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MANEUVERING THE UNKNOWN THROUGH COLLABORATION

A qualitative study on how startups and established firms
collaborate to manage uncertainty

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Abstract

Organizations continuously face uncertainty in their internal and external environment. Through a qualitative cross-sectional study, the study aims to describe how established firms and startups collaborate to manage uncertainty, including the perspectives of both startups and established firms. The sample includes a total of nine respondents, of whom six respondents are from startups, and three are from established firms. To understand and analyze the findings of the study, The Resource Dependence Theory, The Theory of the Growth of the Firm, Institutional Environment, Isomorphism, and Podolny's theory Market Uncertainty and the Social Character of Economic Exchange are used. By including various perspectives, in terms of both startups and established firms, and different theoretical viewpoints, the study deepens the understanding of how collaborations between startups and established firms can manage uncertainty. The analysis finds multiple ways on how startups and established firms collaborate to manage uncertainty, namely by exchanging critical resources, collaboration diversification, and long-term collaborations. In turn, this thesis contributes to inform both startups and established firms which methods to advocate in existing collaborations to yield competitive advantage and to sustain, but also facilitate in making future collaborations more efficient.

Keywords: Uncertainty, Collaboration, Startup, Established Firm, Strategic Management, Network

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Concepts

Table I. Concepts

Concept	Definition
Collaboration	Working together to create something new in support of a shared vision (Emmens 2016)
Critical Resource	A resource needed by an organization to continue operate and/or function (Pfeffer, Salancik 2003)
Diversification	The process of increasing the inclusion of something e.g., products and partnerships (Penrose 1959)
Endogenous Uncertainty	Uncertainty that is firm-specific and occurs within organizations and is something they can control (Li 2008)
Exogenous Uncertainty	Uncertainty that stems from the environment and market events, and is outside an organization's control (Li 2008)
Established Firm	A firm that has existed, been accepted and successful for a long time (Macmillan 2021)
Interdependence	A dependence created towards another actor when the organization does not control the resources required for a desired action (Pfeffer, Salancik 2003)
Network	Includes multiple parties that have complementary strengths (Powell 1990)
Resilience	The ability or capacity to recover from, and deal with, change to develop (Ovan 2015)
Startup	A young firm founded by one or more entrepreneurs to develop a unique product or service and bring it to the market (Baldrige, Curry 2021)
Uncertainty	The unpredictability of organizational and environmental variables impacting the firm's performance (Magnani, Zucchella 2018)

Abbreviations

Table II. Abbreviations

Abbreviation	Definition
EU	European Union
FOMO	Fear of Missing Out
KPI	Key Performance Indicators
RDT	Resource Dependence Theory
UN	United Nations

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1. Introduction

1.1 Background

There are known knowns; there are things we know we know. We also know there are known unknowns; that is to say we know there are some things we do not know. But there are also unknown unknowns – the ones we don’t know we don’t know.

- Donald Rumsfeld, *US defense secretary, 2001–06*

Organizations continuously face and need to deal with uncertainty because of an absence of complete knowledge about the internal as well as the external environment (Sydow, Müller-Seitz et al. 2013). Uncertainty arises when parts of the environment are complex, unpredictable, ambiguous, or probabilistic (Barbow, Hinse et. al 2000). It is multilayered and can be both endogenous, and exogenous. *Endogenous uncertainty* is firm-specific, can be controlled by, and occurs within, the organization (Li 2008). Firm-specific uncertainty is, for instance, caused by resource interdependencies (Pfeffer, Salancik 2003). On the contrary, *exogenous uncertainty* is outside the firm’s control and stems from the organizational environment (Li 2008). Managing uncertainty is a fundamental task for leaders and organizations in order to pursue their missions, and the ability to do so distinguishes between success and failure (Wucker 2020). From the author’s viewpoint, this is a particularly contemporary challenge for organizations, as the average lifespan has fallen from roughly 60 to less than 18 years (Garelli 2016) and is forecasted to shrink to 12 years by 2027 for firms listed at Standard & Poor’s 500 (Anthony, Viguerie et al. 2017). Securing critical resources (Pfeffer & Salancik 2003), acting in accordance with previous patterns (Podolny 1994); (Scott 2008), and mimicking the behavior of prominent actors are different ways for organizations to address uncertainty (DiMaggio, Powell 1983).

At the same time, collaboration appears to be a “buzzed” solution to various challenges, among leaders and policymakers worldwide. This is mirrored through the EU’s establishment of the Agenda for a Collaborative Economy (European Commission 2016) and the UN’s Sustainable Development Goals (UN 2021). Collaborations between startups and established firms are theoretically a win-win. For established firms, it is a way to gain novel technology and agility. For startups, it enables growth opportunities through access to resources, capital, and legitimacy (Prats, Amigó 2017). Accordingly, as networked, and connected resources enable faster adaptation to rapidly changing demand patterns (Andersson, Movin et al. 2018), collaborations between startups and established firms could be a strategic method to manage uncertainty. With this background as a foundation, combined with the author’s curiosity, this thesis strives to understand: how do startups and established firms collaborate to manage uncertainty? How can they collaborate, to cope with both resource dependencies and a

changing surrounding? With the ambition to achieve a comprehensive understanding, the study will include the perspective of both startups and established firms.

1.2 Prior Research and Research Gap

The description in the previous part exposes underlying reasons to engage in startup-established firm collaborations as a method for both parties to manage uncertainty. When reviewing existing research on organizational management of uncertainty various fields are represented, like for example strategic management (Grote 2009). However, while research on managing uncertainty connected to collaboration exists, it focuses much on managing uncertainty within collaborations such as in project management (Perminova-Harikoski, Gustafsson et al. 2008; Migilinskas, Ustinovicius 2008; Kerzner 2011; Zheng, Monteiro de Cavalho 2016). Despite the relevance, little attention has been directed to collaboration's influence on handling uncertainty (Brugge, Vlist et. al 2018), and to the authors' knowledge, even less research with this focus exists on collaborations between startups and established firms. Furthermore, when investigating how startups and established firms collaborate, it largely focuses on specific types of these inter-firm collaborations such as accelerators (Weiblen, Chesbrough 2015; Pauwels, Clarysse et al. 2016; Kupp, Marval et. al 2017) or is related to open innovations or innovation in general (Jackson, Richter 2017; Usman, Vanhaverbeke 2017; Kupp, Marval et al. 2017; Moschner, Fink et al. 2019; Groote, Backmann 2020; Kurjuwit, Wagner 2020; Kapoor, Klueter 2020). Although there has been a significant interest for collaboration between startups and established firms in the last decade, there is less research, to the authors' knowledge, on combining strategic management with the institutional perspective, a perspective within economic sociology, which Raynard, Johnson et al. (2015) emphasize is important to challenge the rational strategic thinker and find explanations beyond what is observed, or other economic sociology theories (Dobbin, Baum 2000). Furthermore, existing research generally only exposes one party's viewpoint in the collaborations, despite the importance to include several perspectives to get a full assessment of a phenomenon (Cornell University 2021). Considering the relevance of examining how collaborations can address uncertainty and integrating the perspectives of strategic management and economic sociology, it is of interest to investigate how the relative characteristics of startup-established firm collaborations address uncertainty of various kinds.

1.3 Purpose and Research Question

One of the major reasons that businesses fail is due to not being able to cope with uncertainty (Edmondson 2011). Including various perspectives, in terms of both parties and different theoretical viewpoints, will deepen the understanding of how collaborations between startups and established

firms can manage uncertainty. This is important to provide practical implications on which methods to advocate in existing collaborations to yield competitive advantage and to sustain, but also to facilitate in making future collaborations more efficient. The study's aim is to understand how collaborations between established firms and startups facilitate in managing uncertainty by using Resource Dependence Theory, Penrose's "The Theory of the Growth of the Firm", Institutional Environment and Isomorphism, and Podolny's "Market Uncertainty and the Social Character of Economic Exchange". The research question is:

How do startups and established firms collaborate to manage uncertainty?

1.4 Main Focus and Delimitation

The research is delimited to investigate collaborations between established firms and tech startups, from the perspective of both parties. The study focuses on such collaborations, due to their interesting composition, since tech startups are claimed to be particularly agile, while established firms are perceived as bureaucratic and less adaptable (Blomberg 2020). Furthermore, Sweden was suitable as a geographical delimitation, partly since Sweden produces the second-highest number of billion-dollar tech companies per capita (McKenna 2017) while also being described to be the second-best country for larger businesses (Forbes 2021). A network easing startup-established firm collaboration was chosen as a starting point for companies to contact. All firms included in the study originate from collaborations within the network. Due to the network being supported by some of the leading Swedish universities, while being funded by government agencies and also including many startups and established firms, the authors found it credible and therefore suitable for the study.

