

R&D-Report

A Cross-Cultural Examination of Investor Behaviour The Influence of Gendered Understandings

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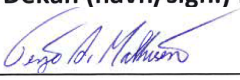


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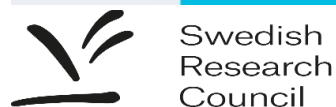
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Preface

A series of reports have been developed as a part of the Project *Overcoming the Entrepreneurial Ecosystem Gender Divide: A Cross-Cultural Perspective*, funded under the GENDER-NET Plus Joint call of Horizon 2020. The present report is a deliverable of the project's Work Package 3: A Cross-Cultural Examination of Investor Behaviour. The objective of WP3 has been to investigate the extent to which gendered understandings of (technology) entrepreneurship influences investor behaviour, and the perceived legitimacy of male and female technology entrepreneurs seeking investor funding. The report summarizes findings and conclusions based on research conducted by the four country teams within the project. It has been put together by the Norwegian Team with essential contributions from other project members. In addition to this report, an unpublished appendix has been written, containing some of the very rich data material and the full analysis underpinning the report.

We would like to thank female and male entrepreneurs, incubator managers, and investors who have shared their experiences and views in interviews with researchers in the project. Further we thank the Horizon 2020, Gender-Net, and the countries' research councils as well as our institutions for funding this research.

Bodø, Örebro, Dublin and Kinneret
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1. Introduction

Access to capital is a main constraint to most entrepreneurship and has therefore been a major theme within research on entrepreneurship. This is also the case for women's entrepreneurship. In fact, it has consistently been shown that women obtain less financing compared to their male counterparts. In this introduction, we first present the GENRE-project before we give a brief background to our research on women's access to entrepreneurial finance and the research gap we aim to address in this report.

1.1 The GENRE-project and this report

The present report is stemming from the GENRE-project; *Overcoming the Entrepreneurial Ecosystem Gender Divide: A Cross-Cultural Perspective*. This is a three-year research project, running over the years 2019-2022 and co-funded under the GENDER-NET Plus Joint Call Grant Number GNP-122. The overall aim of the project is to investigate and cross-culturally compare the lived experiences of female technology entrepreneurs in incubation and investing ecosystems in four different countries: Ireland, Norway, Sweden and Israel. Findings generated from the project aim to inform policymakers and other actors within the four national entrepreneurial ecosystems striving to build more inclusive and sustainable environments, which benefit both men and women.

Four reports are delivered from the project, each with a slightly different focus. In the first report, *Cross-cultural variations in technological ecosystems, a gender perspective* (Heilbrunn et al., 2020), the overall ecosystems in the four countries were mapped, regarding women in technology sectors and access to entrepreneurial finance. In the second report, *Cross-cultural variations in technology incubation provision: An examination of representation and gender dynamics* (McAdam et al., 2022), focus was on women entrepreneurs' lived experiences within technology business incubators in the four countries. The present report is the third, where focus is on how gendered understandings influence investor behaviour. This is followed by a fourth, and last report, where we discuss overall implications from the GENRE-project and present practical tools to be implemented among actors within entrepreneurial ecosystems. Thus, the last report includes practical, hands-on tools to work with.

1.2 Introduction to the topic

From bank loans to private equity

Research on women entrepreneurs' access to finance has to a large extent focused on differences between men and women in their access to bank credit or other types of loans (Verheul & Tunik, 2001; Coleman, 2007; Fairlie & Robb, 2009). This body of research has mostly looked at entrepreneurship in terms of small business owners, where bank loans are a common source of capital (often when resources from the *Family, Friends and Fools*, referred to as FFFs, already have been utilized). The main

focus has been on the demand side, and it has been argued that women *differ* from men, in ways that disqualify them from receiving funding, thus stating that women are not discriminated against per se (Kim, 2006; Mijid & Bernesek, 2013). For example, the gender gap in financing has been explained by differences in social capital, human capital and risk awareness (Carter et al., 2003). It has also been argued that women have a preference for service sectors and run micro firms, and therefore are in less need of external funding (Orser et al., 2006).

Even though most research has examined traditional forms of financing, there is a growing body of literature on the role of private equity for entrepreneurship, such as business angels and venture capital. This type of capital is highly relevant for entrepreneurs operating within technology sectors, who usually require private equity to scale their businesses. In contrast to bank loans, access to private equity is often based on the relationship between founders and investors, and decision processes tend to be less transparent. Despite policy efforts to create equal access to capital, women are still less likely to receive private equity (Paglia & Harjato, 2014). Accordingly, previous studies have shown that gender bias and stereotyping among investors make it more difficult for women to gain private capital for their venturing (Alsos et al., 2006, Alsos & Ljunggren, 2017; Malmström et al., 2017; Balachandra et al., 2019).

Gicheva and Link (2013, 2015) argue that this gender divide is related to information asymmetry. Investors need strong signals of potential growth to be willing to invest, and fail to recognize profit opportunities in women's start-ups, even when they present developed technology. Guzman and Kacperczyk (2019) argue that much of the gender gap depends on investors' gender preferences, and that investors therefore generate structural inequalities in opportunities for men and women. However, the gap decreases when women founders manage to signal growth potential, but also when investors are more experienced. Further, Alsos and Ljunggren (2017) highlight that signals go both ways between founder and investor. They argue that the processes where signals are sent, received and interpreted are gendered, and that understandings of gender continue to be constructed and reconstructed in the process.

According to Kushel et al. (2017), women's ability to raise private capital depends on both business characteristics and founder characteristics, but also on the founders' ability to network with relevant actors. They argue that it is particularly challenging for women in pitching situations, where the founder is expected to display self-confidence and a winner's attitude. Further, Kanze et al. (2018) found that investors make stereotypical judgments, leading them to ask men and women different questions. Men are asked questions focused on promotion ('how big can this become?') whereas women are asked prevention focused questions ('how risky is this?'). This in turn leads to different responses between men and women when meeting investors.

Although previous research has shed light on important aspects of women's access to entrepreneurial finance, we still know relatively little about what happens in the grey

zones, and how investors' gendered understandings are formed, and what the consequences of these gendered understandings are. Based on previous studies, there are no indications that investors (male or female) discredit or disqualify women entrepreneurs on purpose. The overall impression is rather the opposite – that the intention from policymakers, investors and other actors within the entrepreneurial ecosystem is gender inclusivity. The prevailing gender bias seems to be unintentional and implicit, which makes it difficult to reveal, and therefore emphasizing how complex the social construction of gender is.

Different research methods give different answers

How research is conducted is related to what is seen as the underlying problem behind what one sets out to investigate. An important aspect to highlight, regarding research on women's entrepreneurial finance, is therefore the use of *methods*. The majority of previous studies have used quantitative methods, where gender has been a variable among other variables. Acknowledging that all methods have their benefits and drawbacks, different methods contribute with different types of knowledge. Quantitative research has contributed to map out disparities in access to capital between men and women, most often without really discussing gender dimensions per se, or without addressing underlying factors to why these disparities (continue to) exist. Marlow and Swail (2014) argue that presumptions about risk and finance tend to ascribe women with weakness and shortage and that this framing of women happens both theoretically and empirically. They argue that this generates ontological biases and epistemological limitations, which in turn preserve women's disadvantage. Thus, research needs to address the prevailing gender blindness within entrepreneurship.

Since access to private equity depends on networks, relationships, legitimacy and trust, it is particularly important to use research methods that can capture the depth and complexity of the role of gender in funding processes.

1.3 Aim

The overall objective of this report is to investigate the extent to which gendered understandings of (technology) entrepreneurship influences investor behaviour, and the perceived legitimacy of male and female technology entrepreneurs seeking investor funding.

We seek to understand the perspectives of both investors and entrepreneurs, females as well as males. Focus is on the four countries participating in the GENRE-project: Ireland, Norway, Sweden and Israel.

