Regional Scan of the Current State of Gender Inclusivity

Germany

CONTENTS

Foreword

The Science-to-Business Marketing Research Centre in Münster (S2BMRC) at FH Münster University of Applied Sciences, Germany is proud to present the results of the Inclusivity Regional Scan with focus on the "Gender" dimension from the entrepreneurial ecosystem in Münster, a city located in the state of North Rhine-Westphalia

After the launch of the Europe 2020 strategy and recent policy measures to expand entrepreneurship in each of the EU Member States (e.g. The Missing Entrepreneurs, 2019), Europe has taken the path to strengthen entrepreneurial culture and networks by pulling strategies and actions together to enable everyone to start a successful and sustainable business, despite their gender, age, place of birth, or other personal characteristics.

The assumption that underlies most entrepreneurial ecosystems is that all entrepreneurs have equal access to resources and support within the entrepreneurial ecosystem. In theory, this assumption is valid, however, in practice, this is not always the case (Brush et al., 2019). According to the 2nd European Start-up Monitor, only 14.8% of start-up founders are female.

The Global Entrepreneurship Monitor 2019 shows that Europe had the lowest female involvement in early-stage Entrepreneurial Activity of every analysed region (6%) and the lowest gender parity. The lower entrepreneurial activity amongst women has been argued to be owed to the traditional general attitudes in entrepreneurship education, which are discouraging for women (Dilli & Westerhuis, 2018, p. 375).

Traditional masculine assumptions are therefore fed into ideas about entrepreneurship, which in turn are presented to students in a classroom. There is little to no reflective process in the development of the curriculum and entrepreneurship courses in challenging the 'gendered entrepreneurship' (Tegtmeirer & Mitra, 2015, 266).

Foreword

Against this background there is a need for more inclusive approaches in entrepreneurship. In this sense, women's entrepreneurship is analysed within the context of inclusive entrepreneurial ecosystems. The present report is a comprehensive analysis of the degree of inclusivity of key entrepreneurship education and support programs offered by the academic and non-academic partners in the region of Münster. In addition, it analyses key elements form an entrepreneurial ecosystem, namely, a conducive culture for women entrepreneurship, available financing, the acquisition, and development of human capital through education and training programmes, new markets for products and services, and a range of institutional and infrastructure support systems targeted at women.

This report presents a brief description of the regional context and entrepreneurial ecosystem in Münster, its key players, and some basic statistics related to the student and entrepreneurial population with a specific focus on female participation. In addition, it uses a qualitative approach emphasising the perceptions of four main stakeholders interviewed, namely a) educators of entrepreneurship at universities, b) program managers at incubators and other units in charge of entrepreneurship within the regional entrepreneurial ecosystem; c) students/program participants/alumni; and d) other key players in the regional entrepreneurial ecosystem in Münster.

Our approach towards understanding female entrepreneurship is holistic and takes an entrepreneurial ecosystem perspective, which in turn is unique. WeRin sees entrepreneurship education as being an entry point into the regional entrepreneurial ecosystem. However, this only happens if HEIs and other parties active in the ecosystem beyond academia such as science parks, incubators and others are connected and collaborate in such a way that graduates know where to turn for entrepreneurship support after leaving university. For this reason, WeRin includes both parts of the ecosystem and seeks to foster stronger interlinkages and cross-involvements to be included in educational and support program design.

The results of this regional scan have revealed a fragmented and male dominated entrepreneurial ecosystem in Münster. Clear recommendations for the region call for fostering a gender egalitarian culture including supported provision of parental and maternal leave and childcare to encourage more women to engage in entrepreneurial activity. A careful role-model selection should ensure that students relate to the model and that the chosen role model depicts not only a desirable result but also a feasible and achievable career goal. Finally, rising awareness of gender inequality plays a critical role in society. Many ecosystem stakeholders need to overcome the conscious and unconscious bias and female entrepreneurship should not be considered a "taboo topic" anymore in Germany at policy level.

The entire team of the Science-to-Business Marketing Research Centre in Münster (Germany) is proud to deliver this report for the sake of improving the degree of gender inclusivity in the regional entrepreneurial ecosystem. We feel honoured to have been able to work with different stakeholders in this study and we would like to thank everybody who has enabled us to conduct this study, particularly the respondents in our qualitative study from whom we have received substantial and highly valuable contributions for this regional scan.

Jun.- Prof. Dr. Sue Rossano-Rivero
WeRin Project Leader

Science-to-Business Marketing Research Centre - FH Münster

Iulia Stroila PhD (c)
WeRin Lead Researcher,

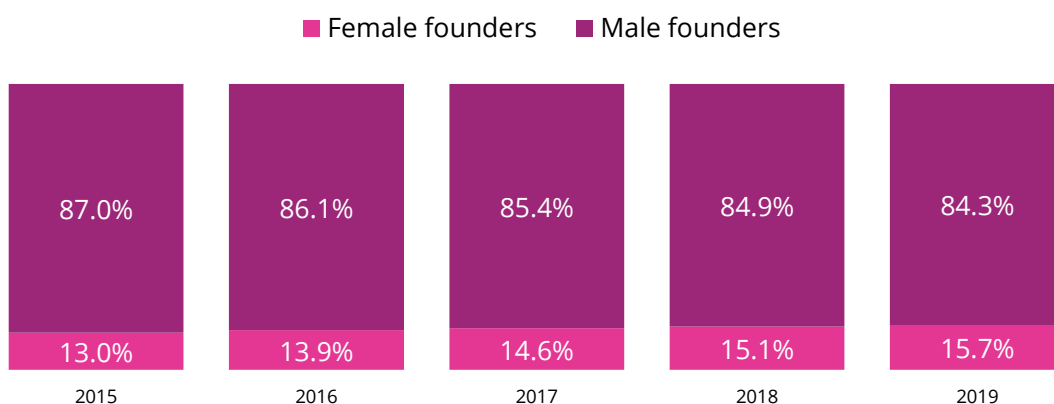Science-to-Business Marketing Research Centre - FH Münster

Women in Start-up

Women are still strongly underrepresented in the start-up world - the share of female founders in Germany is currently only just under 16 %.

