



STARTUP HEATMAP
EUROPE

Women Entrepreneurs





We empower the most ambitious startup ecosystems to solve the biggest challenges of our times

The future tech ecosystem is transnational, driven by entrepreneurs, considerate of externalities and synergetic between all parts of society.

The Startup Heatmap is mapping and analyzing the development of startup ecosystems since 5 years.

The Heatmap platform launched in 2019 and reaches >400,000 readers annually. Our work was featured in leading publications like the New York Times, VentureBeat, Politico, the World Economic Forum Blog and many more.

The Startup Ecosystem Accelerator was launched in late 2018 to turn research results into practical insights. In 7 editions over 160 participants have taken part in the multi-week program launching data-driven ecosystem interventions from Helsinki to Chile.

Learn more about us at:

<https://www.startupheatmap.com>

Our Partners





WOMEN ENTREPRENEURS IN EUROPE

The starting point of our research is an ambiguous situation in which there is strong, successful female entrepreneurs who shall be celebrated, but yet a yawning divide between the reality and the potential of women in the startup world. With only 15.5% of Europe's founders being female, we surely miss out on a large potential of creative talent and restrict the pursuit of an entrepreneurial career for a large part of our society. This begs the question: What can data do for women entrepreneurs?

The daunting realities of a lack of female representation in the tech scene have been documented by many studies. The two main orientation points in the debate for us have been:

- Only 7% of VC funding in Europe goes to startups with a female founding team-member ([Atomico 2018](#))
- The share of women working in the ICT sector in Europe is 17% ([WID 2019](#))

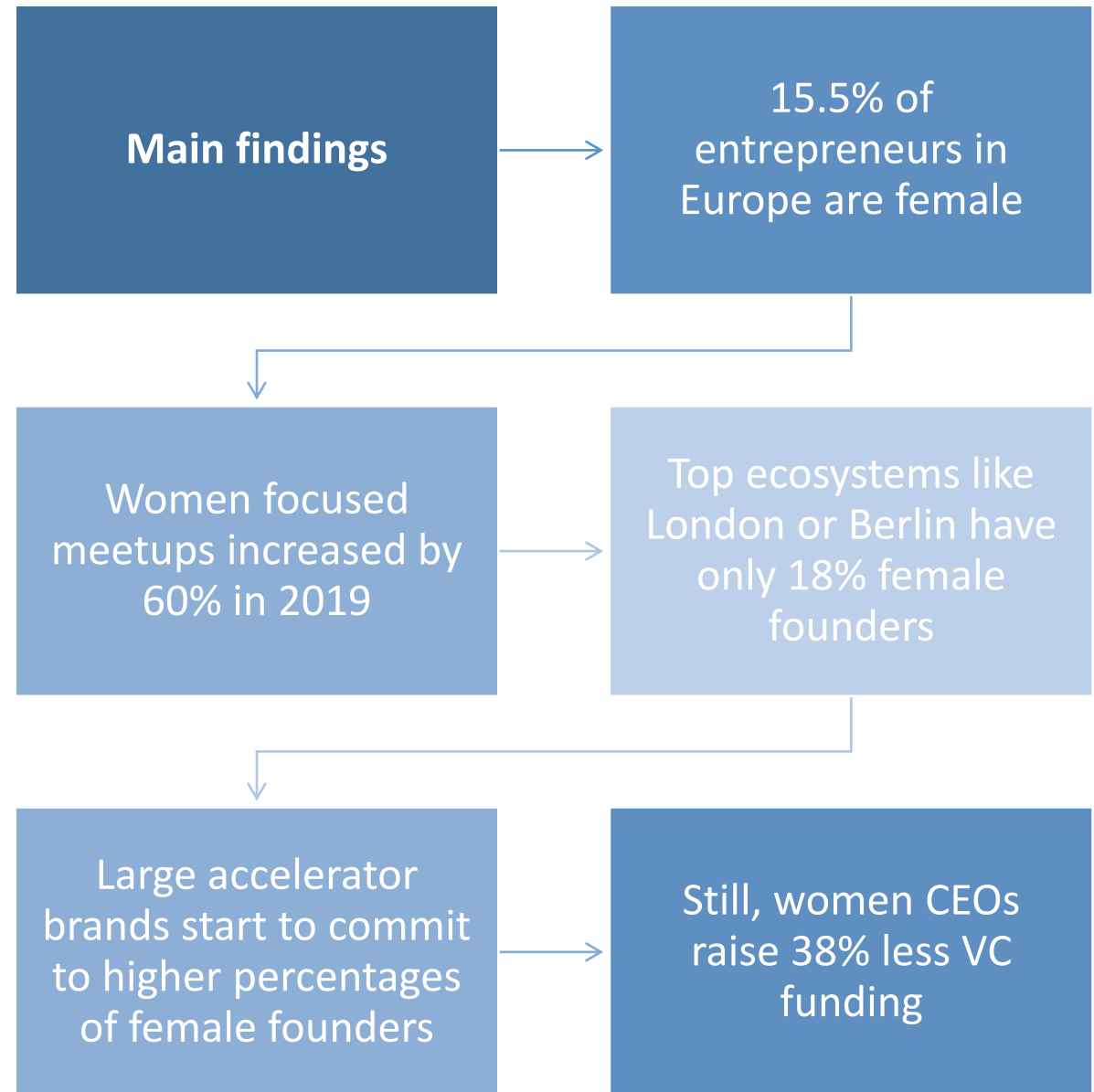
Contributing to the debate, we intended to look at individual ecosystems to understand if there was hubs, which fall out of the overall picture and offer a perspective on how female entrepreneurship can be supported through awareness, networks, and acceleration. To this purpose we looked at three topics:

- Awareness about female entrepreneurship over time
- Representation of female founders in Europe's tech hubs
- Women in accelerators and their company's early trajectory



Dr. Erica Santini,
Head of Research Startup Heatmap Europe

«Only after understanding the specific female disadvantages in the tech scene, we can design data-driven interventions»



Methodology

The research is based on three distinct datasets, capturing the awareness of female entrepreneurship, the number of female entrepreneurs in a given location and the trajectory of female-led startups after being accelerated.

To identify startup founders we created a sample of >20,000 founders in Europe. The selection was based on the company age being younger than 5 years, the position title specifying the function of a founder and a connection to a known startup founder. The last point adding a social network element that allowed us to depict who belongs to the „startup community“, rather than using unspecific industry codes as delimiters. We collected data in a way to reach large enough sample sizes respective the assumed startup founder population on country as well as city level for >30 tech hubs.

To capture the level of awareness on the topic we analyzed >11,000 articles from leading European tech blogs as well as >1,2mn tweets from local ecosystems or tech conferences. All of this data reaching back to 2018.

Finally, we tracked the portfolio of >200 accelerators since 2017 identifying participating startups, their CEO's, their origins, gender, tech skills as well as subsequent VC funding rounds.

