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„Team Faultlines in Start-Ups: Innovation, Conflict, and Communication Under Condition of Existing Subgroups“

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1. Introduction

Having organizations perform successfully without too many conflicts is a complex, almost impossible seeming task. Creating such organizations from scratch, even sounds more unlikely. Humans are social beings. With that come along an unlimited amount of possible differences and distinctions to one another leading into potential conflict. People don't like to interact in groups of too great a size (James, 1951). They rather only interact with a few people at all times. Nevertheless, they strive to be part of an overarching group of people sharing a similar identity (Brewer, 1991). Not the same identity, exactly, as they also need to feel a certain form of distinction from their peers (Brewer, 1991). People also rather enjoy to interact with people on a similar socio-economic level of power (Sidanius & Pratto, 1999). When there is too much difference in perceived status, individuals tend to refrain from too frequent interactions. Furthermore, in the pursuit of facilitating information flow, individuals often rely on specific key words or technical language, for which they need others of similar knowledge backgrounds to understand them. Given the differences individuals are facing towards each other, the literature distinguishes between three major characteristics people use in dividing themselves by.

Based on either identity, power or access to resource, and knowledge or information. These characteristic typically lead to people forming subgroups within an overarching group of individuals (Carton & Cummings, 2012). Since people prefer to be part of small groups, sub-groups usually have the size of two to five people (Levine, Moreland, & Ryan, 1998). This is not a rigid distribution of individuals. Given the variety of possible distinctions, individuals can be part of a multitude of subgroups within the same organization (Carton & Cummings, 2012).

All these and more peculiarities make it seem a wonder that people are able to interact with one another, especially newly acquainted people, at all. Trying to align those people into the same business organization to pursue the same economic goal seems impossible. However, this is what people are constantly doing. Entering entrepreneurship even means to set up a whole new organization without pre-existing rules or communication procedures.

Start-ups are typically founded by people that share some sort of prior experience (e.g. family, friends, co-workers). But from now and then, complete strangers might cross paths and found a business

together, solely based on some specific shared interest or background. The same as any other organization, start-up ventures are faced with emerging subgroup within the organization. As start-up companies are typically faced with increased uncertainties in turbulent environment, considering potential subgroups emergence prior to founding or extending the organization might be a topic to spend time thinking about.

As, typically, multiple individuals are part of a start-up company, risk of conflict is always present.

Conflict in organizations is typically differentiated between personal conflict and task conflict.

Whereas personal conflict describes conflict occurring between several individuals solely based upon interpersonal differences independent from the business requirements, task conflict describes types of conflict precisely about business relevant topics (Humphrey, Aime, Cushenbery, Hill, & Fairchild, 2017). Research in these fields has been conducted extensively over the past decades, providing valuable insights on the preconditions and effects of conflicts in business organizations. Personal conflict exclusively leads to negative outcomes (Li & Hambrick, 2005). When personal conflict occurs, people lose trust towards each other, experience lower satisfaction, are more stressed, and likely to take part in further conflicts (Tajfel & Turner, 1986; Jehn, 1995). This is true even for individuals not being part of the conflict. Personal conflict affects the whole team negatively (Jehn, 1995). Task conflict, in many cases, also leads to negative outcomes as task conflict holds the risk of creating personal conflict between the participants (Humphrey et al, 2017). The major difference, however, is that task conflict also holds the potential of creating positive outcomes (Ensley & Pearce, 2001; De Dreu, 2006; de Wit, Greer, & Jehn, 2012). Task conflict increases communication and information flow, opening up the vessel for increased consideration of the other person's perspective, potentially finding better solutions in decision-making processes (Jehn, 1995; Amason, 1996; Vanaelst, Clarysse, Wright, Lockett, Moray, & S'Jegers, 2006). In new venture teams, task conflict is positively associated with higher degree of innovation (Honoré, 2015).

Start-up companies are facing various obstacles on the path to success, or even survival. Having the right mix of individuals being part of the business to begin with might be the most essential issue to tackle. Start-ups need to produce good products or services. Best they be innovative and attract great

interest in them. To achieve this, the venture needs to be able to create and implement unique ideas no other company can easily imitate. All this is achieved by having the right people working together in a fitting organizational setup. Subgroups and the possible emergence within the business organization is, hence, an extremely important, yet, under-researched topic for the success of start-up ventures. This thesis aims to shed light to and point out the possible impact of the types of subgroups emerging on start-up companies in the DACH region.

2. Theoretical Background

2.1. Start-Up Companies

2.1.1. Founding Team

Founding a new company is a difficult endeavor. It entails various decisions to be made beforehand, in order to give the venture a chance of survival and success. One aspect often overlooked or not attributed sufficient relevance is the importance of the founding team. The founding team is responsible for the early composition of the company and business processes, the business strategy, and the organizational culture (Beckman, 2006; Eesley, Hsu, & Roberts, 2014).

These variables can have long lasting effects on the company even long after the founding team withdrew from the company (Eisenhardt & Schoonhoven, 1990; Beckman & Burton, 2008).

However, most founders don't consider the long-lasting impact of the founding team and, hence, many companies are founded by people coming from a shared social circle, often friends and family (Klotz, Hmieleski, Bradley, & Busenitz, 2014). Shared demographic plays a vital role in company creation. Founding teams composed of same gender members are up to five times more likely than would be expected. Shared ethnicity leads to an even higher factor (Wasserman, 2012).

A shared common background does show benefits in certain circumstances, especially for the early periods of a new venture. In the beginning of a project, ease of communication is an important indicator for speed of the organizational setup and growth of the company. People with shared backgrounds are likely to have shared common identity, similar values and beliefs, a shared common language, and shared social interaction processes leading to common understanding and facilitated communication and integration between team members (Beckman, Burton, & O'Reilly, 2007; Katz, 1982).

Nevertheless, there is a stark difference on venture performance between a founding team consisting of family members, prior work colleagues, or even strangers (Wasserman, 2012).

Past research suggests, founding teams with socially close ties, like family members or good friends, are less stable than any other team compositions. Even groups of complete strangers appear to lead to

a more successful start-up performance in the medium to long run. The sweet spot in social closeness for start-up performance, however, seems to be a team comprised of former co-workers (Wasserman, 2012).

Co-founders with prior shared work experience may, like family and friends, benefit from a shared common background. They will likely share a common language and show facilitated communication flow, which makes the initial decision-making processes regarding the venture easier. Whereas a group of strangers would need to put socio-emotional effort into the group in order to establish social interaction norms, former co-workers most probably have these systems already in place (Agarwal, Campbell, Franco, & Ganco, 2016). People with prior shared work experience also share tacit knowledge. The common knowledge effect, furthermore, leads to more extensive communication, especially about shared knowledge (Stasser, Taylor, & Hanna, 1989).

That does not mean, however, that existing work teams within companies should as a whole spin-out and start a new venture. The variety of work experiences of the individual co-founders also matters.

Although co-workers don't have the disadvantages of being too close to each other, like family members, they do share similar pitfalls when all having the same prior work experience. One of them being that co-founders with the same prior work experience often pursue an exploitation strategy with their start-up (Beckman, 2006). These teams take with them many of the organizational processes of their prior employer. Hence, they end up imitating their strategies (Fern, Cardinal, & O'Neill, 2012).

On the contrary, co-founders with only partly shared prior work experiences but a great variety of other work experiences in the individual founding members are more likely to pursue an exploration strategy (Beckman, 2006). They tend to induce all kinds of knowledge and experience acquired in their career into the new venture. As already theorized fifty years ago by Granovetter, and since been empirically acknowledged, weak ties are more important for the introduction of new knowledge and information into a group discussion. Sharing knowledge is a key measure on group performance (Stasser & Stewart, 1992). However, groups often tend to fall back on shared knowledge (Stasser, Titus, & Wittenbaum, 1995). Group discussions are usually dominated by shared knowledge. Thus, members of a group regularly fail to pool all available information of the group, leaving potentially

important and beneficial unshared knowledge, knowledge that not all group members possess but is only held by certain individuals, behind and undiscussed (Stasser et al, 1995). As a consequence, group decision-making processes often end in confirmation of pre-existing consensus and perpetuation of pre-existing biases (Stasser & Titus, 1985). Co-founders with same prior work experience usually share a majority of knowledge and information. The optimal solution to a task problem might not be available to such a group, as their discussions typically revolve around the already pre-existing knowledge on the group level. Even if an individual of that group might possess superior knowledge to a given task problem, they might not be able to retrieve or reveal it, as the social interaction norms prohibit them from recalling or disclosing that memory (Davis, 1973). As a result, a founding team comprised of a spin-out team might likely be tempted to pursue an exploitation strategy, due to the vast knowledge overlaps. Moreover, the already established communication norms of that team repress potentially worthwhile discussions and leave superior ideas unrevealed.

