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Exploration and exploitation activities in start-ups

The role of network participation

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Abstract

Title: Exploration and exploitation activities in start-ups: The role of network participation

Key words: Innovation, start-ups, exploration, exploitation, formal networks

Purpose: The purpose of this thesis is to explore the effects of formal network participation on exploration and exploitation activities in start-ups.

Methodology: Following a cross-sectional design, an explorative study was conducted using semi-structured interviews. 18 interviews were performed with representatives from 14 start-ups and three different start-up networks. Data was analysed using marginal remarks and pattern coding, resulting in six common themes.

Theoretical perspectives: Previous research has described the importance of exploration and exploitation activities and the need for firms to strike a balance between them in order to obtain long-term success. However, previous studies have largely concerned mature firms and research on how these activities are handled in start-ups is lacking. It is common for start-ups to engage in network activities in order to sample resources; therefore, this study aims to contribute to current literature by investigating the connection between network participation and innovation behaviour in terms of exploration and exploitation.

Empirical foundation: The Malmö-Lund region in Sweden has a very active and thriving start-up scene. Three of the most active formal network organisations in the region were chosen to form the basis of this study: MINC, Malmö Startups, and Ideon Innovation. Founder and CEOs from 14 different start-ups within the networks participated representing industries ranging from production to technology and services.

Conclusions: Entrepreneurs who enter into start-up networks can gain positive outcomes in terms of guidance and knowledge sharing, social platforms, and various strategic benefits. However, these outcomes can be enhanced or mitigated depending on the entrepreneurial intent and personal motivations of the entrepreneur. These outcomes, in turn, affect the way start-ups approach exploration and exploitation. Furthermore, start-up networks do not work in isolation but are part of a larger context where networks intertwine and individuals frequently move across network boundaries.

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1. INTRODUCTION

1.1. Background

In 1991, March described how firms try to strike a balance between two opposing activities: seeking new knowledge and creating new products not previously known to the firm, and leveraging existing knowledge and products in order to grow profits. March (1991) termed these concepts exploration and exploitation respectively and they have since then gained a lot of attention in fields such as organisational behaviour, strategic management and innovation management. Several of research has been done studying why firms are more likely to focus on either one of the activities and how they find an appropriate balance between exploration and exploitation activities (e.g. Levinthal & March, 1993; Tushman & O'Reilly, 1996; Katila & Ahuja, 2002). However, while most of this research has been carried out in the context of mature firms, less is known about how exploration and exploitation work in a start-up venture. Since start-ups have certain characteristics that separate them from mature firms (e.g. higher degree of resource constraint, less developed work processes) it is interesting to explore if exploration and exploitation are carried out differently in this context. Today, current research does not provide an answer to this question (Sinha, 2015).

It is not seldom the case that start-up companies participate in structures of networks where they can sample resources and meet other start-up entrepreneurs. In fact, it is rare to find a start-up venture that is not engaged in some kind of formal network activity (Stuart & Sorenson, 2007). However, research on the direct effect of network activities on firm performance has been inconclusive (e.g. Raz & Gloor, 2007; Batjargal, 2010). Could such network activities affect the innovation behaviour of start-ups, for example how they explore and/or exploit new ideas? Could a formal network structure facilitate exploration due to closer proximity to other creative minds or undermine exploitation for the very same reason? Or is it more likely to facilitate exploitation through educational activities on how to grow a business gain market share? Are these possibilities mutually exclusive or supportive? And if so, under what conditions? These are important questions which are not addressed in current literature. Through this thesis, we aim to contribute to the field by exploring some of these questions.

1.2. Purpose and research question

The purpose of this thesis is to investigate if and how networks for start-ups affect the way start-ups approach the exploration-exploitation dilemma. By focusing the study on start-up networks we aim to expand our knowledge on a possible connection between network participation and the way start-ups handle exploration and exploitation activities. The thesis seeks to address the following research question:

How do formal networks affect exploration and exploitation in the start-up context?

In order to address our research question we will investigate the following subquestions:

- *How do start-ups view their innovation processes?*
- *What is important for start-ups in terms of their network participation?*
- *How do formal networks create value for the participating firms?*

By addressing these questions we aim to expand the theoretical field of exploration and exploitation, but also the fields of start-up and network literature. We hope to contribute in these areas since research on exploration and exploitation in the start-up context is currently underdeveloped. The network aspect offers an interesting perspective on start-ups, which adds an extra layer to this study and could be of theoretical interest. By conducting this study we will also be able to better determine whether pursuing the phenomenon further is of interest, which will benefit future researchers who wish to explore this field.

The results of this study could also be of interest to practitioners in start-up environments and formal network organisations. Managers of formal networks could benefit from our findings when developing their start-up programmes and activities in order to make them more appealing to entrepreneurs. On the other hand, the entrepreneurs themselves could also make use of this study when deciding whether or not they want to participate in a formal network, or when trying to evaluate different networks.

The first section of this thesis will provide a literature review of exploration and exploitation, start-up ventures and network theory. The second section will describe and explain the methodological decisions that were made for this study. Lastly, the empirical findings will be

presented followed by an analysis and discussion of the results. In this final section, the research question will be revisited and discussed in light of previous literature.

2. LITERATURE REVIEW

2.1. Exploration and exploitation

The concepts of exploration and exploitation were introduced by March (1991) in the context of organisational learning and strategic management, and have since then been applied to different fields of study, for example strategic management, organisational behaviour and innovation management (Almahendra & Ambos, 2015). Exploration is described as being connected to terms such as “search, variation, risk taking, experimentation, play, flexibility, discovery, [and] innovation” whereas exploitation can be captured by “refinement, choice, production, efficiency, selection, implementation [and] execution” (March, 1991: 71). Essentially, exploration boils down to a firm’s ability to find new opportunities and/or develop new products and processes not previously known to them. Exploitation, on the other hand, captures a firm’s ability to use their already existing knowledge and products in a profitable way (March, 1991; Levinthal & March, 1993).

In his original piece, March (1991) acknowledged the difficulty that firms face when trying to achieve both exploration and exploitation at the same time. This is mainly due to the fact that resources are scarce (March, 1991). However, March (1991) also presents other factors that make a pursuit of both strategies difficult. If a firm is focused on exploration and inventing new products and processes, it also reduces the “speed with which skills at existing ones are improved” (March, 1991: 72). Conversely, if a firm is growing its knowledge and competence in operating existing products and processes it makes exploration a less attractive option. Levinthal and March (1993) further explore this by arguing that firms can fall into two distinctive traps when it comes to their innovation behaviour: the failure trap and the success trap. Common for both traps is that they “involve short-term positive feedback on either exploration or exploitation and thus upset a balanced attention to both”, making a balance harder to achieve (Levinthal & March, 1993: 105). Firms can fall into the failure trap if they get stuck in a cycle of unrewarding exploration. One reason why exploration would be prone to failure is that most innovations are unsuccessful. This innovation failure leads to more search for new things, which in turn leads to more failure. Another reason is that even successful ideas are likely to fail in the beginning, since the firm has no experience with them. The last reason is that there is an optimistic bias since aspirations adjust downward more slowly than upwards, leading firms to continue with their exploration even when continuously failing. In contrary to this, firms can also be subject to the success trap because they

experience greater rewards exploiting their existing products than exploring new ventures. As a firm gains more competence within their current domain they grow more efficient in using that competence and the opportunity cost for switching to exploration also grows. This can make the firm engage in potentially self-destructive behaviour if their products are rendered obsolete (Levinthal & March, 1993).

Many researchers have stressed the need for firms to be able to balance exploration and exploitation (e.g. March, 1991; Levinthal & March, 1993; Tushman & O'Reilly, 1996). The overall consensus in the research community seems to be that firms cannot achieve long-term success by focusing solely on either of these activities (Almahendra & Ambos, 2015). A firm's ability to pursue both strategies simultaneously is often referred to as organisational ambidexterity (Almahendra & Ambos, 2015). March (1991) argued that ambidexterity can be difficult to achieve due to the fact that exploration and exploitation are inherently different when it comes to how organisations are learning from their experiences. However, other researchers have tried to explain what firms should do in order to strike a balance (e.g. Katila & Ahuja, 2002; Gupta, Smith & Shalley, 2006). Gupta and authors (2006) described two different strategies that a firm could use: ambidexterity and punctuated equilibrium. As noted above, ambidexterity is present if a firm is able to pursue both exploration and exploitation at the same time, often through subunits in the organisation that focus on either of the two. Punctuated equilibrium is an alternative balancing mechanism, which encompasses the idea that a firm can alternate between states of exploration and exploitation over time, for example by complementing long periods of exploitation with shorter, temporary periods of exploration (Gupta et al., 2006). Katila and Ahuja (2002) further developed the exploration and exploitation concepts by arguing that, contrary to March's (1991) argument, not all resources are scarce (e.g. patents). They also contributed with the idea that it is not only a choice between exploration and exploitation for a firm. A firm can also engage in exploration or exploitation activities to different degrees by expanding the depth or scope of their search for new knowledge (Katila & Ahuja, 2002).

The idea that a firm is able to balance between two opposing activities is very much connected to the notion of dynamic capabilities. Dynamic capabilities are defined by Winter (2003) as those activities and processes "that operate to extend, modify or create ordinary capabilities" (Winter, 2003: 991). Dynamic capabilities can therefore be seen as a tool for inspiring change and creating special purpose routines within a firm in order to efficiently

handling that change (Winter, 2003). In the light of exploration and exploitation, it is clear that balancing these activities requires dynamic capabilities that transcend such capabilities, which will just keep the business running on a day-to-day basis. These dynamic capabilities, or special purpose routines, will need to be present whether the firm seeks to achieve ambidexterity or punctuated equilibrium.

More recent contributions to the field of exploration and exploitation have highlighted the importance of individual management style when trying to strike a balance between the two activities (Mom, van den Bosch & Volberda, 2009; De Visser & Faems, 2015). In their study, De Visser and Faems (2015) showed that managers' cognitive style (in this case whether managers were intuitive or analytic) affected whether the managers focused on exploration or exploitation activities. Their conclusion was that managers with a more analytic mind-set tend to focus on exploitation, whereas managers with a more intuitive mind-set prioritise exploration (De Visser & Faems, 2015). Mom and authors (2009) found that managers were more inclined towards exploration or exploitation, or had the ability to pursue both (ambidexterity), depending on formal structures and personal coordination mechanisms within their firms. These findings provide the insight that incentives and psychological factors may be important to take into account when studying how firms try to balance exploration and exploitation.

The field of study concerning exploration and exploitation has continued to gain interest over time since March's (1991) original article. The field has expanded from organisational learning to encompass other disciplines such as strategic management and innovation management. While several of research has focused on the exploration and exploitation dilemma in mature firms, the concepts are equally as important in the context of smaller firms and start-ups. It is also unclear if networks could have an effect on this dilemma, perhaps by moderating the liabilities of the start-ups' size and resource constraint. To conclude, research in this area is lacking and needs to be expanded in order to understand how the exploration and exploitation dilemma is handled in the start-up environment and the possible effects of networks in this question (Sinha, 2015).