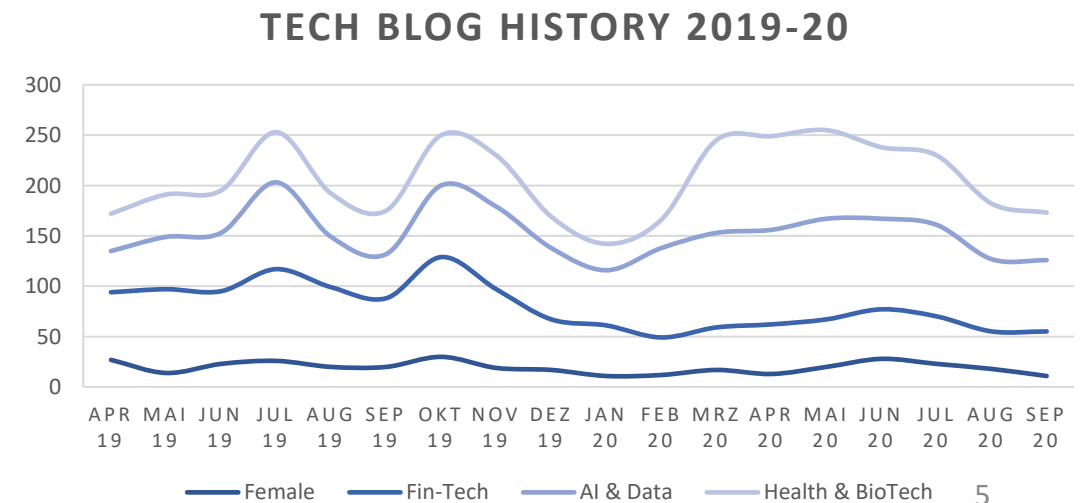
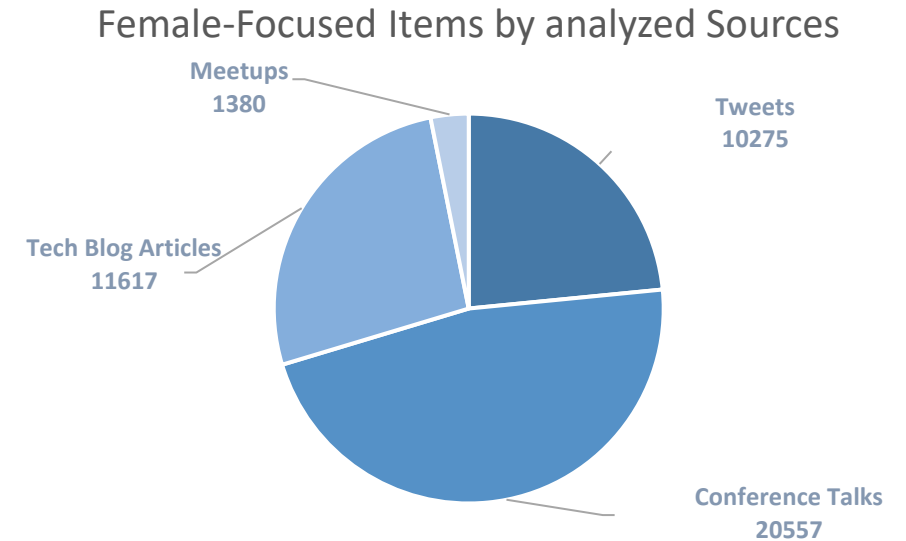
This collection of data offers a very thorough and holistic view on the state of women entrepreneurship in Europe and allows us to validate and go beyond previous survey-based research, that always bears an inherent doubt about representativeness.

Data Sources:

- 21,758 startup founders
- 11,617 articles on tech blogs
- 5,963 accelerator participants

FEMALE TECH IN THE HEADLINES

Awareness is an important factor in the analysis of systematic change. Often we observe change in «soft» factors before traditional indicators are impacted. Bottom-line metrics like total sum of investments captured by female founders might take time to change and this change might also happen suddenly when a development reaches a tipping point. Take for example the fintech sector, which wasn't on the map of investors prior to 2015 really and since then has grown by roughly half a billion annually. This sudden rise could only be predicted by analyzing incremental changes of «soft-factors» beforehand. So, while female founder numbers in Europe seem to stagnate over the past years, we must look into changes in awareness, the support network, events, etc. to see if we can expect a wave of women entrepreneurs in the near future.



WHAT DRIVES ATTENTION?

Conferences

Conferences push the visibility of female entrepreneurship and stimulate waves of community action. The opposite is also true though: In 2020 due to COVID-19 the visibility of female tech during tech events dropped by 76%.

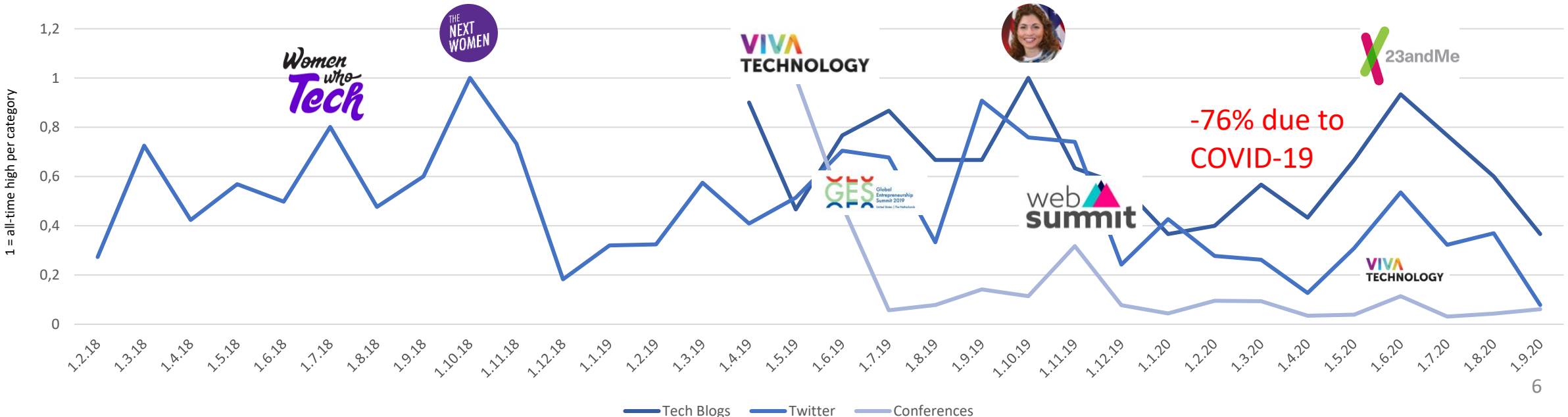
Meetups

While headlines don't change culture, we see community leaders take inspiration in them. The amount of female focused tech meetups in Europe increased by +60% from 2018 to 2019 following a row of high profile events and competitions.

Role Models

The female pendants to Elon Musk might be ex-astronaut Anousheh Ansari, CEO of X Prize or Anne E. Wojcicki, CEO of 23andMe. Their visits to Europe inspired waves of attention in 2019 and 2020, proving that role models can help to inspire more entrepreneurial activity.

