Role of Strong and Weak Ties
- Entrepreneur’s Social Network

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Abstract

The role of social networking has widely been embraced in an entrepreneurial context due to its nature of providing easy access to information, support and other complementary resources needed for the creation and development of entrepreneurial venture (Omta et al., 2001; Johannsson, 1990 cited in Song et al., 2017). The entrepreneurs’ network is affiliated with the study of social relations that can influence the creation and development of new business by shedding light on the functionality of social ties in the diffusion of resources that are vital for the establishment of firms (Greve, 1995). Therefore, studying the field of entrepreneurship in the context of social network can offer a fruitful perspective on entrepreneurship (Greve, 1995).

Despite the vast and diverse research in the field of networking and entrepreneurship, there are still some gaps concerning what is actually going on in a network and the understanding about network operation, their nature and role in influencing business performance still limited to fairly broader and theoretical perspective (Jack, 2005). So, in line with these views, the purpose of this study is to explore and enhance the understanding of the networking in an entrepreneurial context by shedding light on the role of strong and weak social ties. The foundation of this study relies on Granovetter’s (1973, 1985) strong and weak tie hypothesis and Jack (2005) work, that by highlighting the characteristics, formation, and outcome of strong and weak social relationships contribute to building the concept of entrepreneur’s social network.

A multiple case study of five entrepreneurs, operating their networks and businesses in Linköping, Sweden, has been conducted to achieve the purpose of this study. This research work uses a qualitative approach and is based on the semi-structured interviews, which allows a deeper insight into the studied area through analysis of multiple cases.

The result of this study indicates that both the strong and weak social ties, in which an entrepreneur is bonded, are used to a varying level in terms of information flow. Strong relationships, that relies on frequent interaction, hold great importance in providing quality information as compared to weak relationships but simultaneously accountable for providing information that is useless and not up-to-date. On the other hand weak-ties contacts are dispersed in a social network and rarely interact with each other. But these weak connections are also important and play their role once get activated by entrepreneurs. Considering the information flow weaker relationships also occurred to be useful however the relatively small size of the town can mean that similar information is repeated by several connections. Since, the aspect of individual knowledge and experience help in the formation of new relationships but the result of this study highlights that, a personal motivation and drive towards networking also plays a crucial role in the formation of both strong and weak ties.

The study findings can benefit the researchers and the entrepreneurs in developing their knowledge about networking and role of social ties in providing access to information and resources necessary for the creation and the development of venture. However, the strong connections hold a dominant position concerning the information and the resource flow but weak connections are also crucial and provide support in areas that strong connections lack. Thus, the entrepreneur that keeps the balance between both his/her strong and weak connections can efficiently reap the benefit of social networking.

Keywords: Social network of entrepreneur, Strong-ties, Weak-ties
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1 Introduction

1.1 Background

The research in the field of entrepreneurship is growing and has attracted many academic researchers, business experts, governments and policy makers. The underlying reason for this increasing research might concern with the nature of entrepreneurship that is perceived to be fruitful for nation’s economic growth and development and hence provide with the benefit of both the employment and wealth for the country. Various scholars have considered the study of entrepreneurship according to their area of interest which may have it focus on personalites traits theories, economic theory, sociocultural approaches and ethnic background. Moreover, the research also incorporates the networking perspective in the field of entrepreneurship by examining from venture creation perspective and success rate among entrepreneurs in creation and development of their ventures. (Greve, 1995)

On the other hand, the field of networking is not new, since 1930’s has been investigated by many researchers associated with the field of organizational research, anthropology, and sociology but the growing literature highlights its increasing popularity: the network concept “has indeed become fashionable and trendy” (Nohria, 1992, p. 1 cited in Jack, 2005). In recent years the networking research has also tremendously increased in the field of innovation and technological changes which left the impression that innovation is a collective process that highly rely on networking. (Ozman, 2007) The networking topic, has also gained a wide interest of researchers associated with the field of organizational behaviors and management studies, especially after Granovetter’s work which emphasizes that ‘economic action is embedded in ongoing networks of personal relationships rather than carried out by autonomous actors’ (Granovetter, 1973, Gatley et al. 1996: 78 cited in Dodd & Patra, 2002). Although the Granovetter’s (1973) research does not primarily focus on entrepreneurship it provides a useful insight on networking and social activities by discussing in connection with the job seeking aspect. Yet, the Granovetter’s work highlights the path to analyze the social relations and structures in which the entrepreneurs are embedded in and consequently using them for driving the business activities (Greve, 1995). As, the study of entrepreneur’s network is the study of social relations hence, acting as a source to analyze the founding rates of businesses by keeping the focus on the role of social relations and structures in accessing resources vital for the creation of new business (Greve, 1995). Another study highlights the similar issue by emphasizing the dependency of economic actions on social relations (Young, 1998 cited in Jack, 2005).

Moreover, the social network approach has been widely acknowledged as a predictor of business success (Johannisson, 1990 cited in Song, Min, Lee, & Seo, 2017) and consequently perceived as being affiliated with the economic performance (Arrow, 2000 cited in Jack, 2005). Similarly, another study highlights that entrepreneur’s social network plays a positive role in strengthening the business performance of small firms (Stam et al., 2014 cited in Song et al., 2017). Despite the prevailing consensus of the positive impact of social relations on economic activity, there is still some room to broaden the knowledge regarding what is really going on with in a network (Jack, 2005).

The previous studies of sociologist and anthropologists associated social network theory with the nature and the consequence of interaction and exchange that take place between individuals
(Harland, 1995; Maguire, 1983 cited in Jack, 2005). But there is also a glimpse of recent investigation focusing on the role of social interactions and networking, considering them as an important asset in developing cooperative behavior and collaboration through social relationships (Maritz, 2010). The other researcher perceived social network as a set of links of all kinds exists among individuals, for example, friends of friends, strong and weak ties (Boissevain, 1974; Granovetter, 1973 cited in Jack, 2005) that afterward provide with the benefit of valuable information, business development opportunities, and resources.

Considering entrepreneurship in the social context, the literature on entrepreneur’s network typically incorporates two typologies namely, strong ties and weak ties. In order to analyze the aspect of strong and weak ties relationships, most of the entrepreneur’s network studies are theoretically oriented towards Granovetter’s strong and weak tie hypothesis (Jack, 2005). In comparison to the weak ties, strong ties as described by Granovetter is based on the frequent interaction that closely linked to one another.

Although the Granovetter’s hypothesis of strong and weak ties has largely been implicated in many studies, Marsden and Campbell (1984) cited in Jack (2005) argue that the specific focus on ‘tie strength’ has attracted many scholars that consequently lead to a great contribution in developing the concept of networking. However, there is also some contradictions exist regarding the real value and the significance of strong and weak ties as highlighted by Jack (2005).

Despite the diverse knowledge and research on networking, there has been a lack of understanding regarding the aspect of network interactions (Barnir & Smith, 2002; Lechner & Dowling, 2003; O’Donnell et al., 2001; Uzzi & Lancaster, 2003 cited in Jack, 2005). Similarly, Ozman (2007) also highlights networking research, focusing on various fields, not only result in the diversity and richness of the literature but simultaneously create difficulty in producing robust and general results. However, the field of entrepreneurship has generally accepted the importance of networking in the development of small business by accessing resources like information, money and moral support, from the actors in the network that in turn seems to find new ways for the creation and development of business (Dodd and Patra, 2002; Sullivan & Marval, 2011; Premaratna, 2001) but the knowledge about network operation, their nature, and role in facilitating the business performance remains confined to fairly broader and theoretical perspective (Jack, 2005).

Since Granovetter’s (1973) concept of strong and weak ties enable to understand the characteristics of the network, operation, and structure but simultaneously turn out to be inefficient in explaining the real value and significance of strong and weak ties as highlighted by Jack (2005). Following the approach of Jack (2005), this study also incorporates the Granovetter’s (1973) work on the basis that although Granovetter’s (1973) concept of strong and weak ties enable to understand the characteristics of the network, operation, and structure but simultaneously turn out to be inefficient in explaining the real value and significance of strong and weak ties. This study builds on Jack (2005) but in addition to the role of strong ties, it also shed light on the role of weak ties that have not been discussed in detail by Jack (2005). Hence, this research contributes to build the understanding of network ties and will benefit the researchers, academic individuals in building their knowledge base and simultaneously turn out to be useful for entrepreneurs in analyzing the role of social ties in accessing information, knowledge and resources, crucial for the development of business.
1.2 Problem Discussion

The entrepreneurship largely relies on the social network, where the major actor ‘entrepreneur’ associated with other actors in the network through inter-connected relationships (Aldrich & Zimmer, 1986 cited Hoang & Antoncic, 2003). Stevenson (1983) noticed that the entrepreneurs are not only interested to invest resources in the creation and development of new venture but at the same time, they are concerned with the aspect of opportunity seeking. The entrepreneurs’ embeddedness in a social network paves the path to identify and exploit opportunities (Singh et al., 1999 cited in Arenius & Clercq, 2005) which afterward can be used for the exploration, creation, and development of new business (Dodd & Patra, 2002). Through social interaction that occurs between the entrepreneurs and their network contacts, the new ideas can emerge (Christensen and Peterson, 1990 cited in Arenius & Clercq, 2005) which later on can be served useful for business.

Moreover, the social network also considered as a most significant source for entrepreneurs when it comes to providing knowledge and information (Johannisson, 1990 cited in Arenius & Clercq, 2005). The reliance on network relations lead to provide easy access to the useful information, technical know-how and financial support (Omta et al., 2001). But on the other hand, such process of information flow, sharing ideas and other resources get affected by the intensity of relationship or strength of ties among actors (Fernández-Pérez, García-Morales, & Pullés, 2016; Hoang & Antoncic, 2003).

Nevertheless, there is a huge amount of literature in the field of social networking and entrepreneurship but it has been emphasized that the understanding about network operation, their nature, and role in influencing business performance still limited to fairly broader and theoretical perspective (Jack, 2005). Thus, efforts can be made in order to broaden the knowledge regarding what is really going on with in a network (Jack, 2005). Therefore, this study contributes to enhancing the understanding of networks with the specific focus on the role of strong and weak ties and their usefulness for entrepreneurial business.
1.3 Purpose

Keeping focus on the social aspect of networking, this study aims to enhance the understanding about the role of strong and weak ties network of entrepreneur. More specifically the emphasis will remain on examining the nature or characteristics of both strong and weak ties, how they are formed and utilized by entrepreneurs in performing business activities and what is their impact on entrepreneurial business. Moreover, the elaboration of both strong and weak ties and their respective aspects are illustrated in Figure 5.

1.4 Delimitations

The purpose of the study is to primarily focus on the role of strong and weak ties network of entrepreneurs in the social setting that will be achieved by analyzing five different cases of entrepreneurs running the separate businesses.

As the entrepreneurial process and outcome get influenced by the network (Hoang & Antoncic, 2003), therefore the study will focus on entrepreneurship. The reliance on network serves as a source for the entrepreneurs to gain easy access to a variety of resources accumulated by other actors in the network. Although, the entrepreneurial process incorporates the aspect of opportunity recognition and gaining resources (Batjargal, 2003; Ardichvili et al. 2003 cited in Elfring & Hulsink, 2007), but this study focuses on the aspect of information flow that is viewed as key benefit of networks for the entrepreneurial process (Hoang & Antoncic, 2003).

The study is a part of Master’s Program at Linköping University, which implies the limited availability of time and resources. This study is performed by single author and due to the constraint of time and resources, the findings of this study are majorly based on interviews of five different entrepreneurs. For similar reason, the author of this study considers carrying out research on local level, this refers to the entrepreneurs and their network operating in Linköping, Sweden. Considering Sweden as the context of the study, where trust in individuals and corporations emerges as a vital factor as compared to other European countries (Viklund, 2003), puts restrictions on the generalization of the study’s result in another context.
2 Methodology

This chapter gives an overview concerning how this research is designed and discuss the scientific methods and approach used to conduct this study.

2.1 Research Design

The research design highlights the author’s logical plan for research. It serves as a logical blueprint and thereby allow the researcher to make the logical connection among posed research questions, the primary and secondary source of data and the process of analyzing the data. This logical framework afterward, help researcher to present the study’s result that aligns itself with the intended research question. (Yin, 2011)

Jacobsen (2002) described two processes, namely qualitative and quantitative, to consider when doing research studies or gathering the research data. The quantitative approach is structured and the research process proceeds in a systematic way whereas, the qualitative approach does not exhibit a fixed research structure but rather more flexible (Yin, 2011) and depends on many iterations during the entire research process (Jacobsen, 2002). Moreover, the qualitative study deals with the thoughts, ideas, and perspectives of the participants involved in the study rather than relying on pre-existing values, preconceptions or meaning accumulated by the researchers (Yin, 2011).

This study focuses on the exploration of network literature, particularly related to the role of strong and weak ties in entrepreneur’s network. As the entrepreneurship is influenced by the network, therefore, to analyze the study area, this research relies on entrepreneur’s network for gathering relevant data. Since, the aim of study associated with the exploration of study area under the real-world condition, so the qualitative approach with its diverse focus on participants’ views and perspectives, facilities to gather information and ideas that can be translated to give meanings to the real-life event (Yin, 2011). Thus, to understand the social network aspect five respondents are interviewed in order to analyze their networking.

Moreover, the research follows the combination of exploratory and descriptive approaches (Robson, 2002; Hair, Babin, Money & Samuel, 2003) The study initiated with a diverse focus on the growth of entrepreneurial firms which after a long period of pre-study in terms literature study has been narrowed down to entrepreneur’s networking and ties. The process of intense literature review helps to select the research area and to develop general understanding about the existing research on networking ties of an entrepreneur.

This specific focus of study comprises of various iterations, enables to get a better understanding of the research area (Hair et.al, 2003) and to seek new insights by identifying what is happening, make it exploratory in nature (Robson, 2002). On the other hand, descriptive approach is preferable when the researcher follow the structured theoretical way to set the framework for answering the research questions based on a relevant theory which afterward guides the researcher to keep the focus on the major aspects that are vital to be measured (Hair et.al, 2003). Since, the objective of the study is to strengthen knowledge about study area, to explore what is happening and to utilize relevant theories for argumentation building considering the characteristics, formation, and outcome of weak and strong ties in entrepreneur’s network, make the study to hold the notion of being both explorative and descriptive in nature.
The research process, as illustrated in Figure 1, started with defining the overall objective of the study, followed by pre-study to select and get a general understanding of the study area. The initial objective of study experiences a large number of iterations and has been modified and narrowed down to entrepreneur’s networking after doing pre-study. The two interviews were conducted with the first entrepreneur. As the first interview has led to improve the already established questionnaire therefore considered as a part of pre-study. Followed by pre-study, the appropriate research method has been chosen which then lead to the formulation of clear, specific, answerable, interconnected and relevant research questions (Punch, 1998 cited in Robson, 2002). During the study, the literature review and research questions have been developed in an interactive manner followed by the step of data collection and analysis which then ended up in presenting the study’s result and findings align with the study’s purpose in the final step of conclusion.

**Figure 1: Research Design**

### 2.2 Literature Review

To get a diverse view of knowledge and to acquire relevant theories concerning entrepreneur’s network and strength of ties, a literature review is conducted. The in-depth study of these topics enables to develop understanding about the research area and thereby allow to pose relevant research questions (Eisenhardt & Graebner, 2007) in relation to the purpose of the study. Moreover, a literature review is carried out to support the formulation of a research protocol for data collection through semi-structured interviews. These interviews based on open-ended questions that later on facilities to relate the gathered data with the relevant theory.

The research criteria have been decided in advance, before searching for relevant literature and based on the key words such as networking, entrepreneur’s network, the strength of ties, strong ties and weak ties. The research process, to search for scientific articles, scientific conferences proceedings and books, relies on various database like Google Scholars, Scopus, Business Source Premier and Linkoping University website.

As the research process proceeds, the theoretical framework has been modified and revised continuously to make it appropriate enough to support the research questions, data collection and data analysis afterward.

Simultaneously, while strengthening the basis for a theoretical framework to formulate interview questions, continuous efforts have been made in parallel to get in contact with the respondents of selected case companies (interviewee).
2.3 Case Study

In the light of research purpose, the study focuses to build theory by using empirical evidence (semi-structured interview) from multiple case study (Eisenhardt, 1989b). The case study incorporates the qualitative approach to understand and examine the contemporary phenomenon in real-life context; that is entrepreneur’s network and the role of strong and weak ties (Yin, 2011). Moreover, a case study is preferable to perform because it allows the author to explore the aspect of entrepreneur’s network characterizes by strong and weak relation by posing ‘how’ or ‘why’ research questions (Yin, 2011).

