Understanding the effects of power asymmetry on a start ups' innovation performance

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ABSTRACT,

This study focuses on the vulnerabilities of startups in inter-organizational relationships. A conceptual model is created based on literature, which predicts a negative roll from power asymmetry on the explorative innovation firm performance of startups. With experience having a moderating effect, that decreases the negative impact of power asymmetry on explorative innovation firm performance. An online survey based on literature is designed to analyze if these relationships indeed exist in startups. Startups located in concentrated areas in Germany and the Netherlands are used for data sampling. Preliminary data analysis is used by means of a principal component analysis to validate the survey items. Hierarchical regression analysis of the data did not find a negative effect of asymmetric interdependence on explorative innovation performance. Neither was the moderating effect of experience found proven by the results, experience having a non-significant negative effect on explorative innovation firm performance. Many other significant relationships between control variables and explorative innovation performance were found. Limitation of this research and suggestions for future research are suggested.

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Keywords

Startup, power asymmetry, explorative innovation firm performance, experience, asymmetric interdependence, collaboration relationship.

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1. INTRODUCTION

Startup companies play a significant role in today's market. While often being characterized as creative and innovative, they frequently lack resource pools that established companies have. New ventures are prone to high failure rate as studies showed (Song et al., 2008). Arguably for start-ups one of the most important product market goals to achieve is to shorten the time it takes to bring a product to market (Hellman & Puri, 2015). Realizing a fast process of bringing a product to the market requires a significant amount of resources and capabilities. Since most startup companies do not have this, they collaborate with established companies to enhance their performance. This collaboration between startup companies and established companies is often utilized and the competitive gain realized by this relation is apparent. As studies showed that startups could enhance their initial performance by establishing alliances, configuring them into an efficient network that provides access to diverse information and capabilities with minimum costs of redundancy, conflict, and complexity, and allying with established rivals that provide more opportunity for learning and less risk of intra-alliance rivalry (Baum, Calabrese & Silverman, 2000). Arguably one of the most important goals for startups is to stimulate innovativeness and entrepreneurship (Ackerman, 2012). Establishes firms have a tendency to form relationships with startups whose innovative capabilities have already been demonstrated (Shan et al., 1994).

There are also some hazards for startups to collaborate with large established companies. Alvarez and Barney (2001) argue that established companies benefit from access to entrepreneurial firms' innovative technology, while small firms suffer from inter-organizational relationships due to the extra complexity of handling this relationship.

Small firms often are unable to handle complex and uncertain activities of large partners (Yang et al., 2014). Large partners could start programs with partnered startups to improve their own performance, sometimes at the expense of the startup (Weiblen & Chesbrough, 2015).

These effects of collaboration can have a significant effect on a startups performance. Power asymmetry often plays a role when this occurs, with the power leaning towards the established companies. According to (Wang, 2011) the effects of alliance learning and alliance experience on innovative performance are influenced by the level of power asymmetry. Although the main effect of alliance learning was positive, the interaction of alliance learning and power asymmetry on innovative performance was negative and significant. The presence of power asymmetry in relationships affects partner adaptive and collaborative behavior, in part because it may encourage opportunism or the stronger partner may use its advantage to appropriate greater value in the relationship''(Nyaga,Lynch,Marshall, & Ambrose, 2013). Power asymmetry in relationships does not always mean that they are not workable or non-enduring. Power asymmetry may also be viewed as positive effect, which brings together different alliance partners and staff within them with varied views, cultures, strategies and competitiveness (Wang, 2011).

Startups gain experience throughout the years of conducting their business and encounter different companies with which they start business relationships. This experience will help them in developing new relationships and give them a platform for entering other markets (Johansen et al., 2003). It would be interesting to find out if this experience in handling business relationships will have an effect on power asymmetry and innovation performance. Therefore, there will be research if years of experience of a startup moderate the effect of power asymmetry on their explorative innovation performance. The research will be conducted among a pool of startups based in Germany and the Netherlands.

1.1 Research Question

By conducting this research there will be tried to answer the following research question:

- *To what extent does experience of a startup moderate the effect of power asymmetry on explorative innovation performance?*

There is little research available if experience indeed has an effect on the relationship between power asymmetries and a startups explorative innovation performance. By answering this question, it will contribute on the knowledge base gained in prior research (Upheus, 2016) on the subject of the relationship between power asymmetries and a startups explorative innovation performance. More specific, it will gain insight on the moderating effect of experience of a startup on the relationship between power asymmetry and explorative innovation performance. German and Dutch startup companies could use this information to better understand their relationship with established companies. And can use it to improve the overall quality of their collaboration. An insight of the moderating effect of experience on the relationship between power asymmetry and explorative innovation performance could be valuable information for startups. Many of these startups would want to minimize risk to ensure a steadier performance in their business relationships (March et al., 1987).

Power asymmetry could be a lingering problem; this could indicate that even after many years, when a startup has transitioned into an established company, power asymmetry will still play a role in their business relationships. (Auh & Merlo, 2012)

It surely would be valuable to know if this is indeed the case, since startups would have to take actions to make sure their explorative innovation performance is not affected by power asymmetry in business relationships. Even for collaborations started in later operating years.

Thus, it will be researched if the effect of power asymmetry on explorative innovation firm performance is affected by experience gained by the years. This research brings theoretical contribution to the fields of power asymmetry and its effects on explorative innovation firm performance. This by gathering data from startups in a different national context, comparing how outcomes from other research holds up to startups operating in the Dutch and German market. Empirical data gathered from Dutch startups was lacking in the current academic field, possibly caused by disinterest from Dutch researchers on this subject or the inability of researchers to contact suitable Dutch startup companies to gather empirical data. This research can be used to validate research done on startups in different markets, hereby strengthening outcomes and conclusions made by providing more support for these claims. (Upheus, 2016) It also explores the effect of experience as a moderator on the relationship between power asymmetry and explorative innovation firm performance, which better helps us to understand the nature of this relationship and how it is influenced by other variables.

This research will investigate if experience through interaction with partners might enable some startups to achieve greater benefits through collaboration with large partners. Greater benefits from collaborations could be beneficial for the capabilities and performance of a startup. (Kalaignanam et al., 2007).

This could in turn improve the activities of these startups that would result in greater explorative innovation firm performance. Moreover, a startup with more operating years will have on average more experience with business relationships and power asymmetry occurring in these relationships. With this experience, they would be more capable in handling negative effects caused by power asymmetry on their explorative innovation firm performance. This research will investigate if these relationships indeed exist. If proven, this could be a major implication for startups. Since gaining experience by actively creating new business relationships, will be a new driving factor for startups to improve the quality of future business relationships. Especially today, seeing the uplift of relevance for startups in today's market. Examples such as Silicon Valley are a clear example that established companies are more willing to start business relationships with startups compared to decades ago. (Kenney, 2000)

German and Dutch startups are chosen to be researched due to both markets having a high level of innovative activity and high number of startups started per year. (Varsakelis, 2006)

The data will be gathered by using an online survey, targeted towards employees working at these startups. This paper will be structured in the following way: A theoretical framework will be built by utilizing relevant literature, indicating the theoretical implications of our study. Linking our work to previous work done on this subject and making hypothesis derived from the used literature. In the methodology chapter, our research sample will be introduced, our data collection method explained, and an explanation will be given on how our data is measured and analyzed. After this there will be a report and evaluation of our analyzed data in the results chapter. Lastly, there will be a discussion, a theoretical and practical implications part, the limitations of this research and recommendations for future research are mentioned.

2. THEORETICAL FRAMEWORK

In this research, the relationship between the variables of ''Power Asymmetry'' and ''Explorative Innovation Performance'' is investigated. With the moderating variable of ''Experience''. In order to develop a theoretical framework, literature on the concepts of Power asymmetry, Innovation firm performance and learning process of businesses are reviewed. By reviewing this literature there will be tried to give a clear definition and relationship between these variables.

2.1 Conceptual Model

The relationship of the variables Power Asymmetry on Explorative Innovation Firm performance will be investigated. Furthermore, it will be investigated how this relationship is moderated by the variable of Experience.

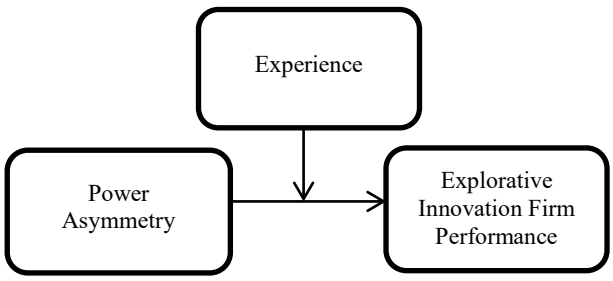

Figure 1: Conceptual Model

2.2 Definition of Variables

Power Asymmetry:

Total interdependence is the sum of both firms' dependence, whereas asymmetric interdepence is the difference between the firm' dependence on its partner and the partner's dependence on the firm. (Emerson 1962; Lawler and Bacharach 1987) This difference has also been referred to as the more dependent firm's relative dependence (Anderson and Narus 1990) or the less dependent partner's relative power (Emerson 1962; Frazier and Rody 1991; Lawler and Bacharach 1987). Symmetric interdependence exists when the firm and its partner are equally dependent on each other. Because one firm's dependence on a partner is a source of power for that partner (Emerson 1962). Total interdependence and interdependence asymmetry are equivalent to the total power and power asymmetry derived from the firms' dependence. (Kumar & Al., 1995)

Explorative Innovation Firm Performance:

Innovation Firm Performance can be split into two elements: Exploratory innovation and exploitative innovation. Exploratory innovations are major transformations of existing technologies that often render the prevailing product designs and technologies obsolete. They resulted from activities focused on searching for new organizational norms and routines and innovation a long-term orientation. (Danneels, 2002) Exploitative innovation is used to adapt existing products and technology to current environmental conditions. (Lubatkin & Al., 2006) It results from activities focused on using and improving existing knowledge, applying existing abilities, and adopting a relatively short-term production orientation. (Raisch & Al., 2009) Previous research (Upheus, 2016) showed a more significant impact from power asymmetry on explorative innovation firm performance compared to exploitative firm performance. Since we include the dataset constructed by Upheus, it would be interesting to see how the moderator effect of experience affects this relationship. This research will focus on explorative innovation.