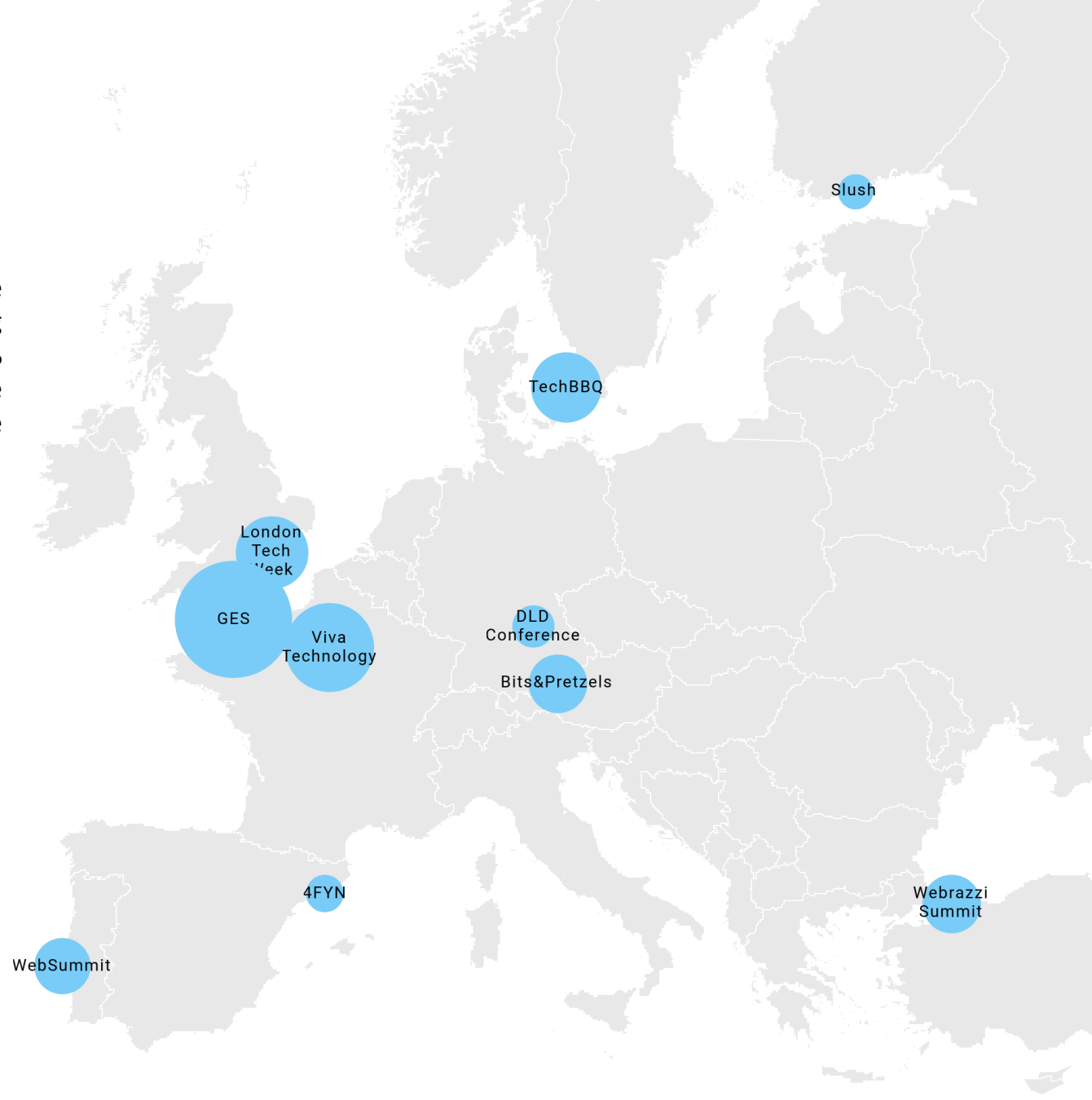
Visibility of Female Tech Topics on Tech Blogs, Twitter and Conferences over Time



TOP CONFERENCES FOR FEMALE FOUNDERS

To understand which conferences are driving awareness for female entrepreneurship, we looked at >200,000 conversations on Twitter happening around 36 of Europe's biggest tech conferences since 2018. On average only 8% of the exchange on a given conference is on female entrepreneurship. But there is great exceptions. Percentages show how many tweets mentioning the conference also mention female tech keywords.

- 1 Global Entrepreneurship Summit, Changing Locations, 49%
- 2 Viva Technology, Paris, 27%
- 3 London Tech Week, London, 20%
- 4 TechBBQ, Copenhagen, 18 %
- 5 Webrazzi Summit, Istanbul, 12%



WOMEN ENTREPRENEURS IN EUROPE

We understand the «tech community» as who is embedded in a social network of tech entrepreneurs. Therefore our sample selection was based on social connections, starting from clearly identifiable members of the tech community and including only founders with direct links to them.

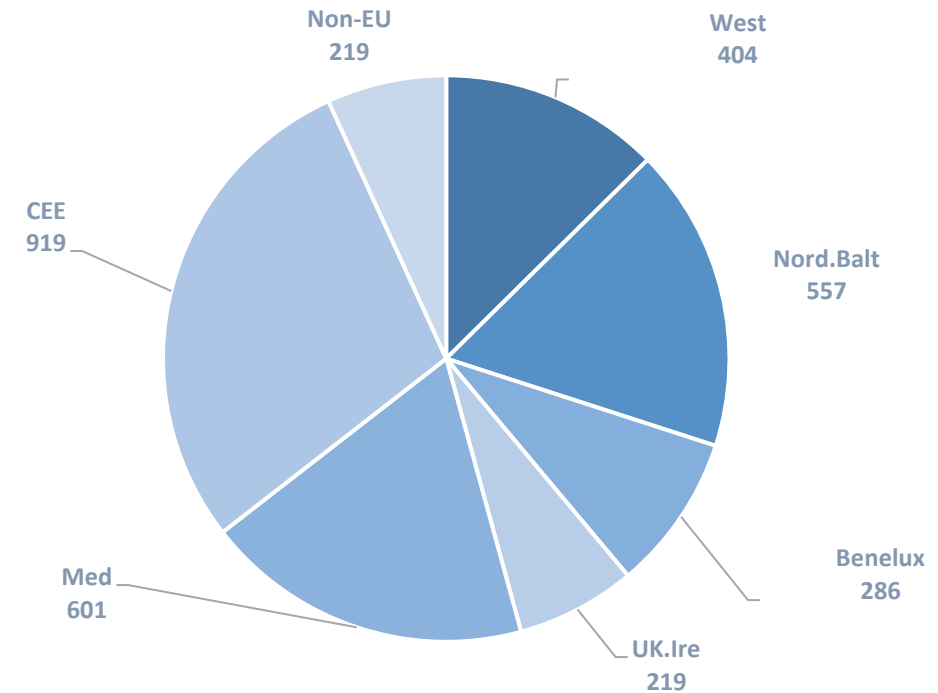
This «community» focus offers an advantage over sectorial approach, which relies on industry tags or venture capital investments to identify high-growth companies as it can better depict the inherently social fabric of the tech scene and also the socially constructed barriers for women entrepreneurs.