1.4 Terminology in this report

Since concepts can be defined and used in different ways, we here specify the key concepts used in this report:

Investors are here seen as formal and informal financial capital providers to technology start-ups, individuals as well as organizations. Hence, we include venture capital companies and funds, business angels and other informal investors. However, we do not include financial capital provided by family and friends. In the early stages of a technology start-up, the typical capital provider beyond the entrepreneurs, their family and friends, are investors providing equity capital in return for shares in the company. Additionally, loans and grants provided by public authorities are important for technology start-ups. Hence, we also look at public funding in this report where relevant. However, the main focus is on (private) equity investors.

Investor behaviour is understood as the strategies, judgements, decisions and actions taken by investors towards technology entrepreneurs, in order to find the right ventures to invest in, to follow-up on the investments made, and to exit, as well as factors and processes influencing the different parts of the investment process.

In approaching the overall objective, we take a two-sided perspective to financing and investor behaviour. On the one hand, we look at the issue from the supply side perspective, hence on the investor side. We seek to understand how investor behaviour is gendered, hereunder how investors' strategies, judgements, decisions, and actions are influenced by gendered understandings of technology, entrepreneurship, investment, success, etc. among the investors. On the other hand, we look at the issue from the demand side perspective, hence on the (female and male) entrepreneurs, their characteristics, strategies and actions taken in order to fund their technology ventures.

A key aspect is *legitimacy*, as entrepreneurs and their technology ventures must be perceived by the investors as legitimate to obtain funding. Moreover, entrepreneurs must also have trust in investors to be willing to trade ownership shares in their start-up companies. The legitimacy issue is a mutual one, although asymmetric.

Entrepreneurs and investors operate within (technology) *entrepreneurship ecosystems*, which also have influence on investors as well as entrepreneurs' behaviours. The ecosystem represents a context in which entrepreneurs and investors are (more or less) embedded, where various actors and factors have impact on the investor – entrepreneur relationship. For instance, incubators within the same ecosystems aim to bridge entrepreneurs and investors, and therefore play a role in this relationship. This is also a topic for this report.

In this report, we mainly use the term *investors*. *Financiers* may be used as synonyms in some places. Further, we use the terms *entrepreneur* and *founder* interchangeably.

1.5 Disposition

Following this introduction, the methods used to collect and analyse data will be presented in Chapter 2. In Chapter 3, a short overview of the studied countries is

presented, regarding financial ecosystems and access to financing for technology entrepreneurs. We also give a descriptive overview of the empirical data used for this report, where interesting similarities and differences are highlighted. In Chapter 4, we present empirical findings from our research in the four countries, from investors' perspective as well as entrepreneurs' perspectives. Chapter 5 discusses the complexity of investors' gendered understandings, and, lastly, in Chapter 6, the main conclusions are presented. The report closes with implications stemming from the empirical findings.

2. Methods

This report is based on a qualitative research approach, where focus is on the lived experiences of, and reflections among, different actors within four entrepreneurial ecosystems. In this chapter, we briefly describe how data were collected and analysed.

2.1 Interviews

In each of the four countries Ireland, Norway, Sweden and Israel, we interviewed ten female technology entrepreneurs and five male technology entrepreneurs who recently had received, or were in the process of seeking, equity financing from formal and/or informal investors. The entrepreneurs were interviewed regarding their process of seeking investor financing, focusing on aims, competences, business cases, communication and behaviours. All entrepreneurs were tenants of technology-focused business incubators.

Further, in each of the countries, we interviewed eight to ten formal or informal investors interested in technology start-ups. Formal investors were represented by venture capitalists/investment funds, either private or public (or a mix of private-public), while informal investors were represented by business angels (either individual angels, or members of angel groups). In some of the cases, the investor had been approached by previously interviewed entrepreneurs, and the majority of investors were more or less formally linked to the incubators where the entrepreneurs were tenants. Investors were interviewed regarding their goals, investment strategies, investment processes and behaviours, as well as on two specific investment cases for each investor (one male and one female lead entrepreneur). Relevant characteristics of the respondents are further described in Chapter 3.

All interviews were semi-structured, meaning that an interview guide was used, but that the interviews also gave room for different reflections or follow-up questions on interesting topics that came up (Miles & Huberman, 1994). Interview guides (one targeting investors and one entrepreneurs) were developed in a joint process within the research team, and the same interview guides were used in all countries. However, interviewers were at the same time open for country-specific follow-up questions. Since no one can be an insider in several cultural contexts at the same time, it was a benefit in this research, that each country-team conducted data collection in their respective context. This made it possible for each team to ask relevant follow-up questions during the interviews, and to make sense of the collected data in a culturally sensitive way (Easterby-Smith & Malina, 1999).

In the beginning of the data collection, interviews took place face-to-face. Due to the COVID-19 pandemic, we had to continue online, using Zoom. With the consent of respondents, all interviews were recorded and transcribed verbatim. Interviews that

were not conducted in English were later translated and all transcriptions were cleaned from personal data and up-loaded to NVivo R1 (see next section).

The reason why we chose to interview both entrepreneurs and investors linked to incubators, was that we wanted to get a deeper understanding of the entrepreneurial ecosystems, where incubators play an important role for technology entrepreneurs. During the research process, we paid visits to most of the incubators, to get a better sense of these milieus. We believe this was beneficial for our overall understanding of the studied phenomena, when later analysing the data.

2.2 Data analysis

An interpretive approach was used to analyse data from the interviews (Gioia et al., 2013). NVivo R1 was used to code and organize data, where each country team coded their own interviews. Early in the coding process, the whole research team participated in a workshop, and agreed on some overarching themes within the data. Thereafter, country teams were given autonomy to continue with a more detailed coding structure, based on country data. In line with the overall aim of the GENRE project, and as stated in the project description, we continued by analysing investment strategies and approaches to identify, screen and evaluate investment cases. Further, the investment processes were analysed, with focus on gendered understandings and on how such understandings affect investor perceptions and decision-making. To get as rich and nuanced understanding as possible, we chose to investigate perspectives of both investors and entrepreneurs. Central themes in analysing the entrepreneurs' perspectives were strategies in approaching investors, funding challenges, as well as gender related challenges.

In order to validate cross-country comparisons, a second workshop, involving the members of the research team, was organized when all coding was completed. During this second workshop we worked to discuss and identify differences and similarities across the four contexts. In the continued process of writing this report, all country teams were given opportunities to comment on the content, particularly regarding cross-country comparisons.

3. Overview of country contexts

This chapter gives an overview of the country contexts for investor financing in the four technology entrepreneurship ecosystems. It thereby provides background knowledge for the presentation and discussion of the study in the subsequent chapters. First, we present a brief overview of a typical funding process for a technology start-up in the four countries. Thereafter, we provide descriptive information of the investors and the entrepreneurs that represent the informants for the study.

3.1 Financing processes for technology entrepreneurship

In our efforts to investigate how gendered understandings of entrepreneurship in general, and technology entrepreneurship in particular, influences investor behaviour and the legitimacy of male and female technology entrepreneurs in the financing process, we have studied four country contexts: Ireland, Norway, Sweden, and Israel. These countries all represent small, developed economies aiming for growth in technology sectors. The governments therefore support technology entrepreneurship ecosystems, seeking to stimulate rich environments for the successful development of technology start-ups. Technology incubators are a key part of these ecosystems; and so are various funding sources for technology entrepreneurs.

While being similar in many aspects, the four countries also differ in terms of the available system and resources for technology entrepreneurship. Entrepreneurial financing is, as mentioned in the introduction, a key aspect of technology entrepreneurship ecosystems. This report takes a closer look at this aspect, applying a gender lens. Some key aspects of the typical financing process for technology entrepreneurship in the four country contexts are presented in Table 1.

Public funding, typically grants, is important as the first type of financing beyond the founders' own savings. Each of the countries have key public agencies supporting technology start-ups at an early stage. In Sweden, public loans, but also public equity investments/seed funding is a key financing source in this stage. Further, university holding companies are commonly used as equity financiers for university spin-off companies in Sweden. Next, business angels and venture capital funds are important for technology start-ups in all four countries. Institutional venture capital (international and local) is stronger in Israel compared to the other countries. For technology start-ups in Israeli incubators, the investment sizes seem to be larger than the typical investments in the three other countries, potentially reflecting a stronger competition to enter technology incubators in Israel. More recently, crowdfunding has increased as a possible funding source for technology start-ups in several of the countries, particularly start-ups addressing the consumer market.