2.2. Start-up ventures

Wieblen and Chesbrough (2015) have emphasised that an established, large corporation is different from a start-up. Because of its size, a mature corporation has resources and routines to run its business model in an efficient way. An early stage firm, like a start-up, is not in possession of the aforementioned attributes. However, start-ups usually have novel ideas, are often more flexible, willing to take higher risks, and aspire rapid growth. Besides, start-ups typically quest speed as well as innovation (Wieblen & Chesbrough, 2015). Freeman and Engel (2007) stress that start-up firms typically also have less legitimacy, capital and fewer strategic alliances. Moreover, according to Sinha (2015), a start-up compared to a mature firm is faced with more resource constraints in terms of money, time and manpower. They are also pressured to survive and therefore need to grow sustainably in the future (Sinha, 2015). As mentioned before, due to the fact that resources are scarce; conflicts between exploration and exploitation arise because of conflicting demands for resources. This conflict is perhaps even more prominent in start-ups compared to mature firms, due to their smallness.

Another common definition of a start-up is one by Graham (2012) stating that a start-up firm actually is intended to grow rapidly. Common misconceptions about start-ups are that they must work within technology and accept venture funding. However, according to Graham (2012), that is not correct. Also the fact that it is has to be newly founded is not truthful, but instead the conception of growth intention is the most essential for a start-up (Graham, 2012). According to Blank (2005), start-ups are wrongly treated as smaller versions of mature companies. However, his definition states that a start-up is only temporary, and in the longer run designed to find a scalable business model. Aligned with this definition, a start-up can be a new venture but it could also be a new division or business unit within an existing company (Blank, 2005).

To sum up these definitions, a start-up is seen as innovative, flexible and risk-taking, aiming for rapid growth. Nevertheless, Freeman and Engel (2007) have stated that as time passes, the start-up's innovation process will slow down. Therefore, survival for start-up firms is always a concern (Shane, 2008). For a start-up firm to successfully survive, it is critical that the firm pursues both exploration and exploitation of the initial idea. The balance between exploration and exploitation activities is equally relevant for start-ups, as it is in mature firms. However, the balance between the two concepts in a start-up is hard to pinpoint and something that few studies have brought up before.

2.2.1. Incubators and accelerators

An incubator is essentially an organisation set up to stimulate and facilitate growth for start-ups and early stage companies. They can be located in a physical or virtual space and usually offer business development services, mentorship programmes, networking opportunities, and access to investors for the participating companies. Some incubators invest directly in the participating start-ups, while some do not (Newton, 2005). Newton (2005) argues that there are both advantages and disadvantages with joining an incubator and receiving incubator funding. The advantages include help from incubator staff and mentors, and proximity to other start-ups in the incubator that are going through the same struggles. However, these circumstances can also become disadvantageous to the start-up if incubator staff and management have visions and expectations for the company that differ from those of the entrepreneurs (Newton, 2005).

Accelerators differ from incubators in the sense that they often are geared towards jump starting start-ups that are more developed (Newton, 2005). In an accelerator, time is usually compressed and the goal is to achieve results in days or weeks instead of months and years (Iskold, 2015). In some cases, the accelerator will make investments in the start-ups in return for equity in the company (Corbyn, 2012). In addition to this, the accelerator usually offers the same type of services and programmes that can be found in an incubator.

2.2.2. Start-ups and innovation

Innovation within start-ups can be argued to differ from innovation processes that are carried out within more mature firms. If start-up ventures are always lacking in financial capital, resources, time and legitimacy in comparison to their more mature competitors, then how come they succeed at all? Freeman and Engel (2007) propose that there are two different models of innovation: the corporate model for mature firms and the entrepreneurial model for start-up firms. Whereas the corporate model is good for coordination, discipline and scale, it lacks in flexibility that can foster creativity. Freeman and Engel (2007) also state that as corporations grow larger, the risk of agency problem rises. In line with agency theory, this leads to the creation of more contracts which need to be supervised and enforced and this only further diminishes flexibility in the organisation.

Freeman and Engel (2007) argue that some factors may occur as a problem or disadvantage for corporate firms, but can be used as an advantage for start-up firms. One such characteristic

is the inventors' commitment and attachment to their inventions. Since most innovation processes are finished before an end product reaches the market, personal attachment may be devastating to an inventor and discourage creativity. However, in a start-up environment such commitment may prove vital in order to persevere through the challenges that the company faces in its early stages (Freeman & Engel, 2007).

Another factor that is important to consider is the risk of failure. As innovations grow bolder and more radical, the more likely they are to fail. On the other hand, the more incremental the innovation is, the easier it is to evaluate and predict the outcome. Therefore, it can be tempting for larger corporations to prefer incremental innovations instead of radical ones. For a start-up, it can be easier to pursue radical innovations since the business model and strategic intent is more flexible at that point. However, as time passes and the start-up becomes bigger and more successful it will perhaps loosen its ability or will for radical innovation since the risk of failure becomes more prominent (Levinthal & March, 1993; Freeman & Engel, 2007).

The entrepreneurial model, according to Freeman and Engel (2007), differs in the sense that alongside bringing an innovation to the market, the entrepreneurs also have to simultaneously build a business around it. If the start-up seeks to grow rapidly, perhaps out of necessity to shake off competitors, it often requires external funding. This funding is usually acquired through some form of venture capitalist. As more venture capital flows into the company and the start-up grows, entrepreneurs gradually lose control over the business as shares are sold and ownership is diluted. This does not always have to be the case, for example if the entrepreneur has vast experience growing businesses, but as Freeman and Engel (2007) put it: "The faster the company grows, the more likely it is that founders will fall behind. Consequently, new managers with deeper experience replace them" (p. 102). In the end, the start-up will usually become a larger company with organisational structures that create "the very inertia that allowed the entrepreneurial innovation process to move forward in the first place" (Freeman & Engel, 2007: 105). However, it is important to note that Freeman's and Engel's (2007) entrepreneurial model does not take into account the evolution of start-up firms which are financed internally and aspire to grow organically.

These models of innovation should not be interpreted as working solely in isolation. Indeed, according to the authors, they work best when combined. This can be seen in the real world, since new innovations are often brought to market through a partnership between a mature

firm and a start-up. By bringing them together, the innovation can benefit from both of these organisational structures (Freeman & Engel, 2007; Wieblen & Chesbrough, 2015).

2.3. Networks

2.3.1. General network theory

Some recent research has suggested that networking in the business context is at the core of management. Business networking is when companies try to consciously develop or change relationships or interaction processes in which the company is involved, directly as well as indirectly (e.g. Ford, Gadde, Håkansson & Snehota, 2003; Håkansson, Gadde, Snehota & Waluszewski, 2009). But the definition of a network has different meanings across different fields. In sociology, for example, a network is constructed of nodes where each node represents a counterpart. In turn, the nodes are connected by links that imply that there is some kind of social interaction between them (Porter, Onnela & Mucha, 2009).

In this study, the network is a set of companies connected by social interaction, meaning formal as well as informal relationships. However, the network surrounding a company is difficult to specify since it has no strict boundaries. Since there is no single definition of a network, the individuals within the network might have different pictures of it. Their perception of the network might depend on their own experience, relationships, and position in the network. Furthermore, it might be affected by their problems, abilities, and by the lack of knowledge. Networks involve combinations of companies working with others. In other words, both collaboration and competition is prominent. Also, the classical roles of suppliers, customers and competitors are not always clear and sometimes completely blurred. Furthermore, a network is affected by companies' earlier experiences. Therefore, shortages in each company's knowledge mean that learning by doing is an important aspect of networking (Ford et al., 2003).

When being active in a network one is networking, which is a universal phenomenon that all companies in a network simultaneously perform. Ford and authors (2003) state that network participants, individually as well as collectively, will produce network outcomes. However, it is almost impossible to see what kind of outcome one will receive for a specific networking activity. The researchers also state that is hard to tell whether the outcomes of networking activities will be positive or negative in terms of profit or revenue. According to the authors,

networking might lead to outcomes such as access to resources, better financials, and increased knowledge. In turn, it is said that business relationships could be a great source to competitive advantage (Ford et al., 2003).

2.3.2. Social capital

In the context of networks, social capital can be used as a concept to explain the relations between parties in the network and how trust, expectations, and norms are created and enforced. Social capital is defined by Coleman (1988) as a variety of different entities that “all consist of some aspect of social structures, and [...] facilitate certain actions of actors - whether persons or corporate actors - within the structure. Like other forms of capital, social capital is productive, making possible the achievement of certain ends that in its absence would not be possible” (p. 98). Social capital can therefore be seen as a resource that actors can use to achieve their goals. According to Coleman (1988), social capital can be very valuable since it can diminish the need for control and supervision between parties. For instance, if a network establishes a norm that means that people will automatically look after your personal belongings when you leave a room, then you could say that the network has created social capital that may not be available in another context. Social capital exists in the relations between people, making it perhaps even more intangible than human capital (Coleman, 1988).

According to Eklinder-Frick, Eriksson and Hallén (2011), several factors are important to support network innovation and the creation of social capital, for example geographical proximity, technological proximity, cognitive proximity, and social proximity. These factors can affect how social capital is created and shared among the members of the network. Eklinder-Frick and authors (2011) also discuss two forms of social capital: bonding and bridging. The bonding form of social capital seeks to strengthen relations between parties, for example within a network, whereas the bridging form seeks to create “bridges to other social groups and loosening bonds between network actors” (Eklinder-Frick et al., 2011: 994). As a result of their study, Eklinder-Frick and authors (2011) conclude that although bonding is a very common form of social capital there is a risk that too much bonding between members create “lock-ins that isolate the members of the strategic network from the outside” (p. 1001). This makes the members complacent and less receptive to outside impressions, which may hinder innovation. In the context of start-up networks, it would be interesting to investigate whether they focus more on bonding or bridging of social capital within the network and how

the start-up firms perceive these efforts. In the light of this study, social capital could perhaps serve as a means to explain social structures within the networks and interactions between the parties involved.

2.3.3. Boundary spanners

The value of networks is, to a great extent, dependent on its ability to share information and knowledge among its members. The concept of boundary spanners can be used in order to try to explain how this knowledge transfer occurs. Tushman and Scanlan (1981a) explored this concept and concluded that boundary spanning individuals can facilitate knowledge sharing between internal and external environments, for example between an organisation and the outside world or between subunits within an organisation. The boundaries that restrict effective knowledge sharing are created largely due to the need for specialisation. When organisations or subunits specialise in tasks or functions they grow more efficient. This efficiency is facilitated by the creation of shared values and norms, working language, context, and culture. However, the same components that can strengthen collaboration within units can also prohibit communication and collaboration outside of the unit. Tushman and Scanlan (1981a) explain that these boundaries “can be spanned effectively only by individuals who understand the coding schemes are attuned to the contextual information on both sides of the boundary, enabling them to search out relevant information on one side and disseminate it on the other” (p. 291-292). Therefore, effective boundary spanning can only be achieved if there is both internal and external linkage (Tushman & Scanlan, 1981a).

Tushman and Scanlan (1981b) also explored the different characteristics of boundary spanning individuals. They found that boundary spanners were more likely to have higher formal status in the organisational hierarchy. They also found that perceived competence was an important determinant of boundary spanning. Individuals that were perceived to be technically competent by their colleagues were consulted more internally. Tushman and Scanlan (1981b) theorised that internal consultation could lead to a higher chance for promotion. This in turn leads to more external and internal exposure thus facilitating boundary spanning.

