



Nordic
Innovation

FEMALE ENTREPRENEURSHIP IN THE NORDICS 2020

- A comparative study

By Leo Grünfeld, Sigrid M. Hernes & Erika Karttinen, Menon Economics

Preface

Menon Economics has, on behalf of Nordic Innovation, written a report on female entrepreneurship in the Nordic countries. The project has been managed by Leo Grünfeld, Sigrid M. Hernes and Erika Karttinen.

Menon Economics is an employee-owned consultancy operating in the interface between economics, politics and business. Menon Economics analyses issues and provides advice to companies, organizations and authorities. We combine economic and commercial expertise in fields such as industrial organization and competitive economy, strategy, finance, organizational design and social profitability. We use research-based methods in our analysis and work closely with leading academics in most disciplines.

We wish to thank the Nordic Innovation for an exciting assignment. We thank the national statistical agencies and Bureau Van Dijk for data and valuable guidance.

May 2020

Menon Economics

Leo Grünfeld, Project Manager



Disclaimer: This publication is part of the special initiative **Nordic Female Entrepreneurship** by **Nordic Innovation**. Menon Economics is responsible for its content.

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Summary

The Nordic countries are viewed as forerunners on gender equality and women's labour force participation. However, we note that there are far fewer women than men starting businesses in the Nordic countries. The Nordic countries are often considered to be culturally similar: they have similar social systems, economic structures, labour markets, concepts of democracy, models of the welfare state, and universal public services (Arenius & Kovalainen, 2006). Nevertheless, there are clear differences in the share of female entrepreneurs across the Nordic countries. Why is this?

We find that there are major and enduring differences in the entrepreneurial activity of women and men in the Nordic countries. Even though there has been a slow increase in the share of female entrepreneurs in many of the Nordic countries in recent years, the share continues to be low, especially for female entrepreneurs within high-growth industries. This is true also for Finland, which has the highest share of female entrepreneurs among the Nordic countries.

To explain the low level of female entrepreneurs in the Nordic countries, and especially the low number of high-growth companies established by women, we have looked at several factors. First, the characteristics of female entrepreneurs, such as age, which industries they establish businesses in, what ambitions they have for their companies, and their willingness to take risks can explain why there are few female lead growth companies. An important factor is that men, more than women, tend to establish businesses in high-growth industries such as ICT and technology. Some studies indicate that women have lower expectations and ambitions for growth than men. In addition, a lower willingness to take risk may explain why women are underrepresented among high-growth companies, as expanding the business usually requires the entrepreneur to take on more risk.

However, there are also several factors not driven by characteristics of the entrepreneurs themselves which make it more difficult for female entrepreneurs to succeed, and especially to establish high growth companies. In the following, we present the most important factors identified in this study.

Women have less access to role models and smaller networks, which makes them less likely to innovate

Social networks and role models play an important role in encouraging entrepreneurship, as well as enabling access to funding. Unfortunately, women tend to have smaller networks and fewer role models than men. Combined, these factors can help explain both lower female entrepreneurship rates, as well as fewer female high-growth companies. In addition, a recent study revealed that women respond better to female role models. Specifically, the study showed that women were more likely to become entrepreneurs if they grew up in a neighborhood with other female innovators within the same field. Given that women do not have the same access to same sex role models as men, there can be many "lost Einsteins", individuals who would have created highly impactful inventions had they been exposed to innovation in their childhood.

If the entrepreneurial culture is male dominated it is difficult for women to succeed

Women could be consistently underrepresented among entrepreneurs and innovators because of underlying biases towards women in the market. Research literature in this field is gradually beginning to accumulate and is showing that the differences are partly the result of social interaction and embodied attitudes, which may hinder the emergence of good entrepreneurial projects with women in management positions. E.g., start-up environments often have a culture dominated by men, which can discourage women from participation and

give them less access to capital and growth. Also, there is evidence from Sweden that governmental investment funds have unconsciously discriminated against businesses lead by women, because they systematically misjudged the growth potential of women lead companies.

Female entrepreneurs have less access to external funding than male entrepreneurs, which makes it difficult for them to expand

Several studies point to female entrepreneurs not being able to raise as much capital as their male counterparts. Therefore, female entrepreneurs today use much more diverse sources of funding than male entrepreneurs. For instance, angel funds constitute 16 percent of the funding that female entrepreneurs receive, whereas it only constitutes 6 percent of funding male entrepreneurs receive (Unconventional Ventures, 2019). This may be caused by a lower preference for risk and a higher fear of failure among women than men. However, it can also be due to gender biases among financial institutions (as mentioned above).

Framework conditions are especially important for enabling female entrepreneurship

The framework conditions from the side of society play an important role for enabling women to participate in professional activities in general, but also becoming entrepreneurs. If these framework conditions are worse for entrepreneurs than employees, it will make it less likely for women to choose to start a business, especially as women take out most of the parental leave in the Nordic countries. We find that the framework conditions are mostly the same for employees and entrepreneurs, but that in practice many entrepreneurs are not able to e.g. take out as much parental leave as they would have wished.

Measures to stimulate female entrepreneurship

What can be done to increase the number of female entrepreneurs in general and female growth entrepreneurship more specifically? Below, we list measures within four areas that we believe can be relevant and effective in increasing the number of female entrepreneurs with a significant growth potential.

- Establish more comprehensive female Nordic mentoring schemes and networks
- Increase female entrepreneurs' access to capital
- Remove competitive disadvantages in industries where women often operate as entrepreneurs
- Establish a scheme for commercialization leave at universities and colleges

Female entrepreneurs are at risk of being especially hardly hit by COVID-19

During the early spring of 2020, COVID-19 reached the Nordic countries. To limit the spread of the pandemic, the Nordic Governments have announced a series of emergency measures, including social distancing measures. Industries where physical contact or physical proximity is important, such as personal services, childcare and cleaning services, health and social work services, or food and accommodation services, have a higher share of female entrepreneurs than industries where physical proximity is less important. Hence, female entrepreneurs are at risk of being especially hardly hit by the economic repercussions of COVID-19. The emergency measures placed by government during the spring of 2020 will affect entrepreneurs today, but also going forward. How fast they will be able to recover once the measures are removed will depend on how heavy the restrictions are, how long they will be in place, and the type and magnitude of rescue packages released by local Governments.

1. Introduction

1.1. Purpose of this study

Over the years the gender gap in education has been closing in most developed economies. The employment and pay gaps for women are also narrowing, but there is still a way to go. Yet the gender gap in entrepreneurship prevails. Entrepreneurship is considered to be one of the key drivers for economic growth (Huggins & Thompson, 2015), and the rise of female entrepreneurship could play an important role for economic growth and development (Sarfaraz et al., 2014). Over the last decade, the role of the entrepreneur has gained a far higher status, and the number of centres, clusters, environments and institutions that promote and facilitate new business start-ups has grown sharply in most countries. The topic of female entrepreneurship has also gained much attention politically. For example, female entrepreneurship is mentioned in the newly published strategy of the EU called "A Union of Equality: Gender Equality Strategy 2020-2025".

"Empowering women in the labour market also means giving them the possibility to thrive as investors and entrepreneurs. The EU cohesion policy supports women's entrepreneurship, their (re)integration into the labour market and gender equality in specific, traditionally male, sectors". - European Commission (2020)

The Nordic countries are often considered to be culturally similar. The countries share similar social systems, economic structures, labour markets, concepts of democracy, and models of the welfare state and universal public services (Arenius & Kovalainen, 2006). The Nordic countries are also viewed as forerunners in question of gender equality and women's labour force participation. Nevertheless, there are differences in the share of female entrepreneurs across the Nordic countries. Also, we note that there are far fewer women than men starting businesses in the Nordic countries. Thus, despite the fact that the Nordic culture is characterized by more equality than the cultures of many other developed countries, the proportion of women to men among entrepreneurs is not higher.

What is the reason for this? Is this pattern governed by preferences and attitudes of women in the Nordic countries? Alternatively, interest in entrepreneurship may be affected by life-cycle choices such as education and one's career path. Or could it be explained by social structures and networks that contribute to the relatively large differences between men and women as entrepreneurs? Perhaps the framework conditions for entrepreneurship in the Nordic countries are different for women as opposed to men, such as government financial support, sickness wages, rules pertaining to leaves of absence and unemployment benefits? Although many factors affecting the decision to become an entrepreneur concern both men and women alike, our focus in this study is on the factors that are likely to affect women more than men.

When discussing female entrepreneurship, an important question is why women should choose to become entrepreneurs. In terms of income, women profit less than men from starting up a business. On average, women earn more as an employee than as an entrepreneur. Nevertheless, the Menon Economics report from 2015 pertaining to women's living conditions as self-employed business owners in Norway, shows that they are consistently more content as self-employed persons; they feel less pressure and are sick less often. These are good reasons to focus on stimulating entrepreneurship among women.

In this report we review the development of female entrepreneurship in the Nordic countries and the distinctive traits of those who start up their own business. We are not only looking at women but also at the characteristics of men. We provide a systematic discussion of factors that may explain why there are fewer female than male

entrepreneurs in the Nordic countries. In addition, we present some suggestions for what public authorities can do to stimulate more women to start their own businesses.

The report is written for [Nordic Innovation](#). The report aims to contribute to knowledge-based development of policies and instruments that stimulate more innovation through entrepreneurship and, in particular, female entrepreneurs with growth ambitions.

1.2. Methodology

To gather information on female entrepreneurship in the Nordics we have used three approaches: literature review, data analysis and mapping.



Literature review: Several studies have been conducted on the topic of female entrepreneurship over the last decades. Some of this literature has a global approach, whereas other studies focus on specific countries, such as the Nordics. In this report, we review the existing literature on female entrepreneurship, and map out whether earlier studies have identified characteristics or traits that are specific for female entrepreneurs.



Data analysis: In this report we use both publicly available statistics and data specifically ordered for this project by the Statistical agencies in the Nordic countries. It was essential to order data from the Statistical agencies, as some of the Nordic countries did not have publicly available statistics on female entrepreneurship. Another reason for ordering was to enhance comparability across countries. However, it is important to note that the definition of entrepreneurship differs between the Statistical agencies, and all comparisons should be interpreted carefully. In Appendix A, we have outlined the definitions of entrepreneurship used by the five Statistical agencies in question. In addition, we have ordered data on business performance specifically for this project from Bureau Van Dijk.



Mapping: We have mapped out start-up environments, state programs that support female entrepreneurship and support mechanisms in the Nordic countries. This work has partly been done by going through webpages, and partly by calling the organisations in question. In addition, we mapped the support mechanisms of the Nordic welfare states that may affect the decision to become entrepreneurs, such as sickness benefits, parental leave and benefits, and public childcare.

There is a considerable amount of empirical material out there, but this material is to a limited extent compiled in an informative and easily accessible way. We are particularly interested in gaining better insights into the role that the many start-up environments now play for new entrepreneurs. As this phenomenon has not gained much attention before, the present work can be regarded as new research.

1.3. A short reading guide

In chapter 2, we outline the different types of entrepreneurs. We present statistics on female entrepreneurship in the Nordics in chapter 3. This includes the share of female entrepreneurs and in which industries they start up. We investigate further how their companies grow in chapter 4. In chapter 5, we provide an overview of the personal characteristics of female entrepreneurs, including their education, age and perception of own skills. In chapter 6, we present the effect of social interaction on female entrepreneurship, focusing especially on social networks and access to capital. We present a mapping of start-up environments in the Nordics in chapter 7. In chapter 8, we provide an overview of framework conditions for female entrepreneurship, such as support

mechanisms of welfare states and state programs. In chapter 9, we conclude and present measures to stimulate more female entrepreneurs in the Nordics.

2. What is entrepreneurship?

What is an entrepreneur? It is common to define an entrepreneur as a person who starts a business with the goal of performing an income-generating activity. These people go by many names: entrepreneurs, new entrants, new creators, innovators, start-ups, and self-employed businessowners. Many imagine entrepreneurs as innovative people who start rapidly growing businesses based on a unique idea or technology, but entrepreneurs range from those who start a small-scale business on the side, to owners of industry with hundreds or even thousands of employees.

Even if the term is broad, there are some features entrepreneurs have in common. One is that they want to create a job for themselves. Another common feature is that they take greater income risk than employees as they do not make a steady wage and are dependent on customers to make an income. Nevertheless, it is important that the term is broad precisely because entrepreneurship can be so many things. In the Menon Economics report titled "One Million ideas", from 2015, a template is presented characterizing different types of entrepreneurs. The distribution does not fully cover all types of entrepreneurship, but it depicts the most archetypical start-ups.



"The innovative entrepreneur": This is the entrepreneur who starts out with a good idea and great ambitions for a successful business, usually based on a technological insight. Unfortunately, the road to growth and the realization of innovations is long, and the vast majority of these entrepreneurs will fail. To make it, the entrepreneur must acquire financing and get a foothold in fiercely competitive markets. Only about five percent of the companies considered by seed capital and venture funds receive investments. Furthermore, only approximately ten percent of these attain significant success in terms of sales revenues or company valuation. In other words, we are talking about a success rate of less than half a percent.¹ Those are not favourable odds.



"The dentist, the hairdresser and the electrician": In some industries, the number of entrepreneurs and self-employed people are high because of the way the industry is organized. A doctor, dentist, lawyer, carpenter or hairdresser often organizes their activity in the form of an individual proprietorship or a limited company where they are the only employee. Many of them congregate in co-working spaces with shared services but continue to have their own company. Few such entrepreneurs accumulate employees.



"The free and creative": In this category, we find the people with professions where permanent employment is uncommon or impractical. In this category we find, for example, actors, artists, musicians, and models, who have a limited opportunity to be permanently employed. This also includes freelancers in professional groups where there is also a possibility of permanent employment, such as photographers and journalists. In some industries, personal characteristics are so important that organizing in larger companies is not practically feasible, or the services needed are so specific that one cannot hire a single person on a regular basis.



"Business on the side": In this group we find those who have a small business on the side which is not their main source of income. An example could be a stay-at-home mom or dad who owns a small business on a hobby basis, or a professor who gives lectures in his or her free time. These businessowners are normally categorized as part-time entrepreneurs. The common denominator for

¹ Menon Economics (2011)

the people in this group is that their business income is relatively small. Frequently, however, these people go from having an income "on the side" to staking everything on their entrepreneurship. This is when a part-time entrepreneur becomes a full-time entrepreneur.



"Move, wash and babysit: In this category, we find those who offer services to people and companies but have little formal competence and do not fit into traditional professions. Examples include people who wash for private households, care for children or assist by doing small chores in people's homes. Many of these jobs are in the unregistered labour market.

It does not necessarily require the establishment of a new company to come up with something new. Most innovations take place inside existing businesses. The establishment of new business areas and innovations in existing enterprises is called **"intrapreneurship"**. If the intrapreneur moves out of the company or the public institution, she goes from being an intrapreneur to becoming an entrepreneur. The part-time entrepreneurs will often have this kind of background.

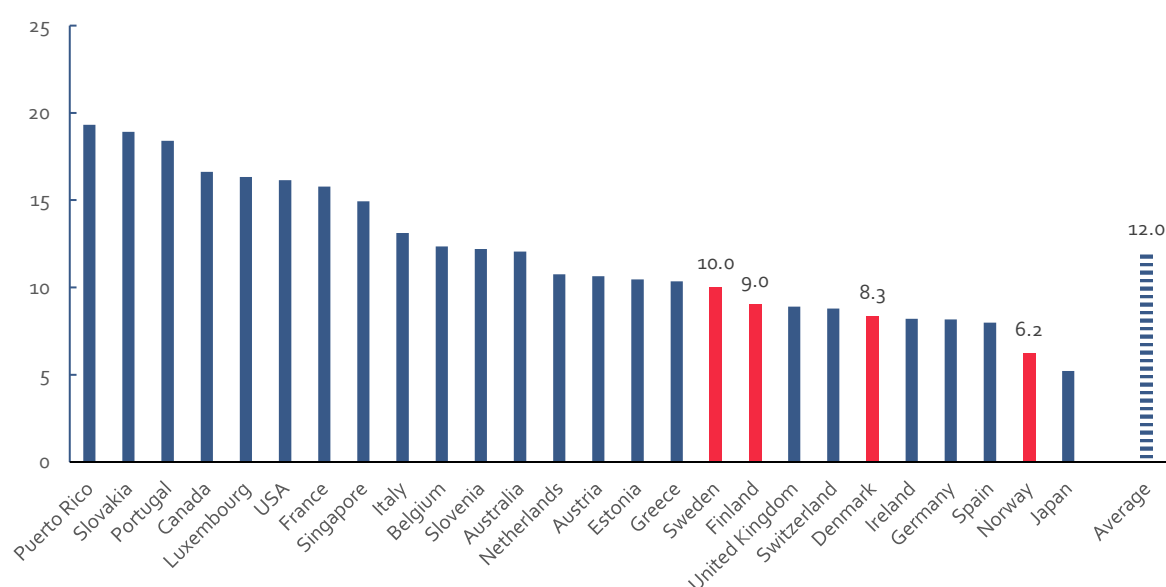
3. Women and entrepreneurship in numbers

In this chapter, we present statistics on female entrepreneurship in the Nordics. This chapter is purely descriptive, and we use data derived from various statistical sources. The figures may vary somewhat with respect to the year and definitions, and we return to this in the descriptions of the figures as we go along.

3.1. Those who dream of entrepreneurship

Global Entrepreneurship Monitor (GEM) is an international research project that annually maps entrepreneurship in a large number of countries. The countries being compared are defined as countries with innovation-driven economies, where the country's development largely depends on innovations and new creation in business and industry.² GEM finds that all the Nordic countries score below average in terms of the percentage of the population that intends to pursue corporate establishment, as outlined in Figure 3-1 below.³ Of the Nordic countries, Norway has the lowest share at only 6 percent.

Figure 3-1: Percentage of the population with an intention to establish a business alone or with others within the next three years among innovation-driven countries. Source: GEM - Alsos et al. (2014).



Several studies have been conducted in the Nordic countries regarding the gender differences of entrepreneurial intentions. However, these studies have been conducted separately for each country. Based on a study on entrepreneurial ambitions in Norway conducted by Ipsos MMI in 2015 on behalf of DNB, 13 percent of Norwegians or 500 000 working age people dream of starting their own business.⁴ Of these, about 55 percent were men and 45 percent were women. In Denmark, on the other hand, researchers have studied recent graduates and found that men are more likely than women to have entrepreneurial ambitions.⁵ The study

² GEM utilizes the World Economic Forum's classification of countries in various phases of economic development based on GDP per capita and degree of factor-driven economy in the form of the share of raw material exports compared to total exports. The three phases are: 1. Factor-driven economy, 2. Efficiency-driven economies, and 3. Innovation-driven economies.

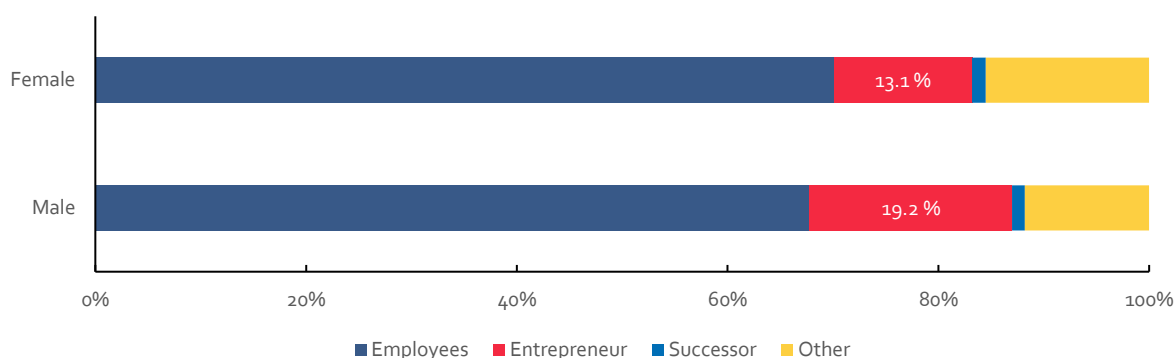
³ Iceland was not included in the study.

⁴ Menon Economics (2015)

⁵ Boyd, Fietze & Philipsen (2015).

looked at students five years after graduation and asked about their career choice intentions. As illustrated in Figure 3-2 below, they find that a higher share of male students, 19 percent, wanted to become entrepreneurs than female students, 13 percent. Overall, this suggests that fewer women than men dream about becoming entrepreneurs.

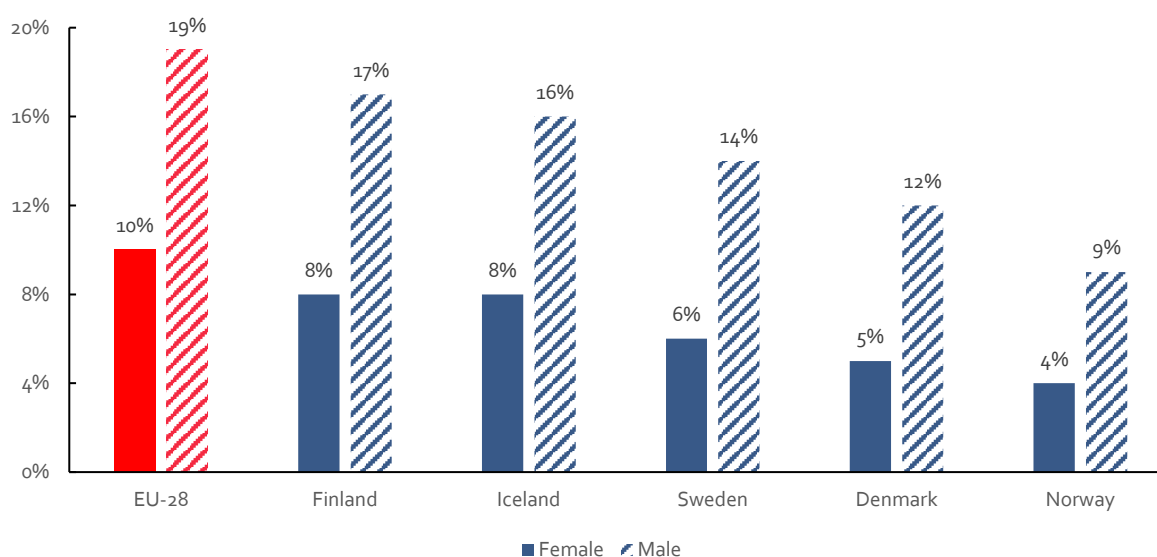
Figure 3-2: Career choice intentions by gender five years after graduation in Denmark. Source: Boyd, Fietze & Philipsen (2015)



3.2. Those who start a business

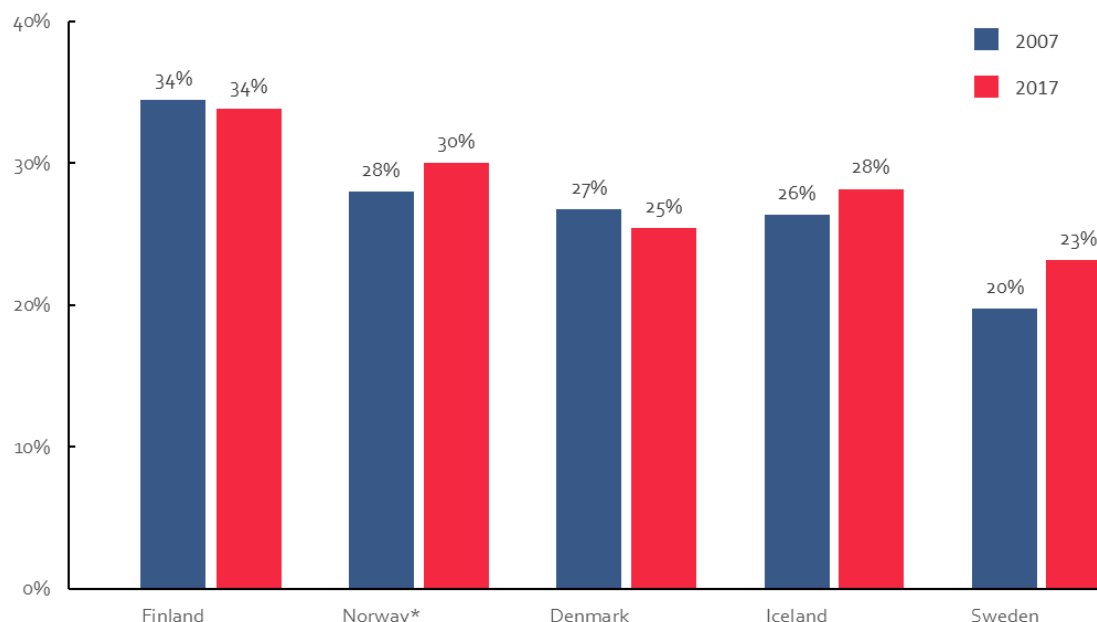
Evidence indicates that fewer women than men dream of, or plan to become entrepreneurs in the Nordics. But who are the people that do become entrepreneurs? Compared to the EU, fewer women become entrepreneurs in the Nordic countries. The figure below shows the female entrepreneurship rate in the Nordic countries compared to the EU28 average in 2012. The entrepreneurship rate is given by the share of the total active labor force population that are entrepreneurs. The average entrepreneurship rate among women in the EU is 10 percent, which is higher than all the Nordic countries. Among the Nordic countries, Finland has the highest female entrepreneurship rate at 8 percent, whereas Norway has the lowest rate at 4 percent.

