

Startup Heatmap Europe

2023

Open Startup Ecosystem & Sustainable Growth



On this Report

Mapping the Geography of Ecosystems in Europe based on Founder Mobility, Sentiment Analysis and Ecosystem Strategies

As every year the researchers behind the Startup Heatmap try to give another refreshing look on the development of the European startup space.

In the first part we present findings from the Startup Heatmap Survey, including the well-known ranking of the most popular startup cities. The second part explores the current state of ecosystem development. This year we analyse three hypotheses about the impact of startups on society.

Finally, the third part describes our unique Open Startup Ecosystem viewpoint and presents strategies of startup hubs to succeed in an ever more connected European startup space.

DEEP Ecosystems

DEEP is the company behind the Startup Heatmap Europe Report. We grow world class innovation ecosystems by combining unparalleled analytical capabilities with hands-on knowledge from working with the fastest growing innovation hubs from Estonia to Chile.

Analyze Your Own Ecosystem

The Ecosystem Health Check is a tailor-made process for cities, startup programs and corporates to collect data on their own programs, the environment they operate in and international benchmark cases to inform data-driven strategies with the help of experienced outside experts.

WHAT ELSE WE OFFER

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- + Ecosystem Intelligence
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About



DEEP Ecosystems is the world's most active accelerator for ecosystem projects helping entrepreneurs to build up their local startup community rather than moving away.

With the Startup Heatmap Europe, DEEP in collaboration with the non-profit european startup initiative is measuring the growth dynamics of startup hubs since 2016 and successfully turned these insights into guidelines and strategic insights for policy makers and practitioners alike.

You can join the movement to build better, data-driven ecosystems and start accelerating your growth too. Visit our website and get in touch:

www.deepecosystems.com

www.startupheatmap.eu

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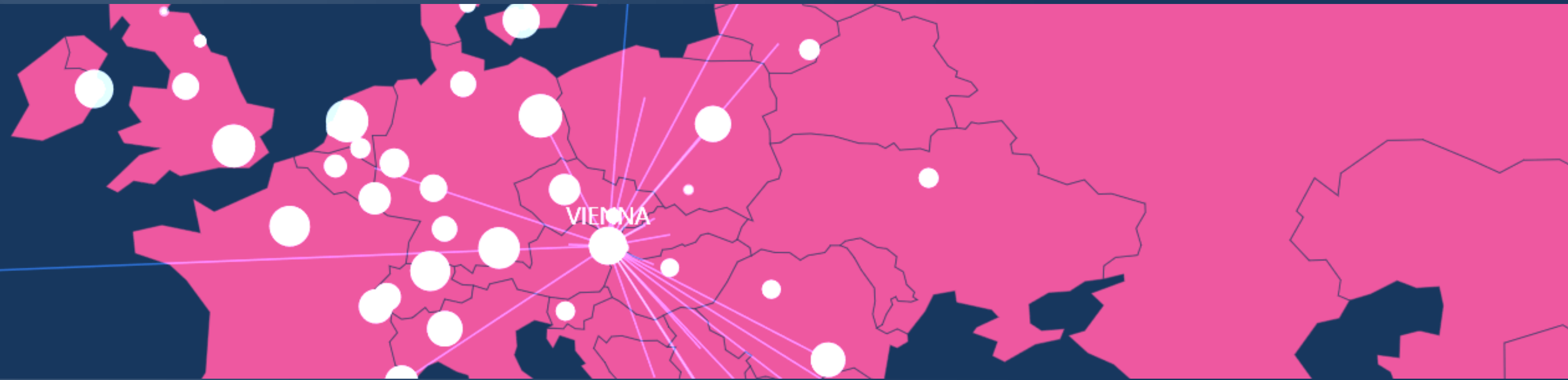
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PART I: EUROPE'S MOST POPULAR STARTUP CITIES

Survey Results

Survey Among Founders



Since 2016, the Startup Heatmap Europe Survey is the longest running Analysis of Founder Sentiments in Europe.

Find in the following the ranking of the most popular startup hubs based on founder opinions. The question we ask founders since 2016 is: Where would you start your company if you had free choice. Founders can pick three hubs from a list of over 200 cities larger than 250,000 inhabitants in geographical Europe.

The survey's audience are Europe-based founders we invite actively to participate in the questionnaire based on a pre-screening. Also, a small portion fills the survey directly on our website. Find all results and live updates of even more data points on www.startupheatmap.eu.

TOP 10

Asking European founders to pick up to 3 cities, where they would start their company if they could choose freely from all cities in Europe, these are the most popular hubs.

Since 2016 the Startup Heatmap Europe Survey is tracking the attractiveness of cities for tech founders. London and Berlin have ever since led the ranking with both 34% of founders choosing them as a potential next destination. This is a sizeable margin ahead of Barcelona and Amsterdam (both 17%). Paris and Lisbon follow with 12% and Munich (10%) is ahead of Tallinn (9.4%).

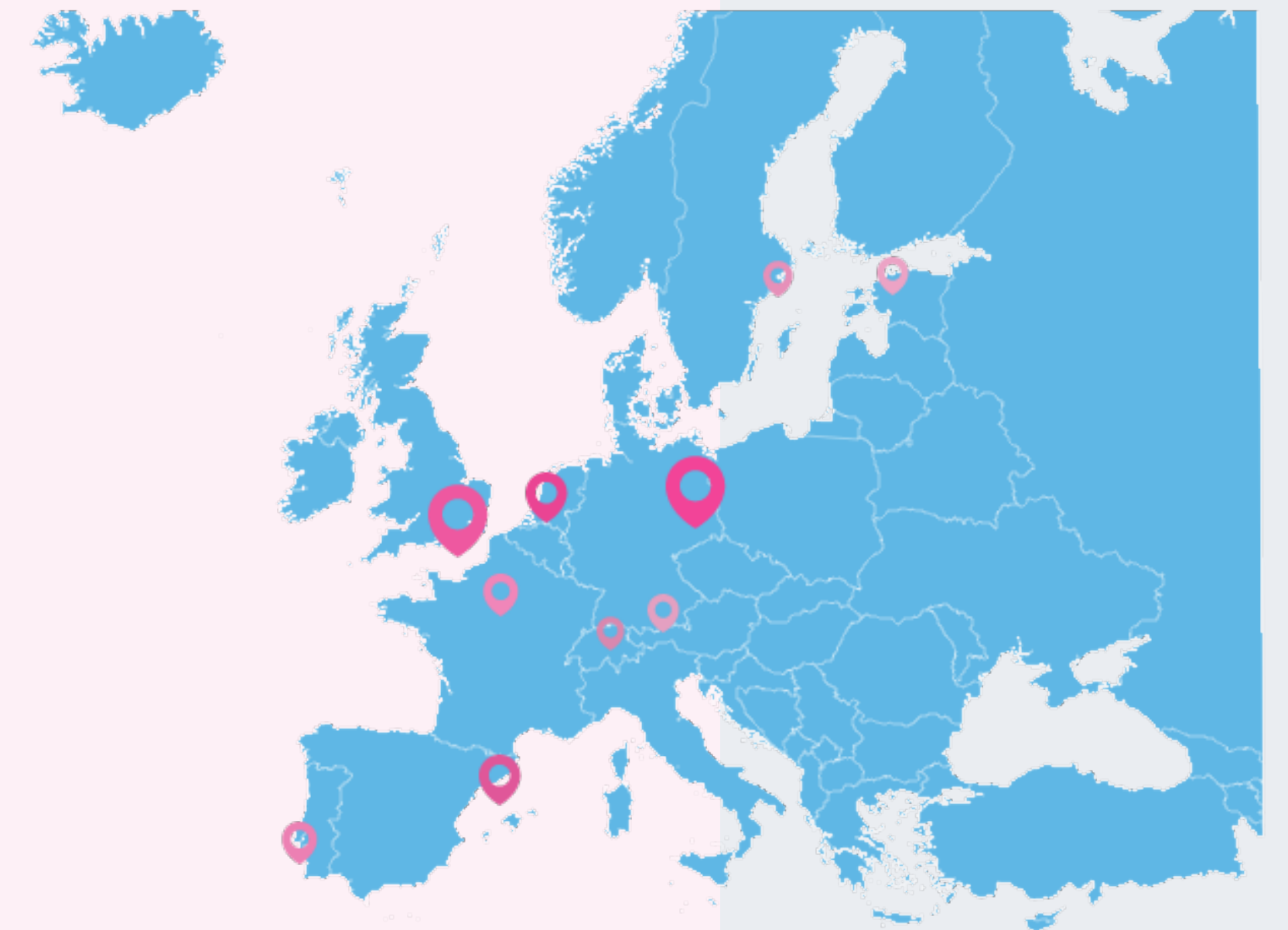


See All City Info

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Most Popular Startup Hubs 2023

- 1 London (+1)
- 2 Berlin (-1)
- 3 Barcelona (+/-)
- 4 Amsterdam (+1)
- 5 Paris (+2)
- 6 Lisbon (-2)
- 7 Munich (+1)
- 8 Tallinn (-2)
- 9 Stockholm (+/-)
- 10 Zurich (+1)



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TOP 10 - 20

The Top 10-20 shows that many active ecosystems compete for the attention of entrepreneurs and are separated only by a few percentage points of the vote.

In 2023 14 hubs convince more than 5% of all European founders. In most cases, these hubs are not the first choice, but a secondary or third option for founders.

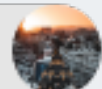
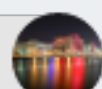



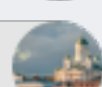


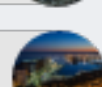
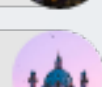
In the Top 20 the hubs with the highest share of 1st preference votes from founders are Vienna (68%), Madrid (56%) and Tallinn (49%).

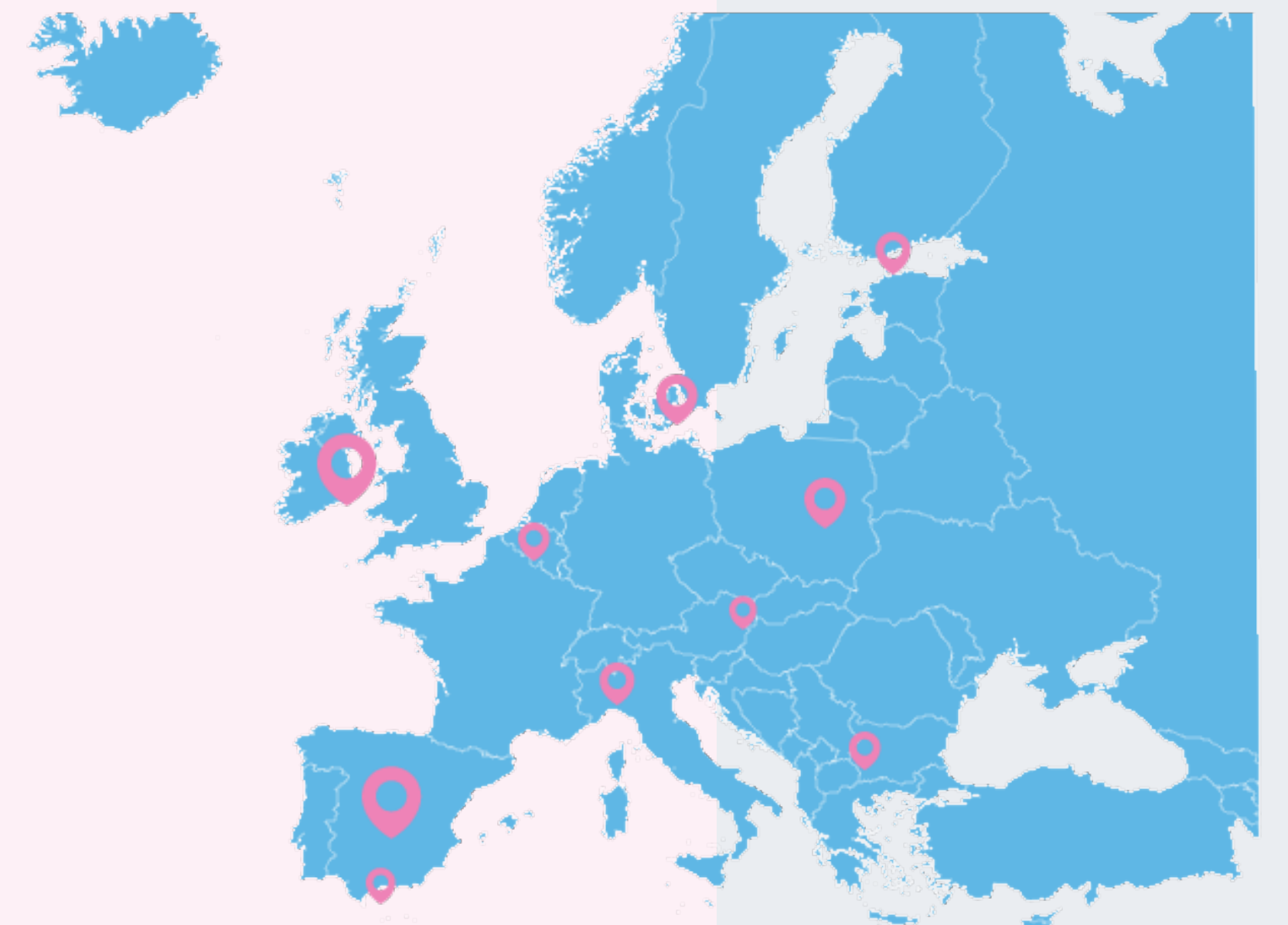


See All City Info

www.startupheatmap.eu/city-search/

Most Popular Startup Hubs 2023

- 11 Madrid (-1) 
- 12 Dublin (+2) 
- 13 Copenhag (+7) 
- 14 Warsaw (+2) 
- 15 Milan (-3) 
- 16 Helsinki (+5) 
- 17 Brussels (+1) 
- 18 Sofia (+9) 
- 19 Málaga (new) 
- 20 Vienna (-5) 