The choice for specific cases to be studied is based on the concept of theoretical sampling. Eisenhardt and Graebner (2007) state that, in theoretical sampling, cases are chosen because they are particularly suitable for illuminating and extending the relationships and logic among constructs. Moreover, Runeson and Höst (2009) mention that selection of specific cases and unit of analysis must be done carefully and intentionally. The Figure 2 depict that networking can be analyzed on various levels for example country, firm and individual depending on the focus of study. Since, this study revolves around the entrepreneur’s network therefore the emphasis will remain on an individual level that is an entrepreneur.

![Figure 2: Unit of Analysis](image)

Since there is a vast variety of literature defining entrepreneur in different ways, so the study confronts with the challenge in defining the limit. According to Davidsson (2005) entrepreneurship concerns with an individual entity who is involved in creation and running of its own business. Shane and Venkatarman (2000) see entrepreneurship as the process of opportunity discovery, evaluation and exploitation, for the creation of future goods and services, by whom, how and with what effects. Whereas, Hitt et al., (2011) emphasizes that although entrepreneurship associated with the opportunity discovery, evaluation and exploitation process at the same time it also needs individuals to discover, evaluate and exploit opportunities.
Since there is no commonly accepted definition of the entrepreneur(ship), thus it is decided to choose the one that aligns itself with the aim of the study. In this regard, Brockhaus (1980) definition which is in line with Davidsson (2005) point of view becomes the basis of the study. Considering Brockhaus (1980) who perceives entrepreneur as a ‘major owner and manager of a business who is not employed elsewhere (p.510)’ and involved in decision making (Evans, 1942; Lamb, 1952; Palmer, 1971 cited in Diaz-Foncea & Marcuello, 2013) the following criteria has been set for selecting the entrepreneurs to do case study that afterwards enable to analyze the collected data and facilitate in drawing conclusive remarks (Eisenhardt, 1989). The established criteria support in the issue concerning generalization of results (Eisenhardt, 1989) and also provide help in building external validity of the study (Runeson & Höst, 2009).

The following criteria have been developed for selection entrepreneurs:

- Owner/founder/co-founder/ manager/ CEO of a business
- High tech firms (except case 3 see Section 4.3)
- Located in Mjärdevi Science Park Linköping, Sweden (except case 3 see Section 4.3)

In consistence with the aim of the study, the author carefully selects five entrepreneurs, two of them are founders, other two are co-founders and one is CEO of the firm. Since, the companies located in Mjärdevi Science park is close to the university therefore positively influenced by the knowledge output of the university (Audretsch & Lehmann, 2005) and thus reflect high rate of entrepreneurial firms. Therefore, the prime focus of the study is to choose companies (entrepreneurs) located in the science park. But in order to make the process faster, due to time constraint, the companies located outside the Science park has also been considered. Thus, one specific case or company (entrepreneur C see Section 4.3), situated in the center of the city has also been included in the study. Moreover, various other entrepreneurs that fulfill the criteria have also been considered but are not included in the study due to their lack of interest. Hence, all in all, the study includes five cases that are willing to take part in research work which later on will be analyzed and provide support in developing the construct validity of the study (Runeson & Höst, 2009) and enhancing understanding about the entrepreneur’s network.

The cases are selected for multiple case study because they are suitable to provide theoretical insight by analyzing the distinct patterns of relationship between entrepreneurs and their social contacts engage in networking (Eisenhardt & Graebner, 2007)

The selected companies (entrepreneurs) operating in the Science park are high-tech firms except the one, located in center, is a recruiting firm. The Table 1 further elaborate the information about the studied cases.
Moreover, the research work executed at Goli AB, an entrepreneurial Information Technology (IT) firm located at Mjärdevi Science park, that has also been analyzed as one of the cases (see Section 4.5). In the beginning, the research work conducted at the firm vicinity (three days a week) and few discussions were held on the different topic with the company’s CEO (supervisor for this thesis) and supervisor at university that later on shaped the topic of this thesis. But after few months the author executed the work mostly at university or home but remained in touch with the company by updating the supervisor (CEO of firm) with the research work status.

2.4 Preparation for Data Collection

The preparation of data collection as mentioned by Yin (2011) can serve as a difficult and complex process and if not managed properly can lead to jeopardize the entire research. Since the data collection is primarily based on interview questions, the interview protocol has been designed for appropriate data collection (Jacob & Furgerson, 2012). The interview protocol is guided by literature review and embedded with open ended questions, starting with easier to difficult, help to gain more information from the participants as possible during the interviews. (Jacob & Furgerson, 2012). Moreover, the entrepreneur’s company website has also been considered in gathering some general information.

2.5 Data Collection

According to Yin (2011), data collection includes various sources namely archival records, interviews, direct observations, documents, participant-observation and physical artifacts to build evidence for a case study. Considering the context of qualitative research, there are also different methods including observations, textual and visual analysis and interviews that support data collection (Silverman, 2000 cited in Gill, Stewart, Treasure, & Chadwick, 2008). This study largely relies on face to face interviews with the respondent as a source of data collection and evidence for a case study. The questions of the interviews are presented in Appendix 1. In addition to the collection of data through interviews, the entrepreneur’s company website has also been accessed to gain some general information that later on compliment the data collection. Specifically, the company’s website helped the author to get
the overview of the firm and find some relevant data regarding their associate membership in formal organizations.

Among other methods of data collection, the interviews serve as the major source for data collection to gather detailed information from individual participants. In order to fulfill the purpose of research interviews that is to explore entrepreneurial networking in the social context, the semi-structured interviews are performed consisting of open-ended questions. This approach is flexible as compared to structured interviews which have minor or no tolerance for variations and follow-up questions. More so, semi-structured interviews are appropriate for this study because it enables the author to explore the study topic by getting detailed responses from interviewer through open ended questions. (Gill et al., 2008)

2.6 Data analysis

Data analysis as perceived by Given (2008) is a central aspect of qualitative research method that acts as a stepping-stone towards both collecting data and linking data with literature (higher order concept). However, Yin (2011) and Eisenhardt, (1989b) perceived the analysis of case study data or evidence is the most difficult part in performing a case study. The data analysis enables researchers to draw a conclusion based on empirical findings through examination, categorization, tabulation/transcription, testing or recombination of evidence (Yin, 2011).

Data analysis for the case study begins with the process of transcribing interviews, where recordings of research conversations are transformed into written text and thereby considered as a primary data for the research (Given, 2008). To facilitate the transcription process, Auerbach and Silverstein (2003) approach has kept in mind concerning the elimination of data that is irrelevant and divergent from the purpose of the study and research questions. Afterward, the useful and relevant information from the interviews has been summarized in the empirical section of the study. The five distinct cases have been studied and understand in depth separately that clarifies the uniqueness of each case associated with it before generalizing in the cross-case analysis (Eisenhardt, 1989).

Followed by the description of each case separately, the next step is associated with the recognition of patterns between the different cases in performing a cross-case analysis. In addition to the identification of patterns, there has been a continuous focus on the comparison of new insights with the existing literature. Hence, to carry out comparison Eisenhardt (1989) approach has been followed by finding out the similarities and differences between the cases that on the other hand also provide support in enhances the internal validity (Voss, Tsikriktsis, & Frohlich, 2002). This technique has been considered throughout analysis in parallel to the theoretical framework. Lastly, the finding of the studies has been summarized in the conclusion part based on the cross-case analysis of the collected data.

2.7 Validity and Reliability

To establish the quality of case study research design, the aspects of validity and reliability are vital to consider and therefore included in the report as well. Validity is divided into three types namely, construct, internal and external validity. Construct validity is concerns with the identification of accurate and correct operational measures for the area under study. Whereas, internal validity ensures that the results of study fulfill the purpose of study or in other words represents the reality. More so, it also concerns with the involvement of all relevant factors that
can influence the study result. Lastly, external validity indicates the possibility of generalizing the result from the case study to other situations or domains. (Yin, 2011)

Yin (2011) mentions that the use of multiple sources acts as a measure to ensure the internal validity of the study. This report relies mainly on the interviews as a source of data collection, which might influence the internal validity of the study. However, the selection of studied topic has been made after a number of iterations that in turn enable the author to consider the relevant aspects that are in parallel with the established research questions.

The internal validity of a framework has been achieved through incorporation of the extensive literature on the topic of networking previously researched by well-recognized scholars. Moreover, the representation of included topics, along with their authors, in the form of table enable the reader to easily understand the theoretical and analytical framework and thereby facilities to enhance the internal validity of the report.

The last concept of validity discussed here is based on external validity that primarily deals with the generalization of the research study result in another domain. Since, the study has been performed as a multiple case study, which has a high probability of generalization as compared to the single case study (Yin, 2011). The findings from five cases can readily be applied or generalized in different context focusing on the similar issue.

Reliability, as discussed above, enables to ensure the quality of research work. It addresses that, the study will have been considered reliable if the facilities other/new researcher(s) to get the same results and conclusion, by using the same research design, data collection techniques and other procedure as followed by the previous researcher (Yin, 2011). Therefore, the reliability aspect has been fulfilled by keeping the records of previous documentation that has been carried out throughout the research work in the form of case study protocol. Moreover, to ensure the replicability of collected data, the interview questions have been documented in the Appendix 1. This afterward facilities in recreating the study by following the same approach as adopted for this study. Since this study is qualitative in nature and based on the respondents’ own views therefore in recreating, the study might produce different results based on varying human behavior and lead to affect the reliability aspect.
3 Theoretical Framework

This report considers the entrepreneur’s social network as the nexus of study, that afterward used to build the theory on the role of strong and weak ties in providing information, knowledge, and resources. Moreover, the focus of studies remains on the individual level that can also be perceived as a self-centered network, that is a relationship of the individual with other actors in the network (Witt, 2004).

The theoretical framework begins by shedding light on the definition of network and different perspectives associated with it. After that, the social aspect of entrepreneur’s network has been discussed that later on narrowed down to the concept of strong and weak ties’ characteristics, formation, and outcome.

3.1 Network

The networking research in the field of economics and management has been greatly increased in last few years. Depending on the approach, an individual can analyze the aspect of the network from various perspectives. The strategic management perspective facilitates to understand networks by analyzing the consequences of inter-firm networks, in different industries, on firm performance. The field of sociology support network literature by analyzing the outcomes of social networks in the society and economy. The understanding of diffusion of knowledge and the role of networks in shaping technology adoption decisions can be developed by following the approach of the economics of technological change (Ozman, 2009).

Network studies have adopted distinctive approaches that shed light on relationships among actors (nodes). In explicit, networks as defined by Brass, Galaskiewicz, Greve, & Tsai (2004, p. 795) is ‘a set of nodes and the set of ties representing some relationship or lack of relationship, between the nodes’. The nodes in the definition refer to individuals, work units, organizations or societies whereas, ties represent the relationships among different level of analysis i.e., individual-to-individual or individual-to-group ties (Katz, Lazer, Arrow, & Contractor, 2004). As compared to economic approaches, in which organizations act as nodes, the sociological perspectives consider individuals persons as the nodes of the network. Among many other types of actors or nodes, Axelsson and Håkansson (2016) shed light on the importance of owners, as an actor, in building industrial and other types of business networks. Moreover, the findings of Axelsson and Håkansson (2016) highlights that owner play a crucial role in developing and designing network as compared to support the firm financially.

In the light of network perspective, actors (nodes) are embedded within the network through interconnected relationships which in turn enable them with opportunities but also behavioral constraints. The authors further emphasize that the perspective of interconnected relationships contradicts the traditional perspective discussed in organizational studies where the focus remains on characteristics of individual actors only rather than a relationship with other actors. (Brass et al., 2004). Showing the deviation from the traditional point of view Axelsson and Håkansson (2016) research incorporates the issue of the relationship with other actors. They argue that owner and firm exhibit direct relationship with each other but in addition to that, these two entities also exhibit several indirect relationships which in turn could be fruitful in many business network situations (Axelsson & Håkansson, 2016)
Considering the prior and recent studies on networking it is observed that the research generally revolves around the structural and relational aspect of networking (Batjargal, 2003; Granovetter, 1973; Hoang & Antoncic, 2003; Semrau & Werner, 2014). The research focusing on the structural aspect of entrepreneur’s network is considered as an overall pattern of connection between actors, highlighting whom and how entrepreneurs reach (Klyver & Grant, 2010; Klyver, Kevin & Denny, 2007). It primarily includes size, centrality, position, diversity, and density of network as a measure of network structure (Batjargal, 2003; Hoang & Antoncic, 2003; Semrau & Werner, 2014).

On contrary, relational dimension also refers as a connectionist dimension, consider the bonding or relationships between actors that allow them to entitle to one another (Sullivan & Marval, 2011; McClane, 2012). In an entrepreneurial context, the relational based approach mainly builds upon Granovetter’s work regarding the strength of ties (Semrau & Werner, 2014) and relational trust among actors (Galunic & Moran 1999; Tsai & Ghoshal 1998 cited in Batjargal, 2003).

According to Granovetter (1973, p.1361) the strength of ties is defined as the strength/intensity and diversity/quality of relationships that can be differentiated in weak and strong ties on the basis of the amount of time, the emotional intensity of the relationship, the intimacy, and the reciprocal services which characterize the tie. According to Jack (2005), the frequency approach used by Granovetter’s (1973) can be seen as a weakness in defining ties. Therefore, in addition to the Granovetter’s (1973) concept of strength of ties, this study also incorporates the type of information provided, usefulness and applicability of the relationship to entrepreneurial business (Jack, 2005). Moreover, understanding about the strength of ties can be broadened by considering two arguments; structural-hole argument presented by Burt (1992) and closure argument proposed by Coleman (1990). These arguments are described in detail later in the report.

### 3.2 Social network of entrepreneur

The social aspect of networking take into account the relationships and ties as an area of focus and in the light of that, the social network can be defined ‘as the pattern of ties linking a defined set of persons or social actors (Seibert, Kraimer, & Liden, 2001, p. 220). The focus on social approach enables to evaluate the connecting lines between two persons that result in the flow of information or communication among them (Granovetter, 1973; Bavelas, 1948 cited in Witt, 2004). In the context of entrepreneurship, an entrepreneur is a person, closely related to (or a part of) a social network through inter-connected relationships, as seen in Figure 3, (Aldrich & Zimmer,1986 cited Hoang & Antoncic, 2003) can utilize networking theories as a tool for exploration, creation, and development of new businesses (Dodd & Patra, 2002).

The entrepreneur’s networks can generally be explained as the set of all relationships an entrepreneur rely on to get access to necessary resources that are crucial to perform business activities (Dodd & Patra, 2002). An entrepreneur may develop these relationships by being a member of formal organizations, through making linkages with customers, suppliers, and distributors or by using its contacts such as family, friends, acquaintances, and kin (Dodd & Patra, 2002). It is noted that an entrepreneur acts as the nexus in building external relationships and also provide a firm with unique resources through his/her personal networks (Ostgaard & Birley 1994, Johannisson 1995 cited in Lechner & Dowling, 2003).
Moreover, Engel, Kaandorp, & Elfring (2017) highlights two networking approaches namely, goal-directed and effectual, that an entrepreneur engages in while creating a network. The goal-directed approach is a linear process, relies on entrepreneur’s rational self-interest (e.g., resource seeking) with the motive to gain benefit from contacts. This specific purpose to seek resources, later on, enable to set goals and plan activities (e.g., to meet specific partner) which in turn lead to achieving the intentional outcome of efficient tie formation. Hence, the networking search scope remains narrow, directed with the aim to meet right people, both from the strong or weak network, through efficient planning. (Engel et al., 2017)

On the other hand, effectual networking relies on both self and collective interests with the motive to exchange resources through mutual collaboration. Hence the networking search scope in more broader and directed with the goal to meet new people or to find new relations through already existing and predominantly strong ties. (Engel et al., 2017)

3.3 Network of strong ties and closure argument

The network closure argument has presented by Coleman (1988), stresses the importance of strong and cohesive ties in creating an environment that foster cooperation. Network closure or strong social ties positively influence the social norms that later on shape trust and enhance cooperation among actors (Coleman, 1988, 1990).

3.3.1 Characteristics

The understanding about strong ties can be built by analyzing the Granovetter’s (1973) model of strength of ties. In the light of Granovetter’s (1973) model of strong and weak ties, the strong social ties can be explained as relations between individuals that show a high level of emotional intensity or closeness of a bond and rely on frequent interaction for mutual confiding. Dodd and
Patra (2002) further explain the Granovetter’s (1973) concept of strong ties in entrepreneurial context and describe that entrepreneur who interacts with other actors at least twice a week, is said to exhibit strong ties. Whereas, Jack (2005) analyzes strong ties in term of the type of information and its usefulness to business. In the same vein, other scholars perceived that network exhibits strong ties if it is primarily characterized by the close, intense and intimate relationship with other actors in the network (Lechner & Dowling, 2003; Riquelme, 2013).