Further the sample of founders as individuals rather than startups gives a real percentage of female entrepreneurs, not the percentage of startups with at least one female founder

15.5 %

female entrepreneurs in Europe

Female Founders by Region in Sample



TECH HUBS WHERE WOMEN THRIVE

Large Ecosystems

- 1 [STOCKHOLM](#), 19%
- 2 [BERLIN](#), 18%
- 3 [LONDON](#), 18%
- 4 [AMSTERDAM](#), 16%
- 5 [ZURICH](#), 15%

Medium-Sized Ecosystems

- 1 [VIENNA](#), 34%
- 2 [OSLO](#), 26%
- 3 [BUCHAREST](#), 21%
- 4 [LISBON](#), 21%
- 5 [BRUSSELS](#), 20%

Small Ecosystems

- 1 [BUDAPEST](#), 30%
- 2 [SOFIA](#), 25%
- 3 [LUXEMBOURG](#), 23%
- 4 [ATHENS](#), 20%
- 5 [ISTANBUL](#), 16%

Percentages show share of female founders within city-level samples. The samples are of varying sizes between 50-1000 founders. Size of the ecosystem was determined by the annual average of startup investments between 2017-2019.

THE ROLE OF THE SUPPORT NETWORK

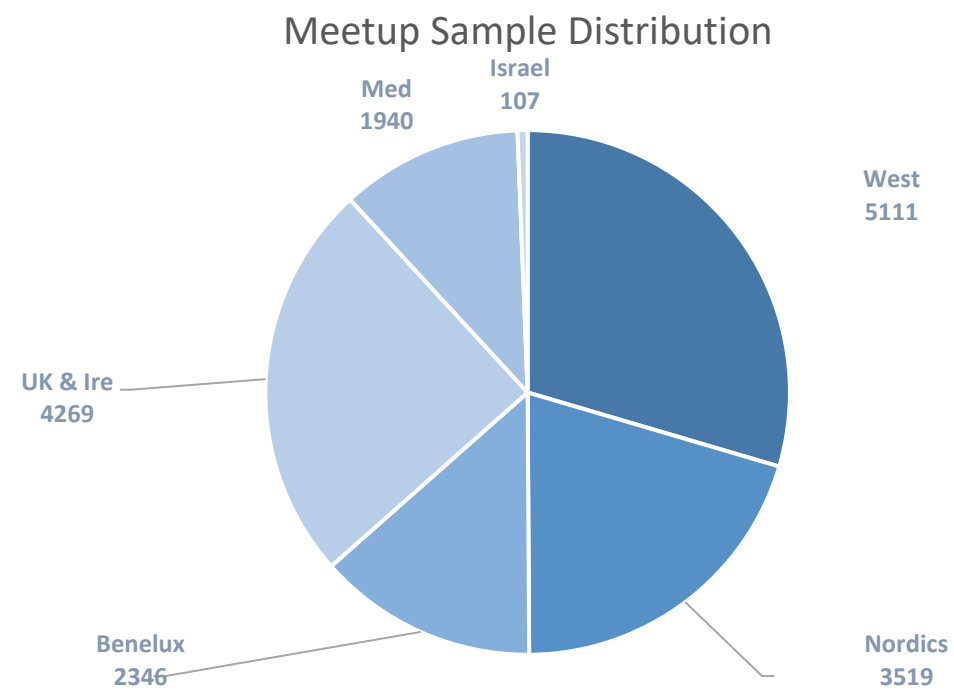
To measure the level of support female entrepreneurs can expect in a given ecosystem we must use proxies that allow an estimation across Europe. Instead of using a survey based approach, we opted to look for signals of strong community support. The proxies we identified were:

- Presence of meetups focused on female tech
- Percentage of female founders accepted in accelerators

We believe the number of events and founders accepted into accelerators give us a good idea on how inclusive a tech community and its support programs are. Meetups on female entrepreneurship show dedicated action to improve the situation and accelerator acceptance speaks to the question whether this inclusion is also executed on the level of early-stage funding.

Unfortunately this kind of data was not possible to collect in all locations. In particular smaller ecosystems, which had high numbers of female entrepreneurs sometimes, could not be evaluated against this measure. Also, the meetup data focuses on 2018 and 2019 only as in 2020 most meetups were cancelled due to COVID-19

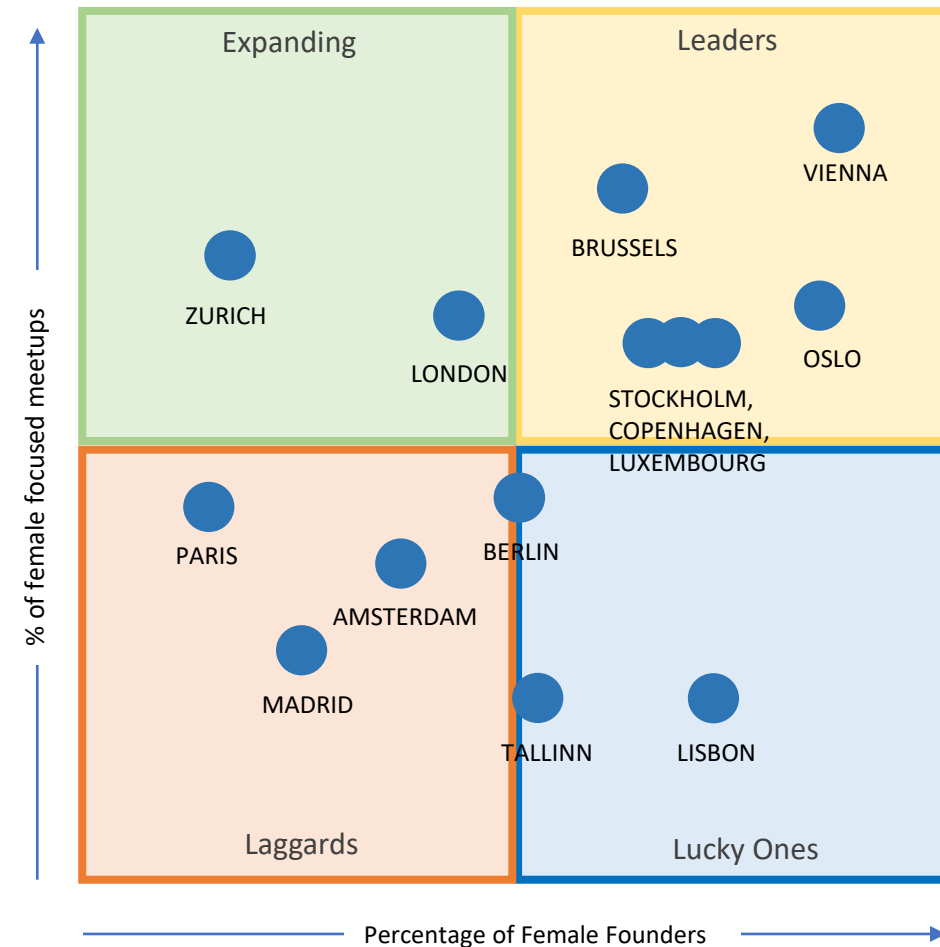
17,292
tech meetups analyzed



THE LEADING FEMALE ECOSYSTEMS

A higher percentage of female focused events goes hand in hand with a higher percentage of female founders. Creating a matrix with these two dimensions reveals the leading tech hubs for female entrepreneurship. Places with few female founders but stronger support are interesting to watch, as they could prove to increase their female founder base soon. Some other places seem to be lucky, as they have higher numbers of female entrepreneurs despite low support.