Table 1: Characteristics of technology start-ups' financing process

	Ireland	Norway	Sweden	Israel
Dominant funding sources at early stage	Public funds/business angels <i>Key actors:</i> Enterprise Ireland Local Enterprise Offices (LEO)	Public grants – soft funding, e.g. for market clarification, R&D grants. <i>Key actors:</i> Innovation Norway, Research Council of Norway	Public grants – soft funding e.g. prototype development. <i>Key actors:</i> Vinnova Public loans and public equity investments/Seed funding (Almi) Seed-funding from University holding companies (for university spin-off start-ups)	Public funding (seed funding through incubators), business angels, venture capital (international and local), corporate VC, crowdfunding <i>Key actors:</i> Israeli Innovation Authority
Other funding sources	Founders' own savings	Public loans, business angels, public/private seed funding/VC, crowdfunding, some institutional venture capital, founders' own savings	Founders' own savings, FFF, direct sales, regional investment funds (public/private), prize awards from competitions, crowdfunding, private equity/business angels	Founders' own savings, FFF, Serial Entrepreneurs re-invest and invest in others, many accelerators
Typical funding mentioned	Enterprise Ireland invested more than €28m in 125 start-ups in 2021, including 82 high potential start-ups.	100 000 NOK start-up grant, 700 000 NOK market clarification grant	300 000 SEK prototype development	\$2-3.5 billion seed funding when accessing incubators
Role of incubator	Several founders obtained funding through incubators and accelerator programs	Advice grant application, matchmaking with investors, e.g. business angels	Incubators do not provide funds, but give advice/help entrepreneurs with applications	Public funding is mostly distributed through incubators
Presence of financing targeting women	Yes; Enterprise Ireland has a dedicated €1m funding stream for woman entrepreneurs under the Competitive Start Funding programme	No, but there have been initiatives previously.	No, but there have been several initiatives previously, organised by companies, universities, and non-governmental organisations. Sweden also has a foreign-born female entrepreneurship programme, promoting SMEs.	Yes, there are several groups who are considered 'women for women' and a government program that targets women (and 'other minority' founders)

The role of the incubator in the financing process differs somewhat between countries. In Norway and Sweden, the incubators typically act as advisors in the financing process, by assisting grant application development or connecting founders with investors in their network. Incubators typically do not provide funding themselves, but some can make small investments early through a small investment fund that they control. In Ireland, several founders obtain funding through incubators and accelerator programs. As mentioned, funding is a key part of the incubator programs in Israel, as public funding for start-ups is generally distributed through incubators. If accepted to an incubator in Israel, the start-up is close to securing a major investment. This difference in the incubators' role in the four contexts is important to understand variations in the financing process.

There are typical sequences of funding sources that are similar between countries, starting with public grants, then business angels before, for some, institutional venture capital. However, the funding process is not linear and predictable in any of the countries. Founders typically move back and forth between different sources of funding as they progress in their entrepreneurial journey (see also Arntzen et al., 2018). Hence, there are idiosyncratic funding processes for each of the start-ups. Consequently, the process can also appear as chaotic for founders.

When looking at funding specifically targeting female founders, we find different approaches among the four countries. In Ireland, TechIreland, established in 2017, has been running a large campaign to boost investment for female founders¹. There is also a dedicated €1 million funding stream for female entrepreneurs, as part of Enterprise Ireland's funding schemes². In Israel, there are several examples of groups of investors profiled as 'woman for woman'. Further, a government program specifically targets women (and 'other minority') founders. In the Scandinavian countries, there are no funding schemes with a specific focus on females today, even though there have been initiatives previously. Emphasizing gender mainstreaming, they instead aim for making the general financing programs inclusive. However, there is a public funding scheme in Sweden, focusing on immigrant women entrepreneurs. In the following, descriptions of the typical financing processes for technology start-ups in each of the four countries are presented.

Ireland

The Irish dataset indicates a level of diversity with regards to the sources of funding for technology start-ups, and equally it shows that founders move back and forth between different sources of funding as they progress in their entrepreneurial journey in a way that is non-linear. This in turn suggests that the funding process that technology entrepreneurs undergo is individualistic. Furthermore, some of the technology

¹ <https://www.irishtimes.com/business/technology/funding-for-women-founded-firms-more-than-doubles-report-shows-1.4820730>

² <https://www.techireland.org/content/snapshots/FEMALE%20FOUNDERS%20AND%20FUNDERS.pdf>

entrepreneurs in the Irish sample experienced a disruptive effect of COVID-19 pandemic on their funding sources – for some, their funding came to a halt, whereas others never got to complete the funding process in the first place. Nevertheless, the most prevalent sources of funding for technology start-ups in Ireland are public funds, angel investors, as well as funding from incubators and accelerators.

Public funds primarily refer to those provided by Enterprise Ireland³, which is the government organisation responsible for the development and growth of Irish enterprises. These funds are often allocated via the New Frontiers Entrepreneur Development Programme; Ireland’s national entrepreneur development programme for early-stage start-ups that is based in campus incubation centres across the country. Furthermore, some entrepreneurs obtained their first funding through Local Enterprise Offices⁴ (LEO) that provide direct financial support to businesses with ten or less employees, and thus create progression pathways for high-potential start-ups to Enterprise Ireland.

Some founders in our sample obtained funding from angel investors or angel networks, with whom they often connected with through incubators, accelerators and other start-up ventures. Networking thus proved to be an important means of connecting with business angels; however, through the activity of networking, business angels also learned about the founders and in turn approached them, which demonstrates the two-way nature of this interaction.

Bootstrapping is also very prevalent among the founders, especially in the early days of setting up a business. Bootstrapping means relying on methods to minimize the amount of outside debt and equity financing needed (Winborg and Landström, 2001). Bootstrapping inevitably poses challenges on founders’ ability to pay salaries and employ full-time staff. However, some founders suggested that bootstrapping provides them with the ability to test and establish the technology before seeking investments, whereas others decide to bootstrap in order to avoid seeking VC funding too early and potentially give away too much of their business equity. Several founders obtained their funding through incubator and accelerator programmes for early-stage start-up companies. These funding resources were sometimes combined or followed by bootstrapping and angel investments, something which again demonstrates the non-linear pathways to funding for technology start-ups in Ireland.

Norway

In Norway, the funding process for technology entrepreneurs typically starts with some sort of public grants. Innovation Norway⁵, which is a publicly owned agency, is a key

³ <https://www.enterprise-ireland.com/en/>

⁴ <https://www.localenterprise.ie/>

⁵ <https://www.innovasjon Norge.no/en/>

actor at this stage. Their mission is to be an instrument for innovation and development of Norwegian firms, by supporting them in developing competitive advantages. They offer several services for start-ups; advisory services (including IP and mentoring), market clarification grants, commercialization grants, innovation loans, start-up loans, grants for innovation contracts, and growth guarantees. Innovation Norway also offers various courses and competence building activities for entrepreneurs. Another important actor is The Research Council of Norway⁶, which offer grants for research and technology development for highly innovative startups. The Research Council also administers a tax incentive scheme for R&D (SkatteFUNN), giving all Norwegian firms tax deductions of 18-20% for R&D costs. If the firm is not profitable, thus not paying any taxes, the deduction can be given as a grant. The majority of the Norwegian respondents mention either one or both of these actors as important for initial funding.