Co-founders with higher degree of work experience variety are less likely to share the majority of knowledge and information. For this reason, it is easier for individuals in group discussions to propose new ideas and introduce new knowledge to the group. Discussions are less likely revolving around shared knowledge, more information can be integrated into the group, and a superior decision alternative might be discovered during group discussion processes (Stasser & Stewart, 1992). This leads to the pursuit of an exploration strategy, thus, to greater decision-making outcomes and an overall higher start-up performance and growth rate, compared to other team compositions (Eisenhardt & Schoonhoven, 1990; Beckman, 2006). Due to the lack of in-place communication norms and patterns, individuals are more likely to be motivated to share unique ideas and evoke a lively discussion. In precisely such discussions the founding team might discover stellar ideas or agree to explore new territories, separate from their preconceived workflows of past work experience, leading to the pursuit of an exploration strategy and, ultimately, a higher, overall start-up performance. Some papers suggest that socially strong ties, like family and friends, can play an important role in providing comfort and trust in periods of change and uncertainty (Krackhardt, 1992). Such an environment, in fact, is the case for new business ventures. This would conclude that having friends

being part of the founding team of a company would be more beneficial than having socially more distant co-founders. Although there needs to be a certain degree of social closeness in an entrepreneurial team in order for the venture to be successful (Leyden, Link, & Siegel, 2014), it should not be the dominating factor for the team to assemble. The impact of pursuing an exploration strategy rather than an exploitation strategy outweighs the social security aspect and fosters venture performance.

2.1.2. Top Management Teams

The founding team's decision-making, at the beginning of the venture as well as during the operation well after venture establishment, shape the direction of the company like nothing else. The decisions made may likely path the way for the venture to either success or failure. Decisions made by a team can often not be traced back to a single team member or thought process. There are numerous variables at play, influencing the outcome. One key variable influencing the outcome of a new business venture is the composition of the top management team. Top management teams often take important decisions jointly, which will be affected by the characteristics of the top management team members (Hambrick & Mason, 1984). The members composing the top management team, in turn, are very much dependent on the founding team's prior functional experiences (Beckman & Burton, 2008). Beckman and Burton found that broadly experienced founders are more likely to attract broadly experienced executive staff for their venture than narrowly experienced founders. This is in line with findings of other authors in this field. Ensley and Hmieleski (2005) found that top management team composition in science-based start-ups is rather homogenous while Clarysse & Moray (2004) found that engineers tend to hire other engineers, which underscores the inclination of narrowly experienced founders to hire people with similarly narrow experiences. For start-up ventures founded by teams, however, the individual founding members' difference in experiences could aid in attracting more broadly experienced employees. Larger and more heterogeneous founding teams are better at attracting experienced employees to their venture, even when no founding team members possesses prior knowledge of the industry they are founding in (Honoré & Ganco, 2020). Furthermore, such founding teams will implement full functional structures sooner (Beckman & Burton, 2008), laying

out a clear organizational structure making it easier to hire functional personnel in the future. Greater founder heterogeneity, also, leads to greater top management team heterogeneity. Top management team heterogeneity increases the available information and perspective, which leads to a decrease in groupthink (Hambrick & Mason, 1984). Due to knowledge differences as well as differences in character of individuals, heterogeneity is, furthermore, better suited for non-routine problem solving (Hambrick & Mason, 1984), especially in uncertain environments like the one experienced by a start-up venture (Chowdhury, 2005). Additionally, top management team heterogeneity increases strategic consensus as well as the inclination to strategic change when needed (Forbes, Borchert, Zellmer-Bruhn, & Sapienza, 2006). This, in turn, increases the likelihood of pursuing an exploration strategy (Beckman, 2006) rather than an exploitation strategy. For creating a successful venture it is not sufficient, however, to merely assemble a heterogeneous team. The individual team members need to know about each other's expertise and how to utilize it efficiently (Rulke & Galaskiewicz, 2000). A team needs a social dimension in which it comfortably operates for it to show great performance (Leyden et al, 2014). Increased heterogeneity always leads to increased risk of cognitive and interpersonal conflict (Amason, 1996). Homogeneity, on the other hand, facilitates communication due to shared background and a common language (Wasserman, 2012), leading to less conflict.

2.1.3. Strategy & Innovation

The strategy pursued to generate profit and be financially successful is individual for every business organization. For new ventures, in particular, the strategy might need to be changed frequently due to the uncertain environment the venture is operating in (Cooper, Patel, & Thatcher, 2014). Encapsulating it, start-up ventures may choose from two general outlines of strategy. Either to invent something novel and to advance into unknown market territory with their innovation or to rely on existing knowledge and create a product or service to fulfill the needs of an already existing market. These strategies are called exploration or exploitation, respectively (Beckman, 2006).

Pursuing an exploration strategy is associated with a tremendous amount of risk and increased chance

of failure. If successful, however, it is more likely to bring about enormous profits for the company. Following an exploitation strategy is a more secure form of entering entrepreneurship as the goal is not to invent anything new or change people's habits but to offer a product similar to an existing one and to feed already satisfied needs. An exploitation strategy, hence, is lacking any true innovation (Fern et al, 2012). Interestingly, most start-up ventures pursue exploitation (Dencker, Gruber, & Shah, 2008), even if the existing knowledge within the founding team does not allow for high quality decision-making (Fern et al, 2012).

Following either explorative or exploitative behavior might depend heavily on shared prior experience of founding members (Beckman, 2006). Founding members that have rather close ties to each other tend to pursue exploitation while founding teams composed of strangers or weakly tied acquaintances are more likely to pursue exploration. Hence, oftentimes ventures pursuing exploitation are made up of individuals already having existing communication patterns and shared mental models towards each other in place (Lim, Busenitz, & Chidambaram, 2013). This allows for faster growth and shorter time to market with their products or services compared to ventures following an exploration strategy (Wasserman, 2012). Pursuing exploration, as a result creating a much more innovative product, leads to greater financial success, in scenario of venture survival.

The success of a start-up venture does not rely upon the pursued strategy but rather on the team members' ability to coordinate and implement effective action (Ensley, Pearson, & Amason, 2002), regardless of the creativity or degree of innovation that is being implemented. However, innovative behavior is effecting knowledge transfer and potentially disrupts of communication patterns in teams (Chandler, Honig, & Wiklung, 2005) leading to increased coordination. Thus, the level of innovation in a start-up venture is a possible predictor of venture success.

2.1.4. Team Conflict

Start-up entrepreneurs would probably think that they are better off not having any conflict arising within the venture. Best everyone gets along and does their job so the venture will become a great success. It's true, conflict is associated with an array of negative consequences like behavioral disintegration, bad performance, lack of innovation, reduction of information exchange and

communication, lower satisfaction, and employee turnover (Li & Hambrick, 2005; De Dreu, 2006; Humphrey et al, 2017; Vanaelst et al, 2006). Although it depends on the type of conflict and the context it occurs in, current literature is indicating that some type of conflict might actually even be necessary for innovation to originate which, thus, could lead to stronger venture performance (e.g. Ensley & Pearce, 2001; Honoré, 2015; Amason, 1996; Jehn, 1995; de Wit et al, 2012).

Conflict within teams can have various shapes and forms. For business ventures there is typically a distinction between cognitive or task conflict and interpersonal or relationship conflict (Jehn, 1995).

Relationship conflict describes the type of conflict emerging solely due to personal differences. Person

A does not like Person B because of differences in personal characteristics. Interpersonal dislike is often based upon demographic dissimilarities (e.g. age, ethnicity, believe). As Byrne (1971) pointed out with his similarity-attraction paradigm, people are drawn to others similar to themselves and tend to avoid, distrust, and dislike dissimilar individuals. Relationship conflict almost always leads to

negative outcomes and easily affects the whole team (Humphrey et al., 2017). If members of a team are experiencing interpersonal conflict it is likely leading to decreased communication (Humphrey et al, 2017). With less communication potentially important information may not be shared throughout

the team, causing the whole team performance to suffer (Li & Hambrick, 2005). Especially in highly dynamic environments most start-up companies find themselves in rigorous information flow and processing is necessary for all team members to be up the latest tasks and challenges. Only when

information is shared openly and constantly the entrepreneurial team has the ability to utilize all knowledge effectively and transcend the individual cognitive facilities (Knockaert, Ucbasaran, Wright, & Clarysse, 2011). Better information flow leads to the venture having a greater probability of creating a successful innovation (Leyden et al., 2014). Furthermore, teams where relationship conflict arises show poorer member satisfaction due to permanent friction within the team (Vanaelst et al., 2006).

Friction within a team can lead to lower team cohesion and, eventually, even member exit (Vanaelst et al., 2006). Low cohesion and turnover have negative effects on all work teams, but it's even more detrimental for start-up teams. Whereas mature companies already have established structures and processes in place as well as long-time employees that have the ability to cover tasks of other staff

members, for start-up ventures this is less likely the case. As Leyden et al. (2014) pointed out, entrepreneurship needs to have a social dimension in order to increase the probability of venture success, lower team cohesion and employee turnover are directly harming the social dimension of the team. Especially early turnover can cost the start-up valuable resources. As start-up teams are usually of a smaller size, every individual's resource capabilities are important for venture success. Having a team member leaving and the need to replace them means, firstly, losing a valuable resource, secondly, lowering overall team capabilities due to a missing member for a period of time, and thirdly, draining resources from other individuals, most likely the founders, due to the need of looking for new qualified personnel to add to the team. Too much interpersonal friction can mean the end of a venture due to drained resources. While some friction may never be avoided, entrepreneurs should have a close eye on their team dynamics. Interpersonal conflict in teams over five are most likely lead to, potentially harmful, fragmentation into identity-based subgroups (Carton & Cummings, 2012).