City	% of female focused events	% female founders
Vienna	15%	34%
Oslo	10%	26%
Luxembourg	8%	23%
Lisbon	5%	21%
Brussels	11%	20%
Copenhagen	8%	20%
Stockholm	8%	19%
Tallinn	5%	19%
Berlin	7%	18%



FEMALE FOUNDERS IN VIENNA

Q: Vienna tops the ranks for female entrepreneurs as well as the support system. Why?

Lisa-Marie: For one, Vienna is one of the most liveable cities in Europe especially for women. Our vicinity to Western and Eastern European countries attracts many international founders. Second, Vienna has many initiatives like Female Founders creating awareness and showcasing women entrepreneurs with their programmes, events and keynote speakers. Also the Vienna Business Agency has set up special funding for female founders.

Q: What is your role in this with Female Founders?

Lisa-Marie: Vienna has a competitive advantage in female entrepreneurship currently. It is a clear profile for the city and we want to make Vienna *the* hub for female entrepreneurship in Europe. That is why female founders is based here, but is a pan-European platform.

Q: What is the biggest hurdle to overcome?

Lisa-Marie: Investments. People tend to write cheques to people who they see themselves in. We need more women in VCs. That change is still very slow.



Lisa-Marie Fassel is co-founder of Female Founders a pan-european ecosystem comprised of an accelerator, a community and funding activities, based in Vienna, Austria.

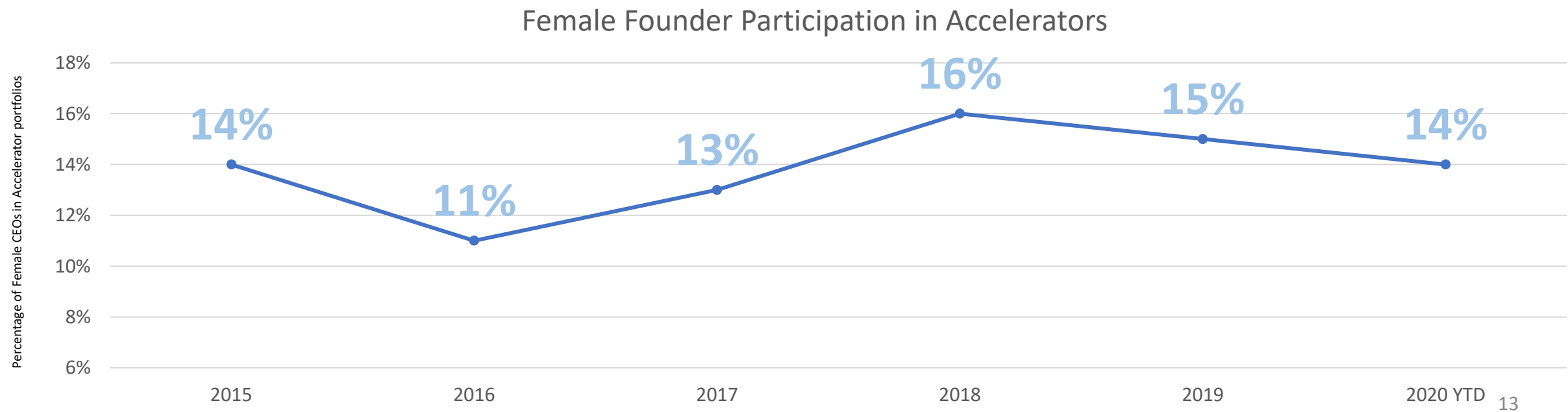
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Vienna ranks top for percentage of female founders in Europe