Many of the technology start-ups stem from university environments, and they may be connected to technology transfer offices (TTO) in the very beginning. It is also common that the technology start-up is connected to an incubator, whether they are affiliated with a TTO or not. The TTO may administer a small R&D grant for the early stage university start-ups. Incubators do not, in general, provide the firms with capital (even though there are a few examples that they do). The role of the incubator, in relation to funding, is rather to help the firms to get investor-ready, to train on pitching and work through financial statements. In several cases, advisors at the incubator help the firms with writing applications for grants. The incubators also play an important role in 'matchmaking' between start-ups and investors. The incubators are often linked to business angels, who either operate individually or in business angel networks. After the initial stage of funding from grants, investments from business angels is often the next step. The connection between business angels and incubators is of growing importance in Norway. Individual business angels typically invest small amounts, around 500 000 - 1 million NOK.

In parallel with seeking funding from business angels, start-ups sometimes turn towards venture capital. However, the institutional venture capital market is small in Norway, and has traditionally been focusing on sectors within the oil industry or IT. Further, they invest in scale-ups, rather than start-ups. It is therefore very challenging for technology start-ups to obtain investments from venture capital companies.

Two of the 15 Norwegian founders mentioned crowdfunding as a source of capital at an early stage. This is an increasing source of funding for consumer goods start-ups. One founder mentioned plans for an IPO.

⁶ <https://www.forskningradet.no/en/>

Sweden

In a similar way as for Norway, Swedish technology founders rely heavily on public actors to receive so called soft funding, especially at early stages. The Swedish innovation agency Vinnova⁷ facilitates project support through funds of up to 300 000 SEK for developing a prototype or business model. Further, Vinnova provides support through a program called Innovative Start-ups⁸. Technology founders talk about start-up support funding as accessible through the incubators, as they are instructed on how to apply and what to emphasize in the applications. The project supported by Vinnova, as mentioned above, is distributed either by innovation offices or by holding companies associated with incubators. Apart from Vinnova, there is a combination of funds accessible through municipalities, regional funds, and other state funding such as Almi⁹. Almi assists in business development and offers loans to companies with growth potential, including both start-ups and more established companies. Almi Invest¹⁰ is relevant for several of the technology founders in this study, as they provide venture capital “for early-stage, emerging companies with high growth potential and a scalable business concept”. Almi also invests in collaboration with private investors, which means a broader network of potential investors and contacts are made accessible for the technology funders.

The incubators do not in general provide funds themselves, but their business coaches assist in the application for funds of various forms and provide contacts. In some cases, the technology founders have received funding from the university holding company that invests in companies active in the university incubator. There are a number of these holding companies attached to Swedish universities all over the country – aiming to boost the utilisation and commercialisation of ideas and innovation from their universities. One example is KTH Holding AB¹¹, a state-owned company managed by the university board with the aim of supporting commercialisation and start-ups based in KTH (The Royal Institute of Technology). Taken together, start-up funds from Vinnova and funds via the incubator are the main sources of early funds for several of the technology start-ups, as well as Almi loans, including funds from the Region or Private owned regional investment funds in some cases.

Other forms of fundraising sources that appear in the Swedish data are: founder’s own savings, family, friends and fools (FFF), bootstrapping methods such as self-financing by working with other jobs while developing the start-up/working without salary, incomes from direct sales, scholarships, awards, prize money from competitions, crowdfunding platforms, and private equity/business angels.

⁷ <https://www.vinnova.se/en/>

⁸ <https://www.vinnova.se/en/calls-for-proposals/innovative-startups/innovative-startups-step-1-spring-2021/>

⁹ <https://www.almi.se/en/in-english/>

¹⁰ <https://www.almi.se/en/almi-invest/>

¹¹ <https://www.holding.kth.se/>

Israel

Israel has a vibrant and robust tech-investment scene. In 2020, over 10 billion dollars were invested in Israeli technology companies and start-ups, continuing the growth trend in past years, and seemingly unaffected by the COVID-19 outbreak. Investments continued to increase in 2021, soaring to over 5 billion dollars in the first quarter of 2021 doubling the amount raised in the parallel quarter in 2020.

To facilitate the extensive investment in Israeli start-ups, funding channels in Israel are wide-ranging and include government funding (mostly through incubators; funds are allocated by the innovation authority), business angels, international and local venture capital (VC) as well as corporate VC funding, in addition to crowdfunding channels. Israel was a pioneer in crowdfunding and one of the first to permit the legal aspects for crowdfunding investment in tech ventures.

Founders who join an incubator usually do so in the seed stage. In government-franchised incubators, start-ups receive an early-stage investment of 2-3.5 million dollars in return for an average of 50% of the company's equity, typically under a private-public funding model where 85% of the investment is paid by the government and the remaining 15% by incubator operators who are granted franchises by the Innovation Authority¹². The investment horizon (time spent in the incubator) lasts for a period of two to three years; in most cases, life science enterprises receive the higher range and longer periods of investment, due to the greater expense and more complex stages of development in those fields. When completing the initial funding phases, start-ups are sometimes eligible for expanded funding through in-house funds established by some incubators to further support their companies, and through additional government funding tracks through the Innovation Authority. In most cases the founders are required to attain matching funds through independent fundraising in order to receive additional funds through those lines. When exhausting all funding channels related to the incubator, founders turn to Round 1 and Round 2 investments business angels, usually through venture capitalists.

Founders who do not join incubators tend to fund the seed stage through family, friends and fools (FFF) funding, as well as seeking to obtain early-stage investment through the vast array of business angels in Israel and abroad. Many of Israel's serial entrepreneurs, who have participated in exits and buyouts, actively reinvest in the start-up ecosystem in Israel.

3.2 Overview of investors and entrepreneurs

In the GENRE-project, the overall aim is to create new knowledge regarding gendered understandings of technology entrepreneurship, and the role of both incubators and

¹² <https://innovationisrael.org.il/en/>

investors in relation to entrepreneurs. As previously described, the focus in the present report is on investor behaviour. Investors can be both public and private actors, formal and informal. However, since investing in a firm generally involves ownership, in contrast to someone who provides a loan, we do not discuss the role of any loan-providers in this report. We do include the role of public funding, even though this often consists of grants rather than equity.

The investors

Table 2 gives an overview of the characteristics of the investors interviewed for this study. For each of the countries, eight to ten investors have been interviewed, in total 35 investors. These include thirteen business angels, whereof four work as part of a business angel group; sixteen representatives for private venture capital funds and six representatives for public or public/private venture capital funds. All of the latter are found in Norway and Sweden. Most of the interviewed investors target start-ups, i.e. early stage investments.

Table 2: Characteristics of investors

	Ireland	Norway	Sweden	Israel
No. of investors interviewed	8	10	8	9
Types of investor				
Independent business angels	4	3		2
Business angels, part of BA Group	(4)*		3	1
Private venture capital fund	4	3	3	6
Public or public/ private VC fund		4	2	
Investment stage				
Start-up	8	9	8	6
Scale-up				2
Both		1		1
Gender				
Male	4	6	2	4
Female	4	4	6	5
Gender objectives				
No	2	8		6
Implicit	1	2	8	
Explicit	5			3

*Irish Business Angels work both independently and as part of group investments.

The interviewed investors are of both genders; in total nineteen of interviewees are women while sixteen are men. Since the investor industry is generally male dominated, this means that we have included more women than the representative share for our interviews. Few investors have explicit strategies to obtaining a gender balance in their investments, or target women in particular. The exception is Ireland where most investors have gender-based objectives. There are also some examples in Israel. The remaining investors have no explicit gender objectives regarding the founder teams they are investing in, but some have an implicit aim to obtain a satisfactory gender balance.

This reflects some differences between the four countries when it comes to the emphasis on gender in entrepreneurial financing.

The entrepreneurs

Table 3 gives an overview of the characteristics of the entrepreneurs interviewed for this study. The sample consists of interviews with ten female founders and five male founders in each of the four countries, in total 60 founder interviews. Comparing the founders in the four countries, we observe that founders are slightly younger in the Norwegian sample and slightly older in the Israeli sample. Founders in the Israeli sample are more often married, particularly the women, while the other country samples have a spread among married and single (including divorced) founders. Founders in the Israeli and to some extent the Irish sample more often have under-aged children as compared to the Swedish and Norwegian samples.