More recent contributors to the field have investigated the role of boundary spanners in the collaborative network setting. According to Long, Cunningham and Braithwaite (2013), who conducted a literature review on the subject, much focus has been on trying to define

networks conditions and contexts where boundary spanning facilitates innovation. They suggest that the optimal network structure for spreading knowledge is cohesion rather than sparseness. The authors also note that many researchers have concluded that “a combination of direct and indirect ties, in the form of closely knit teams linked by sparse ties is the optimal structure for generating and producing innovation” (Long et al., 2013: 8). In the context of this study, it would be interesting to investigate the potential presence of boundary spanners in the start-up networks and their importance for start-up innovation.

2.3.4. Networks and start-ups

Start-ups and early stage firms are according to previous and current literature supposed to gain several benefits when engaging in entrepreneurial networks of different kinds throughout the entrepreneurial process (Stuart & Sorenson, 2007). Networks, being defined as relationships and contacts held by entrepreneurs, are supposed to enable entrepreneurs to gain resources they require for their ventures at more attractive terms as opposed to doing so outside of the network (Adler & Kwon, 2002). While current literature suggest these benefits, empirical findings when studying the phenomena have shown that the link between entrepreneurial performance and different network characteristic effects have inconclusive results (Semrau & Werner, 2013). Some of the empirical findings have demonstrated that the firms involved benefit from big and diverse networks (Raz & Gloor, 2007; Stam & Elfring, 2008; Semrau & Werner, 2013) while others show no significant link or increase in performance (Aldrich & Reese, 1993; Johannisson, 1996; Batjargal, 2010; Semrau & Werner, 2013).

In their essay researching start-ups engaged in networks, Semrau and Werner (2013) explore two certain characteristics of networks and how they affect performance among 349 nascent firms in Germany. The two characteristics was the size of the network and the internal strength of the relationships of those within the network. Semrau’s and Werner's (2013) contribution, unlike much previous literature, did not assume a linear relationship, but a curvilinear one. Hence the results of their study did indeed show that the firms involved in networks showed increases in positive resource returns as both the sizes and qualities of relationships increased, however with diminishing returns (Semrau & Werner, 2013). This is congruent with the transaction costs associated with both searching for partners within the network, as well as maintaining the relationships, increase with scale. Furthermore, Semrau and Werner (2013) suggest that the effect of the network size and relationships qualities on

resource acquisition is somewhat substitutable, and depends on the kind of resource searched for, implying that different firms need different searching strategies. If put into the context of innovative performance and not just financial performance, it would be interesting to see which network context and thusly beneficial accessibility to resources would affect innovation in start-ups. Semrau and Werner (2013) also suggest that it would be beneficial if policymakers and other intermediates could help guiding firms in order to help them establish efficient networks.

This knowledge transfer within entrepreneurial networks has by other literature been treated as a knowledge spillover theory effect, and for it to be beneficial to the firm, theory is contingent on several factors. Not only are networks able to provide greater range of resources, but also knowledge which can help start-ups compensate for lack of corporate experience and industry knowledge (Hayter, 2013). These are all factors that reasonably could stimulate innovation. The contingency factors of these spillover effects are network type and tie content. Simply being part of a network does not mean that the right knowledge nor resources can be accessed for one specific firm. Enablers of transmission (of information) and the internal capabilities of the network are also deciding factors. In other words, meaning how network leaders facilitate relevant information flows and the individual firm's ability to filter and retain relevant knowledge and resources, respectively (Hayter, 2013).

3. METHODOLOGY

3.1. Research approach

The research question is of an explorative nature and the research approach is therefore considered predominantly inductive. This is supported by Bryman and Bell (2011) who explain that using an inductive research approach will allow researchers to study a phenomenon or empirical occurrence in order to complement existing theory or create new theory. However, since the study is grounded in existing theory about exploration, exploitation, networks, and start-ups, we also argue that there are some deductive elements to the study.

3.2. Research design

3.2.1. Qualitative research design

Qualitative research strategy focuses on the “understanding of the social world through an examination of the interpretation of that setting by its participants” (Bryman & Bell, 2011: 386). A qualitative thesis, such as this one, is constructed with words rather than numbers since no quantitative data is collected or generated. In turn, the words are based on observations, documents and/or interviews (Miles & Huberman, 1994).

A basic case study design involves a detailed analysis of a specific case that could be an organisation, but also a person or location could be used as the level of analysis (Bryman & Bell, 2011). In this case the unit of analysis is entrepreneurs since they are networking as individuals and not as firms. The design when using one case could be extended to a multiple case-study, which usually is chosen in order to compare the different cases. Subsequently, by using multiple cases, it has allowed us to see common characteristics as well as differences across cases (Bryman & Bell, 2011). According to Stake (1995), multiple cases are being studied when exploring a general phenomenon. In this thesis a basic, single case-study was not conducted but rather a cross-sectional one. The difference between multiple case-studies and cross-sectional ones is the focus, where the aforementioned focuses on the actual case and its unique context and the latter focuses on general findings and the sample of cases (Bryman & Bell, 2011).

3.2.2. Cross-sectional design

The cross-sectional approach is suitable since the purpose and interest of this thesis lies upon variation. The variation can only be seen if studying more than one case, as we have done. Furthermore, this design has more emphasis on the sample of cases rather than the individual case as a multiple case study has (Bryman & Bell, 2011).

The collection of data in this type of design should be collected at a single point in time to enable to see patterns of association (Bryman & Bell, 2011). This is applicable since a longitudinal study has not been conducted, due to the restrictive time frame. A longitudinal design is common to use when discovering change in business and management usually over months or even years (Bryman & Bell, 2011).

3.3. Selection of sample

For this study, a purposive sampling method has been used. A random sampling strategy was deemed unsuitable; we wanted to make sure that our sample consisted of respondents relevant to our research question (Bryman & Bell, 2011). The three networks that were chosen all serve a clear purpose in this thesis since they are all critical for the phenomena we wanted to study.

The sampling strategy for the participating companies could be argued to be a type of maximum variation sample. The purpose is to achieve data with diverse variations and in the end to enable identification of common patterns (Miles & Huberman, 1994). Our sample is varied across industry, company age, network affiliation, and size (to some degree). However, they are similar in the sense that they all are or have been involved with one of the three networks. Representatives from the networks were also interviewed to expand the variation and broaden our understanding of the phenomena.

3.3.1. Selection of networks

When sampling for appropriate formal networks to study, we chose to limit ourselves to the Malmö-Lund region. This choice was made because this region is very active and intense from a start-up perspective. For this reason, the Malmö-Lund region was deemed to offer a satisfying sample variation in order to adequately study the phenomenon. Three networks were chosen for our study: MINC, Ideon Innovation and Malmö Startups. MINC and Ideon

Innovation were chosen since they have two of the biggest and most active incubators in the region. Malmö Startups was chosen because it is an umbrella organisation that encompasses a great deal of the start-up scene in Malmö. Managers from each network were contacted via e-mail and asked to participate in the study. Four interviews were conducted with representatives from all three networks. The networks are shortly presented below.

MINC

MINC, short for Malmö Incubator, is a “hub for startups and entrepreneurs in southern Sweden” situated in Malmö (MINC website, 2016). They offer help with business development, workspace, coaching and network access. They also run an incubator programme as well as an accelerator, which is customised to fit the need of the start-up. MINC is fully owned and funded by the city of Malmö and offers a broad range of support activities, which are open to the public (MINC website, 2016).

Ideon Innovation

Ideon Innovation is the incubator programme at Ideon Science Park in Lund, financed by the municipality of Lund, Lund University, and a number of private investors. They offer their companies a business development programme with senior business coaches, workspace and help with funding (Ideon Innovation website, 2016). At Ideon Science Park many events ranging from breakfast meetings and pitchers’ corners are offered, most of them are free and open for all (Ideon Meeting website, 2016).

Malmö Startups

Malmö Startups is a start-up network that seeks to unite the start-up scene in Malmö and the surrounding area. It is a non-profit organisation that offers support for start-up activities and access to a network of entrepreneurs and creative people (Malmö Startups website, 2016).

3.3.2. Selection of companies

From each network a number of companies were contacted via e-mail and asked to participate in the study. A selection criterion was that the company had to be older than one year. This criterion was set up because we believe that a start-up needs a bit of time to get in order, since the beginning is a very critical time in the life of a start-up.

After getting in contact with the companies that were interested in participating, 14 interviews were scheduled and conducted between February 29th and April 5th, 2016. The participating companies represent a wide range of industries and products such as manufacturing, services, and technology based companies. This is a great advantage for the study since it diminishes the risk that findings are industry specific.

3.3.3. Selection of respondents

One person from each participating company was interviewed for the study. This person was either founder, CEO, or both and still actively involved in the company's day-to-day business. We decided that one person per company was enough to interview since none of the companies had a very large workforce. The respondents were all in leading positions within their companies and were therefore deemed to have sufficient knowledge and experience to be able to answer our questions adequately.

The network representatives that were interviewed also held key positions within their respective networks and were able to give a comprehensive picture of their network structure and activities.

3.4. Research instruments

Very typical for a qualitative cross-sectional design is to gather data by semi-structured interviews with a number of people. In order to gather empirical data to address our research question, we have conducted 18 semi-structured interviews with start-up companies and persons responsible for start-up networks/incubators. Semi-structured interviews were chosen as a method for obtaining data since we had specific topics that we wanted to explore during the interviews. However, we still wanted to have the option to shift the order of the questions and ask follow-up questions if the respondents took the interview in an interesting direction. The semi-structured interviews allowed us this flexibility, while still maintaining a similar outline for each interview to ensure consistency (Bryman & Bell, 2011).

3.4.1. Anonymity and informed consent

For the purpose of transparency we have chosen to keep the companies' and networks' names visible and identifiable. Walford (2005) propose that complete anonymity is almost

impossible to ensure in ethnographic and qualitative research. In fact, in some cases it may even be undesirable to do so. In order to give the reader a chance to independently interpret the research it is important to provide a context in which the research can be understood, for example historical and geographical details. To do otherwise (i.e. provide less specific details) can easily give the research a spurious generalisability (Walford, 2005). For this thesis we have deemed the need for transparency to be superior to the need for anonymity. Our research questions and the questions asked during the interviews have not been considered to be of a sensitive nature, where respondents could have been tempted to answer untruthfully. Furthermore, we believe that the questions asked were of such general and neutral character that the respondents were not biased in their answers (e.g. in order to provide a marketing opportunity for their companies).

In Table 1. all company respondents are listed, divided into their network belonging. Furthermore, the industry as well as the date of the interview is stated to get a clear comprehension of how the data collection process has advanced. All respondents were asked if the company name as well as their position within the company could be stated in the table and in the results. According to Miles and Huberman (1994), informed consent is important in order to achieve good quality in the data collection. Weak consent among the respondents and interviewers could lead to poorer data since the respondents might feel mistrust. The respondents should be fully informed about the study and they should voluntarily participate (Miles & Huberman, 1994). Therefore we have informed the respondents before every interview that if we were to use a direct quote from the interview we would ask for permission. All respondents have therefore been informed of the conditions before participating, and all quotes in the study have been given consent to be analysed.