Figure 3-3: Percentage of entrepreneurs in total active labor force (entrepreneurship rate), by gender in 2012. Source: European Commission (2014)



A different way to illustrate that women are underrepresented among entrepreneurs is to investigate the share of women among all entrepreneurs in a country. In the figure below, we show the share of women among entrepreneurs in the Nordic countries in 2007 and 2017.⁶

Figure 3-4: Share of female entrepreneurs in the Nordic countries in 2007 (*2008 for Norway) and in 2017. Due to break in data, the share in 2007 and 2017 in Denmark cannot be compared. Source: Statistics Norway, Statistics Finland, Statistics Sweden, Statistics Iceland and Statistics Denmark.



Today, there is still an overweight of male entrepreneurs in all the Nordic countries. However, there are some differences between the Nordic countries. Finland is the country with the highest share of female entrepreneurs at almost 34 percent. Sweden has the lowest share of female entrepreneurs at 23 percent. It is important to note that entrepreneurship is defined slightly differently in each country.⁷ Therefore, it is important that results based on comparisons between countries are interpreted with some caution.

The share of female entrepreneurs has shown moderate change over the past ten years. As we illustrate in Figure 3-4 3-4 above there has been a slight increase in the share of female entrepreneurs from 2007 to 2017 for all the Nordic countries except Finland. It is noteworthy that, due to a break in data, we cannot compare the share of female entrepreneurs in Denmark from 2007 to 2017.⁸

Finland has a significantly higher share of female entrepreneurs than its Nordic neighbors. Our findings are supported by earlier studies, e.g. in Alsos et al. (2014). The results from Alsos et al. (2014) are outlined in Figure 3-5 below, and show the percentage of women involved in early stage entrepreneurship activity in 2014 in various countries. Similarly to what we find, the share of female entrepreneurs in this study differs between the Nordic countries. Finland, with a female share of 41 percent, is the only Nordic country that is placed above the

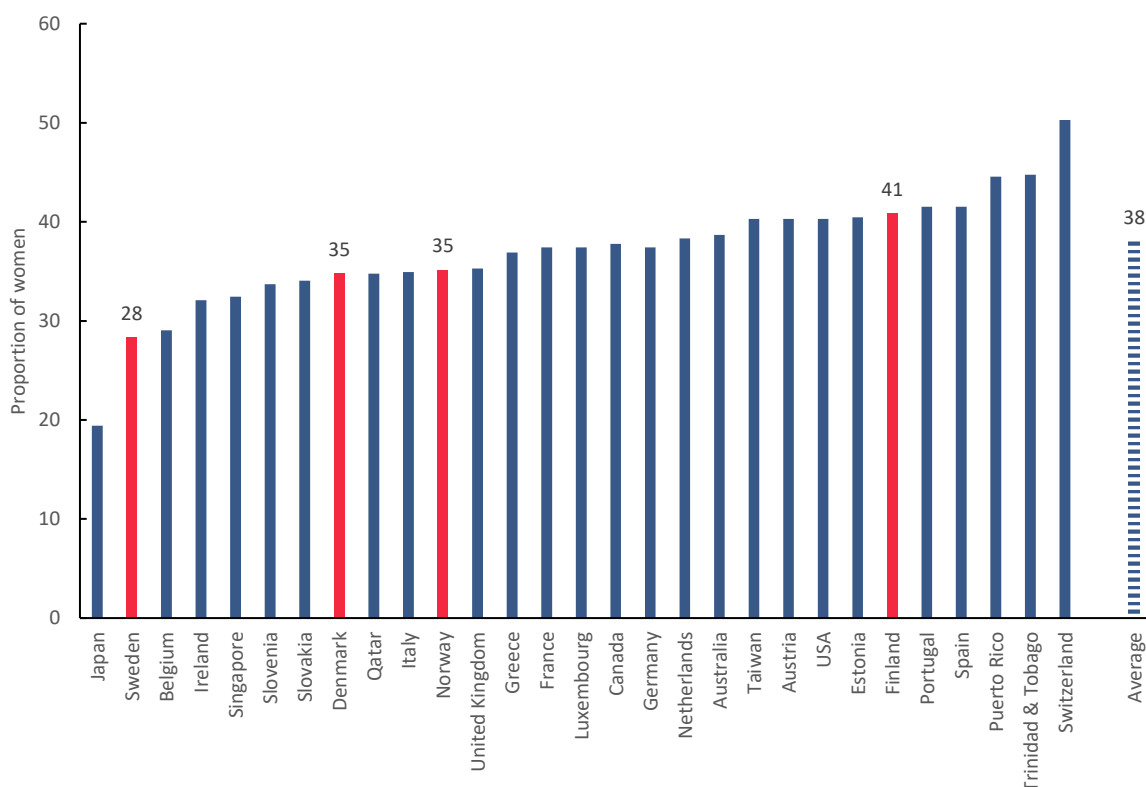
⁶ Note that we do not have information about the share of female entrepreneurs in Norway for 2007. Thus, we have instead reported on the share from 2008.

⁷ The different definitions of entrepreneurship used by the statistical agencies in the Nordic countries is given in Appendix A.

⁸ Statistics Denmark have over time used different definitions to identify entrepreneurship. Thus, the number of entrepreneurs in 2017 are found by using a different definition than in 2007. The decrease of two percentage points can be due to differences in how an entrepreneur was defined and how the data was collected and does not necessarily reflect a decrease in the share of female entrepreneurs. Therefore, we cannot compare the two years with each other.

average (38 percent) of the countries in the study. Both Denmark and Norway have a female share of around 35 percent while in Sweden only 28 percent of women are involved in early stage entrepreneurship activity. By comparison, Switzerland scores best with a 50/50 distribution between women and men, while Japan ranges in the bottom end, with less than 20 percent female entrepreneurs. The study by Alsos et al. (2014) is based on data from the earlier mentioned GEM. Since GEM utilized a survey-based definition, it produces slightly higher numbers than registry-based numbers.

Figure 3-5: Proportion of women involved in early stage entrepreneurship activity among innovation-driven countries.
⁹ Source: Alsos et al. (2014).



Why does Finland have a higher share of female entrepreneurs than the other Nordic countries? We try to answer this question in the box below. Finland has a history of persistently high female entrepreneurship rates, at least compared to other Nordic countries. However, businesses run by women in Finland tend to be small and few of them are within high-growth industries.

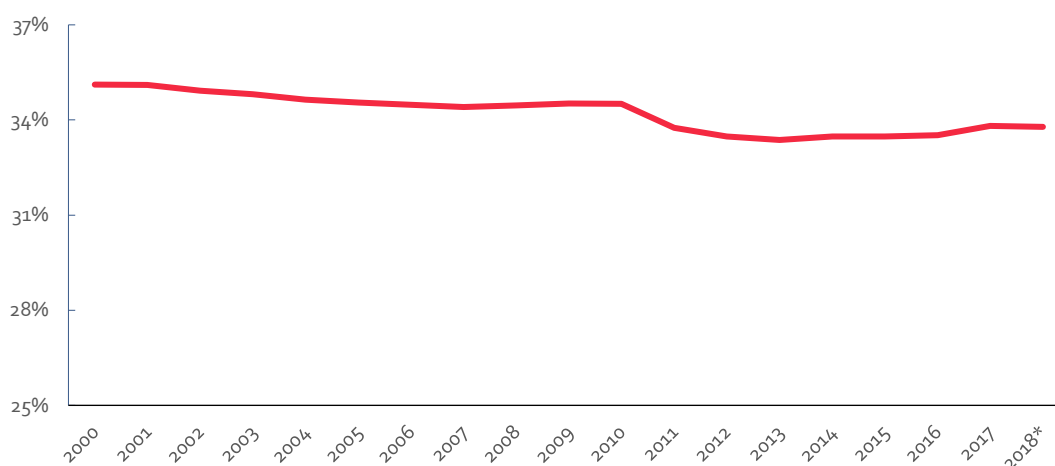
⁹ The study is based on data from GEM. GEM utilizes a survey-based definition that produces slightly higher numbers than registry-based numbers.



Finland has more female entrepreneurs than other Nordic countries, but not more female companies with a growth mindset

Finland has the highest share of female entrepreneurs among Nordic countries (34 percent), followed by Norway in second place (30 percent) and Denmark (25 percent) and Sweden (23 percent) lagging behind. Further, this is a stable trend with the share of female entrepreneurs ranging between 33-35 percent in Finland in the years 2000-2018, see figure below. However, it appears that female entrepreneurs in Finland are mostly small-scale business and that few manage to grow their businesses.

Figure A: Female share of entrepreneurs in Finland, 2000-2018. Source: Statistics Finland (2018)

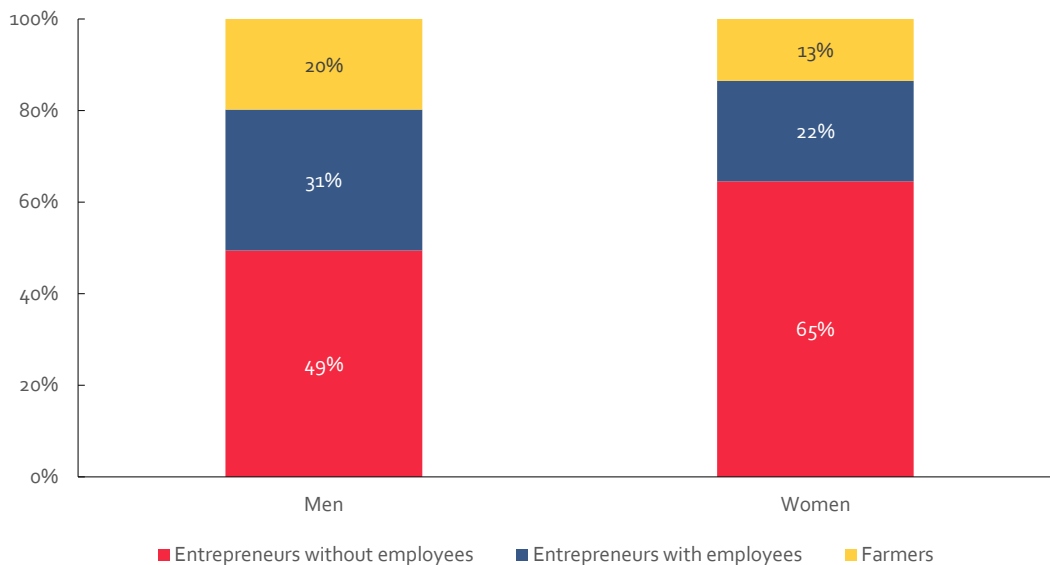


Finland has a long tradition of women participating in professional employment. One reason could be the dire years during the wars fought against the Soviet Union in 1939-1940 and 1941-1944. Most men were sent to the front to fight, which left women behind to take care of tasks traditionally handled by women as well as tasks traditionally handled by men, e.g. within farming and manufacturing. Additionally, through an organization called Lotta Svärd, women also played an important role within health care and other tasks in conjunction with the armed forces during the war. These factors were by no means enough to push women into an equal position with men in the workplace, but they most likely increased their prominence after the war.

A factor that sets Finland apart specifically regarding entrepreneurship is the association Female Entrepreneurs (Yrittäjänaiset). The association has existed since 1947 and consists of 60 local associations. No other Nordic country to this day has a similar association, and the long existence of the association shows a long tradition of entrepreneurship in Finland among women.

However, female entrepreneurs in Finland appear to be small scale business owners. Instead of being growth driven, they mostly appear to aim at providing a job opportunity for themselves: 65 percent of all Finnish female entrepreneurs do not have employees, compared to 49 percent of male entrepreneurs.

Figure B: Entrepreneurs in Finland separated into self-employing, farmers and employers, by gender. Source: Statistics Finland (2017)



Further, women represent only 26 percent of all entrepreneurs that are employing others. Of these women lead companies, only 27 percent of the companies have more than five employees. For companies lead by men, 32 percent of the companies have more than five employees. (Statistics Finland, 2017).

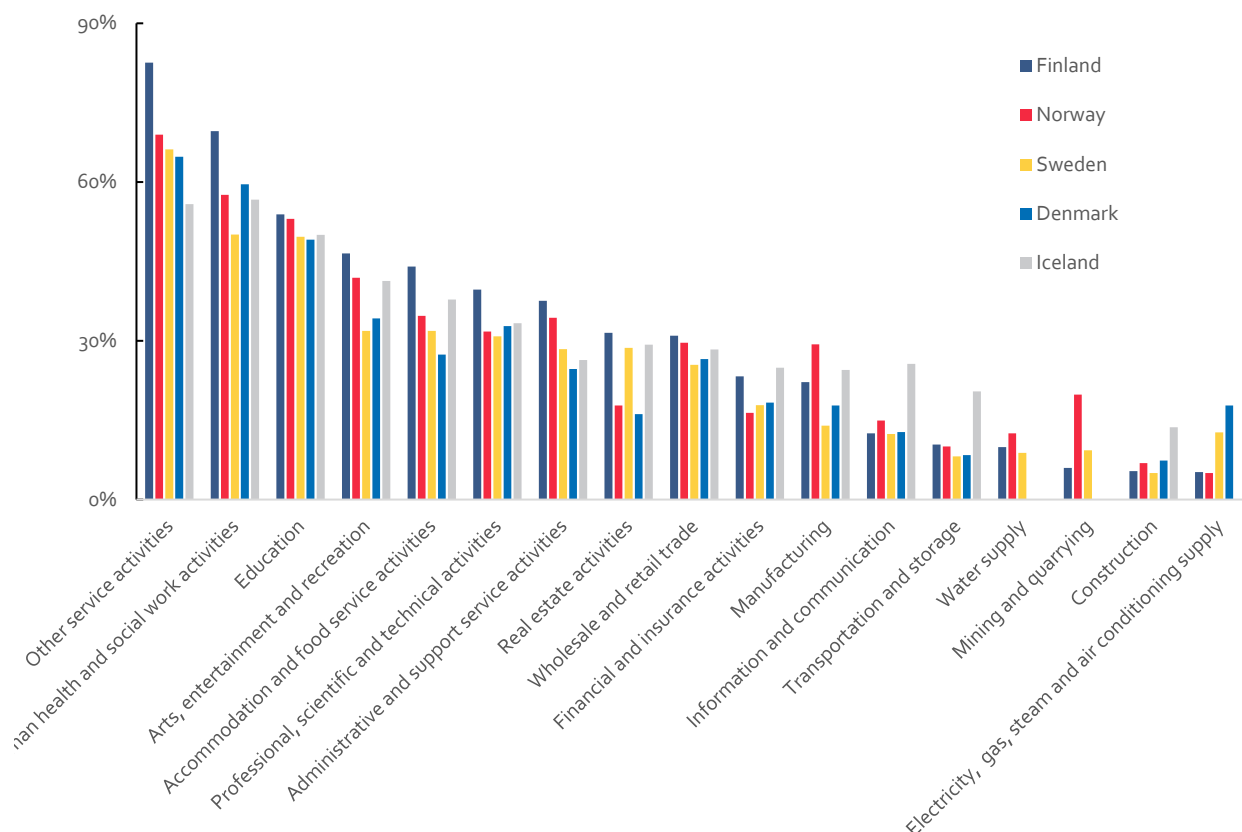
Also, female entrepreneurs do not appear to be doing as well in terms of trying to grow the business. This is e.g. showcased by the Young Innovative Companies (fin. Nuoret innovatiiviset yritykset) funding program by Business Finland. The funding is awarded to startup companies younger than five years that show potential and have aims for international growth. This funding program has existed since 2008 and has over the period from 2008 to 2018 helped in total 434 companies. Of these, only 31 of the companies or 7 percent had a female CEO. In 2018, the number was a bit higher at 12 percent, but it still shows that women are far behind men in Finland when it comes to startups with a potential for international growth. Nevertheless, a study by Confederation of Finnish Industries in 2019 gives reason for cautious hope. They asked Finnish entrepreneurs that employed others what their growth ambitions were, and 51 percent of women answered that they were aiming for high or moderate growth, compared to 46 percent of men. Also, 28 percent of female lead businesses said they had 10 percent growth in the previous year and were expecting 10 percent growth in the coming year, compared to only 22 percent of men.

3.3. In which industries are female entrepreneurs more active?

The Nordic countries have, as mentioned, similar economic structures and labor markets. A hypothesis is therefore that female entrepreneurs are working in the same industries across the Nordic countries. To answer this question, we have compared the share of female entrepreneurs in different industries across the Nordic countries. This is illustrated in Figure 3-6 below. We find that female entrepreneurs across the Nordic countries tend to work in the same industries. For example, there is a high proportion of female entrepreneurs in industries such as personal services, health care, education, arts, entertainment and recreation, accommodation, and food

service activities. Similarly, there is few female entrepreneurs in industries such as transportation and storage, mining, and construction. Further, women often choose to establish businesses in industries with fewer high growth enterprises, like health care, care and nursing, education, and culture or sports.

Figure 3-6: Percentage of female entrepreneurs in various industries in 2017. Source: Statistics Norway, Statistics Finland, Statistics Sweden, Statistics Iceland and Statistics Denmark.



The industries with a high share of female entrepreneurs correspond well with industries where a large share of the labor force is female. In the figures below we show the female share of employees and/or labor force as a whole for the five industries with the highest female entrepreneurship share: other service activities, human health and social work activities, education, arts, entertainment and recreation, and accommodation and food service activities. It appears that women establish businesses in industries that are already dominated by women, and in all Nordic countries most of the industries examined below have a higher share of women in employment and/or labor force than as entrepreneurs. The share of female entrepreneurs is higher than the share of female employees only in Finland and Denmark in the industry "other service activities".

Figure 3-7: Share of women among the total labor force, employees and entrepreneurs in the top five female entrepreneur dominated industries in Finland in 2017. Source: Statistics Finland

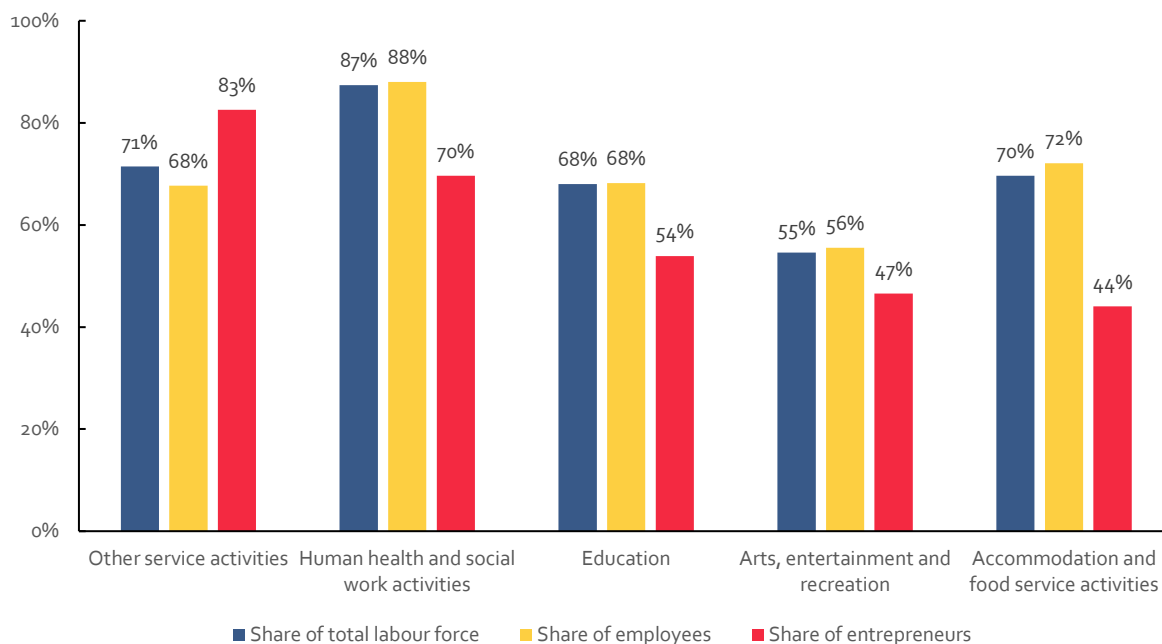
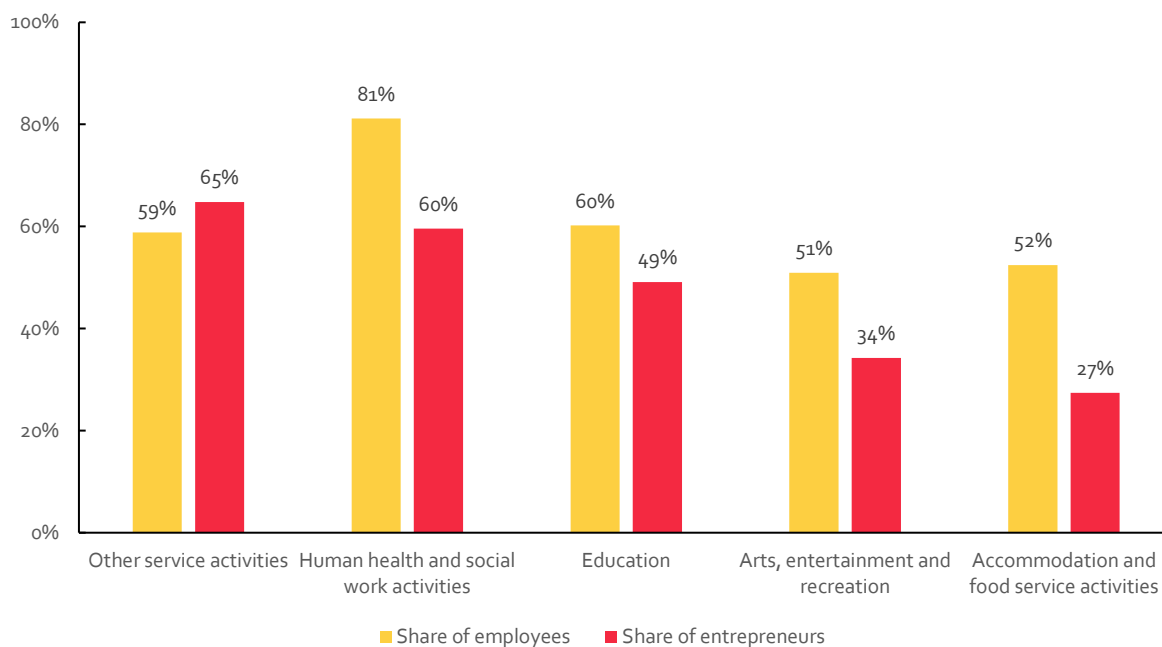


Figure 3-8: Share of women among employees and entrepreneurs in the top five female entrepreneur dominated industries in Denmark in 2017.¹⁰ Source: Statistics Denmark



¹⁰ Unfortunately, we do not have information about share of women in the total labor force in each sector. We have therefore not reported this share for Denmark.