Task conflict describes the type of conflict emerging due to differences multiple individuals experiencing whilst engaging in shared work processes. Person A does not like Person B because of the way they are approaching a certain task or how they behave during information exchange or team discussions while working on the task. The individuals might get along just fine interpersonally, but their different working styles is leading to the emergence of conflict (Pelled & Adler, 1994). Contrary to relationship conflict, the impact of task conflict is not so obvious. While some researchers found negative effects for task conflict like hindrance of innovation when there is too much conflict (De Dreu, 2006), some found no effects in their studies (Li & Hambrick, 2005), and others even found positive effects of task conflict, depending on the degree, context, and situation the conflict is arising in (Ensley & Pearce, 2001; Vanaelst et al., 2006; de Wit et al, 2012). One of the prerequisites of positive outcome for task conflicts is the team's capability to utilize the knowledge resources generated by the task conflict (Xie, Wang, & Luan, 2014). Task conflict in teams leads to various different opinions, information, ideas, and solutions for a given problem emerging in the individual team members. These knowledge differences need to be integrated in the team in order to have the ability to profit from them. Moreover, knowledge integration is necessary to take a shared decision and resolve

the task conflict. If there is no or little knowledge integration, the individuals will not be able to find a mutual decision and leave the conflict with their preferred choices in mind unresolved and risk future relationship conflict due to the unresolved disagreements. Although task conflict is required to bring forth the best solution in group decision-making processes through an elaborate team discussion pooling all available knowledge in order to find the superior decision (Stasser & Steward, 1992), there should not be too much of it within a team. De Dreu (2006) found that teams experiencing too much task conflict are effectively hindered by it and show lower innovation levels. Lower innovation levels in start-up ventures, ultimately, leads to lower probability of success. At moderate levels of task conflict the team is better suited to learn from the individual member experiences like organizational routines (Honoré, 2015). Furthermore, the team prevents premature consensus and stimulates critical thinking, leading to more constructive discussions and decision-making outcomes (Jehn, 1995; Amason, 1996). Ultimately, task conflict is a necessary condition for successful venture performance.

2.2. Subgroups

People in business organizations are often times structured in work teams. Although certain tasks are best done individually, the person handling the task is, typically, integrated into a greater work team. The larger the team the more potential there is for friction between individual team members or fractions of several team members. If the team contains too many members with sufficient characteristic overlaps and distinctions between individuals, simultaneously, the team is facing the risk of fractioning into smaller subgroups (Lau & Murnighan, 1998). Since people prefer to work in groups with two to three members (Levine, Moreland, & Ryan, 1998), disintegration of teams into smaller fractions arises rather easily. John James (1951) already found decades ago that groups smaller than six people are more manageable. Groups larger than six have negative effects on individual member satisfaction and also lead to decreased member interaction as well as coordination problems, drastically increasing the risk of subgroup fragmentation (Carton & Cummings, 2012). Subgroups form by similar individuals, individuals who share significant characteristic with other individuals of the same subgroup, binding them together (Carton & Cummings, 2012). Subgroups usually emerge

along so called faultlines (Lau & Murnighan, 1998). Faultlines are theoretical trenches between groups of people. The more dissimilar a group of like people is compared to another group of like people, the greater the potential faultline between the two subgroups.

Subgroups can emerge on various faultlines. The management literature focuses on three of these ways, explaining certain team dynamics in work organizations, namely identity-based faultlines, resource-based faultlines, and knowledge-based faultlines (Carton & Cummings, 2012).

Identity-based faultlines occur when the subgroups are divided by demographic characteristics. Especially looked at in the literature are attributes like age, sex and ethnicity (Tajfel & Turner, 1986). These characteristics allow for a relatively easy examination. Furthermore, they are a strong measure for potential faultlines as people like to associate with people similar to themselves and try to avoid engaging with dissimilar individuals (Byrne, 1971). These circumstances facilitate the emergence of identity-based subgroups in teams.

Resource-based faultlines occur when the subgroups are divided by characteristics related to power and status. In particular, differences between individuals in the ability to access resources is a key focus point of past research (Sidanius & Pratto, 1999). This type of faultline is more difficult to assess in work teams than the previously mentioned identity-based faultlines, for example. Power and status differences in work teams usually emerge over various layers in organizational hierarchy. It's easy to see how the CEO of a company has more power, hence a greater ability to access resources within the company, than a low level employee of a given department. Nonetheless, such differences, although less frequently and of minor scale, may also occur in a given work team on the same hierarchical level. The last of the three subgroup types, knowledge-based faultlines, occurs when the subgroups are divided by characteristics related to information and information processing (Galbraith, 1974).

Typically, this form of subgroup emerges due to professional interdependencies like working in the same department of a work organization. Characteristics facilitating knowledge-based faultlines are shared technical language, similar task routines, and the same field of expertise.

2.2.1. Identity-based Subgroups

Human beings as all social animals like to be part of a group. One way to affiliate oneself with a group is by discriminating based on identity or social identity within a society (Stets & Burke, 2000).

Identity theory ascribes every individual a role they hold in a given society. Every role entails responsibilities and tasks to fulfill. Acceptance and trust of other individuals within that society is generated through successful exchange. The people taking part in the exchange have expectations of the other person. When these expectations are fulfilled, the respective parties acknowledge each other and interpersonal trust increases (McCall & Simmons, 1978). In business organizations, the role typically would be the work position.

In social identity theory, people are part of the group solely based on certain characteristics, without any obligations or responsibilities attached to their position within the society. The characteristics relevant for in-group or out-group judgment are mostly of demographic nature. An individual is part of a certain group based on their ethnicity, their religious belief, their educational level (Tajfel & Turner, 1986). However, groups also form on other criteria, like support of a sports club or taste in a genre of music or artist. As already stated, in social identity settings the individual does not have to fulfill specific requirements to be accepted in the in-group. People are part of the group based on overarching similarities, no matter their roles. In real life identity and social identity theory overlap (Stets & Burke, 2000). An individual is part of one group no matter what and part of another based on them meeting their roles ascribed expectations. For both theories, nevertheless, people prefer to be in an in-group. They prefer to be accepted by other people. Human beings form their identities around and draw self-esteem from being part of a greater group (McCall & Simmons, 1978). They will adapt dominating characteristics of the group, e.g. becoming a supporter of a certain club, and increase efforts to fulfill their roles, e.g. work extra hours in a job to gain respect by their peers. Due to the energy invested into their group, they will automatically perceive other in-group members as more trustworthy, more competent, more likeable than other individuals not being part of that group. Individuals form a bias toward their group. In-group members are judged positively, whilst out-group members are judged negatively (Brewer, 1979; Stets & Burke, 2000).

These conditions are also relevant for business organizations. Employees who share demographic characteristics or certain interests, are more likely to form a bond with each other. Which brings along a plethora of advantages based on social identity similarities. But there are also possible disadvantages. In rather homogenous organizations in terms of social diversity the few present demographically distinct people may have a hard time in connecting with other people or being accepted into a group. In rather heterogeneous organizations in terms of social diversity, the organization faces the risk of fractioning in multiple subgroups based on demographic similarities.

Start-up organizations are often characterized by a sense of mutuality (Amason & Sapienza, 1997). Since there is no certainty in venture success or even mid-term venture survival, as funds might be drained more rapidly than anticipated when sales do not pick up or external investments are not being conducted as initially planned, members of a start-up organization often times try to stick together with by creating myths of sameness versus the turbulent external environment. This can lead to a sense of shared identity. This identity, however, is fragile. If the path to success becomes clouded, the initial individual identities take over again. As already outlined, new ventures are often founded by alike individuals (Clarysse & Moray, 2004; Beckman et al, 2007; Klotz et al, 2014). People tend to create a business with others they are already acquainted with. This, generally, leads to the founding teams being rather homogeneously set up. Additionally, individuals are drawn to alike people and have more favorable judgment of strangers when they share demographic similarities (Brewer, 1979). In turn, founding teams tend to hire individuals who are similar to themselves.

Interestingly, with research about the field of entrepreneurship advancing into broader media, young entrepreneurs actively try to set up more diverse start-ups from the beginning. Moreover, founding teams aware of potential benefits of workplace diversity might purposefully bring demographically dissimilar individuals onto the team of the venture organization. Due to that fact, new venture organizations might be set up of a rather homogenous founding team with in contrast rather dissimilar people being part the greater team, creating the potential for faultlines emerging, even in ventures of a low number of overall members.

As in every other social setting, conflict is bound to emerge in start-up organizations. In particular, the

turbulent environment and venture uncertainty brings along a great potential of conflicts of various sorts. Since the young enterprise might be confronted with a lot of stress on how to accelerate the product innovation and inward money flow, it would be beneficial if the majority of conflicts arising would be task related. Task related conflicts show potential of more increased information flow (Humphrey et al, 2017) leading to productive discussions and bringing forward optimal solutions in decision-making processes (De Dreu, 2006), and increases likelihood of strategic change (Vanaelst et al, 2006), in turn, promoting innovation (Amason, 1996). Furthermore, task conflict is positively associated with firm performance (Ensley & Pearce, 2001). Personal conflict, on the other hand, shows exclusively negative outcomes (De Dreu, 2006). It generally leads to a less satisfaction and more distress in the whole team, even in individuals who are not even part of the conflict (Jehn, 1995). Nevertheless, in settings of homogeneity in teams as well as in settings of identity-based subgroups being present, there is a greater risk of personal conflict to arise (Jehn, 1995; Li & Hambrick 2005). The author, hence, proposes hypothesis 1:

H1: Identity-based faultline strength in start-up management teams is positively associated with increased personal conflict

2.2.2. Resource-based Subgroups

Resource-based subgroups typically form along the lines of power. Especially on certain levels of hierarchies (Sidanius & Pratto, 1998). Hierarchies in organizations fulfill necessary functions of responsibility, coordination, and access to resources. The greater the span of an organization the more important a well-functioning hierarchy becomes in order to execute the organizational tasks efficiently. People tend to flock along hierarchical lines, as interaction with people on the same level of power is more easily conducted without any threat of one executing power over the other (Pratto, Sidanius, & Levin, 2006). Here the judgments of people lend parts of identity and social identity theory (Stets & Burke, 2000). Being on the same level of power facilitates interaction and a sense of similarity (Tiedens, Unzueta, & Young, 2007), but actual demographic similarity or functional role fulfillment

adds to the positive perception of other people (Hogg & Hardie, 1992).