Experience:

Businesses learn over their years of operating, improving on their capabilities and performances. This learning curve (Adler & Clark, 1991) is something every startup has and affects their future success and viability in the market. Businesses do not only gain indoor knowledge on how to improve their own productivity, they also gain knowledge on how to collaborate with other parties and improve on managing these business collaborations. This higher level of experience could affect performance in future collaborations, resulting in more steady and productive collaborations through experience gained from previous relationships.

2.3 Effect of Asymmetric Interdependence on Innovation Firm Performance

Channels research has consistently argued that asymmetric channel relationships are more dysfunctional than those characterized by symmetric interdependence. Kumar et al. (1995) propose that the degree of both interdependent asymmetry and total interdependence affect the level of interfirm conflict, trust and commitment. Using survey data, they demonstrated that, with increasing interdependence asymmetry, trust and commitment declines and interfirm conflict increases. Moreover, relationships with greater total interdependence exhibit higher trust, stronger commitment and lower conflict then relationships with lower interdependence (Kumar & Al., 1995). These asymmetric channel relationships can have a negative impact on a firm's performance. This will result into a negative effect on the performance of a startup in

these relationships. Consequently, decreasing their explorative innovation firm performance.

Social distance power theory gives an insight in the psychological factor of the relationship between asymmetric interdependence on interaction between a high power and low-power individual. This gives an explanation on the human factor why people within companies with higher power treat employees from companies with lower power differently. Magee & Smith (2013) propose that asymmetric dependence between individuals produces asymmetric social distance, with high power individuals feeling more distant than low-power individuals. The social distance theory of power explains how through asymmetric social distance, power produces a number of interpersonal phenomena. This has profound effects on attitudes, behavior and perception. It predicts how power affects social comparison, susceptibility to influence, mental state inference, responsiveness, and emotions. With high-power individuals' greater experienced social distance leading them to engage low-power individuals in a different way. Causing power to create a difference in goal priority and pursuit of these goals. This can cause different interests in an inter-organizational relation between individuals working at the different firms. Creating friction and less performance off both companies in their collaboration. These effects caused by power asymmetry will negatively influence performance, and more specific explorative innovation firm performance.

Seeing all these negative results for a startup when collaborating with a large partner, makes one question why they would engage in these inter-organizational relations in the first place. Resource dependency theory (Hillman & Al., 2009) gives an explanation on the need for startups to cooperate with larger partners. Large partners often have financial and operational resources which most startups lack. Since they need these resources, they need to collaborate with these large firms. This does often result in them being bound to them by means of legal measures. Being bound to such a large firm limits the startups freedom to collaborate or interact with competitors of these large firms (Weiblen & Chesbrough, 2015). This could prevent major explorative innovation done by a startup. Since they are not permitted to work with competing firms of their partner.

Inter-organizational relationships are widely recognized as critical to product innovation (Kalaignanam et al., 2007). Asymmetric partnerships between large and small firms are common in these relationships. With larger firms being able to enhance their innovativeness through the capabilities of the smaller firms, while the smaller firms often are not able to improve their performance due to the large difference in complexity and experience in comparison with the larger firm (Kalaignanam et al., 2007). This increased complexity and effort for startups caused by the collaborations with large firms, will strain the often limited capabilities and personnel of the startups. Leaving them less time which they could use on activities to explore major transformations of existing technologies linked to their company. Therefore, negatively impacting their explorative innovation firm performance.

Transaction-cost theory gives more support of the negative impact of asymmetric interdependence on an inter-organizational relation. Due to uncertainty and dependence on critical resources controlled by one partner, in our case often being the larger partner. Conflicts arise that could be hazardous for the relationship and therefore need to be managed (Nienhüser, 2008). The large company could develop opportunistic behavior (Sawers & al., 2008), with them using their power to gain control in decisions made by the smaller firm. This prevents the startup in pursuing new projects and business opportunities (Vandaie & Zaheer, 2014). This could have caused explorative innovation for the smaller firm. Startups have innovative ideas and products, which the larger firms often lack. They need resources and capabilities to develop and realize their innovative ideas from large partners, putting them in a dependent position in an inter-organizational relationship, with weaker performance outcomes (Miles & al., 1999).Wang & Hsu (2014) propose a model in which power asymmetry affects exploratory and exploitative innovation. According to their study, power asymmetry can negatively affect exploratory and exploitative innovation firm performance (Wang & Hsu 2014). It is argued that startups, the ones with low power, face performance threats in asymmetric relationships with large partners. They propose that the greater the asymmetrical interdependence in a relationship, the weaker will be the explorative innovation firm performance of a startup.

After analyzing all these theories retrieved from literature, the conclusion is that a majority of the investigated research have found a negative relationship between asymmetric interdependence and a startups explorative innovation firm performance. Therefore, this study will propose the following hypothesis.

Hypothesis 1: Asymmetric interdependence has a negative effect on a startups' explorative innovation firm performance.

2.4 Moderating effect of Experience

Small businesses need to learn to grow as a company. These learning needs that will be needed to reduce the transaction costs of small firms operating its stakeholder environment are paramount for future success (Gibbs, 1997). Learning can be seen in 2 ways: contextual learning (via experience) and the associated tacit knowledge that is gained by this. The key to learning for SME's are via the transactional and other relationships it has with its immediate network environment (Gibbs, 1997). Forming learning circles and learning partnerships with surrounding companies can be a great tool for improving the learning process. Wang and Hsu (2014) argue that developing strong learning relationships both partners can engage in ongoing innovation trough interaction with each other. This way startups will learn through experience how to maintain a productive business relationship with partners in which innovation performance of both parties are high. Learnings gained by experience with previous collaborations will help startups to identify and negate negative effects of asymmetric interdependence on their explorative innovation firm performance.

The goal to reach for SME's as a learning organization is reducing discontinuities between itself and its environment, resulting in a lowering of transaction costs. This also applies to collaborations with other companies, in which a SME must try to achieve reducing discontinuities in this relationship. It should try to achieve a well-balanced and symmetrical relationship, reducing power asymmetry in this relationship. They can better achieve this by gained knowledge through the learning process from previous relationships with their environment. Hereby encountering and learning from different negative effects of asymmetric interdependence on their explorative innovation performance.

Stuart & Abetti(1990) explore the effect of entrepreneurial and management experience on early performance. They suggest that entrepreneurial experience is the most significant factor to predict early performance. Entrepreneurial experience was the most significant single variable more important than any other dimension of the firm or environment. (Stuart & Abetti,1990)

Experience gained by starting previous ventures provides knowledge on what's important and how to do things. This would suggest that experience has a positive effect on overall firm performance, including explorative innovation firm performance.Sykes (1986) suggests a strong correlation between financial success and both management and sales experience of a firm. Vesper (1980) suggests that not only experience, but a variety of experience in different functional areas and prior entrepreneurial experience, even failures. Was an indicator of better performance. These researches suggest that experience will have a positive effect on the capabilities and performance of a firm.

Sosna et al. (2010) argue that firms must learn to trial-and-error learning. Organizations' past experiences, retained in their routines and beliefs influence their action and how they adapt to environmental changes. Nelson (2008) claims that organizations remember by doing. So their prevailing routines and beliefs tend to support continuity in their behavioral patterns. Startups will learn from past errors and use this knowledge for future endeavors. This will result from organizational members retaining actions that produce desired results and discarding those that don't (Argyris, 1976). Trying organizational actions out, and detecting and correcting errors during the process, generates learning.

Startups that are longer in business will have more overall experience with business collaborations and relationships. They will have more prior knowledge on negative effects that these relationships can have on their own performance. And have more knowledge on how to solve these issues, negating the negative effects of collaborations.

Moreover, startups will gain more knowledge of the market and will expand on their network over the years. Hereby creating more insight needed for explorative innovation. Rothaermel & Deeds (2006) suggest that alliance experience moderates the relationship between R&D collaborations of a firm and its new product development. Results from this research prove that this effect exists and give rise to the term of alliance management capability. How capable a firm is to manage inter-organizational relationships and get most benefits from these relationships, in this case explorative innovation. Alliance experience with the same partner over time positively impacted the alliance performance of subsequent alliances between these two partners .(Zollo et al., 2002)Research showed that alliance experience results in enhanced new product development (Rothaermel, 2001), and in the establishment of dedicated alliance function, which in turn positively impacted alliance performance .(Kale et al., 2002). This would suggest that firms with more experience would be better capable in handling inter-organizational relationships, negating negative effects on this relationship plausibly caused by asymmetric interdependence. And resulting in more benefits in terms of overall innovation performance and explorative innovation firm performance.