According to Koning (2003), the network of entrepreneur characterizes by strong ties primarily comprises of inner circles and action set. He refers inner circles to the individuals or group of individuals that are close to the entrepreneurs personally and take part in a discussion with entrepreneurs on regular basis. Furthermore, the finding shows that the relationships of inner circle incorporate some changes and likewise other relations can evolve over time. Thus, it is emphasized that inner circles relationship are very stable over larger time span but at the same time, they are not static. (Koning, 2003)

In addition to the inner circle, action set also characterizes by a network of strong ties (Koning, 2003). Action set as explained by Hansen (1995) cited in Koning (2003) is generally the distinct group of people who help entrepreneurs in accessing resources. The formulation of the action set is a result of entrepreneur’s own efforts in an attempt to avail a certain business opportunity and therefore may range from people serving as resource providers to professional with critical expertise and customers (Hansen, 1995 cited in Koning, 2003). So, the main purpose of building action set is to get support in obtaining resources (Koning, 2003).

An entrepreneur’s network of inner circle and action set may comprise of close personal relations such as with family members and relatives (Riquelme, 2013) but they can also build strong relationship with employees (Jack, 2005), professional with critical expertise, customers and people that serve as a resource provider (Hansen 1995 cited in Koning, 2003). Through developing close connections entrepreneurs can get the advantage to link to other social circles that can provide benefits in regarding local social information, local markets information and employees (Jack, 2005). Moreover, family members that represent strong ties facilitate to develop business by providing instrumental resources and identifying potential entrepreneurial opportunities (Jack, 2005).

3.3.1.1 Quality of information

The network of strong ties that ensure close interaction with other actors holds great importance when considering the quality of information that is being provided (Coleman, 1990). Coleman (1990) expresses his views on transfer of information through networking by shedding light on network cohesion. He explains that actors embedded in a strong, cohesive network enable to achieve quality information in a timely manner and in a way that it improves the quality of information (Coleman, 1988 cited in Arenius & Clercq, 2005). Since, strong connections are close relations and provide with the opportunity to cooperate (Coleman, 1988 cited in Gargiulo & Benassi, 2000) therefore lie in the context of the high cohesive network (Arenius & Clercq, 2005).

Considering the information perspective, the critical issue revolves around the type of information that needs to be exchanged through a network of ties (Collins & Clark, 2003). For example, in the interest of technology firms, sensitive and complex information is beneficial and hence provide them with the platform to be ahead of their competitors through innovation (D’Aveni, 1994 cited in Collins & Clark, 2003). In order to deal with this complex and sensitive
information exchange among actors, the presence of strong ties supports and motivate (Jenssen and Koenig, 2002 cited in Jack, 2005) individuals to transfer information (Hansen, 1999 cited in Collins & Clark, 2003).

3.3.1.2 Trust
Moreover, the dense network of strong ties, that is based on mutual understanding and obligations, not only benefit individuals regarding information flow but it also facilitates to reduced risk concerning uncertainty (Arenius & Clercq, 2005). Since the strong ties are already accountable for providing trusted feedback (Elfring & Hulsink, 2007) which along the development of mutual understanding (Arenius & Clercq, 2005) allow individuals to rely on the information and support they are getting through their contacts of strong ties (Jack, 2005).

In the same vein, another study shows that when individual develop trust regarding the goodwill of their strong ties, the efforts to be aware of other’s opportunistic behaviors become less relevant and hence encourage actors to involve in extensive communication and reap benefit of learning from each other (Zaheer et al., 1998 cited in Arenius & Clercq, 2005).

The research shows that strong ties lead to the development of intense relationship among same people which last for the long time period (Elfring & Hulsink, 2007). This show similarity to Birley’s (1985) study cited in Jack (2005), which points out that entrepreneurs are more likely to link with those individuals to whom they either already know or have working experience with. Such strong linkages, as a result, lead to the development of trust (Lechner & Dowling, 2003), act as a source to transfer tacit knowledge and exclusive information and at the same time encourages joint problem solving (Uzzi, 1996; Krackhardt, 1992, cited in Elfring & Hulsink, 2007). In addition to this, strong ties also account for providing trusted feedback and few new connections of weak ties that later on can serve as a source of new information (Elfring & Hulsink, 2007).

3.3.2 Formation
The network of strong ties provides distinct benefits to entrepreneurs including, knowledge sharing (Johannisson, 1998 cited in Jack, 2005) and resource providing (Jack, 2005). In order to avail these benefits both in growth and start-up phase of the venture, entrepreneurs develop a network of closely knit ties (Jack, 2005). These intense connections are created and formed by entrepreneurs on the basis of knowledge, experience, and trust and are evolved with the passage of time (Jack, 2005).

3.3.2.1 Knowledge and experience
Jack (2005) results show that knowledge and experience act as sources in building strong ties. This refers to both the entrepreneur’s own knowledge and experience in the industry they are working in as well as knowledge and working experience of other individuals to whom they are considering involving in strong connection.

In the network of strong ties consisting of family and their close connection, the aspect of trust, expectations and family bonds form the basis of such relationships. The family bond develops on the basis of friendship and family values that later on give rise to trustworthy relationships in terms of information and resources provided through the network. It is noticed that trust is a central aspect of such relationships in a sense that individual trust in receiving support from family in performing business activities, trust in the quality of information provided by family members and trust in the knowledge of family members about the local market. Since family
relations are strongly based on trust the matter of exchange relationships, that may depend on the extent and depth of family ties, has not been highly considered. (Jack, 2005)

Another relation that the entrepreneurs may rely on is the network of personal connections, consisting of individuals to whom the entrepreneur familiar with. It is mention that individuals become familiar with each other due to knowledge and experience that afterward lead to develop trust. In family relations where trust concerns with the issues regarding information supplied by family members, in personal linkages trust need to be established for individuals as well with whom entrepreneurs are dealing with. (Jack, 2005)

The personal linkages represent strong ties that with the passage of time transformed into a network of business friends in an entrepreneurial context. Furthermore, it is noticed that, as compared to family ties that dictate one-sided relationship, these relationships are characterized by the two-way process of give and take among individuals in the network. Hence, such network linkages result in the exchange of useful knowledge, information and resources among them after the trust has established. (Jack, 2005)

3.3.3 Outcome
3.3.3.1 Knowledge and information exchange
The study carries out by Jack (2005) shows that strong ties are useful to entrepreneurs in different ways. In addition to the benefits associated with the information flow, strong ties also help entrepreneurs in a start-up phase of business and more importantly in developing a customer base (Jack, 2005). Furthermore, the network of strong ties provides the entrepreneur with the necessary support, information, and knowledge needed to develop the business and simultaneously enable them to fill the gap in their own knowledge concerning business, industry and local market base (Jack, 2005).

However, Lechner and Dowling (2003) argue that as strong ties enable to offer great depth of knowledge but at the same time they are inefficient in providing the diverse knowledge of different areas. On the other node, it is noted that Granovetter hypothesis of ‘strength of weak ties’ expresses the importance of strong ties in term of reliability but it also highlights the aspect of redundancy associated with the information flow (Granovetter, 1973).

Moreover, it is also observed that network of strong ties can serve as a better predictor of profitability as compared to weak ties and thereby plays a substantial role in strengthening venture performance (Aldrich et al., 1987 cited in Dodd & Patra, 2002). Moreover, the strong ties not only support business development business but also help in linking to relevant people disperse in a large social network (Jack, 2005; Elfring & Hulsink, 2007)

3.3.3.2 Over-embeddedness
The research shows that strong ties network can also encounter the drawbacks associated with over-embeddedness and/or locked-in, resulting in inhibiting economic performance and an increased risk to overlooked opportunities that lead to new development (Uzzi, 1996; Johannisson, 2000 cited in Elfring & Hulsink, 2007). Although, findings from empirical study favors the efforts that support to enrich the quality of network among employees, suppliers, and customers but simultaneously warns against that over-embeddedness that may result due to the transition of business relationship into friendship (Lindgreen, 2001). Moreover, strong ties among individuals are inefficient in dealing with external changes, finding new partners and may inhibit the exposure of information that exist beyond the network of a strong tie, leading

Furthermore, Uzzi (1996) discussed that embeddedness is a unique logic of exchange, that help actors in building long term relationships by shaping their motives and expectations which afterward benefit both on the individual and collective level. But on the other hand, being embedded in a strong tie network also account for reducing the absorptive capacity of actors (Uzzi, 1966) and therefore, leads to close the door to explore new knowledge and exploit new opportunities. The study carries out by Jack (2005) highlights the similar situation by analyzing strong family bonds. She finds that entrepreneurs are utilizing strong connections in an effective manner but these strong bonds, that builds on mutual expectations, trust and family values, on the other hand can hinder the entrepreneurs vision to recognize new business opportunities that lie outside the context of family business and familiar social network. Hence such influence on entrepreneurship restrict the exposure of new knowledge that facilitates to ideas into entrepreneurial opportunities (Jack, 2005). This shows that strong relations can give rise to opportunities as well as issues and can be creative or damaging at the same time (Bloodgod et al, 1995; Johannisson, 1987 cited in Jack, 2005).

3.3.3.3 Legitimacy
Taking into account the positive aspect of strong ties, it is argued that strong ties play a crucial role in providing resources and therefore are more likely to be dominant in the emergence phase of the venture (Elfring & Hulsink, 2007). Moreover, they are also accompanied with the benefit of providing legitimacy to start-up venture by building a strong link with people or institution holding a prestigious position in the market (Elfring & Hulsink, 2003; Jack, 2005). These characteristics, in turn, enable strong ties contacts to hold the notion of business generators as well as reputation enhancer (Jack, 2005).

3.4 Network of weak ties and structural hole argument
In addition to the literature regarding Cloeman’s closure argument that is based on cohesive networks and strong ties, individuals’ network studies also shed light on Burt’s structural hole argument (Riquelme, 2013). Burt argues that networks accompanied with structural holes facilitate actors with the benefit to gain novel information as well as to exploit new business opportunities (Burt, 1992).

3.4.1 Characteristics
In the context of entrepreneurship, the networking research often highlights the role of entrepreneurs as information broker who is embedded in a huge network of weak ties (Krackhardt, 1995 cited in Koning, 2003). In the same vein, Granovetter (1973) advocates the standpoint of brokerage position of the entrepreneur by discussing the strength of weak ties. He explains the importance of weak ties as a bridge, that helps in linking the disconnected contacts of social network and simultaneously help in diffusing across various social circles (Granovetter, 1973). Burt (1992) show similarity to Granovetter (1973) and supports the brokerage argument by presenting structural hole theory. He argues that entrepreneurs that act as a broker in a sparse network (no relations between the contact) gain a number of benefits in terms to accessing useful information and exploiting business opportunities as compared to those embedded in a dense network, characterizes by the strong relation between every contact (Burt, 1992).
In the light of Granovetter (1973) study about the strength of weak ties, the weak social ties can be explained as relations between individuals that show a low level of emotional intensity or closeness of a bond and rely on less interaction with each other. Dodd and Patra, (2002) further explain that actors who interact with each other less than twice a week but at least once a year characterizes by the relationship of weak ties.

Weak ties as argued by Granovetter (1973, 1995) refers to a diverse group of people belong to different context such as customers, suppliers, financial institutions and with whom an individual interact infrequently or casually on an irregular basis. The importance of weak ties has commonly been accepted in developing new business contacts and obtaining new information due to its nature of linking a diverse group of people through loosely knit ties (Burt, 1992; Granovetter, 1995).

3.4.1.1 Information flow
Weak ties relationship offers unique information benefits and serves as a medium for entrepreneurs to recognize opportunities through the free flow of information. This occurs due to irregular interaction with the weaker contacts such as customer, suppliers and thus become the source of unique and non-redundant information as compared to strong ties. (Granovetter, 1973; Burt, 1992; Riquelme, 2013).

The Granovetter (1973) take into account the amount of time or frequency of contact (interaction) as a source of getting new information through a network of weak ties. However, Burt (1992) study contradicts Granovetter (1973) research on ties and argue that the access to new and novel information rely more on the number of contacts as compared to the frequency of contact among network players. Furthermore, Burt (1992) differentiate these contacts as non-redundant and redundant on the basis of structural equivalence and cohesion criteria.

He explained that actors in the network seem to be redundant if they are structurally equivalenced i.e., having the same contact in the network and cohesive i.e., the strength of their relationship is based on emotional closeness as can be seen in Figure 4. As a result, such redundant ties lead to the same source of information and thus yield same benefits concerning information flow (Burt, 1992).

![Redundancy by Cohesion](image1)

![Redundancy by Structural Equivalence](image2)

**Figure 4: Structural Indicator of Redundancy (Burt, 1992)**

On the other hand, non-redundant contacts comprise of a distinct set of people in the network that are disconnected to each other either in the direct or indirect way and thus provide information benefits (Burt, 1992).
Moreover, these non-redundant contacts in the network are interconnected to each other through a relationship which Burt (1992) termed as ‘structural holes’. The structural hole serves as a medium to offer unique information to actors rather repeated or overlapping information gained through redundant contacts (Burt, 1992). This aligns itself with Granovetter (1973) argument of ‘strength of weak ties’ which emphasizes that weak ties enable individuals to extract new information easily from their network contacts. Burt (1992) further discusses that as actors in the network of weak ties do not get in contact with each other on regular basis, hence lead to obtaining unique and non-redundant information from each other. Therefore, it has been noticed that argument concerning the strength of weak ties and structural holes shows similarity with each other (Burt, 1992; Arenius & De Clercq, 2005 cited in Riquelme, 2013).

In addition to this, the network that is rich in a structural hole not only provide the benefit of accessing fresh sources of information but it also facilities actors to exploit entrepreneurial opportunities. The author further highlights that the information benefits associated with structural holes rely on the presence of both primary and secondary structural holes. According to the author primary structural holes belong to an individual and its direct contacts and others within his/her network whereas, secondary structural holes are between individual’s direct contact and others outside his/her network. (Burt, 1992).

In the same vein, the other study shows that individual’s network that comprises of weak ties and structural holes lie in the context of the low cohesive network. Furthermore, the study results highlight that individuals who are a part of the low cohesive network tend to recognize more opportunities as compared to those embedded in a high cohesive network characterized by the network of strong ties. Moreover, in the early stages of venture growth when the focus is more on the discovery of new opportunities, weak ties that are associated with diverse information and potential resources (Arenius & Clercq, 2005; Koning, 2003) becomes the source for business expansion beyond the original plan. (Arenius & Clercq, 2005)

3.4.2 Formation
3.4.2.1 Task environment
It has been observed that there are various sources that contribute to the development of weak ties. The study shows that a large number of weak ties came through ‘task environment’. Task environment refers to the normal routine and business operations which individuals experience at their work places.

Moreover, friendship initiated through fair trade activities also plays a role in building ties with other actors in the industry and therefore facilities entrepreneur with novel industry information and new business contacts (Elfring & Hulsink, 2007).

3.4.2.2 Experience and career background
In addition to this, it is also highlighted that many years of corporate careers or experience facilitate players to create a network of weak ties with professional contacts in the industry. The author also notices that apart from ties developing through task environment, college alumni networks and occasional hobbies also serve as sources of building a network of weak ties. Furthermore, ties resulting from a network of college alumni are more common and useful source of information as compared to occasional hobbies that rarely facilitates with useful network contacts. The study results show that however the contact among alumni colleagues do not take place on regular basis but still, it results in maintaining the existing ties through organizing small events and alumni functions. (Koning, 2003)
3.4.2.3 Networking activities
In order to form new ties and to maintain old ties, continuous networking activities are needed (Koning, 2003). Networking activities discuss by different scholars in terms of time spent on networking and frequency of communication with potential partners (Dodd & Patra, 2002; Witt, 2004). The study’s results highlight that an entrepreneur plays a substantial role by adopting pro-active approach towards networking that afterward leads to the discovery of useful weak ties (Dodd & Patra, 2002; Johannisson, 1996 cited in Koning, 2003). Moreover, an individual can engage in networking activities formally by attending trade fairs or being a member of the local business association to small events and parties in an informal manner (Koning, 2003).