The figures of the KfW Start-up Monitor show that the share of start-ups in the labour force has been falling continuously for almost 20 years (KfW-Gründungsmonitor, 2018). At its highest, the figure was 2.9 % in 2003 – since then there has been a steady decline in the start-up rate, reaching currently 1.1 %. The declining start-up rate is an important warning signal in the context of Germany's economic renewal and innovative strength.

In Germany, women are still significantly underrepresented in the start-up sector (Female Founders Monitor, 2020). Their share is currently only 15.7 % and has only increased slightly in recent years (Figure 1). The imbalance in the start-up sector is not a German problem but an international one. The Global Startup Ecosystem Report provides initial indications that some entrepreneurial ecosystems in the USA, for example, in New York and Chicago, stand out positively regarding the share of female founders. In contrast, Germany ranks at the bottom in terms of the share of female entrepreneurs (Startup Genome, 2019). Besides, Germany has a similarly negative balance in the number of women in top management (AllBright, 2019).

Figure 1. Percentage of male and female founders in Germany

■ Female founders ■ Male founders

	2015	2016	2017	2018	2019
Male founders	87.0%	86.1%	85.4%	84.9%	84.3%
Female founders	13.0%	13.9%	14.6%	15.1%	15.7%

(Female Founders Monitor, 2020)

North Rhein-Westphalia

Entrepreneurship and innovation should become a source of opportunities helping societies to construct well-being for all. The gender gap seems to be a worrying inequality that can be addressed to reduce its impact on women.

The region is addressing the gap with diverse strategies that are generating trends in female entrepreneurship and may consolidate as practices that guarantee gender equality in the search of inclusive societies. These initiatives articulate diverse actors of the ecosystem such as the regional government, banking industry, higher education institutions, and aspiring and consolidated female entrepreneurs.

Introducing the region

North Rhine-Westphalia is located in Western Germany, colliding with Belgium and the Netherlands to the west and has 17.9 million inhabitants, making it the most densely populated state of Germany.

The economy of North Rhine-Westphalia is mainly based on SMEs. The state counts 747,000 SMEs who provide work to about 80% of the active population (NRW Invest, 2016). Eighteen of the 50 largest German companies are based in NRW. According to the NRW Global Business, every fifth German start-up now comes from the North Rhein-Westphalia, and around 19 % of all start-ups in Germany are now based in NRW. The region has seen an increase in start-up creations from 2019 to 2020 of 2 percent, making it 13 %, which is lower than the national average of 15.9 %.

North Rhine-Westphalia has set the goal of increasing the number of women starting their own business to 33% by 2025. A recent opinion study found that despite that there are more than 32 % of women who would like to start their own business, less than 29% dare to do so.

North Rhine-Westphalia has a vibrant entrepreneurial ecosystem with many convincing location factors. It is one of Europe's best breeding grounds for talent and outstanding research infrastructure (NRW Global Business, 2021). These two location factors are described in detail below.

Outstanding "talent"
There are around 768,000 students at the state's 68 universities. That is more than in the Paris metropolitan area and four times as many as in Berlin. About 90,500 of them are studying computer science and electrical engineering, bringing core competencies to the digital economy. It is not surprising that companies in the digital economy in NRW can cover three-quarters of their staffing requirements with local employees. By comparison: In Berlin, every second employee must be recruited outside Germany to cover the personnel requirements of the companies.

Research infrastructure
NRW has one of the densest research landscapes in Europe. NRW has more than 50 non-university research facilities, including 14 Fraunhofer Institutes, 12 Max Planck Institutes, 10 Institutes of the "Leibniz Association", three Fraunhofer application centres, three Helmholtz Centres, the Centre of Advanced European Studies and Research, as well as the 15 Johannes Rau-Research Institutes and 14 other research facilities financed by NRW state funds.

In addition, there are nearly 30 technology transfer units that form the basis for the regional research and innovation system. In these technology transfer units, the universities receive support regarding setting up a new business, handling patents, etc. All five sub-regions in NRW have an outstanding performance in terms of marketing and organisational innovations. For instance, Münster has the highest score in the region in the Regional Innovation Scoreboard (Regional Innovation Monitor, 2020).

Potential and Trends

North Rhine-Westphalia is one of Europe's best breeding grounds for talent. The rapid growth in women's involvement in higher education has been accelerating year after year. However, education alone is not working to increase the number of women entrepreneurs. This highlights the importance of identifying the cause(s) of low participation rates by women in entrepreneurship. Furthermore, context-specific considerations are essential since they can either encourage or discourage women entrepreneurs.

2018	2019	2020
64.4 % male students	**54.9 %** male students	**54.7 %** male students
35.4 % female students	**45.1 %** female students	**45.3 %** female students

(Gender Statistikportal.NRW, 2021)

Figure 2. Female and male representation of students in North Rhein-Westphalia

Entrepreneurship education

North Rhine-Westphalia has one of the densest and most diverse landscape of Germany when it comes to higher education. With 70 universities in the region, the NRW region can become one of the most relevant triple helix hubs in the country.

General entrepreneurship education in North Rhine-Westphalia is open to female applicants as well as males. These include,

The **Rheinisch-Westfälische Technische Hochschule Aachen** is considered the best university in NRW and 9th overall in Germany, other universities are listed in the midfield or even below. The potential assessed by the Start-up Monitor in 2019 gives critical benefits of increasing the number of spin-offs by connecting stakeholders in different programs.