After analyzing all these theories retrieved from literature, the conclusion is that a vast majority of the investigated research have found that experience has a moderation effect on the relationship between asymmetric interdependence and explorative innovation firm performance.

Therefore, this study will propose the following hypothesis.

Hypothesis 2:

The relationship between asymmetric interdependence and explorative innovation firm performance is moderated by experience. More years of experience will results in less negative effect of asymmetric interdependence on explorative innovation firm performance. (Moderation)

3. METHODOLOGY

In this chapter, the methodology of our research is explained. This will be done in the following order: explaining the subject of the study, elaborating on the data collection method which will be used, and explaining the measurement and analysis of our data. This research will use and analyze data retrieved by Upheus (2016) in his online survey and adding data gathered by ourselves.

3.1 Research Sample

The units of analysis are startup companies in a business relationship (focal company) and their partner companies in these relationships (partner company). All of the startup companies are based in Germany and the Netherlands. Employees from these German and Dutch startup companies are used as our units of observation, with no selection on their current position. They are not selected on job description or degree of power. CEO's till low level workers can react, although in startups the total number of employees and amount of management layers is often comprehensive. There is no selection in which industry a startup is operating, this to gain more diversity in our research sample to better reflect the market. Their perceptions and expectations on the relationship with their most important collaboration partner will be central in this research. With these relationships, conclusions will be drawn on our proposed hypothesis. Companies existing longer than 8 years will be excluded from our data. Our data consists of 63 full responses; there are 310 partial responses which cannot be taken into our data set. Sampled companies were distributed over a wide array of major industries. Most respondents found a customer company to be their most important collaboration partner.

3.2 Data Collection Method

An online survey was used to gather empirical data. This online survey is constructed using survey scales of prior research. An English and German version of the questionnaire has been developed. Making sure these were equivalent translations using back-translation (Brislin, 1970). Lime-Survey was used as an online tool for the construction of the survey and gathering of the data. University of Twente provided free access to this online program. Respondents were reached by mass email, and after 3 weeks a reminder was sent if they did not fill in the survey. To motivate more response, a mention of a prize was made in the reminder. The prize (free service of a sponsor company, worth €150) would be given away to a random participant. Multiple online registers listing startup companies were used to gather relevant websites of startups and corresponding e-mail addresses. In total, 6000 email addresses of startups were gathered and then uploaded to Lime-Survey. The token tool was used to prevent double entries. It gives individual tokens to every e-mail address, which only enables 1 entry per e-mail address. Lime-survey automatically distributes the invitation of voluntary participation with corresponding token to all e-mail addresses. In total 45 complete responses were submitted leading to a response rate of 0.75%. A contribution to this dataset was made by several sources. Multiple Facebook groups of startups communities were contacted to fill in the survey.Moreover, Dutch startup companies were personally visited in order for them to fill in the survey and gather data. These having a response rate of 2% and 100% respectively, bringing the total pool of respondents to 63 respondents.

3.3 Data Measurement

This research analyzes characteristics of the relationship between startups and their most important collaboration partner. The questionnaire only tests the perception of the startup on this relationship, no questions are asked to the collaboration partner and therefore their perception on the relationship is not tested. For the reason that results are oriented towards startups being bound to their collaborations partners, this will provide sufficient insights as opposed to doing research on the perceptions of both interlinked organizations at a dyadic level (Zaheer,Gözübüyük & Milanovl,2010).

Therefore, analyzing startups perceptions on the relationship will determine overall patterns of the relationship and startups' firm performance. Table 1 illustrates the concepts, operational definitions and a description of the operational measures supported by the literature retrieved from Upheus (2016). The initial survey contained 66 questions and can be found in the appendix. Some variables that were measured in this survey and used in Upheus (2016) research will not be used in this research. Therefore, not all questions that can be found in the appendix are relevant. Moreover, the survey items will be narrowed down as explained in the analytic procedure in 3.4. The independent variable of this research is perceived asymmetric interdependence. The dependent variable will be explorative innovation firm performance.

''Experience'' is treated as a moderator variable and investigates the moderating impact on the relationship between perceived asymmetric interdependence and explorative innovation firm performance. Interdependence is strongly associated with power positions. (Kumar et al., 1995) Therefore the role of power perceptions will be explored, of both the startup and partner, as a control variable. Trust within relationships and the presence of formal control mechanisms within the relationship, can have differential effects according to prior research. (Capaldo, 2007; Kumar et al, 1995, Ahuja et al.,2008) These two variables will be added to our control variables.Utilizing brokered access enables startups to cope within asymmetric interdependence situations and thus maintain explorative innovation firm performance. A startup could reduce their dependency on their large partner by searching and adding alternative partners. (Kumar et al., 1995) Or by weakening the value of the relationship with their large partner. Seeing this relation between Broker Access Utilization and coping with asymmetric interdependence, it will be used as a control variable. Summarizing, the control variables that will be used in this research will be startup power, partner power, trust expectations, presence of formal control mechanisms and broker access utilization.

Table 1: Operationalization of Concepts

Concept	Definition	Operational Measures	Literature	Chronbach's Alpha
Dependent variables:				
Explorative Overall Innovation Firm Performance	Startups' degree of overall explorative innovation firm performance.	3 explorative items (on 7- point Likert scale 1 -strongly disagree to 7 -strongly agree)	Fang et al., 2011	0.903
Relation Specific Explorative Innovation Firm Performance	The degree of explorative innovation firm performance, startups obtain trough the relationship with their collaboration partner.	4 explorative items (on 7-point Likert scale 1 -strongly disagree to 7 - strongly agree)	Fang et al., 2011	0.778
Independent Variable:				
Asymmetric Interdependence	Startups' perceived degree of interdependence In a specific collaboration relationship	8 items (on 7-point Likert scale 1-strongly disagree to 7-strongly agree)	Gulati & Sytch, 2007 (ad.)	0.745
Moderator Variables				
Experience	The number of years that have passed since founding of the startup company.	Number of Years	Song et al., 2008; Wang, 2011, Li et al., 2010	X
Control Variables				
Startup Power	Startups' perception of own power compared to their collaboration partner .	3 items (on 7- point Likert scale 1- strongly disagree to 7-strongly agree)	Tang &Tang, 2012; Tang et al., 2014	0.684
Partner Power	Startups perception of power exerted by collaboration partner	3 items (on 7 -point Likert scale 1-strongly disagree to 7-strongly agree)	Tang & Tang, 2012; Tang et al., 2014	0.779
Trust Expectations	The degree to which startups expect their collaboration partner to act in a benevolent and trustworthy way concerning the relationship.	9 items (on 7-point Likert scale 1-strongly disagree to 7 -strongly agree)	Gulati & Sytch, 2007;Li et al., 2010	0.679
Presence of Formal Control Mechanisms	The degree to which formal control mechanisms are present in the relationship between startups and their	3 items (on 7-point Likert scale 1-strongly disagree to 7-strongly agree)	Li et al., 2010; Yang et al., 2011; Cao & Lumineau, 2015	0.765
Broker Access Utilization	Practices startups intentionally deploy to establish multiple relations within a single relationship to develop and get access to alternative partners.	4 items (on 7-point Likert scale 1-strongly disagree to 7-strongly agree)	Yli-Renko et al., 2001; Ritter,Wilkinson & Johnston 2002;Lowik et al., 2012, Li et al.,2010	0.762

3.4 Analysis of Data

Before our data will be analyzed, it is needed to verify if our data derived from the survey questions are applicable. A preliminary analysis and a factor analysis will be used in order to do this. This will be done by analyzing data using SPSS and deriving statistical conclusion from the SPSS output.

3.4.1 Preliminary analysis

Preliminary analysis is needed to ensure that survey questions relate to the suggested construct. According to field (2013) questions with a high correlation with others should be excluded, and exclude questions that do not correlate enough with others (Correlation above 0.9 or correlation under 0.3). In order to identify which questions, fall under this category, a bivariate correlation table for all survey items was created. 31 independent and 7 dependent relevant survey items are identified in the dataset.

After analyzing the independent survey items several questions showed to have a low correlation within their question group (below 0.3). The analysis of an r-matrix together with the analysis of an anti-image correlation matrix showed weak sampling adequacy. Therefore 12 questions of the independent survey items will be excluded for further analysis, leading to a total of 19 independent items used in a principal component analysis. In addition, the 7 dependent survey items were analyzed by using an r-matrix and an anti-image correlation matrix. They showed that one dependent survey questions had a weak correlation under 0.3. No dependent survey questions had

a correlation over 0.9. 1 dependent items with a correlation under 0.3 have been removed from further analysis. This leads to 6 dependent survey questions and 21 independent survey questions for further analysis. An overview of the excluded independent and dependent survey questions can be found in the appendix Table 5. Furthermore, extreme outlier in survey items have been identified by analyzing pearson's correlation coefficient and have been removed when necessary.

3.4.2 Principal component analysis

A principal component analysis (PCA) is performed to validate the questionnaire. This data reduction method will identify groups or clusters of variables in the dataset. This way there can be concentrated further analysis on a reduced size of questions, while keeping as much of the original information provided in the data as possible (Field, 2013).