3.4.3 Outcome
3.4.3.1 Transition to strong ties
Considering the importance of weak ties over time perspective Dubini and Aldrich (1991) cited in Koning (2003) notice that the embeddedness of entrepreneur in a network of weak ties usually leads to enhance awareness through knowing more about each other. While on the other hand, it is argued that the same weak ties may not remain influential in providing information benefits as the time passes by (Dubini & Aldrich, 1991 cited in Koning, 2003). This shows similarity to Elfring and Hulsink (2007) who argue that as the business developed and entered into the early growth stage, some of the weak ties are dropped by the entrepreneur as they become inefficient to benefit with expected complementary resources. But on the other side, it is also observed that some of the weak ties yield fruitful results in many ways and hence with the passage of time transformed into strong ties (Elfring & Hulsink, 2007; Jack, 2005).

3.4.3.2 Network overload
Accompanied with the benefits of weak ties, there are also some drawbacks as well. It is argued argue that a large number of weak ties may result in network overload and therefore become more complex and time-consuming to manage. Hence, it is suggested that consideration of strong ties associated with multiple benefits facilitates to avoid the issue related to network overload and simultaneously help in reducing the problems related to handling a network of a large number of weak ties. (Kim & Aldrich, 2005 cited in Elfring & Hulsink, 2007)
3.5 Analytical framework

To provide the clear picture of how the empirical findings of five cases align with the theory, the analytical framework has been proposed. The Figure 5 illustrates the analytical model and serves as the basis for performing the cross-case analysis.

**Entrepreneur’s social network**

Since the entrepreneurs are social characters embedded in a network of relationships (Aldrich & Zimmer; 1986 cited Hoang & Antoncic, 2003), for purpose of resources exchange and support, therefore in order to get the clear picture of their inter-reliance on each other and applicability of their relationships, the concept of social network first takes into account. The framework, see Figure 5, highlights that cross-case analysis gets initiated by first analyzing the aspect of social networking of entrepreneurs in term of their understanding and approach towards social networking. Followed by that, the cross-case analysis of strong ties and weak ties network of entrepreneurs carries out in separate sections that demonstrate the differences and similarities identified in the characteristics, formation, and outcomes of different cases.

**Strong-ties network**

The strong ties network of entrepreneurs is cross-analyzed among different cases where the focus remains on the characteristics, formation and the outcome of closely bonded relationships on the entrepreneurial business. The strong tie contacts hold a great importance in providing support and other benefits for the creation and development of venture (Jack, 2005). Among various benefits, the strong relationships are also accounted for providing quality information in a timely manner (Coleman, 1990) which afterward can be used for business purposes. Moreover, another important characteristic of strong relationships is trust that enables actors to cooperate and facilitate the flow of information among each other (Arenius & Clercq, 2005; Elfring & Hulsink, 2007; Jack, 2005). Hence, based on that the characteristics of strong ties are analyzed considering the quality of information and trust. Although, the empirical data of respective cases incorporated the information regarding the general understanding of what is a strong relationship, whom it comprises of (contacts) and what is the rate of interaction among strong network contacts, which is not the main focus of this study but later on provide support in the analysis of the trust and quality of information. For the formation of strong ties, the emphasis remains on the dimension of knowledge and experience whereas, the outcome is analyzed concerning the role of strong ties in knowledge and information exchange process, creating legitimacy and over-embeddedness.

**Weak-ties network**

In next section, the weak ties network of entrepreneurs is cross-analyzed among different cases where the focus remains on the characteristics, formation and the outcome of loosely bonded relationships on the entrepreneurial business. Similar to strong ties, the characteristics of weak ties also incorporates the dimension of respondents’ general perception about weak relationships, nature of their weak contacts and rate of interaction among them, that later on complement the data analysis, but the prime concern is related to the aspect of information flow through distinctive nature of weak ties (Burt, 1992). Afterwards, the aspect of task environment, experience, and networking activities are considered for analyzing the formation of weak ties. Lastly, the transition of weak ties into strong ties and network overload are analyzed as the outcome of weak ties.
Figure 5: Analytical Framework
4 Empirical Findings

This chapter presents the empirical data that is collected from interviews of five entrepreneurs (cases).

4.1 Case 1: Entrepreneur A

Entrepreneur A is a serial entrepreneur and a business angel providing financial aid to the start-up firms. He got education in the field of Economics and possess more than 20 years of working experience. He has membership in different organization like LIAF, ALMI (see Appendix 2), and hold a place on an advisory board of Nulink (see Appendix 2).

The company A is a software developing company, located in Linköping, Sweden at Mjärdevi Science Park, offering its services to big and small organizations in running their businesses effectively and securely (BRP, 2016). The company facilities organizations in dealing with economic services, booking, analyzing, production and others (BRP, 2016). The interview was conducted with the company owner (Entrepreneur A) in Linköping, who established it in 2004.

4.1.1 Social network of entrepreneur

Social networking as expressed by the Entrepreneur A is mainly considered to meet and interact with people for a social cause. These people belong to similar contexts, for example, entrepreneurs and investors with whom social interaction takes place. Among them, some are more professional that ended up in working with each other as a network. He further added, through networking it is become easier to achieve goals and objectives. This is because network contacts share their knowledge about the market and contacts in their network and in this way, support each other in getting right information in short time.

The respondent mentioned that the relationship with these actors takes shape by showing up on occasions, attending meetings, seminars, and workshops as well as by being a member of various organizations. In building a network, he follows an approach with no specific aim to meet and interact with specific people or group of people for own interest. Explaining further he expressed that, networking initiated through communicating with people and knowing more about their work, aims and profession. Once various individuals formed the broader network, the focus becomes more specific in connecting back to the right person with specific skills and expertise to provide help in the needed area. Moreover, in his opinion, networking does not rely on defined goals and objective rather it is more flexible in which both the players contribute their efforts and hence get benefited by mutual collaborations. The respondent states that:

“You build a social network not only just to profit from it but you have to contribute as well.”

4.1.2 Strong ties network

4.1.2.1 Characteristics

In the views of Entrepreneur, A, strong ties mainly exist among actors that know very well about each other. As compared to weaker connections, it generally comprises of small of group of people, up to 20% of network contacts, that functions inside the network to provide information and other benefits. These individuals possess close relations due to some common interest and therefore rely more on each other and have frequent interaction.

The contacts in the strong connection of Entrepreneur A primarily comprise of investors or other people who have membership in formal organizations, which he referred to ‘social hubs’,
as well as colleagues within the organization to whom the respondent discusses business performance. However, the respondent network does not include any family relation that represents strong ties among them.

**Quality of information**

Concerning the quality of information exchange via strong ties, the respondent expresses, strong relationships are reliable and offer a quality information that is useful for business. Hence, facilitates in creating awareness for future business development, however, they sometimes provide the information that does not work. He adds that, in order to avail benefits from the strong relationship, it is equally important to contribute towards them because they are the sources to create new businesses. He states that:

“If you are useful you will make other people useful.”

Furthermore, regarding the quality of information exchange via strong ties, he expresses, strong relationships are reliable and offer a quality information that is useful for business.

**Trust**

The respondent expresses that strong ties embedded with the aspect of trust and are up to some extent taken as granted in order to provide validly and confirm information. He mentions that his network is a group of people that are learning from each other and helping each other when needed. With this vision, he believes in mutual efforts and collaboration and has no intention to engage resources to be aware of others opportunistic behavior.

Furthermore, he expresses that despite strong contacts are characterized by close relation and know very well about each other but they are not used to share new business ideas. He believes that the new business idea is a person’s asset and discussing with other may result in stealing of that.

**4.1.2.2 Formation**

The network of strong ties has been formed through socializing. It requires time and efforts until people start to get familiar. The creation of network generally occurs by attending different events, seminars, fair trade and workshops arranged by formal organizations where communication revolves around social aspects.

**Knowledge and experience**

The respondent expresses that his knowledge and working experience act as a facilitator in developing a network. These mediums enable him to reach out to people those are useful for business and hence result in saving time and efforts needed for networking.

The strong relationship with the social hubs formed due to respondent’s own efforts and benefit the business by reaching to right people with the reference of stronger relationships. It is a common practice to engage with people through discussing social things rather than talking about business. However, some people are more specific, for example, consultants, and therefore prefer to discuss business matters with individuals.

For the respondent, networking is a two-way process. He expresses, actors in the network rely on the process of giving and take all the time that afterward result in availing mutual benefits of information exchange.
4.1.2.3 Outcome

Knowledge and information exchange

The respondent agrees to the point that development of strong ties plays a vital role in providing a huge amount of information and knowledge. He argues, strong relationships enable to provide diverse market knowledge by showing current trends and products introduced by new companies in the market. They act as a medium in showing the things happening around and hence resulting in increasing the current knowledge base. Simultaneously, the strong connections are not always efficient and therefore lead to provide information that is not useful for the business.

He explains that the information exchange process between strong ties does not require to be rechecked all the time before implementing into the business unless the issue is critical and need more validity about the information that is being transferred. Moreover, he emphasizes that it is also very important to evaluate what information is being provided in return because wrong information result in damaging the relationship. Moreover, strong connection act as a source to provide information about their contacts that seem to be relevant for the business. Thus, they enable to link to other weaker connections by recommending and providing references. This afterward facilitates in creating and doing business by linking to the right person in a vast group of networks.

Over-embeddedness

According to the respondent, the friendship is not a strong relation. He shows clear understanding about strong business relations and friends. In his views, both need to be dealt separately otherwise the overlapped between two relations affect the individual’s business interest and thereby might result in losing both the business and friend. However, some business relations turn so strong that they favor each other but the presence of mutual respect in protecting each other interest enable to avoid them from confronting with the adverse effect.

Entrepreneur A believes that although one cannot measure whether the strong connections are enough for business at present, the respondent strong ties are sufficient for the business. He further explains that the recognition of business development opportunities is person’s own choice and depending on that one can extend its network. Since network building might create conflicts, among individuals concerning business affairs, therefore, must be carried out carefully by developing awareness about individuals before including them in a network.

Legitimacy

The formation of strong ties supports in gaining and providing legitimacy. In gaining legitimacy, that strong connection with well-renowned firm enables him to build the brand of the company. On the other hand, his own personal reputation in the network, as a business investor and a member of an advisory board in an organization, also serves as a source for people to link to the prestigious and successful person. He stated that:

“People like to meet successful people and always like to associate with something that is successful.”
4.1.3 Weak ties network

4.1.3.1 Characteristics

The Entrepreneur’s A network of weak ties comprises of random and/or specific entities in a crowd of the big social network, who have little know how about each other’s position and work. Moreover, it is a huge group of people making up to 80% of entire network contacts. In comparison with the strong ties, weak ties contacts do not possess any common interest and hence interact less frequently with each other.

The weak ties network of Entrepreneur A is not a selected group of people but rather a cluster of people belongs to different social hubs and comprises of all the actors that do not belong to strong ties network.

Information flow

As these weak connections are dispersed in various social hubs hence provide with the benefits only by linking back to them with the help of strong connections. Therefore, the respondent believes that the more a person involves in an interaction the more it becomes useful in obtaining new information. However, the quality of information provided by weaker contacts needs to be rechecked through other sources like media.

As the companies and their networks operating in a small town so all of them are interconnected to each other. This may influence the quality of information or provide repeated information but it also depends on what individual is looking for. The purpose of social networking is not concerned to extract specific information or to identify business opportunities through weaker connections rather it is more focused on the open discussion to get any information that is useful. However, some people are concerned to do business with the weaker network and to obtain information from the third party and in that case, the strong network plays their role to bridge them.

4.1.3.2 Formation

Task environment

The network of weak ties has been created through meeting different people at different occasions organized by the cluster of strong ties or social hubs. The relationship with these individuals results in hearing about them from strong connections or seeing or meeting them on some occasions.

Experience and career background

In general, networking begins with interaction and communication with the crowd of the network. The open discussion, based on knowledge and experience, then help to set the basis for analyzing the value of contact and the presence of common interest among them and later on might turn into a network of weak ties. In some situations, this interaction often leads to transfer useful information as well. Moreso, the respondent weak ties network does not exhibit a relationship with college alumni but it does rely on strong business relations to get connected with the relevant weak contact to get support in specific areas of expertise.

Networking activities

The networking with weak ties are maintained by participating in different events and by contributing efforts to keep in touch through phone calls but sometimes it gets affected by the time constraint. The respondent further explained that however, all the events are not effective while few of them help to gain new external information and provide with imitation to follow
up. Moreover, these events provide the opportunity to communicate with the people whom the interaction is very rare or make new weak connections that can be useful in the long run.

4.1.3.3 Outcome

Transition to strong ties
The respondent further highlights that strong contacts that are formed through formal organizations or social hubs first belonged to weak tie network but the presence of common interest and combined efforts evolved them into the stronger connection.

Network overload
The weak tie network of Entrepreneur A, belong to the crowd of the wide social network. He refers weak tie contacts as sleepy relations that only functions upon linking back to them.
4.2 Case 2: Entrepreneur B

Entrepreneur B is the owner of the company and is involved in the business since 2014. He got an incomplete education in the field of Industrial Engineering and Management and alongside, exhibits two years of relevant working experience. Moreover, the entrepreneur B exhibits membership in an entrepreneur’s organization, SMIL (see Appendix 2). The interview was conducted with the owner of the company in Linköping.

The company B is Sweden based biotech firm founded by a group of three researchers in 2011 and owned by Entrepreneur B. The company is located in Linkoping, Sweden at Mjärdevi Science Park and producing electronic grade graphene and related products to be used for electronic applications and sensors. (Graphensic, 2017)

4.2.1 Social network of entrepreneur

Social networking as perceived by the Entrepreneur B is related to be social which provide the possibility to make friends through informal gatherings. These individuals belong to both strong and weak social ties network but also include business related and formal connections with whom the person is it not very social. For the respondent networking, severe as a tool that enables to meet various people, useful for the business, for example, suppliers, business partners that provide information about the surrounding world.

The respondent association with the formal organization and active participation in social events led to the formation of the network. In developing a network, the respondent follows an approach to connect to right people than new people because for his precision and quality matter more than quantity and variety. In his views, networking is related to show up in different events sometimes to meet different people and talk while at other times it is more goal oriented with the aim to link to a specific person that is useful for the business.

4.2.2 Strong ties network

4.2.2.1 Characteristic

The entrepreneur B expresses strong ties network as a relationship that builds on mutual awareness and knows how. In his views, strong ties may exist among friends but it also includes other individuals with whom the person is familiar with and does not need to introduce him/herself. Since the strong connections know well about each other but depending upon the strength of strong relationship the frequency of interaction varies. He mentions that if the relationship is more formal one for example with investors, then it needs to be refreshed regularly and need more attention as compared to other strong social relation that requires less attention. Therefore, attending social meeting and events facilitates to maintain strong relationships with formal contacts.

The strong ties network of Entrepreneur B comprises of a diverse group of people belonging to different areas for example suppliers, friends, customers, senior advisors, investors and collaboration partner. These contacts are helpful in providing financial resources, raw material, IT services and useful information which is necessary for the development of the business.

Quality of information

Moreover, the respondent expresses as the strong contacts offer quality information that is more reliable than other sources like media, therefore, support to build good understanding about the external world that in some way influencing the business.
Trust

According to Entrepreneur B, trust is what strong relationship builds upon. His network that facilities in sharing knowledge and business information accompanied with the aspect of trust. He further adds that actors in the strong network trust each other and hence do not expect to leak information to their competitors. Moreover, the respondent expresses his views that studies and learning from other experiences, shows the direction to get involved in developing monitoring activates, to protect from others opportunistic behavior, but his strong belief in collaboration and mutual sharing restrict him to do so. He clarifies the argument by stating:

“If you keep your window open more ideas will fly into the window or into the home rather than fly out.”

Although it results in losing some ideas a person will gain more ideas by keeping the windows open.

More so, in discussing business ideas the respondent shares his thoughts with his closest personal relation that is the chairman of the company. The respondent further explains that it is not only the trust but also the chairman's professional expertise in the area which made him suitable for that purpose.

4.2.2.2 Formation

The respondent has created his strong network through interacting with people at social events. Moreover, the memberships in formal organizations, for example, SMIL and Graphene society help him to link with different people.

Knowledge and experience

The respondent thinks that his career experience and knowledge does not provide help in building a network but rather his own ambition to build a network. He believes that an individual’s experience and educational background may help in creating a network but the most important aspect in his views is person’s own motivation and ambition to get involved in social networking. However, the carrier experience might help in improving social skills but it does not facilitate in giving the ambition to meet and link to people. Therefore, for him, networking is more related to personal drive and efforts to interact with folk for a social cause.

4.2.2.3 Outcome

Knowledge and information exchange

The network of strong ties provides the respondent with the opportunity to engage in real discussion. Since the strong connections are so diverse they offer a huge amount of knowledge and information, for example, provide an update on artificial intelligence and how the technology is improving. Hence, lead to increase the respondent’s accumulated knowledge about the current industry.