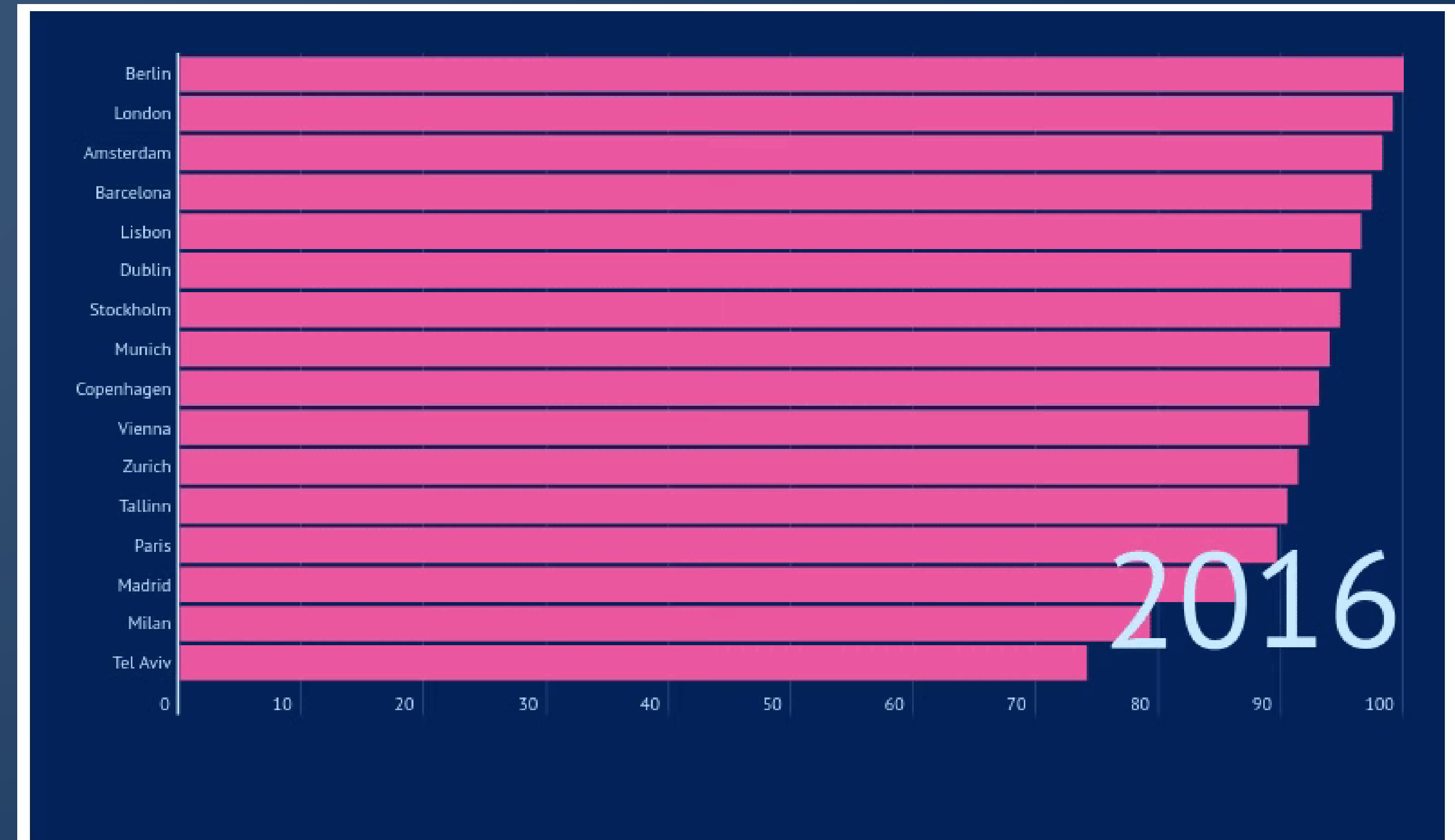
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A Timeline of Popularity

The Most Popular Startup Cities in Europe Over Time

In 2023 Paris has made the largest jump in founder popularity among all European hubs, with an increase of 4 percentage points compared to last year. It is followed by Málaga who newly enters the Top 20 with 3 points and Munich (2.5) and Copenhagen (2.2) as well as Stockholm (2.1). London who took the lead from Berlin increased by 1.8 percentage points, while Berlin decreased by a whopping 3.3 percentage points. Only Lisbon lost more percentage points in the Top 20 (-4).

Popularity of Startup Cities over Time



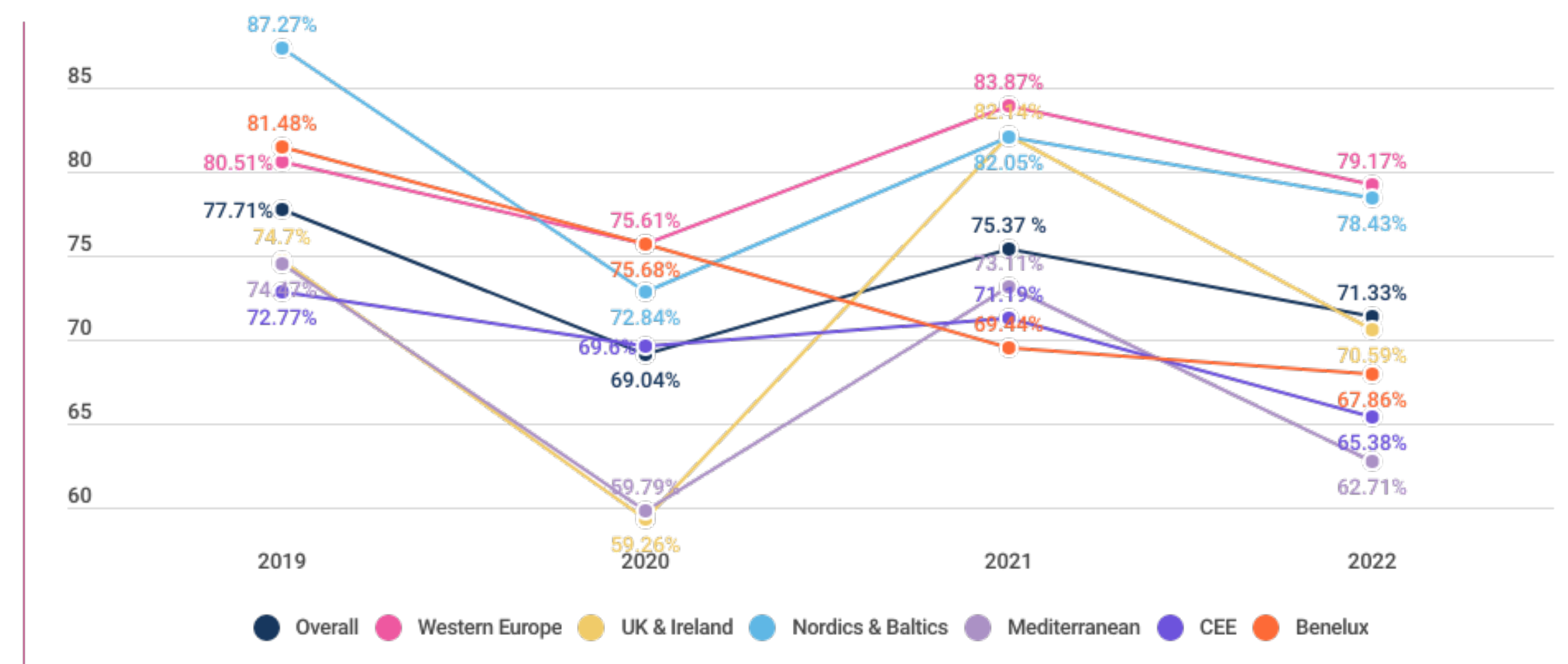
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Source: Startup Heatmap Europe

71.3% of European Founders are Optimistic

The past years showed quite some up and downs of sentiment among founders. While in 2019 the future seemed gloomy, the pandemic struck hard in 2020. In particular founders in the UK and the Mediterranean lost a lot of hope. 2021 saw a change of mood, with an increase of positive prospects. Finally, 2022 under the impression of the Russian invasion in Ukraine, did create an overall more negative perception among founders about future developments.

Optimism: Share of European startup founders who evaluate the future of their ecosystem positively

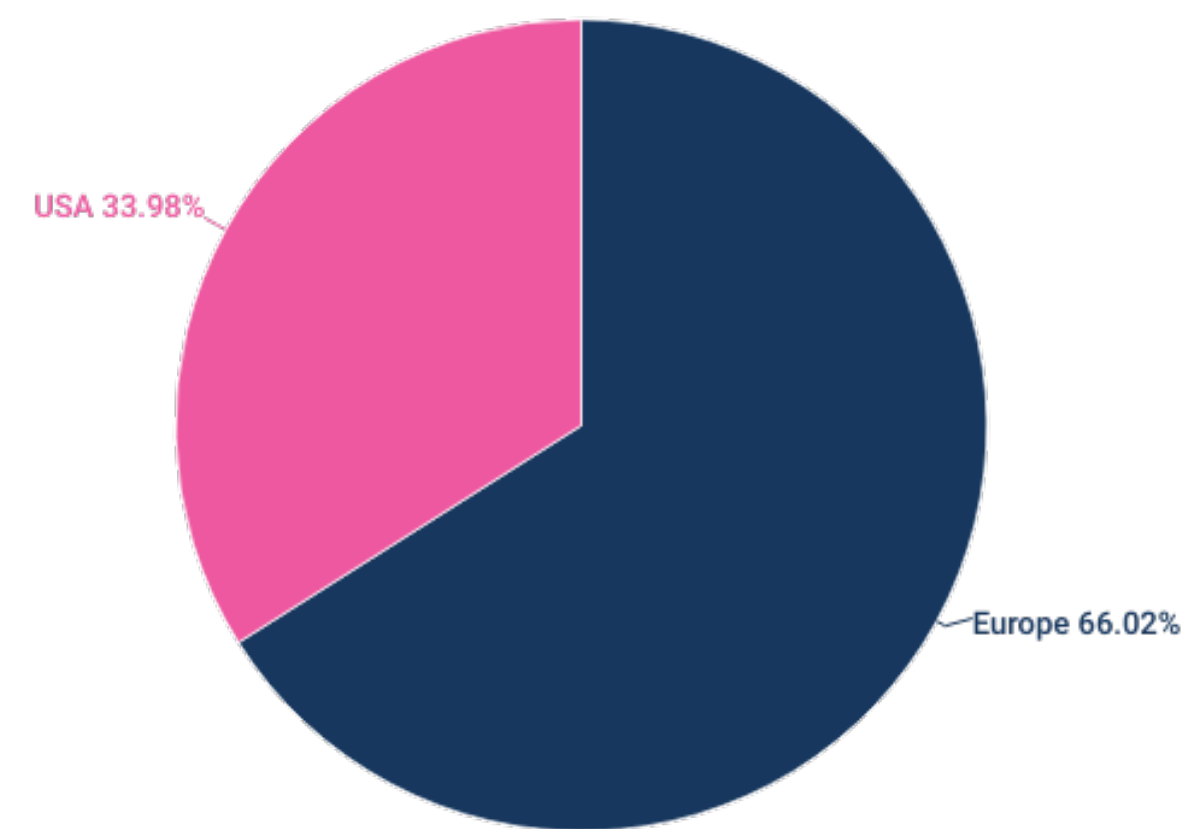


Source: Startup Heatmap Europe

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Europe or the US? European Founders' Preferences



Source: Startup Heatmap Europe

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66% of Founders Prefer Europe Over the US

If European founders could choose freely, 66% would start again in Europe, the Startup Heatmap Survey 2023 shows.

This is an increase from the previous edition as the number stood at 58%, but a bit lower than 2020 when 69% of founders stated they'd prefer Europe.

Preferences for Europe are highest in Western Europe, where 79% of founders opt for Europe (Germany, France, Switzerland, Austria) and lowest in Central Eastern Europe with just 44%. In the UK and Ireland the approval stands at 59%.

COMPLETE TOP 50 List

Rank	City	% of Founders	Rank Weighted Founders	YoY Change	YoY % change	View City Data
1	London	34.93%	1	1	1.83%	↗
2	Berlin	34.04%	2	-1	-3.31%	↗
3	Barcelona	17.13%	3	0	-2.88%	↗
4	Amsterdam	16.83%	4	1	0.66%	↗
5	Paris	12.30%	5	2	4.02%	↗
6	Lisbon	12.20%	6	-2	-4.16%	↗
7	Munich	10.03%	7	1	2.47%	↗
8	Tallinn	9.36%	8	-2	0.15%	↗
9	Stockholm	9.19%	9	0	2.06%	↗
10	Zurich	7.09%	10	1	1.16%	↗
11	Madrid	6.96%	11	-1	0.53%	↗
12	Dublin	5.46%	12	2	0.10%	↗
13	Copenhagen	5.45%	13	7	2.21%	↗
14	Warsaw	5.29%	14	2	0.94%	↗
15	Milan	4.44%	15	-3	-1.33%	↗
16	Helsinki	4.01%	16	5	0.96%	↗
17	Brussels	3.38%	17	1	-0.13%	↗

COMPLETE TOP 50 List

18	Sofia	3.20%	18	9	1.12%	↷
19	Malaga	3.15%	19	62	3.01%	↷
20	Vienna	3.07%	20	-5	-1.94%	↷
21	Bucharest	2.63%	21	9	0.81%	↷
22	Athens	2.54%	22	0	-0.08%	↷
23	Oslo	2.14%	23	24	1.26%	↷
24	Prague	2.01%	24	16	0.77%	↷
25	Rome	2.00%	25	-6	-1.49%	↷
26	Lyon	1.92%	26	29	1.34%	↷
27	Frankfurt	1.86%	27	12	0.54%	↷
28	Luxembourg	1.81%	28	1	-0.04%	↷
29	Hamburg	1.81%	29	4	0.21%	↷
30	Belgrade	1.77%	30	-8	-0.84%	↷
31	Wroclaw	1.75%	31	35	1.24%	↷
32	Riga	1.73%	32	-6	-0.39%	↷
33	Valencia	1.61%	33	-16	-2.04%	↷
34	Tel Aviv	1.57%	34	-10	-0.71%	↷
35	Essen	1.44%	35	40	1.24%	↷
36	Leipzig	1.40%	36	19	0.82%	↷

COMPLETE TOP 50 List

37	Edinburgh	1.30%	37	32	1.01%	↷
38	Cluj-Napoca	1.28%	38	3	0.09%	↷
39	Marseille	1.18%	39	48	1.18%	↷
40	Las Palmas	1.15%	40	41	1.00%	↷
41	Antwerp	1.10%	41	-16	-1.07%	↷
42	Ljubliana	0.97%	42	27	0.68%	↷
43	Malta	0.94%	43	-9	-0.52%	↷
44	Bilbao	0.91%	44	6	0.18%	↷
45	Belfast	0.90%	45	42	0.90%	↷
46	Stuttgart	0.83%	46	-1	-0.19%	↷
47	Vilnius	0.82%	47	-15	-0.83%	↷
48	Istanbul	0.76%	48	-3	-0.26%	↷
49	Bari	0.74%	49	1	0.02%	↷
50	Nice	0.74%	50	-13	-0.67%	↷

PART II: TRENDS IN EUROPEAN ECOSYSTEMS

Let's explore the 3 Hypotheses

Hypothesis I:

Are Startups Overtaking the Economy?



How relevant is the startup scene
for the overall economy in Europe?

Are startups a transformative
force or just a storm in the glass?

A large share of the world's most valuable companies has not been alive 30 years ago. Only 10% of the Fortune 500 companies have remained in the list of 500 most valuable companies for longer than 50 years. Today's tech champions define the future - at least in the US.

In this chapter we analyze whether European tech champions are a relevant force and effectively transforming the European economy.

