

How external factors impact new venture creation by students in Norway

An exploratory study of student entrepreneurs in
Oslo and Trondheim

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Abstract

This Master Thesis concludes the final semester of my two-year Master of Science in Innovation and Entrepreneurship at the University of Oslo, Norway.

BACKGROUND: Due to falling oil price, Norway is looking towards entrepreneurs to create new jobs and revitalize its economy. In such a scenario, ensuring students take up entrepreneurship as a career is more important than ever before.

OBJECTIVE: The thesis explores literature pertaining to environmental factors which impact new venture creation to understand how those factors impact student entrepreneurs at University of Oslo (UiO) and Norwegian University of Science and Technology (NTNU). Based on the findings, this study recommends ways of boosting entrepreneurship among students studying at various universities in Norway.

METHOD: The methodology framework used in the thesis is of the case study type. This is an exploratory qualitative multi-case study of the impact of environmental factors on student entrepreneurs at UiO and NTNU to draw cross-case conclusions.

RESULTS: Eight qualitative interviews were done wherein three were student entrepreneurs from UiO, four were student entrepreneurs from NTNU and one investor who has worked extensively with student entrepreneurs from several universities across Norway. The interview findings were collated based on the literature reviewed.

CONCLUSIONS: Summaries of findings based on interviews are outlined along with suggestions of topics for further research. The thesis sheds light on how various environmental factors are impacting student entrepreneurs in Norway and outlines implications of these findings for government policy makers, universities and students.

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Chapter 1. Introduction

About a quarter of Norway's GDP is related to oil and gas extraction, and a large share of its petroleum production is exported (Olsen, 2015). The oil and gas industry has played a vital role for the strong growth in its economy over the past 40 years but due to the falling oil prices, the oil industry in Norway has been heavily impacted (Milne, 2015). This has led to higher unemployment as many companies have downsized their workforce to remain profitable. This is a matter of national concern and the Norwegian government has increased its efforts to reduce dependency on the oil industry. In an attempt to create new jobs in other industries, Norwegian government is actively promoting entrepreneurship.

Studies indicate that growth of entrepreneurship requires a suitable entrepreneurial environment. The term 'entrepreneurial environment' refers to a combination of several factors that play a role in the development of entrepreneurship. Empirical studies on the entrepreneurial environments of various countries show that countries that keep rules and regulations at a minimum, offer tax and other incentives, and provide training and counseling services to start-up entrepreneurs increase the likelihood of new venture development (Dana, 1987). Furthermore, factors such as the availability of financial resources, being in large urban areas, and the presence of universities for training and research are also found to be very important in increasing the rate of new venture creations (Pennings, 1982).

Encouraging students to take up entrepreneurship as a career has been an important element in the latest Innovation Plan proposed by Innovation Norway. As per the recent Innovation Plan proposed by Innovation Norway, NOK 25 Million has been allocated to student projects (Nikel, 2015). Research Council of Norway recently launched FORNY StudENT – a program to help students who choose entrepreneurship as a career. One million Norwegian kroner would be given to each student idea selected for this program (FORNY StudENT: Innovasjonsstøtte til studenter, 2016).

Although entrepreneurial aspirations among students remain high (Calderon & Lopez, 2013), they often have their own unique set of challenges. For example, they lack work experience, networks and contacts within the industry and financial resources. All of these factors make student entrepreneurs a higher risk investment for financial institutions. In order to promote entrepreneurship among students, it is imperative to understand the current entrepreneurial environment impacting them. Hence, this study examines how external factors impact new venture creation by students in Norway, and which elements can be improved to foster entrepreneurial growth.

1.1 Motives of Study

Studies have shown that students and graduates have great potential for contributing to economic growth and sustainable development (Hofer & Potter, 2010). Mark Zuckerberg, Bill Gates, Michael Dell and many more students have created companies which have made a huge impact globally. These companies have generated thousands of jobs and helped create a lot of wealth for their local economy. Similar to these successful entrepreneurs, there are many potential student entrepreneurs currently studying at Norwegian universities who could create world class companies. Among the eight public universities in Norway, Norwegian University of Science and Technology (NTNU) has the largest number of student enrollments followed closely by University of Oslo (UiO). Since NTNU and UiO have the most number of students and both offer entrepreneurial education, they have been chosen for this study.

In Norway, there are several nation-wide events for entrepreneurs like Venture Cup, Angel Challenge, Technoport, Startup Extreme, etc which give entrepreneurs much needed exposure and also help motivate other people to become entrepreneurs. Many student entrepreneurs participate in such events and often win various innovation competitions. For example, Flowmotion a student startup from Norwegian University of Science and Technology (NTNU), Trondheim won the Venture Cup 2015 finals (Ricketts, 2015) and also raised 1.1 Million NOK at the Live Crowd-funding Event at Technoport 2016 (Mygland, 2016). Similarly there are other student start-ups which have received funding from private investors and other funding sources. For example, Vio media - a startup created by students from NTNU Trondheim, recently

received funding of NOK 2.8 Million from Kjeller Innovation, Angel Challenge and Innovation Norway (Tobiassen, 2016).

Since 2013, when I arrived in Norway, I have observed that although both UiO and NTNU have similar amount of funding and similar number of student enrollments, there are more student start-ups from NTNU which go on to win Idea competitions, get funding or get selected for various national programs and start-up incubation programs.

For example, every year students across Norway participate in the prestigious Venture Cup Business Plan competition. Following are the details of the winners of Venture Cup for the past 10 years:

Year	Winning Start-up	University
2015	FlowMotion Technologies	NTNU, Trondheim
2014	GlucoSet	NTNU, Trondheim
2013	Aalberg Audio Technology	NTNU, Trondheim
2012	Havtek	NTNU, Trondheim
2011	Hoopla	NTNU, Trondheim
2010	Stadt Aqua Systems	Aalesund University College
2009	CERGIS	NTNU, Trondheim
2008	Vonano	NTNU, Trondheim
2007	Securo	NTNU, Trondheim
2006	DeAmp	NTNU, Trondheim
2005	SquareHead Systems	UiO

Table 1: Winners of Venture Cup Norway

As is evident, student entrepreneurs from NTNU, Trondheim have been much more successful than student entrepreneurs from Oslo. Similarly, although Startup Lab (Norway's largest Technology incubator) is located in Oslo near UiO campus there are currently 9 student start-ups from NTNU and 3 student start-ups from UiO. Due to the close physical proximity of Startup Lab to UiO, one would expect more student entrepreneurs from UiO to be part of Startup Lab, but instead there are more student start-ups from NTNU.

As stated before, both NTNU and UiO have similar amount of funding and comparable number of students enrolled, yet student entrepreneurs from Trondheim (NTNU) seem to be much more successful in establishing award winning start-ups and are often selected into prestigious start-up incubators.

Having closely followed the entrepreneurial community in Oslo and co-founding a couple of start-ups while studying at UiO, I was greatly intrigued by this trend. I wanted to explore it further and understand why student entrepreneurs from one region (Trondheim) were outperforming student entrepreneurs from another region (Oslo). The outcome of this study is intended to help understand how external factors impact new venture creation by students in Norway; which elements could be improved to foster entrepreneurial growth, what are the implications for policy makers, universities, students, etc and what could be the basis of further research in this domain.

1.2 Research Question

The present thesis seeks to contribute to the existing literature on student entrepreneurship in Norway by researching the topic “*How external factors impact new venture creation by students in Norway?*” Although students have a unique set of skills, attitudes and expectations; they also have unique constraints which make their case unique and important to understand. In order to explore the factors impacting new venture creation among students, I would examine the “New Venture Creation Model” proposed by Devi R. Gnywall and Daniel S. Fogel in 1994. This classical entrepreneurship model states that the environment has a strong influence on the survival and growth of new ventures. Students in different parts of the same country could

experience different conditions and these can have significant impact on the rate of survival and growth of start-ups created by students. The present thesis is a qualitative study, which primarily involves interviewing students who have created start-ups during their study at UiO and NTNU or created a start-up in 1-2 years following their study at UiO and NTNU. Apart from interviewing student entrepreneurs, a prominent investor was also interviewed who has worked with student entrepreneur for several years.

1.3 Relevance of Thesis for practitioners and academics

As mentioned earlier in the introduction, this study will contribute towards the increased focus on entrepreneurship among students at various Norwegian universities. The interviews of students and investor will help in understanding the various external factors impacting student entrepreneurs in Trondheim and Oslo. A better understanding of these elements could have a significant impact on the growth of entrepreneurship among students and help create new jobs in Norway. The present thesis could also help identify possible policies and initiatives which could boost student entrepreneurship in various regions of Norway apart from Oslo and Trondheim. The results could also become the basis for further studies on how to increase student entrepreneurship at other Norwegian universities.