2. Theoretical Framework

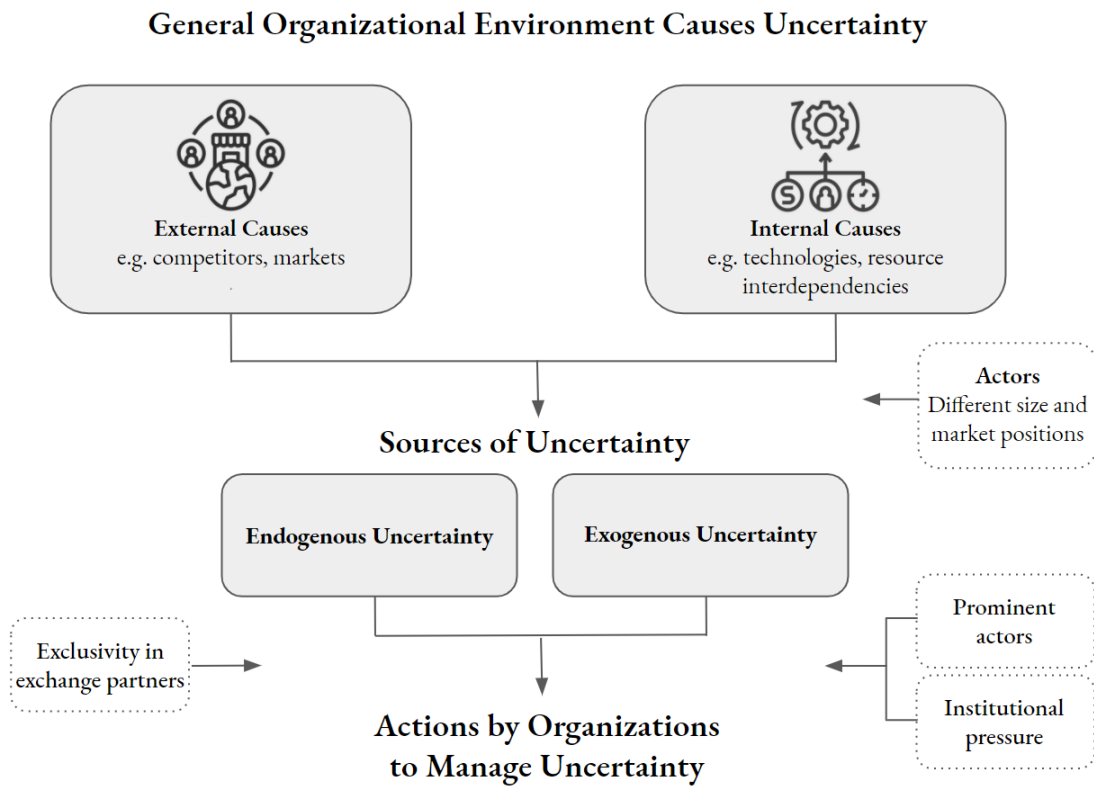
This section describes the thesis' theoretical framework and includes a literature review, split into two major categories: Uncertainty and Organizations, and Dynamics between Startups and Established Firms. Continuing, the theoretical framework further describes the theories used in the thesis.

2.1 Literature review

2.1.1 Uncertainty and Organizations

In the literature, the definition of uncertainty is dependent largely on the object or field studied but it is often referred to as the unpredictability of organizational and environmental variables that impact the firm's performance (Magnani, Zucchella 2018). Endogenous uncertainty is within an organization's control, something one can affect, while exogenous uncertainty is outside an organization's control, something one cannot affect (Li 2008). Uncertainty has internal or external causes (Grote 2009) and it can concern a specific firm or affect the entire market (Li 2008). Thompson (1967), an important figure in the development of organization theory (Hannan 2007), was the first to argue that there are three types of uncertainty for an organization: generalized uncertainty, uncertainty regarding organizational dependence on its environment, and uncertainty that relates to how internal components of an organization depend on each other. The second source of uncertainty, regarding organizational dependence on the environment, such as the market, can occur due to the critical need for a specific resource for the organization's continuous operations. How critical the resource is determining the level of dependence and magnitude of uncertainty for the organization (Pfeffer, Salancik 2003). Accordingly, the size and relative market position of an organization, affect the uncertainties, as these attributes influence what constitutes a critical resource (Penrose 1959). To manage the changing environment, and the perceived uncertainties for organizations, leading researchers within the field of institutional management theories, emphasizes that this can be done by acting according to institutional pressure and prominent figures (Scott 2008; DiMaggio, Powell 1983). On the other hand, according to the economic sociologist Podolny (1994), one way for organizations to handle uncertainty regarding what is exchanged is to adopt a principle of exclusivity in their choice of collaboration partners. See figure 2.1 for a summary of the organizational uncertainty.

Figure 2.1 Summary of organizational uncertainty, by Christiansson & Walter 2021



2.1.2 Dynamics Between Startups and Established Firms

Albrecht and Adelman (1987) elucidated that it is possible to ease uncertainty management with support from others in a stable relationship. Literature also emphasizes that interorganizational collaboration both transfers existing knowledge across organizations and facilitates the creation of new knowledge and the production of synergistic solutions (Beyerlein M., Beyerlein S. et al. 2006). By startup-established firm collaborations, each party can take advantage of each other's differences (Prats, Amigó 2017). Established firms have in comparison to startups a slower pace, because of their size and bureaucratic organizational structure (Blomberg, 2019). Startups, on the other hand, possess flat hierarchies and small teams (Prats, Amigó 2017), which makes them more adaptable and agile (Blomberg 2020). Large firms' challenges are to adapt to changing market conditions while small firms need to access capital to survive (Penrose 1959). In accordance, established firms benefit from collaborating with startups by getting access to new technologies, or novel business models, thus, decreasing their internal inflexibility. In turn, startups gain for example capital, increasing their chances of survival (Prats, Amigó 2017).

2.2 Theory Usage

Resource Dependence Theory (RDT) is one of the most influential theories within strategic management (Hillman, Withers et al. 2009). It was chosen by the authors as the starting point for the theories used in this study, to explore how collaborations can be a method for the different parties to secure critical resources and manage their dependence on the environment, but also how the parties manage dependencies within existing collaborations. By managing the dependencies, the parties manage their uncertainties. Furthermore, Penrose's (1959) resource-based view of strategic management explained in her book "The Theory of the Growth of the Firm", specifically the part "The Position of Large and Small Firms in a Growing Economy", is applied to explore how the different positions of startups and established firms in the market affect the aforementioned dependencies. These theories will be accompanied by economic sociological theories, to investigate how these aspects affect how startups and established firms manage their uncertainties. Firstly, theories about the institutional environment (Scott 2008), and mimetic isomorphism (DiMaggio, Powell 1983) are used to examine how the parties can manage their perceived uncertainty by acting according to prevailing norms. Secondly, Podolny's (1994) theory about "Market Uncertainty and the Social Character of Economic Exchange" is applied to explore how the choice of exchange partners can manage the parties' uncertainty regarding what is exchanged.

2.2.1 Resource Dependence Theory

RDT, developed by Pfeffer and Salancik, provides a framework, regarding the connection between environment, organization, and organizational behavior. In RDT, the organization is characterized as an open system, dependent on contingencies in the external environment (Pfeffer, Salancik 2003). The environment is a central source of uncertainty for organizations since it provides *critical resources*. A critical resource is determined by the organization's ability to continue operating in the absence of it (Hillman, Withers et al. 2009). It may only constitute a small part of total resource needs or costs, but a deficiency in the resource endangers the organization's operations. Organizations strive to reduce or avoid uncertainty. *Interdependence* is created in uncertainty; about the actions of those organizations, one depends on. Consequently, organizations take actions to manage external interdependencies. It creates interorganizational-, power-, and new dependencies, which affects organizational behavior (Pfeffer, Salancik 2003).

2.2.2 The Position of Large and Small Firms in a Growing Economy

In “The Theory of the Growth of the Firm”, Penrose (1959) proposes the existence of different positions of large and small firms in a growing economy. To stay competitive, thus reducing uncertainties, large firms must adapt to external supply and market conditions perceived by the firm. One method for adaptation is *diversification*, investment in new areas. New technologies are one of the most important reasons for large firms to diversify. Additionally, competitive forces oblige large firms to devote their scarce resources to specific fields, since movements into new areas need to build on their existing services and knowledge. Therefore, the necessity of maintaining a competitive position in its basic fields restricts the diversification opportunities for large firms, which in turn creates *interstices in the economy*. For small firms, one of the biggest problems for survival and growth, thus constituting a major source of uncertainty, is access to capital. However, since there are certain areas not suitable for large firms to enter due to diversification restrictions, small firms continue to exist. Because of this, most small firms operate in the interstices in the economy, left by large firms. The more technological knowledge grows and becomes increasingly diffused, the more productive opportunities open up for smaller firms.

2.2.3 Institutional Theory

Institutional environment and mimetic isomorphism can be used to describe why very different organizations act similarly to manage uncertainty. According to these institutional theories, the comparable behavior of organizations is explained by their exposure to equivalent norms and cultural expectations, the same *institutional pressure*. By acting according to institutional pressure, organizations can increase their legitimacy towards their stakeholders, and in turn, decrease their uncertainty. By adapting the institutional pressure, organizations can increase their *legitimacy*, *attractiveness*, and *success*, even if it does not lead to more efficient production processes of goods and services. Thus, organizations can be awarded merely due to their resemblance with other organizations (DiMaggio, Powell 1991; Scott 2008), which in turn is a way for the organizations to perceive that they manage their uncertainties.

2.2.3.1 Institutional Environment

According to Scott (2008), the organizational environment is divided into institutional and technical environments. When the production processes are known, the technical environment and its pressure dominates, which pressures organizations to produce

goods and services efficiently. In contrast, under high uncertainty regarding how organizational solutions, strategies, and production technologies are related to efficiency, the institutional environment and its pressure mostly affect organizational processes. Thus, in uncertainty, expectations, culture, and norms constitute *institutional pressure* on how organizational processes are designed, which may result in organizations acting in the same way.