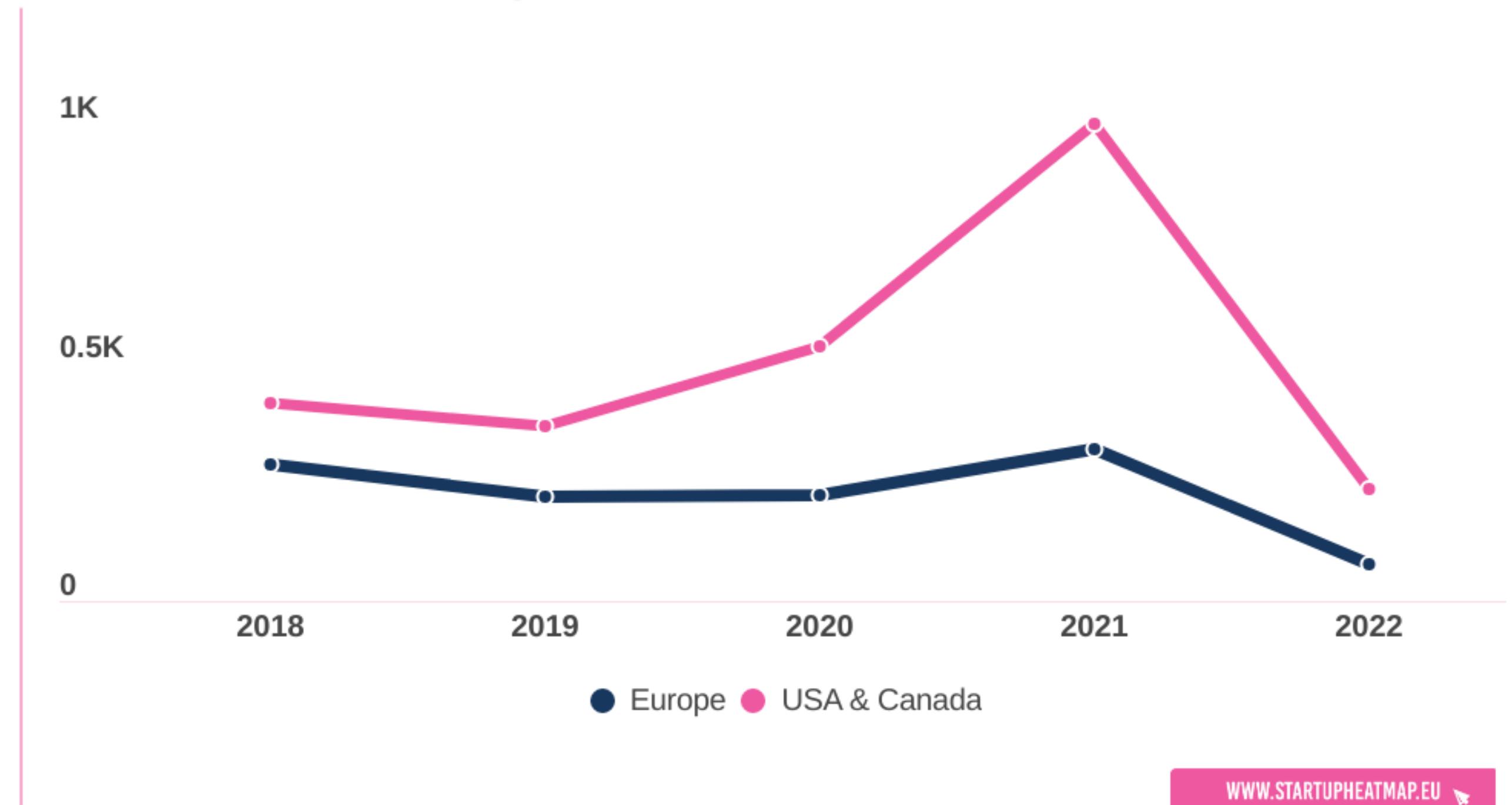
What share of GDP is invested in startups, in which places do startups define the economy already today and jobs depend on them?

IPOs Are Not Increasing in Europe

Despite the record investments and exits during the past years, Europe did not see the same increase of IPOs as for example North America.

Europe (including UK) seems to either not create transformative new companies or to lose them to the US or strategic corporate investors.

Number of IPOs in Europe vs. North America



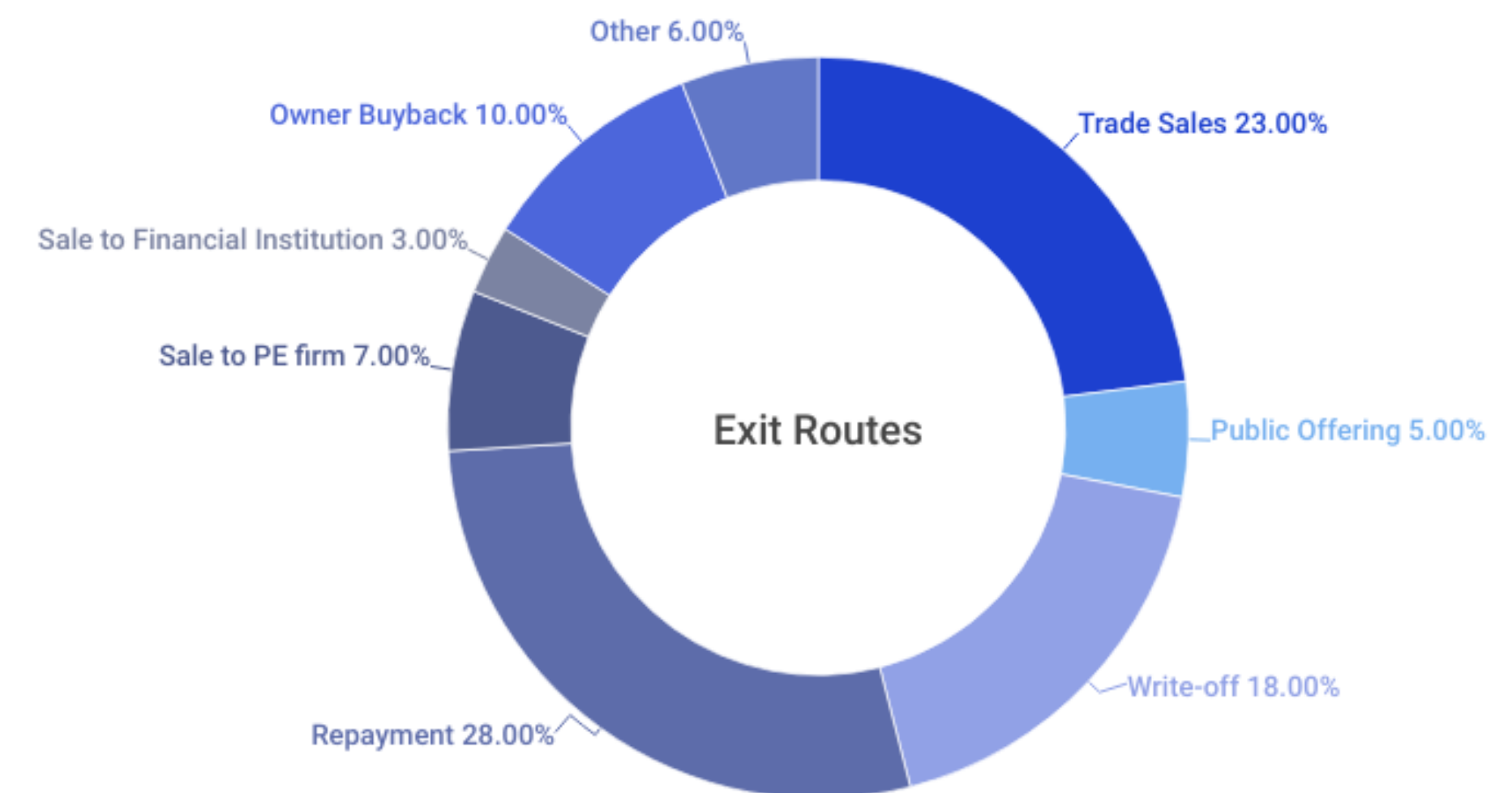
[Download data](#)

Are We Seeing New Transformative Companies?

5% of startup exits in Europe are Initial Public Offerings according to Invest Europe. 23% of startups who are exiting do so to corporates in „trade sales“.

In 2022, Invest Europe tracked only roughly 70 startups with an IPO in Europe.

Exit Routes of European Startups



Source: Invest Europe

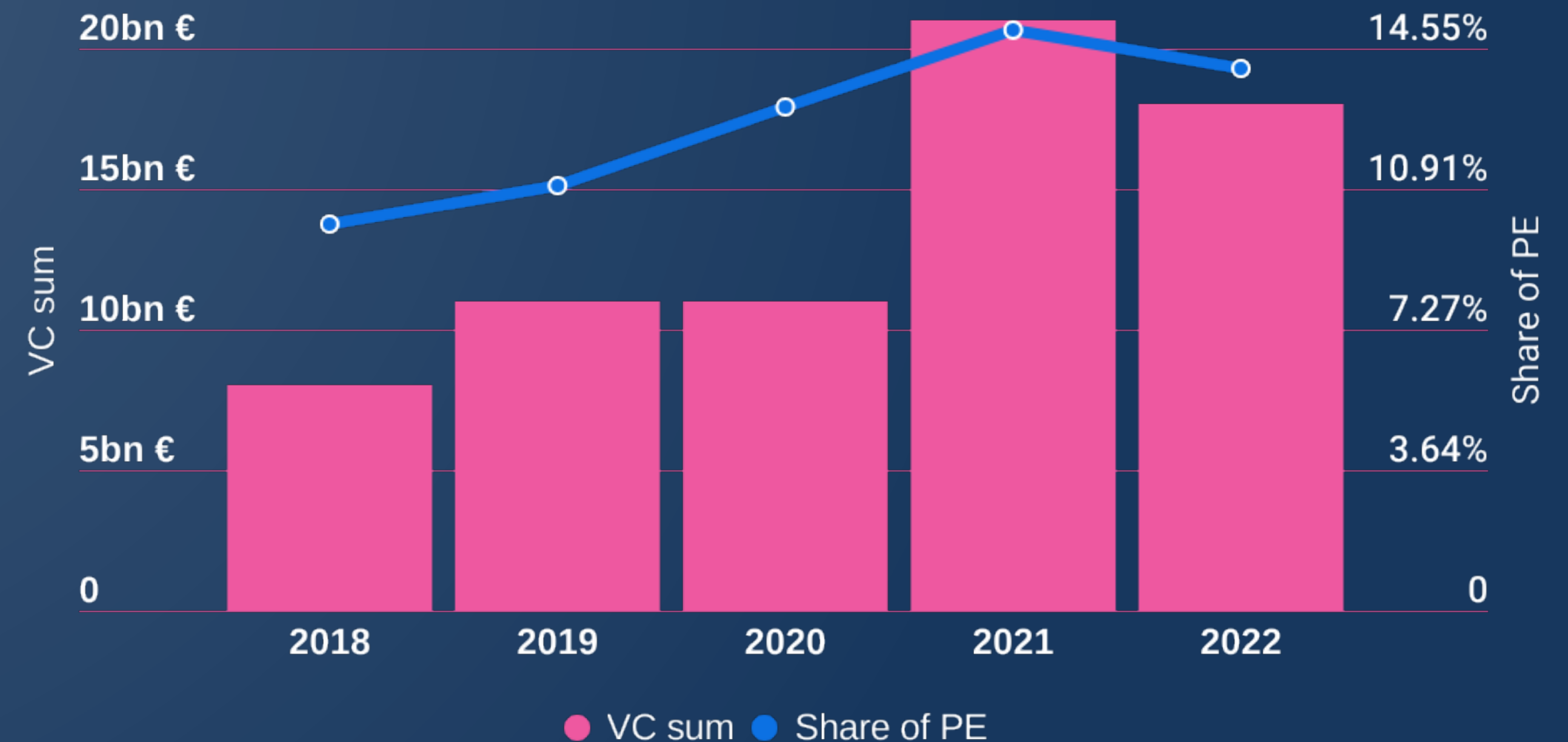
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Importance of Venture Capital for Society

Venture Capital Gains Importance for the Overall Economy

With 14% of all Private Equity being Venture Capital investments, the startup industry does not constitute a „playground“ for new ideas anymore, but becomes a substantial contributor to the European economy. On the other side this means a decline in the startup sector now also has an effect on the health of the overall economy.

Venture Capital as a Share of Private Equity in Europe



Source: Invest Europe



"If the EU's push of the sustainability agenda is followed by the private side, we will witness a real growth in new ventures addressing climate issues. Europe is set to bring its startup ecosystem to the next level."

Alessandro Silvestri -Managing PartnerMALTAaccelerate

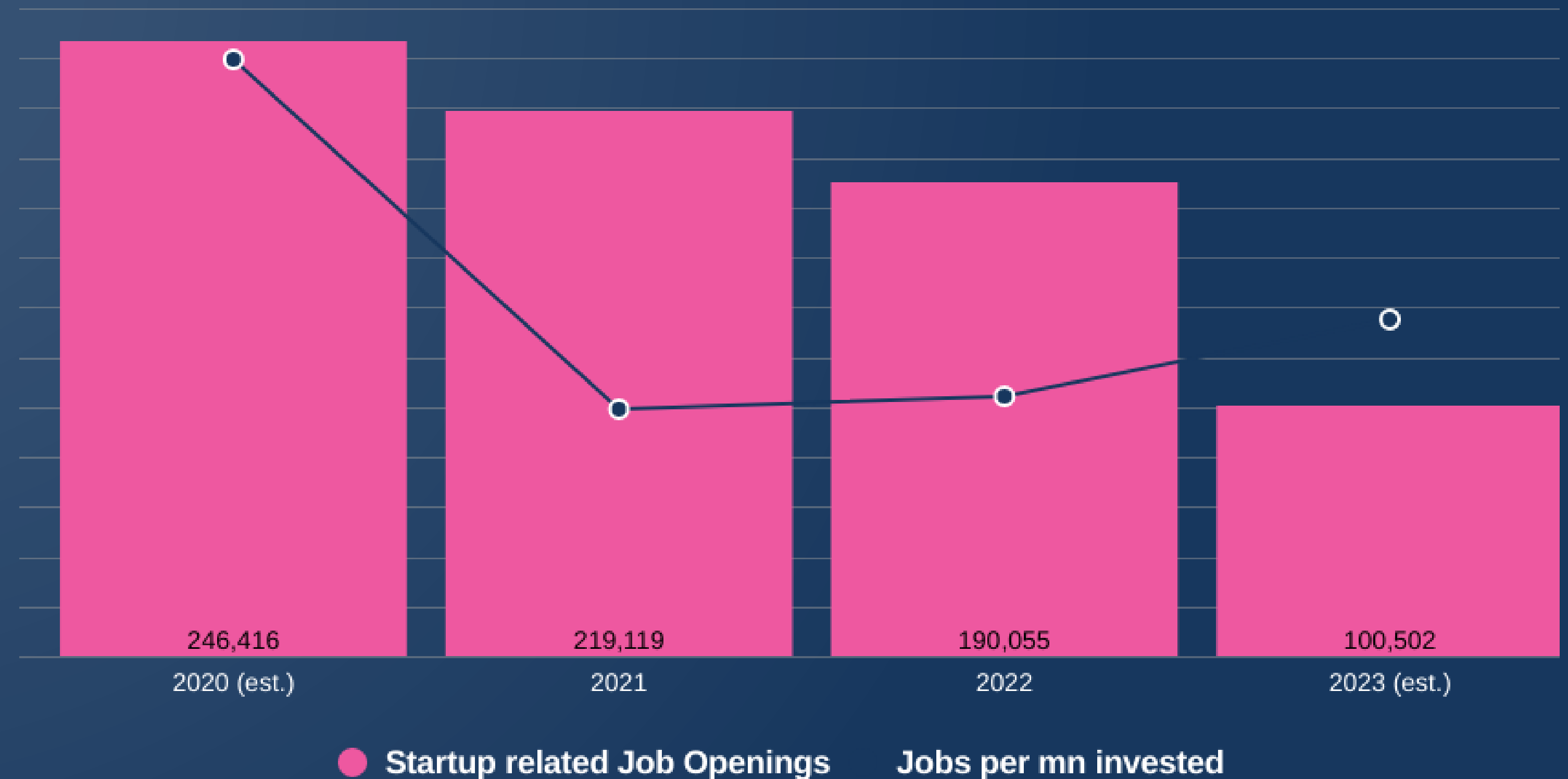
Startups' Contribution to Job Growth

Job Openings in the Startup Sector Peaked During the Pandemic

The significance of the startup sector for Europe's economy is also shown by its contribution to job creation.