1.4 Structure of the Thesis

The following chapter focuses on the literature available on the topics of entrepreneurship, entrepreneurship education and factors influencing new venture creation. Third chapter mentions the research methodologies used within the research paper as well as the method for the data collections along with the reasoning behind them. The fourth chapter includes results of data collection and the analysis of those results. The thesis concludes with a summary of findings; its implications for various entities like policy makers, universities and students, and possibilities of further research to expand the topic of this study.

Chapter 2. Literature Review and Theoretical Framework

Since the main theme of this thesis is student entrepreneurs, this chapter covers an overview of previous research done on the topic of entrepreneurship and entrepreneurship education. It then discusses the “New Venture Creation Model” proposed by Devi R. Gnywall and Daniel S. Fogel in 1994, which talks in detail about the various external and internal factors influencing successful entrepreneurship.

2.1 Entrepreneurship

Different scholars have described “Entrepreneurship” with different definitions. Schumpeter suggested the process of entrepreneurship is the process of innovation which means innovator is entrepreneur. The entrepreneur overcomes imminent contradiction of free market economics through innovation so as to nourish the economic growth. Thus entrepreneurship is innovation (Schumpeter, 1934). Kirzner in 1973 defined entrepreneurship as an activity of exploiting business opportunities by entrepreneurs who do not have any special characteristics; it means the alert discovery of an opportunity caused by alertness to opportunities and arbitrage (Kirzner, 1973).

Ronstadt in 1984 suggested that entrepreneurship is a dynamic process of creating incremental wealth. This wealth is created by individuals who assume major risks in terms of equity, time, and/or career commitment of providing value for a product or service. The product or service itself may or may not be new or unique but the entrepreneur must somehow infuse value by securing and allocating the necessary skills and resources (Ronstadt, 1984). Stevenson, Roberts, and Grousbeck in 1989 suggested entrepreneurship should be a behavior which is driven by perceived opportunity; not be a behavior which is controlled by available resources (Stevenson, Roberts, & Grousbeck, 1989).

Hisrich, Peters, & Shepherd in 2007 suggested that Entrepreneurship is creating something new with value by devoting the necessary time and effort, assuming the accompanying financial, psychic, and social risks, and receiving the resulting rewards of monetary and personal satisfaction and independence (Hisrich, Peters, & Shepherd, 2007).

Although several definitions of entrepreneurship can be found in literature; one of the most popular and accepted definition is "The scholarly examination of how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited (Shane & Venkataraman, 2000)". This definition is used for the current study because it not only talks about the study of sources of opportunities; the processes of discovery, evaluation and exploitation of opportunities, but also about the set of individuals who discover, evaluate and exploit them.

2.2 Entrepreneurship Education

Entrepreneurship is regarded as one of the main driver for the economy and this is resulted in an increased interest in entrepreneurship research, which has steadily increased since 1986 (Peterman & Kennedy, 2003). There are three dimensions of entrepreneurship education (Åmo, 2012) – learning ‘about’, learning ‘for’ and learning ‘through’ entrepreneurship.

While learning ‘about’ entrepreneurship, students are usually given general information about entrepreneurship. It helps students understand what role entrepreneurship has in the society and how entrepreneurship impacts the economy. There are three main dimensions to learning ‘for’ entrepreneurship: business management, decision management and idea development. Hence, while learning ‘for’ entrepreneurship, students are taught subjects like Financial Management, Marketing, Strategy, etc in addition to entrepreneurial skills such as creative thinking, new product development and negotiation (McMullan & Long, 1987). In brief, programs and courses targeting learning ‘for’ entrepreneurship are designed to develop competencies that lead to self-employment and economic self-efficiency (Kirby D. A., 2004). While learning ‘through’ entrepreneurship, students get to ‘practice’ entrepreneurship. Students may acquire a range of both business understanding and transferrable skills or competencies while learning through a

venture creation process (Kirby D. , 2007). Learning through entrepreneurship encourages an active learning style as outlined in Kolb's learning cycle (Kolb, 1984).

2.3 Factors influencing Successful Entrepreneurship

Various theories and models have been developed to explain the complex decision to establish a new venture (Trevelyan, 2011). Unlike personal characteristics of entrepreneurs, entrepreneurial intention can be influenced and directed by various personal and environmental factors such as knowledge, skills, experiences and socioeconomic assistants and barriers (Souitaris, Zerbinati, & Al-Laham, 2007). Baum, Frese, and Baron in 2007 suggested that critical factors influencing entrepreneur's behaviour can be divided into three group variables, which are individual-level factors, group or interpersonal factors, and social-level variables (Baum, Frese, & Baron, 2007).

The individual-level factors mean "factors relating to the experience, skills, motives, cognitions, and characteristics of potential or actual entrepreneurs". The group or interpersonal-factors are "factors involving entrepreneur's relations with other persons, such as their exposure to role models of entrepreneurship and the size and quality of their social networks", while the social-level factors are "those relating to the social, economic, and political environments in which entrepreneurs operate" (Baum, Frese, & Baron, 2007). These group variables can also be considered as two broad dimensions of external and internal influence factors. In the following sections, I discuss critical influential factors pertinent for entrepreneurship of college students.

2.3.1 External Factors

The 'New Venture Creation Model' proposed by Devi R. Gnyawali and Daniel S.Fogel in 1994 states that the environment has a strong influence on the survival and growth of new ventures. Entrepreneurial environment is a combination of factors that play a role in the development of entrepreneurship. First, it refers to the overall economic, socio-cultural and political factors that influence people's willingness and ability to undertake entrepreneurial activities. Second, it

refers to the availability of assistance and support services that facilitate the start-up process (Gnyawali & Fogel, 1994). These factors can be grouped into five dimensions: government policies and procedures, socioeconomic conditions, entrepreneurial and business skills, financial support to business and non-financial support to business.

Government policies and procedures	Entrepreneurial and business skills
Restrictions on imports and exports	Technical and vocational education
Provision of bankruptcy laws	Business education
Entry barriers	Entry barriers
Procedural requirements for registration and licensing	Entrepreneurial training programs
Number of institutions for entrepreneurs to report to	Technical and vocational training programs
Rules and regulations governing entrepreneurial activities	Availability of information
Laws to protect proprietary rights	
Socioeconomic conditions	Financial assistance
Public attitude toward entrepreneurship	Venture capital
Presence of experienced entrepreneurs	Alternative sources of financing
Successful role models	Low-cost loans
Existence of persons with entrepreneurial characteristics	Willingness of financial institutions to finance small entrepreneurs
Recognition of exemplary entrepreneurial performance	Credit guarantee program for start-up enterprises
Proportion of small firms in the population of firms	Competition among financial institutions
Diversity of economic activities	
Extent of economic growth	Non-financial assistance
	Counseling and support services
	Entrepreneurial networks
	Incubator facilities
	Government procurement programs for small businesses
	Tax incentives and exemptions
	Local and international information networks
	Modern transport and communication facilities

Table 2: A framework for entrepreneurial environments (Gnyawali & Fogel, 1994)

2.3.1.1 Government policies and procedures

Governments can influence the market mechanisms and make them function efficiently by removing conditions that create market imperfections and administrative rigidities. They can also create an "enterprise culture" that enables firms to take reasonable risks and seek profits. (Gnyawali & Fogel, 1994). Entrepreneurs may be discouraged to start a business if they have to follow many rules and procedural requirements, if they have to report to many institutions, and if they have to spend more time and money in fulfilling the procedural requirements (Dana, 1987). Among 189 countries, the World Bank ranks Norway 9th for ease of doing business (Ease of doing business index). This vital external factor makes it easier for entrepreneurs to start a business in Norway.

2.3.1.2 Socio-economic conditions

A favorable attitude of the society toward entrepreneurship and a widespread public support for entrepreneurial activities are both needed to motivate people to start a new business (Gnyawali & Fogel, 1994). Socio-economic conditions can have an impact on the remaining four external factors. Relative to the other four external and internal factors, socio-economic conditions is the most macroscopic factor and is not controlled by human, because it was influenced by the macroeconomic situation and cultural traditions (Galloway, Anderson, Brown, & Wilson, 2005). The presence of experienced entrepreneurs and successful entrepreneurial role models in a community or country conveys a message to the potential entrepreneurs that business is an attractive career option (Gnyawali & Fogel, 1994). In a poor economy, chances of getting financial and non-financial assistance usually drop. Similarly, in a struggling economy government policies could significantly alter. With the dropping oil prices, Norwegian government has stepped up its efforts to promote entrepreneurship. This has impacted many existing policies like creation of several new business clusters.