As long as role expectations are fulfilled, within or across hierarchical levels, the more cooperative individuals are with each other (Burke & Tully, 1977). However, with decreasing organizational efficiency, organizational politics tend to increase. People with similar power within an organization tend to form alliances in order to trump a dominant individual or group. These political battles increase conflict, decrease open communication flow, and, hence, lead to poorer organizational performance (Eisenhardt & Bourgeois, 1988).

Considering social dominance theory by Pratto et al (2006) one may realize that people in business organizations tend to orient themselves along the lines of age and gender as functions of power. In almost every culture, a certain degree of power and influence is assigned to the age of members of society. It's often the elders of society, who have asymmetric influence of the direction of actions and outcomes of decisions. This holds true as well in business organizations. The higher the hierarchical level of an organization the higher the average age of the people tend to be.

But there exist also other indicators of power outside of age or gender, like ownership, organizational structure, or prestige (Finkelstein, 1992). These three indicators are especially relevant for start-up organizations. It's the start-up founders who typically possess the most power in their organization (Ucbasaran, Westhead, & Busenitz, 2003). This makes sense as they are the owners, they put themselves on top into the positions of the top management team, and usually they create some sort of intracompany folklore around their persona. In the early stages of the start-up when there are only few employees, open communication across hierarchical levels is easy. However, the greater the company becomes in terms of organizational members, the more restrictive cross-level interaction becomes, fostering the specific levels of the organizational hierarchy. This bears the threat of resource-based subgroups forming along the faultline of founding team vs. employees.

But power differences might not only be present based on the company's ownership. Even within the founding team differences of power might arise. Start-up ventures, having big corporations as role models, like setting up functional job distinctions making use of high title positions like CEO or CFO (Wasserman, 2012). Obviously, even young start-up companies with a small amount of members need

functional distinctions to know who is responsible for which tasks. However, assigned high title names fosters power differences. On paper, the CEO has the most power compared to the other functions (Mintzberg, 1983). Theoretically, this is also the case if the venture brings on an external CEO who does not possess legal ownership.

Furthermore, due to capital investment differences, the ownership of the company might not be shared equally but be distributed asymmetrically, putting certain individuals in greater financial risks and giving them more decision-making rights, based on ownership value. In particular situations, the start-up might have a silent investor. An individual providing capital and having ownership without them participating in the daily operations of the venture. This too is causing power differences amongst the founding team, as this person might want to be a part of the strategic positioning and profit sharing of the venture without actively contributing to its performance and success (Lim et al, 2013).

When looking at research about top management teams, one finds that, especially when it comes to strategic positioning and resource allocation, the company might be under the influence of plenty of interpersonal politics and power struggles (Mintzberg, 1983). There is no reason to believe that this would be any different for new venture businesses. With differences in perceived power individuals are holding within the venture, individuals might engage in coalition forming. Resource-based subgroups potentially emerge.

Since new ventures are often operating with heavily restricted resources, the strategic direction the company aligns itself towards is of outmost importance for venture success and survival. Members might have different viewpoints on the direction the company should focus on and power struggles might emerge. Given the high capital risk founding members are putting themselves under, they might be more inclined of overoptimistically clinging onto their viewpoints (Clarysse & Moray, 2004). This bears the risk of being too convinced about one's own idea and working style, drifting into micromanaging and, hence, a more autocratic communication style. Hypothesis 2 follows:

H2: Resource-based faultline strength in start-up management teams is positively associated with increased autocratic communication style.

2.2.3. Knowledge-based Subgroups

Individuals who share work experience or a similar educational background often learn and adapt task specific keywords or a technical language which eases communication and information flow with their peers (Knockeart et al, 2011). Often times this specific way of communication is almost non-decipherable to outside individuals. The arising faultline, hence, creates a knowledge-based subgroup. Due to the common background and understanding, such subgroups ultimately emerge in business organizations simply due to functional differentiation (Gibson & Vermeulen, 2003). Different specialized departments, e.g. Marketing, Finance, etc., will, eventually, be a knowledge-based subgroup inside the organization versus other functional departments. Sharing technical understanding and information allows a group to easily pull from each other's memories (Stasser et al, 1989). Each individual member does not need to handle all the information that accumulates over time within the group, but can rely on the other group member's memory of information (Wegner, 1987). Such so called Transactive Memory Systems, however, only function when the group has a constant flow of information. Due to the regular information flow each individual member knows at least some part or detail about a topic, even if they by themselves might not be able to retrieve the information completely. When addressing a certain topic, the group will initiate an exchange putting together their collective memory, iterate the memories and, eventually, come up with the full information. Another benefit of knowledge-based subgroups is that they are generally very quick with finding common grounds in decision-making situations due to the shared knowledge base (Stasser & Titus, 1985). For day to day quick ad-hoc decisions this is an efficient system as it saves time and needless discussions. Nevertheless, for more complex issues or strategic decisions to be made, the overlapping knowledge and information processing approach might be harmful for the organization. As the subgroup has a pool of shared information to pull data from, they will easily align on a decision relying on their common knowledge (Stasser & Titus, 1985). This, however, might leave behind more optimal solutions that would only arise in a single individual. Since discussion groups are usually dominated by common knowledge, the uncommon, better solution will either not be mentioned or not be taken into account by the other group members (Stasser & Stewart, 1992). Furthermore, teams

frequently discussing common knowledge will fail bringing forward novel, innovative ideas. Having too much knowledge overlap is harming innovation, thus, potentially harming the performance of a new business venture. For this reason, strategic decisions in organizations should be discussed by individuals or teams of different functional backgrounds, as to bring more viewpoints into the scenario.

As already outlined, more diverse viewpoints in discussions increase the possibility of task conflicts arising (Amason & Sapienza, 1997; Certo, 2006). Task conflicts create a unique chance of enhanced information flow across borders of understanding. It allows knowledge to spill over to other individuals and teams that did previously not possess this specific knowledge (Gibson & Vermeulen, 2003; Levin & Cross, 2004). It is, in particular, important for start-up ventures to gather as much information and knowledge as possible to make the best strategic decisions and to come up with novel, innovative ideas. Start-up companies are under great pressure to innovate and increase sales in order to survive and be successful in the market. A rather homogenous team might not bring forward fruitful innovation as the individuals bring forward and share pre-existing perspectives. Bringing different experiences and perspectives into discussion processes might allow for more unique ideas to emerge and uncover so called hidden profiles (Stasser & Stewart, 1992). Hidden profiles are the optimal solutions in decision-making processes that only reside in individual discussion members. For a start-up, a hidden profile could be a groundbreaking innovation. Since discussions are often dominated by common knowledge (Stasser & Titus, 1985), these unique items might not even be entered into the discussion round. Hence, it's fruitful to have more heterogeneous teams discuss certain topic.

However, solely setting up diverse discussion teams might not be the solution. Individuals are more likely to feel safe bringing unique ideas forward if they have the feeling of other people accepting of them being part of the discussion round (Edmondson, 1999; Levin & Cross, 2004). If an individual is a single stranger in a group discussion they might not engage at all, fearing risk of humiliation and ineffectiveness (Argote, Turner, & Fichman, 1989). Providing them with other, possibly alike, people they can feel safe expressing their ideas with, individuals are more likely to participate in group discussions. (Gibson & Vermeulen, 2003). Thus, a good setting for decision-making processes is to

bring teams in to participate. With focus on strategic decision-making processes and innovation, a company might invite teams from each department, multiple different knowledge-based subgroups, to participate. Knowledge-based subgroups have the valuable characteristic of seeking information from outside groups (Gibson & Vermeulen, 2003). Bringing two or more knowledge-based subgroups into discussion rounds might, hence, positively increase information flow and gathering of ideas, allowing for the best optimal strategic decision to be made. In the setting of a start-up venture, the procedure of having knowledge-based subgroups interact with each other in a productive manner, could be an important aspect of promoting innovation within a company. Since, especially, smaller start-ups do not have teams implemented yet, the knowledge overlap of the founding or management team is relevant. Neither completely similar nor dissimilar professional backgrounds in the team member's will allow for knowledge overlap and a sense of support for original ideas. Hypothesis 3, in turn, follows:

H3: Knowledge-based faultline strength in start-up management teams is positively associated with increased degree of innovation.