As part of the Women Entrepreneurs in Science initiative at the **University of Wuppertal**, a state-wide university network for female entrepreneurs is being set up. Within the framework of this network, regular start-up summits, start-up roundtables, and women's speed-dating events take place. Prospective female founders from universities can also obtain advice from this network at North Rhine-Westphalia. As part of the initiative, there is also a programme for female founders to support women's university spin-offs and set up a mentor network.

At **Ruhr University in Bochum,** such an initiative is also being developed with FACE @RUB, i.e., the female academic entrepreneurs from RUB. With this project, Ruhr University sensitizes female students and academics to the possibility of founding their start-up or running a business as a woman.

In Münsterland, and especially in Münster, an active start-up scene has developed in recent years, which is well networked and strengthens each other. For many years, **Münster University of Applied Sciences** has been stimulating university members and alumni to implement innovative and creative ideas themselves and take the step into entrepreneurship. With the start-up support, the university wants to strengthen this approach further and put it at the centre of its profile.

The **Science-to-Business Marketing Research Centre** is an integral part of the Münster School of Business at FH Münster University of Applied Sciences in Germany. Acting globally, the S2BMRC is a world-leading centre dedicated to interactions between Science and Business + Science and Society.

TAFH Münster GmbH is the central innovation promotion and project development company of Münster University of Applied Sciences. We combine experts from science and practice to jointly launch innovative projects - for example, in research and development, further education or business start-ups.

At **University of Münster**, the team around the head of the institute, Prof. Dr. David Bendig, researches and teaches at the interface of established companies and start-ups. The focus on entrepreneurial action characterizes the contents. Both a start-up and an established company need innovative management and leadership strategies to create sustainable success. The anchoring of the institute in the Center for Management allows cooperation with outstanding researchers on current issues. The connection to the REACH Euregio Start-up Center, in turn, allows the direct transfer of knowledge into practice. The institute aims for more students to perceive the topic of start-ups as an attractive career path.

Public and private support

Various initiatives tailor services to support women from different backgrounds to successfully start their own business, aiming to contribute to the closing of the existing gender gap in the entrepreneurial ecosystem.

General entrepreneurship support offerings in North Rhine-Westphalia are open to female applicants as well as males. These include,

The Gründerstipendium NRW start-up grant sees the introduction of a customised tool that is particularly well-suited to female founders. This is becoming apparent in the continuously increasing proportion of women.

The goal of **the Centres of Excellence for Women and Careers** is to improve equality of opportunity in the workplace for men and women and to maximise women's potential. Female executives and specialists can network and discuss their goals at the women2BUSINESS Women's Business Forum, organised by the Düsseldorf Centre of Excellence for Women and Careers, the Mettmann district and the Düsseldorf Chamber of Industry and Commerce (IHK).

The German Ministry for the Economy and Energy has started the initiative "Women do". This initiative aims to encourage women to achieve professional independence and to start their own businesses and to inspire girls to become entrepreneurs.

The nationwide initiative for businesswomen, known as **Frauen unternehmen**, and are working with them to organise event formats in North Rhine-Westphalia, such as speed-dating events, with female entrepreneurs as the role model. We are seeking to develop this cooperation.

As part of the Exzellenz Start-up Center initiative, the NRW is planning to establish a **Women Entrepreneurship Center**. One of the aims in this context is to develop a nationwide higher education network for female business founders that regularly holds female founders' summits, female founders' round tables and female speed-dating events, and that provides advice to prospective female founders from the higher education institutions in North Rhine-Westphalia. It is also intended to establish a female incubator programme to support female university spin-offs.

The NRW.BANK offers specific advice for women starting up in business and supports networks and participants in North Rhine-Westphalia. It holds NRW.BANK seminars for successors and a networking breakfast for businesswomen. Marketing and PR activities, as well as event formats relating to female testimonials, will be expanded.

The DWNRW Hubs offer advice and events geared specifically towards women setting up in business. They enjoy successful cooperation with the Female Innovation Hub and the Global Digital Women Initiative.

In the Münsterland region there are several women's initiatives to strengthen each other and become visible with their businesses: The BPW club Münster; Frauen U(U)nternehmen E.V.; Network Company You, Drensteinfurt; UFH-Entrepreneurial women in crafts; Landesverband unternehmerfrauen im handwerk NRW E.V.; Steinfurt district network of women entrepreneurs; and Visionen E.V. network of entrepreneurs and creative people.

Regional support programs

Regional support programs can also be found in the Münsterland region with cooperation between universities and the private sector working together.

Programmes that support women have been developed and offered in Münsterland. These have included,

REACH, the new Euregio Start-up Center developed under cooperation with the University of Münster, the University of Applied Sciences of Münster, the University of Twente and the Digital Hub MünsterLAND. This cooperation enables the creation of a platform that supports scientists and students in founding start-ups and spin-offs. The project maps all phases of a start-up, from the idea to the development of a business model. Reach is set out to provide the necessary tools, resources, know-how and network to support new founders.

Amelia empowers young women to recognize and use their own potential. To bring innovative strength and social development in Germany to a new level. Generation f has thus become the heartfelt project of three young women who not only want to watch, but also want to shape the future themselves. Their enthusiasm, passion and strong cohesion allow them to leave their comfort zone to constantly reinvent themselves and increase their impact. Amelia set up a growth bootcamp for women and a networking platform. Their Growth Bootcamp workshops are focused on growth mindset, personal branding, goal setting and purpose.

TechLabs is a learning platform for young people of all disciplines. They offer state-of-the-art tech education in form of the Digital Shaper Program, a program that aims to equip young individuals with tech domain expertise as well as methodical and soft skills that are highly relevant now and in our (more and more automated) future workforce. The three strategic goals TechLabs follows are: effective learning, learning at scale without boundaries and connecting people. Lately, TechLabs has adopted a focus on female programs with their **Women in Tech**! initiative which aims at teaching programming skills to women.