2.3.1.3 Entrepreneurial and business skills

A low level of technical and business skills could prevent motivated entrepreneurs from starting a new venture (Davidsson, 1991). Similarly, unless entrepreneurs are well equipped with technical and business skills, they may not be able to overcome various problems they encounter at different stages of their business development (Gnyawali & Fogel, 1994). Today we are in the midst of a knowledge based economy, where college students can create high growth businesses based solely on their technical innovation. With 44 public and 14 private university colleges in Norway, students have a lot of support in developing their technical and business skills. Several universities in Norway have created programs to encourage entrepreneurship among college students. For example, UiO has a Master in Innovation and Entrepreneurship, NTNU offers a two-year master degree program called School of Entrepreneurship and University of Trømso offers a Master in Business Creation and Entrepreneurship. Similarly there are several other programs which aim at imparting support for students in developing their technical and business skills. Apart from formal support through universities, there are several other channels of support like the iStart program run by the Norsk senter for flerkulturell verdiskaping. This program is specially designed to help immigrants become successful entrepreneurs.

2.3.1.4 Financial assistance

Generally, entrepreneurs require financial assistance for at least one of three purposes: to diversify or spread the start-up risk, to accumulate start-up capital, and to finance growth and expansion (Gnyawali & Fogel, 1994). While availability of financial resources appears to be a major predictor of the frequency of new business start-ups, many lenders seem to be unwilling to invest in high-risk projects or tend to withhold support until the firm has been established successfully (Pennings, 1982).

Innovation Norway is the Norwegian Government's most important instrument for innovation and development of Norwegian enterprises and industry. It has several financial grants for early stage start-ups. For example, Innovation Norway provides start-up grant ranging from 50,000 NOK to 100,000 NOK to perform Premarket evaluation, which includes activities like

conducting customer surveys, testing and development of solutions, networking and competence building. Such a grant is invaluable for student entrepreneurs who are looking to test their business idea. Apart from financial assistance from the Norwegian government, student entrepreneurs can also participate in competitions like the Angel Challenge, which allows entrepreneurs to raise over 1 Million NOK from 20 investors. Apart from these sources, there are several other competitions like the IdeDugnaden, IdePrisen and Inven2Start competitions, which are exclusively aimed at student entrepreneurs.

2.3.1.5 Non-financial assistance

Apart from financial assistance, entrepreneurs also need help with support services like conducting market study, preparing business plans and getting loans. Business incubators can play a major role in providing a variety of services to start-up entrepreneurs (Hoy, Wisniesk, Gatewood, Bryant, & Patel, 1991). As most incubator facilities provide office space, common office facilities, faster and efficient means of communication, and counselling and advisory services to their tenants at low costs, incubators can be very helpful in places where infrastructure is not well developed or where modern physical facilities are costly. In Norway there are several Incubators, Accelerators and co-working spaces, which help entrepreneurs by providing non-financial assistance. For example, Startup Lab based in Oslo provides office space and funding for start-ups. They also provide free office space to students during the summer months. Similarly, Connect is a non-profit business driven membership organization that provides free assistance to entrepreneurs through their Springbrett program.

2.3.2 Internal Factors

Apart from external factors, there are several internal individual factors, which influence entrepreneurship. Individual-level variables play an important role in entrepreneurship and should be included in efforts to develop an accurate and comprehensive model of the entrepreneurial process (Baum, Frese, & Baron, 2007).

In 2007, Baum et al suggested that internal factors for an entrepreneur include capacity of learning and innovation, capacity of indentifying opportunity, capacity of organization and coordination and understanding degree of entrepreneurial knowledge

This study focuses only on students who are actively working on a start-up instead of students who are not sure if they want to create a start-up. Hence, even though the internal factors are critical, they would not be studied as part of this thesis, because by creating a start-up these students have already proven that they fulfill the internal factors needed to pursue entrepreneurship.

To summarize, following factors can affect the new venture creation:

- Government policies and procedures (External Factor)
- Socioeconomic conditions (External Factor)
- Financial assistance (External Factor)
- Non-financial assistance (External Factor)
- Entrepreneurial education and training (External Factor)
- Capacity of learning and innovation (Internal Factor)
- Capacity of indentifying opportunity (Internal Factor)
- Capacity of organization and coordination (Internal Factor)
- Understanding degree of entrepreneurial knowledge (Internal Factor)

Success rate of new venture creation will improve when these factors are fulfilled, and otherwise these could even become barriers to entrepreneurs.

Chapter 3. Research Design and Methodology

Wilson (2010), mentions that research design is a detailed framework or plan that helps to guide through the research process, allowing a greater likelihood of achieving research objectives. As per Wilson (2010), in exploratory research the researcher conducts research into a research problem where there currently exists very little, if any, earlier work to refer to. Hence, where there is a lack of published research and a lack of knowledge about a given topic, then exploratory research is a viable research design (Wilson, 2010). Since prior research on how external factors were impacting new venture creation among student entrepreneurs from UiO and NTNU was not available, an exploratory research design was chosen for this study.

3.1 Research Method

As per Yin (2014), a good research methodology binds the literature, research question and findings to form a solid conclusion. Yin (2014) defines case study research as 'An empirical enquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident'.

Case study approach was chosen for this study because it matches the requirements mentioned by Yin, which are:

1. 'How' or 'Why' questions are being answered
2. The investigator has little control over events
3. The focus is a contemporary phenomenon within a real-life context

For this thesis, I decided to go with qualitative analysis because of the topic chosen and the type of data being extracted. If the research questions had been 'what', then a quantitative study would have been more suited.

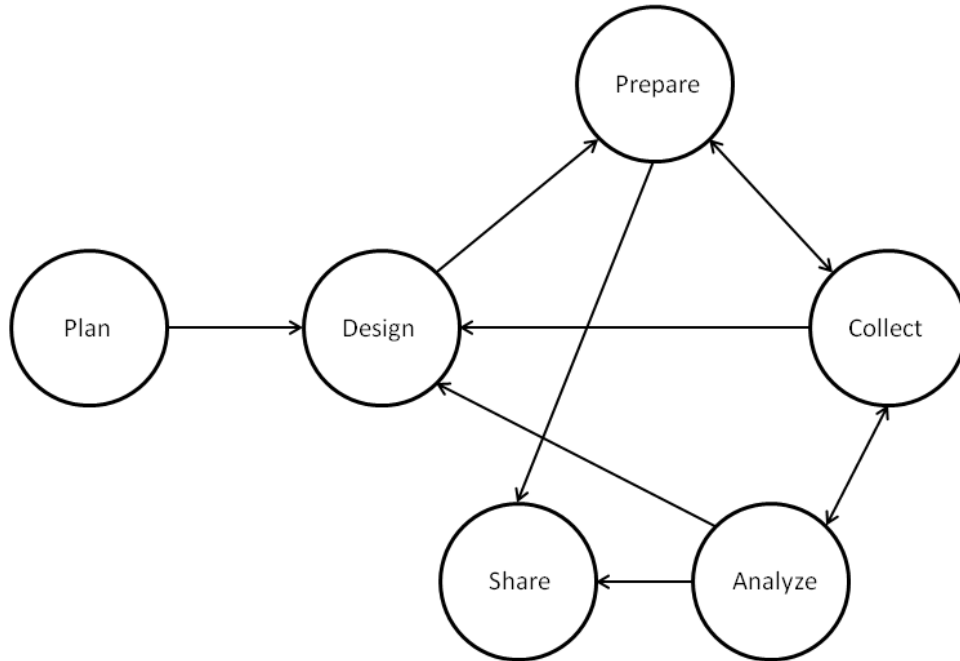


Figure 1. The Case Study Research Process (Yin, 2014)

Among the six sources of evidence that can comprise a case study including documentation, archival records, interviews, direct observations, participant observation, and physical artifacts, Yin (2014) advises to use as many sources of evidence to form a good case study. For this thesis, I have used documentation, interviews and observation.