2.2.3.2 Mimetic Isomorphism

Institutional isomorphism focuses on organizational similarity and rectifying forces, even to a greater extent than technical and institutional environments. Isomorphism takes place independently of the technical requirements derived from the organizations (DiMaggio, Powell 1983). Mimetic isomorphism is one type of isomorphism that stems from standard responses to uncertainty, which is uncertainty regarding an organization's goals or means of achieving its goals. It concerns the tendency of an organization to imitate other organizations that are perceived as successful, due to the belief that the behavior of the latter organization is beneficial. By *mimicking* other successful organizations, these behaviors are deemed legitimate (DiMaggio, Powell 1983).

2.2.4 Market Uncertainty and the Social Character of Economic Exchange

Podolny (1994) argues that in an uncertain environment, actors shift their focus from what is exchanged to the social structural positions of their potential exchange partners where the position is defined by an actor's previous pattern of exchange relations. Podolny emphasizes that organizations manage this uncertainty in two ways:

- a) *The greater uncertainty, organizations are more likely to engage in exchange relations with whom they have previously transacted with.* When uncertainty is high, it is more difficult for organizations to identify optimal exchange partners. In this setting, organizations first consider exchange partners that they have the greatest knowledge about (March 1988). An important source of this kind of knowledge is prior interactions (Granovetter 1985). Because of this, under uncertainty, actors rely more on previous exchange partners, thus facilitating long-term exchange relations.
- b) *The greater uncertainty, organizations are more likely to engage in exchange relations with those of similar status.* When the quality of a product is not directly observable, organizations

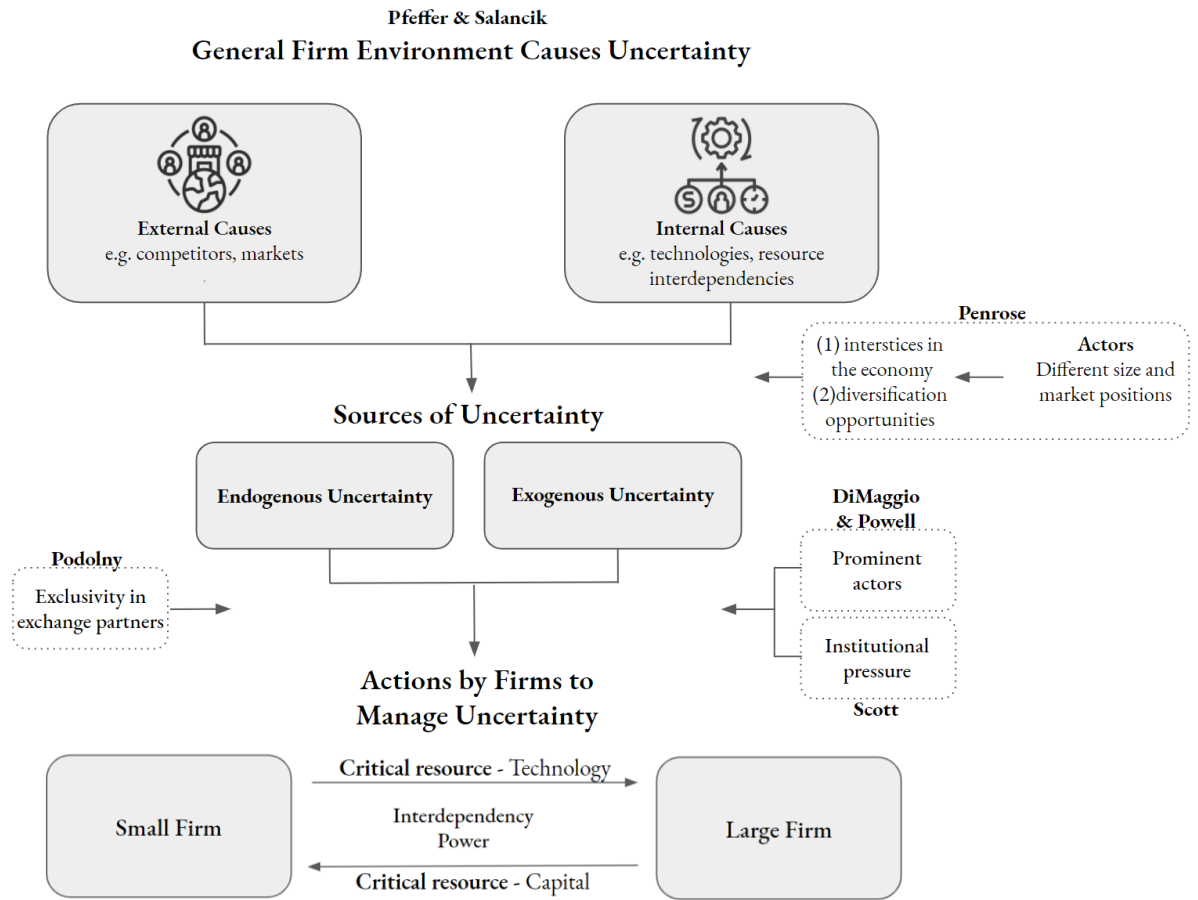
may rely on status when making assessments about the quality of the product. An organization's status is derived partly from previous quality demonstrations, partly from the status of its exchange partners. The more difficult it is to observe the quality of an organization's products, the greater the focus on the actor's status becomes.

2.3 Theory Summary and Contribution

To summarize, organizations take actions to manage the prevailing uncertainty in their resource interdependencies and in their environment. To reduce uncertainty, firms can take advantage of interorganizational relationships, and thus secure scarce resources. This creates new constellations of interorganizational power, new dependencies, which in turn affects organizational behavior. The different positions of small- and large firms affect these dependencies, and in turn, how the different parties manage their uncertainties. Furthermore, organizations are exposed to institutional pressure. The higher degree of uncertainty, the more significant institutional pressure becomes, resulting in organizations acting in the same way and mimicking organizations that are perceived as successful, in order to reduce uncertainty. Lastly, as a way of managing uncertainty, organizations also begin to choose their exchange partners in an exclusive manner, resulting in them working with whom they have transacted in the past, and with those of similar status.

This thesis contributes to theory, by intertwining theories within strategic management and economic sociology, and applying the combined theories on collaborations between startups and established firms, to provide a nuanced explanation of how startups and established firms collaborate to manage uncertainty. A summary of the thesis' theoretical framework, and thus theoretical contribution, can be found in figure 2.2. This framework will be used to answer how startups and established firms collaborate to manage uncertainty.

Figure 2.2 Summary of theoretical framework, by Christiansson & Walter 2021



2.4 Theory Criticism

Although the authors have chosen theories that they consider relevant to the study, some criticism can be addressed. Firstly, the accuracy of Penrose's work, "Theory About the Growth of the Firm", published in 1959, may bring attention. However, the authors deemed her work as appropriate for the study since it has had a significant influence on strategic management (Nair, Trendowski et al. 2009) and useful as it bridges strategic management to organizational economics (Kor, Mahoney 2000; Pitelis 2002). There has also been a discussion about if the success of RDT in the management field has ruined the theory since the active application of the original work prevents substantial theoretical development (Hillman, Withers et al. 2009). However, Nienhueser (2008) argues that RDT still is a valid theoretical framework with a strong future in management research and needs extensions. To address this critique, the authors have combined RDT with the other theories in the study.

3. Methodology

This section describes the methodology of the study and is divided into research design, data collection, data analysis, ethical considerations and implications, and method criticism.

3.1 Research Design

3.1.1 An abductive and Qualitative Approach

The research has been made through an abductive approach, where theory and empirics have been collected in parallel and adapted one after the other. Empirical data was used to delimit the research to only the relevant parts of the selected theories, which would not have been possible to achieve through a purely inductive or deductive method. The study focuses on examining how startups and established firms collaborate to manage uncertainty. As each collaboration is unique, the empirical data have been collected through qualitative semi-structured interviews. The chosen interview method enables the researcher to keep an open mind about the subject (Bell, Bryman et al. 2019) and allows follow-up questions. Thus, it enables the researchers to gain in-depth insights about the subject and the interviewees the opportunity to express the unique aspects of their collaborations. Such nuances would have been more difficult to capture through a fully structured interview. However, the comparability between the different interviews may vary with this interview method (Bell, Bryman et al. 2019).

3.1.2 A Constructivist and Interpretivist Study

The study is based on the constructivist ontology position. This position challenges the suggestion that categories, such as organization and culture, are objective phenomena that confront social actors as external. Instead, they are regarded as socially constructed entities, which are made real by the actions and understandings of humans (Bell, Bryman et al. 2019). This perspective is deemed appropriate to answer the research question partly because startups and established firms are organizations and partly since the study concerns the interactions between startups and established firms. Both aspects are social constructions created by humans. Furthermore, the study is based on an interpretivist approach, which is concerned with understanding the why and how of human behavior (Bell, Bryman et al. 2019). This epistemology has been chosen, firstly since a significant

part of the thesis' theoretical framework concerns how organizations act in uncertainty, thus organizational behavior, which involves human behavior. Secondly, it has been chosen since the selected economic sociological theories require interpretation of empirical data, such as actions, attitudes, and perceptions, to challenge the strategic thinker and get an in-depth understanding of how startups and established firms collaborate to manage uncertainty. Therefore, the interviewees' answers and behaviors have been subjectively interpreted by the authors.