In general, the founders are highly educated. In the Irish and the Swedish samples the majority of founders hold a Bachelor's/Graduate degree or higher. In the Norwegian and Israeli samples the majority holds a Master's degree/MBA or higher. As many as four out of ten female founders in the Israeli sample hold a PhD degree.

In all the countries, most of the technology start-ups are started by teams. There are a variety of technology industries among them, dominated by MedTech in the Israeli and Norwegian samples, while enterprise solutions¹³ are more common in the Irish and Swedish samples. When it comes to the developmental stage, most founders in our samples are in the commercialization stage, particularly so for Ireland and Norway. Some more founders in the Swedish and Israeli sample are in the early conception stage, while there are also some Israeli founders in the scale-up stage.

Comparing the male and female founders, we observe that there are few gender-based differences in founder characteristics. There are slightly fewer male founders in MedTech, but more in other technological fields, indicating a larger breath in industry among the male founders in our sample. Also in the development stage, there is a larger spread among the male founders, while a high share of female founders is found in the commercialization stage.

¹³ Enterprise solutions refer to technology aiming to facilitate other enterprises, such as IT-systems or platforms

Table 3: Characteristics of entrepreneurs and start-ups

	Ireland	Norway	Sweden	Israel
Female/male entrepreneurs	10/5	10/5	10/5	10/5
ENTREPRENEUR CHARACTERISTICS				
Age groups				
-young: 18-35	3/3	6/3	0/3	2/1
-middle age: 36-49	5/1	2/2	7/2	4/3
-senior: 50->	2/1	2/0	3/0	4/1
Marital status				
-single	5/3	7/4	6/2	0/2
-married	5/2	3/1	4/3	10/3
Dependent children				
-yes	5/2	3/0	4/3	8/4
-no	5/3	7/5	6/2	2/1
Education level				
No higher education /Secondary school	1/1	0/0	0/0*	0/0
Bachelor's/Graduate degree	6/1	1/0	9/3	1/2
Master's degree/MBA	0/2	8/5	1/0	5/2
Postgraduate/ Doctoral degree	3/1	1/0	0/1	4/1
START-UP CHARACTERISTICS				
Solo/team founder				
Solo	3/1	1/1	1/2	2/2
Team	7/4	9/4	9/3	8/3
Sector				
EdTech	1/1	1/1	3/1	1/0
Enterprise solutions	4/2	0/0	4/3	0/0
Green Tech	2/0	1/0	0/0	0/0
MedTech	1/0	8/1	1/0	8/2
Other	2/2	0/3	2/1	1/3
Development stage				
Conception	1/1	1/0	4/3	3/4
Commercialization	9/4	9/5	5/2	4/0
Growth	0/0	0/0	1/0	3/1

*One of the Swedish male founders has degrees from private schools, unclear at what level

4. Summary of empirical findings

In this chapter, we present empirical findings, and discuss similarities and differences between the four countries. We start with investors' perspectives, followed by entrepreneurs' perspectives. The chapter gives a summary of empirical findings. The full analysis is available in an unpublished appendix to this report.

4.1 Investors' perspectives

Below follows a discussion of the main themes that stem from the analyses of the investor interviews: (1) what strategies investors use when investing, (2) how investors reflect on the gender of entrepreneurs, (3) what the investors perceive as potential solutions to the prevailing gender gap among technology start-ups, and (4) aspects related to the gender of investors themselves.

Investor strategies and processes

Investors in all four countries emphasise the importance of the team composition when assessing a potential case. They stress the importance of diversity, where gender is one aspect to consider. In general, formal investors have formal strategies, whereas informal investors assess cases in more or less informal ways. They tend to use their 'gut feeling' and combine judgments of data with evaluations of more emotional aspects, such as passion and vision. In a way, this can be seen as diverging from rational judgement and can be seen as a non-traditional 'masculine' behaviour.

Investors in all countries talk about investments as a long-term relationship, where they contribute with 'competent capital', where financing in terms of money comes with the purpose to influence strategies and decisions of the venture. Several investors also highlight that there is a philanthropic aspect in their investment strategies; they want to invest in start-ups that work for positive changes in society.

Investors' understandings of gender

Investors in all countries consider that there are fundamental differences between men and women entrepreneurs. The most common perception is that women are more risk-averse compared to men, and that this has implications for their venturing and for the funding process in different ways. Investors in Ireland and Israel emphasise that women have less confidence, are 'easier to work with', 'willing to take advice' as opposed to men, who are perceived as more 'arrogant'. These types of perceptions were more seldom expressed by Swedish and Norwegian investors. Even though the investors agree that there are fundamental gender differences, they also express that women and men are equally competent to enter technology entrepreneurship. In some cases, they also give statements expressing the advantages of women as entrepreneurs, particularly in Norway and Israel. Similarly, in Sweden some investors state that women are better 'managers' of a start-up, while men are believed to have a stronger focus on succeeding for their own individual benefits. It is also argued by several investors that women and

men entrepreneurs have different driving forces – women want to ‘solve a problem for the world’, while men identify an opportunity to make money. A theme that became visible in all countries is that understandings of gender is related to age of the investors, where younger investors show greater ability to reflect on gender as well as other aspects of diversity.

Reasons behind gender gap and potential solutions

In Ireland, most investors in our study argue that the gender gap in entrepreneurial funding remains, due to women’s lack of self-confidence – women ask for lower amounts and thus receive lower amounts of capital. The majority of investors strive to be ‘gender-neutral’ rather than specifically promoting women. It is also argued that not only gender creates barriers to entry entrepreneurship. Other concepts of privileges, such as socio-economic background, interplays with gender. It is argued that more education is needed, and more ‘awareness raising’. It is also argued that more female investors are needed, as well as specific training to support female investors. The important role of incubators as training providers, connectors and investors, was further highlighted.

In general, many investors argue that gender differences is a structural problem that arises from early socialization processes. In Norway, investors hold that the gender gap mainly stems from early socialization processes and that it goes back to how young children are encouraged to like and engage with different subjects. It is argued that solutions have to target the education system, where girls should be encouraged to engage in maths and technology.

Investors in Israel argue in similar ways, stating that the gender gap in funding is part of the larger ‘gender inequality story in Israel’, something which has to be ‘addressed to its roots’, for example through technology training for women. In both Norway and Israel, the investors do not want to see affirmative actions for women entrepreneurs, something which is perceived as more harmful than helpful for women.

In Sweden, formal investors argue that there is a need for structured work with gender equality, in a similar way as they work with investment processes in structured ways. Informal investors, on the other hand, ask for more gender awareness approaches. In Sweden, as in all the other countries, the male dominance among investors is recognized as a problem. It is argued that more female investors – and training for female investors – are needed.

Female and male investors

We found that the age of the investor is connected to the ability to reflect on dimensions of gender, as well as reflections on other aspects of diversity. The age difference comes through among both male and female investors, in all four countries. It also seems like the ability to reflect on gender is related to one’s own lived experiences. For example,

several of the female investors in Ireland and in Norway, show awareness of gender barriers for entrepreneurs, because they have experienced gendered barriers themselves. This has made them more reflective. However, dimensions of privileges do not only relate to gender, but to aspects of ethnicity as well. This is mentioned particularly by investors in Ireland and Sweden.

In Norway, we found some differences between formal and informal investors, where formal investors tend to express more gender awareness when investing. In the Swedish sample, most investors have some level of gender awareness, ranging from ‘women being the problem and they need to change’ to deep levels of reflections on gendered structures in society, where several aspects of intersectionality are highlighted.

In Israel, the investors do not use any gender-based investment policies, and they do not want to apply affirmative actions. However, the Israeli female investors try to promote female founders in more informal ways, for example by encouraging women entrepreneurs.

4.2 Entrepreneurs’ perspectives

Below follows a discussion of the main themes that came out from the analysis of the interviews with the entrepreneurs: (1) general challenges in different stages in the funding process, (2) gender related challenges in different stages, (3) consequences of experienced gender bias, (4) funding strategies used by female and male founders and (5) their reflections on overall access to entrepreneurial funding in the studied ecosystems.