To improve the quality of a case study, Yin (2014) suggests including:

1. Multiple sources of evidence (converging on the same facts)
2. A Case Study Database (a formal assembly of evidence distinct from the final case study)
3. A chain of evidence (explicit links among the questions asked, data collected and conclusions drawn)

As per Yin (2014), four types of designs for case studies are:

- Type 1: Single-Case (Holistic) design
- Type 2: Single-Case (Embedded) design

- Type 3: Multiple-Case (Holistic) design
- Type 4: Multiple-Case (Embedded) design

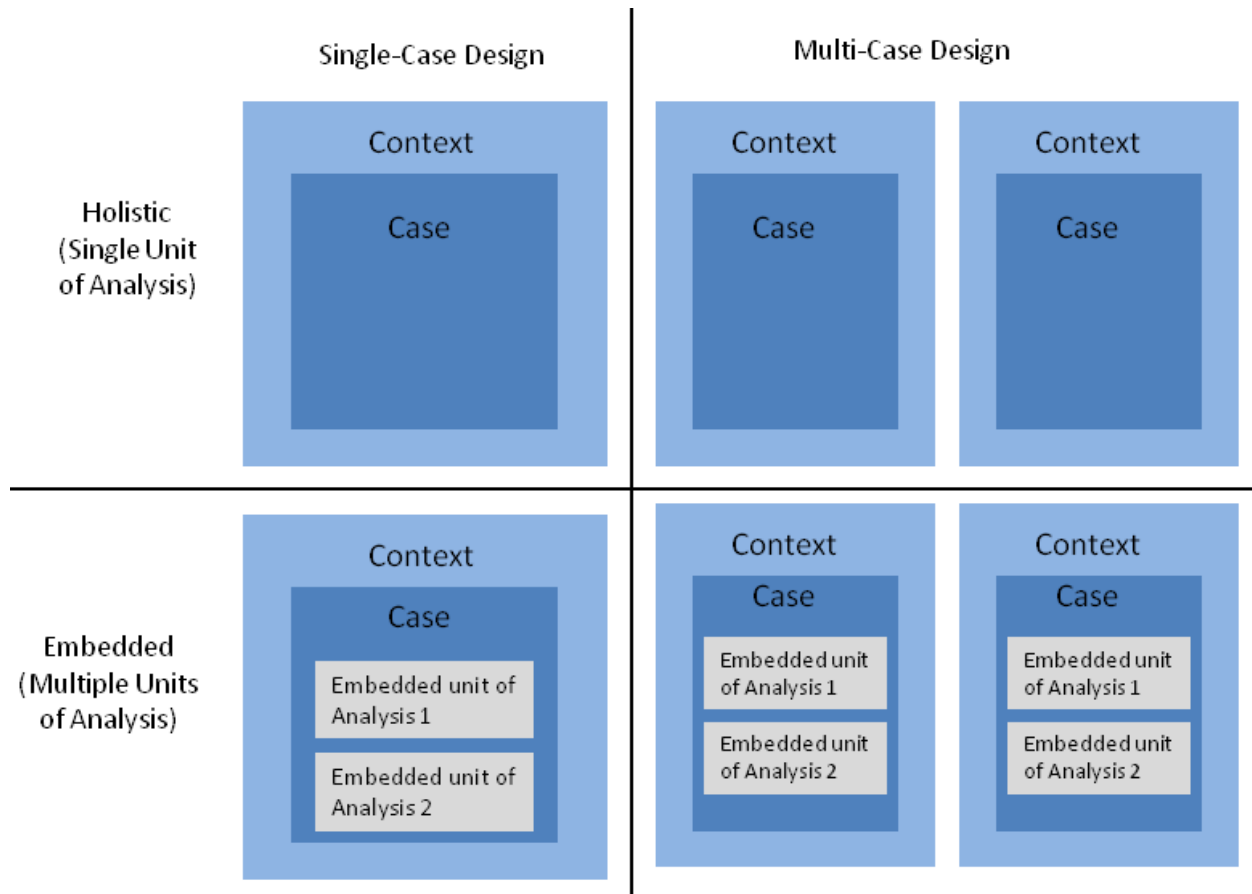


Figure 2. Basic types of design for Case Studies (Yin, 2014)

The context for this study is ‘Student Entrepreneurship’ and it involves comparing two cases (universities) to understand how various external factors of new venture creation impacts students. This study does not include different department, courses, etc within the same university. Hence a multiple-case (Holistic) design was selected for this study. The evidence from multiple cases is often considered more compelling, and the overall study is therefore regarded as being more robust (Herriott & Firestone). Hence, instead of interviewing students

from a single university, students from two of the leading universities in Norway were interviewed.

3.2 Data Collection

For this study, data collection was done through semi-structured interviews. Over a period of 4 weeks, seven student entrepreneurs from UiO and NTNU along with an investor were contacted for a face-to-face meeting. These start-ups were chosen based on several factors including their location (Oslo or Trondheim), presence in business incubator and access to public or private funding. Since the task of collating responses of each interviewee was time consuming, this study was restricted to seven entrepreneurs and an investor to fit the prescribed schedule of the course.

3.2.1 Interviews

The main aim of the interviews was to collect responses from student entrepreneurs pertaining to the various factors responsible for successful venture creations. The interviews were conducted in a semi-structured format so that participants had the flexibility to share information which they felt was important while keeping in bounds of the context of the study. Wilson (2010) suggests that the advantage of verbal communication includes better engagement, recording the conversation for future visits and flexibility of questions to be asked based on responses. There would have been a disadvantage, if the interviewer was a team member of one of the start-ups interviewed but that was not the case for this study.

The interviews were conducted in a conversational manner and the beginning included a brief introduction about the interviewee and the start-up created by them. Based on the responses, the interviews lasted between 45 minutes and one hour. The audio from the interview was recorded and immediately transcribed after the interview to ensure greater recollection and accuracy. This was in accordance with the process for qualitative interviews proposed by (Wilson, 2010), which

includes transcribing data, reading and generating categories or themes, interpreting the findings and writing the report.

3.2.2 Ethics, Reliability and Validity

Since the author is a student at UiO, there is strong case for ethics and reliability. However it is worth noting that none of the interviews were done with students from the author's personal network. All student entrepreneurs selected for the interviews were carefully picked based on the recommendation from supervisor or recommendations from other entrepreneurs. This was done to make sure that the participants were relevant to the study. As per (Wilson, 2010), reliability issues could occur in such cases as the interviewer could have preconceived opinions that could falsely steer the outcome of the interview, resulting in a biased output. To avoid any such bias, interviews and further research was done in an exploratory way and great effort was made to ensure that the data collected was transparent and without bias.

A factor that could impact the reliability of the study is the source of the data (Yin, 2014). To ensure reliability of the data, it was sourced directly from the founders or co-founders of student start-ups through face-to-face interviews, instead of interviewing other students who were part of the start-up but were not part of the founding team. Due to the nature of the data and the topic, the interviewees preferred complete anonymity and release of transcripts only upon prior request and permission. This was agreed upon before the interview to ensure that the responses would be true and this confidentiality has been maintained throughout the thesis research and none of the interview participants or their start-ups have been disclosed.

As per (Yin, 2014), following are the four tests necessary to understand the quality of the case study: internal and external validity, construct and reliability. To adhere to these parameters, the author has used multiple sources of clear evidence (i.e. students and investor). Still it is worth noting that the study was done based on a limited number of participants during a limited time interval. Hence the validity of this study may have to be retested if the number of participants were increased or if the study was done for student entrepreneurs from a different region in Norway.

3.3 Data Analysis

The data obtained through semi-structured interviews was first transcribed. Care was taken to transcribe the verbatim answers from the interviewees to ensure that it does not result in altering the respondent's answers. Although this study uses the New Venture Creation Model proposed by Gnywall and Fogel, a combination of emergent (inductive) and priori (deductive) coding was used to break down the data. This allowed the author to look for specific set of codes while at the same time provided the flexibility to observe any emergent codes.

Chapter 4. Results

The results of this study and its analysis are structured around the external factors impacting new venture creation. This section has a brief background of interviewees who participated in the study and the findings are collated according to the external factors impacting new venture creation to create a summary.

4.1 Interviewee Background

This section gives a brief overview of the student entrepreneurs from UiO and NTNU who were interviewed for this research. All the start-ups are early stage; have received financial help from Innovation Norway (except one start-up); have been founded by students during or immediately after completing their education and all have been part of a business incubator. These start-ups span multiple industries including advertising, renewable energy, media & publication, talent management, EdTech, FinTech and social networking. Out of the seven founders interviewed, three are women and four are men.

Start-up #1

This start-up is creating a mobile application targeting the social networking industry. The founder has studied Law at UiO and also attended Grunderskolen at Singapore. The start-up has

received funding from Innovation Norway and a private investor. They were selected for the prestigious TINC program organized by Innovation Norway and it was also selected to be part of a business incubator (Startup Lab).