3.1.3 A Cross-sectional Study Compromising Two Perspectives

The study was conducted through a cross-sectional research design, thus observing more than one case at a single point in time. This research design enables examination of relationships between variables and is an adequate research design for qualitative research (Bell, Bryman et al. 2019). As the authors were interested in providing an answer to the research question that is applicable to more than one case, a case study was not considered appropriate.

3.2 Data Collection

3.2.1 Sample

This study is based on interviews of nine individuals, including interviewees from six startups and three established firms. A particular collaboration network was chosen as the starting point for contacting startups and established firms, as stated in part 1.4. Under the network, both startups and established firms were contacted via email. Of those who responded, some were directly knowledgeable enough about the firm's startup-established firm collaborations, in other cases, the authors were referred to others in the firms. Some of the contacts who responded provided contact information to persons from other companies with whom they had collaborated, which the authors also contacted. The various companies in the sample have some connection to each other, either indirectly by being part of the same collaboration network, or directly through startup-established firm collaborations. Of the people contacted, six representatives from six different startups, and three representatives from three different established firms led to interviews included in the study. Three more interviews were held but removed from the study at a later stage. The persons who were considered to have the most insight into startup-established firm collaborations were selected for interviews. An overview of the participating startups and

established firms and their interviewees are summarized in table 3.1 and 3.2.

Table 3.1 Table of startup interviewees

Respondent	Firm	Position
SU1	Startup 1	CEO
SU2	Startup 2	CEO
SU3	Startup 3	CEO
SU4	Startup 4	CEO
SU5	Startup 5	Head of Accounts
SU6	Startup 6	CEO

Table 3.2 Table of established firm interviewees

Respondent	Firm	Position
EF1	Established Firm 1	Business Developer
EF2	Established Firm 2	Head of Collaboration
EF3	Established Firm 3	Innovation Manager

3.2.2 Interview Process

The authors designed two different interview guides (see appendix 2 & 3), one for the startups and one for the established firms, for the interviews in correspondence with the initially considered theories for the thesis. However, due to the abductive method, the authors were not sure that the initially selected theories would be relevant later. Therefore, the questions in the interview guide were designed to be open, as well as cover a range of different aspects, to capture interesting nuances and to investigate if other theories could be of interest for the study. After the first interview, some small adjustments were made, regarding which parts of the interview guide would get the greatest focus.

All the interviews were conducted online, through video meetings. The interviews varied between 41 minutes and 60 minutes, with a median of 53 minutes. During the interviews, certain patterns, concepts, similarities, and differences could be discerned for the startups and the established firms. The respondents from the established firms were contacted after their first interview in order for the authors to ask follow-up questions for further elaboration on some of the topics.

3.3 Data Analysis

The empirical data that were deemed important from the interviews have been transcribed, and thus processed through voice and text analysis. A thematic analysis was carried out, where themes were identified by distinguishing patterns, such as repetitions, similarities, differences, and analogies. Coding was used to categorize the different emerging themes into aggregated dimensions and second-order themes. Through analysis of the data, it was found that the many and open questions had allowed the authors to capture many interesting aspects that had not been considered earlier. Thanks to this, the rest of the theories that later formed the theoretical framework in the study were selected. The data analysis provided an overview of the empirical material collected (see table 3.3).

Table 3.3 Overview of the empirical data

Aggregate Dimensions	Second Order Themes
Uncertainties	Different positions and critical resources
Collaboration Exchange	Exchange for startups Exchange for established firms Length of exchange
Collaboration Trends	New organizational structures and measures Herd behavior

3.4 Ethical Considerations and Implications

When conducting the study, the four ethical issues in business research by Diener and Crandal, namely whether there is *harm to participants*, *a lack of informed consent*, *an invasion of privacy or involvement of deception* (Bell, Bryman et al. 2019), have been considered. To reduce the risk of these ethical issues, the respondents included in the study have signed a consent form for their participation in the study, confirming their approval. Additionally, the respondents and firms have been anonymized, of which the respondents were informed before the interviews. The respondents were also told that they may leave the interview, or at a later stage drop out of the study, without stating the reason, if they so wished. Moreover, the respondents were told about the aim of the study in the first contact email, and it was further clarified during the interviews as the respondents got to ask their questions regarding the study. Furthermore, the respondents were allowed to read and comment on their citations, before the publication, which characterizes respondent validation (Bell, Bryman et al. 2019).

3.5 Method Criticism

Criticism against the methodology within the study will be evaluated by *credibility*, *transferability*, *dependability*, and *confirmability*, as suggested by Bell, Bryman et al. (2019). The study may have some weaknesses regarding its *credibility*, as all the interviews were conducted in Swedish. Thus, the interviews had to be translated to English in the empirical material, which means that there is a risk of slight deviation from the original meanings in the translated citations. To reduce this risk, the respondents got to validate their translated citations before publication, as mentioned above. Despite this, the risk of misinterpretation has not completely vanished since the respondents might not completely remember their original citation. To further increase the credibility of the study, and its ecological validity, Bell, Bryman et al. (2019) proposes that the empirical data should be collected in the respondents' natural environments. This was also considered in the study, as all interviews were made in the interviewees' offices or homes. Additionally, as this concerns a cross-sectional, interpretivist, qualitative study, it is apparent that contextual factors affect the respondents' answers, which reduces the study's *transferability*. Moreover, criticism can also be directed to the *confirmability* of the study as the sample only includes nine respondents, and as the authors often were forwarded to the most suitable respondent for an interview in the different firms, resulting in the sample not being that diverse and stochastic. To improve the transferability and confirmability of the study, contextual factors of the interviewees were captured in the different interviews, and included in the study, such as context details like geographical delimitation and positions, thus producing a thick description which can be used in future research (Bell, Bryman et al. 2019). Lastly, to increase the study's *dependability*, the authors kept track of the different phases of research through documenting, and saving, the research material, such as notes and the transcribed interviews. Moreover, throughout the process of research, a supervisor group regularly audited the material, thus further increasing the study's dependability.

4. Empirics

In this section, the empirical data of the study is presented and divided into uncertainties, collaboration exchange, and collaboration trend. The empirics presented aim to display a variety of aspects to give a nuanced answer to the thesis' research question, namely how startups and established firms collaborate to manage uncertainty.

4.1 Uncertainties

This part illustrates the different positions and critical resources for the startups and established firms, which in turn creates different uncertainties for the parties. The interviews recognize that the parties experience both endogenous and exogenous uncertainties. By understanding how the different positions of startups and established firms affect their critical resources, a deeper understanding of how they collaborate to manage uncertainty can be achieved.

4.1.1 Different Positions and Critical Resources

Organizations face and need to deal with uncertainty because of absences of complete knowledge about the market environment, but what constitutes the uncertainty seems to differ depending on the size and position of the firm in the market. The respondents from the established firms seem to describe their endogenous uncertainty as rather low, as they possess much capital. One respondent explains:

We are in a very mature industry, and very capital-intensive. If you want to do something to grow, it requires money, and this is also something that protects the companies in many ways in this industry/.../Even if the environment is getting more disruptive due to technological advancement, no actor in this industry disappears over the day. – EF1

From the citation above it seems as technological advancement has made the established firms' environment more disruptive. Additionally, two of the respondents from the established firms seem to describe technology as a scarce and critical resource for them, as they say:

We are far too slow to develop things. The average time to produce a product, until it is ready, is seven years. It is far too long (time) in the ongoing digitalization/.../We have various structures and certifications that we must live up to. – EF2

Taking decisions about our core functions have been made a couple of times. There we know the exact processes, the costs, how long it will take, and what decision steps it includes/.../But when it comes to making decisions in new areas/.../ the processes can take much more time than the ordinary ones. – EF1

From the citations above, it seems as if the established firms' lack of technological innovativeness, causing endogenous uncertainty, also constitute and affect their exogenous uncertainty. This is because their insufficiency to develop new technologies on their own, makes them less adaptable to respond to technological changes in the market. In contrast, startups seem to exist in the technological interstices in the economy, and rather experience endogenous uncertainty regarding the critical resource capital, due to unsecured capital inflow. This may be comprehended in the empirics as the startup interviewees utter:

(If you are a startup) you often have a new and cool technology that you do not know where it belongs. Sometimes, it does not belong anywhere, and then there is nothing more to do about it. – SU4

We are hardly used to planning more than six months in advance/.../Only about 15% of startups survive. – SU2

Startups usually do not have a longer horizon than a year, in the absolute best case. – SU6

Another startup respondent expressed the anxiety that occurred in the beginning of the Covid pandemic, as all their projects were paused, thus stifling their capital inflows.

The most devastating thing was the uncertainty. Uncertainty is always one's greatest enemy. The carpet was pulled from under our feet. Everything that was not business-critical, in terms of budgets, innovation work/.../were paused (by the established firms). In terms of timing, we normally have a high season in May-June/.../Now all of a sudden, the pandemic coincided with this. – SU3

Against this citation, an insufficient amount of capital may constitute both the endogenous- and exogenous uncertainty for startups. This is because their uncertainty regarding if they will be able to secure enough capital to survive affects their ability to respond to unexpected events in the market.

4.2 Collaboration Exchange

The previous part indicates that startups and established firms are confronted with different uncertainties. Additionally, the study's introduction and literature review present that startup-established firm collaborations should be a win-win, and a way for the parties to manage uncertainties, as it allows them to take advantage of their differences. This part examines the exchanges within these collaborations, to investigate how the startups and established firms collaborate to manage their uncertainties.