In particular during the pandemic, the startup sector created a total of 246,416 job openings in Europe in 2020. This means that per 1mn USD invested in European startups, 4.6 job openings were published that year.

Startup Related Job Openings in Europe

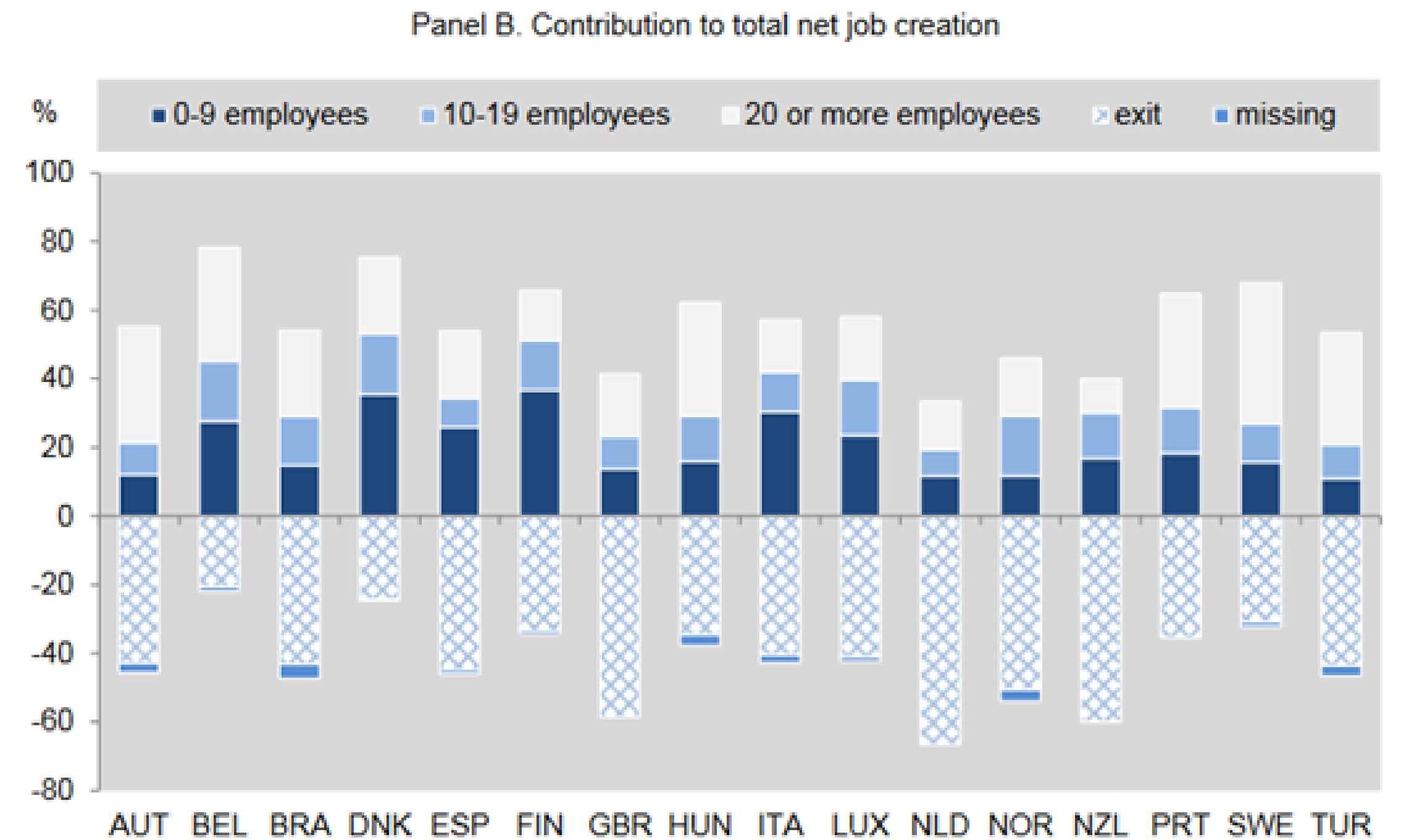


[Download data](#)

Source: Startup Heatmap Europe / LinkedIn

OECD Estimate: Young Firms Create Half of New Jobs

The OECD's research department is tracking the impact of startups on the job market in the so called DynEmp database and showed that even when taking into account the frequent loss of jobs in startups who fail, the overall startup sector in OECD countries has contributed positively to job growth. There is however strong regional differences.



Source: OECD



"The startup scene in Germany is booming and its impact on the economy cannot be ignored. With a culture of entrepreneurship and a focus on innovation, these companies are leaving a lasting impact on the German economy and paving the way for future entrepreneurs."

Jörn "Joe" Menninger - Founder and host of Startuprad.io

„Unicorn“ Ecosystems Raising >1bn € per Year

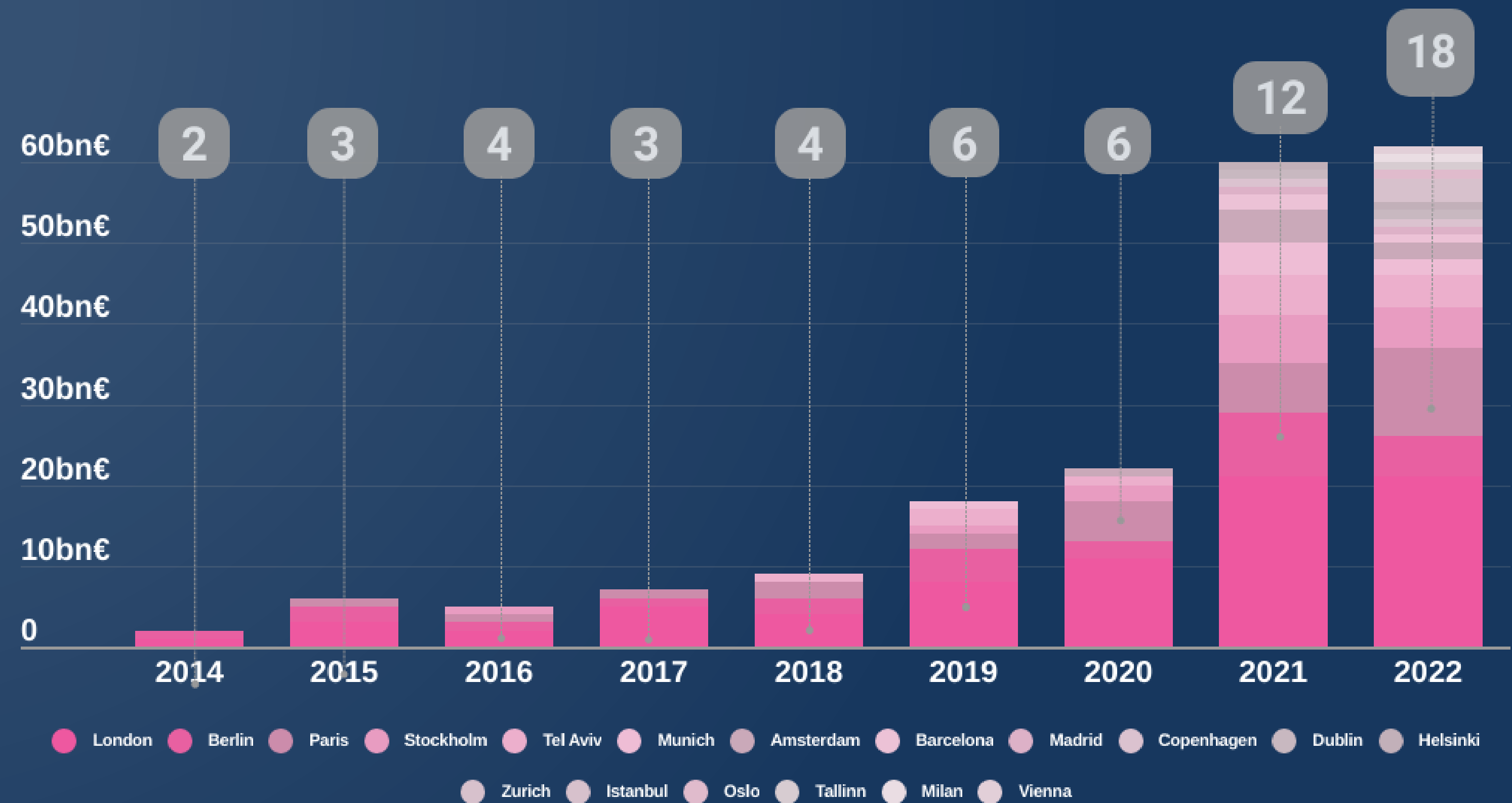
Not Startups, but the City as a Whole Must Become a "Unicorn"

In a global race for technological leadership, innovation readiness will make or break regional economies. Europe has a short list of regions that might be able to turn the tide.

While for Europe as a whole, startups play a small economic role, they start to transform individual regions and potentially can use them as a springboard to disrupt global industries.

Being part of this web of "unicorn" ecosystems is crucial to participate in the transformative processes in the world that tech firms are spearheading.

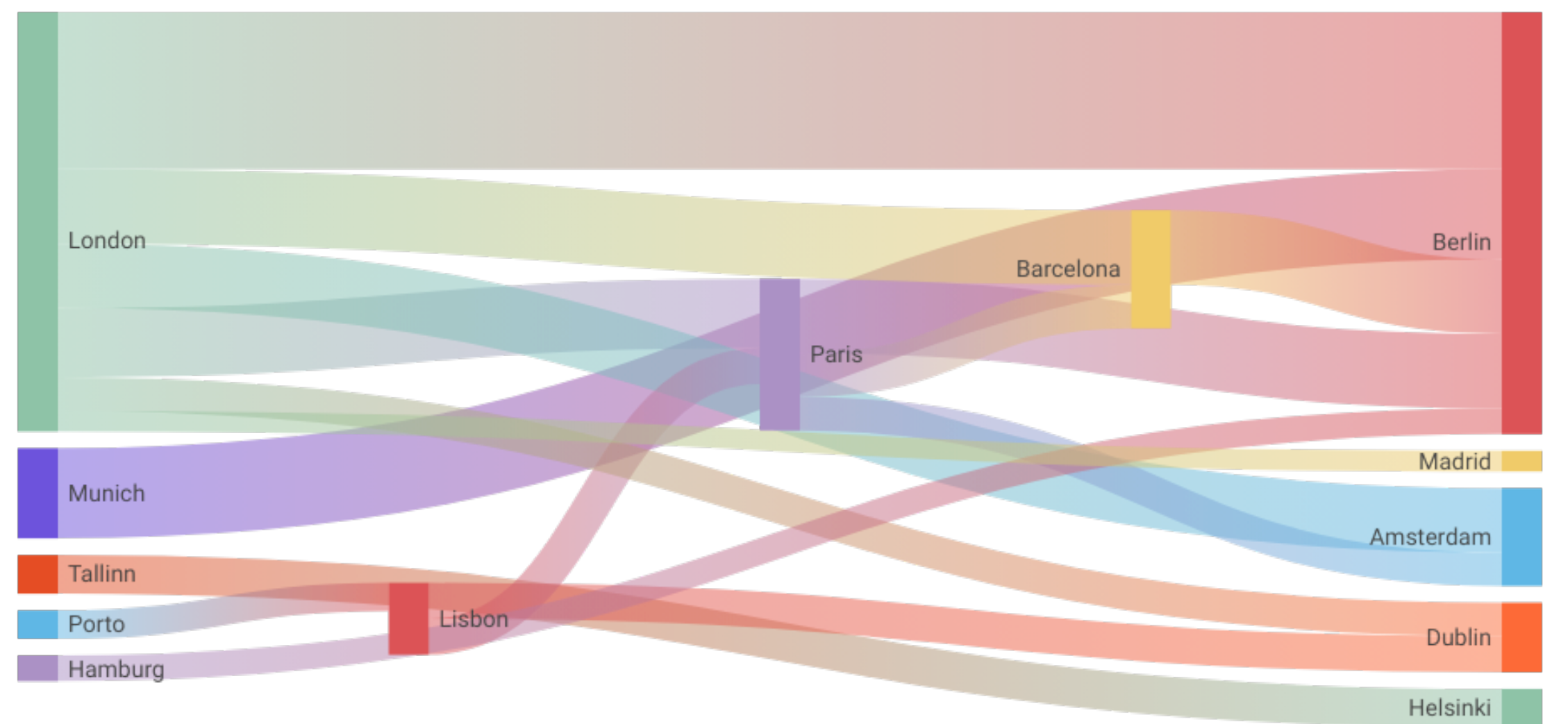
Unicorn Ecosystems in Europe 2022



Source: Startup Heatmap Europe / Dealroom.co

Connections between Europe's Top Ecosystems

Founder Connections Among Top Hubs



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The Unicorn Ecosystems form a kind of "club" that allow a faster flow of resources, ideas and opportunities. For emerging startup cities, it is important to find strategies to become part of this club.

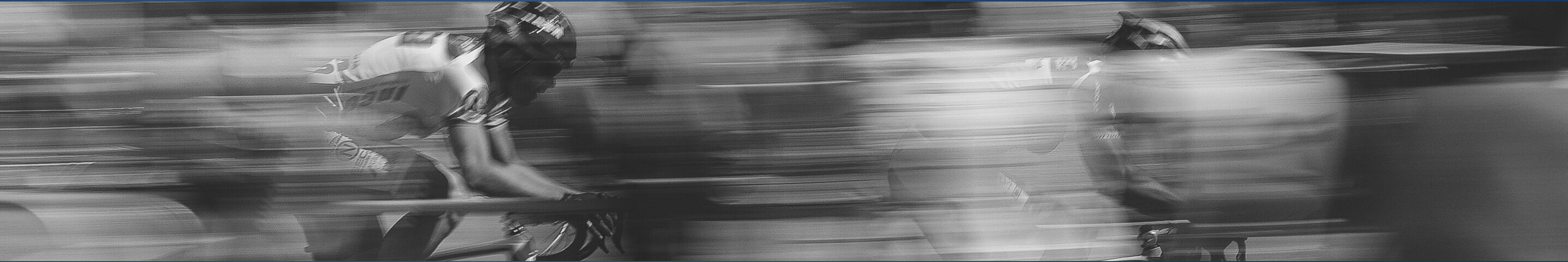
Using the Startup Heatmap Survey voting behaviour as a basis, we analyzed more than 9,244 votes of founders since 2016 and identified mutual relations between hubs, defined as equally strong preferences of founders for one hub as for their own.