First a principal component analysis with orthogonal rotation (varimax) is conducted for the 19 independent survey items. They will be checked on 2 assumptions: KMO, and Bartlett's test of sphericity. (Table 6 in the appendix) The Kaiser-Meyer-Olkin measure will be used to verify the sampling adequacy for the analysis. The KMO= 0.531 which is slightly above the threshold level of 0.5 recommended by Kaiser (1974). The determinant of the R-matrix (|R|=0,002) indicates that there is potentially no multicollinearity. Bartlett's test of sphericity (χ2(467.044)153, p<0,001*),* tells us that correlations between items are sufficiently large.All components had 'eigenvalues' over 1 complying with Kaiser's criterion, together they explained 71.999% of variance. Since our data consist of a relatively small sample size, Stevens (2012) indicates that loadings greater than 0.7 can be considered to be significant criterion level. Looking at the scree plot, it shows that some components lies below this level. Furthermore, the point of inflexion provides support for removing 8 components. This raises questions for the reliability and validity of the data. Nevertheless, due to the relatively small sample size the results of the scree plot have to be considered with caution.

Supported by the sufficiently large KMO's value and due to the fact that this survey contains survey items identified in previous literature there is strong support for the six identified constructs. Looking at the theoretical support for these constructs, we will continue with these constructs for further analysis. Table 10 shows the factor loadings after rotation. The outcome of the factor analysis for independent survey items that cluster on the same components suggest that component 1 represents partner power, component 2 broker access utilization, component 3 startup power, component 4 perceived asymmetric interdependence, component 5 trust expectations and component 6 formal control mechanisms. These components are used for further analysis and hypothesis testing. All factors except startup power(0.684) and trust expectation(0.679) have a higher Cronbach's alphas then the standard of 0.7.Experience only exists of 1 question and therefore no cronbach's alpha could be computed. The theoretical support for these construct questions, the result of the previous tests and the fact that the inter-correlations of items were sufficiently large the constructs are accepted for further analysis.

Now the same steps will be applied to the 6 dependent survey items. A principal component analysis will be used with an orthogonal rotation (varimax). The 2 assumptions to be checked are: KMO, and Bartlett's test of sphericity. (Table 7) The KMO measure of 0.770 verifies the sampling adequacy for the analysis, being greater than the threshold of 0.6. Bartlett's test of sphericity (χ2 (15) =185.939, p<0,001) shows that correlations between items were sufficiently large. The determinant of the r-matrix (|R|= 0,032) shows that there is potentially no multicollinearity. All components had 'eigenvalues' over 1 according Kaiser's criterion that together explained 77.300% of variance. Looking at the scree plot it indicates that three factors can be extracted from the factor analysis. This is supported by the point of inflexion. However, the theoretical support for these construct questions and the result of the previous tests. Gives enough confidence to proceed with these components. Table 11 in the appendix shows factor loadings of the dependent survey questions. The items that cluster on the same components suggest that component 1 represents explorative relation-specific innovation firm performance, and component 2 represents explorative overall innovation firm performance. They both had a Cronbach's alphas over 0.7. This gives reason to continue with these components in further analysis. After the preliminary analysis seven independent components are left. Startup power, partner power, trust expectations, formal control mechanisms, perceived asymmetric interdependence broker access utilization and experience. Two dependent factors are left. Explorative relation specific innovation firm performance and explorative overall innovation firm performance.

4. RESULTS

4.1 Descriptive statistics

From the preliminary analysis, we have seven independent factors left and two dependent factors. Based on the identified constructs, variables are constructed and used for hypothesis testing. A moderator variable of Experience and Perceived Asymmetric Interdependence was created. And an explorative innovation firm performance variable was constructed. An overview of the descriptive statistics, including means, standard deviations and bivariate correlations can be found in table 2. Cohen (1992) states that a small correlation exists if correlation lies between 0.1 and 0,3; a medium correlation between 0.3 and 0.5; and a large correlation if it is higher than 0.5. Looking at table 2 we can find several significant correlations between variables.

There is a significant correlation between broker access utilization and explorative innovation firm performance(r=0,404, p<0,01). It seems that startups utilizing broker access will have higher explorative innovation firm performance. There is a significant relation between the moderator variable and explorative innovation firm performance(r=0.268, p<0,05), it looks like the moderator variable has a positive effect on explorative innovation firm performance. More details will be given in the hypothesis testing. There is a significant correlation between partner power and perceived asymmetric interdependence((r=0.461, p<0,01). This supports previous research (Kumar, 1995), which states that asymmetric interdependence increases with partner power.

There is a significant relationship between formal control mechanics and perceived asymmetric interdependence(r=0,252, p<0,05). Indicating that startups which encounter formal control mechanics perceive more asymmetric interdependence. Which is quite logical, since formal control mechanics is used as a tool by partner companies to control the startups. And therefore will lead to startups feeling asymmetry in their relationship. There is a significant relationship between startup power and partner power(r= -0,260, p<0,05). This relationship sounds logical since in the perception of a startup, the power either lays with themselves or their partner. And if the power increases to one side in this relationship, the power of the other will decrease, giving a correlation between them. This correlation between control variables might indicate multi-collinearity, this will be further analyzed with a VIF analysis.

Table 2: Descriptive Statistics

Means, standard deviations and bivariate correlation of the variables (n-=63)

Constructs	Mean	S.d.	1	2	3	4	5	6	7	8
1 Explorative Innovation Firm Performance	4.97	1.13	1							
2 Perceived Asymmetric Interdependence	4.12	1.19	0.166	1						
3 Partner Power	4.41	1.73	0.172	0.461**	1					
4 Startup Power	3.95	1.37	0.236	0.214	-0.260*	1				
5 Formal Control Mechanisms	4.48	1.44	-0.012	0.252*	0,123	0.246	1			
6 Trust Expectations	4.83	1.12	-0.041	-0.005	-0,082	-0.088	0.086	1		
7 Broker Access Utilization	4.90	1.29	0.404**	0.022	0.111	-0.194	0.005	0.035	1	
8 Experience	4.33	2.44	-0.244	0.095	0.204	-0.17	-0,053	0.059	-0.131	1
9 Moderator	0.27	2.94	0.268*	0.051	0.045	-0.131	0.095	0.038	0.209	-0.111

Notes: **p<0,01 , *p<0,05

4.2 Hypothesis testing

An overview of the hierarchical regression analysis of Explorative innovation firm performance can be found in table 3. After running a VIF analysis of the variables, it showed that their values were all below 1.62, which is well below the margin of 10.(Table 12) This shows there is no issue of multicollinearity between the different constructs.

Table 3: Hierarchical regression analysis: Explorative innovation firm performance

Determinants of explorative innovation performance (n=63)

	1				2				3			
	B	s.e.	β	p	B	s.e.	β	p	B	s.e.	β	p
Constant	1,345	0.978	-	0.174	1.813	1.011	-	0.78	1.915	0.981	-	0.065
Partner Power	0.165*	0.076	0.253	0.033	0.193*	0.089	0.295	0.035	0.200*	0.087	0.307	0.024
Startup Power	0.355**	0.099	0.429	0.001	0.336*	0.107	0.406	0.003	0.370**	0.105	0.448	0.001
Trust Expectations	0.015	0.112	0.014	0.897	0.029	0.112	0.029	0.795	0.027	0.108	0.027	0.805
Formal Control Mechanisms	-0,12	0.091	-0,2	0.193	-0,126	0.091	-0,16	0.169	-0,147	0.089	-0,187	0.102
Broker Access Utilization	0.401**	0.097	0.459	0.00	0.371**	0.098	0.425	0.000	0,338**	0.096	0.387	0.001
Perceived Assymetric Inter.					-0,008	0.126	-0,01	0.952	-0,028	0.123	-0,029	0.821
Experience					-0,087	0.052	0.189	0.101	-0,075	0.051	-0,163	0.147
Moderator Variable									0.089*	0.042	0.232	0.037

Notes: **p<0,01 , *p<0,05 ; Model 1: R2=0,331, Model 2: R2 =0,364, , Model 3: R2 =0,413

The regression analysis is performed by using control variables, predictor variables, the moderator variable and the dependent variable. Model 1 in Table 3 refers to the control variables impact on explorative innovation performance. Model 2 in Table 3 refers to the predictor variables of perceived asymmetric interdependence and experience on explorative innovation firm performance. Model 3 in Table 3 includes the moderator variable and its effect on explorative innovation firm performance. Model 1 reveals that the inclusion of control variables explain 33.1% of the variance. Adding predictor variables in model 2 increases the total variance explained to 36.4%, and adding the moderator variable in model 3 increases the total variance explained to 41.3%. The ability to predict the outcome of the variable exploitative innovation firm in the models increases throughout the models.

Our results shows multiple significant direct effect for control variables on explorative innovation firm performance. Model 1 shows that partner power has a positive effect and is significant (β=0,165, p=0,033), startup power has a positive effect and is significant (β=0,355, p=0,001). And broker access utilization has a positive effect and is significant (β=0,401, p<0,001). We will now check if the suggested hypotheses in the theoretical framework are proven by our results. **Hypothesis 1** predicts that perceived asymmetric interdependence has a negative effect on startups' explorative innovation firm performance. For perceived asymmetric interdependence the effect on explorative innovation firm performance is negative and not significant.(β= -0,008, p=0,952) Seeing the low level of significance and low level of correlation. It must be concluded that the current findings cannot give enough evidence to accept hypothesis 1.