WESt In addition to individual consultations, WESt offers interesting workshops with its new event format BUSINESS.kompakt, which are aimed not only at those interested in founding a company, but also at existing companies. WESt established a network of female entrepreneurs over the past five years, where quarterly meetings are organized within the region Münsterland. Over those years the network grew to a total of 300 female entrepreneurs.

Women Entrepreneurs in STEM has been developed with a clear goal: increase the number of female entrepreneurs in Science, Technology, Engineering and Mathematics (STEM) by transforming their access to and the quality of the training they receive from entrepreneurship VET institutions. The program has been developed by a consortium involving 6 partners from 4 countries, including an applied sciences university (MUAS , Germany).

Meso level

The analysis shows diverging and converging perspectives of the four stakeholder groups interviewed as part of the regional scan. 65 semi-structured interviews were conducted online from March - July 2021, average 45 minutes.

The four stakeholder groups are educators, program managers, students (including alumni), and women entrepreneurs and other key players in the regional ecosystems.

Research methodology

- Desk Research for Macro about North Rhine-Westphalia, Germany, with a largely Münsterland focus
- Primary Data: 65 semi-structured interviews were conducted online from March - July 2021, average 45 minutes
- Based on the WeRin project interview protocols, the sample includes Female Entrepreneurs (20), Programme Managers (6), Entrepreneurship Educators (11), Students & Alumni (26), and Ecosystem Stakeholders (5).
- Interviews are analysed based on the "5M" framework (Brush et al., 2009), where the 5M's stand for Macro, Meso, Management, Money and Market.

Educators

The educators target group age varies between 25 and 55 years. Most of the interviewees from this group were PhD candidates while the rest were either Professors or research associates. The participant lecturers focus on entrepreneurship, creativity and finance on different levels and in different depths. The respondents were mainly women, and their general network was pointed to the REACH incubator as a building platform for new startups in the region. According to the interviewees, the distribution of male and female students is about 50% for each, while the internationalization degree seemed to decrease as the specificity of studies increased (bachelor students are more international whereas master students are primarily German).

The main examples as role models were men while only two female role models were highlighted. Female entrepreneurs are seen as less risk-takers with the same abilities regarding entrepreneurship. Some respondents consider the qualities to become an entrepreneur are related to demographic factors.

Among the main characteristics educators find relevant on young students' entrepreneurs, resilience, motivation and the right mindset were highlighted.

Educators in Münsterland

Role Models

Entrepreneurial educators in the NRW region mostly employ male role models who are on a very mature stage. Although two interviewees named female role models only one was German, leaving a gap in woman representation and national representation.

> *"I use architects because I am an architect. But the architects that I mentioned are indeed male. And that is true. And there's only one architect right now that comes to mind: a famous female architect, that's Zaha Hadid. But I should use her more in my quotes".* (SH2XQQBN)

The role models used by the educators try to be as relatable as possible for everyone or at least known so the impact of the role model used can resonate with the students. Given the academic background of most lecturers the role models were international, nevertheless, one educator highlighted a successful female entrepreneur.

> *"Lea Sophie Kramer... the founder of Amorelie. I just find her character really, really vital, really engaging. She's just so open-minded and sensitive to pretty much any company... And this fearlessness. And this ambition and this energy level, I find really exciting."* (GE7PA4XZ)

Networks

Networking is seen as something everybody can learn and a must have skill to become a successful entrepreneur. Educators agreed on these points and highlighted the importance of acting as catalysts between students and industry to increase entrepreneurship in higher education.

> *"When they are teaching something, and students take an idea out of that, lecturers should be the ones who should encourage further, they usually already have a network, or they are building a network, and they might know someone."* (K5UG6Z2R)

Educators in Münsterland

Social safety

Educators have different perspectives when it comes to gender equality. While some argue both men and women have no distinctive difference and argue both can do the same, whilst others argue some disciplines do not have enough women.

> *"…to have people who stand for a woman who stands for confident women, for women who can achieve more, who want to go further, and who are confident in what they are doing."* (K5UG6Z2R)

The courses in which the interviewees participate have an international participation which makes it easier for them to spot differences between cultures and how some students tend to participate more or less based on their cultural background.

Social role theory

When it comes to entrepreneurship, educators do not see differences and perceive more interest in learning about entrepreneurship rather than become an actual entrepreneur in their lectures. In terms of the key characteristics, the main ones are critical thinking, open mind, problem-solving orientation and self-motivation.

Underrepresentation is not visible for international students during bachelor degrees but as the academic level increases there are fewer international participants. This also relates to the representation of female students at PhD level.

> *"Again, there are three women and 12 men, maybe so, but then again, it's not because of entrepreneurship, but because of the PhD structure. So, we know that women are less likely to do a PhD".* (Y8EP97NV)

Educators provide students with the tools to become entrepreneurs and let them develop the skills they are interested in, providing a safe environment for students to learn about the topic during their studies.

Testimonials
Educators

An overview of the entrepreneurs can be found in the Appendix, Table 1.

"So, I would think, if the students are very curious to develop something new, and to challenge themselves, I think that would add value to the whole learning experience, just from the point of learning. So, rather than taking the conservative approach, taking the more challenging approach, it doesn't matter the outcome because it's a safe environment where you can get feedback, guidance, and so on".

"I do make sure that when we talk about things is that we don't make assumptions about gender. I mean, not even male or female, but binary, nonbinary, right, let's make sure that we are being open to the issues related to gender when we're looking at target markets and looking at solutions".