This allows us to estimate among which places founders have built relations or at least who they see to be on eye-level.

 [Download data](#)

Hypothesis II:

Are Startups Saving the Laggard Regions?



Being outside the club of unicorn ecosystems can hamper economic growth. Can laggard regions catch-up and connect?

Laggard areas took a lot of attention in the last decade in EU. The European Regional Development and Cohesion Funds have aimed at fostering stronger European extra-regional collaboration to reduce regional disparities and enhance the integration of lagging regions.

These regions may suffer from low innovation performance, outmigration, brain drain, and a lack of entrepreneurial activity, which further hampers their development prospects.

However, recently, some startup ecosystems are catching up the big center and the new scenario is changing.

Who Are the Laggard Areas?

Estonia, Cyprus and Greece Are Catching Up

The European Commission uses the Innovation Scoreboard to map EIS (European Innovation Systems) by investigating different factors such as innovation activities but also investments, human resources, digitalization, employment and digitalization.

Previously considered a laggard, Estonia has strongly grown as an innovation system, moving from being strongly under the EU average to an index equal to the EU average. Also Cyprus has surpassed the EU average level. Greece although not reaching the EU average, shows that by investing in innovation a country can escape the laggard status.

Performance of EU Member States' Innovation Systems



Source: European Innovation Scoreboard 2022



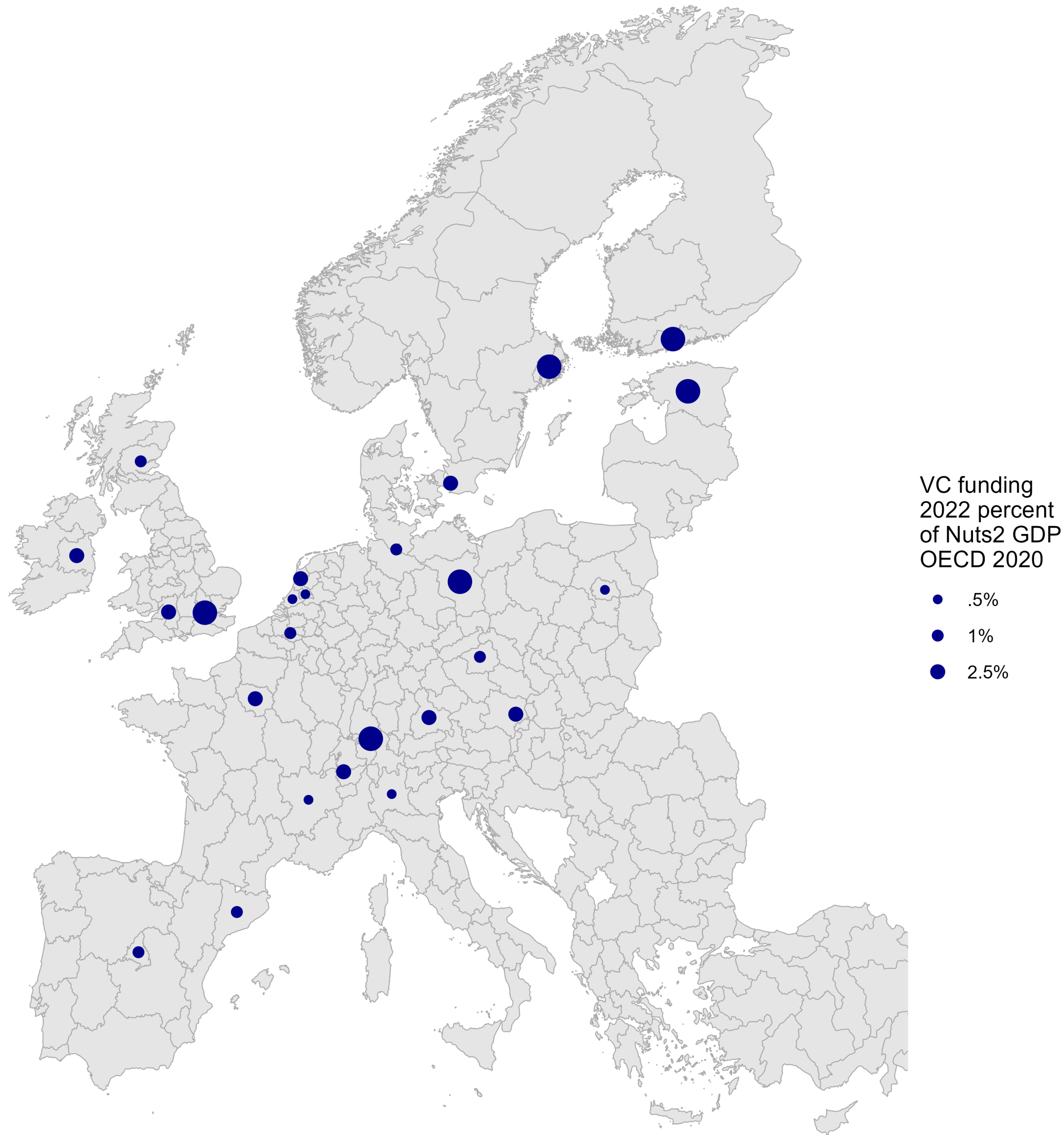
"As a promoter of rural development, I advocate for startups as champions and catalysts of transformation, propelling the laggard regions towards growth and prosperity. Startups stimulate economic diversification, revitalize local economies, and address depopulation trends. However, local government support is crucial to unlock their potential. Supportive policies, access to capital, and robust digital infrastructure are vital for maximizing their positive impact on the local economy."

Razvan Valceanu - Sustainable Development Facilitator

VC Investments per GDP in Europe's Regions

The "lag" of the majority of regions in Europe can be seen by the Share of VC funding per region.

The highest seed investments per GDP can be found in London and Estonia, where about 1.3 € of seed investments are placed for each 100k € of GDP. Other regions like Eastern Scotland, North Holland and Berlin follow, but only have about 0.4 € seed investment for each 100k € of GDP.



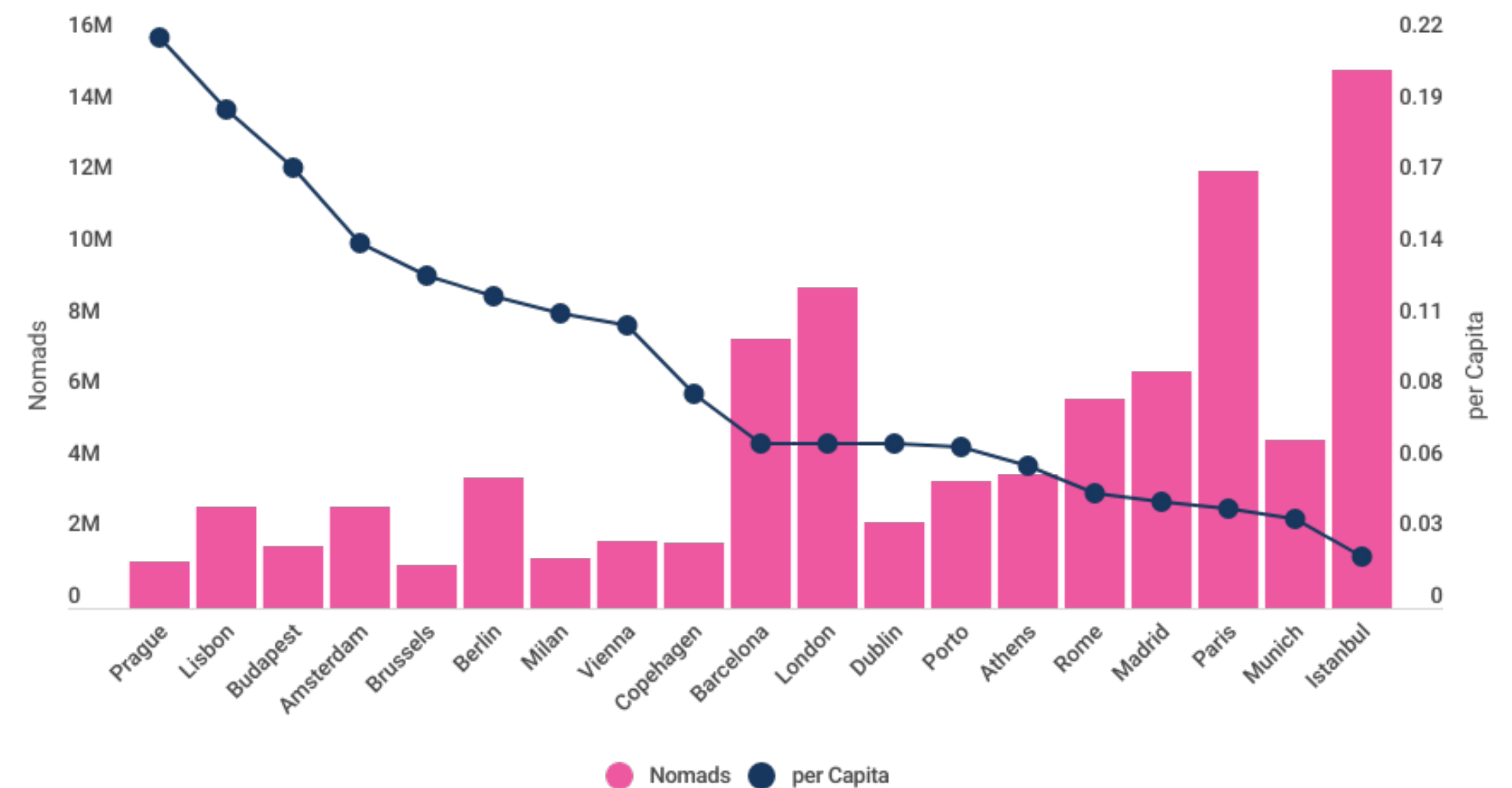
Are Digital Nomads Saving the Laggard Areas?

Migration of tech talent is an often suggested strategy for regional development.

The website nomadlist.com allows us to see where their international users have "checked-in". Using the thousand of data points from this community platform, we see big cities like London on top in absolute numbers. However, some surprising places reach the top rankings in the per capita analysis.

Digital nomads could support laggard areas in catching up to the big ecosystems.

Digital Nomads per City, absolute and per capita



Source: Nomadlist.com

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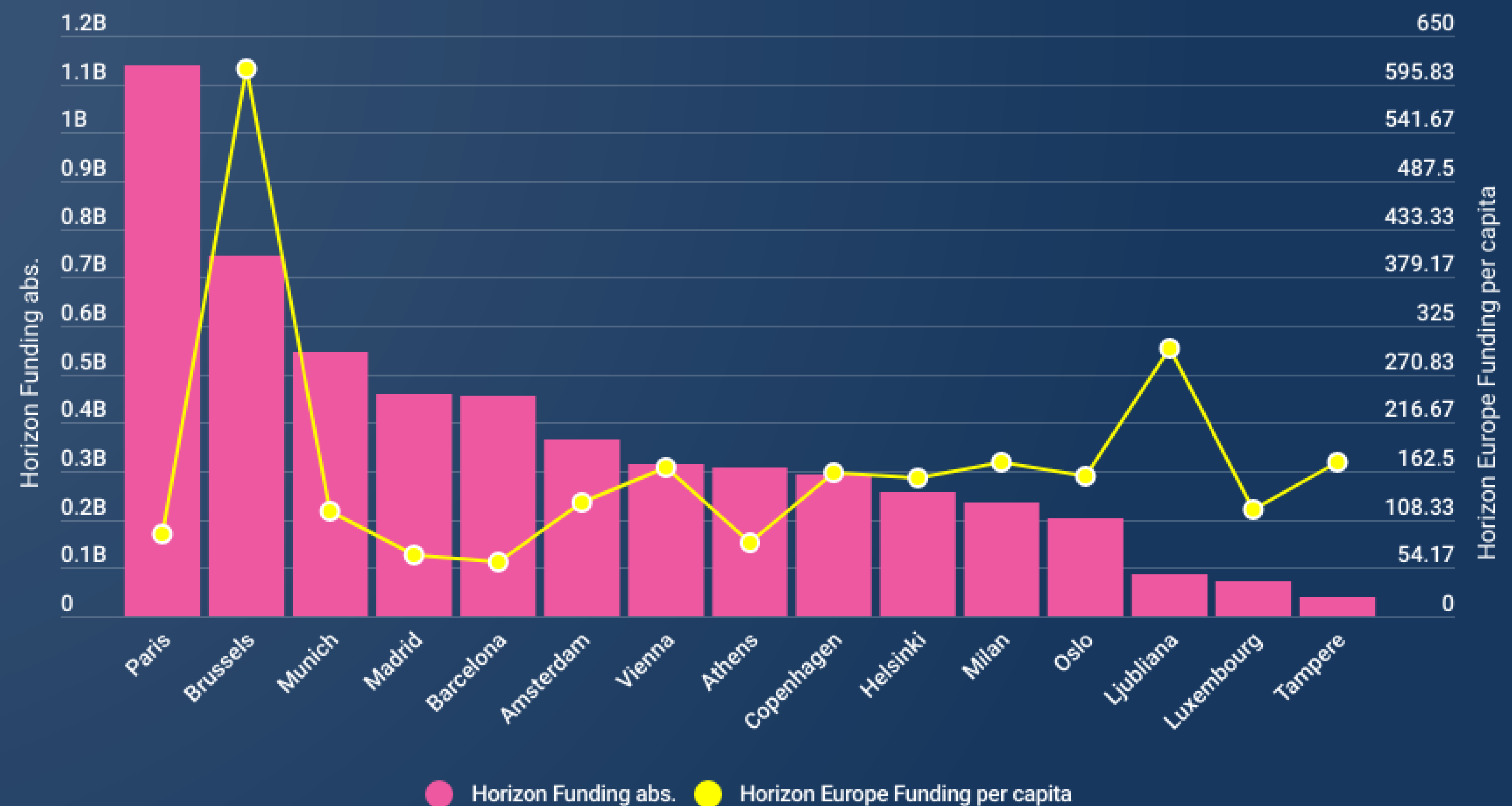
EU Funding in European Startup Capitals

Is Horizon Europe Funding Reaching Laggard Regions?

One of the EU's goals is to reduce regional disparities and enhance the integration of lagging regions. In total numbers of funding raised, economic centers like Paris or Munich are far ahead. However, in the per capita view, we see some "laggard" regions making use of this strategy.

