for new ventures and hypothesize that they should moderate new venture team dynamics. Initial support for this theory is provided by a body of literature relating various situational and environmental stressors to e.g. decreased team effectiveness (Akgün et al., 2006), difficulties in sensemaking among team members (Pauchant and Mitroff, 1990), retarded ability to process novel information (Kontogiannis and Kossiavelou, 1999), heightened frequency of interactions (Pfaff, 2012) and entrepreneurial performance (Kariv, 2008).

Knowledge regarding how different contextual factors tend to influence team dynamics could have practical implications for new ventures. Specifically, an understanding of how contextual factors such as time pressure, risk, resource constraint or ambiguity interact with the inner workings of teams may be leveraged into deliberate strategies and tactics used to better deal with these precarious influences. Moreover, insights into how entrepreneurs perceive to be influenced by these contextual factors may be used to guide curricula in academic venture creation programs and other entrepreneurial training programs. Therefore, we propose that expanding the knowledge base of how contextual factors affect team dynamics in new ventures could prove valuable to researchers as well as practitioners and present the purpose of this master thesis:

Purpose: *To explore how contextual factors specific to new ventures may influence internal dynamics in new venture teams*

1.2.1 Choosing what type of data to collect to address the purpose

Investigating how entrepreneurs perceive the context they are a part of and its potential influence on the inner workings of their teams might yield interesting insights. However, relying solely on classic research approaches such as surveys and interviews could yield biased findings seeing as responses are contingent on the subjects' perceptions of reality only. To support such subjective accounts, we propose that future research on this topic should include real-life observation as well. In this thesis, we decided to utilize both types of information: we collected qualitative data from semi-structured interviews as well as quantitative and qualitative data from real-life observations. Using multiple sources of information, we aim to highlight how

multi-faceted research may prove valuable in future studies of team context and team dynamics.

1.3 Towards an addressable research question – Choosing what facet of team dynamics to study

We define team dynamics as: *"the underlying behavior of people in groups that are working toward a particular objective, such as solving a problem, making a decision, or delivering a product"* (Golay and Church, 2013, p. 669).

Teams dynamics are frequently investigated by studying constructs like cohesion, motivation or conflict using classic research methods like interviews and surveys (Raes et al., 2015). For the present thesis, we aimed at exploiting these well-known methods and leverage them with data gathered through direct observation. Therefore, we chose to study a dimension of team dynamics that was (a) readily observable for us and (b) easy to reflect upon for the interviewed subjects. *Verbal interactions* fulfill both requirements. Patterns of verbal interactions within teams are relatively easy to observe, and frameworks have been established to categorize and analyze them (e.g. Bales, 1950; Losada, 1999; Wheelan and McKage, 2003). Moreover, directly observing how teams communicate has been proposed as a method for investigating the fundamental mechanics of how groups behave (Raes et al., 2015; Lehmann-Willenbrock et al., 2017). Finally, patterns of verbal interactions have been linked to various team level outcomes, including performance (e.g. Losada and Heaphy, 2004; Lyuborminsky, King and Diener's (2005); Lehmann-Willenbrock et al.,

2017). Because of that, we chose to focus our efforts on investigating how contextual factors might influence verbal interactions in new venture teams and proposed the following research question for this thesis:

RQ: *How do contextual factors specific to new ventures influence verbal interactions between members in new venture teams?*

Given the exploratory nature of this thesis, we address the research question using multiple sources of data. First, we conduct interviews to collect information on how teams perceive the influence of contextual factors on their teams' verbal interactions (primary data). In addition, we conduct direct observations of team meetings to compare and contrast these subjective reports (complementary data) (figure 1.1). In this way we hope to reach an understanding of how contextual factors might influence verbal interactions in new venture teams.

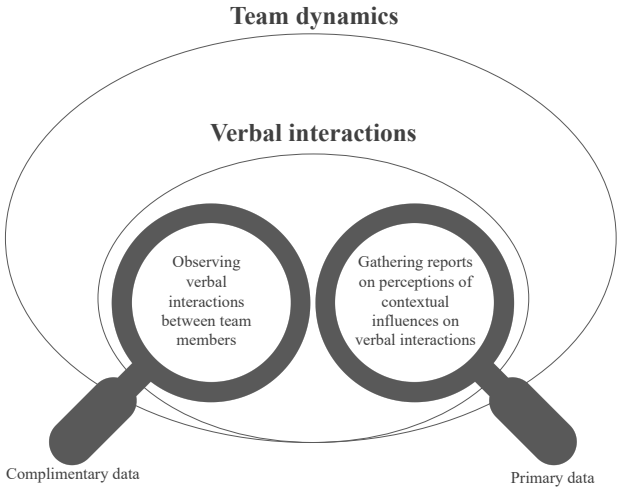

Figure 1.1: The two methods used to investigate the influence of contextual factors on verbal interactions in new venture teams. Semi-structured interviews were complimented with both qualitative and quantitative data obtained from observing team meetings of all the studied teams.

1.4 Outline of thesis

Section 1: In the introduction above, we outlined the importance of new ventures for societal value creation and introduced the concept of team dynamics. Furthermore, we establish a theoretical connection between the two topics. Together, this contributed to the development of our purpose and research question.

Section 2: In section 2, we introduce the theoretical foundation upon which this work is based. Section 2.1 presents theory related to new ventures and the context they operate in. Thereafter, section 2.2 introduces the concept of interaction analysis as a measure for team dynamics. Finally, theory presented in section 2 ends in the presentation of the conceptual framework used to guide the research effort.

Section 3: Section 3 describes and discusses how our choice of method has helped us to address the purpose and answer the research question. In this thesis, we have chosen to analyze qualitative and quantitative data as part of the research effort. The section describes how data was acquired, analyzed and reflects upon the choice of method.

Section 4: In this section, we present the main findings from the empiric data acquired.

Section 5: In section 5, we discuss our findings with regards to prior theoretical knowledge.

Section 6: Finally, a conclusion summarizes our efforts, comments on limitations and lays out potential areas for future research.

2 THEORETICAL FOUNDATIONS

This section presents the theoretical background necessary to understand and evaluate the choices made throughout this study. In section 2.1 we aim to provide an understanding of the new venture context. Section 2.1.1 - 2.1.2 describes what constitutes a new venture team. In section 2.1.3, characteristics that may influence new venture teams are introduced. Section 2.2 describes how previous work has established verbal interactions as a measure for team dynamics and how they relate to team-level outcomes.

2.1 The new venture context

2.1.1 New ventures are different from mature firms

Definitions of new ventures abound in the literature. Leaning on early work by Normann (1977) and Sandberg (1986), Chrisman, Bauerschmidt and Hofer (1998) define new ventures as *"the end result of the process of creating and organizing a business that develops, produces and markets products and services to satisfy unmet market needs for the purpose of profit and growth*" (p. 6). Using a different approach, Biggadike (1979) and McDougall and Robinson (1990) define new ventures as firms that are 8 years old or less, based on observations showing that new ventures need on average 8 years to reach profitability. The exact moment when a new venture is not considered "new" any longer, has not been thoroughly determined. Recognizing a lack of nomenclature in the field, we choose to follow a general definition by Klotz et al. (2014) and define new ventures as "*firms that are in their early stages of development and growth"* (p. 227).

On first sight, new ventures are different from mature firms with regards to age, history and size (Ensely, Pearson and Pearce, 2003). In addition, Eisenhardt and Schoonhoven (1990) and Chrisman, Bauerschmidt and Hofer (1998) argue that the type of decisions new venture teams needs to make and problems they face on a daily basis, are inherently different from what mature firms' experience. For example, whereas larger firms may use significant funds to adjust and fine tune strategic direction over time, the number one priority of any new venture is survival (Ensley, Pearson and Pearce, 2003). According to Stinchcombe (1965) the struggle to survive is amplified by a *liability of newness* characterized by resource scarcity (Stevenson and Gumpert, 1985), lack of legitimacy (Zimmermann and Zeitz, 2002), uncertainty (Freeman, Carrol and Hannan, 1983), and ultimately, risk of failure (Klotz et al., 2014). New venture teams have to overcome these liabilities in order to ensure long term survival.

2.1.2 New venture teams are different from work teams

Similar to the new venture itself, a range of different terms and definitions are being used to describe new venture teams (e.g. entrepreneurial teams, founding teams, new venture teams, new product development teams, start-up teams). In this work, we consistently use the term *new venture teams* (NV teams) to describe teams working in new ventures, and adopt a definition proposed by Schjoedt and Kraus (2009):

> *"Two or more persons who have an interest, both financial and otherwise, and commitment to a venture's future and success; whose work is interdependent in the pursuit of common goals and venture success; who are considered to be at the executive level with executive responsibility in the early phases of the venture, including founding and pre-start-up; and who are seen as a social entity by themselves and by others."* (p. 515).

Whereas work teams are often assembled by upper management, new venture teams generally form out of a group with common interests (Harper, 2008). Moreover, NV teams are critically involved in shaping early workplace procedures and working culture (Kamm and Nurick, 1993; Klotz et al., 2014), generally work on less defined tasks (Harper, 2008) and internalize greater proportions of risk (Sarasvathy, Simon and Lave, 1998). Even more important for this thesis and as suggested in the introduction, the context in which new venture teams operate may be significantly different from regular work team teams operating in an organizational hierarchy (Stinchcombe, 1965; Chrisman, Bauerschmidt and Hofer, 1989; Klotz et al., 2014).

2.1.3 Characteristics of the new venture context

Venture creation is a novel and complex task characterized by a lack of precedence to guide decision making (Chrisman, Bauerschmidt and Hofer, 1998; Huber and Glick, 1993; Cooper, Gimeno-Gascon and Woo, 1994; McKelvey, 2004; Amason, Shrader and Thompson, 2006). As mentioned above, Ensley, Pearson and Pearce (2003) hypothesize that contextual variables originating in these liabilities may affect team dynamics in new ventures. Drawing on new venture research from several decades, they propose that resource scarcity, risk levels, time-pressure and ambiguity are characteristic of new venture operations. In the following, we will introduce each of these factors.

2.1.3.1 Resource scarcity

According to Andrews (1971), strategy formulation is tightly connected to the availability of competence and resources. Resource based theories suggest that if a firm is organized to exploit resources and competencies, assuming that at least some of them are valuable, rare and difficult to imitate by competitors, they can be a source of competitive advantage (Barney, 1991; Peteraf, 1993). Chrisman (1999) notes that NVs tend to have few such resources. Likewise, Greene, Brush and Hart (1999) define five resource constraints specific to NVs: human, social, organizational, physical and financial, and note that NV's tend to suffer shortages in all categories. Zimmermann and Zeitz (2002) have later added legitimacy to this list. Referring to research by Stinchcombe (1965) and Singh, House and Tucker (1986), they argue that, to a new venture, legitimacy is a resource similar to capital, technology or knowledge. They define legitimacy as *"a social*

judgement, acceptance, appropriateness and desirability" (p.414), and claim that by promoting access to other resources, it can help new ventures to overcome the liability of newness. Seeing as resources allow for mistakes in strategic choice, resource constraints may create disproportionally high levels of pressure on NV teams during decision making (Ensley, Pearson and Pearce, 2003).

2.1.3.2 Risk

Risk levels above and beyond what mature firms experience are considered among the major foundational factors in starting a new venture (Forlani and Mullins, 2000; Ensley, Pearson and Pearce, 2003). There is no agreement in the literature of exactly how much risk, in terms of probability of failure, is associated with new venture creation. Urban folklore and media often claim that 90% of new ventures fail (e.g. Forbes, 2015). According to Devece, Peres-Ortiz and Rueda-Armengot (2016), about 80% of NVs in Spain fail within five years. Similarly, Head (2003) found that 30% of new ventures fail after two years of operation, and Dorsey (1979) found that 75% of non-venture capital backed new ventures failed within seven years. Even though these findings may not be generalizable, it is commonly suggested that new ventures' risk of failure is significantly higher than the average rate of failure for regular profit seeking businesses (Busenitz, 1999; Hall and Hofer, 1993), and that this may excerpt pressure on NV teams (Ensley, Pearson and Pearce, 2003). Lack of capital, specifically, has been identified as a source of risk and stressor for NV teams (Dollinger, 1995; Grant, 1991).

2.1.3.3 Time pressure

NV teams have to respond quickly to market opportunities as they arise (Reynolds and Miller, 1992). However, time pressure in starting new ventures means that entrepreneurs often operate with imperfect information, which is a tax on informed decision making (Gilmore and Kasanjian, 1989). In a competitive environment, uncertainty about the outcomes of actions can lead to mistakes which may end in failure (Harper, 2008). Clearly, the need to make quick decisions in the face of uncertainty and probable failure can be a stressor for NV teams (Ensley, Pearson and Pearce, 2003).

2.1.3.4 Ambiguity

Harper (2008) defines venture creation as *"a profit-seeking problem-solving activity that happens under conditions of structural uncertainty and high risk"* (p.613). Following Harper (2008), structural uncertainty exists when an entrepreneur is "*partially ignorant about possible alternatives and their consequences"* (p.617). As knowledge of the outcome of any entrepreneurial endeavor is speculation, structural uncertainty is present in any such endeavor (Townsend et al., 2018; Langlois, 1984). Similarly, Morris and Zahra (2000) describe new venture creation as having high levels of ambiguity, meaning that decision making is characterized by exhibiting: "inconsistent features, contradictions or paradoxes" (p.94). According to Ensley, Pearson and Pearce (2003), most new ventures exhibit these features.

2.1.3.5 Concluding remarks

Ensley, Pearson and Pearce (2003) note that the above-mentioned factors may not be separate but that for the purpose of investigating how they affect NV team dynamic, they may be disentangled. Likewise, the authors of this study recognize that the constructs are likely interrelated but wish to consider them separately in order to understand their potential effects on verbal interactions in NV teams.

The potential effect of contextual factors on team dynamics was investigated by looking at how teams communicate and by analyzing their subjective reflections about what they perceived to affect their inner workings. Below, we introduce the theory behind how verbal interactions are related to team dynamics and outline the methodology used to analyze them.

2.2 Interaction analysis: Verbal interactions and team dynamics

Based in work conducted by Bales (1950) for describing dynamics in groups, interaction analysis is an umbrella term describing different methodologies used to investigate speech and written language in organizations (Grant et al., 2004). In general, interaction models capture and structure verbal utterances by allocating them into different, pre-defined categories (Molin, 2012). Several methods of interaction analysis have been proposed. For example, Bale's (1950) Interaction Process Model (IPM) served as a foundation for later work and aimed at categorizing interaction by differentiating between socio-emotional and task related conversation. An alternative model created and validated by Wheelan and McKage (1993) expanded interaction analysis to also capture groups stages of development. These, as well as other models

developed in the past propose the basic idea that group dynamics can be measured and described by reducing the content of verbal interactions to a categorical variable. In this study, we use Losada's (1999) version of interaction analysis to establish a link between emerging patterns of verbal interactions on the one hand, and subjective accounts regarding the effect of contextual factors on these interactions on the other hand.

In a seminal article, Losada (1999) used observations from 60 management team meetings to highlight the connection between verbal communication and team performance. He recorded verbal interactions and coded them in terms of six dimensions, organized into three bipolar pairs:

- Positive – Negative (P – N)

  *A speech act was coded as **positive** is the speaker was showing support, encouragement or appreciation, and it was coded as **negative** if the speaker showed disapproval, sarcasm or cynicism.*

- Inquiry – Advocacy (I – A)

  *A speech act was coded as **inquiry** if it involved a question aimed at exploring a position. A speech act was coded as **advocacy** if it involved arguing in favor of the speaker's viewpoint.*

- Other – Self (O – S)

  *A speech act was coded as **other** if it was referencing someone not in the company, and **self** if it was referencing someone from the company.*

Based on profitability, customer feedback and 360° reviews, Losada (1999) rate the teams as either high-, medium-, or low performing. Based on this grouping, he highlights a connection between verbal interactions as a measure of team dynamics and team performance (Figure 2.1). Importantly, the model does not intent to establish causality between performance and communication. It merely points to a correspondence of the two measures (Molin, 2012).

When compared with Bale (1950) and Wheelan and McKage (2003), the model developed by Losada (1999) and later refined by Losada and Heaphy (2004) takes the interaction approach one step further. Whereas earlier models have generally studied temporary teams discussing artificial problems, Losada's (1999) method employs real teams discussing real work-related issues. Furthermore, the fact that Losada (1999) relates verbal interaction patterns to performance measures gives his model a normative dimension that may be valuable for managerial applications (Molin, 2012).