Program Managers and Stakeholders

The program managers (PM) target group working time in the start-up scene is on average 20 years, some with less years of experience. Among the industries and offices, the program managers belong to NRW-Bank, Chamber of Industry and Commerce, Transfer Agencies and consultancies were named. The PM have a close connection to start-ups and entrepreneurs given the relation they have with the Economic Development Agency and FH Münster. Further collaborations were mentioned with different stakeholders from outside the Münsterland region.

The role of networking for PM was extremely relevant and seemed to be affected due to the COVID-19 outbreak in the last two years. They also highlighted the importance of equal access due to high network spinning around universities.

Although relative biases were discarded, non-visible biases were commented on by the interviewees, uncovering situations that tend to be normalized while trying to not be biased. In comparison to the educator's perspective in university, in real-life situations, women encounter difficulties once they decide to form a family, leaving them less opportunities to build career paths.

Program Managers and Stakeholders

Role Models

Role models are particularly relevant for project managers because they work as guidelines for entrepreneurs.

> *"...to look at who's doing similar things and see how they're doing it. That's why we also did events where people could go and see how something is made and trace the supply chain."* (S01)

In most cases, programs and coaching are tailored for individual entrepreneurs to provide closer connection to the role models and to apply strategies, processes, and networking targeted to the founders needs.

Program managers consider not to be only one type of entrepreneur but highlight characteristics appreciated in founders such as self-motivation, self-organization, discipline and a higher willingness to take risks.

Networks

A network is perceived as fundamental given the experience of the better the network it is, the more successful founders are in the market. The focus of project managers is to bring the region forward reinforcing the regional network with different online and offline interactions whenever possible.

For women entrepreneurs, the Association of German Women Entrepreneurs provides highly skilled founders who contribute on different areas.

The level of interactions between network institutions and female founders has personal connection, supporting and providing experiences from women entrepreneurs who have been in the market for a long time.

"I think access is equally guaranteed. I think who you go to, perhaps as a woman, might depend on who is advising you. Is it a counselor or a female counselor? I think it's more of a personal story". (SO2)

Program Managers and Stakeholders

Social safety

In general, program managers do not perceive any sort of inequality towards international or female entrepreneurs. They argue that they have a very high number of participants from these groups without experiencing problems.

> *"There are definitely no distinctions made. Münster is a student city and therefore has a diverse audience, and that does indeed shape the initiatives. I have not observed any reservations regarding gender, origin, etc. so far*." (SO3)

However, unconscious biases arise when investment takes part of the equation. Some argue that because of the age gap between founders and investors it appears to be some patterns that negatively affect female founders. Investment from men towards all-female led teams is seen as age-old clichés given the rise of female founders.

Social role theory

Program managers consider women to be not aware of their qualities and qualifications, they also argue there is lower willingness to take risks in comparison to men. In contrast to this, women are eager to have harmonious relationships with everyone and, while providing natural arguments, they are seen as mothers and relate many attributes due to this.

"The woman relies more on security, because she has the child by the hand and doesn't make such big leaps. I've seen it happen with some start-ups, where two friends have a great business idea and have built it up, but at some point, the company no longer exists. Why? Because there was suddenly a family phase. I've never seen a man say, "I gave it up because I was a father. At the beginning, you don't have such a big company where you can say, I'm going to take parental leave." (SO1)

Testimonials Program Managers and Stakeholders

An overview of the project managers and stakeholders can be found in the Appendix, Table 2.

> *"Networking for entrepreneurs is one of the most important things. I think if you know the right people who have a bit more influence, they can help you a lot and you can get things moving where you might have been turned down".*

Representative from a regional bank

> *"Well, it's actually noticeable that it's more men that we interview or that are available for us to interview, but I haven't noticed any prejudices yet. A woman who is just as good then stands out even more and it's something special, which it really shouldn't be, because why shouldn't a woman be better? But then that's more along the lines of "wow, she's got it"."*

Representative from a regional development agency

Students and Alumni

Students interviewed ranged from 20 to 26 years old while alumni ranged between 23 and 33 years. Most of the alumni had lectures related to entrepreneurship in which they commented to have learned the basic concepts to develop their mentality further on. While some students and alumni declared not being involved in any start-up whatsoever, some stated to be participating in the regional start-up network developing their ideas. In terms of networking, both groups gave emphasis on the level of networking universities generate during lectures as well as the possibility to meet people with different backgrounds and nationalities. Nevertheless, only one alumni admitted to be participating actively in a start-up network.

The alumni interviewed mentioned they think some, or even themselves, will become entrepreneurs in the near future, highlighting the main entrepreneur characteristics of their peers during their studies. Students, on the other hand, described already made entrepreneur peers during their studies. Gender and internationalization ratio remained in the same perspective as the educators' group, with only one lecture being mostly attended by women. As mentioned in the previous group, the network factor has been affected due to the pandemic, however, more digital network platforms have risen during this time, enabling students and alumni to actively participate in different networks in the region. Both alumni and students agreed to feel safe in the environment of university, only language barriers were considered as uncomfortable during studies.

Students and Alumni

Role Models

Entrepreneurs and entrepreneurship are both considered as something positive among students and alumni. Female entrepreneurs are admired across multiple disciplines, including academia. Some participants described entrepreneurs who were in their spheres of knowledge such as professors and lecturers. Other participants described female tech entrepreneurs with an impressive example of empowerment.

> *"...she was part of the team that founded Tinder. I think together with her boyfriend and friends of him, and then they broke up, and the others started to bully her. And then she just decided to leave the company, founded her own dating platform. So now she's the first female, I think self-made billionaire. And I would say that's like an example of not giving up and believing in yourself and your ideas."* (35BFT6QU)

The attributes upon which entrepreneurs are reflected always have positive connotations such as creative, confident, ambitious, empathic and open minded.