Funding challenges in various stages

During the first stage of establishing a start-up, the *conception stage*, several respondents in Norway and Sweden experience that the private financial situation is challenging, as the founder usually use his or her own private capital. They also find it challenging to gain legitimacy for the start-up in this stage. In Israel, these challenges are what drives the founders into the incubators, as the incubators are central in providing capital for start-ups in Israel.

Related to the next phase, the *commercialization stage*, Irish founders express that the country (Ireland) is small, and the total pool of funding is therefore too small. Further, they also describe a “catch 22” problem – in order to get funding, you need to show that you already have funding – which is experienced as troublesome. The Irish founders, especially the females, expressed problems with stress at this stage, affecting both their mental and physical health. In Norway, several challenges are mentioned in this stage – to find potential investors and to get introduced to them, to find investors who have the right market understanding and competence and funders who are willing to take the lead as investors. Further, it is challenging to build legitimacy, especially for first-time

founders. Similar to the Irish founders, they perceived this as a stressful stage. The Swedish founders share similar stories. They also mention the need to increase sales and to further develop the products. Further, they describe the challenge of managing resource needs, as well as getting competent team resources, or ‘manpower’. In Israel, the experiences are slightly different, due to the different role of incubators. The founders express that the most challenging situation is when leaving the incubator, as the firm must raise independent capital outside the incubators’ ‘warm embrace’.

The last phase is the *growth stage*, where we find few of our respondents. One of the Norwegian respondents who is moving towards this stage, talks about how the funding process requires planning, and a Swedish founder at this stage is a non-profit, which brings specific challenges regarding funding.

In total, when looking at entrepreneurs in the four countries, and taking the stage of development into account, we find that they face very similar challenges in the funding process.

Gender-related challenges in various stages

During the *conception stage*, several of the Irish female founders express that they have experienced patronising and belittling approaches from male investors. They express experiences of both sexism and ageism when dealing with male investors. In Norway and Sweden, on the other hand, respondents do not express gender related challenges at this early stage. The most common sources of funding in the beginning (apart from private savings and bootstrapping) is public support, which are perceived as gender inclusive in the Scandinavian countries.

During the *commercialization stage* the gender related challenges become visible. At this stage, start-ups typically search for private equity capital from business angels or VCs, which builds on networks and relationships. In Ireland, several respondents argue that there are biological differences, where females are more risk averse and males are more ‘self-confident’, something that affects their funding processes. Further, it is argued that females prioritize their family obligations more strongly. However, women are also, according to the Irish data, exposed to gender discrimination and misogyny, affecting the business development as well as the mental health of the female founders.

In the Norwegian data, there are examples of perceived benefits of being ‘unique’ in a positive sense as a female tech founder. However, the more common expression is that women are disadvantaged in the funding process, even though it is difficult to point at exactly what happens during the funding process in terms of gendered processes. They are less explicit, more hidden. Several respondents talk about ‘grey zones’ and things that happen ‘between the lines’. The experiences are similar among the Swedish respondents, where it is argued that funding opportunities are related to access to networks, where female founders have less access. Both Norwegian and Swedish

female founders give examples of how they use strategies to mitigate their ‘womanhood’, by bringing a male team member when pitching for investors, or by thinking very carefully about how they dress, in order to not appear ‘too feminine’.

In Norway, Sweden and Israel, it is argued that one of the major challenges is the low proportion of female investors. In Israel, for example, it is argued that it is particularly difficult for the female founders to get funding from business angels, as almost all angels are male. It is perceived to be difficult for the female founders to gain legitimacy with the investors in Israel.

In our sample, we have few respondents at the *growth stage*. The perspectives that are brought up at this stage are similar to those of the commercialization stage; that women worry about their womanhood and that they use different strategies to mitigate this.

Summing up, respondents in all four countries report examples where female founders have met sexism, misogyny or harassment to different degrees. The gender related barriers increase when start-ups move from the early stage towards commercialization stage and start to seek private capital from business angels or VCs. This type of capital is provided based on relationships and networks, where women are excluded or tend to have low access. It is also highlighted that the combination of gender and choice of business sector make barriers particularly high for women founders, as many of them operate within traditionally ‘feminine’ sectors, such as med tech, health and education. For example, it is expressed that male investors do not understand gym products or fashion.

In the Scandinavian countries, it is expressed that to be a female in a male dominated sector can be an advantage and disadvantage at the same time. It should also be remembered that the studied women are all highly qualified and do not want to be seen as victims. Lastly, a strong theme in the data is that experiences of gender barriers are implicit and difficult to grasp.

Consequences of experienced gender bias

The respondents who have experiences of gender related bias, talk about several types of consequences. Obviously, to not be given access to capital will have consequences for the development of the start-up, and can delay the whole business process. Several respondents also mention consequences for them personally, in both physical and mental terms. We do not find any specific differences between the four countries on this topic.

Investment strategies

The strategies used among founders are very similar in the four studied countries. The strongest themes that come out in relation to raising private capital, is the need to build a network, and to find investors who can contribute with ‘competent capital’ – meaning

not only money, but also experience and knowledge of the specific sector. However, several founders talk about the search for the right investors, as well as an investor who is willing to take the lead, as especially challenging. In Ireland, the use of mentors is mentioned as a strategy, and in Norway, several respondents try to use ‘soft funding’, i.e. public funding schemes, as long as possible.

Overall, male and female founders use similar investment strategies. However, our data clearly shows that female founders apply additional strategies in order to obtain funding. In all countries, female founders worry about their womanhood in different ways, and they compensate either by downplaying their femininity e.g. by dressing ‘manly’, or by upgrading the masculinity of the team, e.g. by bringing a male when pitching for potential investors.

In Ireland, outcomes of the strategies used seem to be generally positive. In Norway, several of the female founders express that they have a ‘subjective feeling’ that they have not been treated equally, but they cannot point at any specific gender discrimination. However, we also find examples in Norway where female founders try to take advantage of being the underrepresented. In Sweden, we found examples of positive outcomes when women state that they were ‘acting as a male’ when pitching. In Israel, the importance of having personal connections with people who can promote you to investors, is highlighted as a success factor for achieving funding.

Overall access to entrepreneurial financing

From the Irish data, we found that the funding process in itself is perceived as a major challenge for entrepreneurs. It is also argued that the amount of funding available from public schemes is too small. The Norwegian founders perceive the overall entrepreneurial ecosystem as well-functioning, arguing that there is a well-developed support system for those who aspire to become entrepreneurs. Similarly, the Swedish founders find ‘soft funding’ from public schemes important and easily accessible. In Israel, the ecosystem functions slightly differently, and in general it is more difficult to raise funding within life science, medical and pharmaceutical sectors, which are the sectors where most female tech founders operate.

When asking the respondents to reflect on whether they believe there are differences for men and women in accessing entrepreneurial funding, the Irish respondents, males and females, seem to believe that there are no differences. However, when digging deeper into the topic, there are arguments that funding may be more difficult for female founders. Therefore, funding programmes specifically targeting women is argued to be a good option. In Norway, it is very clear that the gender bias becomes visible when a start-up is moving from the easily accessible public money, towards private capital from business angels and VCs. Several of the female founders express that they have experienced gender bias, but not gender discrimination. The perception among Swedish founders is similar – public funding is regarded as ‘unbiased’, whereas gender

differences appear when moving towards private capital from VCs, which requires access to networks and is less transparent in how to receive funding. It is more likely for men to have access to the right kind of networks. This is related to the problem of homosociality, which benefits not only men in general, but a specific type of men with the 'right' background. Just as in the other countries, the underrepresentation of women in funding is recognized as a problem, and it is considered to be more difficult for female founders to convince male investors. This, in turn, requires specific strategies for women. In Israel, we found that male founders believe that there are no gender differences in access to entrepreneurial funding, whereas the female founders share experiences of how funding is perceived as more difficult for them as women. Among males, it is argued that the females have low self-confidence and that they (females) need to train on pitching skills. The female founders, on the other hand, argue that gender differences depend on a strong male dominance within the VC sector, and that male investors, more or less unconsciously, tend to have a bias against female founders.