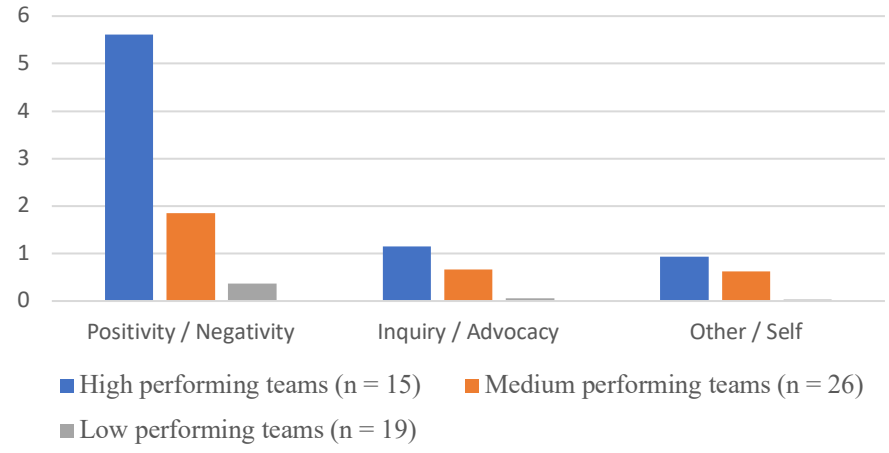

Figure 2.1: Mean Positivity/Negativity, Inquiry/Advocacy and Other/Self ratios observed in Losada's (1999) observations of 60 work teams during strategic planning meetings

In sum, research related to interaction analysis provides evidence for a connection between verbal interactions and team dynamics. Moreover Losada (1999) provides a useful and well-known framework that links verbal interactions to team outcomes. While Losada (1999) mainly used his model in a quantitative sense, we use his proposed dimensions of verbal interactions to guide the qualitative research approach adopted in this study. In the following, we discuss the theoretical embeddedness of each dimension in turn.

2.2.1 Positive and negative interactions

Theoretically, the positivity dimension can be linked to Fredrickson's (1998, 2002) widely regarded *broaden and build* theory of positive emotions (Molin, 2012). Drawing on concepts and literature from the field of positive psychology, the theory suggests that positive affect allows for a broader thought action repertoire, whereas negative affect tends to limit this repertoire. Losada (1999) and Losada and Heaphy (2004) combine these findings to posit that high ratios of positive to negative interactions engender performance by allowing for more creative and chaotic team dynamics. Further investigating this proposition, the German researcher Nale Lehmann-Willenbrock has recently spearheaded a range of studies linking positive verbal interactions to favorable team outcomes (Table 2.1).

Table 2.1: Previous work on positive and negative verbal interaction's link with team level outcomes.

Study	Method	Key findings
Lehman-Willenbrock et al. (2011)	52 blue collar work-groups (N = 307 employees) was observed during action-planning meetings. Interactions were coded in terms of complaining and interest-in-change (positive, communicative counterpart to complaining) utterances. Group mood was coded in two dimensions (Arousal and pleasure) by an outside observer.	Planning communications appeared to have a role to play in creating and sustaining group mood. Frequency of complaining utterances were negatively correlated to team arousal ($r = -0.29$, $p < .05$). Frequency of interest-in-change statements were positively correlated with team arousal ($r = 0.28$, $p < .05$)
Lehman-Willenbrock and Allen (2014)	54 organizational team meetings (N = 352 employees) were observed. Interactions were coded to identify positive humor utterances. The teams' supervisors used questionnaires to rate team performance immediately after meetings and two years after.	Humor patterns (e.g. a joke with subsequent laughter, followed by another joke) triggered positive socioemotional communication, procedural structure and new solutions. In low job insecurity climate conditions, humor patterns were positively related to team performance both immediately after the observations and two years later.
Lehman-Willenbrock et al. (2017)	Verbal interactions of 43 problem-solving teams (n = 43,139 utterances) were coded in terms of positive/negative utterances and problem/solution focused utterances.	A positive correlation ($r = 0.28$, $p < .05$) was observed between frequency of positive utterances and managerial rating of team performance. Previous solution-focused and positive utterances increased the probability of subsequent positivity expressions.

The findings presented in table 2.1 support the notion that positive verbal interactions relate to favorable group outcomes. Further support is found in Lyuborminsky, King and Diener's (2005) meta-analysis of 225 scientific articles, showing that positive affect not only relates to, but may in fact *engender* a range of favorable outcomes on both individual-, and group levels.

While a growing body of research relates positive verbal interactions to favorable group outcomes, some nuance should be added to this picture. Negative and problem focused utterances might be important regulators that help teams avoid falling into patterns of group thinking (Lunenburg, 2012). Lehman-Willenbrock et al. (2017) acknowledges that problem-focused utterances might be especially important when teams examine novel challenges and situations.

2.2.2 Inquiring and advocating interactions

Inquiry refers to utterances aiming to explore a position. Advocacy refers to arguing in favor of the speaker's point of view. While the general body of research covering verbal interactions in terms of inquiry and advocacy seems to be more limited than for positivity/negativity, some works have highlighted this topic.

Thompson (1993) argues that since most western organizations draw their communicative styles from a tradition of argumentation and debate, the communicative skills that are most often rewarded are related to *advocacy*. However, Thompson (1993) goes on to argue that a high frequency of

advocating statements may to cause teams to spend too much time defending existing positions, rather than exploring new ones.

> *The advocate on the white horse, who rides in with the one best answer, is still a folk hero in American organizations. But the person who facilitates inquiry and adds value to the ideas of others by questioning assumptions, sketching alternatives, and drawing others into the discussion may be less recognized.* (Thompson, 1993, p. 103)

Relatable to Thompson (1993), Purser, Pasmore and Tentaki (1992) argue that the effective use of inquiry plays a key role in team learning during product development projects. High frequencies of inquiring interactions in small forums were proposed to expose more team members to the "big picture" and allow for a more participative approach to decision making. Similarly, work by Argyris and Schön (1979) and Senge (1990) suggests that balancing inquiry/advocacy may lead to effective action and learning in teams.

More recently, Coyle (2018) explained how inquiring statements can increase overall team performance by sharing vulnerability within the team. By communicating with humble, inquiring exchanges (e.g. *"Does anyone have any ideas?"*), Coyle (2018) argues that teams can create a sense of safety within teams and lower the threshold for proposing novel ideas. *"It's about sending a really clear signal that you have weaknesses, that you could use help. And if that behavior becomes a model for others, then you can set insecurities aside and get to work."* (Coyle, 2018, p. 103).

2.2.3 Other and self interactions

Based in the strategic management literature, in which the effective combination of scanning the environment for opportunities and self-scrutiny informs a team's strategic choices, Losada (1999) suggests that high performing teams tend to balance the frequency of utterances referring to people and objects within the group and outside of the group. However, limited research seems to have been done regarding this dimension. Without specifically mentioning verbal interactions, Ancona (1990) posits that teams revise their knowledge base more efficiently when actively probing their environment, compared to when looking for new knowledge within their own ranks. Moreover, West et al. (2004) theorize that an "outward focus" will make team members more willing to examine and adjust their own mental models, which leaves them better equipped to create innovative solutions. Finally, Rickards, Runco and Moger (2009) claim that creativity in groups is stimulated by balancing external focus, with regards to the organization's operational environment, and internal focus, with respect to the ideas of the group members.

2.3 Developing a conceptual framework

Reviewing the literature on new ventures and verbal interactions as a measure of team dynamics, we find evidence for the notion that the new venture context is significantly different from what regular work teams are subjected to. Moreover, we find support for the idea that these special circumstances may influence the inner workings of new venture teams. In the remainder of this paper, we attempt to shed light on the relation between new venture context and verbal interaction in teams. To that end, we adopted the

following conceptual framework to guide research design considerations and further discussions (Figure 2.2)

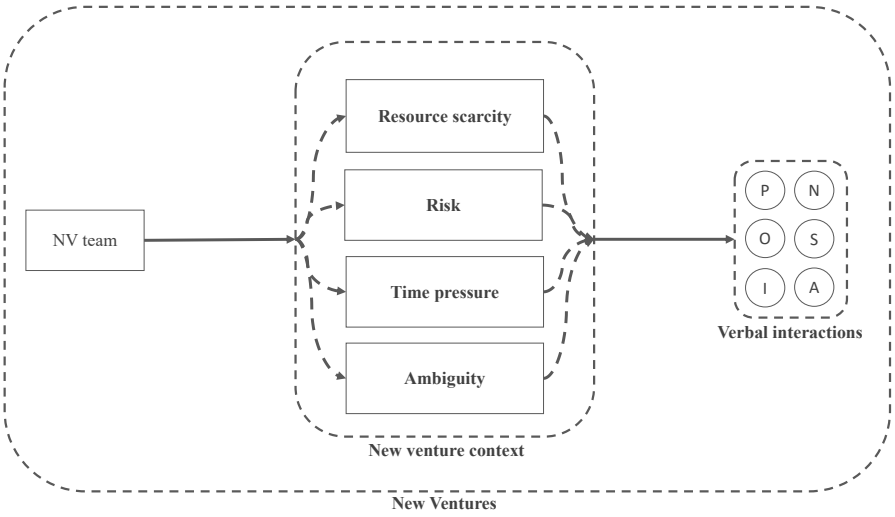

Figure 2.2: The conceptual framework used in this study.

The conceptual framework visualizes how the new venture context might affect verbal interactions in new venture teams. Based in the theory presented, characteristics of the new venture context are understood as divided into four main factors: resource scarcity, risk, time pressure and ambiguity. These factors are understood as state-like variables that might affect patterns of verbal interactions within teams. They will be used as a priori themes guiding the research process.

3 METHOD

In this section, we present the methodology and research design used in this study. To answer the research question of this thesis, we decided to collect qualitative data from face to face interviews as well as qualitative and quantitative data from observing real-life meetings. Qualitative data from interviews were treated as primary data, whereas data sources collected from real-life observations were treated as complementary data. A graphical representation of the data utilized in this study is presented in figure 3.1.

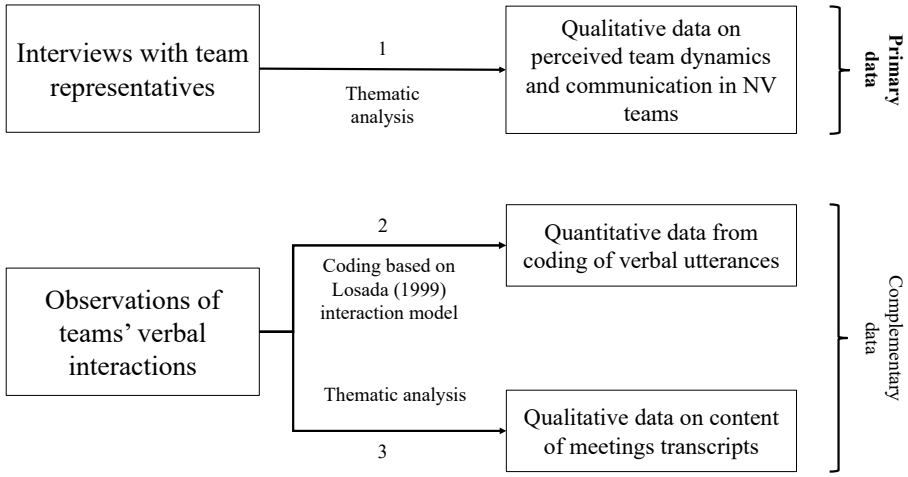

Figure 3.1: Graphical representation of the data collected in this study.

Primary data was analyzed using thematic analysis based on the themes established as part of the conceptual framework. Complementary data was analyzed using two methods. First, verbal interactions from observations were coded in accordance with Losada's (1999) interaction model. Second, observation transcripts were analyzed using the themes and sub-themes established during analysis of the primary data. The following subsections include a detailed description of the data acquisition process for the

interviews and observations, the way they were treated, as well as reflections around the validity, reliability and limitations of the research approach.

3.1 Comments on the method of choice

Ensley et al. (2003) theorize that contextual factors may impact team dynamics in new venture teams. The basic idea of interaction analysis is that team dynamics can be described by observing verbal interactions. Furthermore, it proposes that interactions can be reduced to measurable categories. A strength of models originating from interaction analysis is that they are firmly grounded in psychology and organizational theory (Losada, 1999; Losada and Heaphy 2004; Fredrickson and Losada 2005). However, Molin (2012) points out that stripping communication of its content by categorizing it according to functional dimensions may be problematic: *"There is a functionalist tendency that each verbal utterance can be coded and categorized without taking any interest in the rest of the arena."* (p. 26).

To alleviate this concern, we use a combination of qualitative and quantitative data to answer the research question in the study at hand. Specifically, we use qualitative reflections on verbal interactions as primary data and data derived from Losada's (1999) observation method as complementary data. By using several data sources, we may be able to enrich the verbal categorizations through infusing them with content and meaning, thereby mitigating *functionalist tendencies.*

Recognizing the exploratory nature of this study, we chose to follow an abductive approach to guide research design considerations. An abductive approach was considered a good fit seeing as it allowed us to venture into unchartered territory by integrating and connecting both empirical data and theoretical knowledge through logic reasoning (Kovacs & Spens, 2005). In the section below, we shortly introduce our understanding of the abductive approach before outlining the research design of this thesis.

3.1.1 Introduction to the abductive approach

Abductive research methodology may be defined as a theory matching process where an assumption of how the world works (a given phenomenon) is tested with real-world empirical data (Levin-Rozalis, 2010). Pierce (1955) explains the essence of the abductive method by referring to it as a hypothesis on probation, put differently, a forensic process of developing plausible hypotheses related to a phenomenon. Thus, Similar to following an inductive approach, inferences drawn from abduction are not certain, albeit probable to the extent that the underlying logic is sound (Svennevig, 2001).

Chong (1994) identifies the goal of abduction as creating logical and testable hypothesis based upon plausible premises. Likewise, Mitchell (2018) emphasizes exploration and logic reasoning when presenting abduction as "*an exploratory data analysis to understand a given puzzle*" (p.105). The exploratory nature of the abductive research approach, and its ability to conceptualize and formulate propositions for further study makes it suitable for use in early phases of comprehensive research (Andersen, 1990). To that end, abductive reasoning may start with establishing a theoretical foundation used to guide the process of logical pattern finding in empirical data (Dubois

and Gadde, 2002). In this research, we use pre-defined themes hailing from our conceptual framework and contrast them with knowledge emerging throughout the research process. Kovacs and Spens (2005) compare this process to a learning loop in which the researcher may move back and forth between theory and empiric data with the goal of refining assumptions originating in theory with empiric observations.

In section 3.2, we outline the research design developed in accord with the abductive approach presented above. During data analysis, initial theory matching was achieved by contrasting and refining concepts developed based on prior theoretical knowledge. Furthermore, discussing these findings in light of existing research (section 5) we further refine our assumptions and establish plausible inferences that may be used in future research (section 6).

3.2 Research design

Figure 3.2 illustrates how the research was conducted. Given the exploratory nature of our purpose, we chose a design inspired by the abductive method schematics proposed by Spens and Kovács (2006) and Dubois and Gadde (2002).

Figure 3.2: A visual schematic of the research process of this thesis. The process is based on the abductive research methodology with the final goal to propose a plausible hypothesis for future research on the phenomenon in review.

Prior theoretical knowledge (1) contains theory on new ventures and the characteristics of their context, as well as the relevance of verbal interactions as a measure for team dynamics. Theoretical knowledge was organized into a conceptual framework and produced a priori themes (2) (section 2.3). These served as a guide for empirical data acquisition and analysis (3 and 4). During analysis, themes were contrasted and refined in the light of emerging information synthesized from empirical data. This is in line with recommendations from Dubovskiy (2016) on the abductive research approach. Interviews with team representatives (3) served as the primary source of data. Interviews (3) were structured using thematic content analysis guided by the main themes presented in the conceptual framework. Qualitative and quantitative data extracted from the observations of verbal interactions during meetings (4) were treated as complementary. Observations (4) were transcribed and coded following the interaction model presented by Losada (1999) (section 3.4.3). A discussion (5) reviewed the main findings in light of existing theoretical knowledge. Finally, a conclusion (6) summarizes this thesis by addressing the research question and by outlining directions for future research.

3.2.1 Selection of subjects

Inclusion criteria were established to secure acquisition of relevant subjects (Bryman, 2008). According to Tjora (2012), utilizing a set of inclusion criteria may improve the homogeneity of the sample and reduce the probability of having extraneous factors influencing the result. The subjects were defined as *new venture teams*, and the following inclusion criteria were applied;

- Size of the team is minimum three members
- The new venture is characterized as a technology-driven new venture
- The team uses one common language during meetings
- The new venture has received funding of at least 1M NOK
- At least half of the team members are founders that hold equity in the new venture
- Age of the team was between 1 – 3 years.

In order to ensure a variety of viewpoints and richness of interaction in the teams, we only considered teams constituted of at least 3 members. Moreover, language barriers were considered a non-NV contextual factor outside the scope of our research. Introducing a multilingual team into the study may have influenced the verbal interactions and biased findings (Tenzer & Pudelko, 2015). Thus, only teams speaking Norwegian during meetings were included. To further increase the homogeneity of the sample, only firms that could be characterized as "technology based new ventures" with between 1 and 3 years of tenure were included. Including only similar organizations aimed at reducing extraneous and environmental variations in the population (Eisenhardt, 1989). From a business perspective, requiring at least 1 M NOK in funding, we aimed to exclude new ventures that still were in the idea phase. Finally, only teams in which at least half of the members also were equity holding founders were included. This was done to ensure that the majority of team members were not only emotionally, but also financially attached to their new venture.