4.2.1 Exchange for Startups

The respondents from startups claim that collaborations provide them with capital inflow, SU3 articulates “in the end, it is about a business transaction”. A supplementary benefit perceived by startups seems to be ameliorated reputation when collaborating with well-known actors.

Some startups have stronger reputations than others since they have been working with many large enterprises. I mean, we also want to piggyback on large enterprises’ reputations. – SU3

If you are a B2B startup, and if you have the opportunity, you should always go for the big players. They are the ones who have credibility in the market. – SU5

A better reputation, uttered by the respondents, appears to be important for the startups. The citation below further elaborates on how startups use collaborations to build credibility towards established firms.

One challenge is that we are very small and have many competitors. Many large customers do not want to work with us because we are small. They see us as a risk/.../We have some huge collaboration partners at the moment, so we use it as an argument (to meet this risk). That is probably the best thing we can do. – SU2

In accordance with this, a prominent startup with a good reputation did not express any difficulties in finding new collaboration partners among established firms.

...we are world leaders in our technology, so we do not find so many people who know more than us about these areas/.../platforms and collaborations, are very good ways for us to get in touch with customers and collaboration partners. – SU1

4.2.2 Exchange for Established Firms

In part 4.1.1, the respondents from the established firms describe themselves as too slow at developing new technologies. Related to this, established firms express an increased speed in technological advancements. Against this background, startup collaboration appears to be a way for established firms to gain increased knowledge and speed to the market regarding new technologies. They explain:

The only way for us to quicken our slow R&D procedure is to work with startups, to include an entire ecosystem of startups. Otherwise, we will remain in the Stone Age. – EF2

Today there are very short development cycles. Everything goes very fast, and large companies must use things available on the market. So, you have to take advantage of others’ innovations, and you are instantly competing on a global market. I mean, startup websites are available to the whole world the same afternoon they are launched. You have a global company from day one in many cases. – SU3

Another citation depicts a diversification aspect of startup collaborations for established firms.

(With startup collaborations) we try to enter areas, where we lack expertise, to expand our business to places where we are not today/... /Startups we collaborate with are typically companies within technology, that do not require these CAPEX-heavy investments. It is a way for us to innovate and move on. – EF3

Moreover, respondents from both startups and established firms emphasize that startup collaborations allow established firms to appear more innovative, yielding a reputation of being legitimate towards their stakeholders.

On the website, it looks good that you collaborate with startups. Because they (the established firms) must have a nice appearance, I mean, they must employ young people as well. – SU2

I am a bit harsh, but in general, when it comes to collaborations with startups for established firms, it is much about showing that you are innovative. You do something to show yourself in such an arena. You may not have fully counted on the business case from the start or so. – EF1

4.2.3 Length of Exchange

During the interviews, the respondents also discussed the length aspect of the collaboration exchanges. One respondent from an established firm appears to express a desire for more long-term collaborations, by describing that a goal of collaborating with startups is to ultimately acquire the firm.

A goal (with collaborations) is to build new business areas around the companies/... /the wish is that there would be more such (collaborations). – EF1

Additionally, it may be interpreted as startups find security in collaborating, thus exchanging, with whom they have transacted with before as several interviewees from the startups discuss the benefits of long-term collaborations. They explain:

Longer relationships are more off-shoulders. We know that we like each other and that we have worked with each other before, and we can feel safe. We do not have to be afraid that the large enterprises will just drop out suddenly, as they can. – SU3

The advantages of longer relationships are that the longer you work together, the more you understand the needs of your partners. You get better and better because you begin to understand what they want. – SU2

Dissection of the empirical data suggests that long-term collaborations allow startups to understand their partners' needs, resulting in them being able to adapt towards the established firms. Two startup interviewees describe:

10% of our (long-term) collaboration partners stand for 70% of our revenue which makes them important for us. However, the amounts of money that they give to us are just pennies for them/.../If an established company has a request, it is just for us to adapt. I mean if we do not follow their request, they just tell us to f*** off. It is their road map; we have to follow that. – SU5

I mean, we run much faster than big companies, and we always have to adapt to them. It can be noisy, but there is not much to do. We need them. – SU2

The citations above, suggest an existence of a power imbalance between the startups and established firms. Another respondent expresses the relationship between startups and established firms in collaboration through a metaphor, further illustrating the established firms' power.

The sparrow can help the elephant to scratch it behind its ear, and you can do something very special, but dancing together is quite pointless. – SU3

4.3 Collaboration Trends

As described earlier in the empirical data, startup-established firm collaborations provide exchanges that allow the parties to manage uncertainties. However, at the same time, in the interviews it appears as if the results from the collaborations are not always that important for the established firms. This part of the empirics investigates how the ongoing increased focus on startup collaborations tends to affect the actions of established firms, to further gain an understanding of how startups and established firms collaborate to manage uncertainty.

4.3.1 New Organizational Structures and Measures

New innovation departments in established firms are expressed by several interviewees, as a complement to classic R&D departments to focus on new innovations and startup collaborations, securing critical resources. However, the quality of these functions is disputed by one respondent saying:

Almost all large enterprises today have come to the realization that they must collaborate with startups, then they hire startup managers or innovation managers, which is completely meaningless for us. They (the startup and innovation managers) are measured on how many companies they meet, or how many projects they start. They are not measured by the value they create for the customer /.../ For example, if we are one out of 80 collaborations at a company, that's no value for us. – SU3

At the same time, this perception distinguishes from at least one established firm respondent that proudly voices adaptation of multiple measures for their collaborations with startups. However, not all their startup collaborations appear to be active. The respondent says:

We have a startup platform for our company/.../ (When taking in startups to the platform) there should be a potential for collaboration, but just because they are on our platform does not mean that it leads to actual collaboration. We have no obligation to establish collaborations/.../We also have lots of KPIs. We have tools to measure it (the collaborations), but it is measured rather arbitrarily. For example, we can say “Yes, you had three collaborations as a goal, and I think it sounds like you have three ongoing collaborations”. – EF2

From the above citations, it appears as if the new organizational structures and KPIs exist primarily to *promote* collaborations, adapting normative pressure, and that there is less focus on the actual *results* of the collaborations. This is further explored in the section below.

4.3.2 Herd Behavior

Several respondents mention that prominent figures, such as individuals and companies, portray collaborations positively. This seems to mold a certain herd behavior among established firms. One respondent explains:

When our global CEO goes out and says that “smart leaders collaborate”, and even when other managers say so, we notice that others follow. It weighs heavily on us when we have global technology executives who open meetings and encourage collaboration. Then there are many employees in the organization who dare to be open towards collaborations as well. – EF2

A startup respondent further expands on the notion of established firms’ herd behavior, believing they primarily are mimicking others and collaborate with startups due to a fear of missing out.

Unfortunately, the large enterprises are perhaps more often run by FOMO, than an insight that machine learning can make their business better. So, if their competitor has started to collaborate with startups, they do the same. – SU3

5. Analysis

This section contains an analysis grounded in the empirical data which displayed that startups and established firms experience both endogenous and exogenous uncertainty. The analysis aims to answer the thesis question, how startups and established firms collaborate to manage uncertainty. In accordance with the empirics, the analysis is divided into managing endogenous uncertainty, and managing exogenous uncertainty. The first part will be independently analyzed with help from the theoretical framework chosen. It will be further integrated into the second part as “prerequisites” to facilitate in answering the research question.

5.1 Managing Endogenous Uncertainty

The empirics shed light on the fact that startups and established firms have different market positions and sizes. Established firms are described to have much capital and hold stable positions within their markets as they do not disappear over the day, while startups operate in the technological interstices in the economy and have shorter foresight due to uncertain future survival. These positions seem to affect what resources they desire, as startup respondents expressed desideratum for capital, due to their small size and many competitors. Established firms, on the other hand, communicated a more significant position in the market with more capital, higher entry barriers and perceived their lack of speed in their technology development as a bigger threat to their competitive advantage. In accordance with Penrose, large and small firms have different positions in a growing economy, and therefore need capital, and technology, respectively, to grow. However, the empirics imply that the actors not only want to acquire these respective resources to grow but need to secure them to sustain. For instance, one respondent says that the increased technological advancement has forced the established firms to collaborate with startups in order to increase their speed in technological innovation.