3. Method & Data

For this study primary and secondary data of start-up teams of the DACH region have been used. Primary data contains information about the start-up companies regarding founding, team specific processes, intra-team communication, and team conflict. The data was collected via ten to twenty minute long telephone interviews with one of the co-founders of the companies. The interviews were recorded, with permission of the interviewee which has been given at the start of the conversation, and later transcribed. All ventures have been founded within the last five years, allowing them to be considered a start-up based on their young age. Furthermore, all targeted companies were either listed in start-up hubs, mentioned in entrepreneurship magazines, or have received start-up specific funding of a governmental agency. Companies to be found in such sources typically share the use of new or advanced technologies, which allows for a general comparison of the companies and respective teams. All companies and interviewees remain anonymous throughout this paper. The interviews semi-loosely followed an interview guide, with which all relevant information for this study could be retrieved. The interview guide was structured in several categories containing various question for optimal gathering of information. Below you can see an example of how the interview guide was composed.

Founding of the venture:

- Did the founding members know each other before founding a company?
- From where did the founding members know each other?
- How close was the interpersonal relationship between the founding members?
- Did the founding members know the first employees before starting the hiring process?

The interview data later has been numerically categorized, in order to allow for a statistical analysis (Eesley et al, 2014). Degree of intimacy between the founding partners, for example, have been categorized on a scale from one to five. The value one describing no prior interpersonal relationship at founding, meaning strangers. The value five describing very intimate prior interpersonal relationship at founding like family, long-time friends, and romantic partners. Other variables might have a

different numbers range. E.g. the data consists of companies operating in three different industries.

Thus, the scale for industry is ranging from one to three.

Secondary data used in this paper consists of personal information of founding team members and top management team employees of the companies. An individual was considered a founding team member if they actively contributed to the company in the formation stage and held an equity in the company. Personal information entails primarily demographic variables (e.g. age and nationality), but also knowledge attributes like prior work experiences, industry knowledge and education. These information have been collected using publically available sources like the social network LinkedIn, company websites, news articles, and university websites. Professional background of the individual was assessed as the field in which the individual has the most experience in (Bantel & Jackson, 1989). Furthermore, work experience is considered as a source of knowledge. As shown in the literature, domain experience is strongly related to the development of knowledge (Baldwin et al, 1996)

The data is structured in two tables. One table consisting of all company related data like industry, venture size at founding, perceived degree of innovation, etc. The other table consisting of all personal data of the individuals like age, work experience, educational background, etc. The data of the tables have been merged during the analysis. The statistical analysis has been conducted using the relevant packages of the programming language R in the software RStudio.

The hypotheses have been tested via a multiple regression. Each hypotheses has their own model, independent and dependent variable. The control variables are identical for all models.

In the following, the author will provide definitions of all used variables. Some of them are fixed in their possible value like age or nationality. Some are calculated values based upon fixed variables.

Others are neither fixed nor calculated but which values rather are a weighted judgement of the author based on the available data.

3.1. Independent Variables

The independent variables used in the analysis are faultline strengths. These variables themselves are calculated in RStudio using the `asw.cluster` package in R by Meyer & Glenz, derived from Meyer &

Glenz (2013) and Bezrukova, Jehn, Zanutto, & Thatcher (2009). The faultline strength can be a value from zero to one. The value zero being no faultline present at all within a group. The value one describing ultimate faultlines within a group of individuals. To illustrate, the value zero would occur in teams containing of individual team members without any single characteristic or variable overlapping. The value one would occur if there are two or more factions of identical individuals that are not overlapping any characteristic or variable on an inter-faction level.

Team	Characteristic	Member A	Member B	Member C	Member D	Faultline Strength
1	Age	20	20	20	20	0
	Nationality	Austrian	Austrian	Austrian	Austrian	
	Sex	Male	Male	Male	Male	
2	Age	20	20	30	30	1
	Nationality	Austrian	Austrian	German	German	
	Sex	Male	Male	Female	Female	
3	Age	20	25	30	35	0.3
	Nationality	Austrian	Austrian	German	German	
	Sex	Male	Female	Male	Female	

Table 1: Faultline Strength in Different Team Settings

The independent variables used for this analysis are the three main subgroup types, identity-based subgroups, resource-based subgroups, and knowledge-based subgroups. In the following the characteristics and variables used to calculate the respective faultline strength will be outlined.

Identity-based faultline strength:

Age: The variable is giving the age of the individual.

Sex: The variable is stating the sex of the individual.

Nationality: The variable contains the nationality of the individual.

Knowledge-based faultline strength:

Educational background: The subject area was defined as the field in which the individual holds the most relevant degree. For example, a person who studied electrical engineering in their bachelor's and

master's will be categorized as an electrical engineer as well as an individual with the same degrees plus an additional PhD in philosophy. In such a scenario, the first two degrees were regarded as more relevant, also in comparison to other people for the purpose of identifying possible subgroups, than the highest earned degree.

Academic institution: In the scenario of various academic institutions for different degrees, the institution in which the highest degree was earned was chosen, unless there was a significantly shared institution with other company members in an institution in which a lower degree was earned that would lead to conclude that the shared institution might be relevant to the founding of the venture as well as in the formation of possible subgroups.

Prior Employer: The last employer with the longest occupation time during the last years was chosen, unless there was a significant overlap with other company members that would lead to conclude that the shared employer is relevant to the founding of the venture as well as in the formation of possible subgroups.

Current Position: The variable Current Position contains the area of expertise of the individual. This, for example, can be Marketing, Sales, IT, R&D, Engineering, etc.

Resource-based faultline strength:

Founder / Employee: The variable distinguishes the individuals between either being a founding member of the venture, assigned the value one, or being an employee, assigned the value zero.

Job Level: The variable describes the hierarchical level within the organization. It is categorized on a scale from one to four. One describes a non-operative member of a company, typically a silent investor. Four describes a member of the top management team.

Degree of command: It is categorized based upon the level of influence over other people's work. For the categorization it is relevant how many employees the company has as well as the position within the firm. The value is categorized on a scale from one to five. One describing virtually no degree of command over any employee of the company. Five describing virtually full degree of command over all company personnel.

Decision-making power: It is categorized based upon the influence on the strategic direction of the company of the individual. Relevant here for the categorization are whether the individual is a founding member, the percentage they hold of the company, and the position within the firm. The value is categorized on a scale from one to five. One describing virtually no decision-making power. Five describing full decision-making power over all company processes and strategic direction.

Possible conflict of degree of command and decision-making power:

As position within the firm is relevant for both variables, degree of command and decision-making power, one might suspect a certain overlap and, hence, conflict of analysis. This should not be an issue, however, as the position within the firm was used only as a mediator of the other factors. For example, an individual who is a founding member, holds relevant percentage of the company, and holds a high tier position, like CEO or CFO, will have a higher decision-making power than an individual who is also a founding member, holds the same percentage of the company, but holds a lower position, like Head of Software Development. In this scenario, the Head of Software Development might have a similar or even higher degree of command than the CFO, e.g., but a lower (strategic) decision-making power.

3.2. Dependent Variables

Innovation: The level of innovation is categorized based upon the technological advancement and patents, the quantity of competitors in the field, and the distinctiveness of the product or service. The value is categorized on a scale from one to five. One describing no innovation. Five describing advanced innovation. The level of innovation, thus, can be used to assess whether the venture is following an exploitation or exploration strategy, respectively.

Communication style: This variable is evaluated not exclusively by the answers provided to the interview questions but also consider the extent to which these questions have been answered. The value consists of the frequency of meetings, the self-assessed intensity of instructions given, the self-assessed level of cooperation between top management team and employees, and the degree of

responsibility employees are holding in comparison to the extent the top management team is taking decisions. The scale ranges from the value one, autocratic, meaning the top management team is giving all the instructions and employees are only there to fulfill assigned tasks to the value five, cooperative, meaning all company employees are contributing in every decision-making process and hold a high degree of responsibility and autonomy over their area.

Conflict type: This variable is categorized based upon information regarding conflicts, discussions, debates, and disagreements provided by the interview partner. Furthermore, member exit of the venture is considered in the evaluation of the value. Especially, early member exit of any employee is considered as slightly increasing the judgement of interpersonal conflict. Early exit of a founding member is considered as drastically increasing the judgement of interpersonal conflict. The value is categorized on a scale from one to five. One describing almost exclusively task conflict. Five describing almost exclusively interpersonal conflict.

3.3. Control Variables

Size at Founding: The value of the variable equals the size of the company at the time of venture founding as number of all individuals, founding members as well as employees, in case there already have been some.

Company Size: The value of the variable Company Size is the number of all individuals working for the start-up venture at the time of data collection.

Founder relations: With this variable the intimacy within the founding team is categorized. The scale is constructed from complete strangers, over short-time acquaintances, to co-workers, up to long-time friends and family. The latter having the most relational intimacy. The value is categorized on a scale from one to five. One describing no relational intimacy. Five describing intense relational intimacy as can be found in interpersonal relationships within families, long-term close friends, or romantic partners.

Founding Type: This variable distinguishes between a new venture founding and a spin-off of previously existing teams, either in an academic research setting or as a spin-off from a previous company.

Industry: The variable industry is used as to control for any industry-specific correlations or

dependencies. The data is categorized in three types of industry ranging from the number values one to three. On the low end of the scale the data is consolidated as engineering, containing every start-up handling with physical products. The median of the scale encompasses all new ventures working in the field of medicinal or biological technology. The distinction to engineering is made specifically on the judgement whether the product is dealing with or created for living matter or not. On the high end of the scale all ventures operating in IT are comprised. IT is containing all that is purely software and a product or service that is purely digital and does not involve any physical asset.