Due to time constraints and limited traveling budget, we narrowed down our selection area to new ventures in geographical proximity to Trondheim, Norway. We started our search for new ventures in the Trondheim area by contacting Innovation Norway Trondheim. They advised us to contact incubators and co-working spaces seeing as most new ventures are located there. Innovation Norway has registered a total of nine incubators and co-working spaces in Trondheim (Innovasjon Norge, 2019) hosting a total of 82 new ventures available for search. We found contact information for 69. Upon taking initial contact, 19 replied. Of those, eight met the inclusion criteria for this study. Upon explaining the purpose of the study and time involvement, five agreed to participate. The complete sample for this thesis thus consisted of five NV teams constituting a total of 28 individuals. The final selection was considered a fairly homogeneous group while not being too similar to produce interesting findings. The average team size was six (rounded up from 5.6) and the median was five. Average tenure of the teams was one year and seven months. The selected teams were all technology based, with some teams in software and some in hardware. In addition, the new ventures were serving both consumers and businesses with their value propositions. Background information for each team is presented in table 3.1.

Table 3.1: Descriptions of the teams observed in this study.

	Short description of new venture	Number of team members	Duration of team existence	Number of founders with equity
Team 1	Software company operating in the fitness sector. App/service as main product, selling to consumers only (B2C)	5	1 year	3
Team 2	Software company within the energy sector. Software as a service (SaaS) as main product, selling to businesses only (B2B)	7	1 year and 4 months	3
Team 3	Hardware company within renovation industry. Develop and sell physical products, selling to businesses only (B2B)	5	1 year and 8 months	3
Team 4	Hardware company within fashion/gaming industry. Develop and sell physical products, selling to consumers only (B2C)	6	1 year and 4 months	4
Team 5	Hardware company within the tourism industry. Develop and sell physical products, selling to businesses only (B2B)	5	2 years and 9 months	3

3.3 Data acquisition

Data acquisition was split into two parts as graphically represented in figure 3.1. Observations of verbal interactions in teams were conducted first, followed by interviews with team representatives. Following this sequence ensured that behavior during team meetings was not biased by the interviews. The process is graphically represented in figure 3.3.

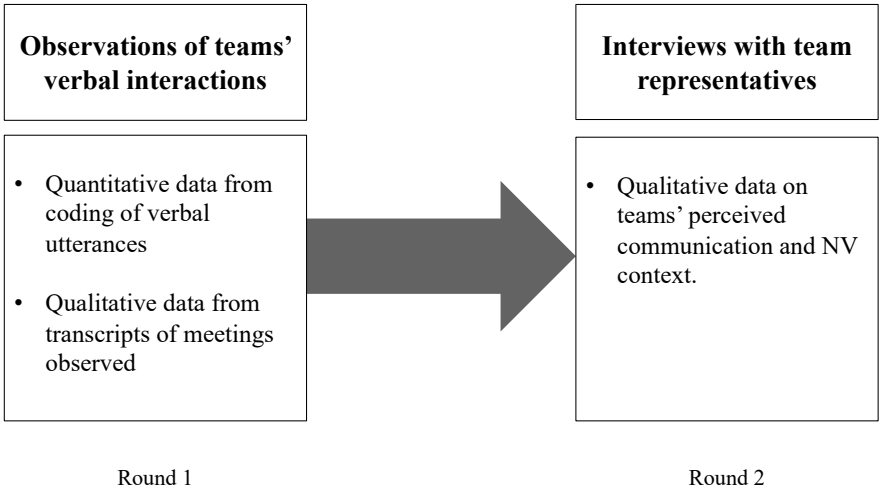

Figure 3.3: Graphic representation of the data acquisition process.

Direct observations of teams' verbal interactions during meetings provided qualitative data in the form of transcripts (section 3.4.2) as well as quantitative data in the form of verbal interaction category scores (section 3.4.3). Semi-structured interviews with team representatives (section 3.4.1) provided qualitative data regarding how team representatives perceived internal team dynamics. By combining several sources of data, we aimed to explore the phenomenon of interest holistically (Richardson, 1996).

3.3.1 Round 1 - observation of teams' verbal interactions during meetings

Real-life data on verbal interactions were acquired through observations of strategy meetings (table 3.2) and scored using the interaction model presented by Losada (1999) (section 2.2). All teams were observed individually while discussing a topic of strategic importance. It was important for the practical relevance of the research that the teams were observed in a setting as close to their daily operations as possible (Kvale and Brinkmann, 2009). Each team was observed for a minimum of 30 minutes or until the meeting ended naturally. Data from the observations were collected using a voice recorder placed in the center of the meeting-room. Voice recording was chosen to minimize the risk of missing interactions and to enable verification of coding retrospectively. Moreover, voice recording allowed us to study interactions while not being present in the same room, thus avoiding a potential Hawthorne effect (Holt et al., 2015). The voice recordings were transcribed and organized in an Excel spreadsheet shortly after an observation took place.

Table 3.2: Description of the main content of the five team meetings observed in this study

	Topics addressed during meeting	**Duration of meeting**	**Number of team-members present**
Team 1	- Marketing campaign - Allocation of human resources - Planning and closing in on deadlines	28 minutes	5 / 5
Team 2	- Discussion on product specifications and feature prioritizing. - How to include partner on pilot project	47 minutes	3 / 7
Team 3	- Product development and search for alternative solution - How to enter the market and where.	53 minutes	5 / 5
Team 4	- Product development and procurement of critical parts - Planning of deadlines and action plan - Discussing customer feedback and insight	41 minutes	6 / 6
Team 5	- Discussing how to enter relationship with new partner - Planning and discussing new business model and value proposition	33 minutes	5 / 5

3.3.2 Round 2 - semi-structured interviews with team representatives

According to Flick (2006), interviews should be designed to reveal how respondents perceive their reality. In the present study, we chose to conduct semi-structured interviews with one team representatives of each of the respective teams. Using semi-structured interviews allowed us to flexibly adapt questioning in accord with a subject's responses (Kvale & Brinkmann, 2009). For example, when a subject's response opened up an interesting perspective which the researcher had not anticipated beforehand, he was allowed to use content mapping and content mining techniques in order to explore the topic further. A content mapping question would typical explore and provoke the interviewee to broaden his/her perspective when answering questions, e.g. "*Do you think your team is different compared to non-NV teams?*". Content mining questions were then used to dig deeper into the answer of the preceding question (Ritchie and Lewis, 2003).

3.3.2.1 *Developing an interview guide*

Prior to the interviews, an interview guide (see appendix A) was developed to structure the interview process and help the interviewer focus on the research agenda. The interview guide was inspired by the conceptual framework presented in section 2.3 and focused on questions related to the perceived interplay between contextual factors and verbal interactions. Several research unrelated questions were placed in the beginning of the interview. This was done in order to establish a safe and comfortable environment in which the interviewee would answer questions honest and on a personal level (Tjora, 2012; Kvale and Brinkmann, 2009). Once rapport was established, the researcher went on to explore the areas of

interest. The interview structure was tested on three test subjects in order to ensure the quality and understandability of the questions.

3.3.2.2 Conducting interviews

Interviews were conducted face-to-face in order to achieve a holistic understanding of the perceived reality of the interviewee (Ritchie and Lewis, 2003). Furthermore, as recommended by Eisenhardt (1989), interviews were conducted with a minimum of two researchers present taking predefined roles as lead interviewer and observer. Interviews lasted between 40 minutes and 1 hour and 20 minutes and were terminated by asking whether the interviewee had anything more to add. As recommended by Yin (2014), notes were taken in addition to audio-recording the interview. Raw data from both audio and notes were later transcribed and combined for further analysis (see section 3.4.1).

Table 3.3: Length of interviews with team representatives.

	Team 1	**Team 2**	**Team 3**	**Team 4**	**Team *5***
Length of interview	1 hour, 13 minutes	41 minutes	54 minutes	46 minutes	1 hour, 3 minutes

3.4 Data analysis

In this section, we present how the data acquired from both observations and interviews were analyzed. The goal of the analysis was to present meaningful findings that were easy to interpret and discuss in section 5. In the following, we explain how the data was treated. Firstly, we outline the treatment of data derived from personal interviews with team representatives (3.5.1). Thereafter, we introduce how transcripts of meeting observations were used (3.5.2). Finally, we present how verbal interactions during meetings were scored quantitatively (3.5.3). An overview of the acquired data used for analysis is presented in figure 3.4 below.

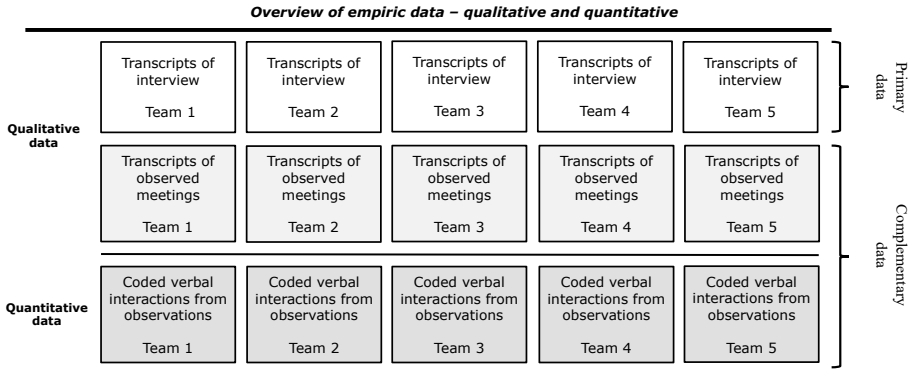

Figure 3.4: A visual representation of the qualitative and quantitative empiric data sources.

3.4.1 Analysis of interview data - Thematic analysis

Wolcott (1994) note that there are at least 50 different types of qualitative analysis approaches described in the literature. According to Braun and Clarke (2006), thematic analysis provides a flexible approach to qualitative research that can be modified and adapted according to the needs of the researcher. Thematic analysis (TA) was thus deemed a good fit for this exploratory research. TA was moreover chosen for its ability to identify, describe, analyze and organize themes and topics found in qualitative datasets (Fereday and Muir-Cochrane, 2006). Similarly, Braun and Clarke (2006) praise TA for its ability to encoding patterns of meaning in primary data.

Practically speaking, there seems to be no agreed upon consensus as to how TA should be conducted (Nowell et al., 2017). Braun and Clarke (2006) note that TA is "poorly demarcated" (p. 5). Still, TA seems to be a popular method used across a range of research questions and epistemologies (Braun and Clarke, 2006). Nowell et al. (2017) conclude that, despite its flexible use, TA can be a rigorous and valuable scientific method for extracting perspectives from research participants, highlighting key features and generating non-obvious insights.

In this study, we chose to employ a composite approach to TA, in which we incorporate both a top-down, theoretical (deductive) process as well as a bottom-up, data driven (inductive) approach. This is in line with Fereday and Muir-Cochrane's (2006) hybrid description of TA. In this study, top-down processes produced a set of pre-defined themes derived from our conceptual framework (resource scarcity, risk, time pressure, ambiguity). Bottom-up

considerations, in turn, produced empirical codes that were used to test and refine these presupposed themes. Testing pre-defined themes with empirical data may is in accord with theory matching practices in abductive reasoning (see also section 3.1).

3.4.1.1 Conducting a hybrid thematic analysis

Themes derived from the conceptual framework were utilized as a theoretical lens for looking at the transcript data. The researchers realize that this may have led to disregarding potentially valuable new types of information. Seeing as the goal with the TA was to test and refine pre-existing themes, the researchers judged the potential upside of this approach as outweighing its disadvantages. Still, we were cautious to not be too "locked in" on prior theoretical knowledge given the exploratory ambition of this study. Throughout the TA, we were open to add, subtract or refine codes as well as themes as we went along, based on learnings from the analysis.

We analyzed the dataset in light of the above. For the purposes of this research, three results were possible.

1. Codes correspond with themes and are absorbed into them (reassurance)
2. Codes do not correspond with themes and are used to generate new themes
3. Codes act to nuance themes and create sub-themes (refinement)

The logistics of the analysis at hand are inspired by the linear procedure presented by Novel et al. (2017). However, they also draw from flexible framework proposed by Swain (2018) where this was deemed appropriate.

3.4.1.2 Step 1 – Familiarize yourself with the data

Qualitative data may come in various forms including audio, video and photographs as well as textual data including field notes, narratives and journals (Crabtree and Miller, 1999; Thorne, 2000). In this thesis, qualitative data came in the form of five audio files recorded during semi-structured interviews. All files were transcribed by the researchers and familiarization was achieved by reading and re-reading the datasets. The interviews were transcribed within a couple of days after the interview took place to secure the data while still fresh in our memory.

3.4.1.3 Step 2 – Generating initial codes

Qualitative coding involves reflecting, interacting and thinking about data (Novell et al., 2017). During this stage, researchers depart from unstructured information and venture towards an understanding of its content (Braun and Clarke, 2006). Initial codes were generated by looking at the data through a lens based prior theoretical knowledge (Boyatzis, 1998). The goal was to identify codes that could be used to test and refine pre-existing themes as presented in the conceptual framework of this thesis. According to Boyatzis (1998), a "good code" (p.1) reflects the qualitative richness of the phenomenon of interest. After several rounds of re-reading transcripts, the following codes emerged:

- Ineffective strategic decisions
- Poor team cohesion
- Cultural differences
- Digital communication
- Geographic dispersion
- Financial constraints
- Lack of competencies within the group
- Lack of available time and energy for existing members in the group
- Uncertainty about the thoughts and future actions of an external party
- Time pressure
- Additional data

Empiric data that seemed interesting but did not fit directly into a code was labeled "additional data". This is concurrent with Attride-Stirling (2001), who notes that setting boundaries for what kind of data to include in analysis is important for effective research progress. By setting boundaries, we reduce redundancy and extract what is most essential in the dataset.

3.4.1.4 Step 3 – Testing a priori themes with codes

Step three involved comparing and contrasting the codes generated from empirical data with a priori themes. The main goal was to identify codes that corresponded with the themes (reassurance), nuanced themes (refinement) as well as those that were more peripheral. The idea was to reduce the amount of codes to make succeeding steps more manageable (Braun and Clarke, 2006). Overall, we found a solid correspondence between a priori themes and generated codes. However, we found that the data supporting cultural differences, digital communication and geographic dispersion was too weak to merit their continued inclusion. Specifically, digital communication and geographic dispersion, while of peripheral interest for several teams, was important for only one of the teams. Revisiting the

transcript data, we found that this was a temporary situation and that the claim had somewhat been retraced at a later point in the interview. These three codes were therefore excluded from further analysis. This is in line with King (in Cassell and Symon, 2004) who mentions that codes which turn out to be peripheral may be deleted.

3.4.1.5 Step 4 – Refining themes and creating sub-themes

Identified themes can only be sustained if they are supported by enough data (Braun and Clarke, 2006). In this step, we tested the remaining codes in order to see if they could generate new, valuable themes. We found that no codes were different and at the same time strong enough to merit creating an additional theme. Remaining codes were thus clustered and emerged as sub-themes.

During this process, we did find that that lack of competency and lack of time and energy seemed to be closely related. Attride-Stirling (2001) suggests that codes should have specific boundaries and should not be redundant. We therefore chose to combine them in a compounded sub-theme *human resource scarcity.* Similarly, ineffective decision-making and poor team cohesion were found to be closely related to a fear of failure. Moreover, these codes were related to risk perception. They were therefore utilized as sub-themes under the main theme of *risk*. Financial constraints as well as lack of competence emerged as subthemes under resource scarcity. Uncertainty with regards to the behavior of an external party regarded as critically important refined *ambiguity*. Finally, time pressure was found to consist of two related, albeit not identical factors. After re-reading transcripts, we chose to split up time pressure into externally motivated and internally motivated.

These codes were utilized to refine *time* as a sub-theme. Themes and sub-themes are presented in table 3.4.

Table 3.4: Themes and sub-themes structuring the empiric data from semi-structured interviews.

Themes	Resource scarcity	Risk	Time	Ambiguity
Subthemes	Financial resource scarcity	Fear of failure: poor team cohesion	Externally motivated time pressure	Uncertainty about the future actions of an external party
	Human resource scarcity	Fear of failure: poor strategic choice	Internally motivated time pressure	

Overall, we found that the themes proposed by Ensley et al. (2003) and theoretically supported in section 2.1 were substantiated in the present dataset. The analysis did not create further themes but achieved to refine the pre-existing ones by testing them with empirical data.

3.4.1.6 Phase 5 and 6 – Naming themes and producing the report

In order to avoid redundancy and seeing as we found the steps to be intertwined in our case, we decided to combine phase 5 and 6 as presented in Novell et al. (2017). Braun and Clarke (2006) argue that themes should be named with "punch", giving the reader an immediate idea of what he or she is to expect. In the current case, we felt that resource scarcity, risk, time and ambiguity were descriptive of their content. In addition, the sub themes

identified throughout this analysis were deemed to lend nuance and understanding to the vigilant reader.