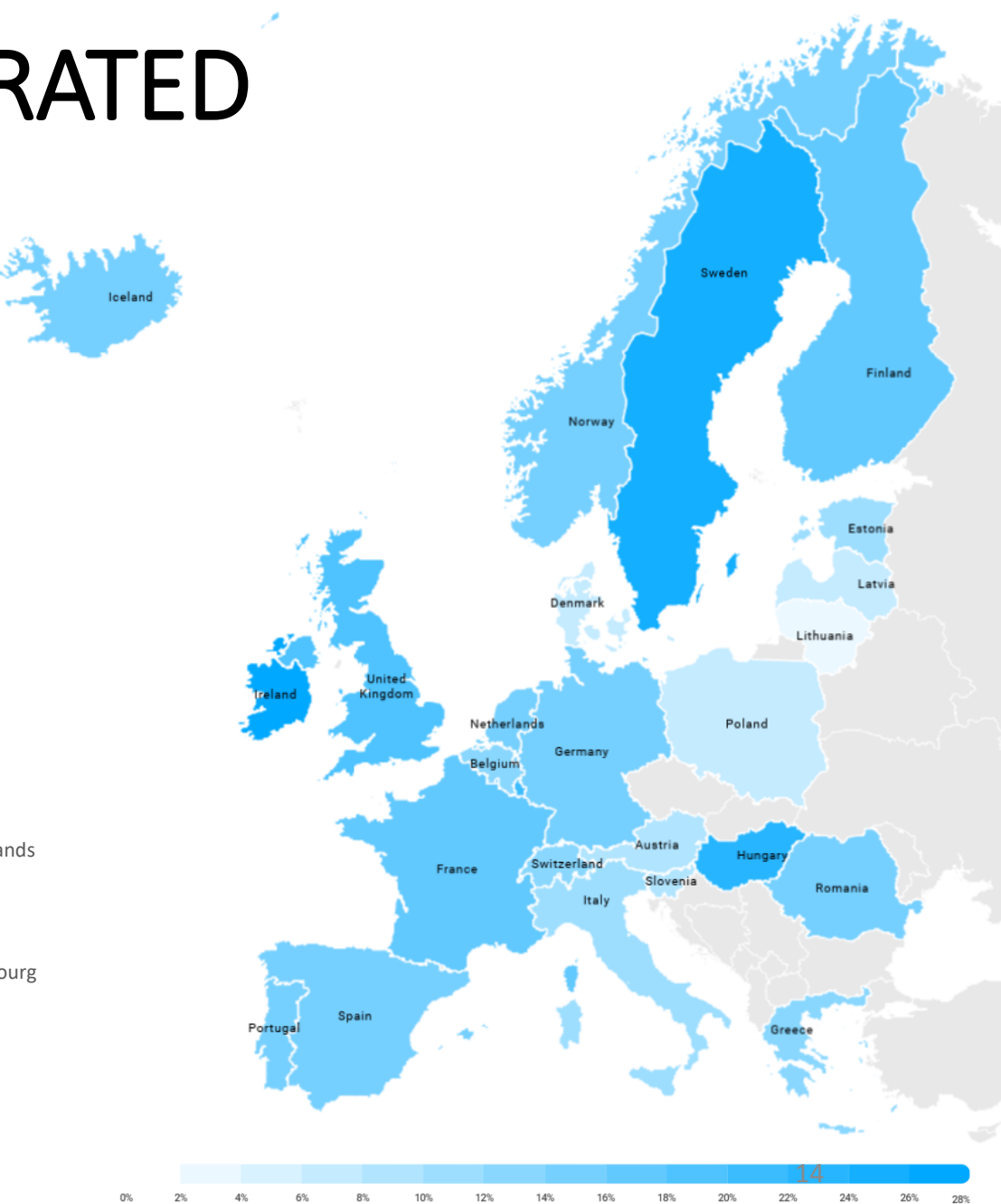
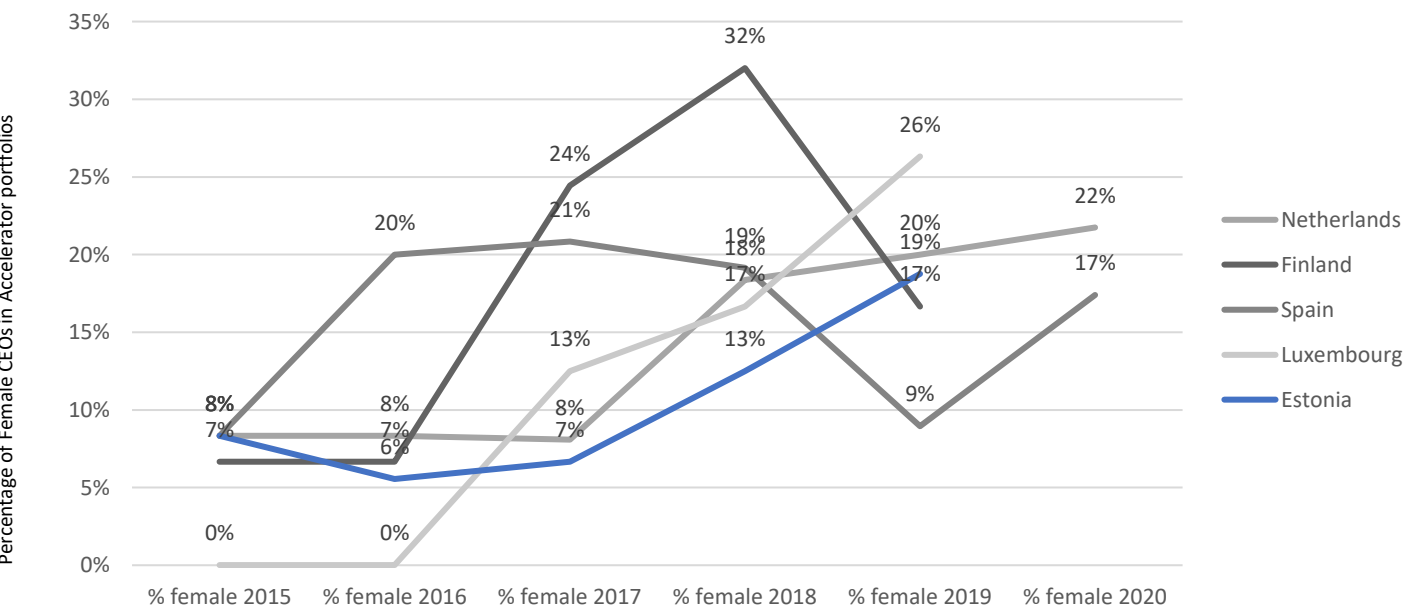
EARLY-STAGE ACCELERATION

The second proxy to understand the inclusiveness of a startup scene for women entrepreneurs next to meetups is the participation of women led startups in early-stage accelerators. It is a particular interesting parameter, as accelerators operate in a phase characterized by large uncertainties and a lack of performance data. Usually, startups applying to accelerators have nothing to show for but their concept, big ambition and their team. It would be expected that in this phase disadvantages for women are the greatest, as they could not balance prejudice with performance. However, we see no further divergence – the percentage of female entrepreneurs in accelerators is – despite being low – the same as in the overall founder population. Women entrepreneurs seem not to have problems accessing early-stage support. However, the percentage of female CEOs participating in Europe’s top 200 accelerators in 2020 is exactly the same as in 2015. Over the past 4.5 years, we never saw the number surpass 16%. This matches roughly the percentage of female founders in Europe’s startup community overall.



WHERE WOMEN GET ACCELERATED

There is notable exceptions with accelerators in some countries like the Netherlands having increased female participation from 7% before 2017 to 22% in 2020. Finland even reached an all time high of 32% female CEOs in the accelerators in our sample in 2018. Luxembourg climbed to 26% after having had no female founders at all in 2015 and 2016. The map to the right shows the percentage of female founders in the accelerators in our sample per country. It cannot be interpreted in a way that accelerators in these countries have this percentage of female founders, rather it visualizes where the portfolio's in our sample of >200 accelerators are located.



TOP 10 ACCELERATORS FOR WOMEN

- 1 Plug and Play - Fashion for Good, Amsterdam, 60%
- 2 Station F - L'Oréal – Beauty Tech Atelier, Paris, 50%
- 3 Station F - ShareIT by ASHOKA, Paris, 48%
- 4 [Startupbootcamp Digital Health](#), Berlin, 44%
- 5 [xEdu](#), Helsinki, 38%
- 6 [Startupbootcamp Commerce](#), Amsterdam, 37%
- 7 [Techstars London](#), 35%
- 8 [STING Accelerate](#), Stockholm, 33%
- 9 Bethnal Green Ventures, London, 33%
- 10 [Techstars Berlin](#), 32%

We tracked 261 accelerator programs and created a dataset of their portfolio companies as available on their websites. This left us with a sample of 129 accelerators where we had at least 10 companies accelerated since 2015, with the average portfolio per program being 42. Using the name of the CEO to define the gender, we were able to create a ranking of the programs with the highest percentage of female founders since 2015. It is interesting to observe that the top five ranks are occupied by vertical programs, ranging from fashion to impact, health and education.

At a global level we see the bigger accelerator brands increasing their numbers of female entrepreneurs significantly over the years. Startupbootcamp has an average of 43.47% female participation across its various programmes and cities. Techstars, another global accelerator brand with locations in London, Berlin and Turin, has an average of 33.5% female founders. With Techstars Berlin reaching 50% participation two times in a row in 2019 and 2020.