Figure 3-9: Share of women among the total labor force and entrepreneurs in the top five female entrepreneur dominated industries in Norway in 2017.¹¹ Source: Statistics Norway

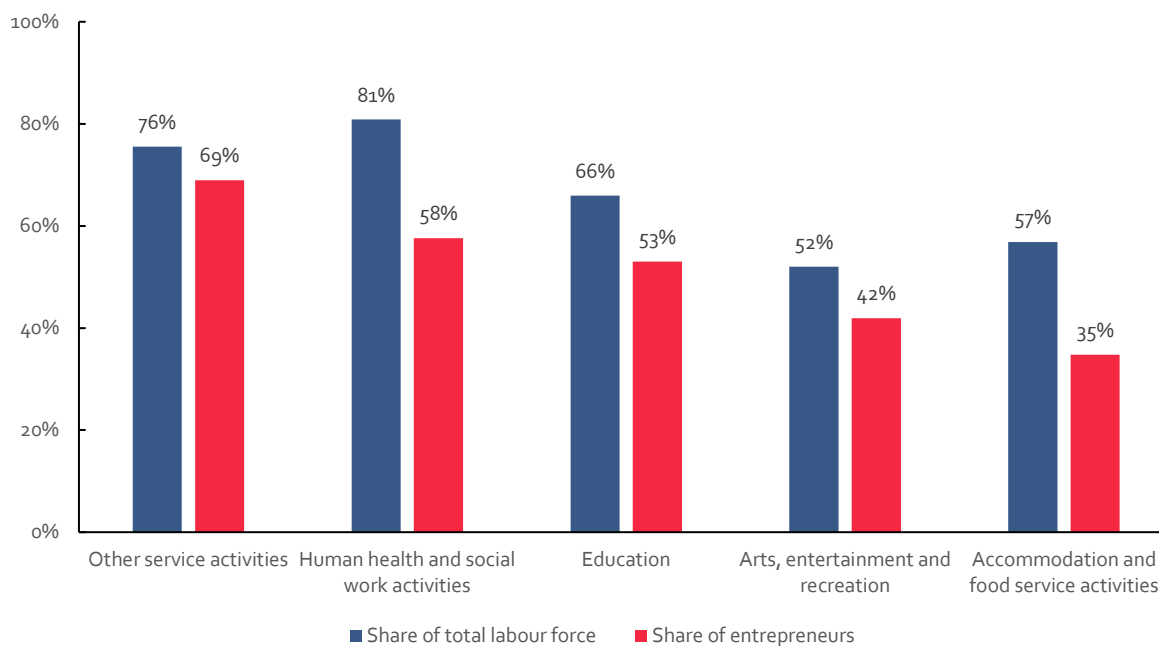
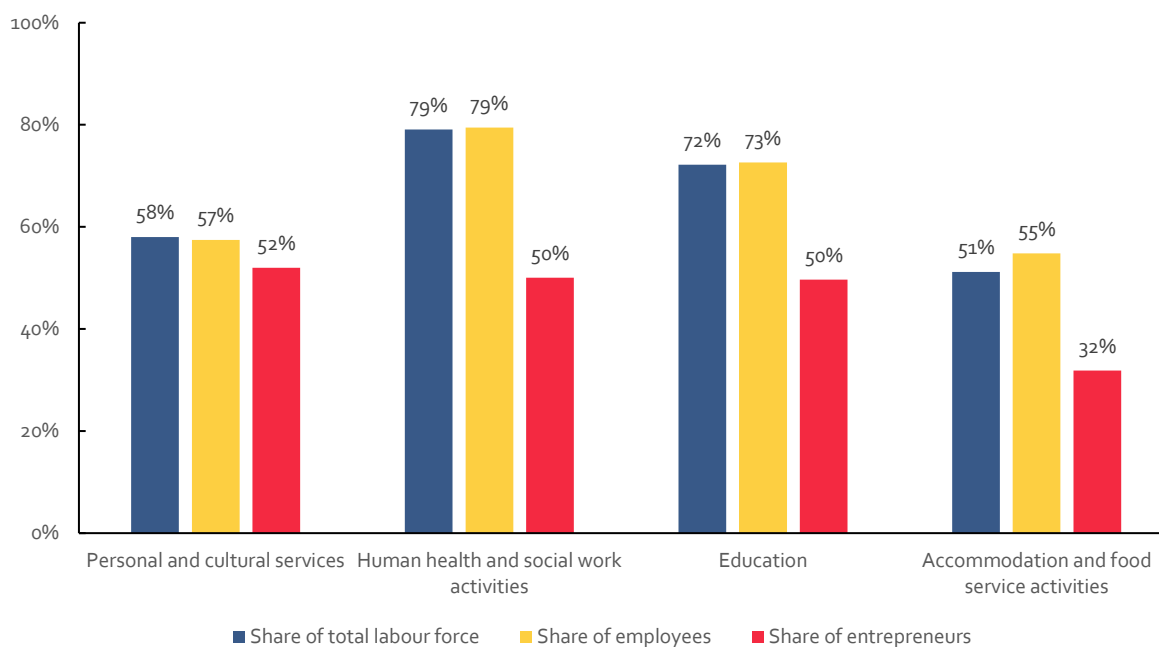


Figure 3-10: Share of women among the total labor force, employees and entrepreneurs in the female entrepreneur dominated industries in Sweden in 2017. Note that the industry called “personal and cultural services” includes both “other service activities” and “arts, entertainment and recreation”. Source: Statistics Sweden



¹¹ Unfortunately, we do not have information about share of women among employees in each sector. We have therefore not reported this share for Norway.

Sectors where private and public sector entities compete

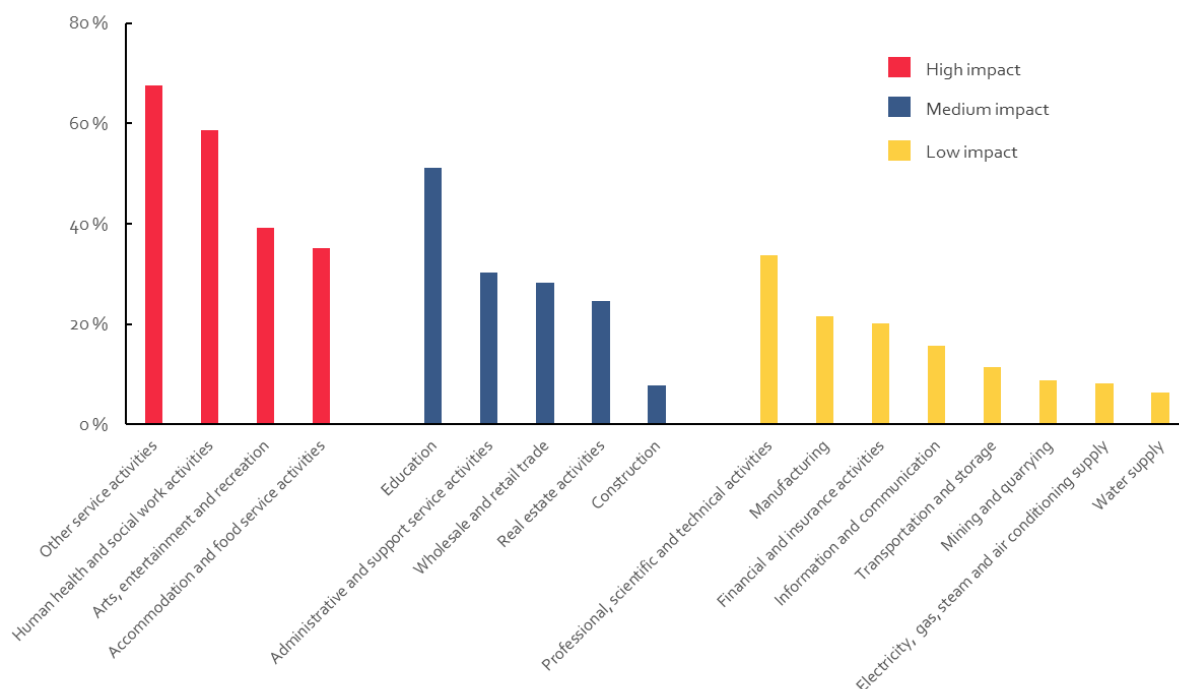
An important characteristic of industries like service activities, health care, and education, is that they largely compete with public sector owned entities, which often operate under different conditions than private enterprises. These conditions increase the difficulty for women to start businesses as they heavily impact the industries in which women are most active as entrepreneurs. The differences may derive from different handling of VAT, or different procurement practices in municipalities relating to the selection of public, non-profit or private suppliers. It may also be a question of cross-subsidizing public services or about special requirements made to operations that are not imposed on publicly owned suppliers. Further, as the state or a municipality cannot go bankrupt, a public provider can take risks that private providers cannot.

3.4. The impact of COVID-19 on female entrepreneurs

During the early spring of 2020, COVID-19 reached the Nordic countries. As the COVID-19-pandemic affects both the demand and the supply side of the economy, it will affect Nordic business environments differently from previous crises. To limit the spread of COVID-19, the Nordic Governments have announced a series of emergency measures, which affect some industries harder than others. For example, most Governments have encouraged social distancing, impacting industries that require close physical contact to provide a service, e.g. hospitality services. In some cases, specific restrictions have been made by the Government, not allowing certain businesses, such as hairdressers, to offer their regular services.

Industries where physical contact or physical proximity is important, such as personal services, childcare, health and social work services, or food and accommodation services, have a significantly higher share of female entrepreneurs than industries where physical proximity is less important. Hence, female entrepreneurs are at risk of being especially hardly hit by the economic repercussions of COVID-19. This is illustrated in Figure 3-11 3-11 below, where we show the average percentage of Nordic female entrepreneurs per industry, classified based on how severely the industry is impacted by the restrictions on physical contact due to COVID-19.

Figure 3-11: Percentage of female entrepreneurs, as a Nordic average, in various industries in 2017. The industries are categorized based on their impact of social distancing due to COVID-19 (low, medium, high). Source: Menon Economics based on data from the Nordic Statistical agencies



We believe the industries most affected by social distancing are service activities, human health and social work activities, accommodation and food service activities, and arts, entertainment and recreation. Except for services like food delivery, physical proximity is essential for the business activity in all these sectors. Further, they are among the sectors with most female entrepreneurs in the Nordic, and for many within the sector, like hairdressers, musicians, or artists, social distancing emergency measures have made it impossible or very difficult to continue providing services and products to people.

Education is the only sector where over half of all entrepreneurs are female which we have classified as having only a medium impact from social distancing requirements. Even though there have been restrictions on physical presence at both schools and universities in most Nordic countries during the pandemic, education itself has not grinded to a halt. However, entrepreneurs teaching courses, in for example arts or music, could be heavily affected, as could people working as substitute teachers at schools where their help is no longer needed.

Nevertheless, social distancing is only one factor affecting businesses due to the COVID-19 pandemic. Other factors are reduced global demand, disruptions of global supply chains, and general disruption of normal consumption patterns due to panic and changed savings behavior among consumers. These will affect industries, and the entrepreneurs in them, differently. Here, we have only looked at the effects of social distancing.

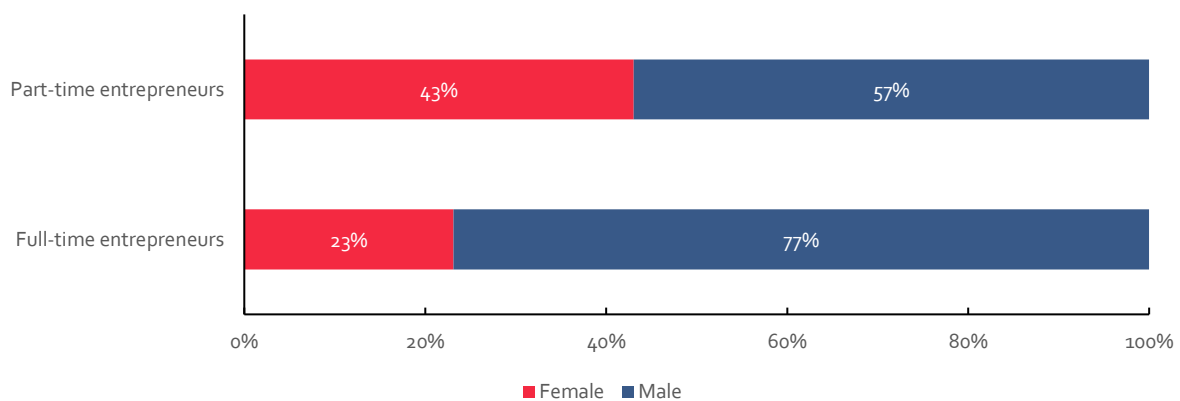
The emergency measures placed by government during the spring of 2020 will affect entrepreneurs today, but also going forward. How fast they will be able to recover once the measures are removed will depend on how heavy the restrictions are, how long they will be in place, and the type and magnitude of rescue packages released by local Governments.

3.3. Part-time entrepreneurship

Many entrepreneurs start up their activity while still remaining employed other places. Such entrepreneurship is often labelled “part-time entrepreneurship”. A part-time position may reduce income risk and provide entrepreneurs with an opportunity to gain from networks and competencies of their employer. Unfortunately, we only have access to data mapping such entrepreneurship in Sweden and Finland.

The share of women is higher among part-time entrepreneurs¹² than full-time entrepreneurs in Sweden. As illustrated in Figure 3-12 below, the share of female part-time entrepreneurs in Sweden was in 2017 43 percent, whereas the share of female full-time entrepreneurs was 23 percent. This is similar to the findings of earlier studies¹³ conducted in Sweden. A study by Andersson & Gamarov (2014) argues that this can be explained by women taking less risks than men and not daring to take the steps needed to become a full-time entrepreneur. Hence, the authors propose that encouraging and simplifying the process of combining employment and self-employment can cause more individuals, and more women, to become entrepreneurs. However, there is a risk that women, will remain part-time entrepreneurs.

Figure 3-12: Distribution of male and female full-time and part-time entrepreneurs in Sweden in 2017. Source: Statistics Sweden.

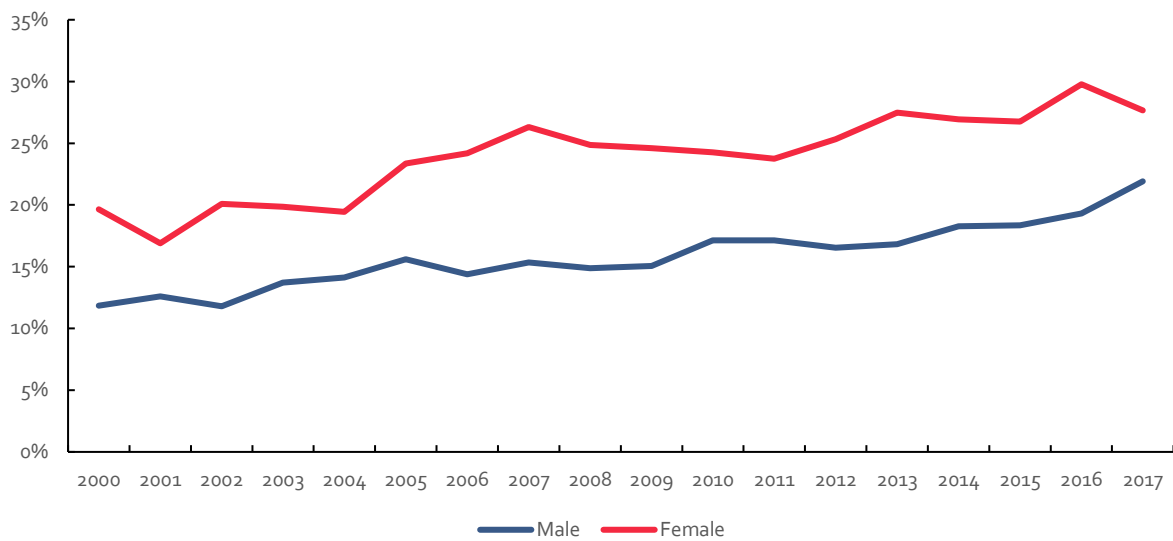


Similarly, in Finland, we find that a higher share of female entrepreneurs are part-time entrepreneurs than male entrepreneurs. As illustrated in the figure below, this has been true for the last 17 years. There has been an increase in the share of male part-time entrepreneurs over the last years. Since 2010, the share of female part-time entrepreneurs has increased by 3 percentage points, whereas the share of male part-time entrepreneurs has increased by 5 percentage points in the same period.

¹² Part-time entrepreneurs are defined as entrepreneurs that also have wage income from another employment (as employee).

¹³ Wennberg et al. (2009) and Andersson & Gamarov (2014)

Figure 3-13: Share of female and male part-time entrepreneurs of all entrepreneurs in Finland in the period from 2000 to 2017. Source: Tilastokeskus (2018)



There are several benefits of being a part-time entrepreneur. Firstly, part-time entrepreneurs do not rely solely on income from the start-up company, since they also have a steady income and receive benefits from other employment. Secondly, part-time entrepreneurs have more freedom to develop the business at their own pace. Since the entrepreneur does not only rely on income from their start-up, the entrepreneur can take their time developing and building both the business idea and the company. Additionally, this gives the entrepreneur an opportunity to take more risk as a mistake leads to smaller financial risk. Lastly, a part-time entrepreneur has the opportunity to make use of the networks and competencies of their employer.

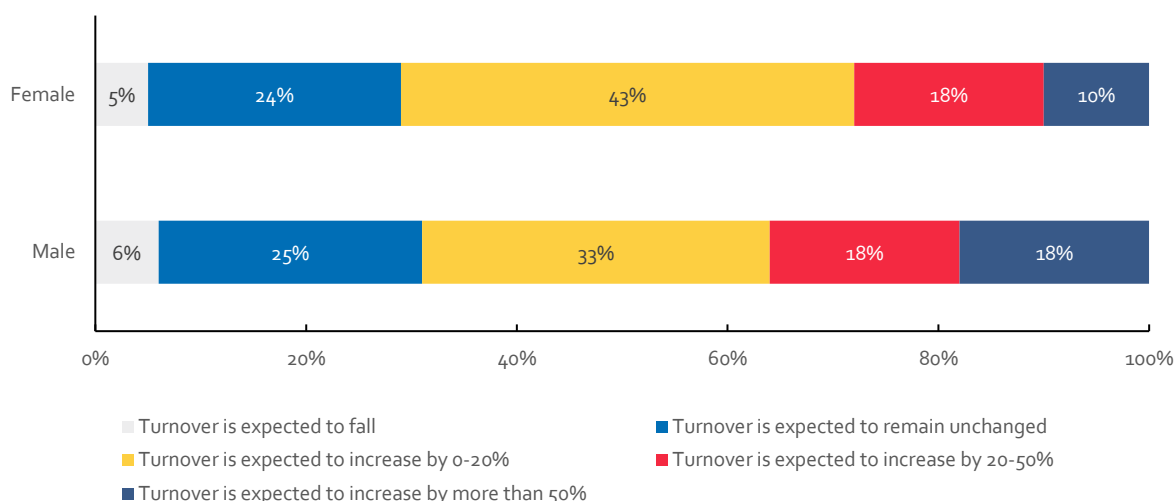
4. Women and entrepreneurial growth

In this chapter we assess how the companies founded by female and male entrepreneurs perform in the years after establishment. Related to this, it is of interest to investigate whether ambitions for growth differ between male and female entrepreneurs.

4.1. Expectations for growth

Based on studies from Denmark and Finland, male entrepreneurs appear to have higher expectations and ambitions for growth than female entrepreneurs. A Danish annual study, called “Iværksætterbarometer”, investigates Danish entrepreneurs’ expectations for turnover growth in the next year and the entrepreneurs long term ambitions for their companies. The study finds that approximately the same share of female and male entrepreneurs expect growth in turnover. However, as shown in the figure below **Error! Reference source not found.**, there is a large difference gender difference as to how much growth the entrepreneur expects. For example, 18 percent of male entrepreneurs expect that turnover will increase with more than 50 percent in the next year, whereas only 10 percent of female entrepreneurs have the same expectation. Similarly, the study presents the ambitions of female and male entrepreneurs and find that the average female entrepreneur in Demark has lower ambitions for growth in turnover and scaling.¹⁴ The report highlights that part of the explanation may be that female entrepreneurs, to a greater extent than men, thinks self-employment is attractive because it is a flexible way to organize their working life. Instead of aiming for high turnover growth, they are happy with a steady flow of business.

Figure 4-1: Danish entrepreneurs expectations for growth in turnover in the next years, 2019. Source: Ervervhuset Sjælland (2019).