When asked to reflect on what is lacking in the entrepreneurial ecosystem, several of the Irish respondents first highlight that the ecosystem in general is good, especially the incubators which are perceived as valuable for founders. A major problem, however, is that the country is small, and that the total pool of investors therefore is small. Also, there are too few female investors, combined with a lack of female role models. The latter is also highlighted as a problem in Israel, where the absolute majority of business angels are male. Among the Israeli respondents, it was further argued that women need to get training in 'masculine' skills, such as assertiveness and self-confidence. In Norway, the respondents in general argue that gender is part of a socialisation process. Therefore, solutions to gender disparity must be targeted at the education system, where the foundation is laid for boys' and girls' different interests. The Norwegian founders do not want to see any 'female-only' programmes or other affirmative actions. However, they do believe that there is a need for more female investors in the ecosystem. The Swedish data reveals that masculine norms in the entrepreneurial funding process create specific barriers for female founders. A central problem is that women are situated as the 'other', and thus breaking the male norm.

Hence, in general a male norm is key in the ecosystems, particularly when it comes to funding, and women are seen as deviating from the norm, causing hindrances in access to founding. Solutions to this issue is, according to most investors and ecosystem actors to, in various ways, help women being able to fit the norm better, while many female founders instead argue that the norm should be changed.

5. The complexity of investors' gendered understandings

Below follows a discussion on some of the main points that have emerged from our empirical findings, which help to shed light on why gendered understandings are complex, and therefore difficult to grasp and depict.

According to the interviews conducted in this study, women and men are assessed differently by investors, even though they may have the same potential and when gender neutrality is stressed in the assessment process. However, even if gendered assumptions and assessments are made according to the interviewees, it is difficult to see a decisive pattern in exactly *how* gender operates and *what effect* it causes. This is in line with other research findings. It has been shown in earlier studies that assessments and negotiations often result in gender differences and especially in relation to financial outcomes. However, these studies have also shown that gender is not a stable factor in predicting effects in assessment and negotiation situations and it has been difficult to establish clear casualties when it comes to the effects that are created (Riley & McGinn, 2002). A variety of explanations have been put forward to explain why there are gender differences, such as differences in life choices and gender-specific preferences, as well as the fact that women and men behave differently. For example, it has been suggested that women are reluctant to promote themselves, expect a lower outcome (for example in wage negotiations) and that women and men implicitly know that there are gender differences in the negotiations and behave in accordance with them (Riley & McGinn, 2002).

Research from Sweden has shown that investors in their discussions made a difference in how they talked about women and men, even though the entrepreneurs' background and applications were very similar. These studies show that women who run companies are considered prudent - they are assumed not to take large loans or make large investments, they are expected to only need small funds and be active in areas with less growth potential. On the contrary, men who run companies are considered to dare to invest, need large funds and be active in areas that are financially viable and have growth potential (Malmström et al., 2017a, 2017b; Malmström & Johansson, 2015). The differences that the researchers could find were categorized into different themes where the language and discussions differed. The first theme concerned the identity given to the applicant: men were given identities as entrepreneurs, innovators and inventors, whereas women were usually given the identity "she" and on a few occasions entrepreneurs. Women were not described as entrepreneurs or inventors at all. Second, entrepreneurial men were portrayed more positively than entrepreneurial women. Women were described with slightly more positive attributes than negative ones. This is in sharp contrast to men whose descriptions were dominated by positive attributes and only in exceptional cases were expressed with negative attributes. Third, the study also found that enterprising men were praised for the same things that women were criticised for. For example, it was considered positive when men were careful because it indicated that they were sensible, while it was negative for women because they were

seen as too cautious. A fourth theme was that women were described with universal positive attributes, which gave a vague picture of potential, in contrast to men who were described with detailed positive attributes, indicating great potential. And vice versa - women were described with detailed negative attributes that clearly indicated that potential was lacking, men were instead described with universal negative attributes, which did not clearly show if potential was lacking. In addition, men were described more with superlatives than women and enterprising women were described in a more passive form (they 'are' and 'have'), while men were described in a more active form (men 'do' and 'can'). The last theme was about innovation and development, where uniqueness was discussed only for men's entrepreneurship and only entrepreneurial men were portrayed as proactive and as "brainstormers". (Malmström et al., 2017a, 2017b; Malmström & Johansson, 2015). Overall, the studies showed how seemingly gender-neutral assessment criteria are used in different ways in the assessment of women and men to the advantage of men.

A study by Riley and McGinn (2002) share similar findings. They proposed two situation-specific aspects which can help us understand how, when and why gender affects investors' assessment. One consists of structural ambiguity, what is perceived as appropriate negotiating behaviours and desirable criteria for agreements and decisions. The second aspect consists of so-called "gender triggers", i.e. situations where gender becomes decisive for behaviours, interpretations and assessments (Riley & McGinn 2002). A situation can be more or less controlled. Situations that are strongly controlled (low degree of ambiguity) in relation to expected behaviour and actions make differences less prominent, in the same way ambiguous situations give more room, because people have to improvise and then the risk of falling into different gender patterns increases. This does not always have to be the case, but the risk increases when there is a strong association with gendered norms, which then acts as a gender trigger (Riley & McGinn, 2002). A gender trigger can, for example, be more or less conscious gendered notions about how an applicant should be, which influences the assessment. One way of counteracting gender triggers is to reduce structural ambiguity and to increase awareness of which gender triggers may exist.

Thus, the vagueness of criteria and assessment process applied by investors, i.e. the structural ambiguity of a situation, creates the space for such gender triggers, which affects the outcomes of decisions to invest. The patterns described by Malmström et al. (2017a, 2017b) have also been found in relation to research grant funding (Husu & Callerstig, 2018). What is interesting in the investors' interviews from the present study is that not only can the patterns described by Malmström et al. (2017a, 2017b) be detected, but furthermore we find that the pattern may vary according to situations and triggered by various gendered norms in relation to gender, technology and entrepreneurship.

One example of how these norms intersect in the present study, is in an interview with a Swedish investor, who describes how it is important not to be too much into tech, as

in 'too nerdy', and not too much into the business side, as in too much interested in making money and too little in the idea, which is associated more often to male entrepreneurs. Women entrepreneurs can benefit from this in some cases. However, similar gender norms can in other situations intersect and result in disadvantages for women entrepreneurs, when being assessed as being too insecure and as having too little knowledge in the area on first appearance.

6. Conclusions and implications

In this final chapter, we sum up the most important conclusions from our research and discuss how these findings lead to implications at micro- and macro levels within the entrepreneurial ecosystems.

6.1 Conclusions

This report is based on interviews with female and male technology founders, as well as public and private investors, in Ireland, Norway, Sweden and Israel. The overall aim with the report has been to *investigate the influence of gendered understandings on investors' behaviour* in the four studied entrepreneurial ecosystems. In the previous chapters, we have presented empirical findings from investors' and entrepreneurs' perspectives. Below follow our main conclusions.

To start with, our findings show that women entrepreneurs do experience gender-related funding challenges in all four countries. Challenges are less evident in relation to soft funding (at a very early stage, when public funding or grants are sought for) but increasingly evident when reaching for equity funding. A very strong theme stemming from the data, is that challenges often are subtle, hidden, it is something that happens in the grey zones in relation to business angels or VC investors. Therefore, it is difficult to explicitly recognize.

Examples of gender-related funding challenges

Several examples of gender-related funding challenges have been reported by our respondents. Some of the most frequently expressed are:

- *Informal networks.* Women express that they have less access to informal networks that give access to investors or information about funding opportunities.
- *Lower legitimacy.* Women experience that investors attribute them with less legitimacy, and that they question their ability to grow their start-ups.
- *Asked different questions.* Women are asked different questions by investors compared to men, e.g. questions about the worst case scenario rather than about potential upside.
- *Business sector.* Gender-related funding challenges are intertwined with the business sector; women in female dominated and male dominated sectors experience somewhat different challenges.