The diverse group of strong contacts often provide the same information, therefore, made the quality of information reliable. This information can be implemented in the business after analyzing internally and by making some reality checks however it does not require be rechecked with the literature and theory.

Moreover, the in-depth discussion facilities the flow of information about other individuals that can occur to be useful for the business.
Over-embeddedness
The strong ties network of Entrepreneur B highlights relationship with a friend, who is offering recruiting services and exhibit membership in the similar organization as respondent, SMIL. However, the respondent does not exhibit any business relationship with his friend but actively interact each other socially. Moreover, he perceived that is easy to deal with friendship and business separately. He further explains, in doing business, it is not personal relations and friends that need to be considered first rather the company’s interest and goals require prioritization. Hence, close relation does not close the door for business development opportunities rather it relies more on person own choices and company interest.

Currently, the business is operating in Linköping, Sweden but respondent clearly highlights the plan for business expansion and hence need more strong contacts in the business. Therefore, the respondent engages in building a network through social media and by participating in workshops and seminars not only held in Linköping but in other cities as well.

Legitimacy
The membership with the European Union’s largest research initiative, Graphene Flagship (see Appendix 2) facilitates the company to build reputation (Graphensic, 2017)

4.2.3 Weak ties network
4.2.3.1 Characteristics
The Entrepreneur’s B defines weak ties as relationships that know little about each other and upon interaction require the introduction of previous meet ups. The weak network of respondent comprises of a diverse group of people, for example, customer, suppliers, investors associated with different fields, with whom he interacts very rarely, once in a two year.

Information flow
The weaker connections are also considered as a useful source of information. The respondent relates that one of his weaker connections provide with the global market information that is in the interest of the company. Therefore, the respondent mentions, the network that comprises of several contacts with whom the interaction is very often enabled to provide a great information benefit. Although the relationship with such contacts is weak it does not affect the quality of information exchange. Like strong connections, respondent relies on information being provided through weaker connections and does not require confirmation with the other sources like media, theory or literature.

Furthermore, the contacts are interconnected and often provide with repeated information that respondent perceives as a positive thing. The similar information provided by second actor functions to countercheck the information provided by the first actor and hence result in validating it. However, the third party also plays a role to transfer information but according to the respondent, it is hard to validate such information. Moreover, weak relations also lead to identifying opportunities through discussing business related affairs at events, workshops, and seminars organized by strong connections. They not only share knowledge, experience and offer suggestions for business improvement but also provide with reference to link to the relevant person in the field.
4.2.3.2 Formation

Task environment
As the company is still in the early growth phase and aims to expand therefore the owner’s (respondent) fifty percent working activities are related to meet and create contacts with unknown people.

Experience and career background
The respondent reflects upon similar thoughts about the role of experience and career background in forming weak ties network as for strong ties network. His strong beliefs inclined more towards an individual’s ambition and motivation to be social rather than being good at it.

Networking activities
The respondent mentioned, although he actively takes part in social events and formal occasions but there is no specific strategy to maintain and build network of weak ties. Hence, whenever required the weaker contacts get back in contact by interacting through a phone call.

4.2.3.3 Outcome

Transition to strong ties
In the opinion of respondent networking with the weak ties required efforts and time to establish an environment in comparison to strong relations that provide with the sense of familiarity towards working norms. But once such environment has established among weak ties they soon become the part of strong ties network. Moreover, he mentions that strong relationships change over time depending on the firm’s interest whereas for weaker relations there is no boundary to decide for their inclusion and exclusion. Hence, they only play their role upon interaction.

Network overload
The respondent gets in contact with weaker connections when needed hence feels accountable to contribute more efforts in maintaining the relationships with weaker connections.
4.3 Case 3: Entrepreneur C

Entrepreneur C is the co-founder of the business and currently working as a CEO in the firm. He got an incomplete education in the field of Industrial Engineering and Management and alongside, exhibits two years of relevant working experience. Moreover, he has membership in an entrepreneur’s organization, SMIL. The interview was conducted with Entrepreneur C at Linköping office.

The company C is recruiting firm, which is located in Linköping and Örebro, has been established by Entrepreneur C and his partner in 2013. The company is offering its services to both the government and private sectors. Through finding the right competence for the organizations, the firm business is helping in developing the technical competence of the two regions, Östergötland and Närke. The company has established in 2013 by Entrepreneur C and two of his friend, studying at Linköping University. (Xamera, 2017)

4.3.1 Social network of entrepreneur

In the opinion of Entrepreneur C, it is a human being that is playing a central role in doing businesses with each other. Since all the companies either big or small rely on individuals to do business and therefore exert demand on individuals, dealing with one another for the cause of business, to know, accept and to some extent like each other. Hence, in developing such relationships social networking plays a crucial role and makes the whole process easier. The social interaction, that revolves around social aspects rather than business matters, at events and meetings allows to make new connections that later on become the key contacts for the company.

The respondent shaped the network being a member of the formal organization and through attending events, seminars, and workshop where the target is to meet new people. He further explains, targeting and connecting with new people might not turn out to be useful for the business but it can become the source to linking to right people, those who are interested in doing business. Thus, social interaction with people, that generally revolves around social aspects rather than business matters enable to explore common interest among each other that later on result in business creation. Hence, for him networking follows the flexible approach that led to develop business through mutual efforts and collaborations. Moreover, he strongly disagrees to engage in networking only for personal cause and therefore develop his own business through collaboration with the customers. For him, networking is a two-sided game and hence demand contribution from both players. He further explains, the company’s business (own business) is not only running by selling recruiting services but we are working with the customers to develop it. He states that:

“Business is a product of networking”.

4.3.2 Strong ties network

4.3.2.1 Characteristics

Entrepreneur C expresses that strong ties between actors characterize by an informal relationship that provides the possibility to deal unprofessionally with each other by getting involved in activities other than business like social dinners, sports. This, in turn, creates the environment that flourishes ties formation and hence, enables to learn more about each other.

The respondent exhibits a strong relationship with a formal organization SMIL, consisting of investors and retired entrepreneurs, and individuals using their services like CEO of the
company, HR personals, and others. The frequency of interaction with such individuals varies depending on their interest hence enables the respondent to embrace adaptive behavior. The respondent mentions that as strong connections are probably the people holding power in organizations, therefore, support in giving easy OK when doing business.

**Quality of information**
Entrepreneur C greatly emphasizes the importance of strong ties contacts in offering quality and new information. He expresses although the information and advice given by strong relations, based on their long previous experiences are reliable sometimes they lack behind in chasing the fast-changing world and therefore occur to be irrelevant for the business. Hence, there is a huge amount of information that needs to be filtered very hard in order to make it useful for the business and as the time passes by, the individual gain experience hence enables him/her to gain and extract useful information.

**Trust**
Trust is a very vital content of strong relationships, in the opinion of Entrepreneur C. Due to trust, the company has developed close relations with their customers. He mentions trust creates the sense of collaboration and respect that leads to benefits both the players in the network. Furthermore, he explains that in the rapidly changing world, strong relationships embedded with the aspect of trust serves as a medium to show the full picture of the transitioning environment as well as to transfer reliable knowledge in short time that is hard to capture by own.

The respondent believes that however, there is always a risk of losing ideas upon discussing with stronger ties but they also provide with trusted feedback that worth more than the potential risk of stealing them. On contrary to, business professionals that belong to weak tie network cost both time and money in providing some business-related insight, the strong trustworthy relationship with an entrepreneur friend, offers same benefits with less time and energy and simultaneously will not be interested to work on the similar idea.

**4.3.2.2 Formation**
The formation of strong ties contacts of Entrepreneur C, that were the part of weak tie network in the beginning, has mainly been developed through attending social events, meetings and seminars. Moreover, the respondent membership in SMIL paved the path to linked to various people that are useful for the business.

**Knowledge and experience**
In building the network of strong relation respondent shows reluctance towards his previous experience and knowledge. According to the respondent, the art to get involved in socializing, two to three times per week, requires both time and efforts and since the respondent enjoys in interacting and meeting with people, therefore, enable him to create a network of strong relationship. Moreover, he expresses that attending events and seminar will not help alone in network creation, it is equally important to follow up the contacts and plan in advance to receive benefit from the relationship.

**4.3.2.3 Outcome**

**Knowledge and information exchange**
The respondent stresses that close relationship plays a central role in showing the clearer picture of the world through facilitating with diverse knowledge. The network of strong ties keeps the
respondent update not only by providing the current information about other companies’ status, working in the same field, but simultaneously shed light on their future development plans. This, in turn, allows Entrepreneur C to be ahead of their competitors by making a minor adjustment in the business and by planning future strategic moves for the development of the business. Moreover, based on their experience they also serve as a tool in providing real and reliable information about the local market condition which is harder to gain from market analysis. However, he contradictory explains that all the information that is being provided by strong contacts are not only useful but constitutes of rumors. Since rumors lack the reliability aspect, therefore, cannot support in making a big business decision, however, they turned out to be useful in shaping the business according to current market demand through creating the sense of the things happening around. In addition to this, by disclosing information about the useful person in their network, they also act as a bridge in linking to potential weaker connections.

**Over-embeddedness**

The respondent’s network of strong ties includes company’s customer that later on become a friend. The respondent experiences that it is harder to do business with friends. He gives the example of pricing, that needs to be negotiated among two actors for finding the best fit, often generates problems especially when dealing with friend customers. Although the respondent mention that he likes to meet and interact with new people but business negotiations create difficulty to establish long term relationship with close customers. Since friendships in business accompanied with some problems but they do not hinder in identifying business development opportunities, expresses by the respondent. Although there is a risk to miss some opportunities but it largely relies on person’s own evaluation skills to the response towards it accordingly.

The respondent clearly highlights the plan for business expansion and hence need more strong contacts in the business. Therefore, participation in the seminar, events and following up the contacts enable to provide help in developing the network of strong relations to a great extent.

**Legitimacy**

The respondent expresses that the relationships with strong, close relation also provided with the benefit of building company’s reputation. He states that:

“If you place yourself with great people, people tend to see you as great people. “

However, one can not only rely on such relations but need to contribute efforts to strengthen by itself. He further explains that the success of his company’s business also plays role in linking to prestigious people. Hence both the successful business and relationship with successful people complement each other and result in boosting the firm’s performance.

4.3.3 Weak ties network

**4.3.3.1 Characteristics**

Considering his business field, the Entrepreneur C defines weaker connections are those that value business services more than the relationship and if required can exchange the supplier of services tomorrow. These weaker contacts belong to government sector while a very few associated with the private sector with whom the interaction takes place rarely like four times in a year. The respondent perceives the weaker relationship as such that stuck somewhere but he continuously striving to make them stronger. He expresses that there is no point to keep the weaker relations because the company cannot get more business out of them and it only cost
money. At some occasions, the weaker relations although interested in the company’s services but are reluctant to develop a relationship with Entrepreneur C. In such cases the Entrepreneur C trade his weaker connections with his college having the same business setup and hence get his weaker connections in return that afterward transform into stronger relation. This exchange of weaker connections among Entrepreneur C and his college results in getting all the business into the company without losing any weaker contact.

Information flow
The respondent expresses although weak ties contacts are using the company’s services as they are not relying on him and lack personal relation therefore neither involve in providing any information useful for business nor help in identifying business opportunities such as by making a recommendation to someone. However, the third party may facilitate in providing information but it demands times. The company and its network function in a small town, therefore, many people know each other. Since Entrepreneur C is not getting any information from weak connections, therefore, interconnectivity does not have any influence on the information flow process either. However, the simultaneous existence of a strong and weak relationship of the respondent with two different actors respectively, that are interconnected to each other, causes some problem. The stronger relationship with the first one makes the weaker relationship contact more suspicious that afterward hinder the development of weak tie into the strong tie.

4.3.3.2 Formation
Task environment
One of the business routines of an Entrepreneur C is to keep in touch with the company’s customer. As most of their customers located in a Mjärdevi science park hence, visiting them at their place or just being in that area provide with an opportunity to make new contacts. So, with the help of his stronger connections he gets linked to the weaker connections.

Experience and career background
The respondent developed his weaker contacts not by relying on his previous working experience and career background rather the prime focus on social interaction, in an informal way, enabled him to know about weaker contacts as well as to attract people that are useful for the business

Networking activities
Active participation in events and social meetings are main networking activates the respondent mainly involved for network building. Moreover, the social media provide support in getting information about new customer beforehand but the respondent considers it as too professional and therefore not using it for building a network.

4.3.3.3 Outcome
Transition to strong ties
The respondent mentions, in beginning all the stronger connections belonged to the network of weak ties but with the passage of time due to the development of trust transformed into the network of stronger relationships.

Network overload
Entrepreneur C believes that spending time with weaker connections is useless therefore he puts focus on his stronger connections that are more useful for the business.
4.4 Case 4: Entrepreneur D

Entrepreneur D is the co-founder of the business that along with his partner has established the company in 2002 at Linköping, Sweden. The company went bankrupt and after that has been acquired by well-known computational knowledge engine Wolfram in 2011 (see Appendix 2). Entrepreneur D has developed his educational background in the field of Applied Physics and working in the same field since 1999. The interview was conducted with Entrepreneur D, working as the CEO of the firm, operating the part of Wolfram business in Linköping, at Mjärdevi Science Park. Moreover, the entrepreneur D also has a membership is entrepreneur’s organization, SMIL.

The company D belongs to the field of modeling and simulation and offers its product and services that help professional to understand and improve their products. Moreover, the focus of the firm business is not only directed towards computational engineers and researchers, but it also strives to develop and provide solutions to all engineers and researchers. (Wolfram MathCore, 2017)

4.4.1 Social network of entrepreneur

Social networking as perceived by an Entrepreneur D is the way of communication and interaction with people. The interaction occurs with the actors belong to both strong and weak tie network, which are mainly oriented towards entrepreneurship and engineering. Furthermore, networking provides with the benefit of managing the company through learning from other experiences and at the same time serves a platform to find new business contacts. The interaction with people in a flexible way initiates networking that later on may lead to a collaborative work based on the situation. Since the respondent expresses him as not a great social person, therefore, a bit reluctant in meeting with new people. The focus is more on building a long-term relationship with the existing contacts that afterward facilitates in learning new things and sharing thoughts.

4.4.2 Strong ties network

4.4.2.1 Characteristics

In the views of Entrepreneur D, the strong ties network builds upon continuity and trust, that with the existence of similar agenda facilitates to learn from each other experiences and afterward result in creating long term relationship. Since the respondent exhibit close relation with his strong ties network contacts, therefore, involve in frequent interaction at least twice a month whereas with the less strong relationship the interaction takes place through email several times in a month.

The respondent exhibits strong social ties with the entrepreneurs’ organization SMIL which serves as a networking hub. However, the respondent exhibit relationship with another entrepreneurs’ association, Modelica which does not entirely represent as a strong connection, concerning interaction, but is up to some extent useful for the business.

Quality of information

The respondent expresses that his strong tie network facilities in learning new knowledge and simultaneously useful in providing reliable information and advice that are used to develop the business.
Trust
Entrepreneur D emphasizes that trust is an essential component in building relationships that later on become the source creating long term relationships. Since the respondent’s strong ties network builds upon trust, therefore, does not require any efforts to be aware of their opportunistic behavior. Moreover, the information that is being provided by the strong relationship is generally reliable but depending on what it is about, sometimes needs to recheck with other sources.

Furthermore, concerning the discussion of business ideas, the respondent mentions that he generally approaches to his manager because of his expertise in business but at the same time also conduct regular meetings with people at work regarding both marketing and technical issues that he believes is the most important.

4.4.2.2 Formation
The respondent shapes his network of strong ties with the help of the organization, SMIL, whom he is a member of. The various events organized by such organization provide with the possibility to meet people and make connections with them through interacting and finding common agendas.

Knowledge and experience
The respondent mentions that his working experience allows him to build the network of strong ties. The employment at another company prior to the development of entrepreneur’s own business serves as a medium to get in touch with the organization, SMIL that at present serves as a networking hub for entrepreneur D. The relationship with people and organizations gradually develop with the passage of time and simultaneously become stronger because of trust.

4.4.2.3 Outcome
Knowledge and information exchange
The strong network of Entrepreneur D serves to be beneficial regarding knowledge and information exchange. The relationship of the respondent with SMIL is more knowledge intensive that enables to build the understanding of business management and sales while the association with Modelica association is used to develop the awareness of market and competitors that later on drive development in the business. Moreover, the information that is being provided by the strong relationship is generally reliable but depending on what it is about, sometimes needs to recheck with other sources.

Simultaneously, strong relationships also provide information about relevant people that in future can be useful for the business.