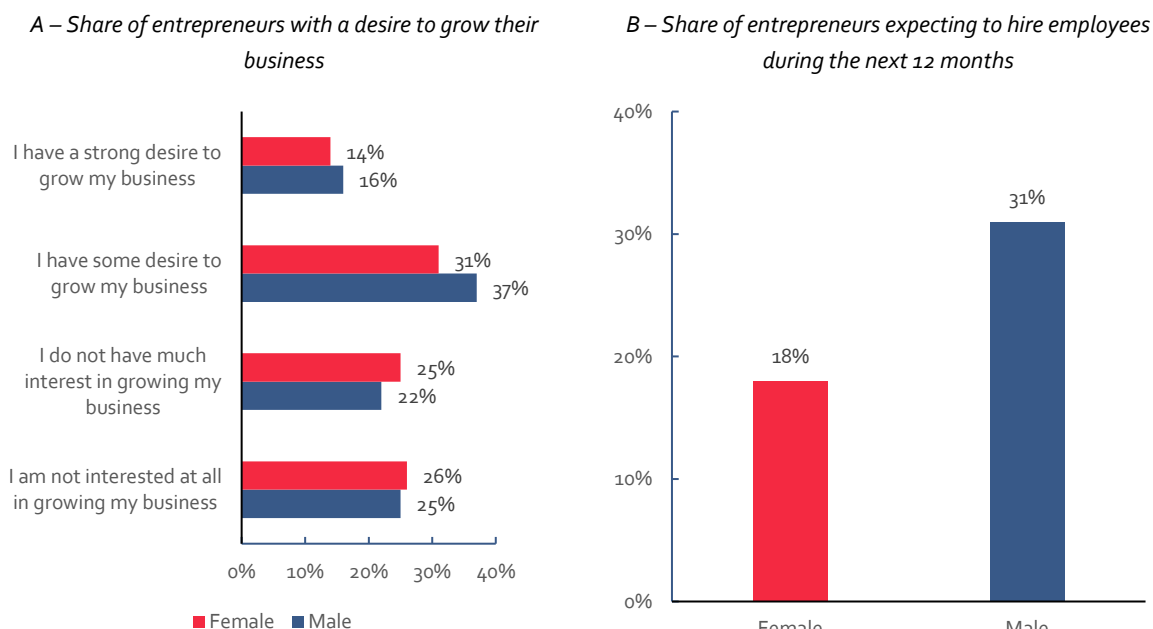


Similarly, we find that male entrepreneurs in Finland have higher ambitions for growth than female entrepreneurs. In a report by Statistics Finland (2018), Finnish entrepreneurs are asked whether they have a strong desire to grow their business. The results are presented in Figure 4-2 A below. Of male entrepreneurs, 53 percent said they had some or strong desire to grow their business, while only 44 percent of female

¹⁴ It is important to note that ambitions for growth does not necessarily reflect the efforts of an entrepreneur regarding their business.

entrepreneurs stated the same. Men also appear to have higher ambitions in terms of hiring new employees than women in Finland. As shown in Figure 4-2 B below, only 18 percent of female entrepreneurs in Finland expects to hire during the next 12 months, whereas 31 percent of male entrepreneurs expects to hire.

Figure 4-2: Finnish entrepreneur's ambitions for growth in 2017. Source: Statistics Finland (2018)



4.2. Growth performance of entrepreneurs

In this section, we investigate what happens with the companies of male and female entrepreneurs after a few years. Specifically, we wish to understand whether companies founded by female or male entrepreneurs perform differently. To do so we will assess the turnover and growth in turnover of companies that were founded in 2011 one and five years after start-up. This will enable us to assess how the companies of females perform compared to the companies of males.

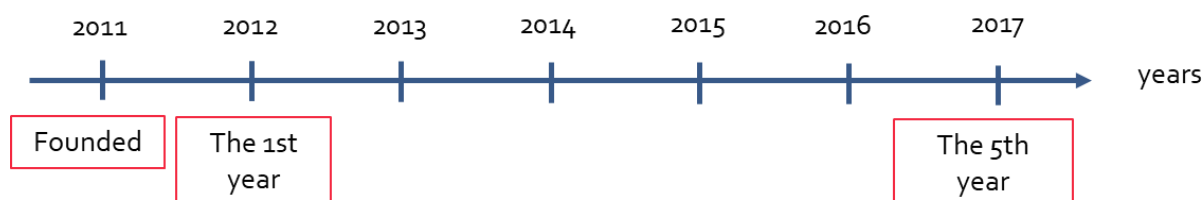
We find that companies founded by men have higher average turnover after five years than those started by women. This is to some degree explained by higher growth levels, but it also reflects that companies founded by men are larger than those founded by women already at the outset. There may be many reasons for why male entrepreneurs have higher turnover and a higher turnover growth than female entrepreneurs after five years. As we have mentioned earlier, male entrepreneurs might to a larger extent than female entrepreneurs establish businesses in high-growth industries. Another reason may be that women have lower desire for growth. In the next chapter we discuss the willingness of female entrepreneurs to take on risks (Chapter 5.7). A lower appetite for risk could also explain lower average turnover, as growing the business usually requires the entrepreneur to take on some amount of risk.

The cohort of companies

The companies included in this analysis are established in 2011. The year was selected so that we could follow the companies for five fully operating years, until 2017, which is the last year with available data. The timeline studied is presented in the figure below. Due to data availability issues, we are only able to do this analysis for Norway, Sweden, Finland and Iceland. The founder of the company is defined as the CEO during the founding

year, as information about the founder is usually not included in available data. However, the CEO during the first year is usually the founder of the company. Thus, this should be a reasonably accurate proxy of the founding entrepreneur. Further, we only look at private and public limited companies, as sole proprietorships often are not dimensioned for growth.¹⁵ An overview of the descriptive statistics is given in Appendix B.

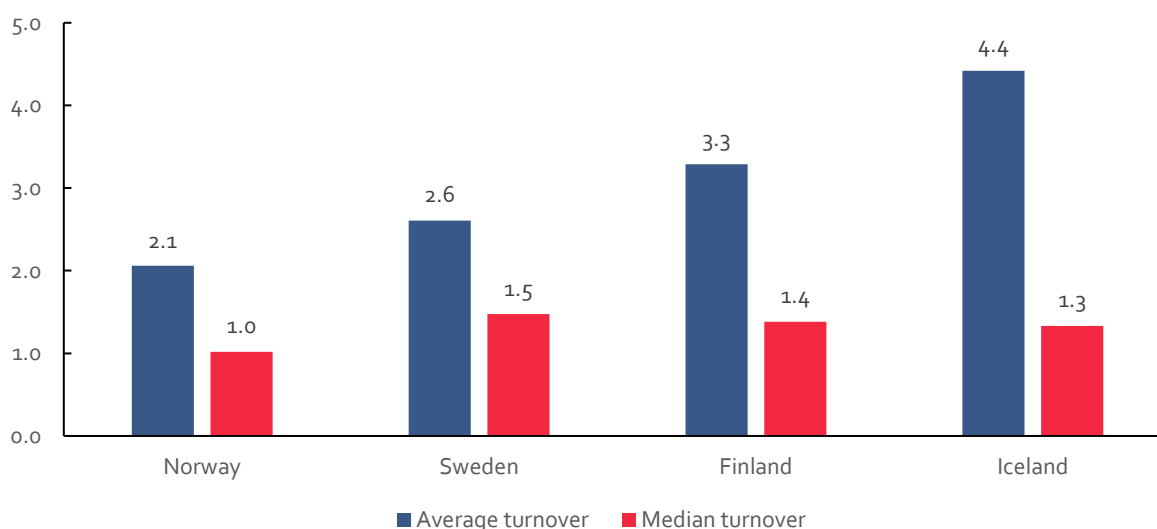
Figure 4-3: Illustration of timeline



Turnover after five years

After the first five years, we find that, on average, companies founded by men have a higher average turnover than the average turnover of companies founded by women. As illustrated in the figure below, the average turnover of an Icelandic company founded by a man is 4.4 times higher than the average turnover of a company founded by a woman. However, such average numbers are often impacted by some high observations. We have therefore also included the median turnover of companies. We find that for all countries, except Norway, the median turnover of companies founded by men is around 1.3 to 1.5 times higher than that of companies founded by women. Hence, the average male entrepreneur is able to expand his company more than the average female entrepreneur. In Norway, the median turnover is the same of companies founded by women and companies founded by men.

Figure 4-4: Average and median turnover of companies founded by men relative to average and median turnover of companies founded by women, in 2017 for the 2011-cohort. Source: Menon Economics, Bureau Van Dijk



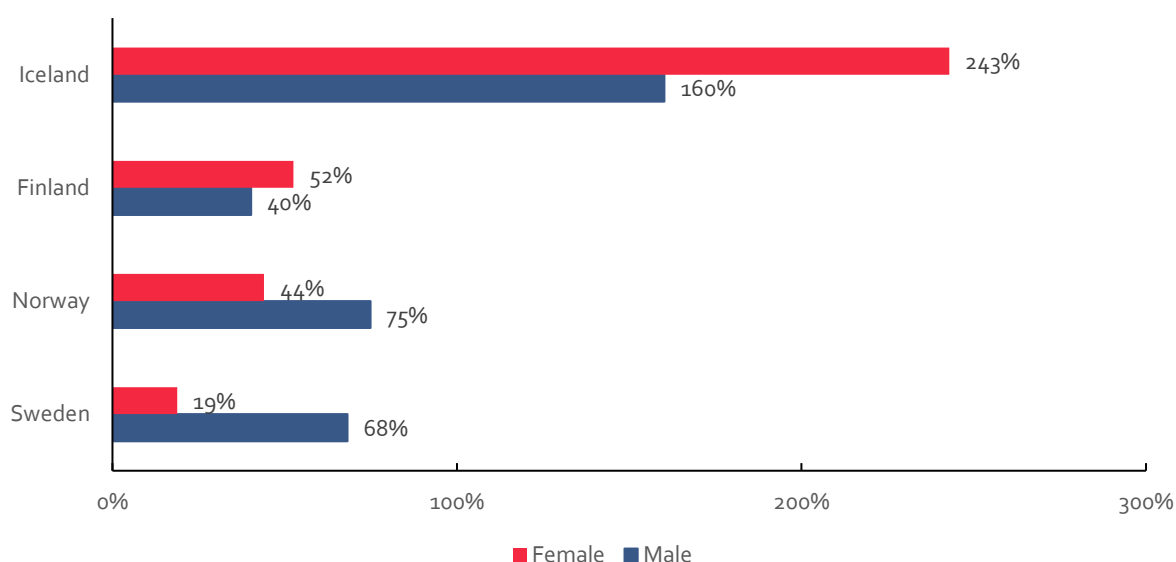
¹⁵ Norway: Askjeselskap (AS) and allmennaksjeselskap (ASA). Sweden: Aktiebolag (AB) and publikt aktiebolag (AB publikt). Finland: Osakeyhtiö (OY) and julkinen osakeyhtiö (OYJ). Iceland: Einkahlutafélag (EHF) and Hlutafélag (HF).

Growth levels of the companies

Why do male entrepreneurs have higher turnover than female entrepreneurs after five years? In practice, this can be explained by differences in the starting point of businesses or in their growth levels. Businesses started by men could be larger to begin with, and the hierarchy is only preserved during the first five years, or companies started by men grow faster than those started by women, increasing the gap over time. The explanation could of course also be a combination of the two.

We find that companies founded by men do grow faster than those started women in Sweden and Norway, but not in Finland and Iceland, see figure below. In Iceland, companies both founded by men and women have grown extraordinary, compared to the other Nordic neighbors. We have fewer observations from Iceland, than for the other Nordic countries, and our findings should be interpreted with caution.¹⁶

Figure 4-5: Growth in average turnover, from 2012 to 2017. Source: Menon Economics, Bureau Van Dijk



In Norway, the average turnover of the companies founded by men grows by 75 percent from 2012 to 2017, whereas for women, it only grows by 44 percent. The growth discrepancy is similar for Swedish companies. Hence, in Sweden and Norway, the higher average turnover after five years is at least partially explained by significantly higher turnover growth. However, in Finland, companies founded by women have on average grown by 12 percentage point more than companies founded by men in the period from 2012 to 2017. Given that male entrepreneurs have three times higher turnover than female entrepreneurs in Finland five years after start-up, companies founded by men must be larger, in terms of turnover, than those started by women already when founded.

High growth companies

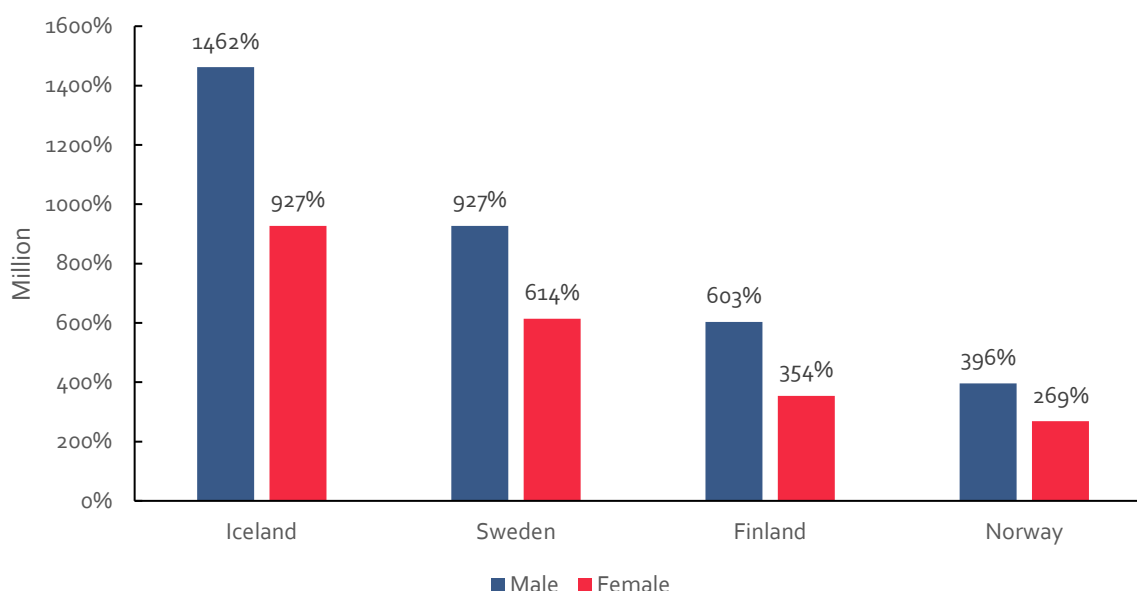
What about the companies that perform very well, so-called high-growth companies? In the previous section, we show that in some instances, men have higher growth expectations and ambitions for their companies than

¹⁶ Given the relatively low number of observations and high growth numbers from Iceland, this may indicate that the observations are positively skewed, in favor of well-performing companies. Thus, the results from Iceland must be interpreted with caution.

women. If the expectations of the entrepreneur reflect how well the companies perform, we should expect that the top 10 percent performing companies (measured by turnover growth) founded by men should have a higher turnover than the top 10 percent performing companies founded by women.

In our cohort of companies, we find that the best performing companies founded by women have a lower growth in turnover from 2012 to 2017 than the best performing companies founded by men, across all the Nordic countries. This is illustrated in the figure below. For example, in Sweden, the top 10 percent performing companies founded by men have had a growth in turnover that is more than 50 percent higher than the growth in turnover of the top 10 percent performing companies founded by women. Thus, the top 10 percent performing companies founded by men perform much better than the top 10 percent performing companies founded by women.

Figure 4-6: Average growth in turnover for the 90th percentile of companies, in 2017 for the 2011-cohort. Source: Menon Economics, Bureau Van Dijk



We have earlier mentioned that men, more than women, tend to establish companies within high-growth industries. If we investigate which industries the top ten percent performing companies in the four Nordic countries represent, we find that most belong to industries such as professional, scientific and technical activities, wholesale and retail trade, construction and to some extent human health and social work activities. Compared to our findings in chapter 3.3, these industries have a low share of female entrepreneurs, except for human health and social work activities.

Bottom performing companies

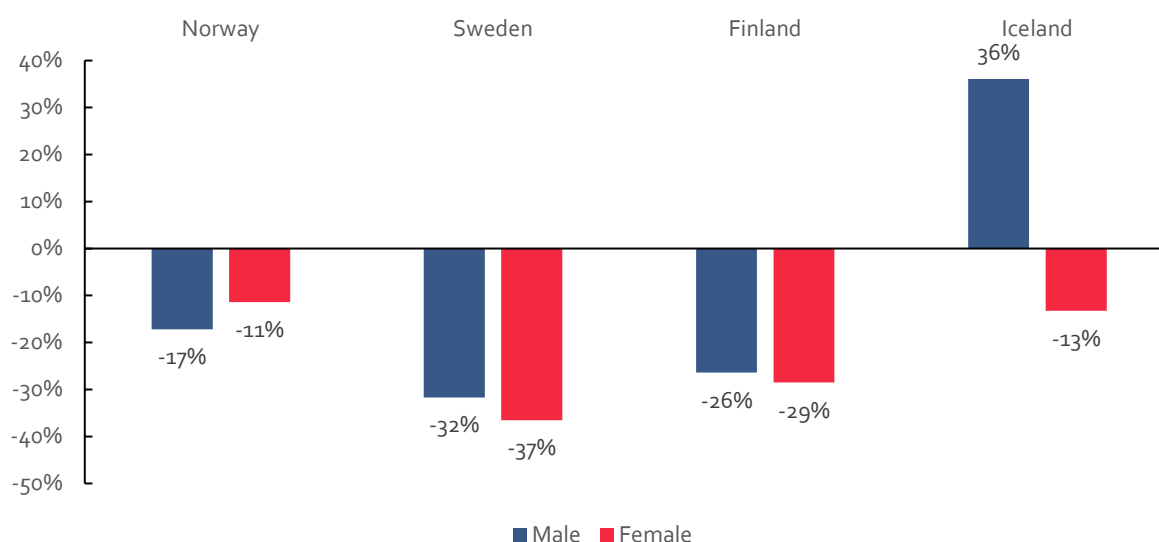
An earlier study conducted by Menon Economics¹⁷, showed that male entrepreneurs were both a majority among the top performing entrepreneurs and the worse performing entrepreneurs. We have already showed that in all the Nordic countries, companies founded by men are larger, measured in turnover, than companies founded by women, and that they have grown faster in Norway and Sweden. But what about the companies

¹⁷ Menon Economics (2015).

that does not perform well? By looking at the bottom 25 percent measured in turnover growth, we would expect that men do worse than women, or at least for the gap between women and men to be smaller. A reason for this may be that men take more risks when expanding and building their companies, which may lead to bigger failure, and thus lower turnover, if they fail.

As illustrated in the figure below, the growth in turnover is negative for the bottom 25 percent of the companies in Norway, Sweden and Finland, regardless of gender. In Iceland, companies founded by men have a positive growth in turnover. However, note that we have relatively few observations for Iceland, thus the results must be interpreted with caution. Further we find that for the bottom performing companies, growth in turnover for companies founded by men is on average higher for all countries but Norway. In Sweden, the 25 percent lowest performing companies, measured by growth in turnover, founded by men, had an average negative growth of 32 percent, whereas the 25 percent lowest performing companies founded by women had an average negative growth of 37 percent. Nevertheless, we find that the gap in average growth levels is significantly smaller than for the top performing companies. This may indicate that there is a larger gender difference among the top performing companies than the rest.

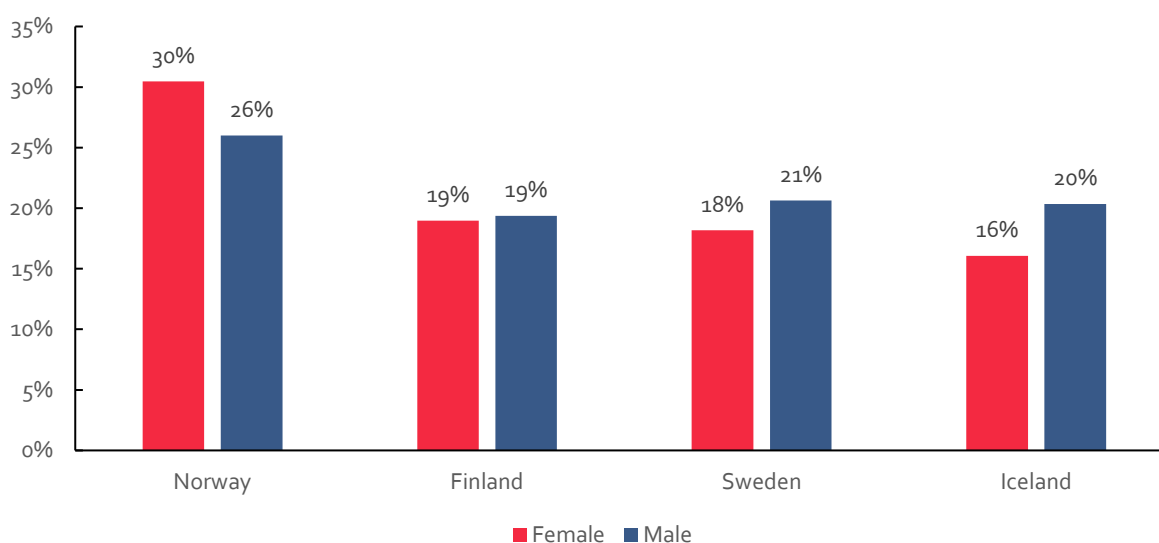
Figure 4-7: Average growth turnover for the bottom 25th percentile of companies, in 2017 of the 2011-cohort. Source: Menon Economics, Bureau Van Dijk



Firm exit

If men take more risk than women, this could show in higher levels of firm closure among companies founded by men. However, companies founded by men and women appear to have similar shares of firm exits. In Norway, the share of firm exits is even a bit higher for women than for men, whereas in Sweden and Iceland, there is a higher share of firms founded by men than women exiting. In Finland, the shares of companies exiting are equal.

Figure 4-8: Share of the companies founded in 2012 that exited by 2017. Source: Menon Economics, Bureau Van Dijk



4.3. Scale-up companies

Nordic Innovation has over the last years worked with *scale-ups*. A scale-up is a fast-growing company that, due to the fast growth, faces unique challenges. Hence, a scale-up is different from a start-up. The UK Scaleup Institute has put forward the following definition:

"Scale-ups are not start-ups. Scale-ups are companies growing from 10 to 5.000 employees and beyond, having specific requirements for: a) talent and skills, b) management and leadership, c) access to markets and customers, d) finance and e) infrastructure."

Nordic Innovation has published several papers on scale-ups and have formed initiatives that promote scale-ups in the Nordics, such as Nordic Scalers.¹⁸ Due to limitations in the data used in this report, we are unfortunately not able to investigate whether women are underrepresented also among scale-up companies. Nevertheless, as we have mentioned, a scale-up is different from a start-up and investigation of the topic does not necessarily shed light on female entrepreneurs. Nevertheless, this would be an interesting topic for future investigation.

¹⁸ 4Front & the Evidence Network Inc. (2019), Iris Group (2019) and Nordic Innovation (2017)

5. Personal characteristics of entrepreneurs

In this section, we look at the personal characteristics of female entrepreneurs to better understand what aspects women take into consideration when starting a business. Here, we aim not to discuss topics dealing with women's social relationships, networking, and interaction with others, and instead leave these topics for Chapter 6. However, it can be difficult to distinguish between personal characteristics and social relations as they are often closely interrelated.

The literature on women and entrepreneurship is vast and there are even dedicated journals for the topic, such as the *International Journal of Gender and Entrepreneurship* and the *Journal of Women's Entrepreneurship and Education*. Research consistently corroborates that personal characteristics and background plays an important role in determining whether a woman, or a man, chooses to become an entrepreneur.¹⁹ Characteristics such as education, social background, age, place of residence, and income are important explanatory factors for entrepreneurship, as is how the person views their own skills. Nevertheless, even if research has revealed several important characteristics, large portions of the gender gap in entrepreneurship remains unexplained.²⁰

5.1. What characterizes an innovator?

Men are more likely than women to become innovators, independently of whether they work as entrepreneurs or employees. The most important factors explaining who comes up with an innovation or gains a patent is still income and not gender.