Hypothesis 2 predicts that the relationship between perceived asymmetric interdependence and innovation firm performance is moderated by experience. The results show that the effect of experience accounted for perceived asymmetric interdependence is positive and significant for explorative innovation firm performance (β=0,089, p=0,037)

A p-plot was created to look at the residuals to see if there is a linear regression for this moderated relationship. Looking at the p-plot, there is a slight S shape visible formed by the data. This would suggest a linear regression. The plot of the residuals shows that the residuals of overall innovation firm performance form a V shape. It can be concluded that a linear regression for this relationship is justified .Looking at only this data, it could be stated that there is enough evidence to accept hypothesis 2. However, this moderator effect has been calculated using two negative effects: Asymmetric interdependence (-0,008) and Experience (-0,087). Therefore accepting this effect as positive is unjustified without further investigation. The negative regression of experience shows that experience has a negative effect on startups explorative innovation firm performance in their collaborations. This is in contrast to the expectations gained from literature. This would suggest that startups would increase their explorative innovation firm performance through experience. After visualizing the moderator effect by using a statistical test gained from (http://www.jeremydawson.co.uk/slopes.htm), more evidence is provided to reject the second hypothesis. Concluding, the results of the statistical analysis cannot give evidence to support the proposed hypothesis. We did not find enough evidence to support either hypothesis 1 or 2.

5. DISCUSSION AND CONCLUSIONS

The main goal of this thesis was to investigate to what extent experience of a startup moderate the effect of power asymmetry on explorative innovation performance. Concluding from the results our first hypothesis was rejected: Asymmetric interdependence has a negative effect on a startups' explorative innovation firm performance. Our second hypothesis was also rejected: The relationship between asymmetric interdependence and explorative innovation firm performance is moderated by experience. More years of experience will result in less negative effect of asymmetric interdependence on explorative innovation firm performance. (Moderation)

Failure to prove the moderation effect of experience in this research does not give conclusive evidence that this relationship does not exist. Future research with different research pools could have different conclusions. Findings of this research do not disprove the negative impact of perceived asymmetric interdependence on explorative innovation firm performance. It only supports a non-significant effect and further research with more data is needed to fully support this relationship.

The rejection of our first and second hypothesis could be caused by several reasons. First being that this hypothesis is untrue. Although the researched literature concluded otherwise, these relationships could be different when applied to different circumstances. Such as our case with startups in the German market and Dutch market. The second reason would be that our small sample size, from which our data is gathered had an effect on the outcomes. The response rate of the survey (Upheus,2016) and our own survey was extremely low. Such a low-test pool gives problems in making statistical analysis and resulting conclusions. To validate on these findings further research with a bigger sample size should be conducted.

The third reason would be that respondents are reluctant to give extreme values. When analysing the data, one thing that was apparent was that most of the answers that were given were 3,4 and 5 on the Likert scale. This psychological effect exists because respondents prefer to give safe answers due to being afraid on what others might think of them. Providing anonymity for the respondents in the questionnaires would be a logical solution to this as was done in Upheus (2016) survey. However psychological research showed that this effect still occurs in anonymous questionnaires. (Tourangeau et al., 2000)One weak point of the Likert scale is that this process is made ''easy'' for the respondents, by already giving respondents the safe option of the middle way on the Likert scale.

The outcomes of this research could not indicate that explorative innovation firm performance of startups suffered due to asymmetric interdependence. Therefore, the many positive advantages of having collaborations with powerful partners for startups as indicated in the theoretical framework, would be beneficial for startups to obtain. It would be wise for German and Dutch startups to reach out in their network and start collaborations with other companies to improve their explorative and overall innovation performance, resulting in more competitive advantage.

6. PRACTICAL AND THEORETICAL IMPLICATIONS

6.1 Practical implication

This paper will help startups to understand asymmetric interdependence and how this can affect their collaborations with other companies. This will help them avoid or overcome negative effects caused by asymmetric interdependence in order to gain and maintain productive collaborations, in which productivity and explorative innovation firm performance is high. Although no clear negative effects from asymmetric interdependence could be found in this research, German and Dutch startups could encounter these when entering new markets in other countries. Startups in others countries who are suffering from the negative effects of asymmetric interdependence would profit greatly from learning how to cope with them. Moreover, this research gives insights to startups on how to improve their collaboration with other companies outside of the effects of asymmetric interdependence. The outcomes of this research indicate that asymmetric interdependence in collaborations with established companies, does not necessarily result in harmful effects for the startups. Therefore, the indicated positive effects from these relationships far outweigh the often lacking negative ones. This is positive for German and Dutch startups and they should actively engage in these collaborative relationships to profit from the gains.

Although this research concluded that experience had a negative outcome on explorative innovation firm performance. There are still many benefits to be gained for startups through experience. Building a learning organization within the company will help startups to improve on their practices and increase their productivity and competitiveness in the market. Learning from mistakes by trial-and-error and having a culture open for criticism and feedback will help build upon the learning curve of a startup.

6.2 Theoretical implication

This research contributes to the academic field researching the effect of power asymmetry on business relationships. More specific, the effect of power asymmetry on the explorative innovation firm performance of startups. The outcomes of this research contribute to the research on this subject by validating hypotheses done by other researchers such as (Kumar & Al., 1995) (Wang & Hsu 2014) (Kalaignanam et al., 2007). This by applying it to a different test pool (startups in the German and Dutch market) with other national contexts. Outcomes show that the tested startups based in the German and Dutch market do not encounter significant negative effects from collaborations with powerful partners.

This contradicts previous research done by other researchers. Wang & Hsu (2014) propose that the greater the asymmetrical interdependence in a relationship, the weaker will be the explorative innovation firm performance of a startup. Our research could not find a significant relationship between asymmetric interdependence and explorative innovation firm performance. Vandaie & Zaheer (2014) propose that smaller firms are prevented in pursuing new projects and business opportunities by their larger partners. Causing weaker explorative innovation by the startup due to asymmetric interdependence. Results from our research could not find such a significant relationship between asymmetric interdependence and explorative innovation firm performance.Miles & al. (1999) propose that smaller firms put themselves in a dependent position in an inter-organizational relationship when collaborating with larger firms. Leading to weaker performance outcomes. This research did not find that startups engaging in inter-organizational relationships will have weaker performance outcomes. According to our conclusions the benefits outweigh the negative effects of engaging in inter-organizational relationships, and a startups performance will increase due to inter-organizational relationships with larger firms. Rothaermel (2001) suggests that alliance experience results in more explorative innovation firm performance. The results of this research suggest a negative relationship between experience and explorative innovation firm performance. Giving contradicting evidence for this theory. These differences between our research and previous research can be caused by several influencing variables. Differences in the startups that are researched could be a possible cause. Our research did not focus on one major industry instead having startups operating in a wide array of industries. Perhaps only studying startups operating in a specific industry in the German and Dutch market would have generated the same outcome as previous research.The national context of the German and Dutch market, compared to other national contexts in which previous research has been done could also be an influencing factor. Our relative small test pool of 63 startups could have caused our inability to prove some of our hypothesis. Having a larger test pool more in line with previous research could have resulted in different outcomes from this research. The outcomes of this research contribute to the discussion in the academic field on inter-organizational relationships. This research also contributed on the validation of the construct of Experience. And its use as a relevant factor for analyzing inter-organizational relationships. It contributes to many other literature subjects such as business learning and collaboration between businesses.

7. LIMITATIONS AND FUTURE RESEARCH

There are some major limitations surrounding this research. Firstly, the measurement of the variable of experience. Unfortunately a survey created by ourselves with more expanding questions on experience gained by startup companies, did not receive enough respondents to build research on. Therefore this research was bound by the survey conducted by Upheus (2016) and his measurement for experience. This survey only contained one question regarding this variable, which was experience. While this gives a good measure point on how many years of operating experience a startup has. It does not give critical insight in what kind of activities they did in these years. It could have occurred that there were some ‘’crisis’’ years where almost no collaborations with other companies or operational activities were made. Looking at the crisis years off the west European economy during the last 10 years Kotz (2009). This is certainly plausible for some of the startups who have responded in the survey. Moreover, experience is a complex variable to measure since startups who actively engage in collaboration with other companies, could learn less than other companies with the same amount of collaboration as them. This is caused by the culture of some startups in which learning from mistakes and being open to feedback or criticism is frowned upon. This would cause a weaker learning curve for these startups, and in many years of operating could have learned less than a learning organization which only operated for far less years. Recommendation for future research would be expanding on the operationalization and measurement of experience for startup companies. Suggestions would be to split experience in its different types as stated in the literature review, and create a good definition of experience which will be measured in the research. Possibly focusing on only one aspect of experience, seeing the complexity of this variable. Another major limitation was that Upheus dataset only had respondents from German startups. And only a small contribution of own data was given, with startups from the German and Dutch markets. Startups from different parts of the world could have different effects from asymmetric interdependence on explorative innovation performance. Germany and the Netherlands have a stable market with many constitutional and governmental mechanisms in place to protect companies. Companies in less sophisticated markets with less protection, more corruption and other hazardous effects in their markets will be more prone to suffer from asymmetric interdependence. The culture of countries also differs, the theory of Hofstedes cultural dimensions (2011) illustrates this and these different cultures in other countries could have effects on how variables affect startups. Therefore the survey should be applied in other countries, markets or specific industries to expand on current data and in order to validate current findings.

Moreover, the small sample size of our research causes some major limitations to this research. Due to the small sample size caused by the low response rate, many problems occurred during the statistical analysis. This made the generalizability of findings and conclusions in this research limited. Having a larger pool of respondents would certainly help the validity and reliability of this research. And further test other survey questions which were left out from further statistical analysis caused by the low pool of respondents.