Start-up #2

This start-up is creating a web based tool targeting the FinTech industry. The founder has studied Computer Science at UiO and the start-up has received funding from Innovation Norway and several private investors. The start-up was also selected to attend a prestigious accelerator program in US and is currently working at a business incubator (Startup Lab).

Start-up #3

This start-up is creating a web based tool targeting the EdTech industry. The founder is currently studying Computer Science at UiO and the start-up is in the process of applying for funding from Innovation Norway. The start-up already has paying customers and has been selected to be part of a business incubator (Startup Lab).

Start-up #4

This start-up is creating a web based application for the Talent Management industry. The founder has studied psychology, computer science and entrepreneurship at NTNU. The founder has also attended Grunderskolen at Boston. The start-up has received funding from Innovation Norway and has been part of two incubators (Innovasjonssenter Gløshaugen and Startup Lab).

Start-up #5

This start-up is creating a web and mobile application for the media & publication industry. The founder has studied Industrial Economics and Entrepreneurship at NTNU and has also attended Grunderskolen at Boston. The start-up has received funding from Innovation Norway and several private investors. The start-up already has paying customers and has been part of two incubators (Innovasjonssenter Gløshaugen and Startup Lab).

Start-up #6

The start-up has created an innovative product targeting the renewable energy industry. The founder has studied Material Science Technology and Entrepreneurship at NTNU and has attended Grunderskolen at Boston. The start-up has received funding from Innovation Norway, SPARK NTNU, Technoport and NTNU Discovery. The start-up already has paying customers and has been part of two incubators (Innovasjonssenter Gløshaugen and Startup Lab).

Start-up #7

The start-up has created a mobile based application for the advertising industry. The founder has studied Industrial Economics Technology Management at NTNU. The start-up has received funding from Innovation Norway and was selected for the prestigious TINC program by Innovation Norway. The start-up already has paying customers and has been part of two incubators (Innovasjonssenter Gløshaugen and Startup Lab).

Investor

The investor has over a decade of experience working in the industries of Financial Service, Management & IT Consultancy, Payments and Insurance. She has held several senior management positions and is currently mentoring a high growth student start-up as its Executive Chairman. Over the past several years, she has worked with several student entrepreneurs who have been associated with Ungt Entreprenørskap.

4.2 Findings

This section takes each of the external factors impacting new venture creation mentioned earlier and tries to collate the interview responses on the particular topic.

Government policies and procedures

Government policies pertaining to topics such as Restrictions on imports and exports, Provision of bankruptcy laws, Entry barriers, Procedural requirements for registration and licensing, Number of institutions for entrepreneurs to report to, Rules and regulations governing

entrepreneurial activities and Laws to protect proprietary rights can have a significant impact on new venture creation.

While acknowledging that procedural requirements for registration of company has an impact on new venture creation, founder of start-up #1 mentioned that because of her background in law, the process of creating a stock company was easy. Although she remarked that the process seemed ‘too serious’ for a student start-up and felt that there should be a possibility to create some sort of a ‘temporary company’, which could be later converted to a stock company. She mentioned that since most start-ups fail within the first 6-9 months, it seemed unnecessary for student start-ups to create a stock company to begin with.

“There should be something more easy for students. Something like a temporary company that lasts for a few months, which can be later formalized into a company” – **Founder of Start-up #1**

Even though she had participated in Grunderskolen, she was not aware of the possibility of creating a ‘Student Company’ and had created a ‘Stock Company. A similar opinion was shared by founder of start-up #5. She felt company creation was a complicated process and the requirements were the same for a 3 member start-up and a large size organization.

“Company formation is unnecessarily complicated. They do make it a little bit hard for you. They expect the same from a small start-up with three founders who do not take a salary as they do from a large firm, which is completely nonsense” – **Founder of Start-up #5**

Although founder of start-up #2 did not face issues creating a company, he faced issues when he tried transferring money between his companies located in Norway and US. He created a company in US because he got funding from investors there and ever since he has been looking to create a Norwegian subsidiary company, so that he could transfer the funds for product development in Norway, but process has been a ‘disaster’. He has spoken to lawyers and accountants but still has been unable to solve the problem. He feels this process is cumbersome making it difficult for student start-ups to target US investors for funding and eventual company

creation in US. Founders of start-up# 4 and start-up #7 raised the topic of templates provided to students for creating companies.

While acknowledging that procedural requirements for creating a company are an important factor in venture creation, founder of start-up #4 mentioned that he would have faced difficulty if he did not get templates for share holder agreement and similar documents from the department where he studied at NTNU. These documents were pre-approved by lawyers, so he thought they were very helpful for student entrepreneurs looking to create a company.

“It would have been difficult if we did not have the templates from senior students. The entire batch shares a Google drive, which has all kinds of legal templates. They are all pre-approved by lawyers connected to the School of Entrepreneurship. So, it all works” – Founder of Start-up #4

Founder of start-up #7 was of the opinion that such templates were not always helpful. He mentioned that the templates provided by the School of Entrepreneurship for company formation, share holder agreement, etc were not good and had caused issues for several student start-ups at NTNU. He found the process of creating a company to be easy because one of his relative was a lawyer.

“It is not a problem at all to create the company and do the registration. What is complicated is to have a good share holder agreement. That is where we should have got help. That is a part where NTNU as an institution can help start-ups much more and the School of Entrepreneurship specifically” – Founder of Start-up #7

The investor while acknowledging that government policies and procedures have an impact on new venture creation mentioned that Norwegian government should take an entrepreneurial approach, similar to what London did in 2010 when financial crisis hit the city. She felt the government should fix tax regulations so that stock options program can be implemented properly by student start-ups in Norway. She also felt that Norwegian government should

communicate outside Nordics that Norway has talent and also look to reducing barriers for entry of foreign talent and investors.

“It is about implementing regulations like taxes which incentivise. Here in Norway we are so afraid of some people getting rich that the stock options program cannot be implemented in the best way. It is also about communicating outside the Nordics that we are outstanding. Please come here with talent, companies and investors” - Investor

Socioeconomic conditions

As per literature, socio-economic factors such as Public attitude toward entrepreneurship, Presence of experienced entrepreneurs, Successful role models, Existence of persons with entrepreneurial characteristics, Recognition of exemplary entrepreneurial performance, Proportion of small firms in the population of firms, Diversity of economic activities and Extent of economic growth often have an impact on new venture creation.

During the interview, founder of start-up #1 mentioned that she did not find role models in Oslo and listened to TED talks and Podcasts for inspiration. She felt that it was frustrating that many people in Norway did not understand when she introduced herself as an entrepreneur, while it was completely different when she visited California during the TINC program.

“Entrepreneurs are starting to get recognition. It started like a year ago. It is still not a lot of recognition. People don’t understand the situation of being an entrepreneur, which is a little bit frustrating but it is something you have to deal with in Norway. It was completely different when I was in Silicon Valley” – Founder of start-up #1

Founder of start-up #3 also expressed a similar opinion as founder of start-up #1. He thought Norway does not make icons of successful entrepreneurs, unlike Sweden. He felt Norway was still stuck with celebrities like ‘Justin Bieber’.

“In Norway there are not many entrepreneurs to look up to. That’s a bold statement but you don’t make icons out of entrepreneurs in Norway. I know that they do it in Sweden, like the guy who started Spotify are like rockstars in Sweden. In Norway we don’t do that. In Sweden kids look up to Mark Zuckerberg, but in Norway we are still stuck in the Justin Bieber era” –

Founder of start-up #3

Although he continued to mention that the Norwegian market was not hostile and it was easy for student start-ups to get noticed. On the topic of socioeconomic conditions, founder of start-up #4 stated that the word ‘Entrepreneur’ is associated with construction in Norway. So people get confused when he introduces himself as an entrepreneur, hence he often use the term ‘Grunder’ to introduce himself.

Founder of start-up #6 too had experienced the impact of socioeconomic conditions. He mentioned that it was a ‘cultural thing’ in Norway that students preferred to become consultants rather than become entrepreneurs. In his entire batch of 100 students, only 2 students got together to form a start-up. As per him, even though socioeconomic conditions were having a negative impact on new venture creation among students in Norway, he felt that if entrepreneurs came to deliver talks to students at the university, more students might become entrepreneurs.