Table 1. Interview objects and their network belonging

Network Name	Date	Company Name	Position of respondent	Industry
Ideon Innovation	Feb 29 th	SleepCarrier	Founder/CEO	Production
	March 7 th	Ideon Meeting	Coordinator	
	March 15 th	S2 Communications	Founder/CTO	Service
	March 15 th	Ideon Innovation	Business coach	
	March 30 th	Sensitive	Founder/Marketing & Sales	Production
MINC	March 2 nd	GetRaw	Founder/CEO	Production
	March 3 rd	Bitcraze	Founder	Tech/production
	March 17 th	Guidly	Founder/CEO	Tech/service
	March 30 th	Caliente Beverages	Founder/CEO	Production
	April 5 th	MINC	Network manager	
Malmö Startups	March 3 rd	Zkyon	Founder/CEO	Tech/service
	March 8 th	Flattr	Founder/CEO	Service
	March 9 th	E-Aktiebok	Founder/CEO	Tech/service
	March 10 th	Planeto	Founder/Managing Director	Technology
	March 10 th	Notified	Founder	Tech/service
	March 18 th	Malmö Startups	Managing director	
	March 31 st	Cashbackshopping	Founder/CEO	Tech/service
	April 4 th	RankTrail	CEO	Tech/service

3.5. Method for data analysis

The chosen method for data analysis in this thesis has started with marginal remarks on the transcribed interviews as a first-level coding. The ideas that arise during this phase of analysis suggest new interpretations and connections to other parts of the data but also deeper analysis. Further on, to understand patterns and notice the reappearances pattern coding is suitable. This step in the coding process is a way of grouping the first-level codes into a smaller number of sets. The pattern codes should be explanatory and should identify themes. The purpose is to reduce the amount of data in our transcribed interviews and making it easier to analyse. It also lays the groundwork for cross-case analysis since it brings out common themes. In a study with an inductive approach researchers look for recurring phrases or internal differences (Miles & Huberman, 1994). In order to be critical in the coding process the pattern coding was performed by a co-researcher that did not perform the initial transcription of the interview. After the thematisation and analysis of data we chose to display our findings in a model, as will be presented later on in Figure 1. According to Miles and Huberman (1994) a figure with a display of effects can clearly illustrate the diverse results deriving from a major variable, such as the formal network.

3.6. Trustworthiness

This thesis is founded upon explorative qualitative research, but many researchers claim that the terms “reliability” and “validity” are unsuitable when discussing qualitative research. These terms are closely associated with quantitative research methods and hence should be adapted accordingly (LeCompte & Goetz, 1982). Instead trustworthiness has been suggested as a more suitable term to use, which consists of four subdivisions: credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1986; Bryman & Bell, 2011). These concepts are reasonably analogous to validity and reliability within quantitative research methods and are used to assure high quality of the study.

An issue with the sampling of companies is that the companies decided if they wanted to participate by themselves. It is possible that the companies that chose to participate have had some ulterior motive or have something in common that has not been accounted for in our analysis, resulting in a self-selection sample bias (Bryman & Bell, 2011). In this thesis several measures have been taken in order to assure trustworthiness of the study. This risk has been mitigated by making sure that at least two researchers were present at each interview, using a scripted questionnaire in their (authors’ and interviewees’) native tongue. This way we could compare personal impressions of the respondents and their answers afterwards. In addition to this, we made sure that questions were asked in a consistent manner and sometimes also backtracked to ensure consistency in the responses.

Furthermore, the respondents have been either founders and/or CEOs of the start-ups or network representatives. However, it should be noted that the formal roles within these start-ups are somewhat less rigorous. The present researcher(s) who were not conducting the interview took notes along the recording and thereafter compared these notes, when applicable.

Dependability, which is analogous to quantitative research's reliability, has been ensured by clearly defining steps taken in the study with clear motivations, thus increasing the trustworthiness of the study. To treat the study's confirmability, relating to the conclusions of the thesis, objectivity is prioritised. This is done by clearly adhering to the research question of the thesis, while avoiding letting personal values of the interviewers affect the results and analysis as far as possible (Bryman & Bell, 2011). This has further been minimised through

objective discussions regarding raw data and results between the three authors of this study, to minimise potential personal biases.

The transferability subdivision, referring to how the study can be satisfactorily replicated, is the one which is commonly critiqued when it comes to qualitative research (Lincoln & Guba, 1986). To the greatest possible extent, we will list in more detail factors in the limitations of the study section (6.1) which we believe to be relevant if a replication of the study were to be made, enabling future studies to deem whether the results are transferable or not. However, it should be noted that exploratory studies are creative in nature and what is focused upon is chosen by the researchers. Statistical generalisation is not what is searched for, but rather the aim is to expand current theory by analytic generalisation to deepen the understanding of objects of interest in-depth (Yin, 2003).

4. RESULTS

In this section, the results of the study are presented. Table 2. provides a brief overview of the themes that were discovered along with a short description of each theme. The themes are presented below in no particular order of importance. However, the interrelations and connections between the themes are thoroughly explored in the analysis and discussion that follows.

Table 2. Overview of themes

Themes	Description
Physical space as a social platform	The office spaces that the networks offer create a social context for the entrepreneurs. The working environment is important in terms of spurring ideas and creativity. Physical proximity is considered an advantage and facilitates networking and social interactions between entrepreneurs and other actors.
Networks as a guidance system	The networks help facilitate knowledge sharing between entrepreneurs. Through attending events and engaging with other start-ups, the entrepreneurs gain access to knowledge and guidance in their business endeavours that they probably would not have gained outside the network.
Networks as a strategic platform	Entrepreneurs gain strategic benefits from network participation. Start-ups could potentially gain access to new customers and external funding through their networks.
Entrepreneurial intent	The entrepreneurs' intentions affect their businesses in terms of network participation and innovation behaviour. The ability to focus and prioritise were considered important to run a successful start-up.
Personal motivations	The entrepreneur's personal motivations and circumstances (e.g. family life) affects network participation. Due to previous experience formal networks could have a greater or lesser impact on the start-ups. Personal inclinations could also drive different innovation behaviour.
Blurred networks	Boundaries between the network and the outside world, and between a network and other networks, are hard to define. Networks intertwine and overlap, and people can freely move between them, creating a larger amount of connected people. The benefits of niche versus general networks were also discussed.

4.1. Physical space as a social platform

This theme illustrates the importance of a physical space (e.g. office space and network facilities) in order to gain access to a social context. The respondents described how access to the networks' facilities have helped them connect with other entrepreneurs and share experiences and ideas. Physical proximity was deemed very important to facilitate effortless networking and social interactions between entrepreneurs and other actors within the start-up community.

Plenty of the respondents pointed to the search for a cheap office space when asked why they had chosen to approach a formal network. Many had started their business at home, but chose to move their business to an incubator, workspace or office hotel in order to be among other people and not be so alone in their struggles. The following quote from the founder/CEO at GetRaw highlights this:

”We wanted an office space, it is quite lonely to work by yourself. Pretend colleagues. You're not alone, you're in a context among other people.”

However, a few respondents had specifically chosen to not use the networks' office spaces and to either place their business at home or in a location outside of the network's facilities. This view was more common among more experienced entrepreneurs who already had extensive personal and professional networks and did not feel they necessarily required the physical proximity that a network office space offers. Others cited personal priorities and cost efficiency as important factors when deciding not to move their business to one of the network's office spaces.

In contrast to this, a lot of respondents highlighted closeness to like-minded people as an important factor when describing the advantages of being part of a network. They also pointed to the sense of community that played an important part in the networks' appeal. Respondents stated that it was very easy to approach other entrepreneurs to ask questions, share similar experiences or pitch ideas. The closeness and sense of community also meant that help was always available. Even if people can easily connect with each other via the Internet or other means of communications, it seems that physical closeness still has some advantages that can be hard to define. The founder/CEO at Flattr stated that:

“Geographical proximity is always an advantage; you can never get away from that. Even if you say you could email anyone, but it doesn’t work like that.”

This view on geographical proximity was echoed by many of the respondents. It is possible that closeness is a factor that affects start-ups’ innovation behaviour. Another reason why the companies were drawn to the networks was because they wanted to be a part of a creative and inspirational environment. Respondents felt that the working environment played a part in stimulating their businesses. By gathering a lot of people with an entrepreneurial spirit in the same place, the networks seem to have created a prosperous environment and a “can-do-it”-attitude. This is supported by the founder/CEO at Zkyon:

”The reason why I’m here is because it is probably Malmö’s nicest place to be in terms of environment, surroundings, tempo [and] creativity. It is relatively cheap to be here [and] get access to a good flow of people, ideas and energies.”

The founder/CEO at Caliente offers a similar perspective:

“The whole environment contributes. Because the environment we have here, it sort of breathes possibilities! And people are very supportive – there are no bad ideas.”

In addition to this, respondents stated that a lot of the value that they got from the networks came from different types of informal meetings and networking. This was exemplified during the interviews by going to the company next door asking for help, talking to someone during a coffee break or impromptu lunch meetings. The respondents described a sort of effortless networking that took place outside of formal meetings and seminars. The founder/CEO at GetRaw exemplifies this:

“Well, we haven’t used the network that much... But you do it more than you think. You sit and talk and hang out with everyone in the house. There is always someone who name drops someone, and you can contact that person that way instead.”

In contrast, while most respondents adhered to this view of effortless networking, some respondents thought that this could be further facilitated by the networks. These respondents felt that the networks were important in establishing a working culture where effortless and

informal networking was possible. When asked if there were many spontaneous meetings between people in the network, the founder/CTO at S2 Communications answered:

“It’s not a lot. But I’m very positive about it, I don’t see it as a problem at all. I think that maybe they [the network] should set up a policy that “If you are here, you have to be prepared that anyone could come and ask questions”. So that it becomes more open. So that you are not afraid to go to someone and ask them questions, but it’s very clear that this is the way we do things around here.”

Judging by this quote, it seems like the networks could do more in order to create an environment where all start-ups feel like spontaneous meetings and networking are a natural part of their everyday work.

4.2. Networks as a guidance system

This theme captures the respondents’ thoughts on the positive outcomes of the networks in terms of sharing knowledge and being guided by more experienced entrepreneurs and key figures. When questioning what exchanges the participation in networks has brought the answers have mostly been of positive character. For instance, one question asked to everyone participating in the study was “What kind of relationship have you had with counterparts within and outside the network? And what advantages do you see coming from them?”

Since experience is something one can obtain overnight, it could be argued that sharing knowledge is an effective way of learning. In this study, many of the respondents have expressed the advantages deriving from sharing information and helping each other. An experienced entrepreneur, who has started a company some time ago, has a lot of valuable knowledge about matters during the start-up phase. The respondents have expressed that a lot of problems can be avoided thanks to listening to others who have gone through the same things. Typically, it is the knowledge of everything “around the business” that a novel entrepreneur is missing. Therefore it is very useful when a novel entrepreneur has an exchange within a network. For example, the founder/CEO at E-aktiebok said:

“I like the purpose of MINC where they mix companies that are up and running with start-up companies in the incubators. I think there is where you can obtain good exchanges from both worlds. It is a special situation launching a new company without any income. [Questions like]

how to invoice the first customer? Will they pay? What are you suppose to do? The experience is needed.”

Furthermore, the managing director from Malmö Startups said:

“We believe that the best way of learning is by listening to somebody who has been through it before. [...] We arrange events and networks for the members. The idea is to meet one another. We believe that the start-up scene is a fast changing environment, the technology is changing rapidly, and the best way to learn and improve is to talk to people who have done it before, something that is much facilitated by the network. Not business coaches but people that have been through it before.”

It is clear that the respondents feel like they can get help from the networks when they need it. All of the respondents agreed that it is positive and beneficial that the networks are present in the start-up community. When the founder/CEO at GetRaw described her network she stated that:

“It has been rewarding and the environment is very neutral which is something I consider positive. There are no internal competition among the companies, instead everyone is helping each other. In other places [outside the network environment] people are maybe not helping each other as we do here, and are open and pushing each other.”