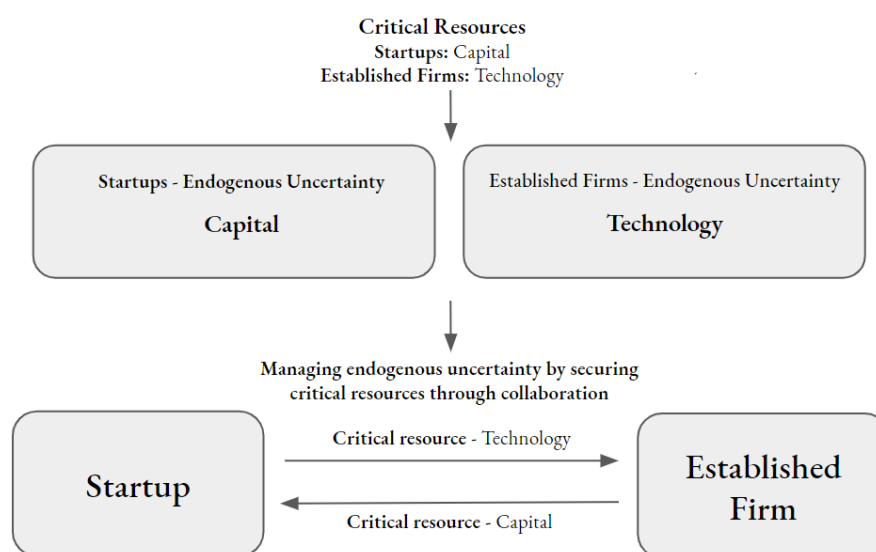
RDT states that critical resources create interdependencies between organizations and that organizations strive to manage these to reduce uncertainty in their environment. By securing critical resources, organizations can manage their internal, endogenous, uncertainty. Hence, it may be viewed that the critical resources needed by the actors, capital and technology, constitute sources of endogenous uncertainty. Therefore, by collaborating, the parties secure critical resources and manage endogenous uncertainty. Furthermore, in the empirical data, the startups can be interpreted as more dependent on the established firms in their collaborations since they are in urgent need of capital inflow to survive. According to RDT, actors in control of a large part of critical resources are powerful. Consequently, the established firms should exercise greater power over startups, than vice

versa, in their collaborations, as startups seem to be more dependent on the established firm's capital, than established firms need technology, in order to survive. In turn, it becomes increasingly important for startups to adapt in the collaborations, to satisfy their partner, and increase their chances of receiving future income. Nevertheless, from the empirical data, it appears as if established firms do not always know what they need, or want, regarding new technology, but they do know that they want to become more innovative. According to theories about institutional pressure and isomorphism, this points to great uncertainty regarding how to achieve efficient innovation for the established firms, resulting in increased institutional pressure for them within the area. Additionally, the established firms' technological uncertainty, suggests that they lack complete information about the exchanged technology in the startup collaborations. Podolny argues that this should cause the social orientation to dominate the market exchanges for the established firms in the collaborations. Aforementioned aspects affect startups and established firm's behavior in how they collaborate to manage their endogenous uncertainty.

Sub-conclusion:

What constitutes the endogenous organizational uncertainty for startups and established firms, depends on the organizations' size and position in the market. The reason is, that startups and established firms possess and desire dissimilar resources. By collaborating, the different parties can secure the critical resources needed, and in turn, manage their endogenous organizational uncertainty. The relative positions entail dissonance in power, and different pressures, which affect how startups and established firms interplay in their collaborations.

Figure 5.1 Overview of how startups and established firms collaborate to manage endogenous uncertainty, by Christiansson & Walter 2021



5.2 Managing Exogenous Uncertainty

As analyzed in the previous part, the established firms and startups experience different endogenous uncertainties. It influences how they act in relation to one another and therefore how they collaborate to manage their exogenous uncertainty, which this part will be analyzing.

5.2.1 Collaboration Diversification

Through the dissection of the empirical data, it is noticeable that established firms have initiated collaborations with several startups at once. Simultaneously, several respondents voiced that these collaborations' existence seems to be more important than their actual outcome. For example, since the established firms have inactive collaborations and do not always fully count on the business cases with startups. This phenomenon could be comprehended through RDT, as several collaborations increase the buffer of critical resources for the organization. At the same time, according to Penrose, large firms must adapt to external changes in order to sustain. The buffer of startup collaborations can be seen as a type of technological diversification. When disturbance occurs in the market, causing exogenous uncertainty, the collaboration buffer can be activated since organizations want to interact with those they already know, according to Podolny. In turn, it allows established firms to faster respond to environmental changes, ultimately managing their exogenous uncertainty.

Another way to interpret the phenomena of several collaborations at once can be made through the lens of RDT and Podolny from the perspective of startups. It seems that startups also benefit from collaborating with established firms, even if the collaborations are not active, and thus are not bringing in capital to the firms. The empirical data discerns that startups partly collaborate with established firms to ameliorate their reputation, in order to increase the chances that other established firms will discover them. Therefore, it appears as if the collaborations partly are performative towards the established firms. Hence, even inactive collaborations can create valuable status for the startups, which can enable future collaborations with other established firms, according to Podolny. In turn, this facilitates increased future inflow of the critical resource capital, reducing their endogenous uncertainty. This is supported by the empirical data, as prominent startups with great reputations seem to have no problem finding established firms to collaborate with. Because of this, they experience less uncertainty compared to less prominent startups. This implies that both active and inactive collaborations may increase startups' status, and accordingly their power, vis-à-vis their competitors'. Therefore, inactive collaborations are

also a method for startups to reduce their endogenous uncertainty, which ultimately decreases their exogenous uncertainty, as increased capital inflow should make the startups more stable during market disturbances.

Sub-conclusion:

Established firms collaborate with startups in collaboration clusters, which allows them to manage uncertainty by interacting with those who they already know. Furthermore, this kind of collaboration diversification allows them to secure a buffer of potential startups, possessing critical resources, which decreases their exogenous uncertainty as the collaborations can be activated when needed. Consequently, their exogenous uncertainty is managed. Startups, on the other hand, partly gain capital, partly an improved reputation which can increase their future income, hence their endogenous, and in turn exogenous, uncertainty is also managed.

5.2.2 Similar Collaboration Functions

The previous part sub-concluded that established firms and startups collaborate in collaboration clusters, and with prominent actors, to manage exogenous uncertainty. Moreover, it appears as the respondents stress the need for collaboration instead of its result. Therefore, the relevance of, for instance, the introduction of collaboration KPIs by one of the established firms, is further questioned by the authors. Noticeably, all established firms have created innovation departments and have an increased focus on startup collaboration. It seems that the empirics demonstrate that established firms mimic each other as they rather are driven by a fear of missing out, as described by one respondent. This phenomenon expressed as “herd behavior”, can be examined through the lens of institutional pressure and isomorphism, which argue that institutional pressure results in that organizations act similarly. The existence of institutional pressure, as earlier discussed in section 5.1, also appears in the empirical data, as established firms’ collaborations with startups are expressed to be driven by a fear of missing out. Additionally, this “herd behavior” can be further seen in the empirics, as prominent figures, such as CEOs, within the institutional environment, communicate the importance of collaboration proclaiming, “smart leaders collaborate”. By acting according to institutional pressure and prominent figures, established firms appear relevant and innovative in the market, which creates value for them. When established firms initiate innovative centers and collaborate with several startups, by following others, it creates a false sense of security, which in turn is a way for established firms to manage their exogenous uncertainty.

Sub-conclusion:

In order to manage uncertainty regarding how established firms should keep up with technological development, they act according to institutional pressures. Consequently, the established firms have introduced similar startup collaboration units. Against this background, it appears as established firms collaborate with startups, partly because others do, in order to appear relevant, which in turn manage their exogenous uncertainty in addition to earlier sub-conclusion.

5.2.3 Long-term Collaboration

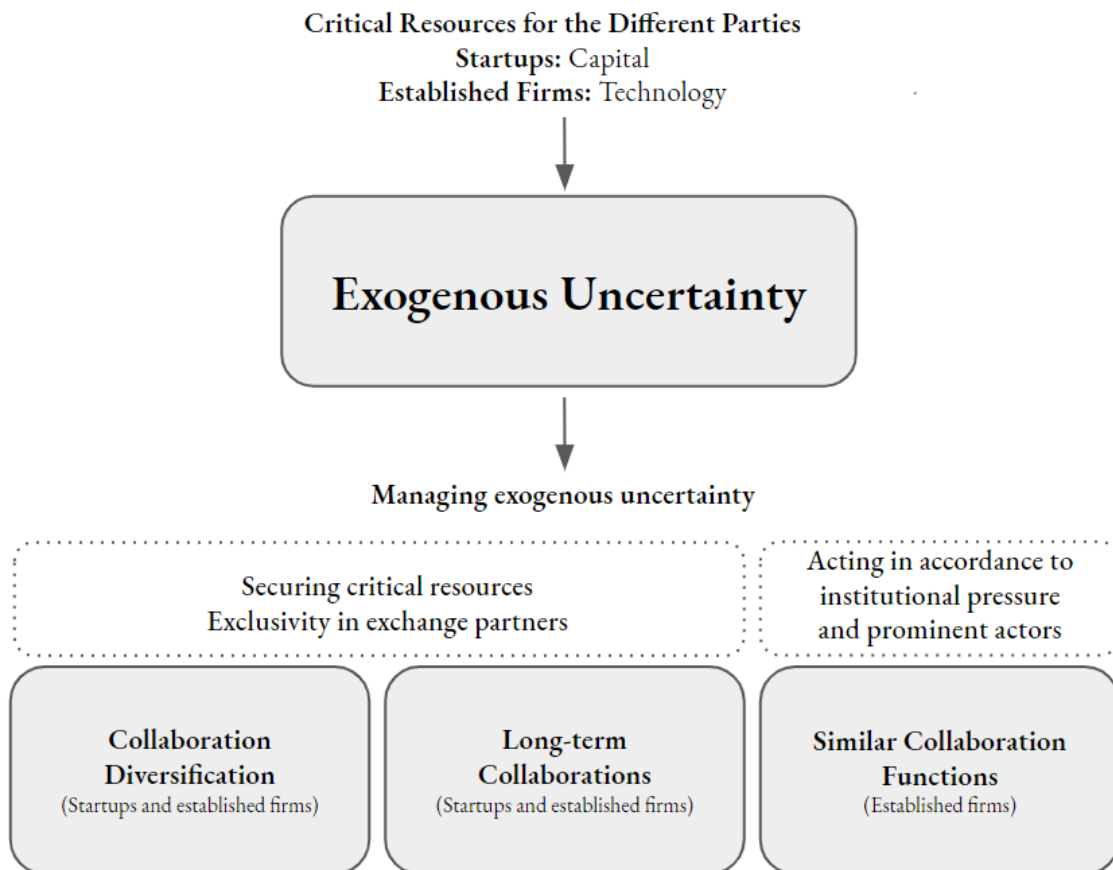
From previous parts of the analysis, the authors conclude that companies collaborate to diversify and imitate others, in order to manage their exogenous uncertainties. Additionally, in the empirical data, a time aspect concerning the different collaborations is discussed, as they emphasize the advantages of long-term collaborations. From the perspective of RDT, it can be understood that startups may prefer long-term collaborations since it enables long-term income, the critical resource capital, thus reducing their endogenous and exogenous uncertainty. Additionally, as proposed in section 5.1, established firms should exercise greater power over startups, than vice versa, in the collaborations, which appear to force the startups to adapt in their collaboration environment. The power structure that forces the startup to adapt to their collaboration partner, the established firm, allows the startups to gain an increased understanding of their partner's needs. From the perspective of the established firms, this suggests that long-term collaboration not only manages their perceived market uncertainty by relying on previous exchange partners, as suggested by Podolny, but also as it facilitates in developing technology that is better adapted to their needs. Through the lens of the theoretical framework of this study, long-term collaborations allow established firms to gain better technology, whilst startups receive long-term income. Directly, this could be interpreted as a method for the different parties to manage their endogenous uncertainty. Due to the benefits of long-term collaboration, it indirectly strengthens the established firms', as well as the startups', position in the market, compared to their competitors. By securing critical resources in the long run, decreasing the endogenous uncertainty, both startups and established firms ultimately are more prepared to face exogenous shocks and uncertainties.