Following a similar trend as the student entrepreneurs, the investor also expressed her dissatisfaction over the negative impact of socioeconomic conditions on venture creation among students in Norway. She mentioned that everyone in Silicon Valley is treated like a hero, while instead in Norway soccer players are treated as rockstars. She felt that this attitude is slowly changing and media is now giving importance to entrepreneurs. She believed that giving importance to entrepreneurs would change the current culture of students looking for a job after studies instead of starting their own company. She also thought that in a society like Norway, which is wealthy and healthy, there is no 'need' to become an entrepreneur. So there has to be a drive to become an entrepreneur, which she believes will come with recognition. She thought previously not a lot of entrepreneurial activities used to happen in Oslo, but now downtown Oslo is thriving with entrepreneurial activities.

Entrepreneurial education and training

Literature suggests that entrepreneurial education involving technical and vocational education, Business education, Entrepreneurial training programs, Technical and vocational training programs and Availability of information have an impact on new venture creation.

Acknowledging the positive impact of entrepreneurial education on new venture creation among students, founder of start-up#1 mentioned that if she experienced an entrepreneurial program like Grunderskolen earlier, she would have become an entrepreneur earlier. She also felt that training for business skills was lacking at UiO and felt that UiO did not encourage students to think of starting a company. She also thinks that students interested in becoming entrepreneurs should be given an 'extra push' by the university.

“I think the University of Oslo does not even encourage students to think about starting a company. They are just like go to our lectures, take our exams. I have no feeling that the university is encouraging students to learn about entrepreneurship or do a start-up. I think UiO should look at NTNU and National University Singapore for inspiration and it should wake up because it is not the 18th century” – Founder of start-up #1

During the interview, founder of start-up #2 expressed his dissatisfaction at the level of entrepreneurial education available at UiO. He said that he had taken an introductory course to entrepreneurship at UiO, but he felt that it was not very helpful as it was quite theoretical. As per him, if there had been more activities around entrepreneurship at UiO, he might have created his start-up sooner. He thought that the activities intended to promote entrepreneurship among students should be more than a business plan competition, which currently happens at UiO. He also thought that UiO should introduce programs around the topic of building products because something like that would be very helpful to student entrepreneurs. He also mentioned that during his study at UiO, he did not meet any alumni from his department (Informatics), who had started a company but he felt that it would have helped him create a start-up because an alumni would have understood the context better.

Founder of start-up #3 also expressed a similar view as founder of start-up #2. He thought that courses taught at colleges in UiO are more theoretical and old fashioned and it was much easier to learn 'as you go'. He was of the opinion that having hackathons at UiO might be a good idea to motivate entrepreneurship among students at UiO. He felt that UiO is not interested in students creating start-ups; instead he felt that the university encouraged students to pursue 'research' as a career.

“I don't think that University of Oslo is interested in making people go out and start their own business. They are actually more interested in keeping the students there doing research” –

Founder of start-up #3

During the interview, founder of start-up #4 said that at the School of Entrepreneurship at NTNU, the courses are designed in such a way that it promotes students to work on an idea. He felt that this was required to promote entrepreneurship among students studying at the School of Entrepreneurship, NTNU. He mentioned that while participating in the Grunderskolen program, he got a chance to work on his idea, while students from UiO had to work for free as interns for other companies. He felt that this was a huge difference and facilitated his path to becoming a full-time entrepreneur.

“Students from NTNU, when they go to Boston for Grunderskolen, they get to bring their start-ups and work on that during summer but the UiO students have to work in start-ups which are over there as interns for free. So at the end of the summer we have 2 months of hard work on our own start-up and hopefully a lot of progress while they have something to write on their resume”

– Founder of start-up #4

He also thought that the Alumni network at the School of Entrepreneurship was very helpful in the initial stages of new venture creation. Although he seemed satisfied with the program structure at the School of Entrepreneurship at NTNU, he was of the opinion that Case-based format of study followed at Boston during Grunderskolen was much more effective than what

was being practiced at the School of Entrepreneurship. He felt that students should be made to write less business plans and more case based learning should be encouraged. He was also of the opinion that entrepreneurship based courses should be introduced as early as possible for students to increase their chances of taking up entrepreneurship as a career.

“Case study based learning was very helpful. First of all it was super valuable to see how strange the road to success is. It is not smooth sailing and seeing how far it is from smooth sailing for the guys who have achieved success is very valuable” – **Founder of start-up #4**

Talking about the importance of availability of information, founder of start-up #5 mentioned that the activities done by students like putting up kiosks around the university campus and travelling to other universities to spread information about the entrepreneurship program was very effective. She too got a lot of help from the Alumni at the School of Entrepreneurship during the initial stage of her start-up. Founder of start-up #6 felt that professors abroad (like in Boston during Grunderskolen) had more hands-on experience, while professors in Norway have only studied the topic and not created start-ups. She felt this was the reason why she learned so much more during her stay at Boston for the Grunderskolen program.

“Professors here are more academic focussed and have not started companies, but while we were in Boston the professors there have more hands-on experience. They have started companies themselves, while in Norway it is kind of a challenge that not many professors have started a business themselves” – **Founder of start-up #6**

During the interview, the investor mentioned that to promote entrepreneurship among students, classes pertaining to business should be introduced at various colleges irrespective of the program specialization. So even if a student is studying law, they should have the possibility to combine courses in business as part of the curriculum. She also thought that students should be taught to code very early on in their studies. She also mentioned that there should be coaching for niche industry skills. For example, since FinTech and MedTech are so complex industries, it

is important to develop talent specific to these industries. She also feels that Intellectual Protection (IP) studies should be promoted to help students protect their business ideas. She feels that large companies should also co-operate with students and create more spin-offs.

Financial assistance

As per literature, financial assistance in the form of Venture capital, Alternative sources of financing, Low-cost loans, Willingness of financial institutions to finance small entrepreneurs, Credit guarantee program for start-up enterprises and Competition among financial institutions have an impact on new venture creation.

On the topic of financial assistance, founder of start-up #1 mentioned that it was not too difficult to get money from Innovation Norway but during her interaction with them, she did not experience them as a team player and a supporter. She felt that the application process was a lot of hassle and there was no good way to communicate with them.

“It was not too difficult to get money from Innovation Norway, but I did not experience them as a team player and a supporter. We felt that it was a lot of hassle and no good way to communicate with them” – Founder start-up #1

She felt that there was a lack of alternate sources of financing apart from Innovation Norway. She needed early stage investment but all the signals she got was that it was impossible to get money from any place else other than Innovation Norway. Founder of start-up #2 thought that Innovation Norway as a source of financing was not very helpful. He felt that the application form was very backward since it did not have any focus on the founder while other investors were solely focussed on him as the founder.

“I did not find Innovation Norway to be very helpful. The application form was very backwards. It required me to explain my idea in a way which was not natural. It did not have a focus on me

as a founder, which I found to be bizarre given the fact that the investors I interacted with were solely interested in me as a founder” – Founder of start-up #2

On the topic of alternate sources of financing, founder of start-up #4 felt that Lånekassen was a big help for student entrepreneurs because it provided funds necessary for students to survive and allowed them to focus on their start-up without having to worry about working part-time to support themselves. He was of the opinion that Innovation Norway gave a lot of focus on the business and very little focus on the team while reviewing the grant application. He felt that the processing time for grant application by Innovation Norway was slow. During the interview, founder of start-up #5 stated that there is a lot more assistance from Innovation Norway in Trondheim than Innovation Norway in Oslo. She thought that probably because there is less demand for Innovation Norway assistance in Trondheim, student start-ups get more assistance there as compared to Oslo.

On the topic of willingness of financial institutions to help start-ups, founder of start-up #6 felt that Innovation Norway at Trondheim was easier to work with and communication was faster as compared to Innovation Norway at Oslo. She also thought that the process of applying and receiving grant would be easier if there was less reporting needed.

“We had a very good experience working with Innovation Norway because I spent time having a good relation with them. Maybe Innovation Norway in Trondheim is easier to work with. It would have been easier if there was less reporting needed” – Founder of start-up #6

Her business partner located in US thought that Norwegian Venture Capitalists demanded a lot more equity from start-ups for the money they invest. Founder of start-up #7 felt that he used to have a great dialogue with Innovation Norway in Trondheim but he felt that Innovation Norway in Oslo was not co-operative and didn't want to meet them.

As a source of funding, the investor thought Innovation Norway was doing a good job for providing funding at the initial stage but she felt that student start-ups in Norway do not have access to enough financial resources to overcome the 'death valley' - A phrase used in venture

capital to refer to the period of time from when a start-up firm receives an initial capital contribution to when it begins generating revenues. On the topic of alternate sources of funding, she felt that there was a need to educate investors in Norway because she thought there was enough funding available with people who have previously been involved with fishing and Oil & Gas industries but that money is usually put into other industries like real estate.