There could be many other additional factors that influence inter-organizational relationship between startups and established companies. This could be researched and expanded upon in further research. Another major limitation of this research is that there is only took the view of startups in account and do not explore the perception of the collaboration partner. Their perception could give valuable insights in the relationship between them and startups and shed new light on relationships made in this research by only focusing on the perception of the startups. The last major limitation this research has is that every response of a startup that was taken into this research was only given at one time point. These relationships can develop and change over time and this change will not be measured by our survey. Felt asymmetric interdependence and its effect on explorative innovation performance could change during the relationship between a startup and their collaboration partner.

8. REFERENCES

Ackermann, S. J. (Ed.). (2012). *Are small firms important ? Their role and impact*. Springer Science & Business Media.

Adler, P. S., & Clark, K. B. (1991). Behind the learning curve: A sketch of the learning process. *Management Science*, *37*(3), 267-281.

Ahuja, G., Lampert, C. M., &Tandon, V. (2008). 1 moving beyond Schumpeter: management research on thedeterminants of technological innovation. The Academy of Management Annals, 2(1), 1-98

Alvarez, S. A., & Barney, J. B. (2001). How entrepreneural firms can benefit from alliances with large partners. The Academy of Management Executive, 15, 139-148.

Anderson. James C. and David W. Gerbing (1988), "Structural liquation Modeling in Practice: A Review and Recommended Two-Step Approach." Psychological Bulletin, 103 (3), 411-23

Argyris, C. (1976). Single-loop and double-loop models in research on decision making. *Administrative science quarterly*, 363-375.

Auh, S., & Merlo, O. (2012). The power of marketing within the firm: Its contribution to business performance and the effect of power asymmetry. *Industrial Marketing Management*, *41*(5), 861-873.

Baum C, Calabrese T. & Silverman B. Don't Go It Alone: Alliance Network Composition and Startups' Performance in Canadian Biotechnology *Strategic Management Journal,* Vol. 21, No. 3, Special Issue: Strategic Networks (Mar., 2000), pp. 267-294

Brislin, R. W. (1970). Back-translation for cross-cultural research. *Journal of cross-cultural psychology*, *1*(3), 185-216.

Cao, Z., & Lumineau, F. (2015). Revisiting the interplay between contractual and relational governance: Aqualitative and meta-analytic investigation. Journal of Operations Management, 33, 15-42

Capaldo, A. (2007). Network structure and innovation: The leveraging of a dual network as a distinctive relational capability. Strategic management journal, 28(6), 585-608.

Caruana, A., Morris, M. H., & Vella, A. J. (1998). The effect of centralization and formalization on entrepreneurship in export firms. *Journal of Small Business Management*, *36*(1), 16.

Cohen, J. (1992). A power primer. Psychological bulletin, 112(1), 155.

Danneels, E. (2002). The dynamics of product innovation and firm competences. *Strategic management journal*, *23*(12), 1095-1121.

Emerson, Richard M. (1962), "Power-Dependence Relations," American Sociological Review, 27 (February), 31—41.

Fang, S. R., Fang, S. C., Chou, C. H.,Yang, S. M., & Tsai, F. S. (2011). Relationship learning and innovation: The role of relationship-specific memory. Industrial Marketing Management, 40(5), 743-753.

Field, A. (2013). Discovering statistics using IBM SPSS statistics. Sage

Frazier, Gary L. (1983), "On the Measurement of Interfirm Power in Channels of Distribution." Journal of Marketing Research. 20 (May), 158-66.

Gibb, A. A. (1997). Small firms' training and competitiveness. Building upon the small business as a learning organisation. *International small business journal*, *15*(3), 13-29.

Gulati, R., & Sytch, M. (2007). Dependence asymmetry and joint dependence in interorganizational relationships: Effects of embeddedness on a manufacturer's performance in procurement relationships. Administrative Science Quarterly, 52(1), 32-69

Hellmann T. & Puri M. (2015)The Interaction between Product Market and Financing Strategy: The Role of Venture Capital**.** Rev Financ Stud (2000), Vol. 13, Issue 4, 959-984.

Hillman, A. J., Withers, M. C., & Collins, B. J. (2009). Resource dependence theory: A review. *Journal of management*

Hofstede, G. (2011). Dimensionalizing Cultures: The Hofstede Model in Context. Online Readings in Psychology and Culture, 2(1). http://dx.doi.org/10.9707/2307-0919.1014

James A. Narus (1990), "A Model of Distributor Firm and Manufacturer Firm Working Relationships," Journal of Marketing, 54 (January), 42-58

http://www.jeremydawson.co.uk/slopes.htm

Johanson, J. & Vahlne, JE. Journal of International Entrepreneurship (2003) 1: 83.

doi:10.1023/A:1023219207042

Kalaignanam, K., Shankar, V., & Varadarajan, R. (2007). Asymmetric new product development alliances: Win-win or win-lose partnerships?. *Management Science*, *53*(3), 357-374.

Kale, P., Dyer, J. H., & Singh, H. (2002). Alliance capability, stock market response, and long-term alliance success: the role of the alliance function. *Strategic Management Journal*, *23*(8), 747-767.

Kenney, M. (2000). Understanding Silicon Valley: The anatomy of an entrepreneurial region. Stanford University Press.

Kotz, D. M. (2009). The financial and economic crisis of 2008: A systemic crisis of neoliberal capitalism. *Review of Radical Political Economics*, *41*(3), 305-317.

Kumar, N., Scheer, L., & Jan-Benedict E. M. Steenkamp. (1995). The Effects of Perceived Interdependence on Dealer Attitudes. *Journal of Marketing Research, 32*(3), 348-356. doi:10.2307/3151986

Lawier, Edward J. (1992), "Power Processes in Bargaining," The Sociological Quarterly. 33 (1), 17-34

Samuel B. Bacharach (1987), "Comparison of Dependence and Punitive Forms of Power," Social Forces, 66 (2), 446-62.

Li, J. J., Poppo, L., & Zhou, K. Z. (2010). Relational mechanisms, formal contracts, and local knowledgeacquisition by international subsidiaries. Strategic Management Journal, 31(4), 349-370

Lowik, S., Van Rossum, D., Kraaijenbrink, J., & Groen, A. (2012). Strong Ties as Sources of New Knowledge: How Small Firms Innovate through Bridging Capabilities*. Journal of small business management, 50(2), 239-256.

Lubatkin, M. H., Simsek, Z., Ling, Y., & Veiga, J. F. (2006). Ambidexterity and performance in small-to medium-sized firms: The pivotal role of top management team behavioral integration. *Journal of management*, *32*(5), 646-672.

Magee, J. C., & Smith, P. K. (2013). The social distance theory of power. *Personality and Social Psychology Review*, *17*(2), 158-186.

March, James G., and Zur Shapira. "Managerial perspectives on risk and risk taking." *Management science* 33.11 (1987): 1404-1418.

Miles, G., Preece, S. B., & Baetz, M. C. (1999). Dangers of dependence: the impact of strategic alliance use by small technology-based firms. Journal of Small Business Management, 37(2), 20.

Nelson, R. R. (2008). Bounded rationality, cognitive maps, and trial and error learning. *Journal of Economic Behavior & Organization*, *67*(1), 78-89.

Newbert, S. L., Tornikoski, E. T., & Quigley, N. R. (2013). Exploring the evolution of supporter networks in the creation of new organizations. Journal of Business Venturing, 28(2), 281-298.

Nienhüser, W. (2008). Resource dependence theory-How well does it explain behavior of organizations?. management revue, 9-32.

Nyaga, G., Lynch, D., Marshall, D., & Ambrose, E. (2013). Power asymmetry, adaptation and collaboration in

dyadic relationships involving a powerful partner. Journal of Supply Chain Management,42-65.

Raisch, S., Birkinshaw, J., Probst, G., & Tushman, M. L. (2009). Organizational ambidexterity: Balancing exploitation and exploration for sustained performance. *Organization science*, *20*(4), 685-695.

Raymond C. Rody (1991). "The Use of Influence Strategies in Interfirm Relationships in Industrial Product Channels," Journal of Marketing, 55 (January), 52-69

Ritter, T., Wilkinson, I. F., & Johnston, W. J. (2002). Measuring network competence: some international evidence. Journal of Business & Industrial Marketing, 17(2/3), 119-138.

Rothaermel, F. T. (2001). Incumbent's advantage through exploiting complementary assets via interfirm cooperation. *Strategic Management Journal*, *22*(6-7), 687-699.

Rothaermel, F. T., & Deeds, D. L. (2006). Alliance type, alliance experience and alliance management capability in high-technology ventures. *Journal of business venturing*, *21*(4), 429-460.

Rubin, A., & Babbie, E. R. (2016). *Empowerment Series: Research Methods for Social Work*. Cengage Learning.

Sawers, J. L., Pretorius, M. W., & Oerlemans, L. A. (2008). Safeguarding SMEs dynamic capabilities in technology innovative SME-large company partnerships in South Africa. Technovation, 28(4), 171-182.

Shan, W., Walker, G., & Kogut, B. (1994). Interfirm cooperation and startup innovation in the biotechnology industry. *Strategic management journal*, *15*(5), 387-394.

Slotte-Kock, S., & Coviello, N. (2010). Entrepreneurship research on network processes: a review and ways forward. Entrepreneurship Theory and Practice, 34(1), 31-57.

Song, M., Podoynitsyna, K., Van Der Bij, H., & Halman, J. I. (2008). Success Factors in New Ventures: A Metaanalysis*. Journal of product innovation management, 25, 7-27.