Braun and Clarke (2006) argue that themes should be accompanied by narrative which identifies the story that each theme tells. Moreover, King (in Cassell and Symon, 2004) argues that examples and quotes that stirred the researcher's interest and were of central importance to the generation of themes are included in the findings as well as in the discussion. He further claims that passively reproducing codes and themes will offer only a superficial account with little depth. Rather, he proposes that data should be treated in a three-step process. Firstly, researchers may describe the data they discovered. In this thesis, this is done in section 4. Thereafter, they should venture into interpreting the data with regards to patterns that may emerge. We present a discussion of the data in section 5. Finally, researchers may theorize as to the practical implications of the data and ways to further study the emerging phenomena. In this thesis, the researchers attempt to comment on practical implications as well as future research in section 6.

3.4.2 Analysis of observation data (qualitative) – thematic content analysis

Qualitative data derived from observing team meetings was used to complement and contrast findings from the primary dataset (interviews). Put differently, the goal with the complementary dataset was to enrich our findings by providing another dimension of meaning and context. Therefore, we chose to use the themes and sub-themes identified in the analysis of interviews to systematically search for complementary or contrasting data in the observation transcripts. By "mapping" themes and sub-themes derived

from interview transcripts onto a team's actual conversation patterns, we were able to discuss the phenomenon of interest (potential effect on contextual factors on team dynamics) from multiple perspectives. Results from the "convergent" content analysis are presented as part of the findings narrative in section 4, as well as the discussion in section 5.

Employing this method, we realize that we may have disregarded observation data that may have led to the establishments of new codes and themes. However, seeing as we specifically used this dataset as complimentary to our primary dataset, we judged the advantages of using this method as outweighing the disadvantages. This reflection is taken up as part of the limitations of the method.

3.4.3 Analysis of observation data (quantitative)

Quantitative data derived from scoring verbal interactions observed during team meetings served as a second source complementary data. As before, this data was used to enrich and contrast the reflections of team representatives during acquired during interviews. For example, subjective accounts of high levels of positivity during team work could be contrasted or supported by looking at scored observations.

Interactions were scored following the Losada (1999) interaction model presented in section 2.2. For the purpose of the study, we defined an interaction as a verbal exchange between two individuals starting with one person's verbal utterance and ending at the start of another person's response. Put differently, an interaction was recorded following a sustained speaker switch. Interactions were then labeled as either *macro* or *micro*

based on the characteristics of a response. A micro interaction was characterized by short responses to a statement (e.g. "*mhm*" or "*mmm*") that did not cause a sustained speaker switch. Macro interactions were longer and referred back to what had been said with more detail, thereby involving a sustained speaker switch. A visual representation of the steps involved in processing the quantitative data is depicted in figure 3.5.

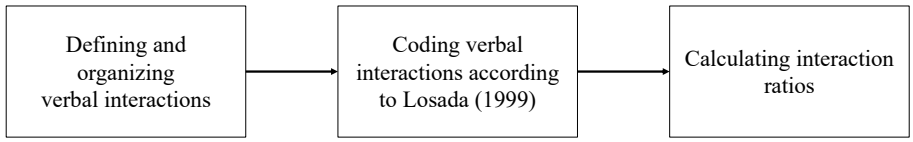

Figure 3.5: Visual representation of the approach for coding teams´ verbal interactions.

Only macro interactions were kept in the analysis due to the lack of information contained in micro interactions. In total, n = 1173 macro interactions were used in the analysis. The average team interaction number (macro) was n = 234. Interactions were coded using the logic presented by Losada (1999) (see also section 2.2):

- A speech act was coded as **positive** if the speaker showed, approval, encouragement, support or appreciation.
- A speech act was coded as **negative** if the speaker showed disapproval, sarcasm or cynicism.
- A speech act was coded as **inquiry** if it involved a question aimed at exploring and examining a position.
- A speech act was coded as **advocacy** if it involved arguing in favor of the speaker's viewpoint.
- A speech act was coded as **self** if it referred to the person speaking or the observed team.
- A speech act was coded as **other** if it referred to a person outside of the team.

Following this coding scheme, an utterance can be labeled with up to three codes (e.g. *positive*, *advocating* and *self).* However, an utterance cannot be characterized as both positive and negative, advocating and inquiring or other and self at the same time.

3.4.3.1 *Inter rater reliability*

Before scoring the data, we went through several test data sets in order to practice and ensure we had a shared understanding of the dimensions used. Interactions were then coded individually to rule out conformity bias among the researchers. Results from scoring are presented in table 3.5. Numerical accounts from scoring verbal interactions were presented as the mean values of the coding from the researchers. Following Losada (1999), data was presented as three classes of interactions ratios [Positive / Negative (P/N); Inquiring / Advocating (I/A); Other / Self (O/S)]. Inter rater reliability scores are also presented in table 3.5. Gellert (1955) deems a percentage of agreement (POA) between researcher over 0.85 as "*very satisfactory*". The POA between the three researcher coding verbal interactions was generally located in proximity of this threshold.

Table 3.5: The scores from the coding of observed verbal interactions by the individual researchers. Data was presented as the mean values of the three individual researchers' coding efforts. Percentage of agreement (POA) was calculated based on the fractional errors between the scores from the three researchers (POA = 1 – fractional error). P/N = the ratio of positive to negative utterances; I/A = the ratio of inquiring to advocating utterances; O/S = the ratios utterances referring to people within the group to utterances referring to people outside of the group.

	Researcher	P/N	I/A	O/S
Team 1	1	3.5	1.4	0.6
	2	3.8	1.2	0.7
	3	4.5	1.3	0.5
	Mean value	**3.9**	**1.3**	**0.5**
	POA	**87%**	**92%**	**84%**
Team 2	1	0.3	0.3	1.6
	2	0.4	0.3	2.0
	3	0.3	0.4	2.1
	Mean value	**0.3**	**0.4**	**1.9**
	POA	**87%**	**88%**	**86%**
Team 3	1	2.9	0.2	1.4
	2	3.6	0.1	1.1
	3	3.1	0.2	1.4
	Mean value	**3.2**	**0.2**	**1.3**
	POA	**89%**	**93%**	**86%**
Team 4	1	2.9	0.6	0.5
	2	2.5	0.7	0.4
	3	2.9	0.8	0.4
	Mean value	**2.8**	**0.7**	**0.4**
	POA	**91%**	**84%**	**87%**
Team 5	1	3.3	0.9	0.7
	2	3.2	0.8	0.6
	3	3.7	0.9	0.5
	Mean value	**3.4**	**0.9**	**0.6**
	POA	**92%**	**92%**	**84%**

We want to point out that the data presented here are ratios which cannot be used to infer the occurrence of any one kind of utterance. For example, P/N ratios yields information about the number of positive utterances per negative utterance. It does *not* yield information on the overall number of positive utterances or negative utterances recorded during a meeting. While some observations may include significantly more utterances than do others (some meetings are longer; some teams talk faster), focusing on *ratios* may allow researchers to compare teams without being biased by the overall occurrence of verbal utterances.

3.5 Reflections on the method

In the following section we comment critically on the choice of method. We will discuss the study in terms of its quality, potential limitations and ethical considerations.

3.5.1 Limitations of the method

Trustworthiness is of mayor importance when judging the credibility of research. At all stages of the process, the logistics of the research need to be accounted for in a logical manner. If the research process can be validated credibly, one may assume that rigor was employed (Meyrick, 2006). Although the methodic approach that we are utilizing throughout the research process was flexible and somewhat novel, we argue that it is systematic. The path along which evidence is presented should help to demonstrate the credibility of the process (Swain, 2018). In this study, we conducted five semi-structured interviews and five observations. Both methods are subject to reliability and validity concerns as introduced below.

3.5.1.1 *Semi*-structured interviews

We conducted five semi-structured interviews in order to collect qualitative data. Two common risks when conducting face to face interviews are expectancy bias and social desirability bias (Yin, 2014). Social desirability bias describes the tendency of subjects to adjust their answers in a manner that they deem socially acceptable, or in congruence with what the researcher wants to hear. In order to minimize risk of false answers, the researchers first ensured the subjects that their data were treated confidentially and stressed that there were no right or wrong answers. Moreover, subjects were assured that they could terminate the interview at any point and that their data would be deleted after analysis (Thagaard, 2003). Similarly, expectancy bias occurs when researchers consciously or unconsciously guide subjects to answer questions in a manner that is concurrent with their desires. In order to avoid this, researchers informed themselves of potential pitfalls when conducting interviews beforehand.

Another potential weakness of semi-structured interviews is their flexibility. As introduced in section 3.3.2, interviewers were allowed to deviate from the interview manual and investigate laterally where they deemed it appropriate. As a result, test-retest reliability may be weakened. We were aware of this drawback from the beginning but judged the upsides of using semi-structured methodology as outweighing the downside risk.

3.5.1.2 *Observations*

We observed five strategy meetings collecting qualitative and quantitative data used to support the qualitative data collected during interviews. A potential pitfall when observing subjects is described by the Hawthorne effect (observer effect) (Holt et al., 2015). This effect describes the tendency of subjects to change their behavior because of being observed. For example, a subject in the study at hand may choose to not talk about a certain topic, emotion or idea because they know they are being observed. We tried to mitigate this effect by choosing to record meetings electronically and not being physically present in the room. However, we are aware that even an electronic recording may elicit a Hawthorne effect.

3.5.1.3 *Coding verbal interactions* (conceptual criticism)

In addition to using the observation data qualitatively, we also derived quantitative data from it. Specifically, quantitative data was gathered using Losada's (1999) and Losada and Heaphy's (2004) interaction model. The basic idea is that group dynamics can be measured and described by reducing verbal interactions to fit into six dimensions presented in section 3.4.3. A strength of the Losada interaction model (LIM) is that it is firmly grounded in psychology and organizational theory. Moreover, the method has been shown to capture what it proposes to measure (Losada, 1999; Losada and Heaphy 2004; Fredrickson and Losada 2005; Molin 2012) and exhibits solid face validity. However, Molin (2012) points out that stripping communication of its content and categorizing it according to broad, functional dimensions may be problematic. The fact that we chose to use the observational dataset both quantitatively (in accord with Losada (1999)) and

qualitatively may to some extent mitigate this concern by enriching the categorical treatment of interactions with content.

3.5.1.4 *Coding verbal interactions* (technical criticism)

Scoring verbal interactions in accord with the LIM reliably requires careful preparation. Firstly, audio files have to be transcribed without error and interactions (as defined in section 3.4.1) have to be identified. Transcribing from audio files may be difficult at times given that recordings can be blurry, especially when people talk at the same time. To limit the possibility of making mistakes in the transcription, and to rule out confirmation bias, a researcher's work was double checked by at least one other researcher. Secondly, interactions need to be scored with high inter-rater reliability. To achieve this, we trained on practice datasets, before scoring the real data. After several trials, the standard deviation among the researchers on test datasets was within a 20% fractional error limit for all constructs of coded verbal interactions (see table 3.5 in section 3.4.3.1). Thus, in the present study, we managed to reliably score the collected data. However, replicating this study without going through the same training may be difficult.

3.5.1.5 Using a theoretical lens to generate codes during TA

Using a lens inspired by the conceptual framework when searching for codes in interview transcripts, we may have "lost" information that could have proven valuable in defining new constructs. The same holds true for analyzing observation transcripts with regards to the themes and sub-themes established during the preceding treatment of interview data.

3.5.1.6 Limitation to meetings

Direct observations and findings related to them are limited to interactions during strategy meetings. Meetings represent a common situation in which teams communicate to solve problems. However, they may not be the only place in an organization where people interact. In addition, using Losada's (1999) interaction method to describe interactions, we neglect non-verbal communication. We recognize that non-verbal interaction can stand for as much as 80% of information transmitted during an exchange (Holt et al., 2015) and are aware of this as a potential short coming.

3.5.1.7 *Translating* quotes from interviews and observations

Given that the native language of all participants was Norwegian, both interviews and observations were recorded in Norwegian. Seeing as language is complex and multi-faceted, we may have lost some depth when translating quotes used in section 4.

3.5.1.8 *Transferability (external validity)*

Team interactions develop non-linearly and are sensitive to initial conditions (Molin, 2012). In addition, situational factors, moods and sporadic "form" of participants may influence how people behave and how interactions in a discussion unfold (Holt et al., 2015). It may therefore be difficult to establish a general pattern of how a team interacts, especially when working with a cross-sectional design and small n.

The thesis is based on five observations and five interviews. Due to limited time and resources, a more comprehensive investigation of a larger sample

of firms was not possible. All respondents were Norwegian working in technology based early phase startups. Moreover, all subject teams were located in Trondheim, Norway. The extent to which our findings may be generalizable (see also above) will thus be limited to companies operating in similar circumstances.

3.5.2 The researchers – *personal experience and potential confirmation bias*

All the researchers are students at the NTNU School of Entrepreneurship and have personal experience from working in NV teams. Theoretical knowledge combined with first-hand experience can be advantageous in terms of developing a research agenda and interpreting results meaningfully. However, it may have led us to expect certain answers and prioritize certain questions over others, given our personal interest in the topic. Confirmation bias, the tendency to search for and interpret information in a way that confirms preexisting beliefs, may therefore have been an issue, especially during interviewing.

3.5.3 Ethical considerations

To protect the integrity of the subjects involved in this study and to ensure good scientific practice, the guidelines proposed by Norwegian National Research Ethics Committees (NNREC) have been followed to the best of our abilities (Etikkom, 2014). Informed consent, confidentiality and respectful handling of personal data are central to the guidelines. Team representatives received information about the study and its practicalities beforehand and were asked to inform their team members. A detailed

debrief including the purpose of the study was given to the teams after the observations and interviews were conducted. Withholding detailed information regarding the purpose of the recording to after the meeting was done to mitigate biased behavior. Informed consent allowed subjects to make informed decisions on whether or not to participate in the study.

Confidentiality was achieved by abstraction and ensured that subjects were open and honest during observations and interviews (Thagaard, 1998). All representatives of each team were informed of their rights to receive transcripts of their interviews.

4 FINDINGS AND ANALYSIS

In general, subjects in this study seemed to share the sense that (a) NV teams are influenced by contextual factors and (b) that these contextual factors affect patterns of verbal interactions within the teams. The four "themes" derived from theoretical considerations were substantiated and six sub-themes were isolated as being particularly descriptive of the contextual factors and their influence on within-team interactions (Table 4.1). The initial framework of how contextual factors may influence verbal interactions in NV teams (figure 2.2) was therefore modified to include these sub-themes.

Table 4.1: Themes describing contextual factors that influenced verbal interactions in the NV teams studied in this work. Green squares denote that a team specifically mentioned the relevant factor when answering general questions like "how do you think your context is different from the context of a work team?". Red squares do not denote that a team wasn't influenced by the relevant contextual factor, but only that it wasn't mentioned naturally during interviews as a defining contextual factor influencing their everyday operation.

		Team 1	Team 2	Team 3	Team 4	Team 5
Resource scarcity	Financial resource scarcity					
	Human resource scarcity					
Risk	Fear of failure: Poor strategic choices					
	Fear of failure: Poor team cohesion					
Time pressure	Externally motivated time pressure					
	Internally motivated time pressure					
Ambiguity	Uncertainty about actions of an external party					

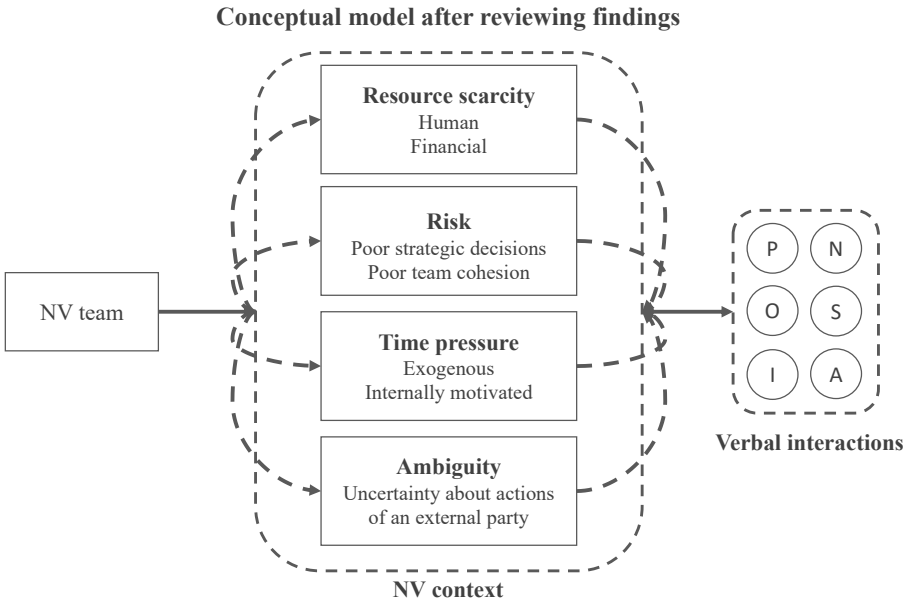

Figure 4.1: Conceptual model of how contextual factors influence verbal interactions in new venture (NV) teams before and after we reviewed our findings. P = positivity, N = Negativity, O = Others (referral to people outside of the group), S = self (referral to people within the group), I = inquiry, A = advocacy.