Athens, for example, is taking advantage of EU funding, being in the 10th position for EU funding per capita. This can be an explanation for the recent growth of this ecosystem, moving from a laggard area to a moderated laggard area

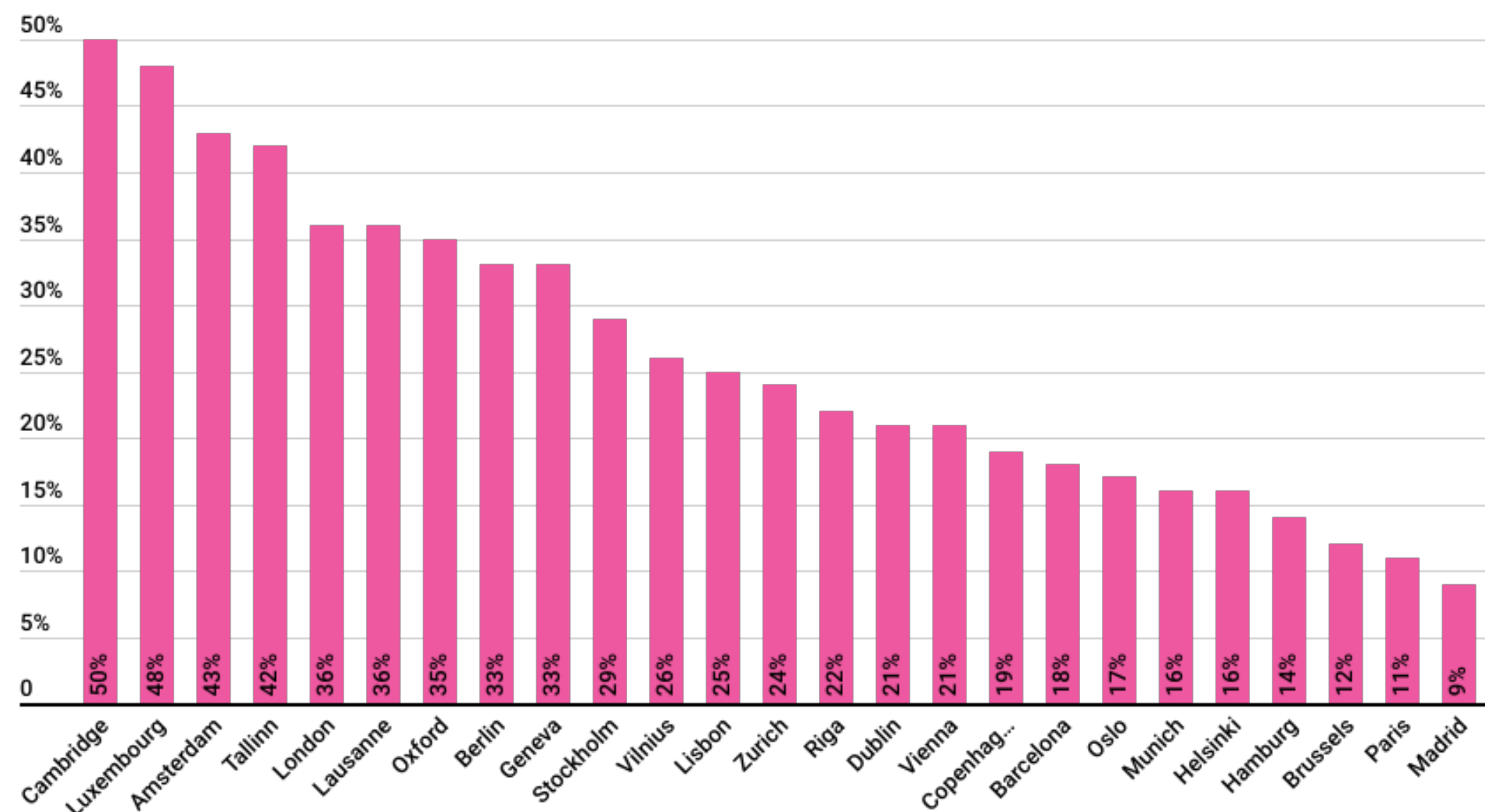
Horizon Europe Funding per Select Cities, absolute vs. per capita



Source: European Commission

Do Diaspora Founders Make a Difference?

Share of International Founders Among Startups in Accelerators



Source: Startup Heatmap Europe

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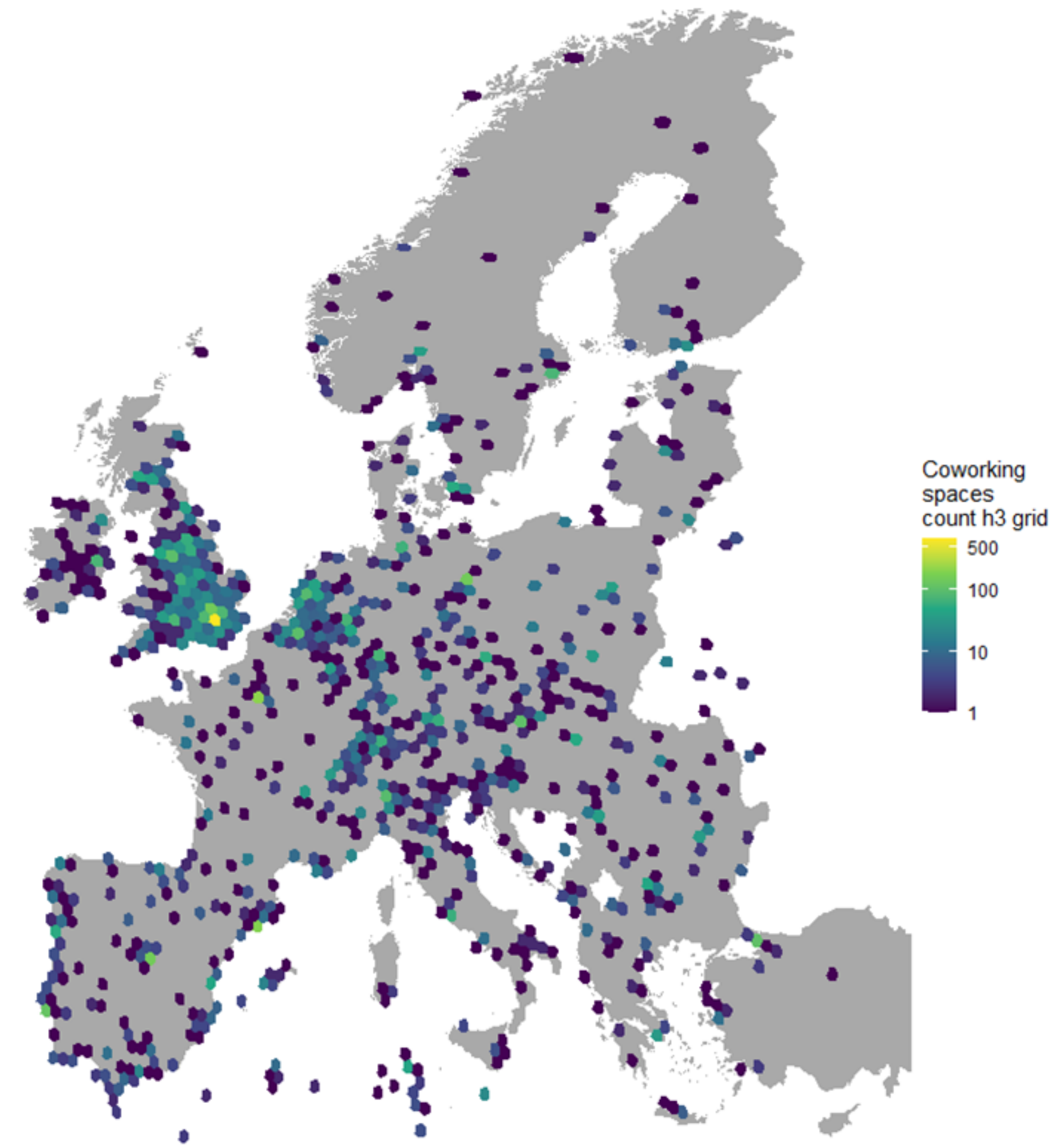
Tallinn has greatly benefited from the arrival of international entrepreneurs, experiencing a significant boost in growth and development.

Being in the top 5 together with Cambridge, Luxembourg, Amsterdam and Lausanne, Tallinn attracted talents and made the ecosystem vibrant and managed to grow in innovation performance over time. Today is Estonia ready to become an innovation leader?

Co-Working Spaces Outside Economic Centers

Another strategy to improve the creativity and entrepreneurial uptake in regions is the establishment of common spaces for the startup industry. Co-Working spaces have therefore received notable funding and support. But do they flourish outside economic centers?

While most co-working spaces are concentrated in metropolitan centers, the prevalence in peripheries is growing. Considering the European picture especially the "European Sunbelt" along the Atlantic and Mediterranean coastlines is clearly visible. A connection with the attractiveness for international digital nomads is apparent.



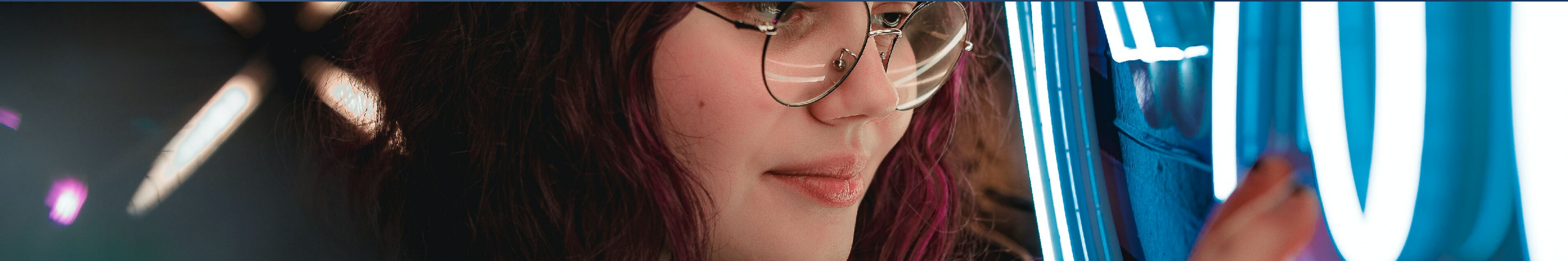
Source: coworker.com



"As time goes on, entrepreneurial education becomes more accessible and diverse. Private organizations and co-working spaces offer different methods to support and nurture new entrepreneurs on topics like administration and finances, IT, HR, and business management overall, providing aspiring entrepreneurs with a solid foundation in business principles with mentoring and coaching services."

Marc-André Bélisle - CEO of Synertium Inc.

Hypothesis III: Are Ecosystems Open to Transform our Economy?



New ideas, failure tolerance and diversity may represent the means for economy transformation. Are ecosystems open to them?

In a dynamic context such as the European startup scene, openness to new ideas, failure and diversity can be sources for a sustainable growth in economic, environmental and societal terms.

However, the level of maturity of the different ecosystems throughout Europe can outline a context where this components have different weights, affecting the development of the local economies.

The "openness" dimensions analyzed in this session open up to a reflection about new factors emerging in our society going beyond the traditional mindset.

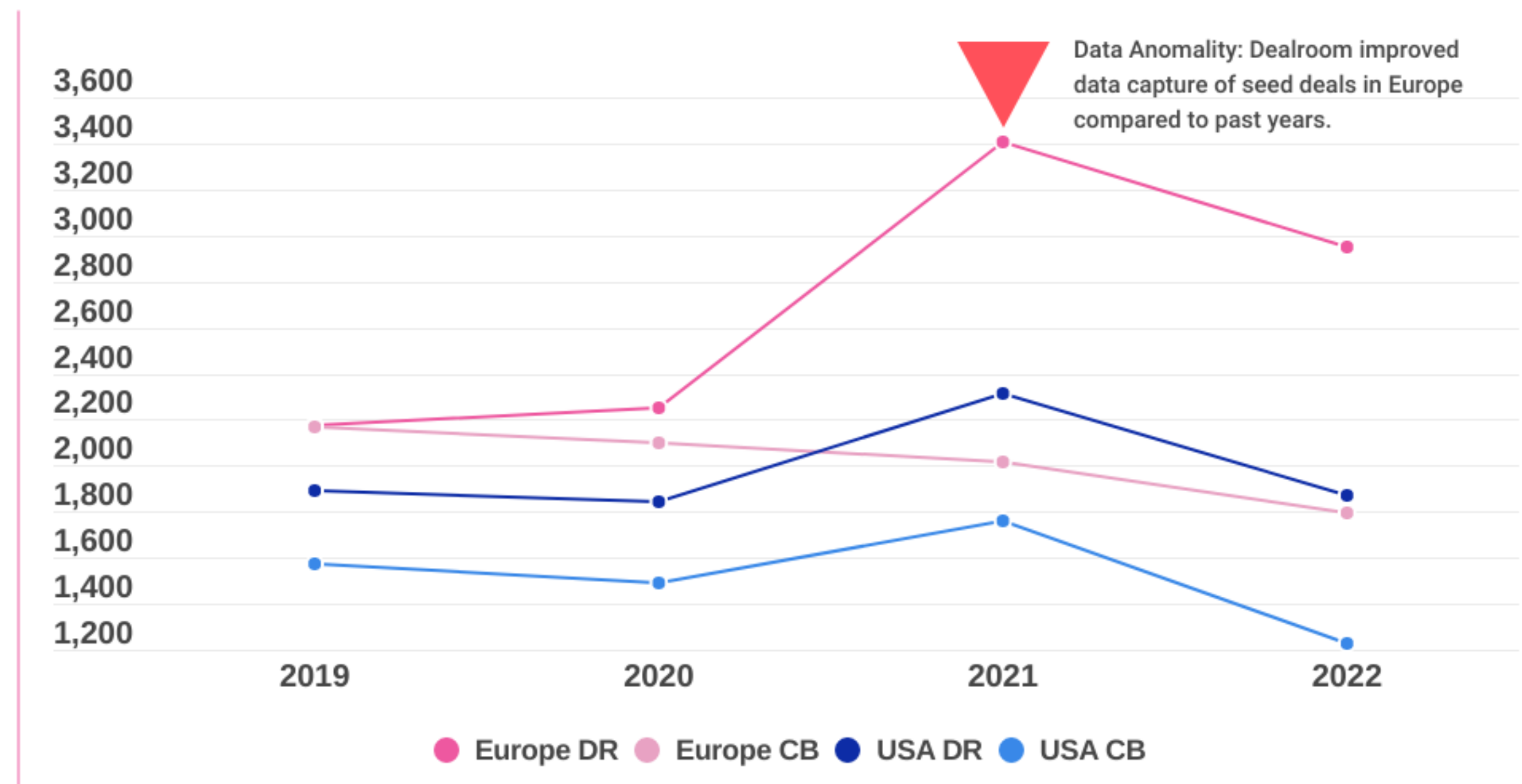
Is Europe Investing in New Ideas?

How can we understand whether Europe believes in new ideas? Well, if local investors are putting their money into them.

Seed investments are predominantly local and therefore are a good indicator to understand how excited high-net worth individuals, family offices and corporates are for innovation.

While total investments have reached record heights in Europe in 2021, the number of seed deals measured by all deals between 450k USD and 2.5mn USD is moving sideways. In the graph, we analyze timelines for the US and Europe based on Dealroom and Crunchbase data. The data is difficult to interpret as it relies on the completeness of the data per platform. However, both Dealroom and Crunchbase show a higher amount of seed deals in Europe. Dealroom even sees almost a 100% increase in 2021. However, we believe this is rather due to how data is captured than a representation of a real surge of deals. Crunchbase in contrast has not changed data collection methods and shows a decline in the same time frame.

Number of Seed Deals in Europe on Dealroom vs. Crunchbase



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Source: Dealroom.co (DR) and Crunchbase.com (CB).

Funding Opportunities by Stages

Is Europe Open to New Ideas?