Non-financial assistance

Literature indicates that non-financial assistance such as Counseling and support services, Entrepreneurial networks, Incubator facilities, Government procurement programs for small businesses, Tax incentives and exemptions, Local and international information networks, Modern transport and communication facilities can impact new venture creation.

On the topic of incubator facilities, founder of start-up #1 mentioned that although she had access to an incubator (Startup Lab) it did not feel like a welcoming place. She thought that an incubator just for students would have helped her much more because she would not have felt intimidated by presence of large companies as was in the case of Startup Lab. She felt that having a separate work place was nice because it was hard to separate yourself from a start-up. She also felt that being in an incubator gave them credibility and also a motivation to be successful. On the topic of counseling and support services, she felt that the TINC program from Innovation Norway was helpful and was of the opinion that something similar within Norway would have still been beneficial.

“An incubator just for early stage student entrepreneurs would have helped much more because then we would not have felt that we are the only babies because in Startup Lab there are more mature companies, who seem to have everything figured out” – Founder of start-up #1

Founder of start-up #3 felt that being in an incubator gave them credibility and felt that an incubator with companies in different stages was helpful. He mentioned that he felt more confident working at an incubator and being in an incubator gave him more resources. He was of

the opinion that without being in an incubator he would have a stronger feeling of insecurity. He felt that events organized by different incubators and co-working places like Mesh, Startup Lab, 657, etc helped him know about things he should not do as a founder.

“Working in an incubator like Startup Lab is like a seal of approval. We have more structure and resources available now, which really helps. Had it not been there, we would have a stronger feeling of uncertainty” – **Founder of start-up #3**

On the topic of incubator facilities, founder of start-up #4 thought that the size of an incubator could prohibit a 'family' atmosphere. He thought that incubators should be smaller in size or split up in industry verticals and mentors at the incubators should follow up more often with the start-ups. Although counseling and support services in the form of Connect Norge exists, he never heard about it.

Founder of start-up #5 felt that being in an incubator like Startup Lab gave her access to an entrepreneur network and other start-ups at similar stage. She felt that being in an incubator helped them get credibility, so it was easier seeking contacts. She thought that Angel Challenge (a start-up investment program) was helpful. She too never heard about Connect Norge.

“Being in an incubator like Startup Lab helped us reach out to other start-ups in the similar stage. Also the staff there was very knowledgeable. So it was a very good place for us to start” – **Founder of start-up #5**

On the topic of incubator facilities, founder of start-up #6 felt that the incubator Startup Lab was too expensive for them since it provided a package which included access to printers, accountants, lawyers, etc while they only needed a place to sit. She felt that an incubator with a different business model, like the one at the School of Entrepreneurship (NTNU) would be nice for student entrepreneurs who lack resources.

“We would have liked an incubator with a different business model that was not too formal or that many advisors. Just a place to sit and share experiences with other entrepreneurs, so that you can cut down the cost and just pay for an office space” – Founder of start-up #6

On the topic of counseling and support services, she thought that Technoport (a membership based organization in Trondheim) was helpful. She also mentioned that Innovation Norway has a mentor program, which was helpful for her. She knew about Connect Norge and had participated in 'Investor Day' organized by it. On the topic of incubator facilities, founder of start-up #7 felt that having a mix of companies at various stages of growth was important for an incubator. He also felt that it would be helpful to have someone in the incubator, who would challenge founders weekly and keep them on track. He feels that being in an incubator was important and not sitting at a cafe or house working on the idea. On the topic of counseling and support services, he mentioned that he had heard about Connect Norge but not in detail.

The foregoing sections collated the interview responses based Gnyawali and Fogel's (1994) conceptual framework which uses five dimensions: (1) financial assistance; (2) non-financial assistance; (3) entrepreneurial and business skills; (4) socioeconomic conditions; and (5) policies and procedures for entrepreneurial activities. Although most responses given by student entrepreneurs could be collated based on the framework, there were some which did not fit. For example, founder of Start-up #3 thought that a strong student community would help in bringing students closer and will create a possibility of them co-founding start-ups. In his opinion, the UKA student festival organized by students at NTNU does this and students organizing the festival often end up creating start-ups. This was also reiterated by founder of Start-up #7. Similarly, founder of start-up #4 commented that the School of Entrepreneurship at NTNU tried to get students from all over Norway to join the program, which often resulted in several students joining the course who are not from Trondheim. This forced students to go out of their existing friend network and build new relationships, which he believes was helpful in finding co-founders and creating new ventures.

Chapter 5. Conclusions

This section summarizes the finding from the results and analysis section and also discusses the possibilities that can expand the scope and understanding of the research topic with further research.

5.1 Summary of Findings

External Factor 1: Government policies and procedures

Literature review indicates that entrepreneurs may be discouraged to start a business if they have to follow many rules and procedural requirements, if they have to report to many institutions, and if they have to spend more time and money in fulfilling the procedural requirements. The summary of the results from the interviews leans towards acknowledging that an easy company registration process in Norway helped to reduce the barrier in new venture creation among student entrepreneurs.

All of the seven student entrepreneurs interviewed were of the opinion that the procedure to create a company in Norway was easy and it did not negatively impact their decision to proceed with their entrepreneurial venture. Although some entrepreneurs did comment on how they thought government policies and procedure could make it even easier for student entrepreneurs to get started with creating their own company. They believed creating a special class of companies for 'start-ups' or 'student start-ups', requiring less legal formalities would encourage more students to become entrepreneurs. They thought creating accurate legal documents with limited experience and knowledge of law was a barrier for student entrepreneurs. They were of the opinion that providing students with templates of legal documents such as share holder agreement or cheaper access to lawyers, who could help create such documents, would have a positive impact on new venture creation among student entrepreneurs.

Improving tax regulation associated with the stock option program was also suggested as a way of increasing the rate of new venture creation among students in Norway, since such a change would help student entrepreneurs attract talent with limited funding.

External Factor 2: Socioeconomic conditions

As per literature review, factors such as Public attitude toward entrepreneurship, Presence of experienced entrepreneurs, Successful role models, Existence of persons with entrepreneurial characteristics, Recognition of exemplary entrepreneurial performance, Proportion of small firms in the population of firms, Diversity of economic activities and Extent of economic growth have a significant impact on new venture creation. The summary of the results from the interviews strongly corroborated this view.

During the interviews, student entrepreneurs expressed frustration about low levels of recognition offered by society and felt that giving more recognition and even treating entrepreneurs as celebrities would help encourage students to take up entrepreneurship as a career choice. Although there was general agreement that this trend is changing and they felt that media nowadays was giving much more importance to the topic of entrepreneurship and were more open to talk about entrepreneurs. The interviewees also agreed that there is a cultural bias towards taking up 'safe' jobs in Norway and in a relatively wealthy society like Norway, there was no 'need' to become an entrepreneur and this was having a negative impact on the growth of entrepreneurship among students. It was indicated that due to societal expectations students enrolling in colleges were much more inclined to become consultants instead of becoming entrepreneurs.

External Factor 3: Entrepreneurial and business skills

As per literature review, low level of technical and business skills could prevent motivated entrepreneurs from starting a new venture and unless entrepreneurs are well equipped with technical and business skills, they may not be able to overcome various problems they encounter at different stages of their business development. The summary of the results from the interviews stands conflicted about low level of technical and business skills preventing motivated entrepreneurs from starting a new venture.

Three out of seven student entrepreneurs interviewed for this study indicated that even though they did not have any formal education in business, they felt comfortable in becoming an entrepreneur. These three entrepreneurs possessed high technical skills and did not think that the lack of business skills would prevent them from starting a new venture. This raises couple of interesting questions – *Is knowledge of Technical and Business skills equally important for early stage student entrepreneurs? Or is knowledge of Technical skills more important for early stage student entrepreneurs?* This might be a possible topic for further research to understand if lack of high levels of business skills could prevent motivated entrepreneurs from starting a new venture or it is not as important a factor as compared to a high level of technical skills.

Although not directly related to technical and business skills, there were several factors related to entrepreneurial education and support from universities, which the interviewees thought would have a big impact on students creating new ventures. These included early exposure to entrepreneurial courses like Grunderskolen, introduction of programming courses early in the curriculum, industry specific (like FinTech, MedTech, etc) training, promoting entrepreneurial activities in universities which are more than just business plan competitions. Suggestions also included change in teaching style from a ‘theory based’ to a ‘case based’ approach, as well as recruiting teachers who had real-life entrepreneurial experience as opposed to those who had a more theoretical approach to entrepreneurship.