Sosna, M., Trevinyo-Rodríguez, R. N., & Velamuri, S. R. (2010). Business model innovation through trial-and-error learning: The Naturhouse case. *Long range planning*, *43*(2), 383-407.

Stevens, J. P. (2012). Applied multivariate statistics for the social sciences. Routledge.

Stuart, R. W., & Abetti, P. A. (1990). Impact of entrepreneurial and management experience on early performance. *Journal of business venturing*, *5*(3), 151-162.

Sykes, H.B. (1986). Lessons from a new ventures program. *Harvard Business Review*, May: 69-74.

Tang, J., Tang, Z., & Katz, J. A. (2014). Proactiveness, stakeholder–firm power difference, and product safety andquality of Chinese SMEs. Entrepreneurship Theory and Practice, 38(5), 1129-1157.

Tourangeau, R., Rips, L. J., & Rasinski, K. (2000). *The psychology of survey response*. Cambridge University Press.

Upheus, C. (2016). Utilizing Networks for achieving sustainable startup performance: Empirical investigation based on German startup companies. Master thesis, University of Twente.

Varsakelis, N. C. (2006). Education, political institutions and innovative activity: A cross-country empirical investigation. *Research Policy*, *35*(7), 1083-1090.

Vesper, K.H.(1980). New Venture Strategies. Prentice-Hall, Englewood Cliffs, NJ.

Wang, C.(2011). The moderating role of power asymmetry on the relationships between alliance and innovative performance in the high-tech industry. Technological Forecasting and Social Change, Volume 78, Issue 1, 1268-1279.

Weiblen, T., & Chesbrough, H. W. (2015). Engaging with Startups to Enhance Corporate Innovation. California Management Review, 57, 66-90

Yang, H., Zheng, Y., & Zhao, X. (2014). Exploration or exploitation? Small firms' alliance strategies with large firms. Strategic Management Journal, 35, 146-157.

Yli-Renko, H., Autio, E., & Sapienza, H. J. (2001). Social capital, knowledge acquisition, and knowledge exploitation in young technology-based firms. Strategic management journal, 22(6-7), 587-613.

Zollo, M., Reuer, J. J., & Singh, H. (2002). Interorganizational routines and performance in strategic alliances. *Organization Science*, *13*(6), 701-713.

Table. 4: Included survey items for Factor Analysis

Included survey items for factor analysis	
Construct	Survey item
Partner Power	Our most important collaboration partner used a high level of direct economic reward or punishment and/or coercive or physical force with our firm.
	Our most important collaboration partner has access to, influence on, or the ability to impact our company.
	Our most important collaboration partner has power to enforce its claims.
Startup Power	We use a high level of direct economic reward or punishment and or coercive or physical force with our most important collaboration partner.
	We have access to influence on or the ability to impact our most important collaboration partner
	We have power to enforce our claims over our most important collaboration partner.
Perceived Asymmetric Interdependence	It would require much trouble and expense for our firm to switch to a different collaboration partner
	Our most important collaboration partner has adapted its management methods to work effectively with our company
	We have made significant relation-specific investments for collaboration with our most important collaboration partner
	Our most important collaboration partner has made significant relationship-specific investments for collaboration us
Broker Access Utilization	We have gotten new potential partner contacts through our most important collaboration partner
	Our most important collaboration partner opened the doors to other potential collaboration partners
	We use our most important collaboration partner as a source of information about potential alternative partners
Trust Expectations	Our most important collaboration partner has always been evenhanded in its negotiations with us
	Our most important collaboration partner never uses opportunities that arise to profit at our expense
	We are not hesitant to transact with our most important collaboration partner when the specifications are vague
Presence of Formal Control Mechanisms	We have customized agreements that detail the obligations of both parties
	We have detailed contractual agreements specifically designed with our most important collaboration partner
Explorative Overall Innovation Firm Performance	Our company accepts demands that go beyond existing products and services
	Our company commercializes products and services that are completely new to our company
	Our company frequently utilizes new opportunities in new markets
Relation Specific Explorative Innovation Firm Performance	The relationship with our most important collaboration partner is beneficial for improving production flexibility
	The relationship with our most important collaboration partner enables our company to reduce production cost
Explorative Overall Innovation Firm Performance	Our company accepts demands that go beyond existing products and services
	Our company commercializes products and services that are completely new to our company
	Our company frequently utilizes new opportunities in new markets
Relation Specific Explorative Innovation Firm Performance	The relationship with our most important collaboration partner is beneficial for improving production flexibility
	The relationship with our most important collaboration partner enables our company to reduce production cost
	The relationship with our most important collaboration partner enables our company to improve existing products and service quality

9. APPENDIX

Table. 5: Excluded survey items from factor analysis

Excluded survey items from factor analysis (r>0,3)	
Construct	Survey item
Perceived Asymetric Interdependence	There are enough potential collaboration partners to replace our current collaboration partner
	There are satisfactory alternate collaboration partners available to keep operations running
	Our most important collaboration partner has technological advantage other potential partners
	Our most important collaboration partner would face serious financial drawbacks if we withdrew doing business with them
Explorative Overall Innovation Firm Performance	Our company regularly uses new distribution channels
Broker Access Utilization	We intentionally establish relationship with collaboration partners to get their large networks
Trust Expectations	Our most important collaboration partner uses opportunities that arise t our expenses
	Based on past experience we cannot with complete confidence rely on important collaboration partner to keep promises made to us.
	We are hesitant to transact with our most important collaboration part circumstances are vague
	We trust our most important collaboration partner to treat us fairly
	We trust that confidential/proprietary information shared with our most collaboration partner will be kept strictly confidential.
	Our most important collaboration partner never uses opportunities tha profit at our expense
Presence of Formal Control Mechanisms	We have specific, well-detailed agreements with our most important coll partner.

Table. 6: KMO and Bartlett's Test Independent Variables

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,531
Bartlett's Test of Sphericity	Approx. Chi-Square	467,044
	df	153
	Sig.	,000

Table. 7: KMO and Bartlett's Test Dependent Variables

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,770
Bartlett's Test of Sphericity	Approx. Chi-Square	185,939
	df	15
	Sig.	,000

Table 8: Statistics of Independent Components

	1	2	3	4	5	6
Eigenvalues	3.476	2.745	2.129	1.837	1.522	1.250
% of variance	19.312	15.251	11.828	10.207	8.456	6.945
A	0.779	0,762	0,684	0,745	0,679	0,765

Table 9: Statistics of Dependent Components

	1	2
Eigenvalues	3.253	1.385
% of variance	54.214	23.086
α	0,903	0,778

Table 10: Exploratory factor analysis for independent survey items

Rotated Component Matrix[a]

	Component					
	1	2	3	4	5	6
PartnerPower1	,676	,001	-,355	,237	-,149	,151
PartnerPower2	,687	-,010	-,349	,013	-,088	-,017
PartnerPower3	,823	,092	-,018	,045	,109	,039
StartupPower3	-,262	-,091	,737	,168	,018	,308
StartupPower2	-,008	,000	,829	,168	-,019	,015
StartupPower1	-,280	-,190	,284	,632	-,225	,080
PerceivedAsymDep1	,326	,125	,049	,650	,121	,157
PerceivedAsymDep5	,283	-,115	,074	,745	,079	,004
PerceivedAsymDep6	,603	,041	,181	,485	-,194	-,098
PerceivedAsymDep8	,670	,108	,311	,135	,040	,341
BrokerAccess1	,101	,894	-,011	-,033	-,079	,031
BrokerAccess2	,236	,840	,149	-,193	,130	,020
BrokerAccess3	-,231	,700	-,364	,155	-,098	-,052
TrustExpectation8	-,088	-,036	,053	,078	,819	,030
TrustExpectation9	-,275	,208	-,350	,351	,627	,064
TrustExpectation10	,132	-,081	,065	-,198	,849	,032
FormalControl2	,073	-,013	-,038	,113	,008	,895
FormalControl3	,112	,025	,236	-,003	,078	,858

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.[a]

a. Rotation converged in 7 iterations.

Table 11: Exploratory factor analysis for dependent survey items

Rotated Component Matrix[a]

	Component	
	1	2
ExplorativeRelSpec1	,895	,218
ExplorativeRelSpec2	,894	,137
ExplorativeRelSpec3	,904	,165
ExplorativeOverall1	,300	,817
ExplorativeOverall2	,195	,840
ExplorativeOverall3	,036	,790

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.[a]

a. Rotation converged in 3 iterations.