4. Results

4.1. Descriptive Statistics

Descriptive Statistics N: 44											
	Dem_ Faultline	Res_ Faultline	Inf_ Faultline	Innovation	Communic ation Style	Conflict Type	Industry	Company Size	Size at Founding	Founder Relations	Founding Type
Mean	0.55	0.75	0.27	3.00	3.36	2.77	2.16	13.23	3.95	3.00	1.25
Std.Dev	0.17	0.14	0.15	1.24	1.24	1.08	0.81	12.70	1.55	1.18	0.44
Min	0.17	0.45	0.00	1.00	1.00	1.00	1.00	4.00	2.00	1.00	1.00
Median	0.53	0.75	0.23	3.00	3.50	3.00	2.00	9.00	4.00	3.00	1.00
Max	0.86	1.00	0.60	5.00	5.00	5.00	3.00	70.00	8.00	5.00	2.00

Table 2: Descriptive Statistics

The sample consists of 44 start-up ventures of the DACH region of which sufficient information could be collected out of 180 ventures that were contacted. All ventures comprised in the sample have been founded by teams. Hence, minimum for Size at Founding is two. The biggest team at founding consisted of 8 members. The mean venture founding size is 3.95. The company size at data collection ranged from four to seventy people. Mean company size of the sample is 13.23, showing that the ventures will likely have multiple hierarchical layers and several possible subgroups forming within the companies. Variable Dem_Faultline, the identity-based faultline strength, is broadly distributed with a minimum of 0.17 and a maximum of 0.86. This shows that the sample consists of teams with weak faultlines as well as teams with strong faultlines. Variable Res-Faultline, the resource-based faultline strength, ranges from a minimum value of 0.45 to a maximum value of 1. This shows that there is no team in the data with weak resource-based faultlines and at least one with a maximum faultline. The value range means that within all assessed teams resource differences are apparent. There is no single team in which ability to use resources is of no constrain, which, is an adequate state for any start-up venture. The variable Inf_Faultline, the knowledge-based faultline strength, shows values ranging from 0 to 0.60. This shows that there is no team in the sample with strong faultlines based on their knowledge or information capabilities. Meaning, there is no single team in which there is strong faction of identical knowledge and experience in contrast to other individuals without any

overlap. There exist, however, at least one team in which there is no knowledge-based faultline present at all. This means, that no single individual has any knowledge-based overlap with any other individual within the new venture team. The remaining variables all show the range in which they were categorized in, e.g. one to five. Of assessed variables all had acceptable distribution within their categorization, allowing for the multiple regression to provide useful outcomes.

4.2. Interdependence of Independent Variables

In order to preclude erroneous result in the analysis of the hypotheses due to interdependences of the independent variables, the various faultline strength of the venture teams, we will test our models upfront with all independent variables and their effect on the dependent variables.

Conflict Type					
Residuals:	Min	1Q	Median	3Q	Max
	-1.8028	-0.6065	-0.1807	0.7562	1.9382
Coefficients:	Estimate	Std. Error	t value	Pr(> t)	
(Intercept)	1.19525	0.99034	1.207	0.234557	
Dem_Faultline	3.23167	0.89728	3.602	0.000864***	
Res_Faultline	0.08681	1.06533	0.081	0.935465	
Inf_Faultline	-0.98282	0.98386	-0.999	0.323825	

Signif. codes:					
0***	0.001**	0.01*	0.05.	0.1	1
Residual standard error:	0.9676 on 40 degrees of freedom				
Multiple R ² :	0.2468		Adjusted R ² :	0.1903	
F-statistic:	4.369 on 3 and 40 DF		p-value:	0.009417	

Table 3: All Subgroups to Conflict Type

The model testing conflict type shows only and significant impact of identity-based faultline strength. The other two subgroup types do not have significant impact onto the outcome of conflict type. Model 1 can be tested with identity-based faultline strength and all control variables, without considering resource-based or knowledge-based faultlines.

Communication Style					
Residuals:	Min	1Q	Median	3Q	Max
	-2.2885	-0.6934	0.1596	0.8775	1.7341
Coefficients:	Estimate	Std. Error	t value	Pr(> t)	
(Intercept)	5.5181	1.2042	4.582	4.43e-05***	
Dem_Faultline	0.3456	1.0910	0.317	0.7531	
Res_Faultline	-.34178	1.2954	-2.638	0.0118*	
Inf_Faultline	0.7635	1.1963	0.638	0.5270	

Signif. codes:					
0***	0.001**	0.01*	0.05.	0.1	1
Residual standard error:	1.177 on 40 degrees of freedom				
Multiple R ² :	0.1633		Adjusted R ² :	0.1005	
F-statistic:	2.602 on 3 and 40 DF		p-value:	0.06528	

Table 4: All Subgroups to Communication Style

Similar to the model testing conflict type, the model testing for communication style also shows significant impact of only one subgroup constellation. Model 2, testing for communication style, can be considered with only resource-based faultline strength as independent variable.

Innovation Level					
Residuals:	Min	1Q	Median	3Q	Max
	-2.10387	-0.71434	0.08346	0.70679	2.44257
Coefficients:	Estimate	Std. Error	t value	Pr(> t)	
(Intercept)	5.2779	1.1868	4.447	6.76e-05***	
Dem_Faultline	-0.4908	1.0753	-0.456	0.6505	
Res_Faultline	-1.5885	1.2767	-1.244	0.2206	
Inf_Faultline	-3.0368	1.1790	-2.576	0.0138*	

Signif.	codes:				
0***	0.001**	0.01*	0.05.	0.1	1
Residual standard error:	1.16 on 40 degrees of freedom				
Multiple R ² :	0.185		Adjusted R ² :	0.1239	
F-statistic:	3.027 on 3 and 40 DF		p-value:	0.04051	

Table 5: All Subgroups to Innovation Level

To complete the testing, model 3 can be calculated with only knowledge-based faultline strength being considered as independent variable to analyze impact onto the level of innovation. The other subgroup types do not show significance.

As a conclusion, the considered models for testing the hypotheses are robust. The three individual subgroup constellations are only significantly impacting the outcomes as theorized.

4.3. Analysis

Conflict Type					
Residuals:	Min	1Q	Median	3Q	Max
	-1.53371	-0.61395	0.02095	0.48944	1.72547
Coefficients:	Estimate	Std. Error	t value	Pr(> t)	
(Intercept)	-0.15214	0.83604	-0.182	0.8566	
Dem_Faultline	2.38847	0.94799	2.520	0.0162*	
Industry	0.12767	0.18598	0.686	0.4967	
Size.at.Founding	0.04126	0.09954	0.414	0.6809	
Company.Size	0.01527	0.01196	1.276	0.2098	
Founder.Relations	0.25781	0.13379	1.927	0.0617.	
Founding.Type	0.15685	0.35593	0.441	0.6620	

Signif. codes:					
0***	0.001**	0.01*	0.05.	0.1	1
Residual standard error:	0.9269 on 37 degrees of freedom				
Multiple R ² :	0.3607		Adjusted R ² :	0.257	
F-statistic:	3.479 on 6 and 37 DF		p-value:	0.007922	

Table 6: Multiple Regression Model 1 - Identity-based Faultline to Conflict Type

Model number one is looking at the impact of identity-based faultline strength to the type of conflict arising within the new venture teams. Figure 2 shows the R square with a value of 0.3607, pointing at 36.07% degree of explanation of the model overall. With a p-value of 0.007922 the model shows significance, as it is below the threshold of 0.05.

Looking at the individual variables we can identify two variables showing significance to the outcomes of the model. The independent variable Dem_Faultline, the identity-based faultline strength of the venture teams, is significant with a p-value of 0.0162. The estimate of the independent variable is 2.38847, showing a positive correlation of identity-based faultline strength towards interpersonal

conflict. The conflict scale ranges from the value one, task conflict, to the value five, interpersonal conflict. The result explains the appearance, in frequency and intensity, of interpersonal conflict in situations of deep faultlines between various fractions of shared identity within a start-up team. The outcome is in line with Hypothesis 1. Control variable Founder.Relations also shows a somewhat significant impact with a p-value of 0.0617. The estimate of Founder.Relations with 0.25781 points at a positive link of relational intimacy of founding partners and interpersonal conflict, albeit a minor one. All other control variables are not significant. The model is supporting Hypothesis 1. It, furthermore, shows the significant impact of identity-based faultline strength to the occurrence of a certain type of conflict. The stronger the differences in perceived demographical characteristics and group belonging the greater the risk of interpersonal conflicts arising in start-up venture teams.

Communication Style					
Residuals:	Min	1Q	Median	3Q	Max
	-2.3504	-0.7492	0.1815	0.8292	1.7592
Coefficients:	Estimate	Std. Error	t value	Pr(> t)	
(Intercept)	6.67080	1.61329	4.135	0.000196	
Res_Faultline	-3.28864	1.42480	-2.308	0.026684	
Industry	-0.08003	0.23749	-0.337	0.738024	
Size.at.Founding	-0.03353	0.13180	-0.254	0.800621	
Company.Size	-0.02140	0.01566	-1.366	0.180185	
Founder.Relations	-0.00743	0.15319	-0.049	0.961578	
Founding.Type	-0.19327	0.45645	-0.423	0.674437	

Signif. codes:					
0***	0.001**	0.01*	0.05.	0.1	1
Residual standard error:	1.181 on 37 degrees of freedom				
Multiple R ² :	0.2207		Adjusted R ² :	0.09433	
F-statistic:	1.746 on 6 and 37 DF		p-value:	0.1376	

Table 7: Multiple Regression Model 2 - Resource-based Faultline to Communication Style

Model number two is looking at the impact of resource-based faultline strength to the style of communication prevalent within start-up teams. Figure 2 shows the R square with a value of 0.2207, pointing at 22.07% degree of explanation of the model overall. With a p-value of 0.1376 the model,

however, shows no significance, as it is above the threshold of 0.05.