Bell et al. (2018), in a large and recently published study of the characteristics of people who become innovators²¹ in the USA, focuses on whether the individual has acquired these characteristics during their life or is born with them ("nature or nurture"). This is an important question because in the debate on gender inequality within entrepreneurship and innovation, one often hears that inequalities relate to innate differences that are difficult to change. However, the Bell et al. (2018) study does not focus directly on entrepreneurship but instead looks at explanatory factors for a person having a patent or coming up with an invention. This is a far more stringent criterion than just looking at entrepreneurship, but it does cover both intrapreneurs and entrepreneurs, as inventions can be made both during employment and self-employment.

The study follows 1,2 million innovators in the United States from birth to innovation. It shows that the likelihood of a child becoming an innovator is largely influenced by characteristics such as gender, race, and parental income. Further, the authors find that a difference in mathematical skills²² does not explain the gender gap in innovation. The mathematics skills of girls and boys in the third and eighth grades are fairly similar and only explain 2,4 percent and 8,5 percent, respectively, of the gender gap in innovation. This result corroborates findings from similar studies showing that gender inequality in measurable skills is small at birth, but that it gradually increases over time.²³

Bell et al. (2018) find that children from high-income families (top 1 percent) have ten times the probability of becoming an innovator than children from families with income below the median. This gap persists even when

¹⁹ Jennings and Cash (2006)

²⁰ Langowitz and Minniti (2007)

²¹ The study defines an innovator as an individual who has a patent. The use of patents as a proxy for innovation has its limitations; among other things, not all innovations are patented and not all patents are meaningful innovations.

²² Good skills in mathematics are very predictive for the innovator rate.

²³ E.g. Fryer and Levitt (2006), Fryer (2011).

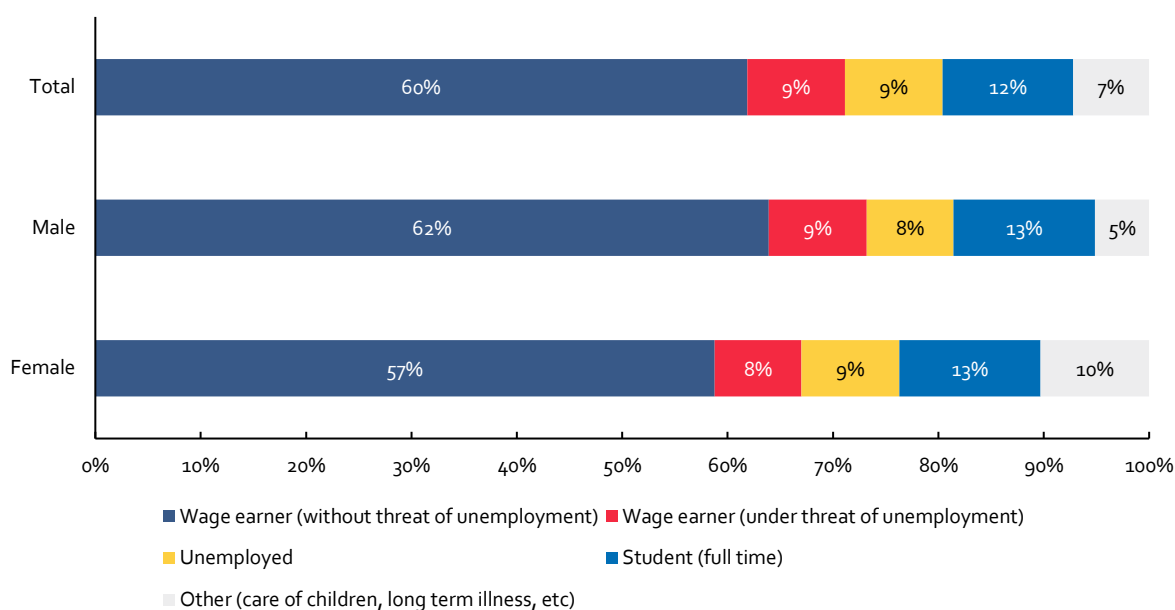
controlled for mathematics skills, gender, etc. The study shows that children who become entrepreneurs typically come from neighbourhoods with higher average income, fewer single parents and more social mobility between generations. This applies to both men and women.

It is important to note that this is a study from the United States, a country that differs from the Nordic countries in terms of labour market structures and social welfare mechanisms. This could imply that the likelihood of a child becoming an innovator is less influenced by parental income in the Nordics than in the United States, as the length and quality of a person's education is not as conditional on parental wealth. Nevertheless, also in the Nordics income and level of education of the parents is a strong predictor of the level of education their children will attain.

5.2. What did entrepreneurs do before they started their business?

A less studied topic within entrepreneurship is what the entrepreneur did before becoming entrepreneur. A reason for this is lack of data. None of the statistical agencies in the Nordics were able to provide data for this study on the labour status of the entrepreneurs before starting their own business. However, some studies on the topic suggests that in general people were employees before becoming entrepreneurs. For example, a study by Statistics Finland (2018) shows that most entrepreneurs, regardless of gender, were wage earners before becoming entrepreneurs, see figure below.

Figure 5-1: Share of entrepreneurs in Finland in 2017 who came from different statuses in the labor market. Source: Statistics Finland (2018)



Similarly, a study by Berglann et al. (2011) finds that most of all entrepreneurs in Norway have the status of wage earner before they start their own business, see Table 5-1 below. Eight percent come from the ranks of the unemployed, five percent are students and two percent of entrepreneurs are retirees or on disability leave

when starting their own business.²⁴ The study shows that, in Norway, men choose to become an entrepreneur far more often than women irrespective of what they were doing earlier. The difference between women and men is particularly large if the person was unemployed.

Table 5-1: Proportion of Norwegian entrepreneurs who came from different statuses in the labor market during the period 2000-2005. Source: Berglann et al. (2011).

STATUS BEFORE ENTREPRENEURSHIP	SHARE OF TOTAL
JOB (EMPLOYEE)	53%
EDUCATION	5%
UNEMPLOYMENT	8%
PENSION AND DISABILITY	2%
OTHER	31%

Berglann et al. (2011) show that job status influences the probability of becoming a female entrepreneur in Norway. The study finds that a woman is most likely to become an entrepreneur if she already has one foot in a workplace but is not a full-time employee. In addition, it is more likely that a woman will become an entrepreneur if she is unemployed rather than in regular work, but high overall unemployment in the economy reduces the likelihood of becoming an entrepreneur. This is corroborated in another study that finds a negative correlation between female entrepreneurship and female unemployment.²⁵

5.3. Competence and education

A large part of the research literature on female entrepreneurship focuses on education, but the results from research are not clear-cut. On the one hand, several studies suggest that the choice of education plays a role on the entrepreneurship rate. For example, a study by Langowitz & Minniti (2007) shows that higher income and higher education increases the likelihood that women will become entrepreneurs if the woman is motivated by opportunity (and does not act out of necessity). On the other hand, other studies show that only a small share of the gender gap can be explained by differences in education.²⁶ Despite major differences in the entrepreneurship rate between education groups, the differences between gender persist even when controlled for education.²⁷

In all the Nordic countries, more women than men are entering higher education. In 2017, 57 percent of the people in the Nordic countries who attained a tertiary level²⁸ higher education were women.²⁹ Studies have shown that an increase in women's educational attainment may also increase business skills and experience.³⁰ Hence, assuming that being an entrepreneur is profitable for women, we should expect that highly educated

²⁴ Many entrepreneurs do not have a permanent job when they start their own business but are not entitled to unemployment benefits and are therefore not counted as unemployed persons by the Norwegian Labour and Welfare Administration. These belong to the "other" group, which accounts for 31 percent of all entrepreneurs.

²⁵ Minniti & Arenius (2003)

²⁶ Berglann et al. (2013), Berglann et al. (2011) and Fjærli et al. (2013)

²⁷ Berglann et al. (2011)

²⁸ Tertiary level is ISCED (International Standard Classification of Education) levels 6 (bachelor's or equivalent), 7 (master's or equivalent) and 8 (doctoral or equivalent)

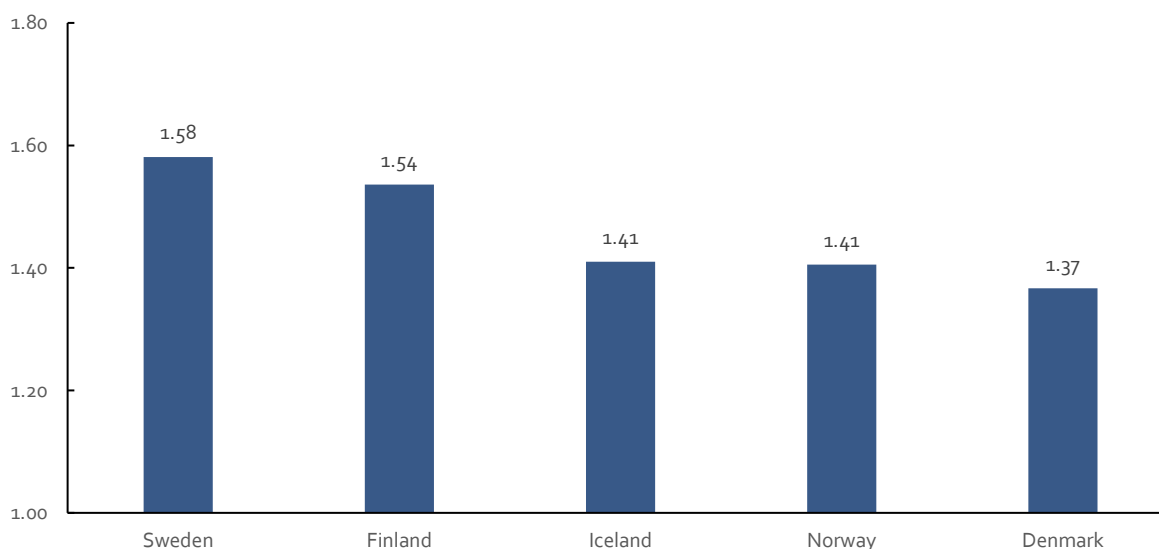
²⁹ Nordic Statistics Database (2019) – Education, table EDUCo1

³⁰ Walker (2002)

women would be interested in becoming entrepreneurs in order to profit from their investment in education. A study by Arenius & Kovalainen (2006) investigated this for Nordic women. However, contrary to our hypothesis above, they found that the correlation between education and self-employment preference is insignificant in all four Nordic countries.³¹ If this is accurate, a further increase of women who attain higher education, will not correspond in an increase in female entrepreneurs.

Not only do women in general have a higher educational attainment in the Nordic countries, but also female entrepreneurs are more educated than their male counterparts. Using data from statistical agencies we have investigated the level of education of male and female entrepreneurs in the Nordic countries. As illustrated in Figure 5-2 below, a higher share of female entrepreneurs than male entrepreneurs have attained higher education³² across all the Nordic countries. The share of female entrepreneurs with higher education out of all female entrepreneurs is 58 compared to the same ratio for men. Apparently, higher education among female entrepreneurs differ more from men in Sweden and Finland than in Iceland, Norway and Denmark.

Figure 5-2: Percentage of female entrepreneurs with higher education (ISCED level 6,7 and 8) over the percentage of male entrepreneurs with higher education in 2017. Source: Statistics Norway, Statistics Finland, Statistics Sweden, Statistics Iceland and Statistics Denmark.



5.4. Female entrepreneurship within STEM subjects

In recent years, there has been a growing literature focusing on (the lack of) female entrepreneurship within the fields of science, technology, engineering and mathematics, also known as STEM education.³³ There are few female entrepreneurs within STEM fields, both in the Nordic countries and globally. This appears to be due to women being less likely to study STEM subjects, less likely to work within STEM dominated industries, and less likely to become STEM entrepreneurs than men. The literature does not provide a clear answer to why this is the case, but a male dominated culture within STEM education could be an explanation.

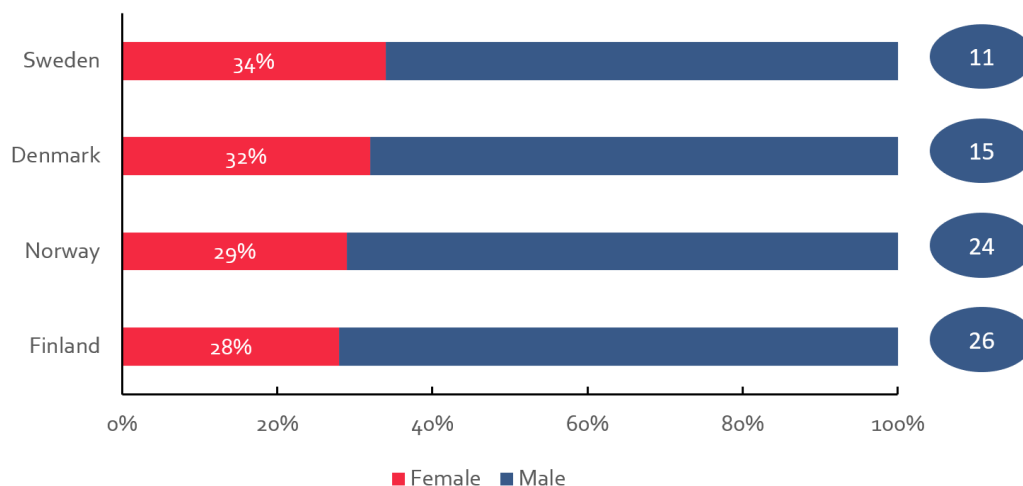
³¹ Iceland was not included in the study by Arenius & Kovalainen (2006)

³² We define high level of education as ISCED levels 6 (bachelor's or equivalent), 7 (master's or equivalent) and 8 (doctoral or equivalent).

³³ See for example Robnett (2016), Simon et al. (2016) and Wang & Degol (2017).

Previously, the literature on STEM has focused on women's educational choices and not on female entrepreneurship within STEM. The underrepresentation of women is not limited to entrepreneurial activity, as women are in general underrepresented in the STEM educational fields, globally and in the Nordic countries. As shown in the figure below, one in three Swedish graduates in higher STEM education was female. Sweden is ranked as number 11 in OECD based on share of women within STEM subjects. Of the Nordic countries, Finland scores the lowest with only 28 percent women and ranking placement 26.

Figure 5-3: Gender split in higher STEM education by country, shown as share of total number of STEM graduates, 2015, and the country's OECD ranking on the right. Source: McKinsey & Company (2018)



Globally, there are few female STEM entrepreneurs, and the gender imbalance is especially clear within this field (GEM, 2019). This is, according to Kuschel & Labra (2017), a result of a lack of STEM role models for emerging female entrepreneurs within STEM. A study conducted by Marlow & McAdam (2012) argues that both STEM subjects and entrepreneurship are statistically atypical for women. This is supported by a similar study pointing out that the culture in the STEM educational fields, and within entrepreneurship in general, is adapted to men and based on male behaviour.³⁴ This is reflected in the quote below:

*"Women may be marginalized within STEM sectors,
while men often thrive and prosper under the same conditions"*³⁵

Blume-Kohout (2014) finds that female PhD candidates in the USA within STEM subjects have a lower entrepreneurship rate and patent rate than male PhD candidates within the same subject. According to Blume-Kohout, 68 percent of this gender gap can be attributed to differences between gender in terms of academic disciplines, work sectors, experience, learning environments and parents.

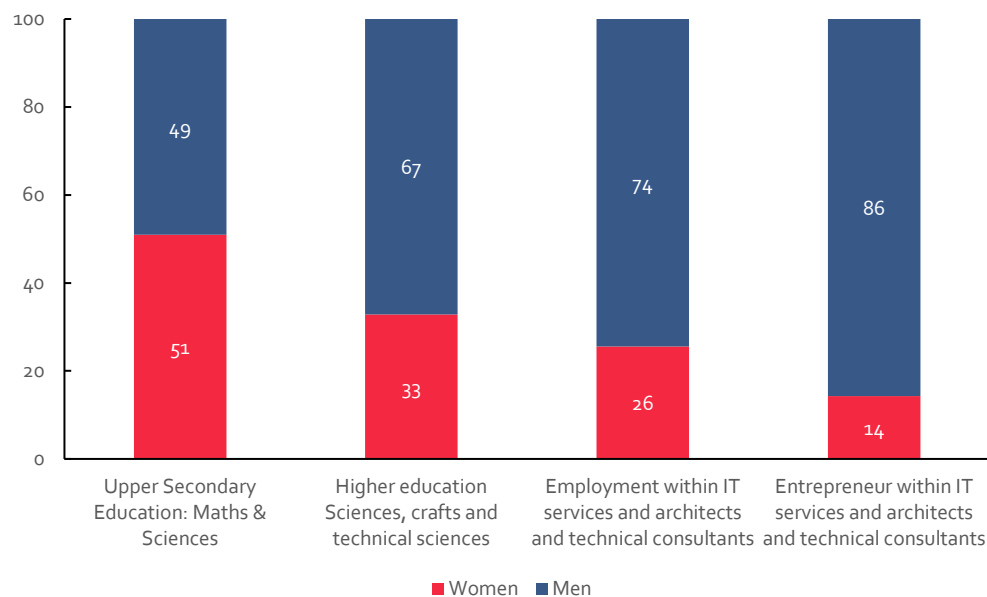
If we follow women from upper secondary education to employment and entrepreneurship, we find a major drop-out in the STEM sectors. This phenomenon has been termed by the literature as a *leaky pipeline*, and it would be important to try and understand better why the STEM fields are bad at retaining women throughout the career path. A Menon Economics report from 2019 illustrated this for women in Norway, see Figure 5-4 below. Among Norwegian pupils in upper secondary school, more than half of the those who select STEM

³⁴ Ogbor (2000)

³⁵ Martin et al. (2015)

subjects within the general studies programme³⁶ were women. However, of the students choosing fields such as natural sciences and technical subjects in higher education only a third were women. After graduation from college, even fewer women choose to work in industries that employ many workers with STEM backgrounds.³⁷ Within these sectors, the proportion of women is 26 percent. Moreover, only 14 percent of the entrepreneurs within these industries are women.

Figure 5-4: Proportion of women in the process of establishing a STEM company in Norway in 2016. Source: Menon Economics (2019)



5.5. Age and experience

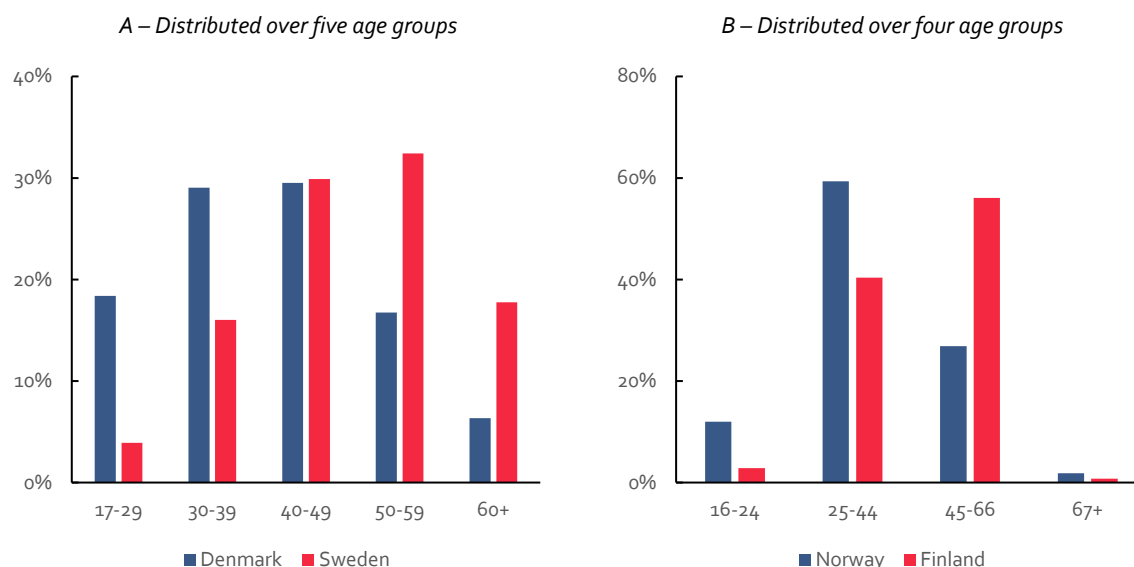
There are female entrepreneurs within all age groups in the Nordic countries. For all countries we find a bell-shaped curve within the age distribution, with fewer young and old female entrepreneurs, but the age group with most entrepreneurs varies between countries. Both women and men appear to become entrepreneurs later in life today than previously, probably because of higher educational requirements. It is not clear from the literature how having children affects the likelihood and timing of women becoming entrepreneurs.

As shown in Figure 5-5 A and B, female entrepreneurs are represented in all age groups across the Nordics. We find that the age profile is shaped as a bell-shaped curve in all Nordic countries. There are few female entrepreneurs in their twenties, but much more that are in their thirties or forties. Few female entrepreneurs are above 60 years old. However, there are some differences between the countries regarding when women typically start a business or quit life as an entrepreneur. For instance, in Denmark the average entrepreneur is younger than in Sweden. Similarly, most female entrepreneurs in Norway are around 25 to 44 years old, whereas most female entrepreneurs in Finland are 45 to 66 years old.

³⁶ In Norwegian called "studiespesialisering innen realfag".

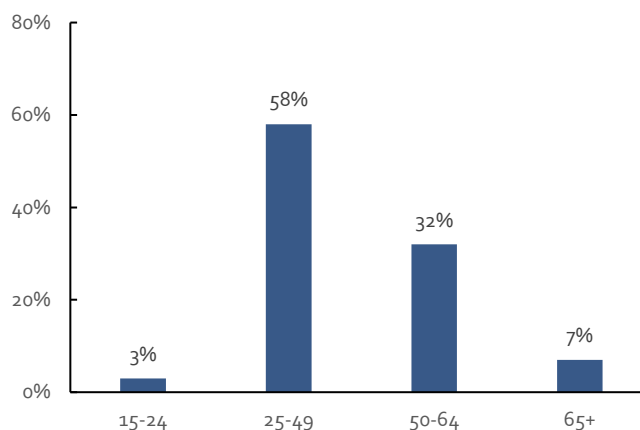
³⁷ Industries such as classified within the NACE-codes "services related to information technology", "architectural business and technical consultancy" and "technical testing and analysis".

Figure 5-5: Share of female entrepreneurs by age group in the Nordic countries, 2017. Source: Statistics Sweden, Statistics Finland, Statistics Denmark and Statistics Norway.



A study on female entrepreneurs in Iceland, carried out by the European Commission (2014), presents data on the age profile of entrepreneurs in 2012. As shown in Figure 5-6, the age profile of Icelandic female entrepreneurs in 2012 is similar to that of the other Nordic countries in 2017.

Figure 5-6: Share of female entrepreneurs by age group in Iceland, 2012. Source: European Commission (2014).