TRAJECTORIES OF FEMALE FOUNDERS

Participation in accelerator programs is one thing, the other is the success of female founded startups in raising funds afterwards. The comparison of accelerator portfolio performances offers a unique advantage versus overall comparisons of funding raised, as we are not comparing apples with pears. Startups participating in the same accelerator are usually at the same stage of development and also receive a comparable amount of support. We can use accelerators as a real life experiment, where we can keep outside variables constant across the sample and analyze the trajectory of startups starting under similar conditions.

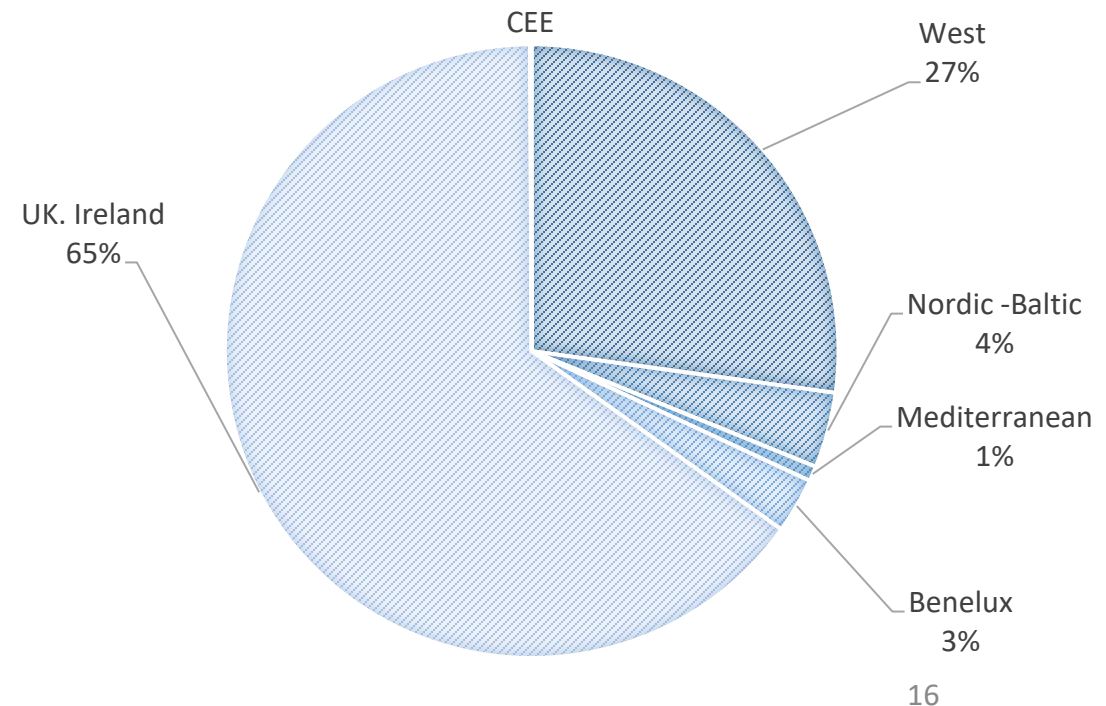
By looking at the companies participating in accelerators in Europe, we have a great way to compare the trajectories of female and male founded companies.

- First, we do not need to work with a sample, but can actually look at all startups participating in the selected accelerators, which gives the analysis robustness
- Second, we can assume that the companies participating in accelerators are roughly at a similar stage and also receive comparable support
- Based on these premises we can map the trajectories from acceleration to first funding for each of the companies and understand what differences emerge.

1.9 bn €

Funding raised by Accelerated Startups since 2015

FUNDING RAISED PER REGION





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IN HUNGARY**

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FEMALE FUNDRAISING

75% raise funds

Over three fourths of female founders in accelerators go on to raise VC funding – the same as their male counterparts

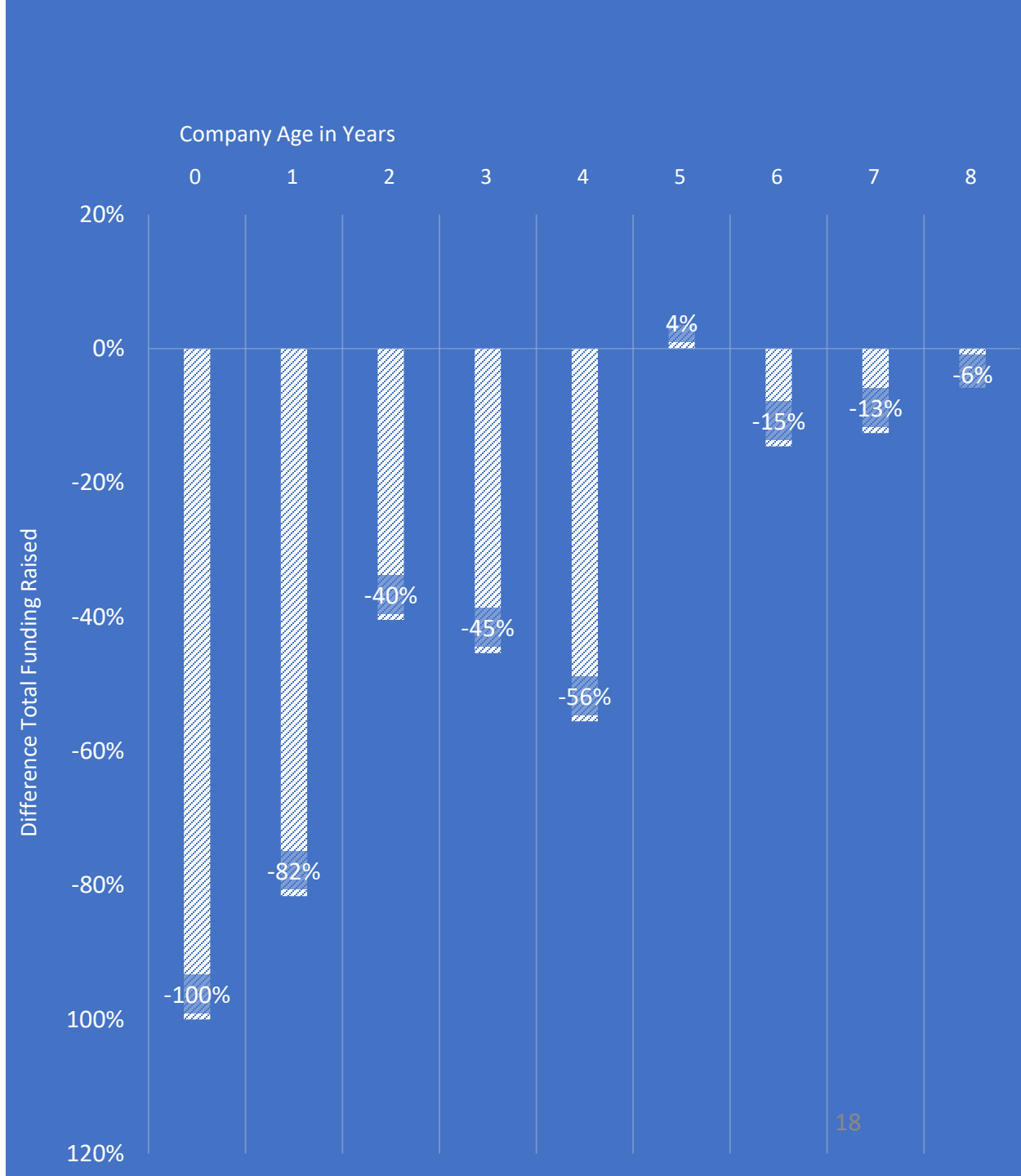
38% less funding

However, the median amount of funding raised by women CEOs is 38% lower than that of their male counterparts

DISADVANTAGE IN FUNDRAISING OVER TIME

There is a large gap between the median amount female CEOs raise and that of their male counterparts. Even more startling is the observation over time. For this analysis we looked at the company age of all accelerated startups and their current total funding raised. We eliminated companies that have raised above 50mn € to avoid extreme cases distorting the image.