An important observation from this study is that “giving and taking” is applied within the formal network. The general impression derived from the interviews is that a novel start-up company usually embrace or “take” information from experienced entrepreneurs. And as time goes on, the novel entrepreneur usually tends to give back to more novel entrepreneurs. This “give and take” situation reflects much on the positive environment that the networks create. Furthermore, it indicates that the entrepreneurs in these networks actually care to help each other. As the founder/CTO at S2 Communication expressed it:

“I do it out of benevolence. I believe that it is fun to share one’s experience. Especially to answer questions in the beginning of the business”.

The network manager who is in charge of the incubator programme at MINC stated that one goal for the programme actually is to create a network which encourages the sort of attitude that the founder/CTO at S2 Communications expressed:

“We try to make the entrepreneur understand the benefit of having a strong network, which they later, when moving elsewhere, still can make use of. It is not only the entrepreneurs who are enrolled in our programme being here, we also see that successful companies that were enrolled ten years ago return to our lunches [and other support activities] to help the new entrepreneurs, even investing in them and so on.”

However, not all mature start-ups are giving back to the network and its members. The founder/CEO at Caliente said:

“I could do much more actually, and I think that one of the limiting factors is that I have been so extremely busy with what I am doing. But I feel that in a year or so, if everything settles, it would be fun. At that time I think I would have quite a lot to offer. I will possess both the practical entrepreneurial part as well as another leadership perspective”.

The majority of the respondents have expressed that they attend support activities that are being offered by the formal networks. In order to understand how things work in practise; seminars and workshops are very appreciated by the novel entrepreneurs. Despite the lack of time, many entrepreneurs attend workshops about invoicing and juridical matters because it is an effective and cheap way of receiving knowledge. In this study, all three networks have communicated that they offer support activities on a monthly basis with different themes. This quote from the managing director at Malmö Startups illustrates why they arrange events:

“We arrange events for everybody to solve problems where we see a lack of resources. There are a lot of organisations doing that, but we try to fill the gaps we find, and emphasise the initiatives from others.”

The coordinator who is responsible for Ideon Meeting told us what kinds of events they execute:

“We use different means to attract people to this environment, one is through our meeting facilities. We try to make people arrange conferences here, not because we have the best locales

in Lund, but since we have a really good informal network, a good stream of people and one wants to take part of that energy by networking during coffee breaks, lunches and so on. [...] But we also arrange some events ourselves, we offer breakfast seminars, conferences with different topics [...] and we receive quite a lot of foreign delegations [...] where we invite start-up firms. For example, if one is about to enter Hong Kong, one can take part of such a delegation to find contacts, or ask questions regarding the foreign markets. We try to create as much value for the firms as possible.”

Besides the knowledge sharing and information from support activities, a start-up company could also receive mentorship and business coaching more related to its specific needs. These functions are more related to the incubator and accelerator programmes that both Ideon and MINC offer to a few selected companies every year. In order to become an incubator company many requirements are usually put on the company as well as the entrepreneur and the business idea.

In this study, a few of the respondents were currently, or had been, in some kind of incubator programme and only have positive responses about attending it. However, the incubator companies also participated in support activities just as much as other start-up companies. The mentoring and business coaching was just seen as extra support during the initial start-up phase. For example, the founder/CEO at GetRaw and her colleagues have decided to stay close to the network and its activities even after the incubator programme. She told us:

“I was working from home for one year, then I got accepted to the incubator programme that lasts for two years and it has just come to an end. However, we would like to remain in the house.”

The formal networks could be seen as a shared base of knowledge as discussed above. Furthermore, the network could also result in entrepreneurs guiding each other in a more informal way. A topic that many respondents touched upon was the difficulty in finding out what works and what does not. Often the solution is trial and error, and pushing ideas back and forth. The formal networks’ contribution is to connect people in the same position. In turn, this can help entrepreneurs to not repeat the same mistakes as others have done before. When asking the founder of Sensative how he communicates with other companies in the network he responded:

“It’s mostly about the entrepreneurial journey, [talking to others] who have done the same thing or are going to do it, in fact just talking about tricks and tips about how running and launching businesses. It could be everything from administrative matters to developing the ideas. It is like you are in the same boat.”

4.3. Networks as a strategic platform

This theme aims to treat in which way members of the start-up networks perceivably have gained strategic benefits from their membership based on their testimonies. This will be discussed in terms of potential increased access to customers, employees and external funding. Furthermore, it will treat how well the firms have received support from the network depending on their business activities, or in other words how, and if, there has been better or worse strategical 'fits' between the firms and networks depending on their business activities and network focus, respectively.

As for the funding, the responses have been mixed between the networks and their respective member firms. The mixture of responses consisted of firms receiving funding through contacts they gained through the network, that they entered the networks after they received funding, and not wishing to receive any external capital at all. The reason for the latter, the founder/CEO at Cashbackshopping motivated with the following:

“My personal opinion is that a lot of start-ups put a lot of focus on searching for money, and very little focus on the business in the beginning. [...] The problem for them is when there's not as much money available. If you build your business on burning cash and need money all the time, it only works until you don't get any more money. Instead, building a good business means that if I need external financing, it is in my case a lot more attractive [for others to finance] if there's a profitable business with an active user base and such. [...] I think cost effectively. [...] It's a lot easier to spend others' money than your own.”

The impression that there was little chance of receiving funding, or the network had any issues to facilitate this, was not present among the respondents. Even firm members of the networks helped with information regarding how to gain external funding. The founder/CEO at E-Aktiebok, who had experience in financing, stated that:

“For example, I was at MINC Monday morning and held a lecture for their firms about financing in practice. How it really works, and not how it works at Lund University, but how it

works in reality. I've studied in Lund. So I held a lecture about it. Many of them are facing questions such as "How do you really do it?"

Regarding how networks offer advice on how to gain funding, the managing director at Malmö Startups had this to say:

"We make events around things that are issues, we have done one on financing for example, where we invite companies to explain how they conduct their rounds. And we think that's the best way to learn, by listening to someone who has done it previously."

When asked what the main reason of joining a network was, many firms stated that finding funding through the network was a top priority. On the relation on being in an incubator programme within a network, the founder/CEO at Caliente stated:

"Now we've just conducted a crowdfunding campaign, and I do think that it helps a bit being accepted to an incubator like this [MINC], as it's some kind of pre-betting, that someone else has reviewed you. [...] So I think that if you afterwards approach angel investors and such, I definitely think it matters."

As for customers, most respondents overall stated that they had not gained new customers through the formal networks, but a few did. In these instances it was in most cases not attributed to the formal networks directly, but rather loosely through their personal networks and other networks. However, the business coach at Ideon stated that:

"Their [Ideon Open, another network affiliated with Ideon] contacts with large companies in this environment give small firms the possibility to find their new customers or use their ideas with big customers, and contacts high up in the organisation, so that you're able to talk to the right person through their processes over there."

This might have been the case, but it was not explicitly mentioned by any firms interviewed from Ideon at any rate. One respondent, the founder of Sensative, outright stated that it did not really help at all, referring to that the contact with the network had decreased over time. The founder/CEO at Guidly, on the other hand, stated that their primary gain from the network was in fact mostly gained customers through their collaboration with the formal network, MINC.

Other firms did however claim other benefits when it comes to interaction and reaching potential customers. These benefits include customer feedback on their products. However, not all attributed the benefits directly to the formal network they were a part of, but more in a general sense. This is illustrated by the following quotes, by the founder/CEO at E-Aktiebok:

“It has happened that you get customers who sign up right away, absolutely. We have gotten invaluable input on how our product is perceived by those who use it”

“You don't sell a service if you don't have a network on contact with them. But suppliers are networks [...] Customers, we sell a lot through partners. Those partners could have been added through networks. We have collaborations with all the large incubators in Skåne: MINC, Ideon, Think. Also we have partners which have been added but weren't in my network for starters, for example, FundedByMe.”

The founder/CTO at S2 Communications further supports this notion:

“We have a third [of customers] where it is new customer arrangements, and then.... The networks are a pretty important there. To be seen in the right environments. That we make ourselves relevant. There's types of branch organisations where our clients' enterprises are, and there's where we try to be active.”

Overall, the access to possibilities of external funding has been available to those who wish to gain such funding through the formal networks, according to the testimonies. Although some of the firms did not want external funding in the first place. The access to and input from customers through the formal networks was mostly not a prominent feature of the formal networks, even though in some cases they had helped. But, in these cases, the entrepreneurs' personal networks did play a role in the access.

4.4. Entrepreneurial intent

This theme describes how the entrepreneurs' intentions affect the start-ups' network participation and innovation behaviour. Many respondents seemed to have a clear vision for their business with innovation at their core. Most respondents felt that the value of the

networks lay in other areas than affecting their core innovations. The necessity of focus and making priorities were also discussed.

Throughout the interviews, most of the respondents stated that they do not think that their network participation has affected their companies' innovation behaviour directly. These respondents think that the network has helped them with other things, but not their core innovation processes. Although some say that it has had an effect, it seems hard to pin-point exactly how it has affected the company. The founder/CEO at SleepCarrier illustrates this:

“I’m sure it has [affected us], but I don’t know if has been for better or worse. I’m completely positive that it has had an effect. I don’t see how it could not. But I don’t know what effect. You can’t say that thanks to us being here, the company has become this or that. It might have become that anyway and even better, because then I wouldn’t have talked to Erik, who is out there, but someone else instead which would have led to something different.”

Most respondents seem to have had a clear vision for their respective businesses, regardless of their network participation. The networks have helped them develop their businesses, but the original ideas have mostly remained the same. The respondents also seem to be clear about what they need to do and acknowledge that resources are scarce. When asked about the possibility to venture outside of their core product, the founder/CEO at E-aktiebok stated that:

“You should do what you are good at. You should focus, I think. And there will be new products in this system that are adjacent, but in this company nothing more [than that] will happen.”

Most respondents agree that innovation is the core of their businesses; it is what made them start the company in the first place. While some respondents discuss scalability and reaching higher volumes with their products, others want to differentiate in order to avoid having to compete on price. However, none of the respondents are planning on venturing into completely new product or process territory within their current start-ups. The founder/managing director at Planeto described the necessity of focus:

“Yes, all companies should always be in an innovation phase, or parts of the companies. But most mature companies are not. They end their innovation phase when they start making a lot of money on an existing business, something they have. [...] If you see it from Planeto’s

perspective, or any company's perspective, then you could absolutely start with revolutionary innovation. But at some point you have to move on to incremental innovation within the thing that you have created.”

This quote highlights the fact that the respondents seem to have a clear understanding of how their innovation behaviour affects their businesses. It also shows the effects of resource constraint and the possible trade-offs between different types of innovation.

4.5. Personal motivations

This theme considers the fact that entrepreneurs' personality and personal inclinations could have an effect on start-ups and their innovation behaviour. Respondents also stated that their private lives sometimes affected the way they approached their businesses. Network participation in light of experience and perceived need is also briefly discussed.