Looking at the individual variables we can identify the independent variable Res_Faultline, the resource-based faultline strength, showing significance with a p-value of 0.026684. This would lead to conclude that the resource-based faultline strength in and of itself does have an impact on the style of communication with a new venture team. With an estimate of -3.28864 the resource-based faultline strength would point at a rather autocratic communication style in teams with deep resource-based faultlines. This outcome is understandable to a degree, as the greater the fight for resources the stronger the individuals having control over those resources tend to cling on them. Nevertheless, including the control variables the model does not show any significance. Hence, Hypothesis 2 can be rejected.

Innovation Level					
Residuals:	Min	1Q	Median	3Q	Max
	-2.17832	-0.74039	0.02663	0.64409	2.04921
Coefficients:	Estimate	Std. Error	t value	Pr(> t)	
(Intercept)	4.28713	1.06036	4.043	0.000257***	
Inf_Faultline	-3.25046	1.16757	-2.784	0.008411**	
Industry	-0.13004	0.22588	-0.576	0.568293	
Size.at.Founding	0.10359	0.11925	0.869	0.390603	
Company.Size	-0.03064	0.01439	-2.130	0.039902*	
Founder.Relations	-0.09533	0.14607	-0.653	0.518001	
Founding.Type	0.12410	0.44559	0.279	0.782179	

Signif. codes:					
0***	0.001**	0.01*	0.05.	0.1	1
Residual standard error:	1.126 on 37 degrees of freedom				
Multiple R ² :	0.2897		Adjusted R ² :	0.1746	
F-statistic:	2.516 on 6 and 37 DF		p-value:	0.03835	

Table 8: Multiple Regression Model 3 - Knowledge-based Faultline to Innovation

Model number three is analyzing the impact of knowledge-based faultline strength of the team to the level of innovation in a new venture company. Figure 1 shows the R square with a value of 0.2897, pointing at 28,97% degree of explanation of the model overall. With a p-value of 0.03835 the model shows significance, as it is below the threshold of 0.05.

Looking at the individual variables we can identify two main contributors to the model outcomes. The independent variable `Inf_Faultline`, the knowledge-based faultline strength of the start-up teams, is significant with a p-value of 0.0084. Its estimate with -3.25046 outlines a negative correlation of faultline strength to the degree of innovation. For every one increase in the strength of a knowledge-based faultline, the level of innovation decreases by 3.25046. This negative impact is pointing at a higher degree of innovation for teams with lower knowledge-based faultline strength. Opposite Hypothesis 3, innovation within start-up ventures seems not to profit from deep faultlines between the individual team members professional background and knowledge capabilities but rather profits from extensive knowledge overlap. The hypothesis needs to be rejected. The general link of independent to dependent variable could be supported with this model, however. Control variable `Company.Size`, the size of the start-up venture at the moment of data collection, is significant with a p-value of 0.039902. Its estimate with -0.03064 is also negatively correlated to the level of innovation. Every one increase in the company size leads to a decrease of 0.03064 of innovation in our sample. This shows, that smaller start-up ventures are showing a higher degree of innovation. Although the impact of `Company_Size` to the model result is significant it has but a minor impact on the outcomes. All other control variable are not significant. This leads to conclude that knowledge-based faultline strength does have a significant impact to the degree of innovation in a start-up venture by itself.

5. Discussion

This thesis follows suit to a vast research body of papers about entrepreneurship and start-up companies. It highlights the importance of the team composition for start-up ventures on their path of survival and success in the market. Whereas most research focuses on interpersonal relations of founding team members, diversity under a heterogeneity vs. homogeneity view, and general innovative power of new ventures (Beckman, 2006; Heirman & Clarysse, 2006; Knockeart et al, 2011; Wasserman, 2012; Eesley et al, 2014), this paper tries to shed light onto the topic of team composition in start-ups through a subgroup lens, which only a few papers have done so far (Lim et al, 2013; Ben-Hafaïedh, Micozzi, & Pattitoni, 2017).

The general implication about the impact of subgroup presence and faultline strength on team dynamics in start-ups hold up. H1, which looked at the impact of identity-based faultline strength on type of conflict, is supported. The model showed good link between an increase in identity-based faultline strength to the arising of interpersonal conflict. Jehn (1995) showed in their paper the relation of interpersonal closeness to conflict. Personal conflict can be detrimental to team dynamics, especially when the conflict can't be resolved and is leading to behavioral disintegration (Li & Hambrick, 2005) and possibly team member turnover (Vanaelst et al, 2006). Negative effects of personal conflict can be reduced with a certain degree of mutuality (Amason & Sapienza, 1997). For start-up companies this mutuality is typically found in a perceived solidarity between the team members, in particular the founding partners. The environment is turbulent. Chance of survival is minimal. A sense of “sitting in the same boat” emerges that can help overcome arising interpersonal issues and conflicts. Especially when a member of the top management team is sharing socio-demographic similarities to the subgroup members, team cohesion, social integration, and knowledge transfer is promoted, leading to better team performance overall (Georgakakis, Greve, & Ruigrok, 2017).

Under the condition of a strong identity-based faultline the team is neither fully homogenous nor fully heterogeneous. It is somewhere in the middle of having at least one faction of increasingly similar individuals, possible more factions of alike people, creating a strong faultline of one subgroup versus

the others (Li & Hambrick, 2005). In such a setting the appearance of in-group and out-group mentality withcoming the usual issues, as described by social identity theory (Tajfel & Turner, 1986), shows the greatest potential compared to other team compositions. In-group mentality brings along a mindset of “us vs. them”. It's a melting pot for conflict and introduces a great risk of social disintegration. Although a sense of mutuality has the potential of reducing negative effects, when the faultlines are becoming too strong, interpersonal issues and, hence, conflict are almost unavoidable. This study of start-ups of the DACH region shows a clear link between identity-based faultline strength and the occurrence of personal conflict.

In the literature of conflict one can find various settings of interpersonal relationships and closeness that might contribute to the occurrence of personal conflict. A great factor increasing the risk of personal conflict is emotional closeness and intimacy (Brewer, 1991, Jehn, 1995). Closeness and intimacy are characteristics build over time. As Granovetter (1973) outlined in his theory about strong ties and weak ties, strong interpersonal ties are requiring continuous interaction and iterations to foster. Individuals need time and interaction frequency to build close relationships with each other. The literature linking emotional closeness and intimacy to personal conflict, thus, is focusing on long-term friends and family members (Jehn, 1995). As to account for that effect, this study used the degree of intimacy as a control. Despite the literature indicating the relevancy of the factor, it did not have a significant effect in this present study. That does not mean, however, that it can be rejected altogether. Due to the narrow focus and small sample size of this study, it might merely be a coincidental outcome. One explanatory factor could be, that previous research did focus on other variables than this study. The author argues for the relevancy of the presence of subgroups, in particular the relevancy of faultline strength when it comes to conflict. While many previous studies solely focused on the degree of intimacy, they neglected the presence of identity. Considering demographic similarities as well as dissimilarities between team member individuals might be an additional factor research about interpersonal relations and conflict could focus on more in depth in the future.

H2 was concerning the relations of resource-based faultline strength on the impact of communication style has been rejected. There exist a vast body of literature examining the impact of power differences

and hierarchies on the communication style within an organization (Mintzberg, 1983; Finkelstein, 1992; Pratto et al 2006; Tiedens et al, 2007). Past research found links of power struggles within organizations to the occurrence of autocratic leadership styles. The argument is that especially autocratic leaders within an organization are causing other parties to build coalitions to defend or push through their ideas and preferred choices in strategic decision-making processes (Eisenhardt & Bourgeois, 1988). Despite some scenarios existing in which individuals are seeking for powerful leaders, e.g. for routine tasks to be performed in turbulent environments (Hambrick & Mason, 1984), human beings generally do prefer more open forms of leadership styles to authoritarianism (Gladstein, 1984; Amason & Sapienza, 1997). Autocratic leaders, hence, are harming team member satisfaction and accelerate conditions for power struggles, on the same hierarchical level as well as across levels (Eisenhardt & Bourgeois, 1988). Such settings of power struggles and organizational politics are harmful for organizations of all sizes. For start-up companies, however, such power struggles unfolding may even be more detrimental. Start-up companies are usually operating on limited resources in turbulent environments (Wasserman, 2012). They are faced with plenty of uncertainties. Most new ventures only have limited time until they have to create profitable revenues in order to even survive as a business. Furthermore, such companies are typically composed of less members than other, more established business organizations. Whereas top management team power struggles in a multinational corporation might not be felt or experienced by hierarchically low level employees, in start-up companies every employee will be aware of the politics ongoing due to their physical and task-related closeness to all team members, whether founding team or employee. Therefore, any usage of power within a start-up team might immediately and inevitably create reactions within individual or multiple team members. Rather democratic leadership styles in organizations are found to be linked to more open communication, higher team member satisfaction, as well as better start-up performance (Gladstein, 1984). It is difficult to accurately assess the presence of power differences in small teams. In large organizations differences in ability to control and use resources is more clear cut, based on hierarchical level. Start-up companies are typically more homogenously composed, concerning power. Past research showed that start-up teams have a high degree of communication (Wasserman, 2012) and

open team discussions including all team members, whether founding member or employee.