Sub-conclusion:

The need for each other's critical resources, and power structures between established firms and startups in their collaborations, facilitate long-term collaboration and adaptation for

the startup towards the established firm's needs. Long-term collaborations allow startup and established firms to secure critical resources more permanently, reducing their endogenous uncertainty, but also their exogenous uncertainty, as they ultimately get better prepared at managing exogenous shocks.

Figure 5.2 Overview of how startups and established firms collaborate to manage exogenous uncertainty, by Christiansson & Walter 2021



6. Discussion

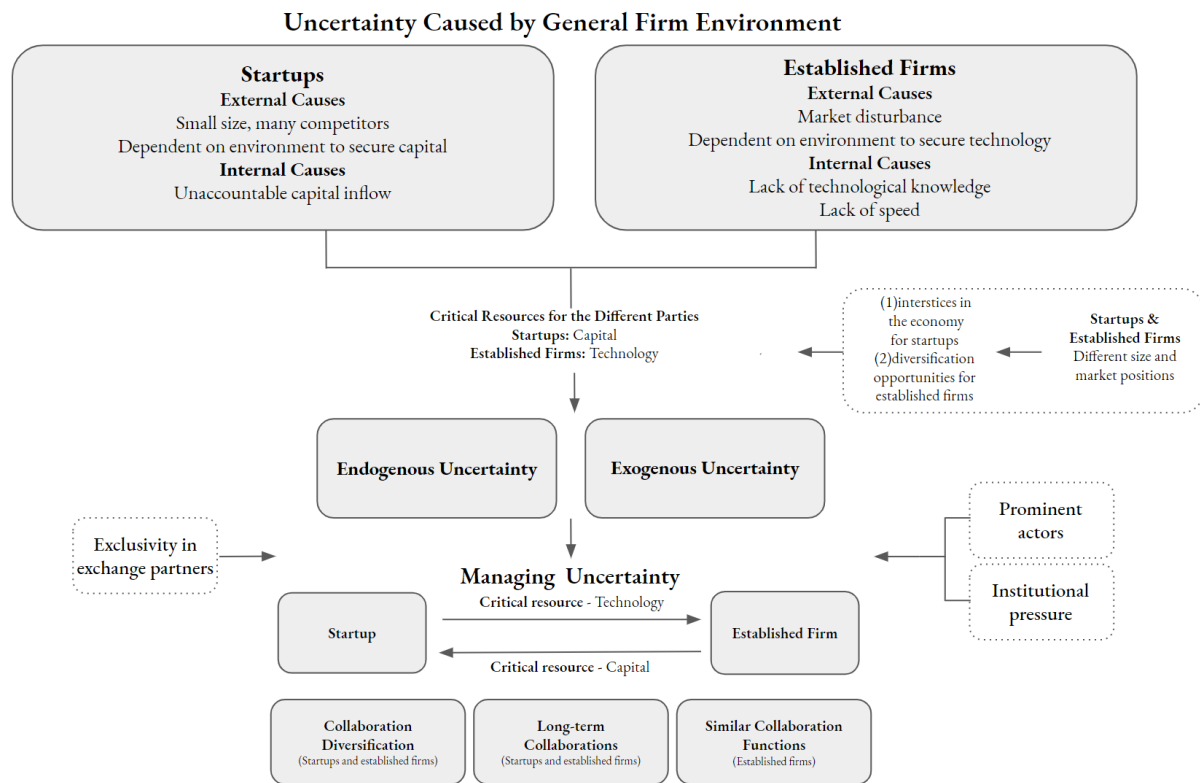
6.1 Answer to the Thesis Question

Through qualitative research, the authors have studied how startups and established firms collaborate to manage uncertainty. The empirical data have been analyzed through the lens of the study's theoretical framework to gain a deeper understanding of the phenomena. This process has been described and explained, with the aim of answering the study's research question, namely: *How do startups and established firms collaborate to manage uncertainty?*

From the analysis in section 5, four sub-conclusions were derived, which serves as the basis to answer the research question. Firstly, there are endogenous uncertainties, individual for each organization based on their critical resources. Startups and established firms desire and possess dissimilar resources, due to different sizes and positions in the market. By collaborating, the parties can secure their critical resources needed for corporate performance, which in turn is a way to manage their endogenous uncertainty. To secure the critical resources an organization needs, facilitate when managing exogenous uncertainty. Secondly, startups and established firms engage in collaboration clusters. By collaborating through these clusters, established firms become more agile when technological disturbances occur in the market while startups build a reputation, facilitating in securing capital and ultimately reducing their exogenous uncertainties. Thirdly, at the same time, it seems to be a focus on collaboration for the *sake of collaboration* rather than the actual *outcome* or as one respondent phrased it "On the website, it looks good that you collaborate with start-ups". By establishing innovations departments, the established firms appear relevant and innovative, which by that means creates value itself for them. When established firms collaborate with startups, by following others, it creates a false sense of security and that is a way for them to manage their exogenous uncertainty. Lastly, although collaborations often appear to be cases of grandstanding, long-term collaborations somewhat seem to actually yield concrete important values, decreasing both endogenous and exogenous uncertainty, for both startups and established firms. By collaborating with previous exchange partners, at least one part of their environment becomes more predictable and secure, in their otherwise uncertain environment.

Based on the analysis, how startups and established firms collaborate to manage uncertainty is summarized in figure 6.1.

Figure 6.1 Overview of how startups and established firms collaborate to manage uncertainty, by Christiansson & Walter 2021



6.1.1 Discussion and Strategic Implications

In the background, a discussion was started concerning the importance for organizations and leaders to manage the existing and emerging uncertainties in the environment to continuously operate, and ultimately survive, but also the potential in doing so through collaboration. Due to the mentioned benefits of collaborations between startups and established firms, the authors believed that such collaborations could be a method for the different parties to manage their respective uncertainties.

In accordance with Penrose, but more acknowledged in the finance field, in order to spread risk, one can diversify. Diversification contributes to increasing resilience, the ability to return quickly to a previous good condition after problems. The authors believe that the concept of diversification together with resilience, a known concept within sustainability, can be applied to the research question and organizations orientation in the uncertain. The aim of an organization is to leverage value to its stakeholders, but in order to do so, one must sustain. For both established firms as well as startups to become resilient and sustain, they must decrease their risk, and startup-established firm collaboration is one way to achieve this. Established firms both diversify their startup contacts, as well as their

technologies. At the same time, the diversification allows them to gain legitimacy towards their stakeholders by following the current and by doing what is considered correct to stay relevant, namely collaborating with startups. In turn, established firms become more agile towards their environment, thus more resilient. Startups, on the other hand, stay resilient through this type of diversification, by gaining capital, as well as improved reputation, which increases their chances of future survival. However, in order to stay resilient, the study also suggests that it is important to have long-term collaboration partners, to achieve a safe haven in the otherwise uncertain and unpredictable environment. This is a reasoning that the authors believe could be compared to the importance of including some risk-free investments in an investment portfolio, to make the future less uncertain. Through the collaborative management of endogenous, as well as exogenous uncertainties, resilience is created for the startups and established firms, resulting in increased chances of survival and competitiveness - ultimately contributing to a collaborative and competitive advantage.

Against this background, the study contributes to the management field by, through a combination of strategic management and economic sociological perspectives, providing important insights on how startups and established firms should collaborate to manage uncertainty. This is concluded to be through exchanging critical resources, collaboration diversification and long-term collaborations. These insights will hopefully facilitate in making uncertainty management through collaborations more efficient for startups and established firms in the future, in order to create resilience and collaborative advantage.