In addition to the themes discussed above, there are also more personal factors that affect the start-ups and some of the business decisions that the respondents make. Some respondents cite personal priorities, such as families, as a reason not to engage more in network activities. All respondents agree that time is a scarce resource and that priorities are necessary. The founder/CEO at Flattr discussed the importance of priorities for their start-up:

“Well, it's really the hardest thing you do. There is nothing that is more difficult. [...] Most companies have some sort of web solution, which is not rocket science. And then it's not about “We choose to do this, because we don't have the expertise to do that” but rather “We choose to do this, because we think it's better than doing that”. Constantly you are making this kind of priorities, since you never have people enough to do everything. And you should never do everything.”

Most of the respondents also said that their networks were not limited to their participation in the formal networks that were studied. Especially the more experienced entrepreneurs used their personal and professional network to a great extent when they needed to reach out to someone. However, as a newcomer to the start-up scene, the founder/CEO at GetRaw stated that the formal network was more important than the personal network due to lack of experience and personal contacts:

“MINC is more important. I’m so young. My mother is 60 and has a big personal network that we have used a lot, so for her that is more important. But I never worked that much [after graduation], so this is great for me! It’s easy to network in a place like this because it feels natural.”

This quote shows that start-ups use the networks in different ways and the connections that they get from the networks vary in importance between the start-ups. A possible interpretation is that different factors like age, experience and personality for instance, affect start-up’s network activities and the effect the networks have on the start-up’s behaviour.

Some respondents also stated that they had a more personality-driven inclination towards more radical innovation. These respondents felt that innovation for innovation’s own sake was exciting and more appealing than perhaps maximising profits from each individual idea. The founder/managing director at Planeto stated that:

“I, as a person, will probably never be able to stop innovating. My brain just works that way. [...] The risk from an innovation perspective is that a company like Planeto, at some point I will no longer be the right person to be in charge. Then it will be more about maximising profits and current businesses. [...] That risk is definitely there for Planeto, and for all companies.”

It is therefore possible that that the respondents’ personalities and entrepreneurial spirit could affect their companies’ innovation behaviour, if the entrepreneur is more inclined towards one kind of innovation rather than another.

4.6. Blurred networks

The following theme illustrates a prominent feature of this study which is important to note; the boundaries of formal networks are not as clearly cut as they may appear on first sight. The networks often intertwine, and are often less formal than they may appear.

During the interviews, when talking about network participation a lot of the respondents were confused by our definition of formal networks. Even after explaining our perspective on formal networks, there seemed to be some confusion still. For example, the coordinator at Ideon Meeting said:

“I think we have a misunderstanding; when I talk about the network here, I mean our powerful informal network. We do not offer a network where one have to pay a fee, so when I talk about our network I mean all the “Ideon companies” that want to be part of the activities here, and all the external firms that want to take part of this energy and environment as well. We have a stream of 8 000 people here every week, and that is what I mean with the environment, energy and the network”.

Some entrepreneurs also had an unclear view of what a formal network really is. The founder/CEO at SleepCarrier said:

“Maybe you have an academic definition of the term network, but for me it is the context of people with all different contacts, and where we are extremely active. I would like to state that Ideon Innovation is not our network. Our network is much, much bigger than Ideon Innovation. Ideon Innovation is one part of it, but then there are other actors. Everybody I meet and can use for favours or connect with, they belong to my network. And I use my personal network a lot in favor of the company.”

This, among other quotes from respondents, confirmed that there is a confusion about the definition and meaning of a formal network. The misunderstanding made us decide that the formal network is only a business incubator or a formal organisation whereas one’s personal network and the work space is contributing to the informal network, which is much bigger.

Furthermore, the different formal networks do seem to have different sectors of innovation and businesses prioritised within them, or at least attract businesses with similar profiles and types of businesses. Obviously this will be true to some degree as many start-ups have similar circumstances surrounding them, but there are some other patterns that should be noted. These seeming focuses are generally not explicitly stated officially by any of the formal networks and their respective incubators, but they do occur. In the case of Ideon Innovation, being a research driven network with close proximity both to Lund University, huge research parks and many very large high technology and medical science corporations, their focus would appear natural. However, the business coach at Ideon answered this when asked how he perceived the mix of firms within Ideon:

“It comes in waves, and it's nothing we control really. What is a good mix? That's something we will see. We can't control it. It could be so that they're [firms] all the same, but still have a great

exchange, and vice versa. We don't judge and don't grade, everyone is welcome to join. We never see competitors, only complements. [...] The underlying thought is an exchange as large as possible with each other, we want open people who share. That's the foundation for all networking.”

In general, most respondents felt that the mix was good and varied in all networks, with a few exceptions. These exceptions generally concerned firms not associated with technological innovation, such as food manufacturers. The issues included that these firms felt that it would be beneficial to connect with other firms that were going through the same procedures that were industry specific. Some expressed that it depends on the stage of the firm, if it is in the idea phase or further along. Meaning that a more concentrated network might be more beneficial as specialisation increases. Respondents who had gained benefits from similar firms within the network often expressed how helpful this was. For example, the founder/CEO at Caliente stated that:

“Yes, of course with [other] food manufacturers we have many similarities. On one hand the technology behind it, but not in the least also market challenges. There's a company here named GetRaw and we have plenty of exchanges between ourselves”

That the network's formal structure is not as clear cut as it seems became apparent throughout the interviews. Several firms got confused by the academic definitions of networks, and outrightly in many cases stated that interpersonal relationships within and outside of the network occurs. Furthermore it becomes evident that the network directors and other people running the different networks intermingle with each other in less formal settings. These network representatives might well go out of their 'formal' setting to connect people to firms within the network. For example, an angel investor or firm representative (outside the formal network) might know a network representative personally through his or her private network, and then introduce said person to firms within the network. Basically, the network representatives extend the formal network through their personal informal connection, on a basis that is not formally structured.

5. ANALYSIS AND DISCUSSION

The purpose of this thesis has been to investigate the connection between network participation and the way start-ups handle exploration and exploitation activities. Our study has resulted in six prominent themes ranging from the importance of physical space, knowledge creation and sharing, strategic benefits, entrepreneurial intent, personal motivations, and the blurred character of networks. In this section each theme is analysed and discussed with regards to the research question and previous literature. After that, a theoretical model is presented illustrating the findings of this study in a visual form. Lastly, limitations of the study, suggestions for future research, and managerial implications are addressed.

5.1. Physical space as a social platform

The empirical findings regarding the network as a social platform seem to suggest that the collaborative aspect of networking, referenced by Ford and authors (2003), is important in these start-up networks. Respondents frequently mentioned informal networking opportunities as being important to their companies. For instance, lunch meetings and coffee breaks were considered to be good opportunities to talk to other entrepreneurs and exchange ideas. These types of interactions between entrepreneurs within the network could have an effect on the start-ups' exploration and exploitation activities, depending on the ideas that are shared. However, it seems difficult to pin-point exactly what the network brings to the start-up in any given situation, as illustrated by one of the quotes stating that the network definitely had affected the business but it was unclear in what way. This is supported by Ford and authors (2003) who state that it is almost impossible to predict an outcome for a specific network activity and that it is equally hard to tell whether the outcomes will be positive or negative. In this study, most of the respondents agree that their network participation has brought positive outcomes for their start-ups. These findings suggest that the overall experience of network participation is more likely to be positive than negative. However, in light of previous research, it is important to note that general causal links could be difficult to establish.

Several of respondents also highlighted the fact that the networks provided them with a physical workspace to run their businesses in, as an alternative to running their businesses from home. There was a clear tendency among the entrepreneurs to seek an office space in order to be in a context with other people. They also felt that physical closeness was

important in order to meet people and exchange ideas and knowledge. The environment that was offered to the entrepreneurs in the networks' locales was often described as being inspiring, creative and motivating. These findings support the notion that geographical proximity is an important factor for supporting network innovation, articulated by Eklinder-Frick and authors (2011). Eklinder-Frick and authors (2011) also state that geographical proximity can have an effect on the creation of social capital within a network. Throughout the interviews, respondents agreed that the social context of the networks was important for them when making decisions about network participation. Since the working environment in the network facilities was, by many respondents, deemed desirable to be a part of, it seems likely that a high degree of social capital is present and created within these networks.

The physical closeness of the start-ups and the sense of community that is created when entrepreneurs socialise are valuable assets to the networks. Considering that many entrepreneurs in this study seemed inclined to participate in a network due to its social benefits it could be seen as an opportunity for the networks to create and cultivate social capital, which is very valuable in this context. According to Coleman (1988), social capital can diminish the need for control and supervision. It can also bind the start-ups closer together and give them a sense of belonging and shared values (Eklinder-Frick, Eriksson & Hallén, 2011). The quotes from network representatives indeed suggest that the networks actively try to bring the start-ups together in order to solve problems and create a working culture where start-ups help each other and even older start-ups come back to the networks to help the new ventures. These findings imply that the networks focus a great deal on bonding social capital, in order to strengthen the relations between actors within the network. This notion is supported by Eklinder-Frick and authors (2011) who found that the bonding form of social capital is very common in networks. However, contrary to their results, we have not found any evidence that support the idea that too much bonding creates lock-ins that would isolate the entrepreneurs within the networks from the outside. Instead, network boundaries seem to be of a more porous nature, which is discussed more thoroughly in theme six: "Blurred networks".

5.2. Networks as a guidance system

As the literature review puts forward, joining a networks could have positive outcomes for the participating firms. According to Ford and authors (2003), networking could lead to outcomes

such as access to resources and increased knowledge. Analysing the interviews, we have seen that these outcomes really do occur, and that they are very important to the entrepreneurs. This theme, networks as guidance system in terms of increasing one's knowledge base, has actually become one of the most essential since it captures both the exploration and the exploitation opportunities for a start-up company. In order to investigate if and how networks for start-ups affect the start-ups' approach to the exploration-exploitation dilemma we have returned to March's (1991) definition of the two concepts: exploration being associated with search, experimentation, flexibility, and innovation, and exploitation being connected to concepts like efficiency, selection, implementation, and execution.

Most obvious is the connection between networking and exploitation. According to this study, entrepreneurs say that networking have provided them with assistance regarding efficiency. This is because it is more effective to listen to more experienced people instead of trying it out directly by yourself. Many of the respondents said that listening to others within the network has been a great source of guidance. The majority of the respondents believed that a lot of support from the network was regarding practical matters like selection, implementation, and execution which, according to March (1991), define exploitation.

As Freeman and Engel (2007) state, there are two different models of innovation; the corporate model and the entrepreneurial model for start-up firms. The latter differs in the sense that alongside bringing an innovation to the market, the entrepreneurs also have to simultaneously build a business around it. In this study we have seen that a lot of the entrepreneurs are striving to be innovative, but lack knowledge of more general matters. However, this is where network participation plays a huge role and brings valuable outcomes when it comes to building a business around an innovative product or service. Respondents stated that they could get help with everything from administrative matters to developing ideas.

Nevertheless, the network could also be seen as a guidance system in terms of exploration. The gain from more experienced entrepreneurs is important and networks are seen as a helpful guidance system because of its ability to increase knowledge. Listening to others is perhaps the key to finding the right balance of exploration and exploitation, if such a balance is indeed possible.

Another important strategic benefit gained thanks to the knowledge transfer within the network is given by the knowledge spillover theory effect (Hayter, 2013). Congruent with the fact that firms stated that the benefits of having other start-ups around them in similar positions, but not always the same business sector, implies that this knowledge spillover could compensate for lack of corporate or business experience, and in our meaning, could aid to stimulate exploratory activities.