Nevertheless, power differences exist. An obvious faultline for power differences is whether an individual is part of the founding team and having invested capital, hence, a high stake of financial risk involved, versus employees only earning a salary. Given that, the author proposes that strong resource-based faultlines would lead to rather autocratic communication styles being present in the company. This, however, had to be rejected. There might be multiple explanations to that.

Communication patterns and leadership style are, apart from being individual to each person, a matter of culture and socialization, hence, are intertwined with social identity (Stets & Burke, 2000). Young entrepreneurs often try to foster the myth of “family” in start-up ventures (Leyden et al, 2014). They overly push open communication and a sense of shared identity, rejecting any use of power differences. Especially the German language has an inherit power difference due to the formal form of addressing the an opposite individual with “Sie” compared to the more colloquial form of “Du”, which the younger generation of entrepreneurs are rejecting from the get-go, in comparison with more established organizations where the formal form is heavily used in addressing people of higher hierarchical level. Furthermore, autocratic communication style and power struggles within a start-up team leads increasingly to fast employee turnover and a situation of stagnancy in the business venture (Klotz et al, 2014). With interpersonal issues being present, innovation cannot unfold that easily, leading to more difficult situations and quicker death of the young venture. For this reason, it might be that the sample size of this study does not actually possess a sufficient quantity of teams with rather autocratic communication styles, as these ventures are more likely to have been disappeared again already.

Under H3 the author proposed a positive link of the strength of knowledge-based faultlines to the degree of innovation within start-up ventures. The literature found a lot of variables affecting the innovativeness of new ventures. Most of them, of course, have to do with team composition. Although the media, especially pop culture, is focusing on the companies or one of the founding members, most ideas for innovation are emerging within individual team members (Fern et al, 2012; Honoré, 2015). Thus, team composition and the ability to make use of their knowledge resources is the key to

innovation and success. There is a plethora of papers arguing for higher team diversity to be beneficial for innovation (Stasser & Titus, 1985; Lau & Murnighan, 1998; Fern et al, 2012; Klotz et al, 2014). It makes sense on various aspects. More heterogeneous teams have a higher pool of different experiences and perspectives to bring into decision-making processes (Hambrick & Mason, 1984; Forbes et al, 2006). But solely focusing on diversity doesn't bring the desired outcome, as some papers showed (Amason, 1996, Wasserman, 2012). It is necessary to create team dynamics in which people feel comfortable to engage and openly express their ideas and viewpoints (Mortensen & Haas, 2018). Therefore, it is not the demographic constellation of the team that is essential for performance, but how to make use of it. Furthermore, when it comes to strategic decisions or innovations, demographic heterogeneity is not sufficient. A major driver of unique information flow is differences in knowledge backgrounds (Stasser & Stewart, 1992). Educational backgrounds and professional experiences are what allow a team to bring forward more unique ideas. Knowledge transfer needs differences in knowledge and information. No matter how demographically diverse a team might be, if the team is homogeneous in functional expertise, it is unlikely that new ideas might emerge (Stasser & Titus, 1985). Nevertheless, given that individuals tend to engage and share their ideas more often when they feel that the group has at least one other member they feel safe around expressing themselves (Edmondson, 1999), the optimal setting for knowledge transfer is not when mixing only individuals with different knowledge backgrounds together, but to have factions of individuals with shared knowledge taking part in decision-making processes. Providing individuals with an increased security to participate, it possibly enhances interaction frequency and information flow. In turn, chances for innovative ideas emerging increase. The setting of multiple knowledge-based factions in an organization increases with the strength of knowledge-based faultlines. Knowledge-based subgroups have the tendency to seek information from other subgroups (Gibson & Vermeulen, 2003). Faultline strength, hence, facilitates inter-subgroup knowledge sharing, interaction, and communication. The degree of innovation is boosted. For this, start-up ventures should try creating knowledge-based subgroups in order to promote innovation, which, in turn, improves the chances of entrepreneurial success. Why do I mention “create” knowledge-based subgroups?

When looking at subgroup research conducted about large organizations, one realizes that knowledge-based subgroups are the only form of subgroup managers can actively influence and create (Carton & Cummings, 2012). Of course you can also purposefully assemble teams of demographic similarity. One needs only to look at specific demographic characteristics to discriminate by. However, social identity, in-group mentality, interpersonal affect, are hard to control for. There are endless variables people might find similar identity with. Furthermore, too homogenous teams are bringing a lot of disadvantages to the table, that organizations typically try to avoid. The goal would rather be to purposefully not create subgroups. But subgroups are going to emerge no matter what. The strength of the faultlines are not in your control, then. With knowledge-based subgroups, on the other hand, you have high chances of creating functioning subgroups by discriminating based on educational background and functional expertise. Which is exactly what is being done in organizations with a functional setup. The organization forms specialized teams based upon technical understanding and task responsibilities, effectively fabricating knowledge-based subgroups. Although start-up ventures are typically under financial restraints, they should aim, to the degree possible, to bring multiple people with overlapping expertise and responsibilities into the company as to increase the chances of the benefits of knowledge-based faultlines versus other team members.

6. Limitations

This thesis underlies a great degree of limitations. The sample size is rather small for a study looking at team dynamics and possible emergence of subgroups. Start-up companies operate under restricted resources, time pressure, and a great interest from all different directions (e.g. media, start-up centers, research). Due to that it is difficult to get a significant sample size with acceptable contribution when operating under time constraints. Future research concerning subgroup and team dynamics in start-up ventures should aim at accounting for a greater data collection time frame.

Furthermore, this thesis only looks at start-up companies from the DACH region. Cultural differences might exist compared to start-up team compositions and team dynamics in other areas of the world. Especially identity-based faultlines are constructed based on demographic characteristics as well as perceived social identity differences. Future research might stumble onto vast differences in the effects of identity-based faultlines onto team dynamics and performances.

Continuing, given data collection being conducted at one point in time with a single individual of the start-up venture, the data and derived outcomes might succumb to situational and momentary bias.

Due to the one time collection of data, this thesis does not aim to and cannot make any conclusion over the effects over time and subsequent venture performance, success or survival. When looking at team composition impacts on venture performance, future research should try to follow specific ventures over a prolonged period of time. Conducting qualitative research might provide this field with additional insights that can't be drawn from quantitative investigation.

7. Conclusio

Both the entrepreneurship literature and the subgroup literature have discussed and showed the impact of team composition on possible outcomes extensively. It has been hypothesized and sporadically proven, also, that the two streams of literature can be combined. Not only does team composition impact the performance and success of a new venture in terms of the individual relational level or the team relational level derived from that, as treated in the concepts of diversity, heterogeneity, homogeneity, and so on, but venture performance is, moreover, heavily affected by the intra- and interteam processes as outlined in the subgroup literature. This thesis aimed at and partially managed to contribute to that notion. Start-up ventures are heavily dependent upon the capabilities of their team members and the ability to unlock those capabilities in a sophisticated manner in order to promote innovation, hence, venture success. One crucial factor in providing the necessary framework for team processes to flourish could be the constellation of subgroups and the management of potentially arising faultlines. As some authors have shown, faultlines are not inevitably to avoid but rather maintaining some degree of faultline might be beneficial for proper stimulation of inter-team processes.

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10. Appendix

10.1. Abstract English

Start-up companies are a vital part of any economy. They are the center for innovation and will partly make up established companies in the future. The most important ingredient making a start-up fruition is not, however, the great idea or the financial resources but the people behind the venture. Individuals who ideas originate in and who collaborate with each other towards making that idea reality is what is making or breaking a start-up venture. For this, a key aspect for success is proper intra-team processes. These processes are affected by the constellation of the team and the characteristic of the individual team members. Differences in characteristic are causing faultlines and with them a fragmentation of the team into subgroups. As this thesis shows, the emergence of subgroups have an effect on various intra-team processes and are likely to impact the communication flow, the type of conflict arising, and, detrimentally, the level of innovation within a start-up team.

10.2. Abstract German

Start-up Unternehmen sind ein essenzieller Teil jeder Wirtschaft. Sie sind der Mittelpunkt von Innovation und werden langfristig teilweise zu großen, bewährten Unternehmen aufsteigen. Die wichtigste Zutat für ein erfolgreiches Start-up ist allerdings nicht bloß die innovative Idee oder die finanziellen Ressourcen, sondern die Personen hinter der Unternehmung. Entscheidend für den Erfolg oder das Scheitern eines Start-ups sind die einzelnen Leute in den Ideen entspringen und welche miteinander kooperieren um die Idee erfolgreich umzusetzen. Aus diesem Grund ist ein wichtiger Aspekt für Erfolg angemessene Teamprozesse. Teamprozesse sind durch Konstellation und individuelle Eigenschaften der Mitglieder beeinflusst. Unterschiede in diesen kreieren Faultlines, welche zu einer Spaltung des Teams in verschiedene, kleinere Subgruppen führt. Diese These zeigt die Auswirkung von entstehender Subgruppen auf unterschiedlichste Teamprozesse, wie Kommunikationsfluss, auftretender Konflikt sowie Grad der Innovation in einem Start-up Team.