Over-embeddedness
The respondent expresses since it is common that professional relations, with the passage of time, in some way or another turn into personal or friends’ relations hence the same implies to his strong network. He further describes although such transition does not influence the business in a negative in order to have clear separation in personal and professional life, the respondent wants to avoid it. He also mentions, his network of strong ties increased in volume but in order to keep the network effective, it requires to change the people over time.
Though the reliance on the close relationship is helpful in getting useful and quality information in less time but at the same time do not hinder in identifying new business opportunities. The respondent believes that he may miss some business opportunities because of some other reasons but not because of reliance on his strong ties network contacts.

Moreover, he believes that due to reliance on strong connections, his information perspective becomes local by character, Linköping oriented, therefore might lead to miss a global perspective necessary for the development of the business.

Legitimacy
The association or acquisition of a company by a Wolfram after it bankruptcy enable to gain reputation by working under the banner of wolfram.

4.4.3 Weak ties network

4.4.3.1 Characteristics
The network of weak ties as expressed by the Entrepreneur D is characterized by too many fluctuations and discontinuity that requires both time and effort to know each other and get something valuable. The respondent’s network of weak ties comprises of a distinct group of people associated with the social media like LinkedIn and Facebook. These individuals are suppliers, customers and other entities who are interested in the company’s product and with whom the communication is seldom while with some personal interaction may take place once in a year.

Information flow
The Entrepreneur D describes that weaker connections serve to be useful in an unexpected way. One of his weaker connection, that is a contact on LinkedIn, share the information from company’s blog on Vibration analysis of wind turbine. The information, later on, shared among a cluster of people that started taking interest in it. Hence, this information flow process through weaker connection benefit the business and result in making new contacts in Australia.

From an entrepreneur point of view, the respondent is inclined in building long term relationship within the areas of marketing and sales, therefore, emphasizes more on the quantity of contact. Furthermore, as the company’s product has unexpected users and in order to attract them to a small-town Linköping and in Australia, the respondent believes that quantity of contacts helps a lot than the quality of contacts.

Since these weaker entities are associated with the social media and a part of the diverse group, therefore, enable to provide diverse information about market trends and status. These weaker connections are often interconnected to each other and lead to provide the same information that varies a lot in term of quality as compared to a strong connection, that embodies trust and provides reliable information. But with the passage of time an individual can learn and create the sense of reliance on certain weaker connections. The respondent expresses although weaker connections are helpful in business development to a certain degree but they do not provide the new idea for business creation and as he is not using the social media for marketing purpose therefore associated with less risk to influence the business in a negative way.
4.4.3.2 Formation

Task environment
The respondent mentions that he is not good in making new connections and also it is not in his prime concern to look out for new people, therefore, contribute fewer efforts towards it. While in few cases, doing business with the strong connections provide with the possibility to connect to the weak connections.

Experience and career background
The respondent exhibit two years of working experience, prior to the development of his business, that does not play a huge role in building up the network, however, it turns out to be useful up to a certain degree in a limited way.

Networking activities
Being a less social player, the Entrepreneur D does not involve in any efforts to maintain the weak relationships.

4.4.3.3 Outcome

Transition to strong ties
As the network developed over time, the respondent has built up the volume of both the weak and strong connections and due to the presence of common interest some of the weak network contacts ended up doing close business with Entrepreneur D.

Network overload
The entrepreneur D is not willing to spend time in interacting with new people rather the focus is more on to build a long-term relationship with the existing strong tie.
4.5 Case 5: Entrepreneur E

Entrepreneur E has established the company in 2011 and currently working as an employee in the firm. He educated himself as a software engineer and trumpet and alongside exhibit seven years of working experience in an automotive industry. The interview was conducted with the founder, Entrepreneur E in Linköping.

The company E is a Swedish software developing company, located in Linkoping at Mjärdevi Science Park. The company is offering its services to the different clinics of health care sector that are spread in five distinct municipalities of Sweden. The company provides a software program that helps the healthcare sector in scheduling, production planning, staff managing, goal-steering and future performance prognosis (Goli, 2016).

4.5.1 Social network of entrepreneur

In views of the Entrepreneur E, social networking is concerned as the interaction and communication with the people that are useful for the business. He perceives social networking as job-related events and meetings that provide him the opportunity to meet and interact with the business professionals or other job-related personals that exhibit knowledge in the specific areas. Although, such social work-related interaction helps the Entrepreneur E to learn from others’ experiences and simultaneously improve the business the respondent does not use the social networking for developing a business that is to get customers and clients for the business.

While interacting with people in job-related events the respondent follows the approach to meet the right people with the clear purpose to get something valuable in the term of knowledge and information.

4.5.2 Strong ties network

4.5.2.1 Characteristics

Strong ties network as expressed by the respondent represents the close relationship among individuals that knows well about each other as well as possesses some work-related experiences. The Entrepreneur E exhibits a strong relationship with the business customers, key opinion leaders, business professionals and friends with whom the interaction is regular for example once in a quarter.

Quality of information

The respondent puts emphasize on the role of strong relationships in providing reliable information. He describes that his strong tie network enables him to understand the details about the business world that is crucial to the improvement of business.

Trust

The Entrepreneur E expresses trust as the building block of strong relationships. The respondent, on one hand, highlights strong belief in accessing quality information through his close contacts with business professionals that later on helps to enhance the business performance. On the other hand, the company’s efforts in maintaining the close long-term relations with their customers, even after selling their product, enable to develop trust which in turn result in providing mutual benefits to both the actors in the network.

Since the respondent entirely trusts his strong ties network contacts, therefore, is not involved in any activates that keep him aware of their opportunistic behaviors. The Entrepreneur C does
not concern that people will steal the idea but at the same time he does not exposes all the information either to his strong connection just because it is not useful for them.

Moreover, the respondent gets involved in discussions of business ideas, on daily basis, with his colleges because of the aspect of trust and knowledge.

4.5.2.2 Formation
The Entrepreneur E has created the network of strong ties through meeting and interacting with people, especially the customers, by being out of the office and participating in job-related events and meetings.

Knowledge and experience
The respondent strongly emphasizes that previous working experience and knowledge contribute to a great extent in establishing strong ties network. Based on the previous working experience at another firm, the Entrepreneur E get in touch with his previous colleges to provide help in developing business in a specific area. Hence, the Entrepreneur’s C experience and knowledge about his college allow him to transform it into close relation or friendship, that on the other hand also promoting the business.

4.5.2.3 Outcome
Knowledge and information exchange
The respondent mentions that strong relationships are helpful in many ways for example in providing new business ideas, financial resources and referring to new connections. At the same time, the close relationships are a useful source of providing diverse knowledge of many things that can be related to markets, business managements, and others. In addition to that if any useful information that is being provided by strong connection for example customer, is not evaluated based on trust rather analyzed from the business point of view.

More so, they also provide information about other people that have potential to become a part of the weak network.

Over-embeddedness
The Entrepreneur E strong ties network also highlights relationship with friends that have been formed through the company. On one hand, the friendship of Entrepreneur E with his former college serving the business while on the other hand, he seems a bit reluctant in developing a relationship with the existed company’s customers. He expresses that it can be problematic to deal with a friend customer because there is a risk to work professionally with each other. Moreover, such working relationships incorporate biases to a certain degree that in turn discredited the business.

Since the business development does not rely on existing close relations (customers) rather on sales with new customers, therefore, the entrepreneur E believes that the company does not miss any business development opportunity due to a strong relationship with their current customers.

Moreover, the Entrepreneur E expresses as the company is in the initial stage of development, therefore, need more strong connections, especially customers, to grow the business. Hence, by interacting people at business related events and by keeping in touch with the existing one enables him to build and maintain the strong social network.
Legitimacy
The close connection of the company with their reference customer enables to promote the company’s business by explaining to the company’s new potential customer about the product functionality and in turn build legitimacy.

4.5.3 Weak ties network

4.5.3.1 Characteristics
The Entrepreneur E expresses weak ties network comprises of loosely bonded relationships that possess less know how about each other as well as does not bound in any business relations. Hence, the entrepreneur E network of weak ties comprises of various people, whom he just meets once or twice in the job-related event, that is not directly linked to the business. Since the interaction with weak relationships is very rare therefore often need introduction upon interaction.

Information flow
The respondent mentions although weak relationships sometimes provide good business information but cannot match the level of information, in terms of quality and reliability, provided by a strong tie contact. However, weaker relationships, on the other hand, can act as a router that enables to find other weak contacts. Such entities are dispersed in a huge network and only functions upon linking back to them. Therefore, the Entrepreneur E believes in engaging more in the interaction rather than including more people in the weaker network.

Moreover, the Entrepreneur E describes that it often happens that weaker connections provide repeated information because the market they are working in is small (healthcare sector). But as weak relationships are not directly in contact with business hence such interaction does not influence the business either. Moreover, these relationships also help in identifying business opportunities but due to the low intensity of trust need to be checked from other sources. In addition to this, the Entrepreneur E mentions that often third parties also enable to provide information regarding government policies and laws that in turn enhance the business performance by taking right measures.

4.5.3.2 Formation

Task environment
The respondent expresses, as the business activities based on a lot of external events and meetings, therefore, provide an opportunity to interact with people that later on can become the part of a business.

Experience and career background
The Entrepreneur E strongly believes that experience and career background facilitates great help in building relationships by providing the ground to get involved in communication otherwise would be harder for other people to engage in communication with a stranger.

Networking activities
The Entrepreneur E is not involved in other social events apart from business hence contribute fewer efforts towards networking activities. He mentions that if the weak connection is useful for the business then efforts are being made to keep in contact at least once in a year.
4.5.3.3 Outcome

Transition to strong ties
As the time passes by the weak relationship among actors gets strengthen with the help of trust and afterward transformed into stronger relationships. Moreover, the respondent mentioned that, as the business developed the strong tie network also develop which result in providing more valuable knowledge than before.

Network overload
Although the weak ties network of Entrepreneur E is huge it only works when it is asked for. So, the entrepreneur E put more focus on his strong relationships rather consuming time in maintaining the all weak relationships.
5 Analysis

By analyzing the empirical findings with the studied literature, this chapter presents the understanding of the role of strong and weak social ties of entrepreneur’s network.

5.1 Social network of entrepreneur

**Perception:** The empirical findings of the cases highlight that there is a common consensus about the concept of social networking among four of the respondents, as depicted in Table 2. The entrepreneurs A, B, C and D associated social networking as a way to meet and interact with people for social causes. The communication is more focused on knowing more about each other rather than talking about business. These interactions usually take place at an informal gathering and social events, which afterward ended in becoming friends and doing collaborative work with one another. However, the entrepreneur’s E perception about social networking showed some deviation from the rest of the respondents and associated with meeting and interacting with people at business related events and meetings. Therefore the focus of entrepreneurs E is more on discussing business related affairs than social aspects. Hence despite these differences, it can be seen that all the respondents are embedded in a tight social network through exhibiting some sort of relationships and ties that later on facilities in achieving their purpose of networking (Aldrich & Zimmer, 1986 cited Hoang & Antoncic, 2003).

The empirical findings of entrepreneur A highlight that social networking serves a source to grasp new information through social contacts that later on paved the path to achieving goals and objectives easily. The similar thoughts were reflected by Entrepreneur B that furthermore highlighted the importance of social networking in connecting to new people that are useful for the business. While entrepreneur C consider social networking serves as the platform for building relationships and make the process of doing business easier by arousing the sense of likeness, acceptance, and familiarity regarding one another. In the similar context, entrepreneur D embraced social networking which provides them with the benefit of learning from other experiences, managing own business and finding new contacts for the business. Thus, these findings from the cases highlight that entrepreneurs are continuously engaging in doing networking that later on facilities in gaining new information and providing with the opportunity to explore, create and develop new businesses (Granovetter, 1973; Bavelas, 1948 cited in Witt, 2004; Dodd & Patra, 2002).

Although entrepreneur E also uses social networking for improving the business performance through gaining information from others and learning from other experiences but does not consider social networking for the cause of business development that is to get customer and clients. Hence social networking facilitates entrepreneur C in communication and information gain (Granovetter, 1973; Bavelas, 1948 cited in Witt, 2004) but at the same time contradicts Dodd and Patra (2002) findings that highlight the role of social networking in developing the business.

In developing the network, it can be analyzed that active participation of entrepreneur A, B and C in social events, informal gathering, seminars and simultaneously the membership in formal organizations become the basis to link to different people (Dodd & Patra, 2002). Whereas, for a less social entity like entrepreneur D, the associate membership in the formal organization facilities to link to different people. However, in the case of entrepreneur E, the networking takes shape by attending job-related events and meeting that happen outside the premises of the
office. Thus, having varying level of social skills, all the respondent relies to a fair extent on events and seminar in developing their networks (Dodd & Patra, 2002).

**Networking approach:** Moreover, the findings show that entrepreneur A and C follow a similar approach in building the network. Both respondents engage in networking with no intention to only receive benefit but also to contribute efforts equally to benefit the other player in the network. Hence both rely on mutual efforts and collaboration to shape their businesses. For both the entrepreneur A and C the motive is not concerned to meet to right people but rather new people. This approach shows that entrepreneurs A and C relies on effectual networking where the focus is more on combined efforts to produce an efficient result. (Engel et al., 2017)

In the case of entrepreneur B, it is evident from the findings that although social networking is a concern to interact with different people without any specific aim as the respondent prefer the quality over quantity, therefore, is more inclined in meeting with right people, that is useful for the business than new people. Therefore, it can be clearly analyzed that the respondent B majorly relies on goal-directed approach in networking. (Engel et al., 2017)

Moreover, as entrepreneur D is not an active social person, therefore, consider developing a long-term relationship with the existing contacts, that are useful for the business, to facilities learning and thought to share rather than meeting new and unknown people. In the same context, the similar approach reflected by entrepreneur E, where the prime focus of networking is to extract useful information and knowledge by linking to the right person. Hence both the respondent relies on a narrow goal-directed networking with the aim to gain benefit from the contact. (Engel et al., 2017)

The findings are summarized below in Table 2.

<table>
<thead>
<tr>
<th>Table 2: Cross-case Analysis of Social network of entrepreneur</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Social network of entrepreneur</strong></td>
</tr>
<tr>
<td>Perception</td>
</tr>
<tr>
<td>Networking approach</td>
</tr>
</tbody>
</table>

### 5.2 Strong tie network

#### 5.2.1 Characteristics

**Perception about strong ties:** The result of empirical findings leads to the analysis that all the respondent possessed similar understanding about the perception of strong tie relationship that aligns with the concept of strong relationship highlighted by Granovetter (1973). They perceived strong relationships exist among individuals that know well about each other and have some knowledge about each other. In the case of entrepreneur A and D, it can be analyzed that, the closeness of bond arises due to the presence of common interest among actors which afterward result in developing long term relationships. Whereas, entrepreneur B, C develop closeness by knowing more about their contacts at social events in an informal manner and for
entrepreneur E, work related experience act as a facilitator in developing the closeness in strong relationships. (Granovetter, 1973)

**Interaction:** The empirical finding reveals that entrepreneur A relies on frequent interaction with his strong connections due to the existence of common interest whereas, entrepreneur B and D consider interacting more with formal/less strong relationships as compared to less formal/personal relationships. Entrepreneur E also interact with his strong ties on regular basis, once in a three month, but the enrapture C relies on the willingness of other individuals to meet and interact and hence adapt his behavior accordingly. Thus, it can be analyzed that although the respondents are embedded in a network of strong ties as explained by Granovetter, (1973) they are not involved in doing interaction with other actors twice a week. This contradicts the Dodd and Patra (2002) findings, which emphasized on interacting with close ties contact at least twice a week.

**Contacts:** Moreover, the findings highlighted that the contacts in the strong ties network vary from respondent to respondent. The strong relationships of all the respondent generally exist between two separate entities, the one that functions inside the organization and other that functions outside the organization.

The respondents reflect strong relationships with their fellow members, for example, employees, CEO, chairman, that function inside the organization and thereby get involved with them in doing business discussion (Jack, 2005; Hansen 1995 cited in Koning, 2003). This group of people is close to entrepreneur and can be analyzed as an inner circle (Koning, 2003). Moreover, family and relatives can also be seen as close personal relations (Riquelme, 2013) but the respondent does not possess any such relationship that functions to benefit the business. However, some of the respondents do possess a relationship with a friend that served to be beneficial for the business.

On the other hand, the strong tie contacts of the respondents that functions outside the organization range from investors, business opinion leaders and entrepreneurs to customers and suppliers that help them in providing financial resources and/or information necessary for the development of the business. Hence, this is a distinct group of actors that can be analyzed as the action set (Hansen, 1995 cited in Koning, 2003), enabling the respondent in accessing necessary resources, crucial for the business.