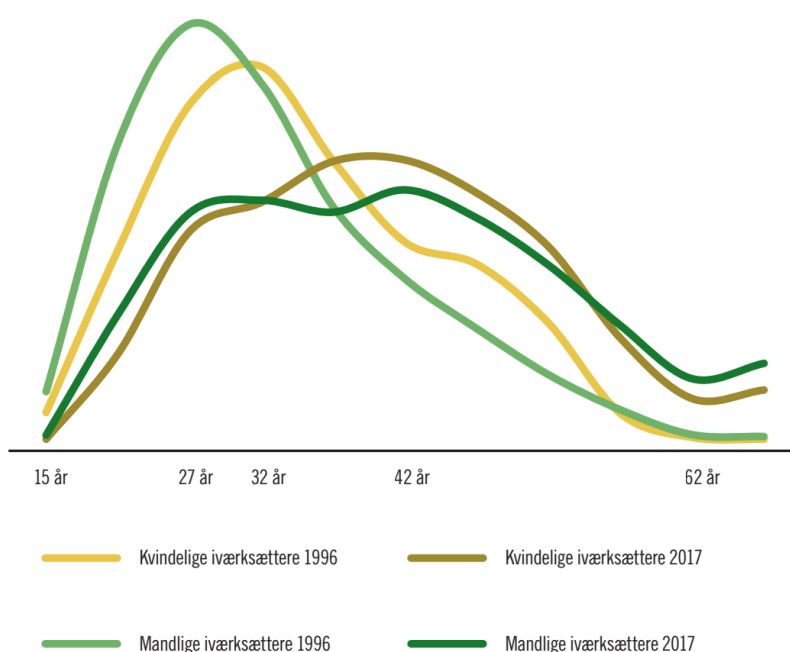


When in life women choose to become entrepreneurs could be affected by when they have children, but unfortunately the data does not give a clear answer to whether this is the case. In the Nordic countries the mean age of women giving birth to their first child is around 28 to 30 years. Hence, we could expect to see a drop in the number of entrepreneurs at this the age of 28 to 30, or that the level continues to be low and women enter entrepreneurship at a later stage of life. Unfortunately, our data does not provide a clear answer to this, but we notice that in e.g. Denmark and Sweden, the share of female entrepreneurs is lower in the age group corresponding to the mean age of having a first child (age group 17-29). However, if the welfare measures that the Nordic countries provide encourage women to become entrepreneurs even during childbearing age, we should not see a drop in female entrepreneurship rates due to children. A study conducted by Statistics Finland (2017) seems to contradict this hypothesis. It finds that, of entrepreneurs with children, only 50 percent of

women compared to 67 percent of men had been an entrepreneur when the first child was born. The welfare measures will be further discussed in chapter 8.

An annual Danish study on entrepreneurship, called “Iværksætterbarometer”, finds that there has been a shift in the age profile of Danish entrepreneurs over the last 20 years. As illustrated in figure below, a large proportion of entrepreneurs in 1996, both female and male, became entrepreneurs around the age of 27 to 32. In 2017, on the other hand, most are older when becoming entrepreneurs. According to the study, a likely explanation is that companies founded today are often within scientific service sectors. This requires entrepreneurs with higher education making it natural that entrepreneurs are older when founding a company.

Figure 5-7: The age profile of Danish male and female entrepreneurs in 1996 and 2017. The green color presents male entrepreneurs and the yellow color represents female entrepreneurs. Source: Ervervhuset Sjælland (2019)



Earlier studies have shown that the entrepreneurship rate increases with age. For example, a study by Berglann et al. (2011) shows that the age with the highest proportion of female entrepreneurs is 44 years (51 years for men) in Norway. In addition, they find that the rate stabilizes for women already in their mid-30s (for males in their mid-40s). This pattern is confirmed by an earlier study that found both women and men often become entrepreneurs during a period of life when it is common to raise children.³⁸

The study by Arenius & Kovalainen (2006) does not find a relationship between age and self-employment preferences for women in the Nordic countries. Further, they also do not find that there is a peak in entrepreneurship activity of women in a specific age group, which is typically reported in studies on male entrepreneurial activity. The authors suggest that this result may partially be explained through the extensive and universally available childcare services in the Nordic countries. A different explanation, put forward by the authors, is based on the employment structure in the Nordic countries. As Nordic women tend to be employed in the public sector, their income and pension tend to rise with years in employment. Therefore, self-

³⁸ Minniti and Arenius (2003)

employment becomes less lucrative with age. This corresponds to our findings in Figure 5-5 for Denmark and Norway, where we find that female entrepreneurship rates go down for women aged fifty years and up. In Sweden and Finland, however, many of the female entrepreneurs are in their fifties or sixties, and a larger share of female entrepreneurs are in their fifties than in their forties in Sweden.

5.6. Income and assets

The importance of personal income and wealth has been highlighted by many when discussing entrepreneurship. A study conducted by Arenius & Kovalainen in 2006 investigated whether household income level had a positive effect on self-employment preferences in the Nordic countries, and whether the positive effect was true in each of the Nordic countries. Based on a regression analysis, the study found that the household income variables were not a significant predictor of self-employment preference for women. The authors therefore argue that women do not count the family income to be the main financial source for their business.

However, there are also studies on female entrepreneurial activity contradicting the findings above regarding the importance of personal income and wealth.³⁹ For example, studies by Evans & Jovanovic (1989) and Smallbone & Welter (2001), show that the entrepreneurial decision is positively related to the individual's income, since the availability of income weakens the financial constraints. Other studies have investigated whether this is true for female entrepreneurs. Langowitz & Minniti (2007) find that higher income increases the likelihood that women become entrepreneurs. Similarly, Connelly (1992) finds a significant positive effect of increase in the household income on the likelihood of a women becoming an entrepreneur.

Other studies have investigated the impact of partner's income and wealth on an entrepreneur.⁴⁰ Berglann et al. (2011) find that a partner's income and wealth do not have a significant impact on female entrepreneurship in Norway. However, they find that the opposite is true for men. Their entrepreneurial rate is heavily influenced by the partner's wealth.

5.7. Willingness to take financial risk as a characteristic

A number of studies point to the gender gap in entrepreneurship being due to differing preferences for risk-taking and willingness to compete between men and women.⁴¹ Some studies report that female entrepreneurs are more risk-averse than male entrepreneurs, while other studies are unable to prove such a link.⁴² In other words, we face a blurry picture in this respect. It has been shown that the fear of failure may affect female entrepreneurs to a greater extent than male entrepreneurs, which may point in the direction of women having a lower tolerance for risk.⁴³ Similarly, another study shows that female entrepreneurs often use a higher share of bank loans instead of equity to fund their start-up companies.⁴⁴ The study argues that this could be a sign of female entrepreneurs taking less risk than male entrepreneurs, because female entrepreneurs take personal and business risks more into account, while men want to expand more rapidly with the help of external funding. This is especially an issue in high-income countries, such as the Nordics, where an increasing number of women

³⁹ Evans & Jovanovic (1989), Smallbone & Welter (2001), Connelly (1992), Langowitz & Minniti (2007) and Berglann et al. (2011).

⁴⁰ E.g. McPherson (1998) find that there is a positive relationship between a husband's financial resources and the probability of his wife becoming an entrepreneur

⁴¹ Markussen & Røed (2017)

⁴² Humbert & Brindley (2015)

⁴³ Langowitz & Minniti (2007)

⁴⁴ Minniti & Arenius (2003)

are beginning to start more technological businesses. Starting a company within these sectors is usually capital intensive, and will require more equity, not only bank loans. If women are not used to taking out more financing in form of equity, they will have a difficult time expanding their businesses.

Berglann et al. (2011) suggest that male entrepreneurs take more risks than female entrepreneurs in Norway, since the most (least) successful male entrepreneurs have higher gains (losses) than the most (least) successful female entrepreneurs. In the previous chapter we showed that female entrepreneurs are underrepresented among so-called high-growth companies in the Nordics, and that motive of being an entrepreneur is to provide themselves employment without necessarily having ambitions for growth. This may reflect a lower preference for risk among women. Meanwhile, these correlations can also be driven by the fact that women systematically choose to establish new enterprises in industries that do not generate as many high-growth enterprises.⁴⁵

5.8. Perception of own skills

Women's inclination to become entrepreneurs is likely influenced by the way women perceive their own skills. Earlier studies show that individuals might be more inclined to become an entrepreneur if they believe that they possessed the necessary skills.⁴⁶ Arenius & Kovalainen conducted in 2006 a study where they investigated whether this was true for Nordic women. In other words, they analysed whether Nordic women's perception of skills influence the choice of becoming an entrepreneur. The authors found that there is a positive correlation between self-employment preference and the perception of having the necessary skills to start a business. For example, in Sweden, they find that establishing a new business occurs seven times as frequently among women who perceive themselves as having the necessary skills for starting a business. Thus, perception of skills significantly increases women's entrepreneurial activity in all Nordic countries.

Schneider (2017) shows, among other things, that self-esteem in terms of their own skills is an important factor for women's success as entrepreneurs. This is in line with studies that argue that the gender gap in entrepreneurship can be explained by women having a lower perception of their own competence.⁴⁷ As shown in the next section, women's perception of their own skills can also influence the probability of getting external capital for their businesses.

⁴⁵ Menon Economics (2015), Menon Economics (2016)

⁴⁶ Boyd & Vozikis (1994), Chen et al. (1998) and Krueger & Brazeal (1994).

⁴⁷ Langowitz & Minniti (2007), Minniti & Arenius (2003)

6. The effect of social interaction on female entrepreneurs

In this section, we focus on how social interaction influences the inclination to establish a new business. In the previous chapter we presented a wide range of characteristics that seem to affect whether women become entrepreneurs. Characteristics such as education, age, income and perception of own skills will all be determined by how women (and men) interact with others around them. These characteristics affect who their neighbours are, who they work with, what their parents' experiential background is, whether they have someone around them who can be an inspiration or a role model, their access to financing, and the competence of people in their network.

6.1. Parenting and interaction in childhood

A number of studies show that the probability of becoming an entrepreneur increases if one or both parents are entrepreneurs, irrespective of gender.⁴⁸ For example, a Swedish study finds that if one's parents have started up a business, the chances that one will become an entrepreneur oneself increase by as much as 60 percent.⁴⁹ The family environment has a positive influence on the likelihood of self-employment.

Bell et al. (2018) finds that exposure to innovation during childhood has a significant impact on children's inclination to become innovators. There is a higher probability that children of families who moved to an *innovative neighbourhood*⁵⁰ when they were young will become innovators. The younger they were when they moved, the greater the correlation with innovation. These exposure effects are particularly strong for girls, and the effects are also governed by the area of technology⁵¹ that characterizes the neighbourhood. Children, who grow up in a neighbourhood or in a family with a high innovation rate within a specific technology, will probably patent innovations within that specific area of technology. It is especially interesting to observe that women are more inclined to become innovators within a specific technological area, if they grew up in an area with several female (but not male) innovators within the same area of technology.

Previous studies have argued that exposure effects from neighbourhoods have been caused by better schools in some areas and residential segregation. Bell et al. (2018) argue in their extensive study that the exposure effects of growing up in a neighbourhood with a high innovation rate cannot be explained by better schools, but to a greater extent through mechanisms that transfer specific human capital between people, in the form of mentors or networks, for example through internships. They find that it is less likely that women, minorities and children from low-income families have had the same exposure through their families and neighbourhoods. In turn, this may help to explain the significantly lower innovation rate among these groups than in the overall population.

Bell et al. (2018) estimate that if girls had been as exposed to female innovators as boys are exposed to male innovators in their childhood neighbourhoods, the female innovation rate would increase by 164 percent and the gender gap in innovation would diminish by 55 percent – or, to put this another way, the gender gap would

⁴⁸ Lindquist et al. (2015) and Berglann et al. (2011)

⁴⁹ Lindquist et al. (2015)

⁵⁰ Defined by Bell et al. (2018) as a neighbourhood with a large number of patents.

⁵¹ Bell et al. (2018) have classified patents within 445 different areas of technology.

be halved. They point out that this may mean there are many so-called lost female Einsteins, who could have become innovators with a great impact on society if they had been exposed to innovation in their childhood.

6.2. Social networks as drivers for entrepreneurship

The strong effect of being exposed to innovators or entrepreneurs of the same sex in childhood coincides with Nordic studies that demonstrate the importance of social networking and social interaction in adulthood for women's inclination to become entrepreneurs. The study by Arenius & Kovalainen (2006) tests whether knowing someone who has started a new business during the past two years, may have a positive effect on self-employment preference of women in the Nordics. The authors argue that this person may serve as an influential role model and provide the necessary confidence to pursue a career as an entrepreneur. The study finds support for that having a close relation to someone who has started their own business, i.e. a role model, is positively related to starting a new business.

Similarly, Markussen & Røed (2017) show that Norwegian women's entrepreneurship is heavily influenced by the scope of entrepreneurship in neighbours, family members and people who attended the same school and were in the same grade level. Based on extensive statistical tests of entrepreneurs in Norway, they show that women are more influenced by surrounding women being entrepreneurs than surrounding men being entrepreneurs, while the opposite is true for men. This confirms the previous findings in this study of the importance that same gender role models play. The study shows, like the work of Bell et al. (2018), that social networking effects are strong and that they may largely explain the difference in business establishment rates between men and women. Markussen & Røed argue that as much as 50 percent of the discrepancy between men and women's entrepreneurship activity can be explained by these factors. As this study does not consider that some neighbourhoods may attract women with special traits, any causal inferences from this analysis should be made with caution.

The importance of the geographic dimension of social interaction has also been confirmed in Swedish and Danish studies looking at the effects of social interaction on entrepreneurship rates.⁵² Further, for example Langowitz & Minniti (2007) find that familiarity with other entrepreneurs, was positively related to the likelihood of women starting a business.

Thus, this literature review confirms that women's propensity to become entrepreneurs are influenced by female role models and female networks. Unfortunately, female entrepreneurs have smaller networks than male entrepreneurs do, leaving women at a disadvantage compared to men.⁵³

6.3. Women entrepreneurs and access to other people's capital

Several studies point to female entrepreneurs not being able to raise as much capital as their male counterparts. Entrepreneurs wishing to establish high growth businesses will often need seed capital from others, either in the form of loans or through other people's investments. If female entrepreneurs find it more difficult to obtain capital than male entrepreneurs, all other things equal, it may help explain why women are underrepresented among entrepreneurs in general and among entrepreneurs in high growth companies specifically (as we show in chapter 3 and 4).

⁵² Nanda & Sørensen (2008) for Denmark, and Giannetti & Simonov (2009), Andersson & Larsson (2016) for Sweden.

⁵³ Minniti & Arenius (2003)

Earlier studies find that women tend to use personal assets rather than funding from external sources.⁵⁴ Malmström & Wincent (2018) argue that women encounter different and stricter requirements to documentation when soliciting capital financial markets, which could explain female entrepreneurs preferring funding through personal assets. For example, Malmström & Wincent (2018) demonstrate that Swedish women seeking loan financing from banks face far more stringent requirements for information gathering than men. However, this is only for banks with a national scope, where there presumably is no personal relationship between the loan provider and receiver. When the banks are local, and banking could be relationship based, this inequality disappears.

Further, Malmström et al. (2018) show, through interviews with investors, that government-supported investment funds in Sweden consider female entrepreneurs and business leaders as having fewer resources available and less willingness to take risks, meaning their businesses are expected to grow less. Nevertheless, the study shows that empirical data does not demonstrate any difference in success in enterprises based on whether they were managed by a woman or a man. The researchers therefore believe that female business leaders receive far less government-supported seed capital than what they should be receiving based on business performance. According to their research, female entrepreneurs received on average 25 percent of the amount they applied for, while men received half of what they asked for from public Swedish investment funds.

The findings of Malmström and her colleagues have been noted in Sweden, and there has been a debate about the effects this has on gender equality and what needs to be changed, especially related to the practises and gender biases of public financing institutions. This has been a contributing factor to an audit of the gender related investment practises of a state-owned enterprise supporting businesses, Almi Företagspartner AB, in 2018-2019.⁵⁵ The audit, by the Swedish National Audit Office, concluded that the Swedish government should investigate whether there is a need for complementing the market based funding alternatives, given the gender biases.

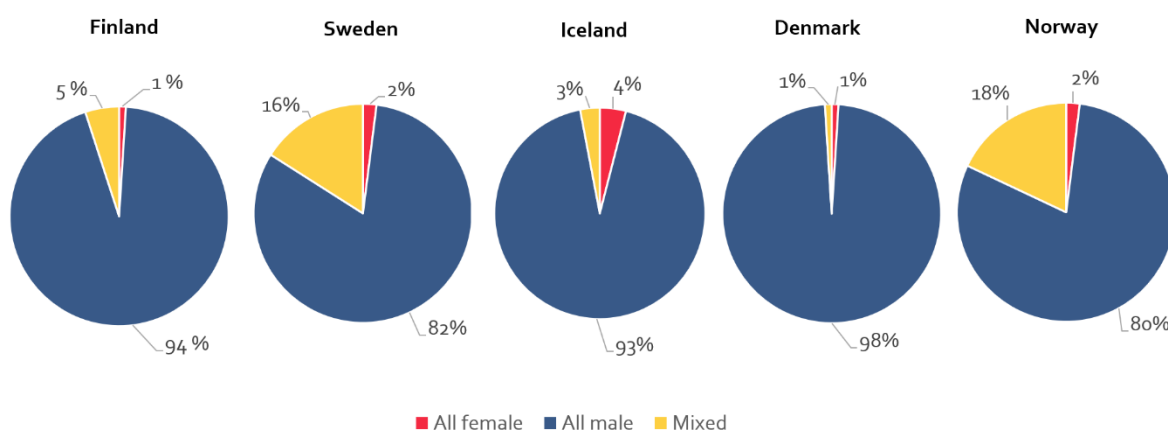
Also, in Norway, research points to public business fund managers believing it is less profitable to invest in or provide financial support to women than to men. This is highlighted by Alsos and Ljunggren at Nord University in Norway, who have conducted a large number of studies on female entrepreneurship, in the journal *Research*. Alsos & Ljunggren (2017) point out that the small Norwegian investment fund that they study attributed less weight to the experiential background of female than male entrepreneurs. Additionally, Alsos & Ljunggren argue that the women who receive support seem to have realized their own weakness and therefore allied with male business partners.

Overall, the literature points towards female entrepreneurs raising less capital than male entrepreneurs. If we look at venture capital raised in the Nordics, we find that 88 percent of the funding went to teams having only male founders in 2018, whereas all female founder teams only raised 1.4 percent of the capital (Unconventional Ventures, 2019). As illustrated in Figure 6-1 below, there are no big differences between the Nordic countries regarding the share of capital raised by teams with only female founders. The share of capital raised by all female teams varied between 1 to 4 percent. However, there was greater variation between countries regarding the share of capital going to teams of mixed gender. In Sweden and Norway, this share was 16-18 percent, while it was only 1 percent in Denmark. In Denmark, 98 percent of all capital raised went to male only teams.

⁵⁴ For example Hisrich & Brush (1986) and Neider (1987)

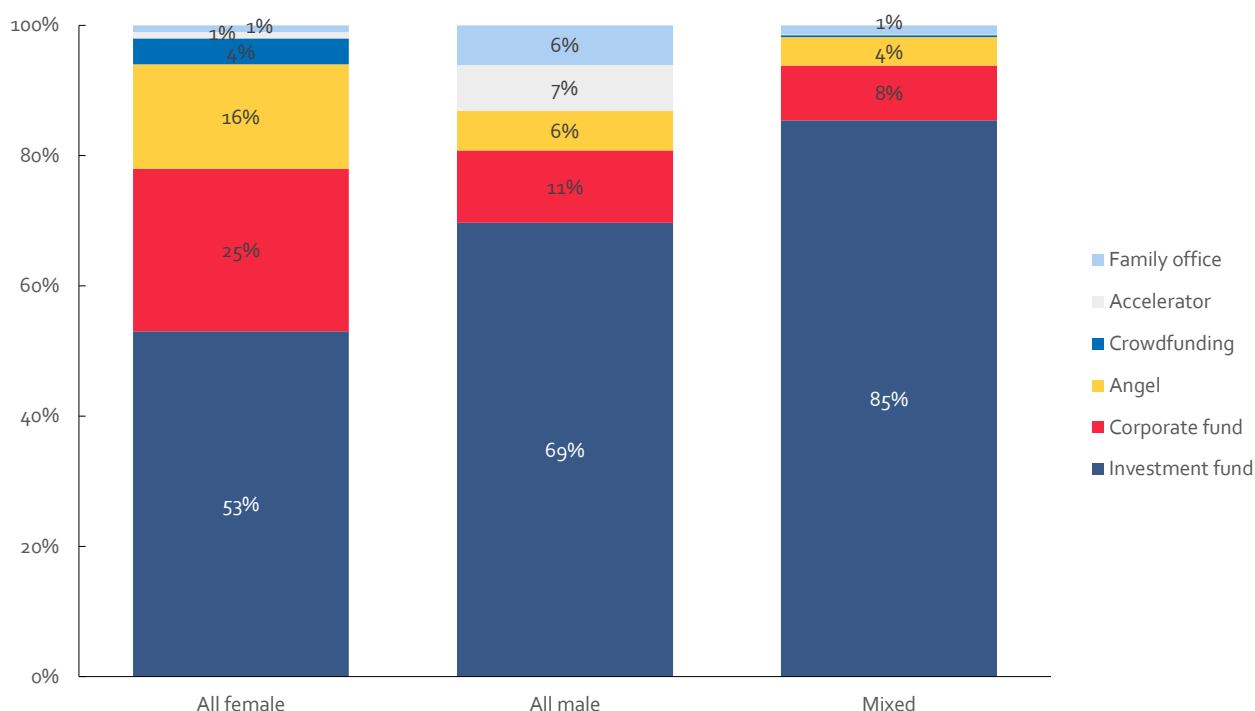
⁵⁵ Regjeringens skrivelse (2019).

Figure 6-1: Nordic capital raised teams by gender in 2018, by country. Source: Unconventional Ventures (2019)



The funding source varies for all male and all female teams (Unconventional Ventures, 2019). In 2018, teams having only female founders use more diverse sources of funding, whereas mixed and all male teams are funded mostly by investment funds, see Figure 6-2 below. This shows that teams with only female founders use more creative means of funding, like corporate funds, crowdfunding, and angel funds. In the Nordics, angel funds constitute 16 percent of the funding that female entrepreneurs receive, whereas it only constitutes 6 percent for male entrepreneurs.

Figure 6-2: Source of funding in the Nordic countries in 2018. Source: Unconventional Ventures (2019)



Menon Economics (2019) did a similar exercise for Norway finding that only few businesses had a female CEO at the time of investment from seed and venture funds. Combining Norwegian Venture Capital's database of all

companies in Norway⁵⁶ with professional fund investors on the owner's side and data from the Brønnøysund Register Centre, we were able to identify the gender of the CEO at the time when the funds (seed and venture funds) were first invested in the company. Normally, the general manager of the companies in the early years will also be the entrepreneur. Of all the businesses⁵⁷ that attracted investments from 2007 through 2017, only 4,2 percent had a female CEO at the time of initial investment.⁵⁸ This supports the finding of the Norwegian government investment company Investinor, who reviewed all the companies they had considered investing in during the period 2009 to 2015. Of 1.620 companies, only 16, or 1 percent, had a female manager, board chair, or inventor.⁵⁹

A central question that must be posed in this context is if the low proportion of women in such firms derives from barriers that women, more than men, encounter to obtaining capital. Menon Economics (2019) interviewed three women who are central figures in the Norwegian system for investments in startup companies with high scaling potential. They have extensive experience in acquiring capital for such firms, primarily from investors. They paint a clear picture of a capital market that is characterized by masculine traits. The larger the investments or loans are, the more dominating the presence of men becomes. The language used is also typically masculine, and it is claimed that many women are frightened away from the rooms where investors are easiest to find and match with. Different language and unnatural expectations can reduce the efficiency of the market and contribute towards curbing the acquisition of capital for good projects fronted by female entrepreneurs. One of the interviewees pointed out the need to find other types of rooms where the entrepreneur and investor can meet so that these factors are not allowed to curb marketing activity. Crowdfunding is an example of the type of venue where women can feel greater confidence and perhaps more easily acquire capital in the market, which, as shown in Figure 6-2, is a source of funding that women use more than men. The three interviewees also highlighted that women are not accustomed to the role of ownership, i.e. being an active shareholder. When AksjeNorge has regular membership and informational meetings, very few women attend, but when they hold meetings that are hosted exclusively for women, attendance is high. There is a glaring shortage of such women only forums in the financial market.