2021 represented a record year for the total number of deals in Europe (14.6K deals). Therefore, in 2022, the funding opportunities registered either a slight decrease or remained stable. Only series A rounds increased by +7%, highlighting a preference of VC investors for more „developed“ businesses in comparison with the previous year. While the number of pre-seed deals decreased by -18% outlining an aversion to more infant ideas. However, the magnitude of pre-seed and seed investment deals remained relevant with 7,038 and 2,858 deals respectively.

Number of Deals per Stage and Year in Europe



Source: Dealroom.co (*due to reporting lag, the last 12 months are systematically under reporting on rounds especially small rounds).

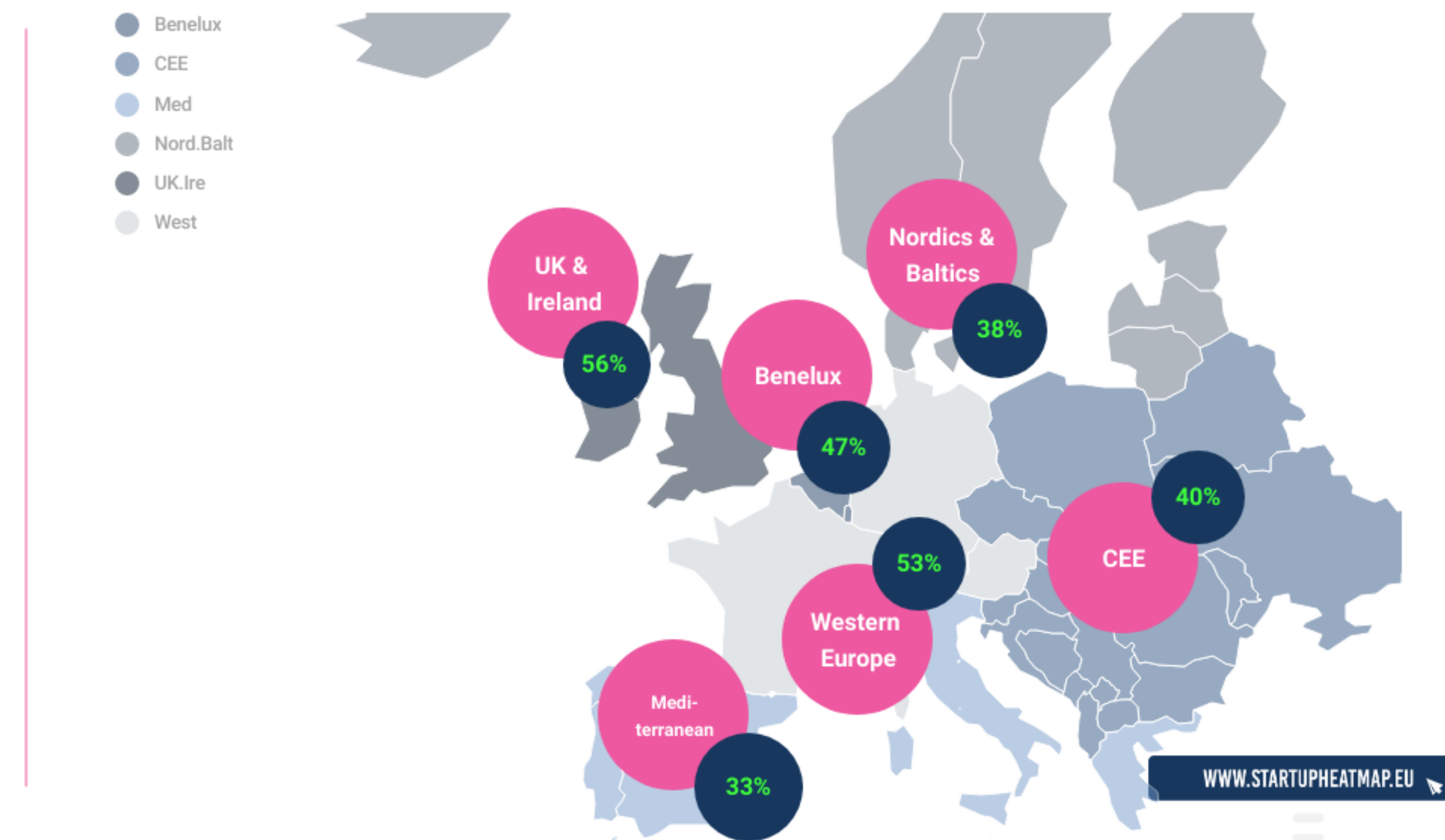


"In Vienna, players in the otherwise highly competitive startup scene agree that cooperation can help advance economic development, mutually benefit all participants, and serve as an accelerator of innovation. As a result, newcomers to our Viennese startup ecosystem will find a warm and friendly welcome. International startups establishing themselves in here Vienna can count on the support of the local community and be confident of finding their place in the ecosystem."

Gabriele Tatzberger - Startup Services Director @Vienna Business Agency

Are European Ecosystems Open to Failure?

Share of Founders who believe they can talk openly about failure



From the map, we can see that the region of UK and Ireland is the most open to sharing about failure. Indeed, the majority of the entrepreneurs feel open or quite open to talk about bad results. This can be due to the regulations and the long startup ecosystem history in this area that have increased the failure tolerance.

Whereas in the Mediterranean area, entrepreneurs are the least prone to talk about failure.

Source: Startup Heatmap Europe survey 2023 (the shares in the circles represent the respondents that indicated that entrepreneurs are open or quite open to talk about failure in their ecosystem).

Failure Tolerance

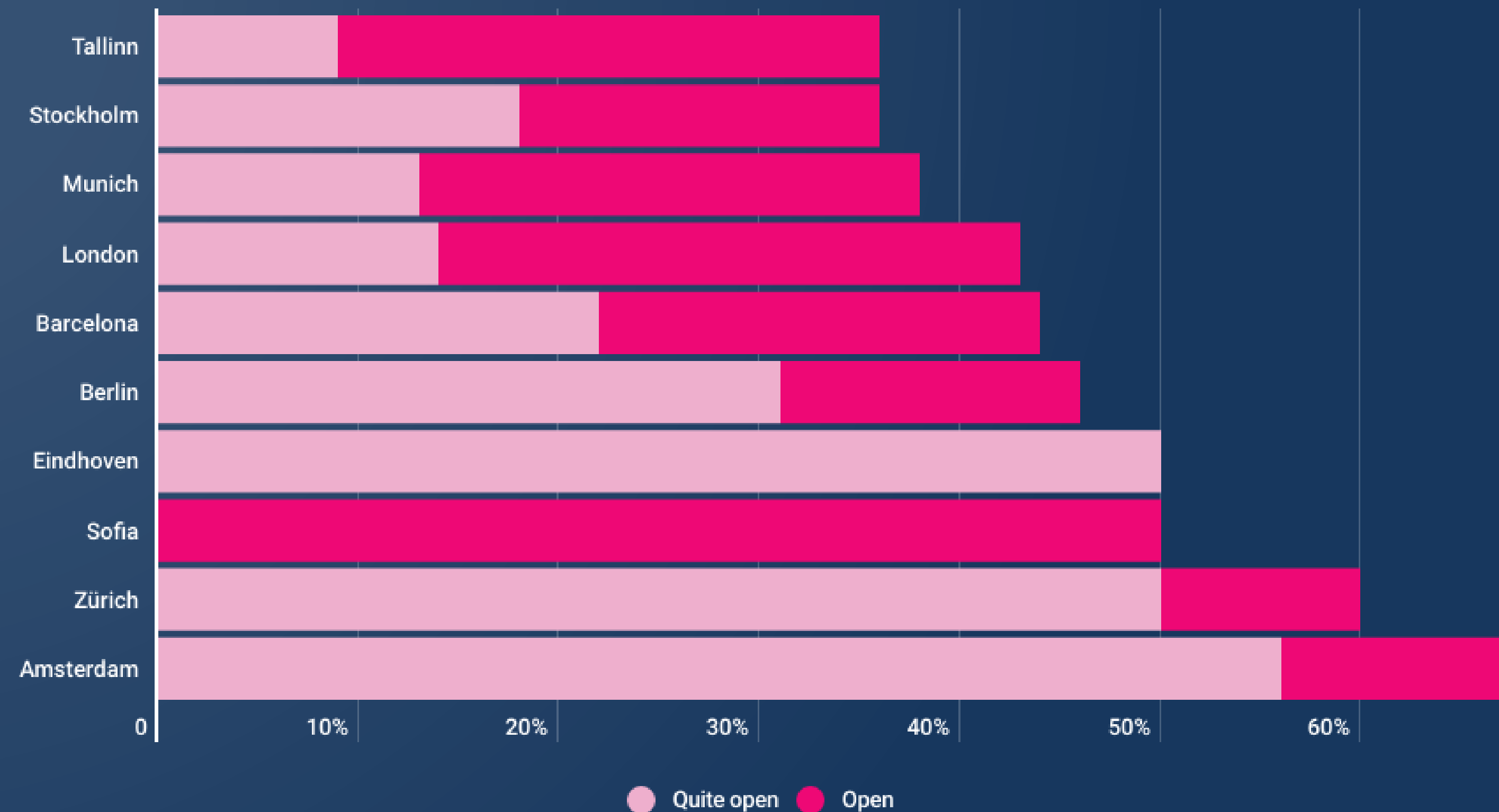
Not Every Entrepreneur Feels Safe to Speak about Failure

Amsterdam is the ecosystem where entrepreneurs feel most open to talk about failure (67% of them). It is followed by Zurich and Sofia.

In the largest European ecosystems – London, Berlin and Barcelona – more than 40% of the entrepreneurs are disposed to share their failure.

In general, the openness to failure fosters an environment where taking risk is accepted and not blamed, and „more ambitious“ ideas can be pursued.

Share of Founders Open to Talk about Failure by City



Source: Startupheatmap survey 2023 (the cities included in the ranking received at least 6 answers to the survey).





"After fifteen years of experience with our Bio incubator, we've found that one of the shortcomings of many incubators is a lack of ambition. Indeed, once a good process is in place and the Hub reaches a certain size, the challenge is to have enough space to support the growth of your companies. When we launch an incubator, we often think too small because we want to limit the financial risks. The consequence is that the companies created have to leave the Hub and sometimes even the country. You also have to refuse companies that want to join you. Losing the benefit of your work...

My advice is to think big and be ambitious!"

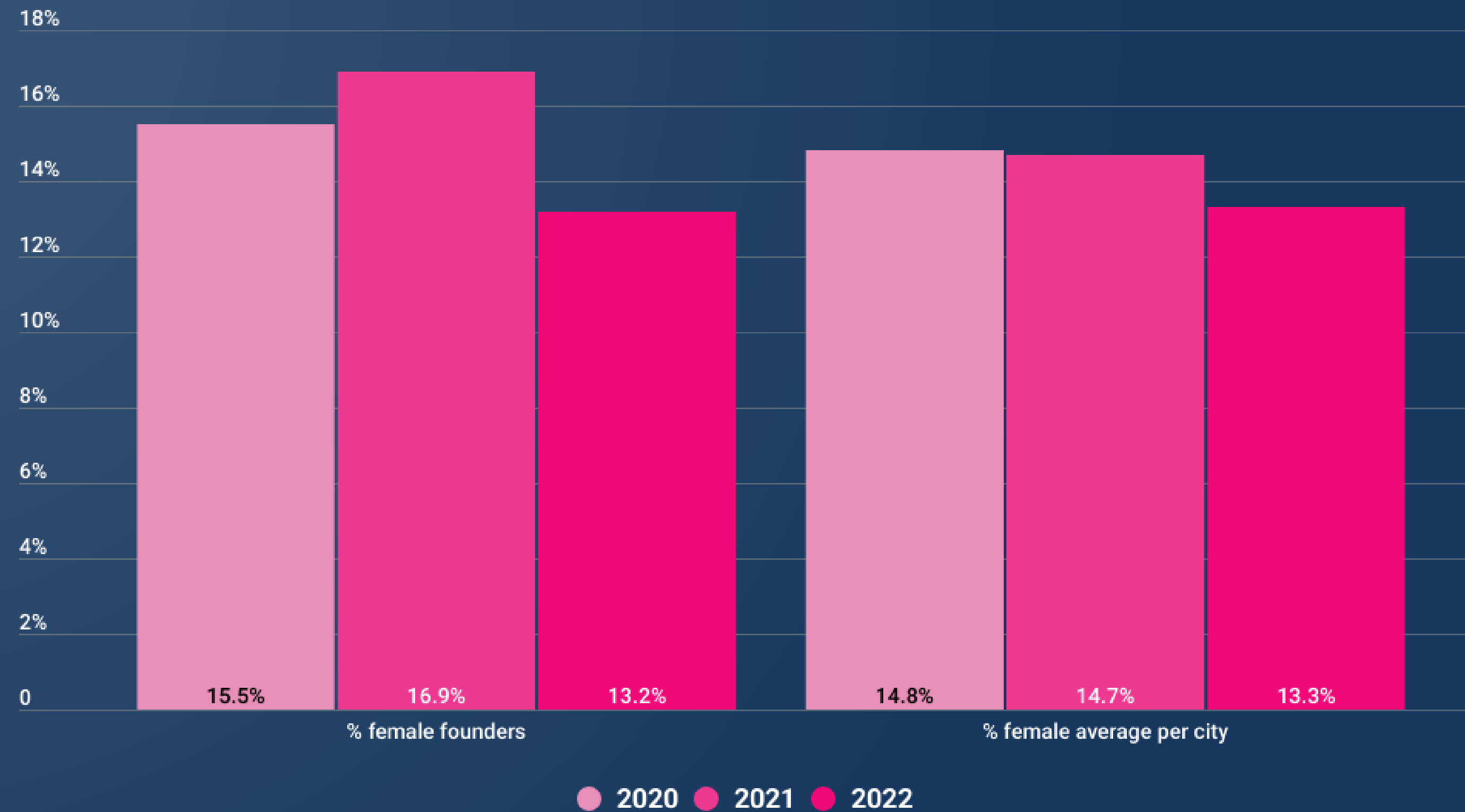
Dominique Demonté - CEO of the Brussels South Charleroi BioPark

Diversity among European Founders

The Share of Female Founders Dropped in 2022

In 2022, the share of female founders among the total founders is 13.2%. It represents a drop of -3.7% in comparison to 2021. Also the average of female founders per city amount to 13.3%, decreasing by 1.4%. Therefore, the female founders in Europe are not even close to the gender equality of 50%.

Female Founders in Europe per Year



[Download data](#)

Source: Startup Heatmap survey (average calculated on 52 cities in 2021 and 50 cities in 2022)



"We have to give women a better chance to realize their ideas. In 2022 women startups in the EU only got 2% of the venture capital. 2%! We can do better than that. Women own only 6% of registered patents in the EU. Those figures are terrible.