5.2.1.1 Quality of information

All the respondents accept the importance of strong network contacts when it comes to the quality of information that is being provided. They emphasized that close relationships help them in gaining reliable information and knowledge which afterward can support in enhancing the business performance (Coleman, 1990). Moreover, the exposure to such information enables the respondent to build general understanding about the external world, that is influencing the business indirectly or directly, in a short time. But in addition to this, there are also some other thoughts highlighted by entrepreneur A and C. Although entrepreneur A confessed the role of strong relationship contacts in providing quality information but in his views, they also serve to provide information that does not have any practical implications and thereby is not useful for the business. In the case of entrepreneur C, his strong relationship with retired entrepreneurs works well in the term to reliability but it lacks in providing the recent and up to date information that is vital to chase the fast-changing world. However, the information is being provided by retired entrepreneurs in a timely manner, through events and seminars, but
due to miss-match between their long previous experience with the present dynamic environment, it is unable to improve the quality of information as the time passes by. This contradicts Coleman (1988) cited in Arenius and Clercq (2005) which make a stand point on quality improvement due to frequent interaction with strong connections.

5.2.1.2 Trust

In the light of empirical findings, trust occurs to be an important component of strong tie relationships. All the respondents build relationships with other actors in the network on the basis of trust that afterward last for the long time period (Elfring & Hulsink, 2007). Moreover, these strong connections are taken as granted by the respondents concerning quality and reliability of information (Jack, 2005). The development of a strong relationship that afterward strength by trust gives rise to collaboration and mutual respect among actors, that can be seen in the case of entrepreneur C. Since the customers are tied in strong relationships with entrepreneur C therefore, will turn back to him in a time of need instead of searching for some other suppliers. Hence such mutual reliance on one another prospers trust and reduces the uncertainty of losing the business of both parties (Arenius & Clercq, 2005).

Moreover, the empirical findings highlighted that, although respondent are aware with the sense of losing ideas by involving in discussion with the strong connections but there is no major focus to engage efforts in protecting from others opportunistic behaviors. Rather they strongly believe in mutual collaboration and trust help in the exchange of useful information and simultaneously enhance learning (Zaheer et al., 1998 cited in Arenius & Clercq, 2005).

Through engaging in discussion with trusted strong relationships, entrepreneur B and C are receiving trusted feedbacks on their thoughts that later on may lead to the emergence of a new idea. Whereas in the case of entrepreneur A, that shows closeness to his strong connections regarding information exchange and learning but seems reluctant in discussing business ideas with them due to the risk of stealing. On the other hand, entrepreneur E does not believe in the stealing concept but at the same time does not enclose all the information to the strong connections that are irrelevant for them.

Hence, it can be analyzed from the findings that, trust in strong relationships is vital that provide trusted feedback, facilities learning, joint problem solving, cooperation and information flow and as a result benefit both the actors in the network (Uzzi, 1996; Krackhardt, 1992; cited in Elfring & Hulsink, 2007; Zaheer et al., 1998 cited in Arenius and Clercq, 2005). However; in the case of entrepreneur A, there is a strong glimpse of reliance on strong connections for the cause of information exchange, learning, and collaboration but there is a lack of trust in strong connections when it comes to discussing business ideas. Hence, Lechner & Dowling (2003) argument concerning the interdependence of strong relationship and trust held true for respondent B, C, D and E but it contradicts in the case of A.

The findings regarding the characteristics of strong ties are summarized below in the Table 3.
5.2.2 Formation

5.2.2.1 Knowledge and experience

In forming the network of strong ties, most of the entrepreneurs A, D, and E highly rely on their knowledge and experience, as can be seen in Table 4. Moreover, the accumulated knowledge and experience of the similar working field not only result in saving time and efforts but also lead to connect to the right person. But for entrepreneur A it is not only the knowledge and experience but the ability to socialize with people at various social events also promote the formation of strong network of entrepreneur A. The similar thoughts were reflected by entrepreneur C, which acknowledged the role of socialization more than knowledge and experience in the formation of strong tie network. Whereas entrepreneur C perceived it in a different context and relate the creation of strong tie network to the personal ambition and drive instead of individual knowledge and experience.

Hence it can be analyzed from the findings of the study, highlighted in Table 4 that, the respondents have shaped their strong tie network in different ways. The respondents not only make use of their knowledge and previous working experience as highlighted by Jack (2005) in making linkages to the relevant person but also considered the importance of social skills, motivation and drive in shaping the strong network.

Table 4: Cross-case Analysis of Formation of Strong ties

<table>
<thead>
<tr>
<th>Strong tie network</th>
<th>Case A</th>
<th>Case B</th>
<th>Case C</th>
<th>Case D</th>
<th>Case E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formation</td>
<td>Helpfulness</td>
<td>Also relies on social skills</td>
<td>Not helpful rather personal drive and ambition play higher role</td>
<td>Not helpful rather social skills and frequent interaction play higher role</td>
<td>Helpful</td>
</tr>
<tr>
<td>Knowledge and experience</td>
<td>Helpful</td>
<td>Helpful</td>
<td>Helpful</td>
<td>Helpful</td>
<td>Helpful</td>
</tr>
</tbody>
</table>
5.2.3 Outcome

5.2.3.1 Knowledge and information exchange

It can be analyzed from the empirical findings, highlighted in Table 5, that all the respondents are reaping the fruit of information and knowledge exchange because of their reliance on strong ties (Jack, 2005). Since the respondents’ strong tie network comprises a diverse group of people, therefore, lead to provide diverse knowledge about different areas. Thus, this diversity in information, as analyzed from the findings, ranges from local market knowledge, technological advancements business management, sales to the updates regarding competitors’ performance and hence enable to show the clear picture of surrounding world. This contradicts the Lechner and Dowling (2003) findings that emphasized on the inefficiency of strong ties in providing diverse knowledge.

The entrepreneurs B, D, and E perceived such kind of information useful and reliable that can be implemented in the businesses after doing some reality checks. On contrary, entrepreneur A and C perceived that up to some level strong ties are accountable for providing useless information and rumors that lack reliability. However, such information exchange may help in making some minor adjustment in business but are not useful in making business moves. This shows similarity to Granovetter, (1973) cited in Witt (2004) that account strong ties for providing both reliable and redundant information simultaneously.

The findings also reveal that by making use of strong ties, the respondents are also getting information about other relevant persons that later on may become the part of their weak network (Jack, 2005; Elfring & Hulsink, 2007).

5.2.3.2 Over-embeddedness

The findings, documented in Table 5, showed that entrepreneur A and B have a clear understanding of the friendship and a business relation. The entrepreneur A findings highlights that doing business with a friend has adverse effects, that influences the individual’s business interest and may lead to damage both the business and friendship. The similar thoughts were reflected by entrepreneur C and E, which perceived that doing business with a friend is accompanied with a lot of troubles. The entrepreneur E also reflected that the friendship with business relation includes biases that afterward lead to the discreditably of the business. On contrary, the entrepreneur D exhibits strong business relationships that later on turns into friendship but such transition is not influencing the business and economic performance of the company.

However, entrepreneur A does not possess any business relation(s) with a friend(s) but at the same time reflects a too strong connection with a few business relations. Although theses business relations favor each other but also remains away from any conflicts by showing respect to each other businesses. Similar thoughts were reflected by entrepreneur B that, in doing business gives higher importance to company’s goals and interest over friendship. Since there is no adverse effect on the business of entrepreneur A and B by keeping friend-business relation, neither the strong relationships hinder in identifying business development opportunities, therefore can be analyzed as not associated with over-embeddedness or lock-in situation (Uzzi, 1996; Johannisson, 2000 cited in Elfring & Hulsink, 2007).

Moreover, all the empirical findings show contradiction to Jack (2005) and Uzzi (1996), highlighted that despite the strong reliance on close linkages for information, knowledge and other resources exchange, the respondents are continuously engaging in exploiting
opportunities based on their own choices and skills. Moreover, the respondents’ positive attitude towards the new knowledge search, expansion of business and strong tie network lead to analyze that majority of the respondents are not associated with the locked-in situation or over embeddedness. However, in case of entrepreneur D, there is no negative impact on firm economic performance by holding friend-business relation that later on shows association with over-embeddedness but at the same time the dependency on his strong relations restricted the information perspective to local level and therefore lacks the capability to provide broader array of information from global perspective. This according to Jack (2005) and Uzzi (1996), is due to the inefficiency of strong ties in dealing with external changes and in exposing information from a wider perspective which thereafter created the situation of lock-in. Thus, in the case of entrepreneur D, there is a glimpse of over-embeddedness concerning information perspective. Whereas, in the case of entrepreneur C, there is a trouble in dealing with a friend as a business contact due to its negative consequence on firm economic performance. This shows similarity to Uzzi (1996) and Johannisson (2000) cited in Elfring and Hulsink (2007) that perceived such situation related to over-embeddedness/ locked-in. Moreover, entrepreneur E reflects clear thoughts about the negative aspect of friend-business relation and therefore not involved in any business dealing with friends that might cause a disturbance in economic performance and afterward lead to the situation of lock-in/over-embeddedness.

5.2.3.3 Legitimacy
In addition to other benefits, strong ties are also considered accountable for providing legitimacy, as can be seen in Table 5. In the case of entrepreneur A, the development of business under the banner of well-renowned firm enable to gain legitimacy. But on the other hand, his own successful career in the business field enable his strong connections to build their company reputation by associating with him (or his business). Similarly, for the other respondent, the strong linkages to internationally recognized organizations and strong tie help them to improve the business performance and simultaneously, enhance the image of the company. (Elfring & Hulsink, 2003; Jack, 2005). However, entrepreneur B findings show that the strong linkages are not only the source of providing legitimacy, it is equally important to contribute efforts in making the business successful. Hence, the findings reflect the new aspect that has not been highlighted by Elfring and Hulsink (2003) and Jack (2005).
5.3 Weak tie network

5.3.1 Characteristics

**Perception:** The empirical findings highlighted that the respondents have a similar perception about weak ties (see Table 6) as mentioned by Granovetter (1973). The entrepreneur A, B and E findings highlighted that little knowledge about the contacts’ profession, skills, and expertise, with whom the respondents just meet once or twice, become the basis of weaker connection. In addition to this, the absence of common interest among actors and their indirect business linkage enable them to rely less on each other and therefore make the relationship weaker. In the case of entrepreneur D, the weakness in the relationship arises due to too many fluctuations and discontinuity which shows similarity to entrepreneur C, that perceived weaker relations as more business oriented than relationship oriented and in his case, these are government sector mainly. Hence, it can be analyzed that due to the respondents or contacts low level of emotional intensity, interest and closeness with one another, as highlighted by Granovetter (1973) lead to the weak social ties.

**Contacts:** The weak tie network of all entrepreneurs generally comprises of a diverse group of people, as can be seen in Table 6, ranging from suppliers, customers, business professionals associated with private and government sector to a vast group of unseen people on social media. (Granovetter, 1973, 1995)

**Interaction:** Since the respondents and their weak ties contact are loosely bonded, not directly interconnected to business and do not possess any common agenda therefore the interaction is very rare for example once in a year (Dood & Patra, 2002).
5.3.1.1 Information flow

The results of findings highlighted in Table 6 show that the majority of the respondents is receiving the varying level of information benefits from their weak ties network. In order to receive useful information from their loosely knit contacts, the respondents showed deviation in their perceptions. In the case of entrepreneur A and E, the reliance is more on the frequency of interaction with weaker contacts that later on help in gaining any information that will be in the interest of the company (Granovetter, 1973). On contrary the, the entrepreneur D showed an inclination towards the number of contacts in enabling the free flow of information that afterward helps in attracting the unexpected user of company business (Burt, 1992). Whereas, for entrepreneur B, it is a mix of both the approaches, that is the frequent interaction with several contacts simultaneously, that lead to reaping the information benefit at fullest (Burt, 1992; Granovetter, 1973). Moreover, the weaker connections of entrepreneur C, are mainly business oriented and not relationship oriented therefore are so feeble and lack trust in providing any information that occurs to be useful for the business.

As the study has been conducted on the entrepreneurs and their network operating in a small town, Linköping so, most of the findings highlighted that the contacts in the weak tie network of the respondents comprises of distinct group of people like suppliers, customers, investors, government organizations, that are interconnected to each other and often provide with the same information benefit. According to the findings of entrepreneur A, this interconnectivity often results in providing repeated information but it also depends on the personal interest regarding information search. Whereas, receiving repeated information as a result of contacts interconnectivity occurs to be beneficial for entrepreneur B’s business because it helps him in building the validity of the information obtained from different contacts that later on can be utilized for performing/enhancing business activities. Since the weak connections of entrepreneur E are not directly linked to the business, therefore, obtaining repeated information, from such contacts, does not have any impact on the business performance. Whereas entrepreneur D also received repeated information through his diverse group of weak ties on social media like LinkedIn but the quality of that information lacks reliability and therefore, hard to use for business matters.

The contacts in the weak tie network of respondents are a distinct group of people that in light of Burt (1992) belongs to non-redundant contacts, but at the same time such distinct group of people is interconnected to each other and providing repeated information that shows characteristics of redundant contacts as discussed by Burt (1992). Hence, it is evident from findings that, respondents’ weak ties network incorporates the characteristics of both redundant and non-redundant contacts. Moreover, it also showed that the repeated information, that is mainly associated with having same contacts in the network, can also be provided by a distinct group of people belonging to a different context and with whom the respondents’ interaction is very rare.

Since there is no unique information provided by the weak contact, therefore, cannot be analyzed as connected to each other through structural holes. On the other hand, some cases like B and E, weak ties play a positive role in identifying new business opportunities as well as in building a link to new weak ties. But for others like C and D, they provide no insight that later on becomes the source of new business creation. Whereas, entrepreneur A does not consider networking as a source for identification of business development opportunities therefore not expect the same from the contacts of weak tie either. Although all the respondents’
weak tie network lies in the context of the low cohesive network it functions differently by showing more possibility to entrepreneur B and E than C and D (Arenius & Clercq, 2005).

Table 6: Cross-case Analysis of Characteristics of Weak ties

<table>
<thead>
<tr>
<th>Weak tie network</th>
<th>Characteristics</th>
<th>Case A</th>
<th>Case B</th>
<th>Case C</th>
<th>Case D</th>
<th>Case E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perception</td>
<td>Actors know little about each other and possess no common interest</td>
<td>Actors know little about each other</td>
<td>Value business more than relationship</td>
<td>Reflects too much fluctuation and discontinuity</td>
<td>Actors know little about each other and are not connected to business</td>
<td></td>
</tr>
<tr>
<td>Contacts</td>
<td>Diverse group comprises of people belonging to different social hubs</td>
<td>Diverse group comprises of suppliers, customers, investors and others</td>
<td>Service dealing with contacts, majority belong Government sector</td>
<td>Diverse group of people on social media like LinkedIn, comprises of suppliers, customers, and others</td>
<td>Diverse group comprises of business professionals, customers, and others</td>
<td></td>
</tr>
<tr>
<td>Interaction</td>
<td>Less frequent</td>
<td>Once a year</td>
<td>Four times in a year</td>
<td>Once in a year</td>
<td>Very rare</td>
<td></td>
</tr>
<tr>
<td>Information Flow</td>
<td>Greater the interaction with the contacts, higher the information flow that often leads to provide repeated information that needs to check from other sources</td>
<td>Greater the interaction and number of the contacts, higher the information flow that often leads to provide repeated information and result in increased validity</td>
<td>Lack of emotional bonding hinder flow of information</td>
<td>Greater the number of contacts, higher the information flow that often leads to provide repeated information low quality</td>
<td>Greater the interaction with the contacts, higher the information flow that often leads to provide repeated information that later on evaluated from business point of view</td>
<td></td>
</tr>
</tbody>
</table>

5.3.2 Formation

5.3.2.1 Task environment

The findings of entrepreneur B showed that it is the business expansion that demands more new relations and thereby shaped fifty percent of entrepreneur B working routines in interacting with new people. While in the case of entrepreneur E, the business related external events and meetings often lead to create new weak contacts. However, in the case of entrepreneur C, being in touch with strong relationships (customer) is a part of a business activity that afterward helps in finding new weak ties. Moreover, entrepreneur A finds new weak contacts by meeting different people at social events, which are not a primarily related to business, organized by strong tie network contacts. On the other hand, the entrepreneur D is not a concern in making new weak connections therefore not willing to perform any such activity as a part of normal business routines. Therefore, it is found that majority of the respondents are forming new weak connections through task environment that is by performing activates related to business as highlighted by Koning (2003). But it is also observed that social events and reliance on strong tie also lead to the formation of new ties as seen in the case of entrepreneur A and E highlighted in Table 7 (Elfring & Hulsink, 2007).