5.3. Networks as a strategic platform

When analysing the results gained from the interviews regarding strategic benefits through its platform, it appears to be overall congruent with previous literature conducted on firms' performance in formal networks. To begin with the funding possibilities when it comes to being a part of a formal network, it appears to be one of the more attractive offers a formal network can bring to a start-up firm. Interestingly, when it comes to the wish to gain external funding, it does not appear to be any apparent dependency on the specific network, but rather on the firms' activities and structure as well as entrepreneurial inclination. With the latter meaning the personal views of the entrepreneurs and to what extent they wish to debt finance themselves. In other cases, firms accepted to the formal network had already gained external funding. Indeed, congruent with Stuart's and Sorenson's (2007) study, early stage firms seem to have an easier time accessing, or fast-tracking, toward strategic benefits that would be harder to access on their own.

Adler and Kwon (2002) also argue that networks are supposed to enable firms to gain resources at more attractive terms within the network, than outside of it. As for receiving funding, this seems to be the case. Semrau and Werner (2013) suggested that the different searching strategies are required for accessing strategic resources depending on the kind of firm and which resources they require. This too proves to be somewhat true, since several of the interviewees highlighted the issue of being in a different sector than the majority of the firms within the formal network or incubator programme. Conversely, firms being in a sector which corresponds to the majority of the firms within the formal networks claimed that it was very beneficial to have such experience around them. Further, the firms not in the majority sectors, often production of goods, expressed the notion of wishing more on-site support, for example the use of different machinery and the like, which further supports Semrau's and Werner's (2013) findings.

The access to external funding, and supporting activities (such as seminars, lectures, and business coaching) are services provided through the network by network managers and similar roles. One of Semrau's and Werner's (2013) contingencies of successful networks was just this, that policymakers and other intermediaries would be helpful in establishing efficient networks. These are conditions that are all fulfilled in the networks that were studied.

5.4. Entrepreneurial intent

Throughout the interviews respondents stated that they did not think the formal network had affected their core innovation processes in any major way. Possible effects that were discussed were considered minor and hard to pin-point. Some entrepreneurs seem to have had a vision for their business development right from the start. This perspective seems to be more common among more experienced entrepreneurs, who either already had experience from founding other start-ups or had extensive work experience from other companies. Rather than assisting with product innovation respondents felt that the networks helped them with supporting activities. This support was used to a greater extent by first-time entrepreneurs and to a lesser extent by experienced entrepreneurs. According to Stuart and Sorenson (2007), start-ups, especially in the early stages of their lives, are supposed to gain several benefits when participating in entrepreneurial networks. This notion is, to some degree, supported by this study. However, it seems that entrepreneurial intent can affect the extent to which entrepreneurs decide to make use of the resources that are offered to them through the networks.

As most respondents agreed that innovation is an important, if not the most important, factor for their success it seems clear that the concept of exploration is very much a reality for these start-ups. Many of the respondents stated that they experimented a lot before reaching their final product and described a flexible innovation process, which corresponds well to March's (1991) description of the exploration process. It is also interesting to note that most respondents felt like they needed to focus their business in order to make it financially viable. Priorities were considered very important, as is evident from the quotes. This seems to imply that, after an initial phase of innovation and exploration in order to establish a core product, the start-ups started to lean more towards exploitation and making a business out of their original ideas. One respondent even explicitly stated that while radical innovation is important

and even desirable, at some point the company has to turn to incremental innovation to make a profit. This seems logical since start-ups, by nature, are small and resource constrained (Sinha, 2015). Perhaps it is not possible for start-ups to balance exploration and exploitation in this initial phase. Indeed, the need for balance, expressed by for example Levinthal and March (1993) and Tushman and O'Reilly (1996) is largely directed at mature firms with more extensive resources at their disposal. In light of this argument, it is perhaps not relevant to discuss whether these start-ups are subject to a success trap since they have not yet reached a level of business where such a discussion is warranted. Instead, the focus on exploitation after an initial exploration is most likely a result of trying to survive in a competitive business environment.

Since resource constraint makes it hard, if not impossible, for these start-ups to pursue both exploration and exploitation at the same time we cannot say that organisational ambidexterity has been supported by this study, as articulated by Gupta and authors (2006) and Almahendra and Ambos (2015). The strategy of punctuated equilibrium seems more appropriate to discuss in this case, as it makes it possible for firms to alternate between exploration and exploitation over time (Gupta et al., 2006). It is possible that this strategy is more suitable for start-ups since it does not require simultaneous focus on both exploration and exploitation. However, since we have not been able to study the start-ups for a longer period of time we cannot be certain that this strategy is more widely adopted in these start-ups.

5.5. Personal motivations

In addition to their intent for their business, the entrepreneurs also seem to be affected by personal circumstances such as family life and priorities outside of their businesses. Entrepreneurs are individuals with limited time and attention, so it is only logical that their time is divided between their work and private life. However, this personal resource constraint on time and attention may be even more prominent for people working in a start-up context. It is reasonable to assume that each individual worker is more important in a start-up than in a mature firm. Therefore, the entrepreneur's resource allocation assumedly has a greater impact on the business in a start-up. Under these circumstances, combined with the entrepreneurial intent discussed above, it does not seem feasible for single or even a team of entrepreneurs to pursue both exploration and exploitation successfully simultaneously. Wieblen and Chesbrough (2015) discussed the major differences between start-ups and

mature firms. They noticed that the latter has access to resources and routines that the former does not. On the other hand, start-ups are considered more flexible, more prone to risk taking and they usually grow more rapidly. While this may still be the case, this study implies that flexibility may suffer when entrepreneurs are considered as individuals who share their time and attention between work and their private lives.

Some respondents stated that their personal traits made them lean more or less towards the innovative side of business. One of the quotes highlights the fact that the entrepreneur feels a more personal inclination towards innovative behaviour but also acknowledges that it may be better for the start-up to focus on exploitation once it has launched its core products. This seems to support the notion that personal traits and individual management style have an effect on the innovation behaviour in these start-ups (Mom et al., 2009; De Visser & Faems, 2015). If these personal motivations have an effect on innovation behaviour in start-ups, it is also possible that a balance between exploration and exploitation is not always what is strived for. An entrepreneur might want to focus solely on either of the two activities if he or she feels more personally inclined to do so. While it is hard to argue that a start-up could focus on exploitation without an initial phase of exploration (i.e. creating a business to begin with), it is possible that it could continue to pursue exploration activities even after a viable product or idea has been created. However, this study does not suggest that exploration and exploitation are considered mutually exclusive, but rather that the entrepreneurs acknowledge that different activities are called for during different stages in their start-ups' development.

5.6. Blurred networks

In this study the concept of a formal network is seen as a set of companies connected by social interaction. We have come to a conclusion that this means both formal as well as informal relationships, being similar to the view that Ford and authors (2003) hold. A lot of the respondents were confused by the terminology of networks since they believe that their personal and professional networks intertwine. This creates a sort of blurred network boundaries; it is hard to determine where one network ends and another begins. It is also possible for people to move between networks, as the interviews show that a lot of the same people are involved in different networks in different capacities. Since the formal networks studied are organised under different authorities it is still reasonable to argue that at least these networks consist of a structure with some kind of boundaries. The entrepreneurs can

choose to participate in one of the networks or they can choose not to. The people that move between networks or hold key positions in multiple networks can therefore be argued to engage in the bridging form of social capital, as presented by Eklinder-Frick and authors (2011). By creating “bridges” to other groups and networks, the specific network gains access to a larger context and its members can benefit from these bridges. For example, this study indicates that the entrepreneurs within these start-up networks are confident they could gain access to potential external funding if they wanted to since the networks are well connected to investors outside of the networks.

People who can transcend formal network boundaries and move freely between them can also be considered to be boundary spanners. In this study, the respondents who mostly articulated their connections with people outside of the networks were those working for the formal network organisation. This seems to support Tushman’s and Scanlan’s (1981b) notion that boundary spanning individuals are more likely to have higher formal status within the organisational hierarchy. However, since many of the entrepreneurs highlighted that they also gained benefits from their personal and professional networks (apart from the start-up networks), boundary spanning qualities cannot be attributed to people with high formal status alone. Being a boundary spanner, according to Tushman and Scanlan (1981a), is contingent on one’s ability to facilitate knowledge sharing between internal and external environments. A single entrepreneur may be able to share knowledge that he or she obtains from outside the network with those he or she is most closely linked to within the network. On the other hand, it is more likely that a network representative is able to share the same knowledge across the whole start-up network, making them more efficient boundary spanners in this study.

We have seen that the networks are hard to separate, but in order to “unblur” the boundary of a network certain arrangements can be made. For example, by setting up an incubator or accelerator programme, with criteria for the participating companies, the boundaries of that network will become more defined. As we have seen in the literature review, these two arrangements have quite clear definitions (e.g Newton, 2005; Iskold, 2015). The idea of incubators and accelerators being more organised is also supported by respondents in this study. Some of them have received mentorship and business coaching more related to its specific needs, making it more clear what gain the network actually brings. And, in order to become an incubator company, many requirements are usually put on the company, the entrepreneur, and the business idea. To sum up, an incubator or accelerator are examples of

formal network structures with less blurry boundaries. However, in reality one’s own network is much bigger and much more complex than such a definition conveys.

5.7. Theoretical model

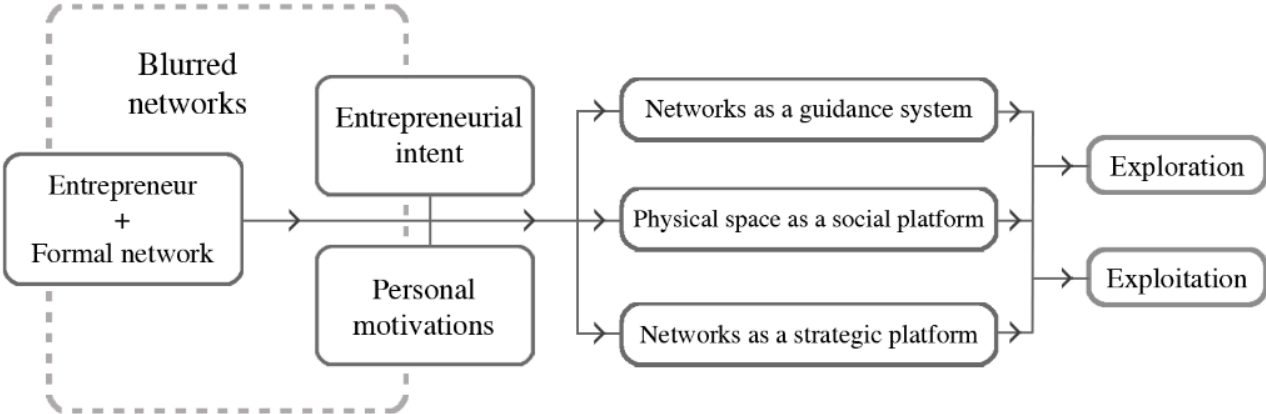


Figure 1. Theoretical model of entrepreneurs in a formal network

Figure 1. depicts the six themes that were discovered in this study. The themes are presented sequentially in the order they seem to relate. The starting point for this study has been an entrepreneur who enters into a formal network structure. When the entrepreneur is participating in a network, the *entrepreneurial intent* and *personal motivations* of that entrepreneur affect the different outcomes that the start-up gets from that network. Acting as an intermediary step, entrepreneurial intent and personal motivations influence how active or passive the entrepreneur will be in his or her network and to what extent he or she will utilise the resources offered by the network. Entrepreneurs with vast experience or demanding family lives may choose to use less of the network’s resources while those who are new to the start-up scene may choose to use more. The entrepreneurs’ vision for their business in terms of innovation behaviour (i.e. exploration and exploitation) will also have an impact on how they choose to engage with the network.