> *"I think for us, they are very valuable, brave. So, someone who is trying to make a company. I think we understand that it's not easy. And sometimes its just inexperienced of learning. But I think it's like every person trying to do a business, which is a perfect opportunity."* (NY9XPKSX)

Networks

Students could identify at least one relevant regional organisation in which entrepreneurs or even themselves could go for support. Alumni recognized the relevance of networking during lectures and also comment on the importance of good skills for it.

"Okay, so whenever you're talking about entrepreneurship classes, networking is one of the bases. I think they always try to focus and how important it is for you to develop a good network." (LUZZJGQX)

Students and Alumni

Social safety

The atmosphere around university is considered as positive due to its ability to provide students with a space in which they feel their ideas are valued and listened to. The international environment brings positive outcomes when working together and overcoming biases. These situations occur even in the digital world.

> *"I think there's a big tolerance to everyone here in university. Because people get older and respect everyone's opinion. So, I think yes, you're heard when you're in breakout sessions, for example..."* (8BN5LY43)

The female ratio in studies showed an inclination towards higher number of women studying in the participant's lectures. However, female lecturers and professors remain only with few spots in the educational field in the region.

Social role theory

Students perceive gender differences and argue they have more challenges to address due to lack of trust or unconscious biases. Lecturers provide students with space and tools to overcome them.

Although there is no main underrepresentation, female international students remain to be the lowest number of participants in university according to students and alumni.

> *"In entrepreneurship classes? Yeah, I think there were more men than women. And also, I noticed that there were more white people than black people."* (ERRFESMQ)

When asked for who might become a successful entrepreneur, respondents predominantly did not assign a gender to the person but rather only described good qualities could improve skills.

> *"I think being a good entrepreneur is a talent. I think being an entrepreneur is something that you can learn."* (LUZZJGQV)

Testimonials Students and Alumni

An overview of the project managers and stakeholders can be found in the Appendix in Table 3 & 4.

> "
> "I don't think that they differentiate between male and female. But I think they really do like to see more female founders because they're still really underrepresented right now".

Student at FH Münster University of Applied Sciences

> "
> "I think it depends on the person. Really. I think some people are entrepreneurs and have the mindset. And for them, it's pretty easy. And then some people don't really have, and I think for them, it's difficult. In general, the doors are open, and everyone could do it".

Student at University of Münster

Female Entrepreneurs

Female entrepreneurs interviewed ranged between 25 and 33 years old, most of them have a masters degree and only a few are completing or have finished their doctorate degree. Their entrepreneur journey started either during university or after it, not before. Among the motivation to start the entrepreneur journey, interviewees stated to embark on new opportunities outside the academic sphere. Entrepreneurship lectures are highly appreciated among the respondents, these lectures provide them the tools to develop a successful start-up.

In comparison to the alumni and students' group, female entrepreneurs have more female role models in who they identify. The perspective interviewees have on how female and male entrepreneurs deal with business is targeted at soft skills and business skills, respectively.

Most of the participants agreed that they often experience hidden discrimination, which can be seen in not receiving invitations or being asked what will happen when they get pregnant.

Female Entrepreneurs

Role Models

Female entrepreneurs have different female role models which come from different fields including STEM. Entrepreneurs are source of inspiration for young female entrepreneurs and having to focus on the very best from everyone is the main goal to become a great female entrepreneur.

> *"I'm building up my role model pool. And they are mostly women."* (DVKVX64D)

The typical entrepreneur is mainly attributed to a white male given the low number of female founders in the region. Among the characteristics highlighted by the entrepreneur's resilience, analytical skills, ambition and vision are some of the ones considered. When asked if they felt like a role model most of the participants felt some level of acceptance in the fact, they are role models for someone.

> *"Yes, definitely. But not, like, people follow me and do the same like me. It's more like, I'm trying to show people that it all depends on circumstances and that it's totally fine to have different ways and to have different paths you follow."* (SM6QMR4Z)

Networks

Formal and informal networking was highlighted. The pandemic has had an impact in how networking takes place nowadays, affecting how relationships are established and the repercussions this might have.

> *"Networking will help to get your startup off the ground. And that is having connections to other people. You never do business with businesses, but you always do business with people."* (DVKVX64D)

The region start-up scene allows female entrepreneurs to participate in different organizations and win support and mentorship. Some participants highlighted the lack of female entrepreneurs in incubators, supporting low numbers of female lead start-ups in NRW.

Access to funding

The results confirm the difficulties that female entrepreneurs face in running their ventures. Evidence from research suggests that there is still a gender imbalance in entrepreneurship in terms of funding, especially with regard to investments by VCs and business angels.

This is also evident from our qualitative interviews. Female entrepreneurs consider having greater difficulty compared to their male counterparts in convincing investors, both in terms of their financial projections and in terms of their capital needs. The exchange with investors thus involves a number of uncertainties and obstacles for female entrepreneurs. The access of female entrepreneurs to investors and capital providers can be considered a critical factor that explains the low proportion of women in the entrepreneurial ecosystem.

Female Entrepreneurs

Social safety

Being careful on what they say and to whom is an important point for female entrepreneurs whenever socializing their ideas in networking events.

> *"I wouldn't share everything with them because I cannot know if they use it against me."* (BKVYKTEJ)

Equality still remains in debt for female entrepreneurs. While there is no visible gender discrimination, some situations prove men remain secluding themselves from women.

> *"Because you just don't get into these boys' clubs. You feel like you're just not communicating on an equal level. You have by different standards like you're still asked to be cute, friendly, and smile a lot. And to be Yeah, "like a good girl", as women always told me."* (DVKVX64D)

Regardless, of where these situations happen, they are *kept under the rug* even at a political level.

Social role theory

Biases towards women are seen through the lens of female entrepreneurs. Questioning their ability to work once pregnant, assuming positions women typically did, and unconscious biases are some of the feedback provided by the participants.