5.3.2.2 Experience and career background

In the case of entrepreneur A and E, it is found that, their long working experience of 20 and 7 years respectively and the carrier background help in forming weak tie. These enable to set the base for open discussion and thereby allow to communicate with unknown people in an efficient manner that later on become the part of the weak network. Whereas, the findings of entrepreneur B and C, that exhibits 5 and 2 years of working experience, shed light on the soft skills and give higher importance to one’s motivation, drive and social skills than experience in making linkages to new people which later on can function as a weak tie, see Table 7. In the
case of entrepreneur D, the prior working experience of two years before the creation of his own business occurred to be insufficient in forming the weak ties. Moreover, the weak ties contacts of entrepreneur D are generally the actors on social media, which has been formed by interacting on social media but not majorly on the basis of experience and career background. Thus, it is found that, findings show similarity to Koning (2003) that argued, experience and career background are helpful in forming weak ties for those entrepreneurs who have many years of corporate experience, like in case of A and E as compared to those who exhibit less, like B, C and D. However, in case of D it is analyzed that, in addition to the role of experience, ability of being social also accountable for the creation of weak tie.

5.3.2.3 Networking activities
The empirical findings of case A, B, and C, as depicted in Table 7, show similar patterns of networking activities adopted by the entrepreneurs. The actors are actively involved in participating social and formal events which afterward facilities them in making new connections and simultaneously keeping in touch with existing one (Koning, 2003). Thus, this highlight that respondents are pro-actively involved in networking that enables them to develop their network (Dodd & Patra, 2002; Johannisson, 1996 cited in Koning, 2003). The entrepreneur E also involve in networking activities by attending business related events and meetings, but it shows slight different approach as compared to entrepreneur A, B, and C, which prefer to get to know more about people in an informal way instead of talking about business. On contrary, the entrepreneur D as not being a social player does not spend time on networking with new people rather the focus is on building long term relationship with the existing one. Hence, it is found that all the entrepreneur except D, are involved in developing their network either in a formal and informal way which later on become the source of forming new weak ties (Koning, 2003).

5.3.3 Outcome
5.3.3.1 Transition to strong ties
The empirical findings showed similarity to Dubini and Aldrich (1991) argument cited in Koning (2003), that all the respondents shaped their network of strong ties by knowing more about their weak ties. In all the cases, as can be seen in Table 8, it is found that, the respondents’ strong tie contacts first belonged to weak tie network, that with the passage of time strengthen their relationships either by establishing an environment that created the sense of familiarity among them or by working on a common agenda (Elfring & Hulsink, 2007; Jack, 2005).
It is also observed that the weak tie network of respondents’ does not exhibit any specific boundary that restricts the addition and dropping of weaker contacts as time passes by. They are dispersed in a huge social network and become useful upon linking to them. However, in the case of strong tie network, there is a boundary, based on their efficiency in providing benefits, which leads to add or drop contacts in the network. Thus, it is analyzed that, the weaker contacts only get activated when they are capable of providing benefits and useful resources and thereby are not associated with the matter of adding or dropping as highlighted by Elfring and Hulsink (2007). Whereas, strong tie network, that is taken as granted by the respondents in providing support and resources, get changed with the passage of time depending upon their usefulness in providing resources and benefit to the firm.

5.3.3.2 Network overload

It has been observed from the findings, although all the respondents have a huge number of loosely knit contacts that are widespread in a social network and provide benefits when linked to but at the same time they are not influencing the business in a negative way. It is also found that among respondents, there is a less focus on managing the weaker tie, however, the more consideration is given to the strong relationships, that are serving useful for the business (see Table 8). Thus, it leads to the analysis that all the respondents’ network is not accompanied with the issue of network overload, that demands more time and energy in managing the weak tie relationships. (Kim & Aldrich, 2005 cited in Elfring & Hulsink, 2007)

| Table 8: Cross-case Analysis of Outcome of Weak ties |
|---------------------------------------------|---------------------------------------------|---------------------------------------------|---------------------------------------------|---------------------------------------------|---------------------------------------------|
| **Weak tie network**                       | **Outcome**                                 | **Case A**                                  | **Case B**                                  | **Case C**                                  | **Case D**                                  |
| **Network overload**                       | Weak relationships became stronger due to the presence of common interest | After the establishment of familiar environment weak ties transformed into strong ties | All strong relationships were weaker in beginning | Weak relationships became stronger due to the presence of common interest | Strong relationships were weaker in beginning |
| **Networking activities**                  | Active participation in social and formal events | Active participation in social and formal events | Active participation in social and formal events | No efforts | Participation in business related events and meetings |
6 Conclusion

Social networking seems to play a huge role in influencing the entrepreneurial businesses in terms of resources and information benefits. However, the concept of social networking is perceived by the respondents in more or less the same manner but there are deviations in the adoption of network approaches. Based on the self-interest, some consider social networking as a single side game where the efforts are contributed to making most out of the network contacts in terms of resources and information benefit. Hence, the focus is narrow and goal directed to connect to right people. On the other hand, some embraced social networking as a double-sided game and thereby contributing efforts to benefit each other. Such effective approach relies on mutual collaboration and respect where the focus is to interact with people.

Based on the Granovetter’s (1973) research, that take into account the frequency of interaction and quality of relationship, and Jack (2005) research that highlighted the real value of strong ties only, this study contributes to enhance the understanding of networking, by shedding light on the role of both strong and weak ties, in the following ways.

Concerning the role and significance of strong ties in an entrepreneurial context, it is concluded that strong ties act as a major player in providing quality information and knowledge to the actors embedded in a network. The strong tie network of all the respondents acts as a short cut that enables them with the access of novel and reliable information with less effort and time. Moreover, strong ties not always provide useful information but they also often account for providing information that not up-to-date and incorporates rumors. Furthermore, such strong and close relationships are highly based on trust which increased reliance on one another and makes the information exchange process easier. Alongside, the development of trust also gets positively influenced by societal and cultural norms of Sweden, that is considered one among high trust societies (Viklund, 2003).

Moreover, the argument of Jack (2005) presented in the theory highlights the importance of knowledge and experience in the formation of strong ties. This study has shown that in addition to the knowledge and experience, the personal social skills, motivation, drive, and ambition to be social also plays a big role in the formation of both strong and weak ties.

In addition to the role of strong ties in generating knowledge and information and they also help in linking to the weak tie (Jack, 2005). This study also supports the argumentation and presented that, being in touch with the strong ties lead to the formation of apparently weak ties. Hence, aligned with the Jack (2005) findings, this study also shows an extension to Granovetter’s (1973, 1985) research that has not highlighted the aspect of interconnectivity of strong and weak ties. Moreover, it is presented in the literature that, high reliance on strong ties or friends lead to create the situation of over-embeddedness and lock-ins which afterward inhibit economic performance and the recognition of business development opportunities. Most of this study’s findings reveal that there is a clear understanding among the respondent considering the professional business relation and friendship which later on help them in avoiding getting trapped in the situations. However, this study demonstrates that the reliance on strong connections does not hinder in business development opportunities which contradict with the findings of Jack (2005). Furthermore, strong ties also help in building and maintaining the personal reputation and brand of the company (Jack, 2005). This study shows extension to the Jack (2005) work and demonstrates that, in order run a legitimate business or establish
connections with prestigious organizations and actors, it is highly important to contribute efforts, at first place, in making the business successful that afterwards pave the path to develop association with legitimate institutions and actors.

Considering the significance and role of weak ties, it has been found that they facilitated the free flow of information in a wide social network. It is stated in the theory that redundant contacts are interconnected on contrary to non-redundant that are discounted to each other and hence provide same and distinct information benefit respectively (Burt, 1992).

Although the respondents’ network of weak ties is diverse and comprises of actors belong to different context but as they are operating in a small-town Linköping, so highly interconnected to each other which results in providing repeated information. This finding leads to extend the understanding of redundant and non-redundant contacts in providing same and distinct information benefit respectively as discussed by Burt (1992). It demonstrates that, in addition to the nature of non-redundant contacts, that represents a distinct set of people affiliated with different areas, the aspect of proximity also matters. The closeness and proximity among a different group of people influence the attribute of non-redundant contacts in providing unique information and thereby become the source of providing repeated information.

On the other side, this study’s result also demonstrates that when the weak ties reflect a lack of emotional bonding and trust, then it leads to affect the flow of information process. In such conditions, weak ties will not function to provide information as discussed by Granovetter (1973), Burt (1992) and Riquelme (2013)

Extending the Jack (2005) work concerning the formation of strong ties, this study has incorporated the aspect of weak tie formation. This study supports the (Elfring & Hulsink, 2007) and (Koning, 2003) work that highlighted the role of task environment and experience in the formation of weak ties, respectively. But in addition to these, it has concluded that personal interest in interacting with new people also plays a great role in the formation of weak ties as perceived for strong ties.

Moreover, it is also concluded that persistence of weaker relations for long time period, due to the presence of common interest or other reasons, will transform it into the stronger relation. It is highlighted in the literature that, as the business developed some of weaker ties are dropped because they are not functioning up to the expectations of the entrepreneur (Dubini & Aldrich, 1991cited in Koning, 2003). But this study has shown differences in this concept. According to this study, as weak ties as sleepy relations that represents the crowd of people dispersed in a huge social network and which only functions when asked for, therefore, not associated with consideration of adding in and dropping out from the network. Whereas, the study result showed that, as the business developed, it is strong ties that need to be considered, concerning it's in its inclusion and exclusion from the network, instead of weak ties.

Since, a large number of weak ties are accountable for network overload (Kim & Aldrich, 2005 cited in Elfring & Hulsink, 2007) but if weak tie only works when needed and gained less importance as compared to strong ties, then it will not result in network overload.

This research has highlighted the role of both strong and weak ties of an entrepreneur, embedded in a social network, by analyzing their characteristics, formation, and outcome. It has highlighted that, although weak ties also play their role in providing information and
complementary resources but the social network of entrepreneur mainly functions with the help of strong ties.

The study result can practically be implemented in various context for example by entrepreneurs, by professional academics and other people who are interested in developing their understanding of social networking. However, due to the nature of this study’s findings, which is limited to the small-town Linköping and considered only a few cases, there might be some influence on the aspect of generalization. Hence, for further research, it is recommended to carry out the study by including a large number of cases operating in different areas. Moreover, it would also be worth investigating to verify the result of this studies by adopting the quantitative approach. As, it has been observed that personal interest and drive has a large impact in developing a network, therefore it is suggested for the future research to incorporate the issue of personal motivation and interest in connection with the network development.
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Appendix (1) - Interview Questions

General information

- Name of respondent
- Age of respondent
- Designation
- Name of company
- Established year of company
- Working experience
- Educational experience

Social network of entrepreneur

- How do you define the term social network?
- What is entrepreneur’s network to you?
- Is networking important to you and your business?
- Why and how it is important to you?
- Networking rely on defined goals and objectives that afterwards leads to efficient tie formation or it is like flexible and emerges through mutual efforts?
- Do you engage in building external relationships for the firm? If yes then with whom? And how often?
- What is the driving force that engage you in building network? E.g. what can I get from you or what can we do together.
- Can you explain how you begin with networking during early years of business (strong, weak, new or existing)? And why do you think it is the right approach to begin with?
- At present, what is your approach towards networking search? is it narrow or broad, focus on meeting the right people or new people?
- In general, the network comprises of strong connections and weak connections.
  - What do you think the strong connection is? What characteristics must they possess to hold the notion of strong ties.
  - What do you think the weak connection is? What characteristics must they possess to hold the notion of weak ties.
- When you have given a task to form a connection, to whom do you contact first? Why?
- When dealing with your network contacts do you need to think about monitoring activities to protect from other’s opportunistic behavior? If yes. Which types of connection/ties need these monitoring activities specifically?

Strong ties network

Characteristics

- Who is a part of your strong connection? Do they belong to diverse group of people like (customer, supplier, business partners etc.)?
- How often do you interact with them?
- Is strong tie network useful to you? How?
- Does your strong connection facilitate you learn new knowledge?
  - Which type of knowledge /information is this?
o What is the quality of that information? Is it reliable?

- When you get information from a strong connection, do you recheck or confirm it before using? If yes, why? If no, why?
- Do you discuss new ideas with other individuals? Who are they? And how many? And how often you discuss things?
- Why do you prefer to discuss only with the(se) specific person(s)?
- How far do you think that trust is important in creating strong connections?
- Does your network characterize of any business relation that later on turn into friendship? If yes, then does this transition effect the business in any way? Can you explain in what way?
- Can you relate that due to reliance on these close connections you miss some business development opportunities?

Formation

- Can you explain how this network of strong ties has been created?
- What (actors/institution) help you to develop the network?
- Do you think that your previous experience and career background help you to create strong connections? How?
- What you think about your current close relations, are they enough for your business? If not why? If yes why?
- Do you make any effort to create these relationships? What are these?
- Do you make any effort to maintain these relationships? What are these

Weak ties network

Characteristics

- Who is a part of your weak connection? Is it a diverse group of people belonging to different areas? E.g. Customers, Friends, Suppliers etc.?
- How often do you interact with them?
- Are these weak connections being helpful to your business? In what ways?
- Do they provide any information benefits?
- Which type of information do you receive from these loose connections? Is it the same or distinct?
- What is the quality of that information? Is it reliable?
- There are two views concerning information benefits;
  o The more you interact the more you get new information
  o The more contacts you have the more you get new information
Which one you think is more useful to you? And why?
- Are contacts in your weak network connected to each other either in direct or indirect way? Does this influence on information exchange process?
- Do contacts in your weak connection facilities you to identify new business opportunities? If yes, can you quantify and explain what are they?

Formation

- Can you explain how this network of weak ties has been created? What (actors/institution) help you to develop this network
• Do you think that your previous experience and carrier background help you to create useful connection? How?
• Do normal business routines/activities (task environment) help you to form new weak ties? How?
• Do you make any efforts to maintain these weak relationships? What are they?
• Are there any other activities/platforms that help you to find weak contacts?

**Outcome**

• Is there any difference between the information and knowledge you get from strong ties and weak ties? If yes, what is that?
• Does it influence your own knowledge base? How?
• Concerning complex information and quality information, what types of connection are more useful? Why?
• Do strong ties help you in finding new connections? If yes, how often?
• Have you identified any drawback associated with strong connections? What are they?
• Have you identified any drawback associated with weak connections? What are they?
• Does strong tie connection hinder in business expansion? If yes how?
• Overall, how do you explain your network of weak ties in early business phase and now? Is there any change in contacts, type and quality of information and others?
• Overall, how do you explain your network of strong ties in early business phase and now? Is there any change in contacts, type and quality of information and others?
Appendix (2) – Description of organizations

LIAF
Liaf is a group of eight business angels and entrepreneurs that have diverse experience in the field of IT, medicine technology, finance, security and business development. The group is based in Linköping, Sweden and primarily focus to support start-up companies of Östergötland. (Liaf, 2017)

ALMI
Almi helps in the development of innovators and entrepreneurs by providing advisory services, loans and venture capital. Almi Företagspartner AB is owned by Swedish government. It is a parent company that hold 16 regional subsidiaries under it. The vision of Almi, in general is to promote entrepreneurship throughout Sweden. (Mårdbrant, 2017)

Nulink
Nulink AB (Näringslivsutveckling i Linköping AB) is the business own by Linköping municipality that work with the development and support of the existing and new companies as well as promote entrepreneurship. It also functions as a communication bridge between business and Linköping municipality that encourage positive business. Moreover, Nulink has an advisory board, consisting of entrepreneurs that discuss the role of Nulink in improving the entrepreneurship in Linköping. (Nellmark, 2017)

SMIL
SMIL is a network of entrepreneurs and business professionals of Linköping. It is a knowledge-intensive platform that by organizing different seminars and workshops not only facilitates in the development of its members entrepreneurs’ business but also support in building their network to local or global level. The SMIL activities are conducted in collaboration with the Center for Innovation and Entrepreneurship (CIE) at Linköping University. (SMIL, 2017; Holmér, 2014)

Graphene Flagship
Graphene Flagship is a Europe’s biggest research initiative, funded by European Union. It offers a platform that gathered academic and industrial researchers to find new ways for the practical implication of Graphene material into the European society. (IT Crew, 2016)

Wolfram
Wolfram research founded by Stephen Wolfram in 1987, is a cluster of world’s most reputable computer, web and cloud software companies. This also serves as a junction of scientific and technical innovations. (Wolfram, 2017)