In the following sections, we systematically present the findings of this thesis. Findings are structured as follows: each section (4.1–4.4) corresponds to findings regarding one of the four contextual factors identified in the revised framework (figure 4.1). Within each section, all three sources of data gathered during this study are represented. We use qualitative information gathered from interviews as the main source of data. Qualitative data from observations were used to support or contrast findings from interviews. Towards the end of each section, we further compare the qualitative accounts with quantitative data derived from scoring observed verbal interactions. For example, when observing an e.g. high O/S ration in a team, the researchers may re-read transcripts from observations and try to relate the occurrence to an underlying cause.

4.1 Resource scarcity

Three teams specifically mentioned being affected by some sort of resource scarcity. Team 2 and 3 reported to be influenced by lack of financial means (financial resource scarcity). Team 1 and 2 reported being hindered by a lack of competencies and man-hours available (human resource scarcity). Although obviously related to some extent (monetary resources can be used to hire additional human resources), these dimensions of resource scarcity seemed to be related to somewhat different patterns of verbal interactions.

4.1.1 Financial resource scarcity

The representatives of team 2 and 3 reported that their internal communication was influenced by financial resource scarcity. The lack of available funds seemed increase stress levels and occurrence of criticism in both teams.

> "*Risk is a big thing for us, I think about this all the time, it's pretty tiring. It comes down to the fact that we have little time and money, so it feels like I'm constantly working against the time and money. . . And yeah, this affects the communication in the team...no doubt about that. We are constantly reminded that we have limited resources. So, we talk about this and worry a lot. I think it can lead to us being more finicky and like, be more direct with each other.*"
>
> – Team 3

> *" Yes, we do have limited capacities in terms of available capital. . . If this affect us? Yes, I think it makes us more critical. You know, things should be right when we first decide to run with something. I mean, as a pretty early phase startup we might often be one bad decision away from failure."*
>
> – Team 2

The interviews with the representatives of team 2 and 3 indicate that financial resource scarcity was related to increased sense of risk and stress among team members. Especially, sense of risk originated from a feeling of *"one bad decision away from failure"* seemed to cause the two teams to be more critical in their communication (see also section 4.2). As described by the representative from team 2, team members often played *"devil's advocate"* during meetings. The subject continued to describe how this behavior could feel "*tiresome"* and even become very annoying, however, acknowledging that it most likely was done with good intentions: "*...at the end of the day I think it is because none of us wants the company to fail.".*

Both representatives also expressed how the lack of financial resources may lead them to scale down some projects. Team 2 acknowledges: "*If we had all the money in the world, I would be completely comfortable letting people explore their own ideas. But I feel like if we spend our time and money in the wrong places now, we really risk failing as a company.*" Having to restrict allocations to a team member's "*passion projects"* was also mentioned by the representative from team 3 to be a potential source disdain and criticism among members.

> "*We don't argue specifically about how we are going to spend money. I think it is more about a feeling that we can't do everything we want to. I know the guys working on the [redacted] would like to test with some other types of parts, but we simply can't afford to buy these parts right now. Especially since it is more like a 'passion project' for one of the engineers than an actual planned part of our solution... I'm not certain how it may affect the team, but things like this can dampen the mood in the group. For example, I sometimes get the sense that when someone doesn't get what they want, they become more critical when other people want to do things. Like it's a small fight for the resources.*"
>
> – Team 3

4.1.1.1 Complimentary findings from observations of team meetings

Reviewing the transcripts of the two teams' meetings it became apparent that especially team 2's communication was influenced by the shared feeling of financial resource constraint. During the 45-minute meeting, two prolonged discussions specifically revolved around financial allocation. These discussions contributed heavily to relatively high amount of negative interactions (N) exhibited by team 2 (Figure 4.2).

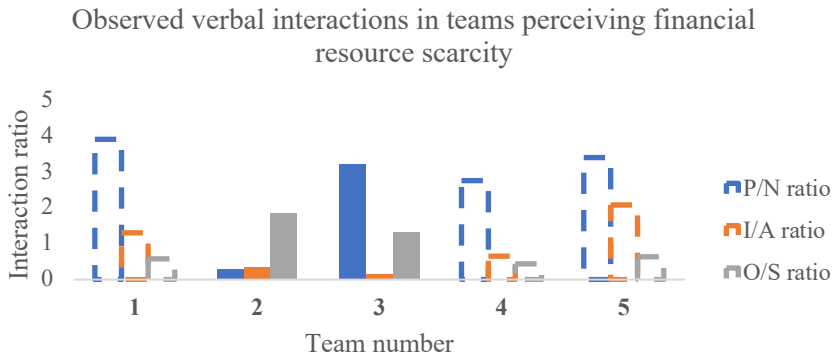

Figure 4.2: Observed verbal interactions in teams reporting to perceive financial resource scarcity. Verbal interactions were recorded and coded in terms of Positive (P), Negative (N), Inquiring (I), Advocating (A), regarding Others (O) and regarding Self (S). The results are presented as interaction ratios ordered in three bipolar pairs (P/N; I/A; O/S). Interactions observed in teams perceiving financial resource scarcity are highlighted with colored bars. Interactions ratios observed in other teams are depicted with dotted outlines.

A such, we posit that financial resource scarcity influenced teams 2 and 3 mainly by increasing the criticism within the teams (figure 4.3). Although this was not readily evident from observing team 3's meeting, the qualitative interview with the team representative strongly support this claim.

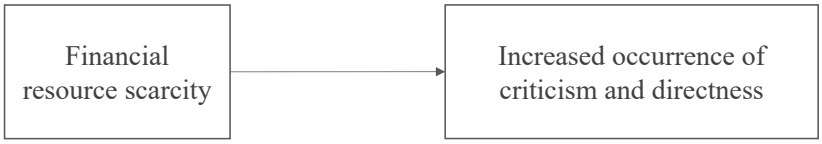

Figure 4.3: A proposed mechanism for how financial resource scarcity influenced verbal interactions in team 2 and 3.

4.1.2 Human resource scarcity

Team 1 and 2 specifically mentioned that their day-to-day operations were influenced by human resource scarcity. The representative from team 1 mentioned the lack of time available for existing team members when asked about their new venture context.

> "*None of us are able to work full time on this project, so then it is super-important that everybody loves what they do. You need to be motivated to put in the effort. If not, we don't find as much time to work on our individual tasks. How cool people think this is very much affects how much energy they put into it.*"
>
> -Team 1

With none of the team members able to work full time, the representative of team 1 reported that his team tended to be more reticent during discussions and more reluctant to delegate tasks. He continued to explain how he could not expect his team mates to do tasks when asked, that autonomy was preferred and that motivation was the way to achieve this; "*I don't really think we would come very far if we tried telling people directly what to do. But we are really dependent on people wanting to work long hours, so we focus more on motivation than delegation.*" This seemed to come from a fear of causing conflicts that could make team members less enthusiastic about work.

"With most of the team members working part time I think we have to be a bit more careful with each other's emotions, you know, talk friendly and such. I now know which team members I should call when I want to discuss something and whom I can just contact on Slack or Messenger... But overall, I try to be careful not to annoy people – some in particular"

-Team 1

Different from team 1's perception of human resource scarcity, the representative from team 2 focused on the NV's lacking possibilities to call on expertise from within the organization.

"(continuing from discussion on financial resource scarcity) *... And then there are all the other prerequisites in terms of available resources. For example, the possibility to call in new personnel if need be. So, we are restricted in more areas than just money... I think, in larger organizations you might have a range of experts within different topics. We don't really have any expertise in anything other than a few core areas."*

- Team 2

"The lack of expertise is one thing that can generate disagreements... In areas in which none of us have any expertise or authority it can be challenging to reach any sort of consensus, since no one is able to cut through."

- Team 2

In contrast to observations in team 1, experiencing constraint in terms of an absence of competencies, rather than in terms of available man-hours, human resource scarcity did not seem to directly cause team 2 to be either more positive or more critical in their communication.

4.1.2.1 Complimentary findings from observations of team meetings

The representative from team 1 reported that due to the part-time employment of all NV team members, they focused on keeping moods elevated within the group at most times. This was apparent during the observed meeting of team 1 where the highest P/N ratio in the entire selection of meetings were recorded (Figure 4.4). The observed meeting of team 1 was highly procedural, in which the team leader addressed the different team members one by one. Very little verbal communication occurred without directly involving the team leader, and *no* disapproving or inquiring utterances were directed toward other members than the leader during the 37-minute meeting. This dynamic was unique for team 1. All other teams exhibited some discussion involving three or more team members.

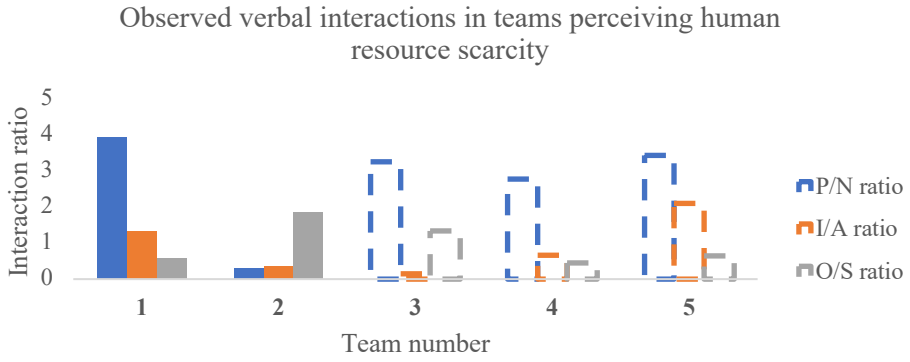

Figure 4.4: Observed verbal interactions in teams reporting to perceive human resource scarcity. Verbal interactions were recorded and coded in terms of Positive (P), Negative (N), Inquiring (I), Advocating (A), regarding Others (O) and regarding Self (S). The results are presented as interaction ratios ordered in three bipolar pairs (P/N; I/A; O/S). Interactions observed in teams perceiving human resource scarcity are highlighted with colored bars. Interactions ratios observed in other teams are depicted with dotted outlines.

Reviewing these findings, we do not consider the evidence as sufficient to make any general claims regarding how human resource scarcity influenced verbal interactions in the studied teams. Two teams reported to be influenced by human resource scarcity. However, reports from team representatives and observed verbal interactions during meetings (figure 4.4) did not produce a clear picture of how this affected team dynamics. This may be explained by the fact that team 2 reported to be influenced by resource constraint in terms of competencies, while team 1 reported to be constrained in terms of available man-hours.

4.2 Risk

Team 2, 3 and 5 specifically mentioned being influenced by perceiving an imminent risk of venture failure. No team representatives reported to perceive any other form of risk (e.g. personal risks like not having a reliable income). Team 2 and 3 described the perceived risk of organizational failure as a burden that caused team members to interact more critical and with more honesty.

> *"...You quickly become extra critical, because there is a sense that we can't afford to make bad decisions. I mean, one wrong decision and we risk the entire company to fail!"*
>
> - Team 2

"It is very challenging to survive as a startup I think, because there are so many ways we can fail. There are a lot of questions we have that we can't really answer before we launch something on the market. But since we have limited resources, I still feel like we only have one shot to launch a successful product. So, that makes it important to question everything that we do. It's better to be critical than to do mistakes, if you know what I mean."

-Team 3

"(talks about the current phase they are in, prototyping and testing market)... In this phase we argue a lot about what features to add in our first prototype. It often becomes very heated, because we all have different opinions. And if the first prototype is not awesome, we will probably lose the only customer we have so far"

- Team 2

In addition to reporting that perceived risk of organizational failure might have led to more criticism and focus on good strategic choices, both team representatives also expressed that perception of risk might have a somewhat unifying effect. Both team 2 and 3 expressed a sense of cohesion and "*we are in this together*" to cope with the overarching risk of failure. This sense of belonging may partly explain their focus on being honest and direct in their communication. This was highlighted by the representative from team 2 talking about how the perceived stress from his sense of risk was a source of motivation: "*I think the stress relates more to motivation and passion. We all really want this to work. Maybe that makes it okay to be more honest and direct with each other*".

While team 2 and 3 seemed to perceive the possibility of making wrong strategic choices as the major driver for risk of organizational failure, the representative from team 5 offered an alternative view. He emphasized the risk of not being able to collaborate efficiently as a team: "*We rely on every member of the team to be able to work efficiently together. This can make us more afraid of conflict and more reticent with issues that should actually be shared. You don't want to cause bad moods*". Fearing the consequences of prolonged conflicts within the team, the representative reported that they tended to "hold back" in some arguments in order to maintain a positive atmosphere within the group.

> *"I think it is okay to keep doing something even though the entire team doesn't 'get it' or sees the immediate benefit of the suggestion or idea. What really can break us is if people start arguing all the time, this is the scary part! We really have to work together if we are going to get somewhere. So, it is better to hold back sometimes – for the sake of the overall mood in the group, like you need to "swallow some camels" sometimes."*
>
> -Team 5

> *"(talking about ongoing projects and day to day operations) …When someone has gotten emotionally attached to something it may be better to just let him do his thing, rather than criticizing it too much. I think it is more important to keep an open and positive atmosphere than looking over each other's shoulders. No one likes to be micro-managed."*
>
> -Team 5

A lack of formal contracts between team members was reported to enhance this trend, seeing as the team leader wield no formal power to reprimand unwanted behavior or delegate tasks.

> *"We can't really issue commands. We are all pretty equal and at the end of the day we all have to agree on what to do, at least that is how we want it to be. If people get frustrated by their tasks or their coworkers, there is nothing that formally stops them from doing something completely different. In the worst case every team member can actually leave the startup at any given day! P.S. it has not happened yet, hehe. But, if one of our product developers were to leave on a few days' notice… well, that would be a truly catastrophic situation"*
>
> -Team 5

4.2.1.1 Complimentary findings from observations of team meetings

Team 5's reported tendency to face risk by "*holding back*" during discussions is relatable to team 1's strong focus on maintaining a positive atmosphere within the group (section 4.1.2). Team 1 and 5 seemed to share the notion that conflicts could occur relatively easily and that the progress of their work depended on avoiding such situations. This was evident when observing the meetings of these teams. Here, team 1 had the highest and team 5 had the second highest P/N ratios in the sample (figures 4.4 and 4.5).

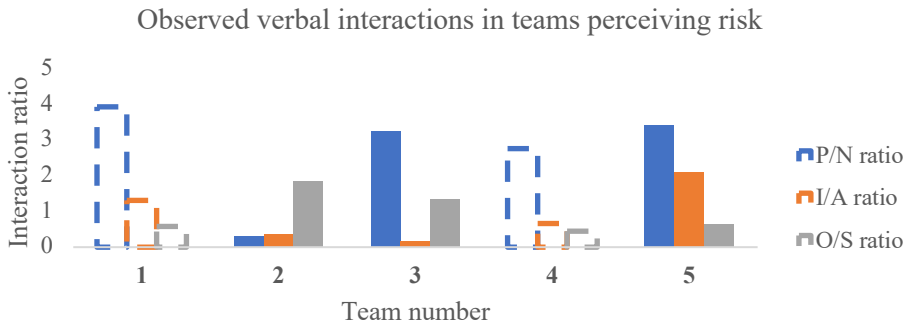

Figure 4.5: Observed verbal interactions in teams reporting to perceive risk. Verbal interactions were recorded and coded in terms of Positive (P), Negative (N), Inquiring (I), Advocating (A), regarding Others (O) and regarding Self (S). The results are presented as interaction ratios ordered in three bipolar pairs (P/N; I/A; O/S). Interactions observed in teams perceiving risk are highlighted with colored bars. Interactions ratios observed in other teams are depicted with dotted outlines.

While team 2, 3 and 5 all perceived risk of organizational failure, the perception of what was most likely to cause failure seemed to influence communication more directly than the level of risk itself. Deeming poor decision making the most probable cause of failure, teams 2 and 3 reported to respond to risk by being more critical in their interactions. When reviewing transcripts from observed meetings, this seemed to have had a similar effect on verbal interactions as did perception of financial resource scarcity (section 4.1.1). Financial resource scarcity and perceived risk thus seem to be related. Both teams, 2 and 3, reported feeling like they could not afford to do costly mistakes, and that they felt that they had *"only one shot"* (Team 3) to get things right. Both teams explicitly reported that financial resource scarcity and risk made team members interact in more direct and critical ways. Thus, we propose that the following mechanism influenced verbal interactions in team 2 and 3 (figure 4.6).

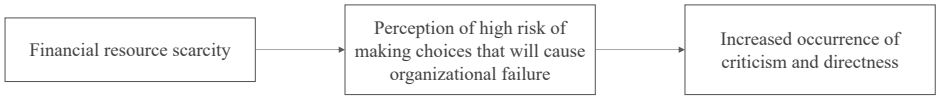

Figure 4.6: The proposed mechanism of how financial resource scarcity and high risk of organizational failure increased occurrence of criticism and directness in team 2 and 3's internal communication.

4.3 Time pressure

Four teams reported to be influenced by time pressure. While three teams perceived time pressure as a phenomenon invoked by forces outside of the organization, team 4 explicitly mentioned not perceiving exogenous time pressure. Rather, the representative from team 4 reported that his team focused on creating internal time pressure by collaboratively creating milestones with ambitious deadlines. Perceiving exogenous time pressure versus creating time pressure through internal deadlines seemed to influence the way in which teams interacted. While teams perceiving exogenous time pressure systematically reported this as a major source of conflict, the team that created their own internal time pressure reported this to be a highly motivational factor.