⁵⁶ The database covers all investments from 2007 through 2017.

⁵⁷ Selection of 407 firms.

⁵⁸ 80,3 percent of the companies had male managers. As not all businesses are registered with an indication of the manager's gender, 15,5 percent of all companies are categorized as having a manager of unknown gender. We have no reason to believe that unregistered companies have a gender composition that differs from this.

⁵⁹ Article in Dagens Næringsliv: <https://www.dn.no/her-er-kvinneandelen-99-prosent/1-1-5486759>

7. Start-up environments to promote entrepreneurship

There are several different types of start-up environments or business networks that help entrepreneurs. Some of these environments are specialized in helping entrepreneurs early on (called incubators), whereas some networks aim at helping entrepreneurs scale-up their companies (called accelerators). There are also other types of environments like co-working spaces, innovation centers and science parks. In sum, these different types of start-up environments all have an ambition to stimulate business development and help start-ups grow through training, counseling, workshops, and by giving them access to funding and networks.

There is ample research that suggests that social interaction among entrepreneurs encourage entrepreneurship. We mentioned already in chapter 6.2 that social networks are drivers for female entrepreneurs. In addition, there are many studies looking at start-up environments in particular. According to Bergék & Norrman (2008) a purpose of incubators is to enhance economic development and reduce unemployment in a region by facilitating the start-up of new companies and increasing their survival rate and growth.

*"Incubators support start-ups comprehensively
so they are able to concentrate on business development."*⁶⁰

7.1. Start-up environments in the Nordic countries

It is well known that networks and role models will play an important role to increase the number of female entrepreneurs. Therefore, we want to investigate to what extent start-up environments in the Nordic countries support and promote entrepreneurship in general and female entrepreneurship specifically. To do this, we have mapped the start-up environments in the Nordic countries. However, there are a large amount of start-up environments of different sizes and functions in the Nordic countries. Some networks offer only a desk from which the entrepreneur can work, and no other services such as mentors, guidance, etc. Due to the scope of this report, we have chosen to exclude such environments. It is important to note that our mapping is not complete but provides an overview of the start-up environments in the Nordic countries.

The literature on female entrepreneurs in start-up environments show that few of the companies in incubators have female founders or managers, and the existing incubators do not appear to decrease the existing gender wage gap.⁶¹ For example, Lindholm Dahlstrand & Politis (2013) study the role of university incubators in women's academic entrepreneurship.⁶² They analyze over 1.400 companies across 19 incubators in Sweden and find that only around 15 percent of these companies were founded and managed by women. The share of female entrepreneurs differed between incubators targeting companies within life science (18 percent female) and incubators targeting companies within technology (10 percent female). The authors do not find any evidence that the Swedish incubators in the study are able to decrease the gender gap in women's academic entrepreneurship.

⁶⁰ World Economic Forum & KPMG (2018)

⁶¹ Marlow & McAdam (2015), Lindholm Dahlstrand & Politis (2013)

⁶² University incubators are entities within a larger university-centered innovation support system that are dedicated to accelerating the successful development of start-up and early-stage companies through an array of business support resources and services

Start-up environments focusing on female entrepreneurs

Unfortunately, there is limited available statistics about the female representation in start-up environments⁶³. Almost none of the environments we have covered in our survey reports the share of females. However, some incubators and accelerators refer to gender diversity in their annual reports, where they mention briefly that they wish to increase the share of females among their applicants. Nevertheless, few presents specific actions to achieve this. Further, our survey reveals that only a few start-up environments promote specific initiatives or programs for female entrepreneurs. In the following we present some of the start-up environments in the Nordics that target women, which may be viewed as best-practices. Please note that our mapping is not complete but provides an overview of the start-up environments in the Nordic countries.



Denmark

- The Copenhagen School of Entrepreneurship (CSE) is a student organization at Copenhagen School of Business with an incubator and accelerator program. They have an initiative towards female entrepreneurs called **the RISE Programme**, aimed at inspiring female students to build businesses. The program has 15 spots and can be viewed as an exclusive talent program. CSE is the largest entrepreneurship university in Denmark.



Finland

- In Finland, there is an incubator called **"Women's Enterprise Agency"**. The mission of the Women's Enterprise Agency is to promote female entrepreneurship. The Agency provides several services for female entrepreneurs, such as referrals, mentoring, training, and advisory services.
- Finland also has incubators focused on female entrepreneurs within specific sectors. **"Girls in Tech"** and **"Future female"** are all aimed at technology. "Girls in Tech" offer a mentoring program and skills bootcamp. "Future Female" is a platform for female entrepreneurs which offers workshops, seminars, and mentors.

⁶³ In Sweden, there is a database called Inkrapp that reports data from 18 Swedish incubators that belong to the national incubator program "Inkubator-excellens". This database provides statistics on employment and turnover of the businesses belonging to the incubators, but not by gender.



Iceland

- In Iceland, the publicly funded organization “**Innovation Center of Iceland**” provides incubator services to, among others, entrepreneurs. The organization has also supported female entrepreneurs through specific programs. The Innovation Centre will be dismantled by the end of year 2020.
- The Ministry of Welfare awards yearly grants to female entrepreneurs from the loan guarantee fund **Svanni**. The aim of these grants is to encourage women to start up their own companies and to increase their access to financing.
- The Association of Women Business Leaders, also called the **FKA**, aims to support women managing and growing their businesses in Iceland. FKA was founded in April 1999 and has as its core mission to bring businesswomen together, support women as they manage and grow their businesses and increase their visibility in the business world and society in general.



Sweden

- The initiative **Femtech Bootcamp** is carried out by Startup Sweden and is targeting early stage startups with at least one female founder who wants to meet with leading investors and the largest tech media houses in Sweden. FemTech Bootcamp is an intensive one-week program where 10 selected startup companies from all over Sweden is given the opportunity to take part in the startup scene in Stockholm, participate in pitch training including the possibility to pitch on stage in front of important decision-makers. Throughout the week the participant will be part of several workshops developing your skills in business development, digital strategy, funding law, branding and design, matchmaking with investors and media and more.
- For the fourth year in a row, Di Digital is hosting **Female Founders**, a national initiative that celebrates female founders, leaders and investors helping female tech stars reach their full potential. Six of Sweden's most promising female founders gets the opportunity to pitch in a competition. Three of them goes to a national final. During the event, the female founder of the year and female investor of the years is announced during the final.
- **Ownership** is a politically independent think tank with the purpose of shifting societal power structures through ownership. They want to substantially increase the proportion of owneresses within our lifetime to improve equality. Diversifying the gender distribution of those who own creates a better society for everyone and equal ownership grants women more power over their own lives and decisions.
- The initiative “**the Yes Way**” is run by eight Swedish incubators, and sponsored by government agencies such as Vinnova and Tillväxtverket. The initiative focuses especially on female entrepreneurs and work for an equal and inclusive entrepreneurial and innovation support system, financing climate and business support. According to the initiative, to be able to increase the gender diversity in entrepreneurship, organizations that encourage entrepreneurship, such as incubators, must have a working environment that is inclusive towards women.



Norway

- In Norway, the **SHE Community** is an organization that aims at closing the gender gap, by inspiring more women to become leaders and entrepreneurs. The organization is behind several initiatives such as a mentor program for female entrepreneurs and leaders called **SHE Mentor**. Another initiative is **SHE Invest** that aims to inspire women to become investors, and to encourage investors to invest in start-ups led by women.
- **The Angel Challenge** is an arena where investors and entrepreneurs work together to learn how to get capital for your start-up.
- **Girl Geek** is a network promoting women in the IT and technology-sector. The network is present in several countries.

In sum, there is a large number of start-up environments in the Nordics, but very few have a specific focus on female entrepreneurs. In fact, if there is a large share or a majority of female entrepreneurs among the companies belonging to an incubator or an accelerator, it often makes the news.⁶⁴ We have also found that if a start-up environment had a specific program for or focus towards female entrepreneurs, this was rarely well communicated on their web pages. If these programs or initiatives aimed at female entrepreneurs are not promoted, female entrepreneurs will not be aware of them and turnout will be low.

Nevertheless, our mapping reveals that, even though start-up environments want to increase the share of female entrepreneurs, they select start-up companies based on quality of the business idea, not gender of the entrepreneur. Further, one start-up environment pointed out that, in their experience, female entrepreneurs did not want to be selected based on gender but based on their talent and business idea. However, given that female entrepreneurs receive clearly less attention and funding than male entrepreneurs, there is a bias in start-up environments. This leads to unintentional favoring of companies lead and founded by men over those lead and founded by women.

Our mapping suggests that there is little collaboration between the business networks across the Nordic countries. However, we find that there are some efforts that focus on entrepreneurship across the Nordic countries. One example is the "Nordic Mentor Network for Entrepreneurship" (NOME), a collaboration between the Nordic countries. NOME matches Nordic companies within life science with highly skilled professionals that volunteers as mentors. The mentors are typically Nordic business leaders, chairmen, professors, and successful entrepreneurs.

⁶⁴ For example <https://digital.di.se/artikel/kvinnliga-grundare-dominerar-i-malmos-startup-program>

8. Framework conditions for female entrepreneurship

In this chapter, we look more closely at the framework conditions for entrepreneurship that are created through government regulations, rights and support schemes. If the framework conditions are consistently poorer for women than for men, one should consider changes in the system. Several comparative studies have been conducted contrasting policy designs aimed at female entrepreneurship in various countries. The studies show that the policy design is very heterogeneous and that it is complex to make comparisons that allow one to extract normative insights pointing to the best possible policy design.

Our analysis of the framework conditions for female entrepreneurs, reveal that the Nordic countries have social support mechanisms such as sickness benefits, parental leave and benefits and public childcare. We find that the framework conditions are mostly the same for employees and entrepreneurs, but that in practice many entrepreneurs are not able to e.g. take out as much parental leave as they would have wished. This may indicate that women are discouraged to start their own business. We also find that there are several state programs that support entrepreneurship in the Nordics, but these rarely distinguish on gender.

8.1. Support mechanism of the Nordic welfare states

The Nordic countries are all so-called welfare states. This means that the Nordic countries have a social security system that provide stronger support mechanisms than in other European countries. In the following we will investigate whether support mechanisms like sickness benefits, parental leave and benefits, and public childcare differ across the Nordic countries, and how they may impact female entrepreneurship.

Sickness benefits

There are many financial and regulatory differences between employed workers and entrepreneurs and overall, we find that entrepreneurs are covered by sickness benefits to a lesser extent than employees. In the table below, we have outlined which sickness benefits are given to entrepreneurs in the Nordic countries. However, there are some differences between the Nordic countries. In Sweden, entrepreneurs of newly started companies receive sickness benefits that corresponds to that of an employee with similar tasks, education and experience. In Denmark on the other hand, the sickness benefit for a recent entrepreneur is calculated based on income from previous employment. In Denmark and Norway, entrepreneurs can take voluntary insurances and receive sickness benefits also for short-time illness, while entrepreneurs in Sweden and Finland to a large extent are covered by the same benefit schemes as employees.

Table 8-1: Sickness benefits given to entrepreneurs in the Nordic countries.

Country	Sickness benefits
Denmark ⁶⁵	In Denmark, self-employed people receive daily unemployment benefits if they are not able to work due to sickness, given that they live in Denmark and pay taxes in Denmark. The entrepreneur will receive daily unemployment benefits after two weeks of illness. An entrepreneur can receive sickness benefits also for short-time illness if they take a voluntary insurance. If the company is less than six months old when the entrepreneur

⁶⁵ www.borger.dk <https://www.borger.dk/arbejde-dagpenge-ferie/Dagpenge-kontanthjaelp-og-sygedagpenge/Sygedagpenge/Sygedagpenge-hvis-du-er-selvstaendig>

falls ill, the daily unemployment benefits is calculated based on income from previous employment.

Finland ⁶⁶	If an entrepreneur falls ill in Finland, the Social Insurance Institution of Finland (Kela) will provide sickness benefit, which will compensate the entrepreneur for the loss of earnings due to the incapability to work. An entrepreneur may receive this benefit for maximum one year. The payment of sickness benefit starts after a qualifying period, which is usually the first day of illness and the following three weekdays. The sickness benefit is calculated based on the entrepreneur's annual income, confirmed under the Self-Employment Persons' Pensions Act (YEL). However, the yearly income of the entrepreneur is self-reported. If the entrepreneur chooses to underreport their income, they might in practise get very low benefits.
Iceland ⁶⁷	Number of sick-leave days are determined by collective agreements. A self-employed person who has been in full-time work, will receive full sickness benefits, and if they have worked half-time, they will receive 50 percent of benefits. The benefit is calculated based on the level of income the entrepreneur has provided for their social security contribution.
Norway ⁶⁸	Sickness allowance for short-time illness is only given if the entrepreneur has a voluntary insurance. Entrepreneur's usually have the right to daily unemployment benefits and have only voluntary occupational injury insurance benefit.
Sweden ⁶⁹	Entrepreneurs are covered by the Swedish social insurance, which means that the entrepreneur is entitled to compensation if the entrepreneur is unable to work due to illness. The sickness benefit is around 80 percent of the entrepreneur's income during the first year of illness. How the income is calculated varies depending on the type of company. At the beginning of the sick leave there is at least one unpaid day but it can be up to 90 unpaid days if the entrepreneur so chooses. If an entrepreneur of a newly started company becomes sick, he or she will receive a sickness benefit that at least corresponds to that of an employee with similar tasks, education and experience.

In a Menon Economics report from 2016, reference is made to Norwegian female entrepreneurs who, more so than men, report issues related to the lack of sick leave rights. The report argues in favour of strengthening access to medical insurance for self-employed workers and freelancers to enable a higher proportion of female entrepreneurs. Furthermore, the study reports that self-employed persons want more information about their rights to welfare schemes related to sickness, pregnancy and unemployment.

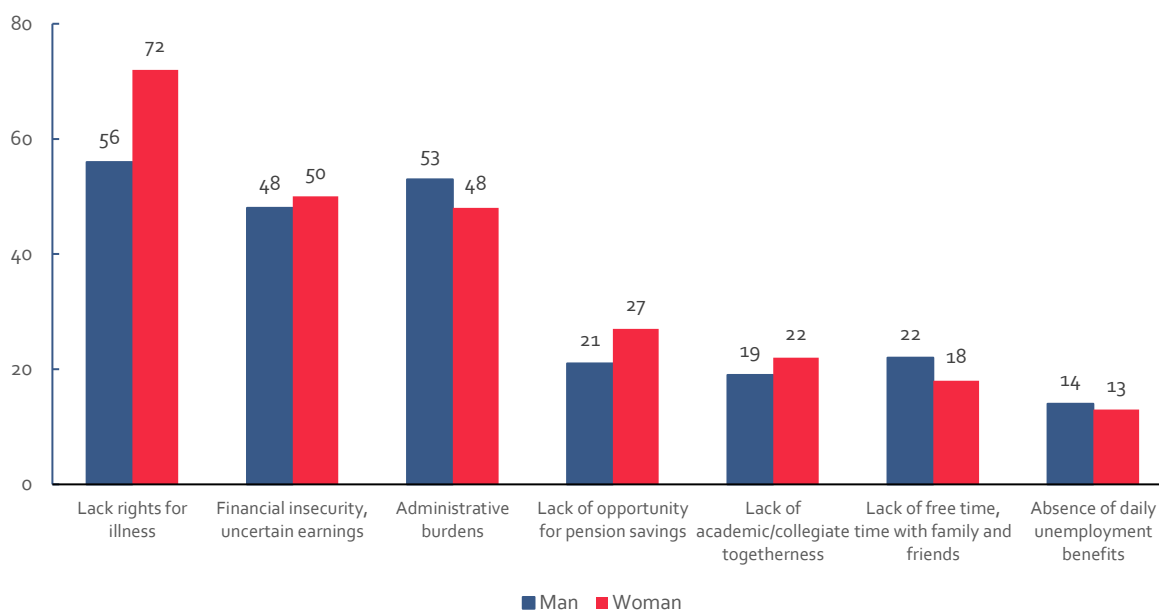
⁶⁶ [www.kela.fi https://www.kela.fi/sairauspaivaraha_maara](https://www.kela.fi/sairauspaivaraha_maara)

⁶⁷ <https://www.norden.org/en/info-norden/sickness-benefit-iceland>
https://vefur.island.is/en/business_and_industry/employees/sick_leave_rights/

⁶⁸ Menon Economics (2016)

⁶⁹ Försäkringskassan https://www.forsakringskassan.se/privatpers/sjuk/enskild_firma_lank/sjukpenning

Figure 8-1: The biggest challenges in starting up and running a business among members of the Federation of Norwegian Professional Associations. Source: Respos and Menon Economics (2016)



Parental leave and benefits

Similarly, there are differences regarding prenatal leave, maternity leave, and parental leave and benefits for employees and entrepreneurs. In the table Table 8-2 8-2 below, the parental leave and benefits are outlined for the Nordic countries. In all countries, entrepreneurs are entitled to parental leave and benefits. For example, in Norway, women have a right to prenatal leave, maternity leave and parental leave, i.e. respectively, before, during and after childbirth.

Table 8-2: Parental leave and benefits given to entrepreneurs in the Nordic countries.

Country	Leave	Benefits
Denmark ⁷⁰	A female entrepreneur is entitled to maternity leave as long as she has worked at least six months out of the last 12 months.	A female entrepreneur is entitled to maternity allowance as long as she has worked at least six months out of the last 12 months. ⁷¹
Finland ⁷²	Entrepreneurs are entitled to leave of absence up to same amount as employees.	All finish entrepreneurs must have a self-employed persons' pension insurance called YEL insurance. The parental benefit is calculated based on the annual income, which is the income under the self-employed persons' pension insurance schemes (YEL).

⁷⁰ Nordic Council of Ministers (2011). Parental leave, childcare and gender equality in the Nordic countries.

⁷¹ In 2019, the Finance Act 2020 (Finanslov) launched a maternity fund for entrepreneurs. The Fund will increase the current maternity and paternity allowance given to entrepreneurs. However, only full-time self-employed persons will be covered by the Funds funding. The final discussion on the design of the Fund will be held during the year 2020.

⁷² [www.kela.fi https://www.kela.fi/vanhempainpaivarahat-yrittajalle](https://www.kela.fi/vanhempainpaivarahat-yrittajalle)

Iceland ⁷³	Entrepreneurs are entitled to leave of absence.	Payments amount to 80 percent of the average earnings of the parent during a 12-month period. The benefit is calculated based on the level of income the entrepreneur has provided for their social security contribution.
Norway ⁷⁴	Entrepreneurs are entitled to leave of absence.	Average income over past three years (For freelancers: average income over past three calendar months)
Sweden ⁷⁵	Entrepreneurs are entitled to leave of absence up to same amount as employees. Additionally, both entrepreneurs and employees are entitled to leave to take care of a sick child between the age of 8 months to 12 years.	The parental benefit is around 80 percent of the entrepreneur's income for the first 390 days and after this 180 Swedish krona for 90 days. The benefit for taking care of a sick child is also 80 percent of income. How the level of income is calculated varies depending on type of company.

According to Arenius & Kovalainen (2006), entrepreneurs often receive lower maternity and parental leave payments than employees in the Nordics. Therefore, women in their childbearing years would be less inclined to become entrepreneurs. Thus, the authors argue that the welfare model in the Nordic countries render entrepreneurship less rewarding for women and possibly discourage women from becoming entrepreneurs.

Similarly, Neergaard & Thrane (2011) finds that although the Nordic welfare model offers schemes such as prenatal leave, the scheme favours employed workers over entrepreneurs in Denmark. For example, remuneration associated with pregnancy for a self-employed person is reduced if she works, whereas an employed person does not face the same restriction. The study argues that this may mean that a female entrepreneur will have to shut down the business when she has children. 56 percent of female entrepreneurs believe that the system of maternity leave does not meet the needs required by having both their own business and a family. The study finds that 20 percent of female entrepreneurs did not take out prenatal leave, whereas a third of female entrepreneurs took out less than three months of prenatal leave. In comparison, an average female employed worker took out just over nine months of maternity leave. According to the study, eleven percent of female entrepreneurs opted not to have children or to postpone having children.

Our mapping above shows that entrepreneurs to a large extent have access to the same benefits as employees in the Nordic countries. Even so, the costs of taking out parental leave can still be higher for entrepreneurs than for employees, which affect women more than men as they take out most of the parental leave.⁷⁶ A study by Statistics Finland (2017) finds similar results in Finland as Neergaard & Thrane (2011) found for Denmark. Of women that were entrepreneurs during the birth of their first child, 24 percent had not taken out any parental leave. The share among men was even higher, 52 percent. Of the parents that did take leave, only 6 out of 10

⁷³ [www.vefur.island.is https://vefur.island.is/en/family/having_a_baby/maternity_paternity_leave_and_parental_leave/](https://vefur.island.is/en/family/having_a_baby/maternity_paternity_leave_and_parental_leave/) and Act on Maternity/Paternity Leave and Parental Leave, No. 95/2000.

⁷⁴ Nav <https://familie.nav.no/om-foreldrepenget/hva-kan-du-fa>

⁷⁵ Försäkringskassan <https://www.forsakringskassan.se/privatpers/foretagare/foraldrasforsakringen-for-dig-som-ar-foretagare>

⁷⁶ A study by Cederström (2019) for the Nordic Council of Ministers find that men in the Nordics only use 10 to 30 percent of the total leave.

said they were able to take leave for as long as they wished. For women, 7 out of 10 entrepreneurs were content with the amount of leave, while only 5 out of 10 men were.

Public childcare

Access to childcare and kindergarten is a factor that significantly affects women's ability to participate in the labour market. This is stated in the European Commission's report on equality from 2009. We find that public childcare is available in the Nordic countries, regardless of parents' employment status. However, the cost of public childcare and at what ages children are accepted varies between the countries. Our findings are summarized in the table below.

Table 8-3: Public childcare in the Nordics.

Country	Public childcare?	Cost of childcare and age limits
Denmark	Yes	Denmark offers public childcare (nursery and kindergarten) for a cost, which varies between municipalities.
Finland	Yes	In Finland, children may attend municipal early childhood education. The fee depends on the income of the parents, the number of children in the family and the number of hours a week the child will attend the early childhood education.
Iceland	Yes	Pre-schools are available to all children. Parents pay a monthly fee that depends on the amount of time the child spends in day care, and the family situation (single parents, number of children, income of parents).
Norway	Yes	The Norwegian state has set a maximum monthly fee per child. In Norway, children born before December, are entitled a place in a kindergarten no later than October the following year ⁷⁷ .
Sweden	Yes	Public childcare in Sweden is subsidised with tax revenues. Parents pay, regardless of the number of children or their own income, a fixed amount for childcare. The cost varies between counties.