> *"Obviously, I'm annoyed when I go into a room. It happened to me a few months ago that I was speaking to an investor, and I was pitching my company. And he asked me, you know, this is all great. But what happens if you get pregnant? Like this is obviously a very obvious form of gender bias that he had. And you know, he made it obvious by asking it out loud."* (XBKCMK6F)

Female entrepreneurs were able to provide insights to improve female student life. One of them was self-sufficiency expectations, which helps to set high goals and ambitions. Another one was to identify with something in the long run.

Testimonials female entrepreneurs

An overview of the project managers and stakeholders can be found in the Appendix, Table 5**.**

> *"I experienced sexism every day. And I know that a lot of female founders who connect with me to talk about these issues do face the same. It's nothing uncommon. It's prevalent, but no one wants to talk about it. Even if you talk about it with politicians, they are like, oh, that's a difficult issue. Not easy to raise. Let's keep silent".*

Female entrepreneur

> *"The issue isn't gender, the issue is how we are doing business. And I think it is not enough to just promote women and to promote female entrepreneurship, because we have to promote a diverse entrepreneurship".*

Representative of an entrepreneurship support program

Conclusion

Women are still severely underrepresented in the entrepreneurial ecosystem in Germany, in general, and in Münsterland. The reasons for this are complex and often deeply rooted in our culture. In addition, there are very concrete obstacles that we need to address quickly and decisively: access to funding, sexism, and realistic role models. In addition, female entrepreneurs are at a severe disadvantage when it comes to financing, especially when it comes to raising large amounts of capital through business angels and VCs. Finally, there is a clear imbalance of relevant contacts in the investment sector as well as in start-up networks.

Role models and networks

Role models

Research on women entrepreneurship highlights the critical influence of role models on the entrepreneurial journey of women. Awareness of women's entrepreneurship potential should be increased by media role models, which would have different degrees of effects on women's cognitive processes.

Role model selection should ensure that students relate to the model and that the chosen role model depicts not only a desirable result but also a feasible and achievable career goal. In this way, educators should consider how close the role models are in terms of age, educational background, and gender when selecting role models for use in educational programs.

Educators should take the gender balance of role models seriously, reflecting on the predominance of positive models, and with further investigation needed to determine the learning significance of negative models. A diverse selection of women entrepreneurs from various backgrounds should be highlighted.

Networks

Research stresses the relevance of networking to stimulate entrepreneurship; however, the way networks are used appears to be "gender-specific" (Klyver, 2011).

In our qualitative study, all participants agreed that networking is one of the most important things for entrepreneurs to be successful. Networking activities provide women technology entrepreneurs with access to resources and services that would otherwise be unavailable to them.

Observing the diverse dimensions of networking, business strategies at incubators and accelerators, and formalized gender roles in society, companies tend to partake in 'gender neutral' recruiting practices and encourage transaction-based networking, essentially reproducing gender inequalities. In that sense, stakeholders generally recommend the same networks to female entrepreneurs as to male entrepreneurs. There are also initiatives purely for women entrepreneurs, not in Münsterland, but for example in the Rhineland there are some that are recommended, for instance the Female Innovation Hub in Düsseldorf.

Stereotypes and Social Role Theory

An effective image of founders is still the idea of very young men who drop out of university and start a company in their early twenties.

The entrepreneurial journey is a particularly risky one. Therefore, entrepreneurs need to have a high degree of passion, courage and perseverance. To gain insights into this aspect, participants were asked about their perspective on entrepreneur's characteristics.

The results show that female entrepreneurs are described in terms of soft skills while male entrepreneurs are described using specific characteristics such as intelligence, communication skills, flexibility, or confidence. In their opinion, entrepreneurs are not afraid of failure but stay focused on their goals and never give up on their vision.

In class, educators tend to use examples like Elon Musk or Jeff Bezos to showcase the typical entrepreneur. On the other hand, female entrepreneurs look up to successful women and men when thinking of their role models. As typical role models, persons like Lea-Sophie Cramer, Sebastian Pollok and Jakob Berndt were named by them.

Recommendations

WeRin aims to enhance the inclusivity of entrepreneurship education and support programs to increase the share of female graduate entrepreneurs and enhance their level of embeddedness in regional entrepreneurial ecosystems across Europe.

Empowering female entrepreneurs should address precisely these areas to bring much-needed diversity to the entrepreneurial ecosystem.

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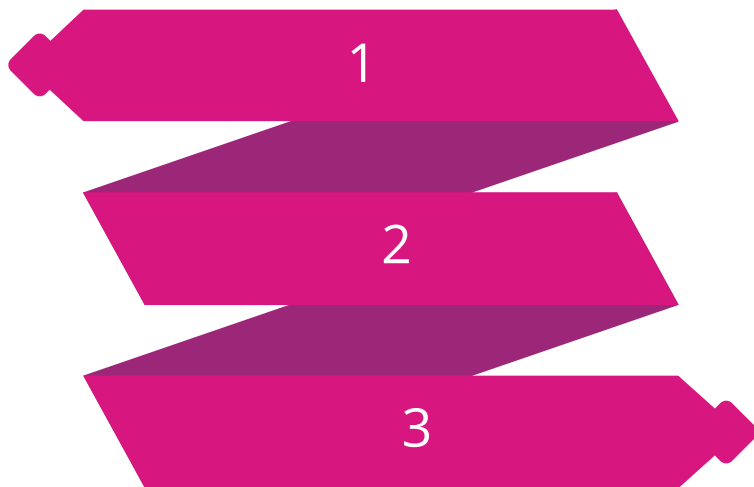
A gender egalitarian culture

is advised and effective mechanisms for work–life balance, including supported provision of parental leave and childcare to encourage more women to participate in employment and engage in entrepreneurial activity.