After the entrepreneur has entered into a network and is engaging and connecting with network representatives and other entrepreneurs within the network, the start-up will likely experience certain positive outcomes of network participation. Three possible outcomes have been discovered in this study: *networks as a guidance system*, *physical space as a social platform*, and *networks as a strategic platform*. These outcomes are separated but at the same time closely related to each other. The physical space that the networks offer, for example, not

only gives the entrepreneurs a social context to work in but also increases the possibilities of knowledge sharing and strategic benefits that the start-up can gain. These possibilities would probably be diminished if the start-up would not have been situated within the networks' facilities to begin with. Furthermore, having the networks both as a guidance system and strategic platform is mutually reinforcing. While the knowledge sharing and practice of helping each other within the networks can give the entrepreneurs access to, for example, potential funders and investors that they would not have known about otherwise, the effect can also work the other way around. By using the network for strategic purposes, for example seeking external funding and growing their business, the entrepreneurs simultaneously gain valuable knowledge that can then be shared across the network.

The positive outcomes and the intermediary step before will likely have an effect on the start-up's innovation behaviour in terms of exploration and exploitation. All three outcomes could have an effect on start-ups' exploration activities. For example, by attending network events and activities the entrepreneurs gain access to new knowledge that could guide them in their exploration processes. Similarly, the closeness to other entrepreneurs provides the opportunity to share experiences and ideas, which could stimulate exploration within the start-up. However, this effect can be mediated by the effect of entrepreneurial intent and personal motivations beforehand. The three outcomes could also have an effect on exploitation activities within the start-up. Being guided by network representatives, who have seen a lot of start-ups develop, and by seasoned entrepreneurs, who have been through the same journey before, can give the entrepreneurs the tools they need to grow their businesses and become financially sustainable. This study supports the notion that this effect on exploitation is somewhat bigger than that on exploration, since entrepreneurial intent and personal motivations seem to mitigate the effect on exploration to a higher degree. However, as the theoretical model stands, this slight difference is not visually acknowledged. If further studies on the subject are conducted in the future, this theoretical model could be revised to show more nuanced differences in effect. Ultimately, this study implies that entering into a start-up network will have an effect on how start-ups approach exploration and exploitation activities respectively.

The last theme in our study, *blurred networks*, is more difficult to put in a sequential order relative to the other themes. Instead we have chosen to represent it as a porous boundary loosely separating the formal network, and the entrepreneurs within it, from its external

surroundings and other network structures. This study has shown that network boundaries are hard to draw and that both people and information frequently move across network boundaries. Nevertheless, some formal structure is still in place seeing as the networks all form separate organisations, which is why a porous line is depicted rather than a solid line or no line at all.

In conclusion, the themes that have been discovered in this study all have an effect on the entrepreneur's network participation and experience. Positive outcomes from engaging in a network are a prominent feature but these outcomes can be enhanced or mitigated by factors such as entrepreneurial intent and personal motivations. These outcomes, in turn, affect the way start-ups approach exploration and exploitation activities with the mediating effect of entrepreneurial intent and personal motivations. The blurry boundaries between networks and the outside world put these start-up networks in a larger context of actors who can have an effect on start-ups and their innovation behaviour.

6. CONCLUSIONS

From this study we have come to a few conclusions regarding the effects of network participation on exploration and exploitation activities in start-ups. Firstly, network participation is considered by many to be a positive experience and will likely bring positive outcomes for the participating start-up. Secondly, these positive outcomes will have an effect on the exploration and exploitation activities of the start-up due to increased access to knowledge and guidance, a social platform to interact on, and strategic benefits for the start-up. Thirdly, the effects of the outcomes on exploration and exploitation will be mediated by the extent of entrepreneurial intent and personal motivations of the entrepreneur. Lastly, the formal network is only one part of a much larger context where networks intertwine and people transcend network boundaries.

6.1. Limitations of the study and suggestions for future research

One of the limitations of this study concerns the difficulties when deciding on an appropriate sample. Even though we have tried our best to make sure that the sample is varied in terms of industry, location, and network belonging it is possible that our sample contains factors that are unique to this sample making the findings potentially less valid for other start-up networks than those studied. While we feel confident that our findings can be argued to hold true for a larger national sample of start-up networks, it is possible that there are international differences that have not been accounted for in this study. While this can be considered a limitation in this study, it also presents a possibility for future research to explore these potential differences between countries further.

The intention of this thesis has been to contribute to research on network outcomes and the exploration-exploitation dilemma in a start-up context, since we found current literature on the subject incomplete. In our opinion, this area deserves scientific attention and we believe that further studies on the subject are relevant and needed, much due to the environment that surrounds us today where start-ups are an important source of innovation and the start-up scene keeps expanding.

6.2. Managerial implications

The results of this study point to areas that could be of interest to managers of formal network organisations in general but managers of start-up networks in particular. This study has shown that entrepreneurial intent and personal motivations affect the way start-up entrepreneurs approach their network participation and engagement. Therefore, it would perhaps be beneficial for network managers to create a closer connection with the entrepreneurs in order to better understand their reasoning behind choosing to engage to a greater or lesser extent with the network. By understanding this, the network managers will probably be better equipped to facilitate network participation and maximise each entrepreneur's potential engagement with the network.

Given the positive outcomes that network participation seems to bring start-ups, managers could benefit from continuously evaluating and improving the ways their networks work to produce these outcomes for their companies. For example, managers could ask themselves "Is knowledge sharing efficient within my network?" and "How can I improve the means of communication in order to facilitate sharing of knowledge and experience?". Since the physical space is important to encourage social interactions between entrepreneurs, managers should try to make sure that work space is available when needed, and promote a working environment that is open and inspirational, for example by arranging inspirational events and paying attention to the layout of the work spaces.

The boundaries of networks are difficult to draw and different networks intertwine as people move between them. Network managers would therefore benefit from acknowledging that they are a part of a larger context rather than working as an entity completely separate from its external surroundings. By acknowledging this fact, managers could work towards extending and improving the relations that they have outside of their formal boundaries in order to improve the position of the start-ups in their network with greater connections to external actors.

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APPENDIX 1. Interview guide in English

Background questions

- Who are you, and what's your position in the firm?
- Can you tell us about your experience of entrepreneurship/businesses?
- Can you tell us about your company?
- For how long have you been a part of the network?
 - Initially, why did you choose to join the network?
 - How did it look like before you joined the network?
 - If you joined directly after starting your firm: why?

Exploration/Exploitation

- What does 'innovation' mean to your company?
 - How does your firm work with development of new products and processes?
 - How does your firm work with continued development/upgrades of your core products?
 - How does your firm work with finding new channels of communication?
 - How does your firm work with maintaining relationships with your customers/suppliers?
 - How do you find new costumers/suppliers?
- Would you say that one type of innovation is more important than another, in your firm?
 - If yes: Why?
 - If no: How do you manage to work with both goals at the same time?

Network

- How are your processes influenced by being a part of a network, as compared with how it would've been outside of a network?
 - Which processes?
 - What exchanges/relations have you have/had with other firms, within and outside of the network?
 - Which benefits do you perceive that you gain from the network?
 - Have your access to a network influenced your innovation processes or innovation strategies?
 - How do you perceive that the network helps for your firm and others, for example with support functions?
 - Would you prefer to work with/collaborate with someone within the network as opposed to someone outside of it? Why?
 - What's important to your firm when you judge the potential of a future collaboration?
 - How does firms interact/communicate with each other within the network?
- How do you perceive the number of firms and the mixture of firms within the network?

- How much time/resources do you spend on network activities, as well as creating and maintaining relationships within the network?
 - What kind of activities?
 - What kind of activities gives the most benefit to your firm, and the least, respectively.
 - In what way?
 - How is this evaluated?

Questions to network responsables

- How was the network created, and what was its purpose initially?
- Which services do you provide for the members of your network?
 - How often? (If workshops, or the like).
 - How does the membership look for start-up firms? Cost?
 - What do your member firms usually ask you about?
 - Which people in the firms do you usually have the most interaction with?
 - How does the mixture of firms within the network look? Production/tech, etc.
 - In what way do you evaluate/follow up on the effects of your support activities?

APPENDIX 2. Interview guide in Swedish

Bakgrundsfrågor

- Vem är du och vilken roll har du på företaget?
- Kan du berätta lite om din erfarenhet av eget företagande/entreprenörskap?
- Kan du berätta lite om ert företag?
- Hur länge har ni varit med i nätverket?
 - Varför valde ni att gå med i nätverket initialt?
 - Hur såg det ut innan ni gick med i nätverket?
 - Om företaget gick med direkt: Varför?

Exploration/Exploitation

- Vad betyder ”innovation” för ert företag?
 - Hur jobbar ert företag med utveckling av nya produkter och arbetsprocesser?
 - Hur jobbar ert företag med vidareutveckling/uppgraderingar av era kärnprodukter?
 - Hur jobbar ert företag med att hitta nya kommunikationskanaler?
 - Hur jobbar ert företag med att hantera relationer till era kunder/leverantörer?
 - Hur hittar ni nya kunder/leverantörer?
- Skulle du säga att någon typ av innovation är viktigare än någon annan för ert företag?
 - Om ja; varför?
 - Om nej; hur fungerar det att jobba med båda målen samtidigt?

Nätverk

- Hur påverkas era processer av att vara med i ett nätverk, jämfört med hur du tror de hade varit om ni hade varit utanför ett nätverk?
 - Vilka processer?
 - Vilka utbyten/relation har ni/har haft med andra företag, i och utanför nätverket? Vilka fördelar upplever ni av nätverket?
 - Har er tillgång till ett nätverk påverkat era innovationsprocesser eller era innovationsstrategier?
 - Hur upplever ni att nätverket underlättar för ert och andras företag, när det kommer till att etablera nätverk och andra aktiviteter, såsom stödfunktioner?
 - Skulle ni föredra att samarbeta med någon i nätverket eller med någon utanför det? Varför?
 - Vad är viktigt för ert företag när ni bedömer potentialen i ett framtida samarbete?
 - Hur interagerar/kommunicerar firmor med varandra i nätverket?
- Hur upplever du antalet företag och blandningen av företagen i nätverket?
- Hur mycket resurser/tid lägger ni på nätverksaktiviteter samt att skapa och upprätthålla relationer i nätverket?
 - Vilka aktiviteter är dessa?
 - Vilka aktiviteter anser du gynna företaget mest respektive minst?
 - På vilka sätt?

- Hur utvärderas detta?

Frågor till nätverksansvariga

- Hur skapades nätverket och vad var syftet med nätverket från början?
- Vilka tjänster erbjuder ni medlemmarna i nätverket?
 - Hur ofta? (om det är workshops eller liknande)
 - Hur ser medlemskapet ut för start-upföretagen? Kostnad?
- Vad brukar era medlemsföretag fråga er om?
- Vilka personer på företagen brukar ni ha mest kontakt med? (nyckelpersoner)
- Hur ser sammansättningen av företag ut i ert nätverk? Producerande/tech osv.
- På vilka sätt utvärderar/uppföljer ni effekterna av era stödaktiviteter?