The results are startling: In the year of their foundation female founded startups did not raise funds at all and even one year later, the total amount is 82% less. This is explained partly by the age startups have when they are accelerated. Female-led startups tend to be almost two years old on average when joining an accelerator (1.9), men-led startups 1.5 years. Besides joining late they also need longer to raise funding. The consequence is that female-led startups are 5 years behind their male counterparts.



DATA SHOWS: EQUALITY IS POSSIBLE

Ratio Median Funds Raised by Female Founders over Median Raised by Male Founders per Country

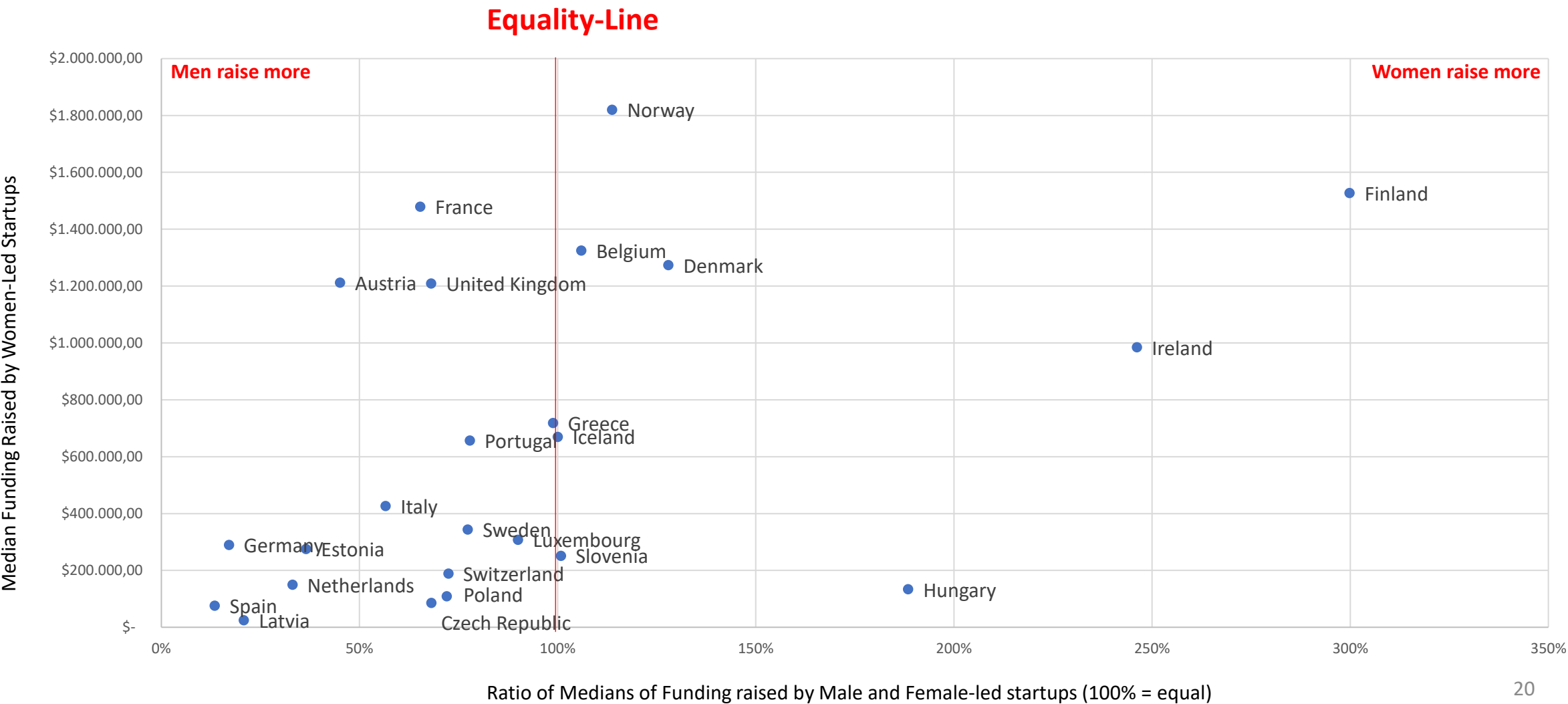
Country	
Finland	300%
Ireland	246%
Hungary	188%
Denmark	128%
Norway	114%
Belgium	106%
Slovenia	101%
Iceland	100%

This list shows the countries where women-led startups have managed to match or outperform their male counterparts after participating in the same accelerator program.

Of course the sample size does not allow to transfer these findings to the whole country, as we only looked at a limited number of accelerator programs per country and the funding data in some countries is based on a low double digit number. However, the data looked at the entirety of the monitored accelerators' portfolio and allows us to state that the difference in this specific setting is real.

Finally the data shows that in certain settings, it is at least possible that female founded startups raise the same or even more funding than their male counterparts.

WHERE WOMEN CAN RAISE MORE THAN MEN



FINAL REMARKS

- Awareness for Female Entrepreneurship is declining during the pandemic, as other topics raise to focus and conferences and meetups who are an important driver for attention are missing.
- Accelerators play an important role for inclusivity with larger brands overrepresenting women founders, creating a welcoming environment
- Smaller ecosystems can punch above their weight by attracting international female founders as the case of Vienna shows
- Fundraising for women-led startups particular in the early stages is too slow and too little
- We should learn from case studies in Finland, Hungary, Ireland or Denmark, where women founders managed to outperform their male colleagues.

INTERESTED TO WORK WITH US?

Join major European cities in our Ecosystem Data Club and get quarterly insights on your ecosystem to identify data points to inspire your brand story or prepare for answers on weak spots.

- ✓ Quarterly “Signals”-Report with all relevant data on investments, tech trends, job growth, international connections, local ecosystem activities and brand visibility, etc.
- ✓ Joint analytics team to maintain continuous monitoring and execute specific on-demand analysis
- ✓ Quarterly calls with community of peers to advance understanding of ecosystem trajectories
- ✓ Quarterly development of data-driven marketing material in form of social media bits including data visualizations as well as embeddable graphs for your website
- ✓ Access to ecosystem data experts when you need quick answers
- ✓ Annual analysis of survey data on reputation and connectivity of your hub among founders

Contact us: info@europeanstartupinitiative.eu