However, the impact of such welfare schemes on female entrepreneurship is complex. In Denmark, 30 percent of women perceive nursery/childcare system as a significant barrier to entrepreneurship.⁷⁸ Neergaard & Thrane (2011) show that public childcare might not have increased the share of female entrepreneurs as expected in Denmark, and it appears that welfare policies aimed at facilitating employment are not the same as those aimed at facilitating entrepreneurship.

8.2. State programs to support female entrepreneurship

Framework conditions for entrepreneurship can also take the form of state supported programs. The Nordic countries all have programs or initiatives that in some way aims to support entrepreneurs, either by providing advisory services or financial help. In Figure 8-2 below, we have collected some of the agencies that offer such

⁷⁷ The Kindergarten Act § 12.

⁷⁸ Neergaard & Thrane (2011)

programs or initiatives in the Nordic countries. Please note that our mapping is not complete but provides an overview of the agencies in the Nordic countries.

Figure 8-2: Overview of Nordic agencies supporting start-ups and entrepreneurs in general

 Nordic Innovation  Nordic Council of Ministers		
Norway  Innovasjon Norge   Forskningsrådet		Denmark   Danmarks Erhvervsfremmebestyrelse  ERHVERVSSTYRELSEN  InnovationsFonden <small>FORSKNING, TEKNOLOGI & VÆKST I DANMARK</small>
Iceland   Innovation Center Iceland  SVANNI LÁNATRYGGINGASJÓÐUR KVENNA	Finland  FINNVERA  BUSINESS FINLAND	Sweden  VINNOVA <small>Sweden's Innovation Agency</small>  Industrifonden  tillväxtverket  almi  SAM INVEST

Even though most of these programs are not aimed directly towards female entrepreneurs, Petterson (2012) found that all Nordic countries, except Iceland, had a program or an action plan to support female entrepreneurship. Similarly, we find that there are current or past state funded support programs and business schemes directed specifically towards female entrepreneurship in all the Nordic countries. Below, we present some of these programs and business schemes.

Denmark

Vækstfonden is the Danish state's investment fund. Vækstfonden aims at enabling Danish companies to innovate, generate growth, and create new jobs by providing access to risk capital. The investment fund also provides financing to entrepreneurs, such as convertible loans, start loans and guarantees. However, our research has not shown that Vækstfonden have specific initiatives aimed at female entrepreneurs.

Innovation Fund Denmark (Innovationsfonden) invests in entrepreneurs, researchers and businesses. Innovation Fund Denmark launched in 2018 four initiatives with the ambition to strengthen the gender balance among the applicants of the investment fund:

- Appointing role models that will inspire women to apply, as well as providing the investment fund with input into future work ensuring increased gender balance.

- Including gender diversity in the strategy of Innovation Fund Denmark. In December 2018, the fund published a new strategy that focuses on securing that more female entrepreneurs are supported.
- Adjusting application requirements and formulations.
- Focusing on gender diversity among candidates for panels and awards.

Danish Business Authority (Erhvervsstyrelsen) is a part of the Danish Ministry of Industry, Business and Financial Affairs (Erhvervsministeriet). Erhvervsstyrelsen aims at improving the competitiveness of Denmark and make it more attractive to run a business. Erhvervsstyrelsen is responsible for startup policy in Denmark, and supports different programs and initiatives targeting entrepreneurs, i.e. by financially supporting startup events, such as TechBBQ, Global Entrepreneurship Week Denmark and others.

Finland

Business Finland is the Finnish governments organization for innovation funding. The organizations strategy is to enable companies to grow internationally, but also to create a competitive business environment in Finland. Business Finland offers funding and several programs. For example, Business Finland offers funding on a yearly basis to Young Innovative Companies. The funding is awarded to startup companies younger than five years that show growth potential and have aims for international growth. However, they do not have specific initiatives directed towards female entrepreneurship.

Finnvera is a financing company owned by the Finnish state. In addition, it is the official Export Credit Agency (ECA) of Finland. Finnvera provides financing for the start, growth and internationalization of enterprises. Finnvera offers, among other things, an entrepreneur loan, which is a personal loan to an entrepreneur and can be used to finance investments. The maximum loan is 100.000 euro per borrower, and it is required that the borrower must personally put a self-financing portion of at least 20 percent. Of the 30.000 new enterprises in Finland each year, around 3.500 get financing help from Finnvera.

Finnvera does not currently have any initiatives directed towards female entrepreneurs, but has a scheme providing newly established businesses with a bank guarantee to help them get a loan which, according to Finnvera, is heavily used by female entrepreneurs. However, from 1997-2012 Finnvera had a loan scheme with the purpose of encouraging women to become entrepreneurs and scale up their businesses. This scheme was authorized by parliament and gave Finnvera (previously Kera) the mandate to support female entrepreneurship with 50 million Finnish marks to celebrate the 1996 anniversary of 90-years of female suffrage in Finland. The loans were granted to companies with female ownership and management, up to 5 employees, and to both the new and existing businesses. In addition to being directed only towards women, the scheme had a 1 percent lower interest rate than a comparable loan that was granted also to men. This interest rate reduction was important at a time of generally high interest rates. A single company could get up to 35.000 euro and, in total, Finnvera gave out 320 million euro to female entrepreneurs over a period of 16 years. The scheme ended because it had filled its mandate and was replaced by non-gender specific schemes.

Iceland

In Iceland, the publicly funded organization “**The Innovation Center of Iceland**” offers a wide range of services to entrepreneurs in general. This includes workshops, professional support and incubator services. Some of its work is specifically targeted towards female entrepreneurs.

The Ministry of Welfare awards yearly grants to female entrepreneurs from the loan guarantee fund **Svanni**. The aim of these grants is to encourage women to start up their own companies and to increase their access to

financing. A prerequisite is that a majority of the company is owned by women. Further requirements are that the company is based on an innovation and that it creates jobs in the long term.

The **Association of Women Business Leaders**, also called the **FKA**, aims to support women managing and growing their businesses in Iceland. FKA was founded in April 1999 and has as its core mission to bring businesswomen together, support women as they manage and grow their businesses and increase their visibility in the business world and society in general.

Norway

Innovation Norway (Innovasjon Norge) supports Norwegian companies in developing competitive advantages and enhance innovation. Innovation Norway offers a range of programs and services, of which some are aimed towards entrepreneurs. Innovation Norway's start-up offers include:

- Expertise and networking. The aim is to help companies build networks, which can provide the entrepreneurs with capital and competence, such as investors, other entrepreneurs and experts in the start-up ecosystem.
- Mentoring services, where the objective is to contribute to increased survival and growth among start-up companies.
- Start-up grants for promising start-ups with high ambitions.

However, these services are available for all entrepreneurs and are not focused on female entrepreneurs. Nevertheless, Innovation Norway is one of the main contributors to the discussion on female entrepreneurship in Norway, and has worked several years to increase the share of female entrepreneurs, in particular female entrepreneurs with growth ambitions.

Investinor is an investment company owned and funded by the Norwegian government with a focus on companies in the other early and expansion stages. Investinor says they work towards increasing the share of females in their portfolio, as diversity drives better results. For example, Investinor's new guidelines state that portfolio companies are obliged to have female representation in both management and board within three years after Investinor has invested in them. Nevertheless, Investinor does not have specific initiatives towards female entrepreneurs.

The Research Council of Norway (Norges forskningsråd) works to promote research and innovation in Norway, and invests on behalf of the Norwegian Government. The Research Council offers a STUD-ENT scheme that is aimed at increasing the rate of entrepreneurship among students. The program does not have any specific requirements related to gender, but the Research Council reports that female entrepreneurs were behind almost half of the projects in 2019.⁷⁹

Sweden

The Swedish Agency for Economic and Regional Growth (Tillväxtverket) is a government agency under the ministry of Enterprise and Innovation. The Swedish Government has long been focused on promoting female entrepreneurship. For example, the Swedish Ministry of Enterprise and Innovation stated in 2011 that:

⁷⁹ <https://www.forskningsradet.no/nyheter/2019/18-studentgrunder/>

"The under-representation of women amongst Swedish entrepreneurs means lost business opportunities and a limitation of the country's potential for growth.

In 2011, the Government tasked the Swedish Agency for Economics and Regional Growth to coordinate a program to promote female entrepreneurship called "Promoting Women's Entrepreneurship".⁸⁰ The target group of the program was both female entrepreneurs and women that wanted to start their own business. The program lasted from 2011 to 2014, and included several initiatives, such as a mentor program called "Ambassadörer for kvinnors företagande", an initiative focusing on business development and innovation measures, and initiatives specifically aimed at universities and colleges. In addition, the Agency was tasked with developing a strategy for a system that would promote female entrepreneurship, which was launched in 2015. Further, the Agency is one of the sponsors of the programme "The Yes Way", which is described in Chapter 7.1.

Vinnova is Sweden's innovation agency. They fund different types of projects related to innovation. Gender diversity have been a focus point of the agency over several years. Vinnova works to ensure that the initiatives supported by the agency will both benefit women and men. Vinnova has three focus areas for their gender equality work, which are outlined below.

- Who: Actively promote the number, power and influence of women in project teams.
- What: Integrating a sex and/or gender perspective in research and innovation projects.
- How: Ensuring 60/40 percent in all assessment groups and a gender aware assessment process.

In addition, Vinnova finances projects focusing on gender equality. Vinnova is one of the sponsors of the programme "The Yes Way", which is described in Chapter 7.1.

⁸⁰ In Swedish the program is called "Främja kvinnors företagande". The first period of the program was from 2007 to 2009 (later expanded to 2010), but it was in that period run by Nutek

9. Measures to stimulate female entrepreneurship

In this study, we show that there are major and enduring differences in the entrepreneurial activity of women and men in the Nordic countries. Even though there has been a slow increase in the share of female entrepreneurs in many of the Nordic countries in recent years, the share continues to be low, especially for female entrepreneurs within high-growth industries. This is true also for Finland, which has the highest share of female entrepreneurs among the Nordic countries. A low share of female entrepreneurs is not unique for the Nordic countries, but what is surprising is that the differences between men and women are as large, or even greater, than in countries with much lower gender equality in general.

What can be done to increase the number of female entrepreneurs in general and female growth entrepreneurship more specifically? Below, we list measures within four areas that we believe can be relevant and effective in increasing the number of female entrepreneurs with a significant growth potential.

Establish female Nordic mentoring schemes and networks

As mentioned, social networks and role models play an important role in encouraging entrepreneurship. Several papers reviewed in this study find that networks and role models are positively related to the likelihood of a person starting a new business.⁸¹ In addition, this report reveals that women tend to lack female entrepreneurs as role models.

A measure to increase the number of female entrepreneurs is to either establish mentoring schemes specifically for women or encourage female participation in existing mentoring schemes. The new evaluation of Innovation Norway's mentoring service clearly shows that a mentoring scheme is important for company growth, and especially for female entrepreneurs. However, the number of successful female entrepreneurs is limited. It may therefore be relevant to establish a common female mentoring scheme in the Nordics. This will increase the number of successful role models available and make it easier for women to find them. A Nordic mentoring scheme could have positive ripple-effects, like encouraging entrepreneurs to expand their business to other Nordic countries by removing barriers between countries, providing them with new growth opportunities.

Establishing a Nordic network for female entrepreneurs could be another way of achieving similar results. A recent report prepared for the Nordic Council of Ministers (2018) found that even though the Nordic countries are often considered one innovation ecosystem, the actual co-operation and integration between the countries is limited. For instance, there are very few structures and mechanisms established to support an integrated Nordic innovation ecosystem. Establishing common Nordic mentoring schemes and networks for women may increase the integration between the Nordic countries with regard to innovation and entrepreneurship, while also encouraging female entrepreneurs.

Increase female entrepreneur access to capital

This report shows that female entrepreneurs today use much more diverse sources of funding than male entrepreneurs. For instance, angel funds constitute 16 percent of the funding that female entrepreneurs receive, whereas it only constitutes 6 percent of funding male entrepreneurs receive (Unconventional Ventures, 2019). Hence, it seems that female entrepreneurs have less access to capital than their male counterparts.

⁸¹ Arenius & Kovalainen (2006) and Bell et al. (2018)

There are several measures that can increase the access to capital for female entrepreneurs. A first measure is to think about the words, expressions and examples used when promoting investment funds and venture capital, for instance on investment bank web pages. If the language on these web pages is directed predominantly towards a male audience, women might be discouraged. Similarly, illustrations of who an entrepreneur is and examples of successful entrepreneurs on web pages should not only be of men. The Nordic state programs that offer investment support and loans to start-ups should also consider this when setting up their homepages and program descriptions. Further, this measure is a low-hanging fruit that does not require extensive administration and funds to be executed.

Second, to promote diversity, it would be important to take a broader view and look also at the diversity among the investors. If the people making investment decisions are predominantly male, there can be an inherent bias to favour companies founded and managed by men. Hence, it would be good to review the diversity in the companies making investment decisions and to encourage a more diverse culture among investors. As finance is in general male dominated today, changing the culture will take time and is by no means a quick fix solution.

A third suggested measure is to review the investment guidelines in governmental investment companies. Governmental investment companies could promote female entrepreneurship and diversity in general through their guidelines. Nevertheless, investment companies of course want to invest in the best companies out there, independent of the gender of the founder or CEO. Setting female entrepreneur quotas is still not the only way for investment companies to promote diversity. In Norway, for example, Investinor's new guidelines state that portfolio companies are obliged to have female representation in both management and board within three years after Investinor has invested in them. This could be something for investment funds in the Nordics to mimic. Additionally, focusing on investment in young companies (e.g. younger than 3 or 5 years) could help women as they often have a slower start than men. This is something that many investment funds already do today, e.g. Business Finland with their Young Innovative Companies scheme.

A last suggested measure is to establish a government supported women's investment fund in the Nordics to increase the access to capital for female entrepreneurs. The Nordic governments have in recent years contributed capital to establishing a wide range of seed funds, pre-seed funds, venture funds, etc. Most of these funds have several provisions through their investment mandates that can be complicated for the investor, such as restrictions on geography, industry, phase, etc. Based on insights from this report, there are signs that women consistently face obstacles when they seek to acquire external capital for their projects. This indicates that a fund that exclusively picks investment cases where the entrepreneurs are women can achieve high yields. The investment fund Backstage Capital in the United States works based on a similar premise, investing in start-ups with founders identifying as women, persons of colour, and/or belonging to a sexual minority, but it is still too early to assess the returns of the program. The idea of such a fund is not to impose gender requirements among the fund managers, but to make demands on the fund's focus. However, a recent report on access to capital in the Nordic countries, prepared for the Nordic Council of Ministers (2018), states that a new Nordic innovation fund should not be a priority given the current financial market situation. The report considers new public funding mechanisms that build on existing structures, but making them more effective and targeted, to be more relevant. The conclusion was still drawn in a time before the Covid-19 pandemic, and there can now be reason to reassess the need for a pan-Nordic innovation fund.

Remove competitive disadvantages in industries where women often operate as entrepreneurs

In this study, we have shown that women do well as entrepreneurs in the industries where they are overrepresented, such as health care, care and nursing, education, and, to some extent, tourism. In many of these industries private, small enterprises face heavy competition from public institutions, not least in the municipal market. All special conditions that make it economically more favourable for public institutions to operate such businesses distort competition and make it more difficult for women to succeed as entrepreneurs. This relates to practises within, e.g., purchasing policies of governments and municipalities, VAT rules, and various supervisory and regulatory requirements. Public decision-making authorities should carefully review this area and remove all unnecessary discrimination. There is good reason to believe that this is a key obstacle to female entrepreneurship, and it is created by municipalities and national governments. A relevant measure will therefore be to remove competitive disadvantages in industries where women often operate as entrepreneurs. We therefore recommend the Nordic governments and authorities to carefully review their national legislation and practises related to competition between private enterprises and public institutions within industries as e.g. health and teaching.

Establish a scheme for commercialization leave at universities and colleges

It is possible to provide academic/scientific staff at universities and colleges with a so-called commercialization leave that allows them to be absent from their regular position for three years, but subsequently be entitled to return to their position when they come back. In this respect, the universities/departments can be given varying degrees of discretion, depending on how they wish to prioritize this. Such an arrangement opens for more temporary positions in this sector, which can create dynamism in the academic environment. Entrepreneurship could also in general be more included into university and college studies, to promote entrepreneurial ideas early on, e.g. within health care. This measure may be especially important to increase the share of female entrepreneurs within STEM-subjects.

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Appendix

Appendix A – Definition of entrepreneurship

Table A-1: The Nordic Statistical agencies definitions of entrepreneurship

Country	Definition
Statistics Denmark	<p>Statistics Denmark identify the entrepreneurs by priority of different sources of information. These priorities have differed over the last years.</p> <p>From 2007-2008: Statistics Denmark do not have documentation of how an entrepreneur was defined these years.</p> <p>From 2014 and onwards: 1) The person is registered as the founder of the enterprise and has been employed by the company for at least one month during the reference year. Or the person is registered as a responsible participant (only for affiliated companies) in the company and has been employed by the company for at least one month during the reference year. 2) The person is registered as the founder of the enterprise, or the person is registered as the responsible participant (only for affiliated companies) in the company. 3) The company has only one person registered as a participant in the company's management body. 4) The person is reported as CEO in the company, has a reported ownership interest of at least 50 percent, is reported as "Real owners" and has been employed by the company for at least one month in the reference year. 5) The person is reported as CEO in the company, has a declared ownership interest of at least 50 percent, and are reported as "Real Owners". 6) The person reported is a member of the Board of the company, has a declared ownership share of at least 50 percent, is reported as "Real Owners" and has been employed by the company for at least one month during the reference year. 7) The person reported is a member of the Board of the company, has a reported ownership interest of at least 50 percent and are reported as "Real Owners". 8) The person is reported as being in the ownership circle, has a reported ownership interest of at least 50 percent, is reported as "Real owners" and is employed by the company. 9) The person is reported to be in the ownership circle, has a reported ownership interest of at least 50 percent and are reported as "Real Owners". 10) The person is reported as CEO and has been employed by the company for at least one month during the reference year. 11) The person is reported to be a member of the Board of the company and has been employed by the company for at least one month during the reference year. 12) The person is reported as CEO of the company. 13) The person has been employed by the company for all 12 months during the reference year. 14) The person has been employed by the company for at least 3 of the 12 months of the reference year. 15) The person has been employed by the company for at least 1 of the 12 months of the reference year. 16) The person is reported as member of the Board. 18) The person is reported as "Real owners". 18) The person is registered as a participant, but no other information is available.</p>
Statistics Finland	<p>Entrepreneurs are defined as persons aged 18-74 who during the last week of the year had a self-employed person's pension insurance and who were not unemployed</p>

on the last working day of the year and were not conscripts or conscientious objectors during the last week of the year. If, in addition to having a self-employed person's pension insurance, the person is in an employment relationship, his/her entrepreneurial income must exceed his/her wage income. The category of entrepreneurs also includes people whose entrepreneurial income exceeds a specified level of earnings, provided that they are not retired during the reference week. This limit is set each year by means of inference using data from the Labour Force Survey.

Statistics Iceland	Statistics Iceland's database has information on the founders of companies when they are registered, which is used in lieu of entrepreneurs. In some cases, companies are registered as founders of other companies. Those cases are ignored.
Statistics Norway	<p>An entrepreneur is defined as a founder of an AS or an ASA, that directly or indirectly holds an interest (andel aksjekapital) above a certain limit in the newly established enterprise, or has an ownership interest or is the managing director, chairman, deputy chairman or board member of the same enterprise. The person can be a shareholder directly in the company or through another company. Requirements for ownership interests are:</p> <ul style="list-style-type: none"> - 100 percent of a company with 1 shareholder - At least 40 percent of a company with 2 shareholders - At least 30 percent of a company with 3 shareholders <p>At least 20 percent of a company with 4 or more shareholders</p>
Statistics Sweden	To be classified as an entrepreneur the person need to own shares in the company where they have their main job and get an income from the company.

Appendix B – Descriptive statistics

In the table below, we present the number of observations (companies) that were founded in 2011. As we have pointed out above, there are relatively few observations for Iceland. This is among others due to the size of the country and the economy. Therefore, some of the results must be interpreted with caution.

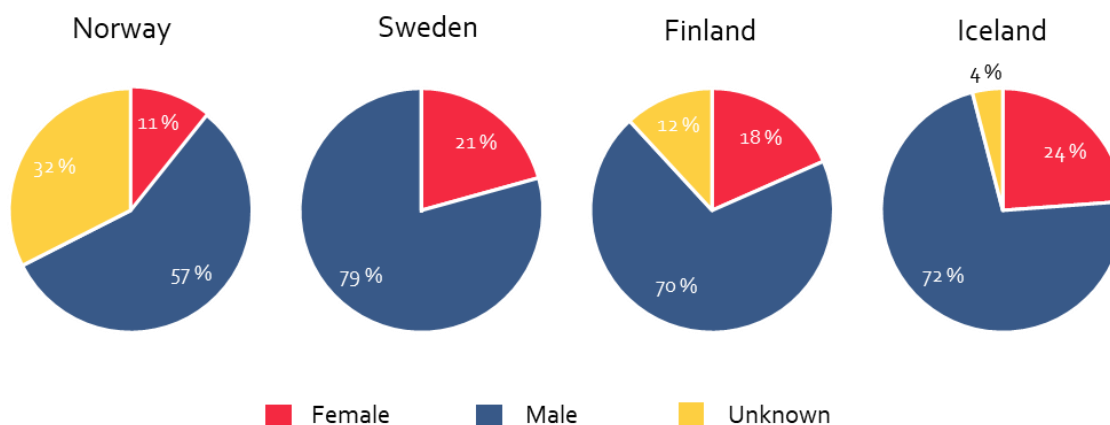
Table B-1: Number of observations (companies) founded in 2011 and that were active in 2012 and 2017, sorted by country and gender of founder. Source: Menon Economics, Bureau Van Dijk.

Country	Active in 2012			Active in 2017		
	Female	Male	Total	Female	Male	Total
Norway	1 435	6 720	8 155	962	5 073	6 035
Sweden	1 687	6 179	7 866	1 549	5 750	7 299
Finland	1 013	3 724	4 737	830	3 128	3 958
Iceland	96	291	387	79	232	311
Total	3 218	16 914	21 145	3 420	14 183	17 603

Of the companies founded in 2011 in Sweden, Finland, Norway and Iceland, a minority were founded by women. This is as expected, since we have shown earlier in this report that there are more male entrepreneurs than

female entrepreneurs in all Nordic countries. As illustrated in Figure B-o-1 below, women founded only 18 percent of the companies that were established in 2011 in Finland, whereas men were behind 70 percent. For 12 percent of the companies we do not have any information about the gender of the founder. We find similar results for Sweden, Norway and Iceland.

Figure B-o-1: Share of companies founded by women and men in Norway, Sweden, Finland and Denmark, 2011.
Source: Menon Economics, Bureau Van Dijk



During the five-year period, some companies ceased to exist. The number firm exits during the five-year period is given in the table below.

Table B-2: Number of observations (companies) founded in 2011, that had exited by the year 2017, sorted by country and by gender of founder. Source: Menon Economics, Bureau Van Dijk.

Country	Female	Male	Total
Norway	473	1 647	2 120
Sweden	138	429	567
Finland	183	596	779
Iceland	17	56	76
Total	811	2 728	3 542