4.3.1 Exogenous time pressure

Team 1, 2 and 3 reported to be influenced by a strong sense of urgency, hailing from exogenous market cues. Interestingly, all these teams also reported that internal differences in perceptions regarding time-pressure were the most prominent source of conflict within their team.

> *"Having several part time employees, as you probably understand, we can't expect the same speed as we would like to see. In return, this makes everything more stressful and we are always feeling a step behind... Conflicts are often related to speed during decision making. See it like this, some of us feel the need to move fast and break things, while others really like to consider things more carefully first."*
>
> -Team 1

> *"Often, in many situations, someone wants to make decision really quickly, while others feel the need to gather more information first. Then we have to stop and discuss further, which makes things take even longer time. This causes annoyance in the group and is a typical cause of conflict."*
>
> -Team 2

A statement from the representative of team 3 exemplifies the difference in perception of what the desired and agreed upon speed was: "*Some team-members work in their own pace and don't seem to care much about keeping up with the desired pace*". He continued to express feelings on how he perceived this as "*annoying*" in the face of high risk: *"This is annoying when you know we need to deliver results to survive and stay afloat... [retracted name] and I share a background from the same business school and view time as much more valuable resource than the guys working with the technology. We often become a little more stressed and tend to push this*

into our conversations with the tech. team." This irritation ultimately seemed to influence the communication in the team. The misalignment between sense of urgency in technology-focused and market-focused team members also seemed to be a frequent cause of conflict.

> *"I feel like the tech. team responds positively when we push them e.g. by saying that we need to have a working prototype ready to show to customers. But I don't really feel like they take ownership over those deadlines and this worries me. It is frustrating to constantly having to tell people to hurry, we don't like this"*
>
> -Team 3

> *"I think we [new venture management] feel it [time pressure] more than the developers do. After all, we are the ones having to negotiate deadlines and milestones with our partners, and I think we spend a lot more time worrying about being outcompeted. I think this creates sort of a distance between those working with technology and those working with other stuff. We don't always understand each other, and this is a small, constant source of conflict."*
>
> -Team 2

4.3.1.1 Complimentary findings from observations of team meetings

The representative from team 3 explained that he believed the success of the venture to be largely contingent on their first mover advantage in an under-utilized market niche. This seemed to cause a sense of urgency in team members working with market strategies, while team members working with technical aspects of the product seemed to remain largely unaffected. Misaligned perceptions of urgency were an apparent cause for discussion during the observed meeting of team 3. as the market-facing team-members

advocated strongly in favor of bringing in a consultant to quickly fix a technical problem, while a technology-focused team member wanted to adopt a more long-term solution by hiring and integrating a new team member.

> *"... in order to not use too much time and resources to find and hire a person that can develop this, we should look for a consultant. None of us should use time on this, it will take too much energy and time just to figure out the hardware part of the problem. Time we can't afford to waste right now!"*
>
> -Team 3 (recorded during team meeting)

Sensing external time pressure, the representatives from both team 2 and 3 explicitly mentioned looking outside of the group for help as a strategy for increasing the speed of their operations. This was evident in the quantitative observation data from team meetings as team 2 and 3 exhibited the highest O/S ratios in the entire selection (Figure 4.7). Relatively high amounts of verbal utterances recorded during these meetings either involved speculating about what external actors might do, or how the team could leverage resources in their environment to reduce their own workload.

> *"(response to a suggestion on a product feature) ... But what do you think [redacted name] needs? When she's actually going to use this every day - will she really need this information? I think what she really needs is just a simple overview"*
>
> -Team 2 (recorded during team meeting)

> *"We save a lot of time by admitting that other people might know more than us. Let's admitting that we don't know everything"*
>
> -Team 3 (recorded during team meeting)

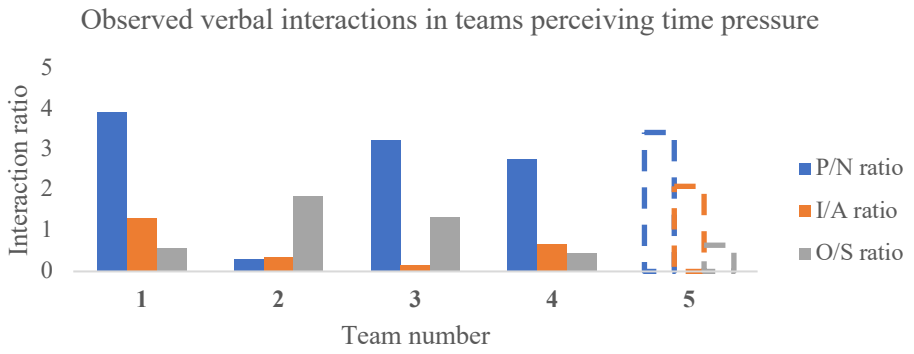

Figure 4.7: Observed verbal interactions in teams reporting to perceive exogenous time pressure. Verbal interactions were recorded and coded in terms of Positive (P), Negative (N), Inquiring (I), Advocating (A), regarding Others (O) and regarding Self (S). The results are presented as interaction ratios ordered in three bipolar pairs (P/N; I/A; O/S). Interactions observed in teams perceiving externally motivated time pressure are highlighted with colored bars. Interactions ratios observed in other teams are depicted with dotted outlines.

Summarizing, team 1, 2 and 3 reported to be influenced by time-pressure originating from a sense that they had a limited time to answer to their market opportunity. All of these teams named time pressure, and more specifically a misaligned sense of urgency within the team, as the most common cause of conflict. While teams experiencing exogenous time-pressure tended to interact with relatively high amounts of referrals to people outside of the group during the observed meetings, it seems that this did not create a shared sense of urgency to address external market cues. As such we propose that exogenous time-pressure related to verbal interactions in the studied team via the following mechanism (Figure 4.8).

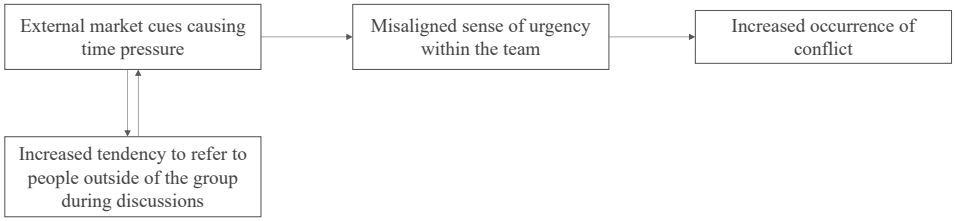

Figure 4.8: A proposed mechanism for how time pressure related to verbal interactions in team 1, 2 and 3.

4.3.2 Internally motivated time pressure

The representative from team 4 explicitly mentioned not sensing any externally motivated time pressure. Instead, his team deliberately used ambitious deadlines towards clearly defined milestones as a method of enforcing an *internally* motivated sense of urgency.

> *"You don't get more time pressure than you put on yourselves! I think that is so unique and nice with the entrepreneurial context – it's not a real time pressure. (after being asked to elaborate on this)... Okay, so, I think it is because you create your own deadline and you are free to move it... But then again, discipline becomes important in order to get things done. In our team, we solve this by pressuring each other on deadlines, especially between the product team and market team. So, to answer your question, we do feel some time pressure, but it is created internally"*
>
> -Team 4

Deliberately mapping out clearly defined milestones, team 4 reported to generate a shared sense of urgency between team members: "*When we agree on where we want to go it is easier to get everybody onboard with how we get there and how much time we need.*" The representative further elaborated

on how creating deadlines together with all team members made the team "*more committed and motivated to work for each other*". Using collaboratively agreed upon deadlines might act as a highly motivational factor within the team (figure 4.9).

> *"So, I have an easy 'algorithm', if you will, for setting deadlines: First, we have to make sure everybody agrees on why we are here in the long-term perspective. Then we create a list of things we want to achieve within a period of a couple of months. Once we agree on that, we usually discuss different possibilities for how to get there... There are always multiple ways to do things and we probably have to change our plans half-way, but the point here is to set some milestones that everyone understands and 'owns'. When we have those milestones, we usually naturally agree on who should be the main responsible for what, and we have everyone set their own deadlines in front of the group. The magic here is that the group pushes everyone to set ambitious deadlines, but since you ultimately set it yourself it is your responsibility.*
>
> -Team 4

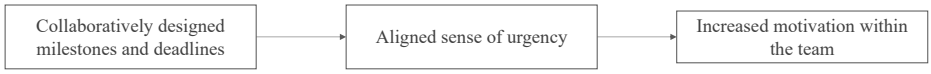

Figure 4.9: A proposed mechanism for how internally motivated time pressure created motivation in team 4.

4.3.2.1 Complimentary findings from observations of team meetings

As deadlines were constructed internally, team 4 seemed more flexible in altering their progression plan when faced with unexpected problems. In situations where an unexpected technical problem was discussed, team 4 and team 3 reacted in very different ways.

> *"...in order to not use too much time and resources to find and hire a person that can develop this, we should look for a consultant, or what? None of us should use time on this, I think. Like, it will take too much energy and time just to figure out the hardware part of the problem. And this is time we can't afford to waste right now!"*
>
> -Team 3 (recorded during team meeting)

> *"If we cannot use the standard motor we have selected now, we have to find a replacement that fits the standard. If that is true, we will not make our goal for the summer. It is simply too much work in too short a timeframe. So, we may have to change the deadline here – we will see."*
>
> -Team 4 (recorded during team meeting)

4.4 Ambiguity

The representatives of team 2 and 5 reported that their operations were significantly influenced by ambiguity. For both teams, this ambiguity mainly seemed to stem from poor communication with an external organization that they were somehow reliant on.

> *"Right now, for instance, we are planning a pilot project with our first major customer. But communication is slow, and we are really uncertain about what exactly they would like us to do. This makes it really hard to make product development choices, as we do want to meet the needs of our customer."*
>
> -Team 2

"In this period, we are going into business with a Swedish company. Or at least, we are trying to – we don't really hear from them all that often, and I am not sure what is going to happen there"

-Team 5

While similar phenomena seemed to generate ambiguity in both teams, the team representatives reported that uncertainty influenced the groups' behaviors in two very different ways. The representative from team 2 reported that members of his team tended to face ambiguous situations by quickly choosing a position and defending it from other team members.

"I think our situation is much more characterized by ambiguity [compared to teams in more mature organizations]. And oftentimes this causes different members to make quick conclusions and then just move forward.... Yep, I think this might be negative because we can become emotionally attached to arguments that may not be valid and then make poor decisions. But, on the other hand, we must accept that we will never live in a world of perfect information. So, we have realized that some decisions must be taken without sufficient data available. Anyhow, this uncertainty is often the starter of long discussions and conflicts about what information may yield the best decisions."

-Team 2

"(talking about their ongoing project with a pilot customer) ... when we discuss what the customer that we are working with now might think, we disagree a lot. We have all been in many meetings with different people from that organization, and I think everyone feels like they have the best idea of what the customer really meant during those meetings"

-Team 2

Contrary to team 2, the representative from team 5 reported that his team tended to tackle ambiguity by remaining open-minded and admitting uncertainty, rather than advocating for any particular position.

> *"We often have to make decisions based on very imperfect information. But that's just how it is when you try to create something new, isn't it? We don't always know what we are doing, and I think we should accept that. In situations of doubt we focus on admitting that we are uncertain, so that we get certainty of what we are uncertain about"*
>
> -Team 5

The representative of team 5 emphasized his team's humbleness when faced with ambiguous situations.

> *"We try not to be too proud all the time. It should not be about proving why you are right, but more about learning where you might be wrong."*
>
> -Team 5

> *"(following up to elaborate on why they try to not be too proud) … Sometimes it is somewhat weird because I feel like everyone intuitively knows the answer. But then again, I think we still feel we have to explore our options. At least that is often what happening. And yes, this does take longer, but I think it makes it easier to move quicker when our intuitive conclusions are not the same. Plus, I don't think we should consider ourselves so smart that we don't need to question ourselves and our conclusions"*
>
> -Team 5

4.4.1.1 Complimentary findings from observations of team meetings

The differing strategies of navigating ambiguous situations seem to be reflected in the observed interactions during team meetings (Figure 4.10). Striving to remain more open-minded, team 5 exhibited a much higher I/A ratio than team 2. Moreover, team 2 exhibited a much lower P/N ratio compared to team 5. Reviewing the transcripts from the meeting observations, this phenomenon can be explained by team 2's tendency to advocate for their individual positions. Many of the negative (N) interactions recorded during team 2's meeting (Figure 4.10) occurred during several prolonged discussion in which three team members advocated in favor of their own viewpoints on matters regarding what an outside party might think. This was highlighted by an episode during which over five minutes were spent discussing the nuances of what an external person had meant with one particular statement.

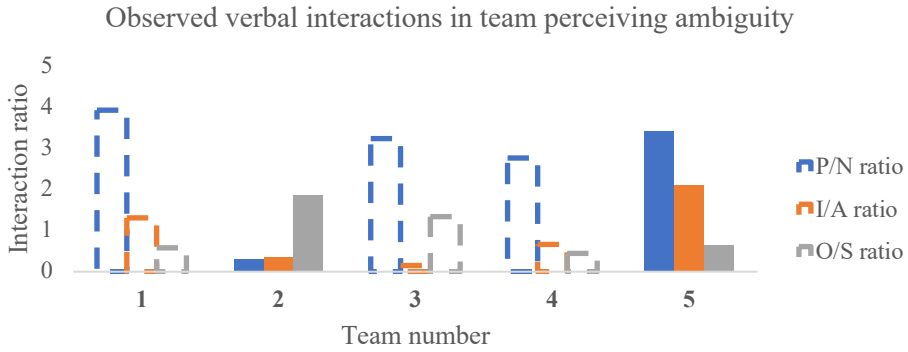

Figure 4.10: Observed verbal interactions in teams reporting to perceive ambiguity. Verbal interactions were recorded and coded in terms of Positive (P), Negative (N), Inquiring (I), Advocating (A), regarding Others (O) and regarding Self (S). The results are presented as interaction ratios ordered in three bipolar pairs (P/N; I/A; O/S). Interactions observed in teams perceiving ambiguity are highlighted with colored bars. Interactions ratios observed in other teams are depicted with dotted outlines.

Team 2 and 5 both experienced ambiguities originating from an uncertain relationship with an external party. However, the teams reported to utilize two very different strategies of dealing with uncertainty. Team 2 reported to focus on making quick decision, while team 5 reported wanting to review as many opportunities as possible before making choices. Reviewing the transcripts from meeting observations, these strategies seemed to cause contrasting interaction patterns, as team 2 tended to interact with lower I/A ratios, while team 5 tended to interact with higher I/A ratios during meetings (Figure 4.11).

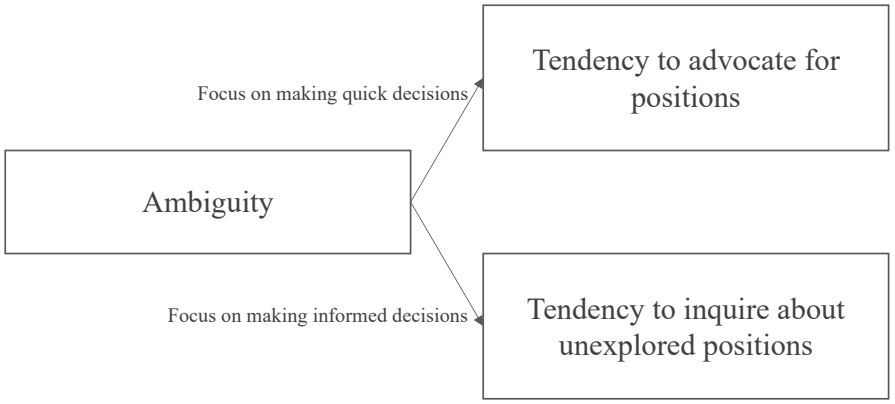

Figure 4.11: A proposed mechanism for how ambiguity affected verbal interactions in team 2 and 5.

5 DISCUSSION

In this section, three main findings from section 4 are discussed with regards to previous scientific work. As part of this discussion, the mechanisms produced will be refined in light of existing literature. Firstly, we discuss how financial resource scarcity and risk seemed to increase the occurrence of criticism in two teams. Secondly, we highlight how exogenous time pressure might prompt conflict within teams. Moreover, we discuss how the detrimental effects of time pressure seemed to be mitigated in one team that deliberately used internally created time pressure as a motivational tool. Lastly, we discuss how two strategies for facing ambiguity yielded contrasting patterns of verbal interactions and how this may have implications on team-learning processes.

5.1 Risk originating in financial resource scarcity seemed to increase occurrence of criticism

Risk of organizational failure is relatable to financial resource scarcity in the sense that "*lack of key resources essentially holds the new venture to a minimal number of strategic or tactical errors"* (Ensley, Pearson and Amason, 2002, p. 339). The notion that financial resource constraint yield heightened perceptions of risk was confirmed by team 2 and 3. Both team representatives reported that limited funds gave them a feeling of having *"one shot"* to make good strategic decisions. This observation is coherent with previous work, positing that financial resource scarcity is likely to increase risk of new venture failure and entrepreneurs' awareness of risks (Grant, 1991; Dollinger, 1995).