6.1.2 Limitations with the Study

The study contains some limitations. Firstly, a constructivist and interpretivist approach is used, thus the presentation of the empirical data is influenced by the authors' interpretation. Therefore, the authors' perceptions and biases can have affected whether the empirical data have been presented fairly. Secondly, the theoretical framework of the study constitutes a limitation in that other factors, which are not mentioned in this, could be interesting for the study. Thirdly, the results of the study are affected by the selected respondents. For example, from established firms, only employees active within innovation were interviewed. They will likely be positively biased towards collaborations as their positions exist partly due to the ongoing startup collaborations.

6.1.3 Suggestions for Further Research

This study has developed a multilayered answer to how startups and established firms collaborate to manage uncertainty. However, these answers do not provide an exhaustive

illustration of these types of collaborations. To improve the study's transferability further research could include more contextual factors regarding how startup-established firm collaborations manage uncertainty. Further research could also focus on comparing collaborations between different sectors, both regarding startups and established firms, to investigate if differences can be found. This would further clarify how different contexts affect the collaborations between startups and established firms. Additionally, voices from a larger variety of positions within each firm can be included in future research. Including different positions, different perceptions about such collaborations are heard and the picture will become more nuanced. Last but not least, as collaboration is seen as an intangible corporate asset (Thomas 2011), and is important in the future, it is also interesting to examine other types of collaborations: not only between startups and established firms.

6.2 Conclusion

Today, business life cycles are shrinking, and organizations continuously face and need to deal with uncertainty. Moreover, collaborations are promoted by leaders and policymakers worldwide. Against this background, the authors' idea for the thesis arose from curiosity about how the prevailing multilayer uncertainties for organizations can be managed through collaborations. Specifically, between startups and established firms as such collaborations theoretically allow the different parties to take advantage of each other's benefits. By intertwining theories within strategic management and economic sociology, the authors conceptualize a nuanced picture of how startups and established firms collaborate to manage uncertainty. Collaborations allow the startups and established firms to manage both endogenous and exogenous uncertainties, through exchanging critical resources, collaboration diversification and long-term collaborations, creating resilience and collaborative advantage for both parties. Through this study, the authors provide important insights that can facilitate in making uncertainty management through collaborations more efficient for startups and established firms in the future. The authors hope to bring interest to the field and a foundation for further research on how startup-established firm collaborations, as well as other collaborations, can manage organizational uncertainties - to create collaborations that efficiently manage the known knowns, the known unknowns and the unknown unknowns.

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Appendix

Appendix 1: Email to potential interviewees

Hi [respondent name],

Our names are Maja Christiansson and Linnéa Walter and we are currently writing our bachelor thesis in management at the Stockholm School of Economics with a focus on interorganizational collaborations between start-ups and established companies. Furthermore, we have understood that your company is part of the network [network name]. In light of this, we are contacting you.

Our environment is becoming increasingly disruptive, with, for example, elements of increased technological development and a world pandemic. Thus, it becomes increasingly important to be agile and adaptive as a company, and interorganizational collaborations can be a tool to achieve this. Therefore, we are curious about how such collaborations work. Our hope is that the study can contribute insights to the academic discussion and to organizations so that they can develop their collaborations.

With an interest in organizations' collaborations as a method to dealing with the challenges that our environment poses to us, we find it very exciting to contact you in order to understand how such collaborations work in practice. Furthermore, we find that you are a role model in this area as you by e.g. being a part of [network name] network contributes to innovation and development! Thanks to this, we are interested in hearing more about how your collaborations work.

We wish to meet someone who is active in this area for one for an interview, preferably as early as possible during the period w. 7,8,9. The study is of course anonymous for both the interviewee and your company. We are flexible regarding time for the meeting. We look forward to hearing from you to book an interview,

Kind regards,

Maja Christiansson | 24459@student.hhs.se | 076-025 83 86

Linnéa Walter | 24327@student.hhs.se | 070-515 58 86

Appendix 2: Interview Guide for Startups

Ethical Aspects

1. In our study, which is our Bachelor thesis in management at Stockholm School of Economics, you as a participant and your employer will be anonymized.
2. Also, we will not disclose any other participants in the study, neither to the employer nor other participants.
3. You may interrupt and/or leave the interview at any time and without disclosing the cause to us.
4. We would like to ask whether we have permission to record the interview, so we can transcribe it afterwards?
5. Before we start, do you have any questions for us?

Background

1. Could you tell us a little bit about yourself?
2. Could you tell us a bit about your company and industry in your own words? Did you start Company X? What made you start your own company?
3. Could you explain your product/service with your own words?
4. Could you tell us a little bit about your role in the company?
5. What do you consider to be the most challenging for your business as well as the sector in general?

About collaborations in general

1. What is collaboration for you?
2. What is your attitude towards collaboration?
3. Why do you collaborate today with other companies? Purpose? Desired result?
4. Could you tell us about your collaborations with established firms?
5. Could you tell us about your latest collaboration project?
 - a. How did you start collaborating (initial process)?
 - b. When did it start and end? How long has your collaboration lasted?
 - c. What do you collaborate around?
 - d. What is the exchange?
 - e. Do you have specific processes for the collaborations?
 - i. How often do you get in touch?
 - ii. Do you see each other physically or online?
 - f. Were there any benefits in the collaboration? If so, what do you see for benefits?
 - g. Were there any obstacles? If so, in what way and why?
 - h. What could have facilitated your collaboration?
 - i. How do you and the established firm complement each other in your collaborations?
6. What has been the outcome so far by the collaborations?
7. Are you interested in entering a long-term collaboration/partnership? Why/why not?
8. How do you organize yourselves in the collaborations?
9. Would you like to collaborate more/less?
10. Why do you think that not more companies collaborate?
11. Why are you active in collaboration networks?

Impact of Covid-19 on collaborations

1. Has Covid-19 and remote work affected your collaboration?
2. Is collaboration different now from before Covid-19?

Challenges in collaborations

1. What benefits do you see with collaborations? Both for your own company and your counterpart?
2. What challenges have you met during your collaborations? Why do you think they have occurred?
3. Do you see any difficulties with collaborations? (Transaction costs)
4. Do you think that collaborating with established actors comes at a cost? If so, why do you continue to collaborate?

Adaptation in collaborations

1. Have collaborations made you have to change in any way? If so, how?
2. Have collaborations made your partner have to change something? If so, how?

Appendix 3: Interview Guide for Established Firms

Ethical Aspects

The participation in this study is voluntary.

1. In our study, which is our Bachelor thesis in management at Stockholm School of Economics, you as a participant and your employer will be anonymized.
2. Also, we will not disclose any other participants in the study, neither to the employer nor other participants.
3. You may interrupt and/or leave the interview at any time and without disclosing the cause to us.
4. We would like to ask whether we have permission to record the interview, so we can transcribe it afterwards?
5. Before we start, do you have any questions for us?

Background

1. Could you tell us a little bit about yourself?
2. Could you tell us a bit about your company and industry in your own words?
3. Could you explain your product/service with your own words?
4. Could you tell us a little bit about your role in the company?
5. What do you consider to be the most challenging for your business as well as the sector in general?
6. Do you have an innovation center? Why/why not?

About collaborations in general

1. What is collaboration for you?
2. What is your attitude towards collaboration?
3. Why do you collaborate today with other companies? Purpose? Desired result?
4. Could you tell us about your collaborations with startups?
5. Could you tell us about your latest collaboration project?
 - a. How did you start collaborating (initial process)?
 - b. When did it start and end? How long has your collaboration lasted?
 - c. What do you collaborate around?
 - d. What is the exchange?
 - e. Do you have specific processes for the collaborations?
 - i. How often do you get in touch?
 - ii. Do you see each other physically or online?
 - f. Were there any benefits in the collaboration? If so, what do you see for benefits?
 - g. Were there any obstacles? If so, in what way and why?
 - h. What could have facilitated your collaboration?
 - i. How do you and the established firm complement each other in your collaborations?
6. What has been the outcome so far by the collaborations?

7. Are you interested in entering a long-term collaboration/partnership? Why/why not?
8. How do you organize yourselves in the collaborations?
9. Would you like to collaborate more/less?
10. Why do you think that not more companies collaborate?
11. Why are you active in collaboration networks?

Impact of Covid-19 on collaborations

1. Has Covid-19 and remote work affected your collaboration?
2. Is collaboration different now from before Covid-19?

Challenges in collaborations

1. What benefits do you see with collaborations? Both for your own company and your counterpart?
2. What challenges have you met during your collaborations? Why do you think they have occurred?
3. Do you see any difficulties with collaborations? (Transaction costs)
4. Do you think that collaborating with established actors comes at a cost? If so, why do you continue to collaborate?

Adaptation in collaborations

1. Have collaborations made you have to change in any way? If so, how?
2. Have collaborations made your partner have to change something? If so, how?

Appendix 4: Table of Interviewees

Respondent no.	Respondent	Time	Date
1	SU1	44 minutes	2021-02-12
2	SU2	60 minutes	2021-02-15
3	SU3	53 minutes	2021-02-16
4	EF1	57 minutes	2021-02-19
5	SU4	59 minutes	2021-02-24
6	EF2	41 minutes	2021-02-26
7	EF3	46 minutes	2021-03-05
8	SU5	53 minutes	2021-03-09
9	SU6	43 minutes	2021-03-12
Minimum: 41 minutes			
Maximum: 60 minutes			
Median: 53 minutes			