External Factor 4: Financial Assistance

As per literature review, availability of financial resources such as Venture capital, Alternative sources of financing, Low-cost loans, Willingness of financial institutions to finance small entrepreneurs, Credit guarantee program for start-up enterprises and Competition among financial institutions are a major predictor of the frequency of new business start-ups. The summary of the results from the interviews leans towards acknowledging that availability of financial assistance positively impacts new venture creation among student entrepreneurs in Norway.

During the interviews, entrepreneurs from NTNU acknowledged that student start-ups there get access to a number of early stage investment funds like NTNU Discovery, NTNU Spark and Innovation Norway. On the contrary student entrepreneurs from UiO did not get access to such kind of financial assistance except for Innovation Norway. Even though Innovation Norway provides funding for early stage entrepreneurs all over Norway, during the interviews it was revealed that student entrepreneurs from different parts of the country have a different experience working with them. Student entrepreneurs from Trondheim mentioned that they get a lot of assistance form Innovation Norway office in Trondheim, while they had faced a lot of frustration when they tried working with Innovation Norway office at Oslo. Since Innovation Norway is one of the largest sources of financial assistance to early stage student start-ups, this has major implications in promoting entrepreneurship among student entrepreneurs across Norway. Although not meant for the purpose of promoting student entrepreneurship, Lånekassen (a student loan provided by Norwegian government) seems to have a big impact on student entrepreneurs because it gives a certain degree of financial security allowing them to single-mindedly focus on their start-ups instead of worrying about earning to support their basic requirements. A common concern shared by student entrepreneurs and investor was the unavailability of funds for student start-ups during the “death valley” – A phrase used in venture capital to refer to the period of time from when a start-up firm receives an initial capital contribution to when it begins generating revenues. Both student entrepreneurs and investor were of the opinion that there were many private investors in Norway but they are not looking to put their money into funding start-ups due to several reasons. Getting such private investors to invest in start-ups could have a significant impact on the rate of new venture creation among student entrepreneurs and also help improve their chances of survival.

External Factor 5: Non-Financial Assistance

As per literature review, non-financial assistance in the form of Counseling and support services, Entrepreneurial networks, Incubator facilities, Government procurement programs for small businesses, Tax incentives and exemptions, Local and international information networks and Modern transport and communication facilities play a major role in increasing the rate of new venture creation.

The summary of the results from the interviews indicates that access to a business incubator was one of the most important forms of non-financial assistance for student entrepreneurs. All student entrepreneurs agreed that being part of a business incubator helped them in several ways. It increased their network within the entrepreneurial community, it helped increase their credibility which in turn helped them get noticed and raise money. Being around successful start-ups at a business incubator also gave them motivation to work harder. Although student entrepreneurs agreed on the importance and benefits of the business incubators, they felt there was a lot of scope for improvement in the current business incubators available for students. For example, some felt that the current business incubators were too costly for student entrepreneurs, while others felt that the business incubator in Oslo lacked a 'community' feeling as compared to the incubator in Trondheim. Apart from access to business incubators, the interviews indicated that expanding programs like TINC and Angel Challenge would help increase new venture creation among student entrepreneurs. The interviews also indicated that not enough was being done to promote the presence of organizations like CONNECT Norge, which helps entrepreneurs reach out to possible mentors and investors.

Even though most responses from student entrepreneurs were aligned with Gnyawali and Fogel's (1994) conceptual framework, this study seems to indicate that if this framework is used to examine factors influencing new venture creation among students, it needs to be expanded to include the degree of student activities at colleges. This study indicates that a strongly knit student community seems to positively impact the rate of new venture creation among student entrepreneurs and should be added to the existing five dimensions suggested by Gnyawali and Fogel.

5.2 Implications of this study

The findings of this study have implications for several stakeholders like government policy makers, universities and students.

5.2.1 Implications for Universities

This study suggests that much more needs to be done by universities in Norway to promote entrepreneurship among students. Following are the key implications for universities based on this study:

- Student entrepreneurs from NTNU who were interviewed for this study were all of the opinion that being able to work on their own start-up while participating in Grunderskolen was important for their success. This study recommends that other universities who participate in the Grunderskolen program but do not allow students to work on their own start-up (including UiO), need to reconsider their program structure.
- This study suggests that a closely knit student community at NTNU is helpful in bringing together students with diverse backgrounds, which in turn is helpful for creation of start-ups. So, it is recommended that universities like UiO, which lack a closely knit student community, needs to actively look into developing such a community.
- As per this study, entrepreneurial activities in universities like NTNU helped motivate its students to become entrepreneurs. So, it is recommended that universities who are currently not promoting entrepreneurial activities like hackathons and business plan competitions, need to start doing so.
- Student entrepreneurs from NTNU indicated that being part of a business incubator helped them in the process of new venture creation. The ‘New Venture Creation Model’ proposed by Devi R. Gnyawali and Daniel S. Fogel also indicates that non-financial assistance like incubator facilities help in new venture creation. Hence this study recommends that universities like UiO, which does not have a business incubator, needs to create a business incubator for its students or arrange cheap/free access to external business incubators to encourage new venture creation among its students.
- As per this study, students from School of Entrepreneurship at NTNU said that their program structure which focused on new venture creation was very helpful in their effort to create a start-up. This study recommends that universities like UiO which provide

entrepreneurial education, need to look into restructuring their program structure to provide similar assistance to students looking to create new ventures.

- Student entrepreneurs from the School of Entrepreneurship, NTNU indicated that they received a lot of help from their college alumni, which was important in the early stages of their start-up. This study recommends that universities looking to promote entrepreneurship like UiO, need to look into ways to engaging their alumni to help their students create new ventures.
- As per this study, student organizations like SPARK at NTNU are helpful in creating awareness about entrepreneurship among students, in providing early stage funding and providing free consultation to other student entrepreneurs. This study recommends creating such organizations in other universities which are looking to promote entrepreneurship among its students.
- As per this study, student entrepreneurs at NTNU who received help preparing legal documents, considered it to be important for the process of new venture creation. Literature also indicates that non-financial assistance like counseling and support services help in new venture creation. Since students cannot afford costly legal help while creating start-ups, this study suggests that universities providing entrepreneurial education need to take measures to provide students access to free or cheap legal help, which is needed to draft legal documents like share holder agreements, non-disclosure agreements, Intellectual Protection, etc.

5.2.2 Implications for Government Policy Makers

This study indicates that there are several areas of improvement for policy makers in Norway.

Following are the key implications:

- As per this study, student entrepreneurs in Oslo do not get the same level of assistance from Innovation Norway as student entrepreneurs in Trondheim. Since both literature and this study indicates that financial assistance has a positive impact on new venture creation, policy makers need to take measures so that student entrepreneurs from different parts of the country get the same level of service from Innovation Norway.

Policy makers need to understand why the level of service is different and then take measures to resolve it.

5.2.3 Implications for Students

Students looking to pursue entrepreneurship education need to be aware of several factors, which can impact their chances of creating a start-up. Following are the implications for students:

- This study indicates that entrepreneurial programs offered by universities in Norway have different areas of focus. Some programs like the one at School of Entrepreneurship, NTNU are structured to encourage students to create start-ups, while programs at other universities are not. Hence, this study recommends students to learn more about the program's focus before joining it.
- As per this study, funding opportunities for student entrepreneurs are better at NTNU, Trondheim than UiO, Oslo. Since financial assistance is crucial to new venture creation, this study recommends students to consider this vital factor while deciding on their program of study.
- Student entrepreneurs interviewed for this study stated that School of Entrepreneurship at NTNU has a large and engaged alumni network, which is very helpful for new venture creation. Hence, this study recommends that students looking to choose their program of study, need to consider this vital factor.

5.3 Further Research

This section aims to expand the possibilities within this research that could lead to more in-depth analysis or even lead to a new research topic on its own.

The study conducted has a fairly narrow scope of investigation as seven student entrepreneurs from two universities were interviewed. To get an even better understanding, it would be helpful to interview more students from different universities, which are situated in various geographical locations across Norway. The student entrepreneurs interviewed for this study were all

Norwegian. Hence, a future study including foreign students who have created a start-up would help expand the scope of this study. The current study could be further improved by interviewing staff at UiO and NTNU to get their response.

A possible topic of further research is to investigate the correlation between the strength of student community at a particular university and the rate of new venture creation among students of the same university. If a positive correlation is found, it would open up new possibilities of increasing rate of new venture creation among student entrepreneurs in Norway. Although this study indicates that students benefited from being part of a business incubator, a possible topic of further research is to investigate if it is more beneficial for students if universities have their own business incubator.

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