More interestingly, both team 2 and 3 stated that the high levels of perceived risk tended to make their teams communicate with more criticism. This outcome was non-obvious, as high levels of risk have been proposed to cause team members to be more protective of each other, and increase cohesion in teams (Fruhen and Keith, 2014)

5.1.1 Criticism might mitigate stress induced by high-pressure situations

Contrary to popular belief, most empirical evidence suggests that members of new venture teams do not have higher propensities for risk taking than do other groups (Forlani and Mullins, 2000; Mullins and Forlani, 2005). In fact, Norton and Moore (2006) suggest that individuals tend to start ventures because they do not perceive the risks involved, and not because they knowingly accept high levels of risk. As such, there is no reason to suspect that perceptions of risk and uncertainty will be any less stress-inducing in new venture teams than in groups in more mature organizations (Michie, 2002). New venture teams facing heightened risk may therefore tend to communicate in ways that is believed to mitigate stress induced by perceiving risk.

In fact, it seemed that team 2 and 3 communicated with high amounts of criticism in order to quickly reject flawed ideas, thereby narrowing down the amount of options to choose from. This approach might mitigate stress by reducing the perceived complexity of the team's situation. This is line with Peters et al. (2006), who explain that states of negative affect may help groups prioritize and reduce the number of options available during decision making processes. While it might be counterintuitive to regard limited options as a favorable outcome, it might be just what some new venture teams need in certain situations. This is because a sense of having too many available options (choice overload) is a known stressor for individuals (Scheibehenne, Greifeneder and Todd, 2016). When facing high-risk decision-making processes with numerous possible options, quickly rejecting ideas and converging towards a sensible solution might be an effective way of mitigating the stressful effects of risk and uncertainty (figure 5.1).

Figure 5.1: A proposed mechanism for how criticism and negative affect might mitigate some of the stress induced by high-pressure decision making processes in new venture teams.

5.1.2 Negative affect may limit individuals' abilities to innovate

While criticism may promote decision making in some situations, previous work suggest that high levels of criticism and negative affect can retard an individual's ability to process novel information (Fredrickson, 2001; Fredrickson, 2004). As new ventures may be reliant on their ability to innovate, an overly critical working environment might therefore be detrimental for the venture's long-term success.

In her widely renowned "broaden and build theory", Fredrickson (2001) suggests that positive emotional states allow individuals to process novel information more efficiently and broaden their thought-action repertoires. The theory suggests that the evolutionary significance of positive emotions (joy, contentment, pride) is to urge individuals to learn from their surroundings and build personal resources. Fredrickson supported her theory showing that college students (N = 104) gained broadened visual scopes of attention and increased thought-action repertoires when stimulated by movies eliciting amusement or contentment (Fredrickson and Branigan, 2005). More notably, Lyuborminsky, King and Diener (2005) analyzed 225 scientific articles gathering a plethora of data highlighting the correlations between positivity and cognitive performance.

Fredrickson's (2001) broaden and build theory is relatable to the concept of psychological safety (Delizonna, 2017). Psychological safety refers to team members' perception of the consequences of taking interpersonal risk. In a team with high psychological safety, teammates feel confident that no one on the team will embarrass or condemn anyone else for asking a question or offering a new idea (Edmondson, 1999). Excessive amounts of criticism may

hence reduce perceptions psychological safety within teams. This might be detrimental for overall team performance as there seems to be a consensus among scholars that high-performing teams need psychological safety (Delizonna, 2017).

As outlined in the preceding sections, it is evident that facing risk with criticism might yield both negative and positive outcomes, depending on situational factors. Referring to the proposed mechanism for how financial resource scarcity and risk influenced verbal interactions in team 2 and 3 (figure 4.6), we propose the following modified interaction (figure 5.2).

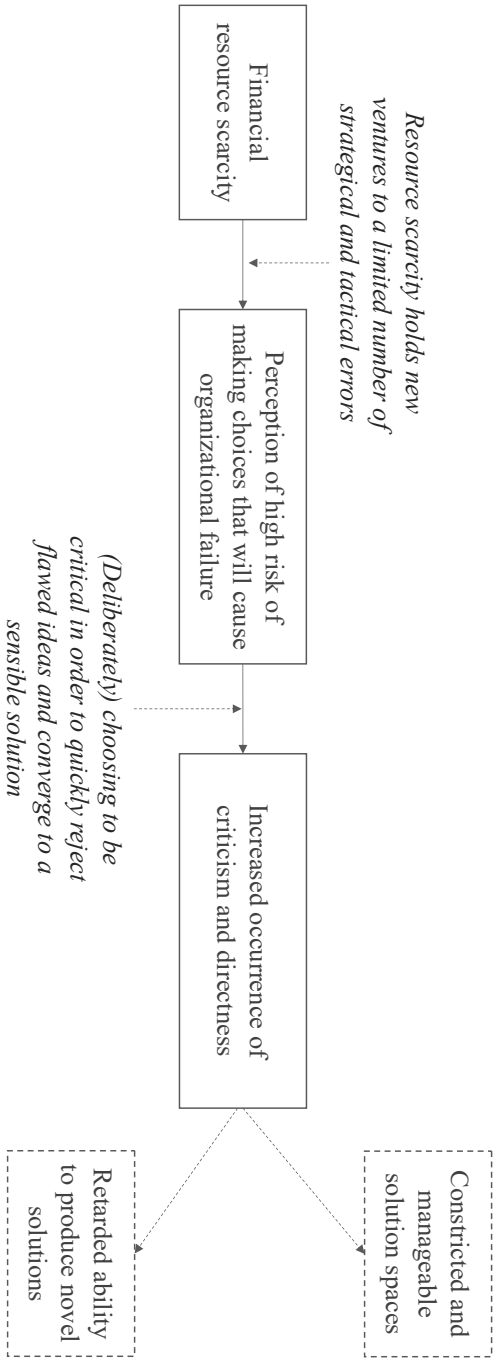

Figure 5.2: A proposed mechanism describing how financial resource scarcity and high risk of organizational failure increased occurrence of criticism and directness in team 2 and 3's internal communication.

5.2 The effects of time pressure seemed to be contingent on the degree to which sense of urgency was aligned within a team

Having limited resources and competencies, NV teams might be especially dependent on looking outside their own borders when it comes to making informed decisions (Stinchombe, 1965; Chrisman, 1999; Greene, Brush and Hart, 1999). Theory suggests that successful NVs benefit from focusing on customer feedback and market responses (Ries, 2011). The importance of absorbing external knowledge by 'getting out of the building' early and often are highlighted in the widely acknowledged methodologies of 'lean startup' (Ries, 2011) and 'design thinking' (Norman, 2013).

The present findings suggest that outward focus may come at some cost, seeing as misaligned perceptions about the significance of exogenous cues may trigger conflicts within the team. Specifically, we observed that exogenously invoked time pressure yielded a misaligned sense of urgency because team members tended to evaluate these inputs differently. Three out of five teams reported that different perceptions of time pressure were the principal causes of conflict.

5.2.1 Exogenous time pressure seemed to prompt intra-team conflict

Teams claiming that differing perceptions of time pressure caused conflict exhibited relatively high O/S ratios during meetings (Figure 4.7). Moreover, frequently discussing the external cues did not seem to align team members' perceptions of the outside world. This was most readily apparent when looking at interactions between market-focused and product-focused team members. Market-focused team members seemed to be somewhat unable

to convey their perception of exogenous time pressure in a way that engendered the same sense of urgency in product-focused team members. The resulting discrepancies in perceptions of time pressure was reported to cause frustration and conflict within teams.

As conflict originates from discrepancies in views between individuals (Jehn, 1995), it is not surprising that misalignments in senses of urgency caused conflicts in teams 1-3. The observation that most conflicts seemed to occur between market-focused and product-focused team members, however, is more interesting. Li and Hambrick (2005) suggest that team members involved in interdisciplinary work might easily encounter conflict because of difference in aims, skills, capabilities and working styles. McClure (2010) showed that team members who held diverse mental models regarding organizational values were more likely to experience tension and mistrust, compared to those with more aligned interpretations. As market-focused team members may spend a large portion of their time probing the external environment, they might adopt a somewhat different interpretation regarding what is most imperative for the NV compared to team members focusing on product development.

Market-focused team members' propensity to be more sensitive towards exogenous market cues might not only be explained by marketer's obvious tendency to spend more time probing the market. Our observation may also be partly explained by the notion that engineers and marketers are traditionally educated in somewhat different schools of thought. While most business schools teach that a business' success is contingent on its achieved position in a market, several years of technological studies might cause

engineers to evaluate product innovations as the principal source of competitive advantage. Divergence in schools of thought has previously been shown to relate to conflicts between marketers and engineers in larger corporations, partly because the two groups tended to ascribe unlike significance to information regarding the external market (Weinrauch and Anderson, 1982; Shaw, Shaw and Enke, 2003).

The notion that marketers and engineers tend to hold different mental models regarding problem solving strategies might explain why the high O/S ratios recorded during team meetings did not seem to contribute to a shared perception of the urgency of time pressure within teams: Even though market-focused team members often spent prolonged periods of time explaining the exogenous factors that caused their sense of urgency, it is possible that technology-focused team members remained insensitive to this information as they had fundamentally different ideas of what types of information should be emphasized when making decisions.

While the three teams experiencing exogenous time-pressure seemed largely unable to align perceptions of urgency within the group, one team reported that collaboratively designed milestones and deadlines was successful in creating an aligned sense of urgency (figure 5.3).

Figure 5.3: A proposed mechanism describing how exogenously, and internally motivated time pressure yielded two contrasting team-level outcomes in teams 1, 2, 3 and 4.

5.2.2 Deliberate use of shared leadership principles seemed to align perceptions of time pressure in team 4

Collaboratively designing both individual and organizational milestones and deadlines, team 4 reported being able to align perceptions of time pressure between market and product team (Section 4.3.2). During the interview, the representative of team 4 explained that they used the same approach when setting deadlines:

1. Get every team member on board with why the NV exist, and what the long-term vision is.
2. Agree on what the NV should achieve within a given time period.
3. Discuss how to get there (designing their strategy).
4. Discuss what needs to be done to get there (designing milestones).
5. Discuss when the different milestones realistically could be achieved based on internal resources.
6. Having team members set their own deadlines with an emphasis on pushing/supporting each other to be somewhat ambitious.

While being in the favorable position of not feeling significantly rushed by their external environment, team 4 deliberately generated a sense of internally motivated time pressure by setting ambitious deadlines. This collaborative approach seemed to yield increased motivation within the team. Ensley, Hmieleski and Pearce (2006) have previously shown that *shared leadership*, characterized by collaborative decision making and common responsibility, promotes motivation in NV teams. Thus, by motivating and aligning market and product team, it seems that collaboratively generating milestones and deadlines, rather than passively

reacting to exogeneous cues, may be an application of the theoretical concept of shared leadership and potentially enhanced performance in team 4.

5.3 Different strategies when facing ambiguity yielded contrasting verbal interaction patterns

5.3.1 Only two teams reported to be influenced by ambiguity

Harper (2008) proposes that ambiguity in NV teams exist when an entrepreneur is *"partially ignorant about possible alternatives and their consequences"* (p.617). Generally having limited time and resources available to explore possible alternatives, previous work suggests that NV teams tend to be influenced by ambiguity (Langlois, 1984; Morris and Zahra, 2000; Ensley, Pearson and Pearce, 2003; Loch, Solt and Bailey, 2008; Townsend et al., 2018). However, only two out of five team representatives reported to feel influenced by ambiguity in this study. This begs the question; *did the other teams not face any ambiguity? Might they experience some degree of ambiguity without it significantly influencing their day-to-day operations?*

Both teams that reported to be influenced by ambiguity were able to identify a specific source of uncertainty (collaboration with an external party). It is possible that other teams failed to mention being influenced by ambiguity because no singular specific source generated the uncertainty. Loch, Solt and Bailey (2008) posit that NV teams often do not correctly foresee real market opportunities due to failure of identifying what they don't know (unknown unknowns). As unknown unknowns may not be easily identifiable, it seems plausible that although most of the teams studied in this work may have

limited information about their environment, they stay relatively unaffected by ambiguity in their day-to-day operations.

5.3.2 The two teams that reported to be influenced by ambiguity exhibited contrasting verbal interaction patterns

Although two teams reported to be influenced by ambiguity originating from similar phenomena, they exhibited contrasting verbal interaction patterns during meetings. Team 2 exhibited the lowest I/A ratio of all teams observed, while team 3 exhibited the highest. This contrast may be partly explained by the two teams' choice of strategy for dealing with ambiguous situations (figure 4.11). While team 2 reported a strong sense of urgency and the desire to make quick decision, team 3 deliberatively explored many alternatives before choosing a position.

Coyle (2018) argues that groups generally follow one of two paths during disagreements and writes: *"Are we about appearing strong or about exploring the landscape together? Are we about winning interactions or about learning together?'. At moments of disagreements people either dig in and become defensive and start justifying and a lot of tension gets created. Or they say something like 'Hey, that's interesting. Why don't you agree? I might be wrong, and I'm curious and want to talk about it some more"* (p.161). This effect was evident when observing the meetings of the two teams. Members of team 2 seemed quick to "dig in" with their individual points of view, while members of team 3 seemed to endure prolonged explorative discussions before choosing a position.

Coyle (2018) goes on to explain that facing ambiguity with an inquiring discourse might be beneficial because it acknowledges bounded rationality and shows that team members are open to differing viewpoints. *"It's about sending a really clear signal that you have weaknesses, that you could use help. And if that behavior becomes a model for others, then you can set insecurities aside and get to work"* (Coyle, 2018, p.103). On the other hand, Coyle (2018) notes that in order to achieve a shared sense of vulnerability and psychological safety, groups must often endure feelings of unproductiveness as they allow for exploratory discussions despite already having reached a conclusion individually. Considering that NV teams are often affected by time pressure (Gilmore and Kasanjian, 1989; Reynolds and Miller, 1992; Ensley, Pearson and Pearce, 2003), enduring prolonged feelings of unproductiveness might be especially difficult. Hence, the observation that team 2 reported to be influenced by time pressure, while team 5 didn't, may partly explain why the two teams diverged in terms of verbal interactions when faced with ambiguity (Figure 5.4).

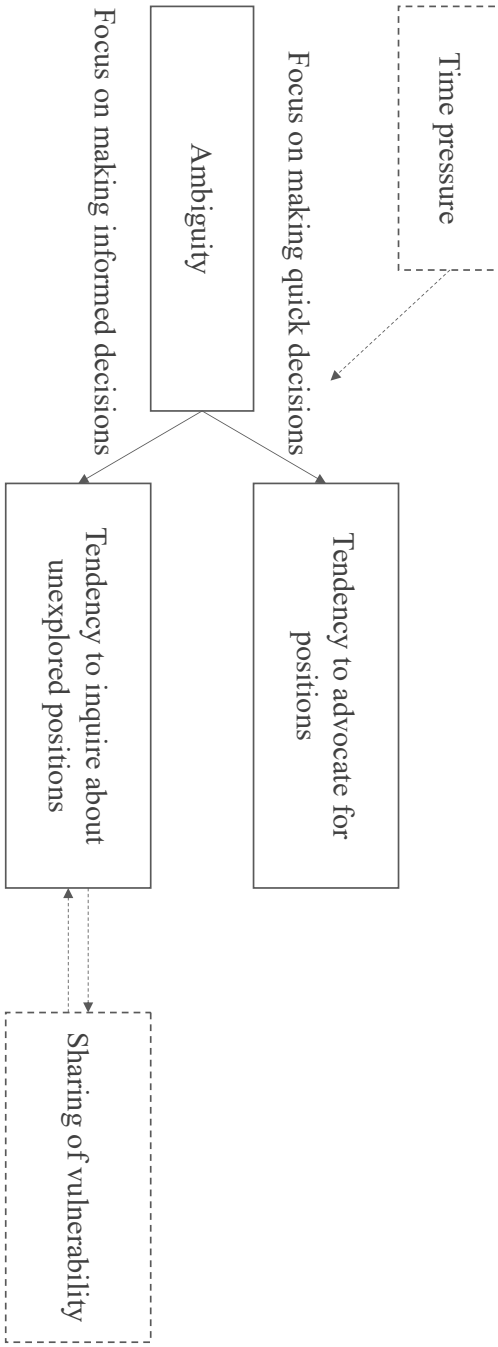

Figure 5.4: A proposed mechanism for how ambiguity yielded two contrasting interaction patterns in team 2 and 3.

5.3.3 Winning interactions or exploring landscapes; the possible effect of inquiry and advocacy on team learning

Argyris and Schön (1979), Senge (1990) as well as Losada (1999) theorize that groups will benefit from balancing the frequency of advocacy and inquiry during discussions. However, Thompson (1993) argues that teams could benefit from offsetting this balance towards inquiry, as high frequencies of advocacy may cause teams to spend excessive amounts of time defending existing positions rather than exploring new ones. Likewise, Purser, Pasmore and Tentaki (1992) argue that effective use of inquiry is an enabler for effective team learning. Studying two product development teams, the researchers posit that high frequencies of inquiry accelerate team learning by exposing more team members to "the big picture" and allow for a more participative approach to decision making.