Table 12: VIF

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	PartnerPower	.876	1.141
	StartupPower	.810	1.234
	TrustExpectation	.962	1.040
	FormalControl	.884	1.132
	BrokerAccess	.957	1.045
2	PartnerPower	.619	1.615
	StartupPower	.694	1.440
	TrustExpectation	.952	1.051
	FormalControl	.870	1.149
	BrokerAccess	.923	1.084
	PerceivedAsymDep	.651	1.535
	YearsSinceFounding	.902	1.109
3	PartnerPower	.618	1.618
	StartupPower	.678	1.475
	TrustExpectation	.952	1.051
	FormalControl	.859	1.164
	BrokerAccess	.899	1.112
	PerceivedAsymDep	.647	1.545
	YearsSinceFounding	.891	1.123
	moderator	.916	1.091

a. Dependent Variable: explorativeinnovationpreformance

10. SURVEY

Online Survey: Interdependence Asymmetry		
Survey Question	**Answer Option**	**Reviewed Literature**
Identification of most important collaboration partner		
Please think about cooperating relationships of your company and indicate who you consider to be your most important collaboration partner. For the remainder of this questionnaire every time you are ask to answer questions based on your most important collaboration partner please refer to the partner indicated here.	(1) Other Startup (2) Customer (3) Supplier (4) Distributor* (5) Consultant (6) University (7) Research Institute (8) Competitor* (9) Funding Agency*	Faems et al., (2005) McGrath & O'Toole (2013)*
What is the approximate number of employees of your most important collaboration partner?	#Number of partner employees	Song et al., (2008) Wang (2011)
Is your most important collaboration partner a larger company in terms of total revenue?	(1) Yes (2) No	Sawers et al.(2008)
Is your most important collaboration partner a larger company in terms of number of total sales?	(1) Yes (2) No	Sawers et al.(2008)

Liker-Scale Questions: Please think of the relationship to your most important collaboration partner and indicate whether you "strongly disagree" or "strongly agree" with the following statements.								
Partner Power								
Our most important collaboration partner used a high level of direct economic reward or punishment and/or coercive or physical force with our firm.	Strongly disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Strongly Agree	Tang et al., (2014) Tang & Tang (2012)
Our most important collaboration partner has access to, influence on, or the ability to impact our firm.								Tang et al., (2014) Tang & Tang (2012)
Our most important collaboration partner has power to enforce its claims								Tang et al., (2014) Tang & Tang (2012)
Startup Power								
We use a high level of direct economic reward or punishment and or coercive or physical force with our most important collaboration partner.	Strongly disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Strongly Agree	Tang et al., (2014) Tang & Tang (2012)
We have access to influence on, or the ability to impact our most important collaboration partner.								Tang et al., (2014) Tang & Tang (2012)
We have power to enforce our claims over our most important collaboration partner.								Tang et al., (2014) Tang & Tang (2012)
Perceived Asymmetric Interdependence								
It would require much trouble and expense for our firm to switch to a different collaboration partner.	Strongly disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Strongly Agree	Gulati & Sytch (2007) Sawers et al., (2008) Wang (2011) Kumar et al., (1995)
There are enough potential collaboration partners to replace our current collaboration partner. [reverse coded]								Gulati & Sytch (2007) Kumar et al., (1995) Lusch & Brown (1996)

There are satisfactory alternate collaboration partners available to keep our operations running. [reverse coded]								Gulati & Sytch (2007)
Our most important collaboration partner has technological advantage over other potential partners.								Gulati & Sytch (2007)
Our most important collaboration partner has adapted its management methods to work effectively with our company.								Gulati & Sytch (2007)
We have made significant relation-specific investments for collaboration with our most important collaboration partner.								Gulati & Sytch (2007)
Our most important collaboration partner would face serious financial drawbacks if we withdrew doing business with them.								Gulati & Sytch (2007)
Our most important collaboration partner has made significant relationship-specific investments for collaboration us.								Gulati & Sytch (2007)
Explorative Relation-Specific Innovation Firm Performance								
The relationship with our most important collaboration partner helps our company to enter new technology fields.	Strongly disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Strongly Agree	Fang et al., (2011) Wang & Hsu (2014)
The relationship with our most important collaboration partner helps our company to extend our product range by developing successful new offerings.								Fang et al., (2011) Ashnai et al., (2015)
The relationship with our most important collaboration partner enables our company to open up new markets.								Fang et al., (2011)
Exploitative Relation-Specific Innovation Firm Performance								
The relationship with our most important collaboration partner is beneficial for improving production flexibility.	Strongly disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Strongly Agree	Fang et al., (2011)
The relationship with our most important collaboration partner enables our company to reduce production cost.								Fang et al., (2011)
The relationship with our most important collaboration partner enables our company to improve existing products and service quality.								Fang et al., (2011)
Explorative Overall Innovation Firm Performance								
Our company accepts demands that go beyond existing products and services.	Strongly disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Strongly Agree	Jansen et al., (2009) Jansen et al., (2006) Jansen, Vera & Crossan (2009)
Our company commercializes products and services that are completely new to our company.								Jansen et al., (2009) Jansen et al., (2006) Jansen, Vera & Crossan (2009)
Our company frequently utilizes new opportunities in new markets.								Jansen et al., (2009) Jansen et al., (2006) Jansen, Vera & Crossan (2009)
Our company regularly uses new distribution channels.								Jansen et al., (2009) Jansen et al., (2006) Jansen,Vera Crossan2009
Exploitative Overall Innovation Firm Performance								
Our company frequently makes small adjustments to our existing products and services.	Strongly disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Strongly Agree	Jansen et al., (2009) Jansen et al., (2006) Jansen, Vera & Crossan (2009) Wang & Hsu (2014)
Our company constantly pursues to increase economies of scale in existing markets.								Jansen et al., (2009) Jansen et al., (2006)

								(2009) Wang & Hsu (2014)
Our company constantly seeks to expand services for existing clients.								Jansen et al., (2009) Jansen et al., (2006) Jansen, Vera & Crossan (2009) Wang & Hsu (2014)
Our company frequently refines the provision's efficiency of existing products and services.								Jansen et al., (2009) Jansen et al., (2006) Jansen, Vera & Crossan (2009) Wang & Hsu (2014)
Relationship Strength								
What best describes the role of your most important collaboration partner?	(1) A business acquaintance (4) A business friend (7) A personal friend							Lowik et al., (2012) Newbert et al., (2013)
Please indicate the number of years, holding the relationship to your most important collaboration partner.	#Number of years of the relationship							Capaldo (2007)
Please indicate how many times in a moth you have business related contact to your most important collaboration partner.	#Number of times, business related contact							Capaldo (2007)
Broker Access Utilization								
We have gotten new potential partner contacts trough our most important collaboration partner.	Strongly disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Strongly Agree	Li et al., (2010) Yli-Renko et al., (2001)
Our most important collaboration partner opened the doors to other potential collaboration partners.								Li et al., (2010) Yli-Renko et al., (2001)
We use our most important collaboration partner as a source of information about potential new partners.								Ritter et al., (2002)
We intentionally establish relationships with organizations to get access to their large networks.								Lowik et al, (2012)
Shared Goal Expectations								
In the relationship to our most important collaboration partner both parties are enthusiastic about pursuing collective goals.	Strongly disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Strongly Agree	Li et al., (2010)
In the relationship with our most important collaboration partner both parties are committed to improvements that may benefit the relationship as a whole and not only the individual parties.								Li et al., (2010)
We share the same ambition and vision in the relationship with our most important collaboration partner.								Li et al., (2010)
In most aspects of the relationship to our most important collaboration partner both parties are jointly responsible for getting things done.								Li et al., (2010)
Trust Expectations in Partner Benevolence								
Our most important collaboration partner uses opportunities that arise to profit at our expenses. [reverse coded]	Strongly disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Strongly Agree	Gulati & Sytch (2007)
Based on the past experience we cannot with complete confidence rely on our most important collaboration partner to keep promises made to us.[reverse coded]								Gulati & Sytch (2007)
We are hesitant to transact with our most important collaboration partner when								Gulati & Sytch (2007)

We trust that confidential/proprietary information shared with our most important collaboration partner will be kept strictly confidential.								Gulati & Sytch (2007)
Our most important collaboration partner can be considered to be trustworthy.								Li et al., (2010) Cao & Lumineau (2015)
Our most important collaboration partner has always been evenhanded in its negotiations with us.								Li et al., (2010) Cao & Lumineau (2015)
Our most important collaboration partner never uses opportunities that arise to profit at our expense.								Li et al., (2010)
We are not hesitant to transact with our most important collaboration partner when the specifications are vague.								Li et al., (2010)
Formal Control Mechanisms								
We have specific, well-detailed agreements with our most important collaboration partner.	Strongly disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Strongly Agree	Li et al., (2010) Cao & Lumineau (2015) Yang et al., (2011)
We have customized agreements that detail the obligations of both parties.								Li et al., (2010) Cao & Lumineau (2015) Yang et al., (2011)
We have detailed contractual agreements specifically designed with our most important collaboration partner.								Li et al., (2010) Cao & Lumineau (2015) Yang et al., (2011)
Context Questions								
Are you the owner or founder of the company? If not, what is your position within the company?	(1) Yes (2) Position:							Hoang & Antoncic (2003) Wang (2011)
How many years since foundation of your company have passed?	#Years since foundation							Song et al.,(2008) Wang (2011) Fang et al., (2011)
What is the number of employees of your company?	# Employees							Song et al.,(2008) Wang (2011) Fang et al., (2011)
Which industry sector does your company belong to?	(1) Agriculture, Forestry & Fishing* (2) Mining, quarrying, oil & gas extraction* (3) Utilities* (4) Construction* (5) Manufacturing* (6) Transportation & Public Utilities* (7) Communication Technology (8) Electronic* (9) Gas* (10) Public Administration* (11) Sanitary Service* (12) Wholesale, Trade* (13) Finance, Insurance & Real Estate*			(14) Services* Retail trade° (15) Warehousing° (16) Information° (17) Real Estate Rental & Leasing° (18) Professional Scientific & Technical Services° (19) Management of Companies & Enterprises° (20) Administrative support, Waste management & remediation services° (21) Arts, Entertainment & Recreation ° (22) Accommodation & Food Services° (23) Other Services (except public administration) (24) Other:				According to SIC* and NAICS°