Strategies used by women entrepreneurs

When analysing our rich data, we found that women entrepreneurs use several different strategies to overcome these gender-related challenges. We identified four main

strategies. Some of the interviewed women used several of these strategies but applied them differently depending on situation and context.

- *Ignoring.* First, women can choose to ignore the challenges, and act as if they do not exist. This may be a strategy to choose to be passive, to not waste energy on what is difficult to change, and instead focus on what is possible to improve (the start-up).
- *Fighting.* A second strategy is to fight gender-related challenges, by actively making them visible through different forms of resistance. This is an active approach, where gender is brought to the agenda and where the founder actively works for change, maybe by organizing other women or by requiring change by other actors within the ecosystem.
- *Navigating.* A third strategy is to navigate the challenges. Similar to the fighting strategy, this is an active way of acknowledging the challenges, but focusing on internal actions rather than external factors. For example, women can choose to team up with a man when pitching for investors, to ‘use the woman card’, or to make sure to obtain female support by, for example, searching for female investors.
- *Accepting.* Lastly, we found that a strategy to deal with challenges can be acceptance. It is a passive strategy, but as opposed to simply ignoring the challenges, acceptance means that existing challenges are recognized. The reasoning can be that ‘change will come with the next generations’ or that one simply reduces the ambitions for the start-up.

Where women entrepreneurs place the problem

An interesting phenomenon that we found in the data, is the ‘*placing*’ of the problem. From interviews with female founders, it is very clear that they recognize the presence of gender-related challenges in the overall entrepreneurial ecosystem in their respective countries. However, they often tend to attribute the challenges to ‘*other women*’. When specific examples were asked for, we often got stories about their female friends, or the experiences of other women they knew of. The overall impression from the data is that the female founders emphasize that *they take control* and seek to be in charge of their own funding process. It is important for them to be portrayed as *strong, independent actors* and not as victims.

Where investors place the problem

Further, we found that investors, just as female founders, are eager to create a distance between themselves and where the problem is perceived to be present. Although the majority of interviewed investors in this research recognise the presence of gender-related challenges in their entrepreneurial ecosystem, very few reflected on their own role in this system. Rather, they attributed problems to:

- *Other investors.* A common argument was that one really treats women and men the same, but that other investors fail to do so.
- *The women.* In line with previous research, we found that investors often place the problem on the demand side, arguing that women are lacking ambitions, lacking network or lacking resources. It was also commonly argued that women have different focus, are risk averse, have more domestic responsibilities or prioritize family life, and therefore have less time to focus on the start-up.
- *Pipeline issues.* Lastly, almost all investors argued that there are pipeline issues, with too few women in STEM-sectors, too few women entrepreneurs, too few women tech entrepreneurs, and consequently it is difficult to find good investment cases.

6.2 Implications

Before discussing some implications stemming from the results above, we would like to highlight that this report is one out of four reports based on the GENRE-project. The first report, *Cross-cultural variations in technological ecosystems, a gender perspective*, deals with the overall preconditions in the four ecosystems. The second report, *Cross-cultural variations in gendered technology incubation provision*, is aiming to investigate the extent to which entrepreneurship ecosystems support or hinder women's technology entrepreneurship. In this report, being the third, we have focused on the influence of investors' gendered understandings. In the fourth, and last report, we provide actors within entrepreneurial ecosystems with practical tools when working towards increased gender awareness. Thus, in the fourth report, we present implications for both policymakers and practitioners, that are based on findings from the GENRE-project. Therefore, we discuss implications only at a general level in this chapter. We would like to encourage anyone operating within entrepreneurial ecosystems (including entrepreneurs, incubator managers, private and public investors, policymakers) to read the fourth report, to get more detailed and practical suggestions on how to develop ecosystems to become more gender-aware and inclusive.

That said, the studied countries have some overall similarities. All four countries are small, with small populations. They are all well-functioning, stable democracies, with open economies and strongly depending on international trade. At the same time, we found several interesting country specific similarities and differences among the four countries. For example, the two Scandinavian countries, Norway and Sweden, are in many ways closest to each other; geographically, but also regarding culture, language, and the strong influence of well-developed welfare systems. Further, these countries have long traditions of working with gender equality issues from a public policy side. When looking at the advancement of technology, and the prevalence of strong 'technology hubs', there are similarities between Sweden and Israel, as both these countries stand particularly strong in international comparison in this regard. We also

find that there are some similarities between Israel and Ireland; two countries where religion and religious values to a high degree influence the society. These countries are also characterized by traditional family norms, something that comes through in the interviews. In contrast, Norway and (especially) Sweden are very liberal and individualistic countries, where religious values play very little role. Among the four countries, Israel is unique in several ways. The country is to a high degree depending on trade and other sorts of interaction with countries that are not located in the immediate surroundings, not the least its relation to the USA. The presence of the extensive military service is unique and has implications for the overall technological landscape, because it trains leaders who learn to deal with uncertainty and who develop the ability to make do with what is available and to work with limited resources. Further, the role of incubators is slightly different in Israel, compared to the other studied countries, as Israeli incubators play a more central role for funding of start-ups.

This is obviously not an exhaustive list. The reason for pointing out some similarities and differences between the four countries is to say that each entrepreneurial ecosystem is unique, and they all struggle with unique challenges. There are positive and negative sides in all ecosystems, and since the contexts are different from each other, there are no ‘solutions’ or ‘quick-fixes’ that fit them all. The implications that we discuss below are therefore kept at a general level, which means that the themes are relevant also for other entrepreneurial ecosystems, beyond the four countries included in this report.

At micro-level

When talking about gender, there is an almost exclusive focus on women. This is a strong theme that comes out in the present data, but it is also more generally the case in other research as well as in most policy documents (see i.e., Marlow & Martinez, 2018). As shown in the present data, women obviously *do* manage to navigate in masculine technology environments, and they *do* express strength and self-confidence, and use all kinds of strategies in the process of raising capital. We argue that a broader perspective of gender is needed, where focus moves from looking at whether women are ‘risk-averse’ or not, to also look at men and the performance of masculinity. This is needed when looking at micro-level, both regarding male entrepreneurs and male investors.

At ecosystem-level

At system-level, there have been different approaches when working for a better gender balance within technology entrepreneurship. The most dominant approach has been to ‘fix the women’ rather than to ‘fix the system’. In other terms, women have still been seen as the ‘other’ and policies have generally focused on ‘fixing them’ by, for example, introducing women-only development programs. We argue that the question we need to ask is rather what kind of entrepreneurial ecosystem we want to have. In doing so, we need to move towards looking at the structures at both micro- and macro levels in parallel. There are many different aspects of contexts and this needs to be considered when dismantling prevailing gender stereotypes (Welter 2011, 2019).

Another important theme that comes out in the data, is that the masculine norms dominating within technology entrepreneurship environments, are by no means representing a masculinity that is inclusive for all men. On the contrary, it is a narrow form of masculinity, where many men are excluded, or questioned if not being 'masculine' enough. Therefore, we argue that gender has to be studied in more nuanced ways, than just looking at men and women, or masculinity and femininity.

Not only have findings in this report shown that the concept of gender is multi-faceted and often very complex. Gender also intersects with several other traits, such as age and ethnicity. Another important factor is the role of mental health, and research is needed on how women and men are affected by stress in different ways, since this also forms preconditions for the ability to enter tech entrepreneurship. A recent study by Ahl and Marlow (2021) critiques for example the idea that entrepreneurship necessarily is a good thing for women, or for all women.

Less studied, but likewise important, is the impact of socio-economic background, and different preconditions for those living in geographical periphery versus the cities. The intersection of different traits can make barriers grow even higher for some individuals, and it is therefore important to consider this, when trying to develop inclusive ecosystems.

Lastly, as we have shown in this report, all entrepreneurial ecosystems have their unique preconditions. We do not believe that there is a 'one size fits all' policy to suggest for all ecosystems. Therefore, both practitioners and policymakers need to be context-sensitive and adapt policies to the specific country contexts.

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