Being able to effectively handle ambiguity and absorbing knowledge quickly are arguably two of the most important qualities of NV teams (Loch, Solt and Bailey 2008; Chandler and Lyon, 2009). Thus, agreeing on a deliberate strategy to handle discussions relating to ambiguity might be beneficial for NVs. While time pressure that usually influence NV teams may make prolonged exploratory discussions challenging, theory suggests that "digging in" and justifying viewpoints too quickly may have detrimental effects on team learning processes.

6 CONCLUSION

Adopting a somewhat novel methodological approach, this work explored how data from interviews and observations may be used in tandem to investigate concepts relating to team dynamics. Investigating how contextual factors influence verbal interactions in new venture teams, we found that complementing interviews with qualitative and quantitative data from observations of team meetings nuanced findings and yielded a more multifaceted understanding of the topic. However, the novelty of this approaches meant that little previous work had described methods for combining the different datasets during analysis. In this study, interview data was treated as the primary source of information while observations from meetings were treated as complementary data. We promote critical investigation of our method and recognize that the research approach may be refined in the future.

By studying how contextual factors influence verbal interactions in new venture teams, we generated findings that may have practical implications. Carefully discussing three proposed mechanism of how financial resource constraint, risk, time-pressure and ambiguity seemed to affect verbal interactions within new venture teams, we provide insights that may allow managers to adopt tactics to appropriately face these influences. Developing these tactics and possible interventions was beyond the scope of this study. However, we provide some pointers below. Moreover, we propose future research to continue where we left of.

6.1 Addressing the research question

Findings regarding how contextual factor may influence verbal interaction in NV teams are summarized in table 6.1. This table provides the most plausible answer to this thesis' research question. We present our findings while being aware that they may not be generalizable based on a N = 5 (teams) sample size. To reiterate, we present the research question below:

RQ: *How do contextual factors specific to new ventures influence verbal interactions between members in new venture teams?*

In reviewing the qualitative interviews, transcripts from team meetings, and coded verbal interactions from said meetings, a range of observations highlighted the connection between contextual factors and verbal interactions (table 6.1). One general impression was that a given contextual factor's influence on verbal interactions within a team seemed to be contingent on the team's strategy for handling the relevant factor. For example, team 2 and team 5 were both influenced by ambiguity but responded very differently in moments of uncertainty. Whereas team 2 generally reacted to uncertainty with high amounts of advocacy, team 5 tended to be a lot more inquiring in their discourse. This indicates that even though different teams may be subject to a given external factor to a similar degree, the way in which this factor will influence team dynamics will be contingent on the teams' strategies for handling it. Similarly, several teams reported being subjected to time pressure. Only team 4 deliberately used this pressure as a motivational tool. By disregarding external cues and focusing on creating agreed upon milestones and deliverables internally, they managed to extract value from an otherwise conflict bearing factor. As becomes clear, developing coping strategies in the face of resource scarcity,

risk, time pressure or ambiguity, teams may deliberately influence the way these stressors affect their inner working.

Table 6.1: Key findings regarding the effect of contextual factor's influence on within-team verbal interactions from semi-structured interviews and observation of meetings of five NV teams.

Contextual factor		Influence on within-team verbal interactions
Resource scarcity	Financial resource scarcity	Seemed to cause members of team 2 and 3 to be more direct, critical and finicky in their interactions.
	Human resource scarcity	Team member's time constriction seemed to cause team members of team 1 to be gentler and more reticent in their interactions. This team exhibited the highest P/N ratio in the selection of five NV team meetings.
Risk	Fear of failure: Poor strategic decisions.	When poor strategic decisions were deemed the most probable cause of failure (team 2 and 3), perceived risk seemed to cause more criticism to occur.
	Fear of failure: Poor team cohesion.	When team dysfunction was deemed the most probable cause of failure (team 5), perceived risk seemed to cause gentler and more reticent interactions.
Time pressure	Exogenous	Exogenous time pressure was the most frequent cause of conflict in team 1, 2 and 3 seeing as it seemed to cause an uneven sense of urgency between product-focused and market-focused team members. Teams reporting to perceive high levels of exogenous time-pressure (1, 2 and 3) exhibited relatively high O/S ratios during meetings.
	Internally motivated	Collaboratively setting ambitious deadlines based on available internal resources was seen as a motivational factor in team 4. Adopting a highly introverted focus during the observed meeting, team 4 exhibited the lowest O/S ratio in the selection of five NV team meetings.
Ambiguity	Uncertainty about actions of an external party	Ambiguity was related to frequent use of advocacy in team 2. They also reported to focus on quickly converging on conclusions when faced with uncertainty. Team 5 was deliberate in exploring a range of positions when faced with new situations. They exhibited the highest I/A ratio in the selection.

Based on the findings summarized in table 6.1 and the discussion presented in section 5, we propose three mechanism for how contextual factors might influence verbal interactions in the observed teams (figures 6.1-6.3). Following the abductive research approach, we consider these mechanisms as representing our most plausible hypotheses of how the new venture context relates to verbal interactions in the studied new venture teams. Future research may want to design studies to specially test these initial findings.

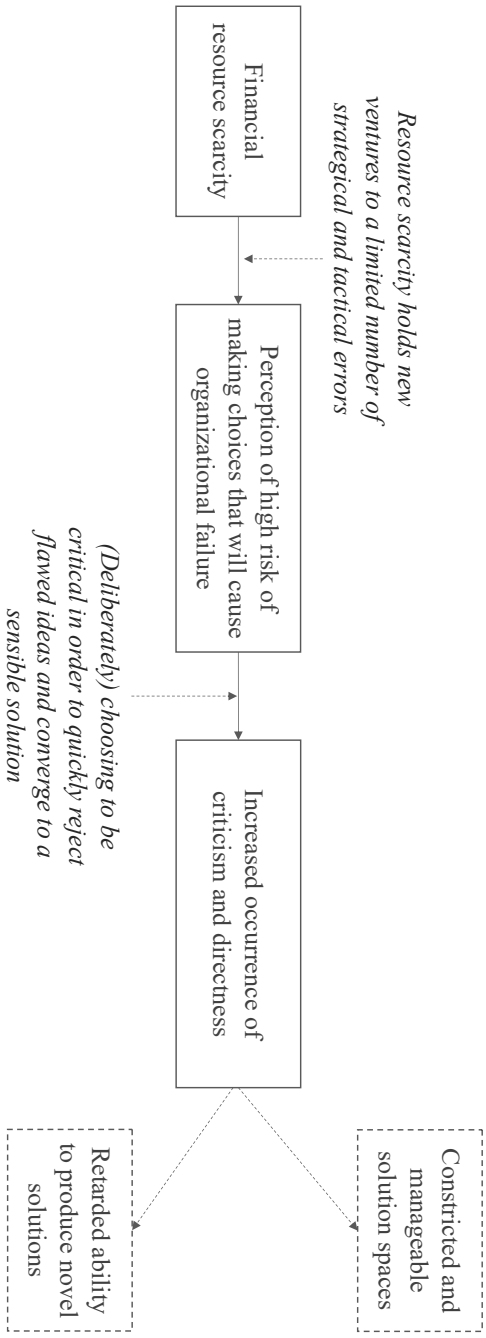

Figure 6.1: (Copy of figure 5.2) A proposed mechanism describing how financial resource scarcity and high risk of organizational failure increased occurrence of criticism and directness in team 2 and 3's internal communication.

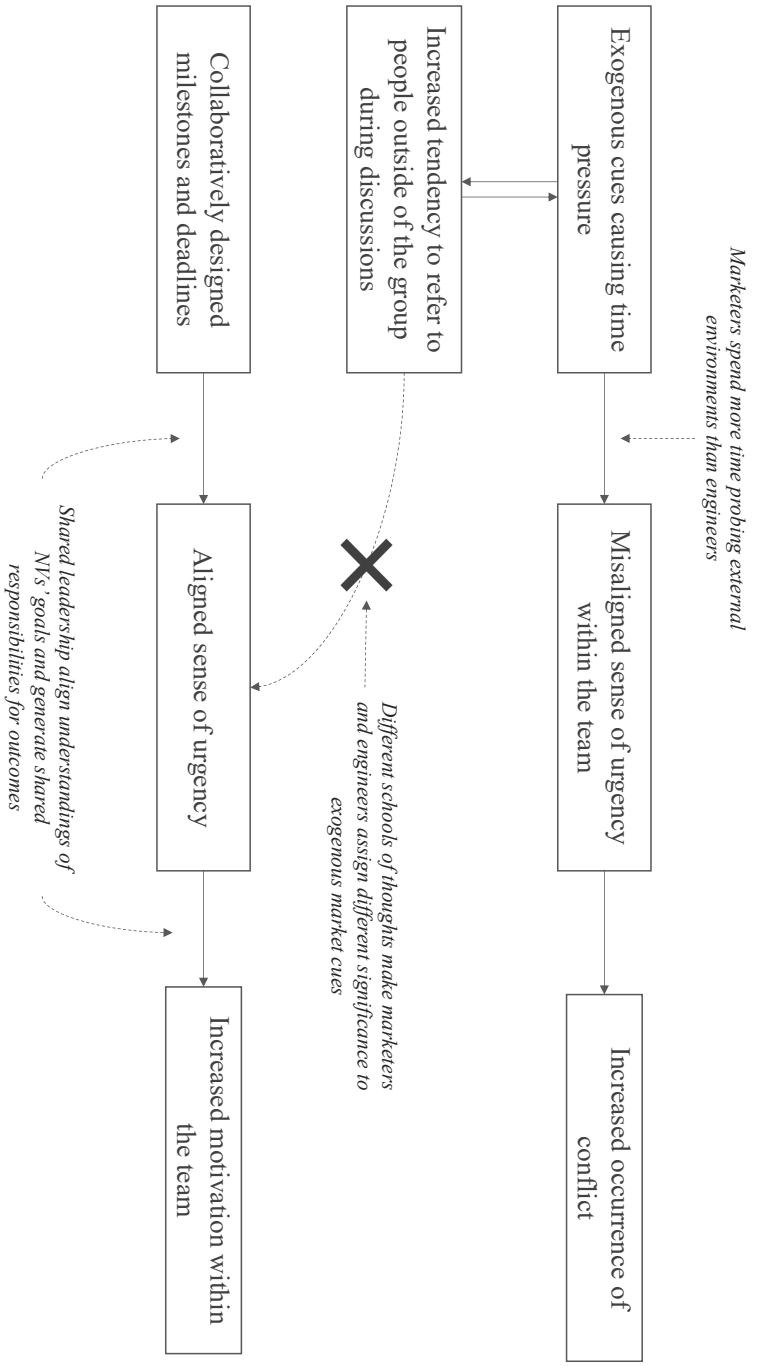

Figure 6.2: (Copy of figure 5.3) A proposed mechanism describing how exogenously, and internally motivated time pressure yielded two contrasting team-level outcomes in teams 1, 2, 3 and 4.

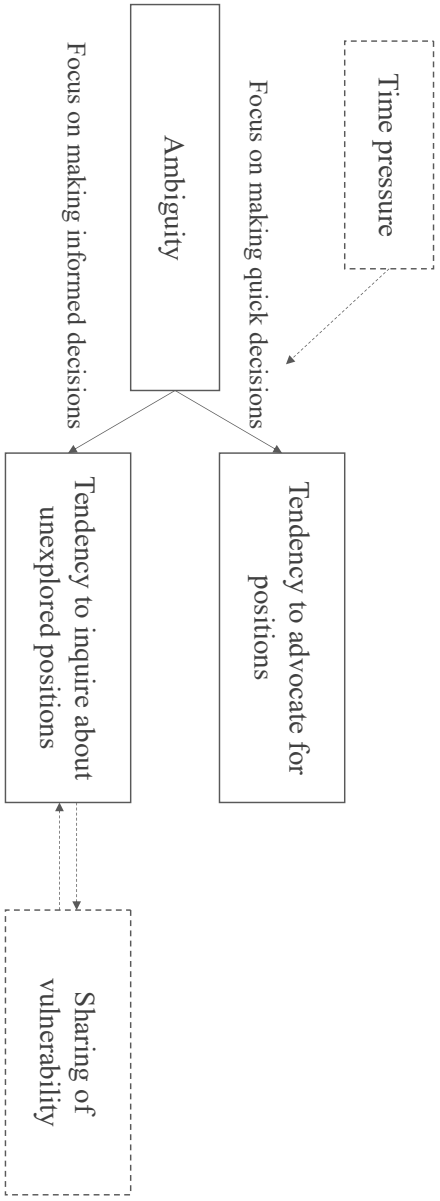

Figure 6.3: (Copy of figure 5.4) A proposed mechanism for how ambiguity yielded two contrasting interaction patterns in team 2 and 3.

6.2 Limitations and further research

Being limited by both time, experience and resources, this study probed a relatively small sample (N = 5 teams) at a singular point in time. The small sample size did not allow us to generalize the findings presented in this study. Thus, we suggest that further studies should aim to replicate and nuance or findings with larger samples.

Utilizing a larger sample size might also allow researcher to more fully utilize the potential advantages of the method adopted in this thesis. While descriptive statistics proved useful for complementing qualitative findings in this study, we propose that employing sample sizes large enough to merit the use of inferential statistics may help researchers to observe patterns that are not readily observed in descriptive statistics or qualitative data sets alone.

Other than probing larger samples, longitudinal studies might reveal insights not gained in this thesis. By studying teams over longer periods may uncover how exposure to contextual factors as well as their effect on teams changes with time. For example, in teams that recently have secured private funding, perceived resource constraints may disappear and be replaced by another form for stressor. Knowing which stressors are likely to appear on the horizon, managers can prepare their teams for and handle the specific challenges that occur at different stages of a new venture's life cycle. Recently, Diakanastasi et al. (2018) have spearheaded qualitative longitudinal studies of how various situational factors impact early phase new ventures in incubator environments. They identify factors important to new venture team dynamics and show that they are of varying relevance according to the "phase" a new venture is in.

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Appendix

Appendix A – Interview guide

Introduksjon (5 - 10 minutter)

- Kan du fortelle litt om deg selv?
    - Alder?
    - Studiefelt og/eller tidligere utdanning?
    - Din rolle i selskapet?

- Kan du introdusere meg til deres selskap?
    - Hvem er dere?
    - Hva gjør dere (produkt/tjeneste)?
    - Hvorfor startet dere selskapet?
    - Hvor lenge har dere holdt på?
    - Hvor mange er dere på teamet?
    - Hva er status nå (funding, salg, milepæler)?

Hoveddel (30 – 40) minutter

Om oppstartsselskap og konteksten oppstartselskaper opererer i/påvirket av.

- Når jeg sier oppstartselskap, hva tenker du da?
    - *Følg opp med å spørre om hvorfor de mener dette*
- Kan du fortelle meg om hva du mener kjennetegner konteksten til oppstartselskap?
    - *Følg opp med spørsmål som belyser kjennetegn som blir nevnt*

- Hvordan tror du det er å jobbe i et team i et oppstartsselskap kontra et team i en etablert større bedrift?
- Er det noen spesielt som kjennetegner et team i et oppstartsselskap?
    - *Følg opp med spørsmål som belyser kjennetegn som blir nevnt*

Om team og team dynamikk

(*gi en kort introduksjon til hva vi mener med team dynamikk før spørsmål stilles*)

- Hvordan vil du beskrive måten dere omgås på i teamet?
- Vil du fortelle litt om samhold i teamet deres?
    - *Spør hvorfor de har/ikke har dette samholdet og om kjennetegn*
- Har dere opplevd noen interne uenigheter eller krangler i teamet?
    - *Følg opp med å spørre om hva som kjennetegnet evt krangler / uenigheter.*
- Hvordan tror du måten dere omgås på I teamet kan påvirke effektivitet og produktivitet?
- Tror du deres samhold og måten dere omgås på har endret seg i takt med hvor godt kjent dere er blitt?

Om kommunikasjon (verbale interaksjoner) i team

- Hvordan opplever du at kommunikasjonen er i teamet deres?
    - *I lys av positive og negative interaksjoner*
    - *I lys av fokus på eksterne og interne resurser og mennesker*
    - *I lys av mengden folk forsvarer meninger eller søker nye perspektiver/stiller spørsmål.*

- Hvorfor tror du det er slik?
- Tror du det er en sammenheng mellom måten dere kommuniserer på og deres team dynamikk?
    - *Følg opp med spørsmål om hvorfor han/hun mener dette*
- Tror du måten dere kommuniserer på kan påvirke deres konfliktnivå men også motivasjon?
    - *Følg opp med spørsmål om hvordan dette påvirker/ikke påvirker?*
    - *Følg opp med spørsmål om kommunikasjon kan påvirke andre elementer ved team samhold og dynamikk.*
- Tror du at kommunikasjonen i deres team kan bli påvirket av den konteksten dere er i (typisk for oppstartsselskap)?
    - *Følg opp med spørsmål om hvorfor det er slik og hva som blir påvirket av hvilke kontekstuelle faktorer*

Avsluttende spørsmål

- Har du noe annet å legge til angående;
    - det å være et oppstartselskap?
    - teamarbeid og team dynamikk?
    - kommunikasjon i team?