Careful role model selection

should ensure that students relate to the model and that the chosen role model depicts not only a desirable result but also a feasible and achievable career goal. Educators should consider how close the role models are in terms of age, educational background, and gender when selecting role models.

Awareness of gender inequality

plays a critical role in society. Many ecosystem stakeholders need to overcome the conscious and unconscious bias and female entrepreneurship should not be considered a "taboo topic" anymore in Germany at policy level.

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Appendix

Table 1. Overview of the educators interviewed.

No.	Code	Gender	Age	Education level
1	VU62VDJT	Male	45-55	PhD
2	WSGXN6LF	Male	25-35	Master
3	78LBL7T7	Male	25-35	Master
4	MN455RZ5	Male	36-44	PhD
5	Y8EP97NV	Male	36-44	PhD
6	Z4EMF79V	Male	45-55	PhD
7	GE7PA4XZ	Female	25-35	Master
8	A5NQECCF	Female	25-35	Master
9	K5UG6Z2R	Female	25-35	Master
10	SH2XQQBN	Female	36-44	Master

Appendix

Table 2. Overview of the program managers and stakeholders interviewed.

No.	Code	Gender	Age	Role
1	ST01	Male	20-25	Representative of a chamber of commerce
2	ST02	Female	25-25	Representative of consulting firm on innovation, and digitalisation
3	ST03	Male	20-25	Representative of a regional development agency
4	ST04	Male	20-25	Representative of a state bank
5	ST05	Female	20-25	Representative of regional development agency
6	PM01	Male	20-25	Project manager
7	PM02	Male	20-25	Project manager
8	PM03	Male	20-25	Project manager
9	PM04	Male	20-25	Project manager
10	PM05	Male	20-25	Project manager

Appendix

Table 3. Overview of the students interviewed.

No.	Code	Country of origin	Gender	Age	Education level (in progress)	University
1	G6S4QGH9	Spain	Male	20-25	Bachelor	Student FH Münster
2	BJCNLD7H	Germany	Female	25-25	Bachelor	Student OM Münster
3	MUP3BH2T	Colombia	Female	20-25	Bachelor	Student FH Münster
4	BX7G2PCR	Germany	Female	20-25	Master	Student WWU
5	WHTSFUD8	Brasil	Female	20-25	Bachelor	Student FH Münster
6	6UGS75LB	Columbia	Male	20-25	Bachelor	Student FH Münster
7	6UGS75RT	Germany	Male	20-25	Bachelor	Student FH Münster
8	D3HWL2DC	Germany	Male	20-25	Bachelor	Student FH Münster
9	QRQHXQJ8	Germany	Male	20-25	Bachelor	Student FH Münster
10	B8YZLDLP	Germany	Male	20-25	Bachelor	Student FH Münster
11	KFLKNB5P	Germany	Male	26-30	Master	Student WWU
12	WZV7BXUV	France	Female	20-25	Bachelor	Student FH Münster
13	G95AHCWK	Brasil	Male	20-25	Bachelor	Student FH Münster
14	8BN5LY43	Germany	Male	20-25	Bachelor	Student FH Münster
15	2LYSH3A9	Morocco	Male	26-30	Master	Student FH Münster
16	VBGR2G4E	Germany	Female	20-25	Bachelor	Student FH Münster
17	SY7ZFXCQ	Colombia	Female	20-25	Master	Student FH Münster
18	ERRFESMQ	France	Female	20-25	Bachelor	Student FH Münster
19	NARVR3DX	South Korea	Female	20-25	Bachelor	Student FH Münster
20	WD7C7FVE	France	Male	20-25	Bachelor	Student FH Münster
21	35BFT6QU	Germany	Female	26-30	Bachelor	Student FH Münster
22	W9VCN74M	Germany	Female	20-25	Master	Master FH Münster
23	M2WC3BE3	France	Male	20-25	Bachelor	Student FH Münster
24	86HTLSQH	Germany	Female	20-25	Bachelor	Student FH Münster
25	NYA7AK3Y	Germany	Female	20-25	Bachelor	Student FH Münster

Appendix

Table 4. Overview of the alumni interviewed.

No.	Code	Country of origin	Gender	Age	Education level (finished)	Alumni
1	M4X9YEYJ	Germany	Male	20-25	Bachelor	Alumni WWU Münster
2	LUZZJGQX	Chile	Male	20-25	Bachelor	Alumni FH Münster
3	ESBYDE2T	Germany	Female	26-30	Master	Alumni FH Münster
4	NY9XPKSX	Colombia	Female	20-25	Bachelor	Alumni FH Münster
5	3XTSKEL7	Finland	Female	26-30	Master	Alumni WWU Münster
6	KSANTMQ8	Germany	Female	26-30	Bachelor	Alumni FH Münster
7	PV3L5DMS	Germany	Female	20-25	Bachelor	Alumni FH Münster
8	93FE6GXQ	Germany	Female	31-35	Master	Alumni FH Münster
9	NJ5LTBNB	Germany	Female	26-30	Master	Alumni FH Münster
10	AZ5GR54B	Germany	Female	26-30	Bachelor	Alumni FH Münster

Appendix

Table 5. Overview of the female entrepreneurs interviewed.

No.	Code	Age	Education level	Sector
1	MG4UULLG	25-30	Master	Education
2	DVKVX64D	25-30	Master	Advice and consultancy
3	SM6QMR4Z	31-30	Bachelor	Finance and consultancy
4	93RJXCGL	25-30	Master	Service
5	BKVYKTEJ	31-35	Master	Service
6	XBKCMK6F	31-35	Master	Fashion
7	M46MJ584	25-30	Master	Agriculture
8	RF86AFBS	25-30	Bachelor	Service
9	TREN023S	25-30	Bachelor	Cosmetics
10	AGHJFO3A	41-45	Bachelor	Service