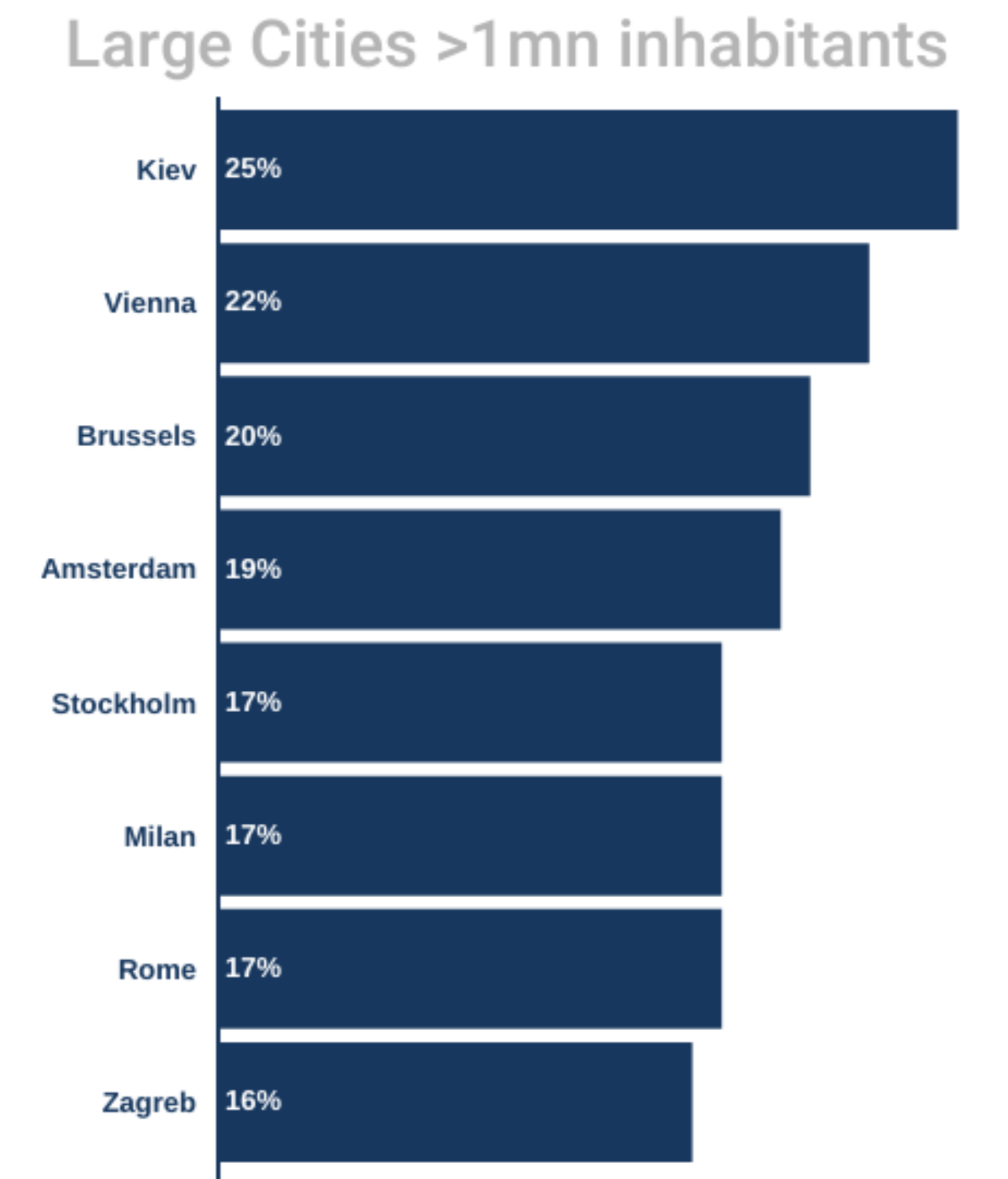
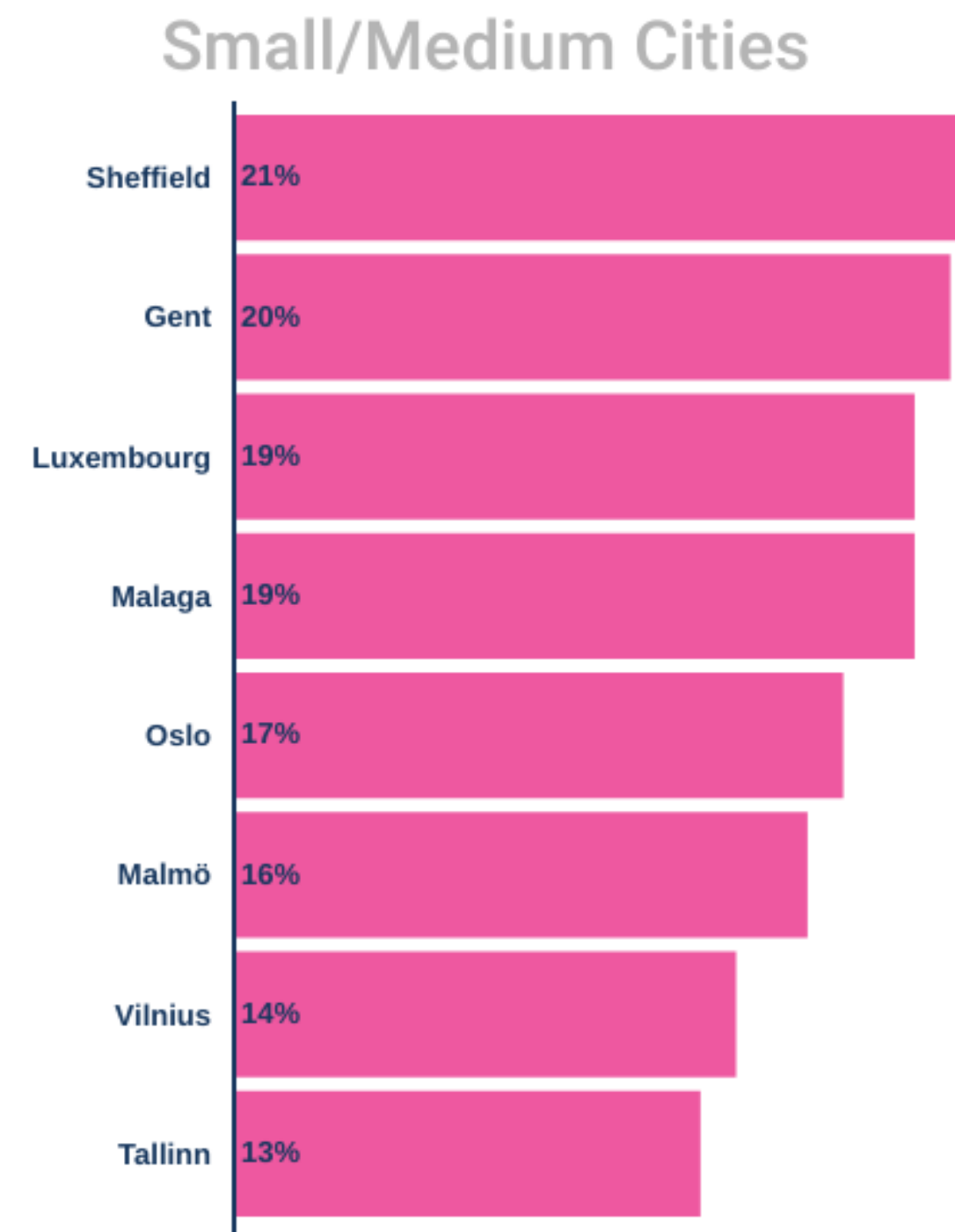
The more female inventors are recognised, the more school-age girls will be inspired to become innovators themselves and the more the gender gap will narrow. So, here's to women inventors - may we know them, may we be them, may we celebrate them."

Elinora Inga Sigurdardottir - CEO Elás ehf Royal Natural & founder and chairman KVENN

Female Founders by City

The highest share of female founders in Europe is registered in Kiev (25.5%), followed by Vienna (22.7%) and Brussels (20.6%) for large ecosystems. Regarding small-medium ecosystems, Sheffield (21.3%), Gent (20%) and Luxembourg (19.9%) are the top 3 cities in Europe for women entrepreneurs.

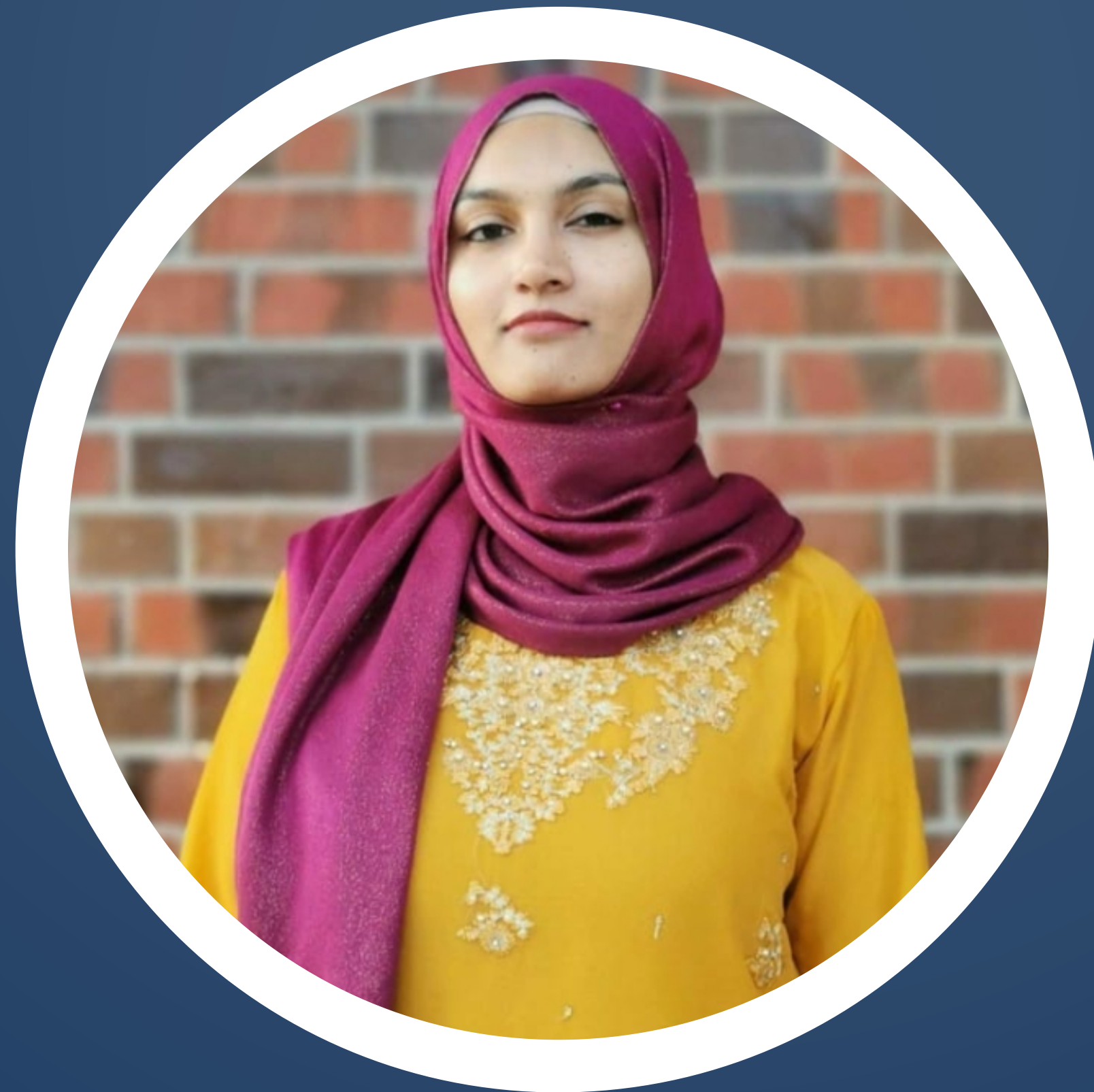
Diversity in the founders' population is a key factor for openness to new and multifaceted ideas. And the presence of female founders in startups is a good indicator for a more inclusive and gender-balanced society.



WWW.STARTUPHEATMAP.EU

Source: Startup Heatmap survey 2023 (the population data consider the metropolitan area. Only cities with at least 30 respondents have been considered for the calculation).

 [Download data](#)



"Enabling access to the labour market and providing a platform for innovative businesses from entrepreneurs with super-diverse backgrounds is pivotal for current state of the EU.

Startup ecosystems need to create pragmatic and accessible solutions to include more BIPOC founders into their programs. For this very reason, I started The Migrant Accelerator."

Laila Zohaib - Managing Director @ The Migrant Accelerator & Investor Relations Manager @ Startup Campus 0711

PART III: OPEN STARTUP ECOSYSTEM & SUSTAINABLE GROWTH

Ecosystem Success Strategies

How To Win in an Open Ecosystem



Who is the winner? Who are winners? Is Europe winning the startup growth challenge?

In the Open Ecosystem view there is not a single winner, but a multitude of regions taking part in the startup journey. Startups often face challenges and uncertainties during their developing phases: growing, accelerating and scaling-up. Ecosystems need to provide services and infrastructure to support startups in each single phase. To foster an environment of collaboration and innovation, it is crucial to encourage knowledge sharing, networking, and cross-sector partnerships, creating opportunities for startups to access resources, mentorship, and funding.

Startups Blur Regional Boundaries

Ecosystems can relate to startup processes in multiple ways. Some founders who start out in a city will move away but new ones might move in, while others only pass through, maybe staying only for the period of an acceleration program.

For both policy-makers and investors, it is important to not cling to the idea that founders will remain in the same location all the time. To grow an ecosystem means also to find ways to leverage all sorts of relations with startups moving through the open ecosystem. It means that also policy-makers and investors need to move, adapt and create coalitions with international partners that will help them to adequately serve the needs of hyper-connected startups passing through their region. This is not a nice-to-have, but a must for regions who want to grow unicorn-ecosystems.



Own chart, based on: Schmidt, et al. Open region: Creating and exploiting opportunities for innovation at the regional scale. *European Urban and Regional Studies*, 2018.

Open Ecosystem Strategies for Regions

Focus on Growing New Entrepreneurs

Ecosystem who want to focus on the initial part of the journey and help founders to form strong business ideas should:

- Foster entrepreneurial universities
- Train talent in different disciplines
- Encourage entrepreneurial experiments
- Center around physical places to mingle

Regions excelling in this strategy will not see many unicorns headquartered in their cities, but they benefit from an increase of creativity, develop entrepreneurial skills in their workforce, attract corporate R&D centers, raise public funding, and will see philanthropic returns of investment by entrepreneurs that give back.

Double Down on Accelerating Startups

To help early-stage startups gain first traction, ecosystems should:

- Be home to a vibrant scene of support organizations
- Create pools of local seed capital
- Integrate links to other ecosystems
- Keep in touch with role models
- Experiment with alternative financing models

As a benefit the region will see increased collaboration of their SMEs with startups, a higher uptake of technology, the creation of jobs in offices of startups that passed through, as well as financial returns from seed investments and likely an increase of brand visibility in international business networks.

Invest in the Boosting of Scale-ups

To supercharge their growth potential, ecosystems should:

- Attract world-class talent
- Increase industry leadership
- Don't compromise when it comes to Venture Capital and Growth
- Focus on internationalization

The competition in this strategy is unforgiving, as only very few regions in the world reach the status of a global Venture Capital destination. In turn these places see massive income from taxes and the creation of a world-class managerial talent pool able to create unicorn after unicorn.

European Startup Journeys

Start at a top entrepreneurial university outside of big centers

Move on to a top accelerator in 2nd tier cities

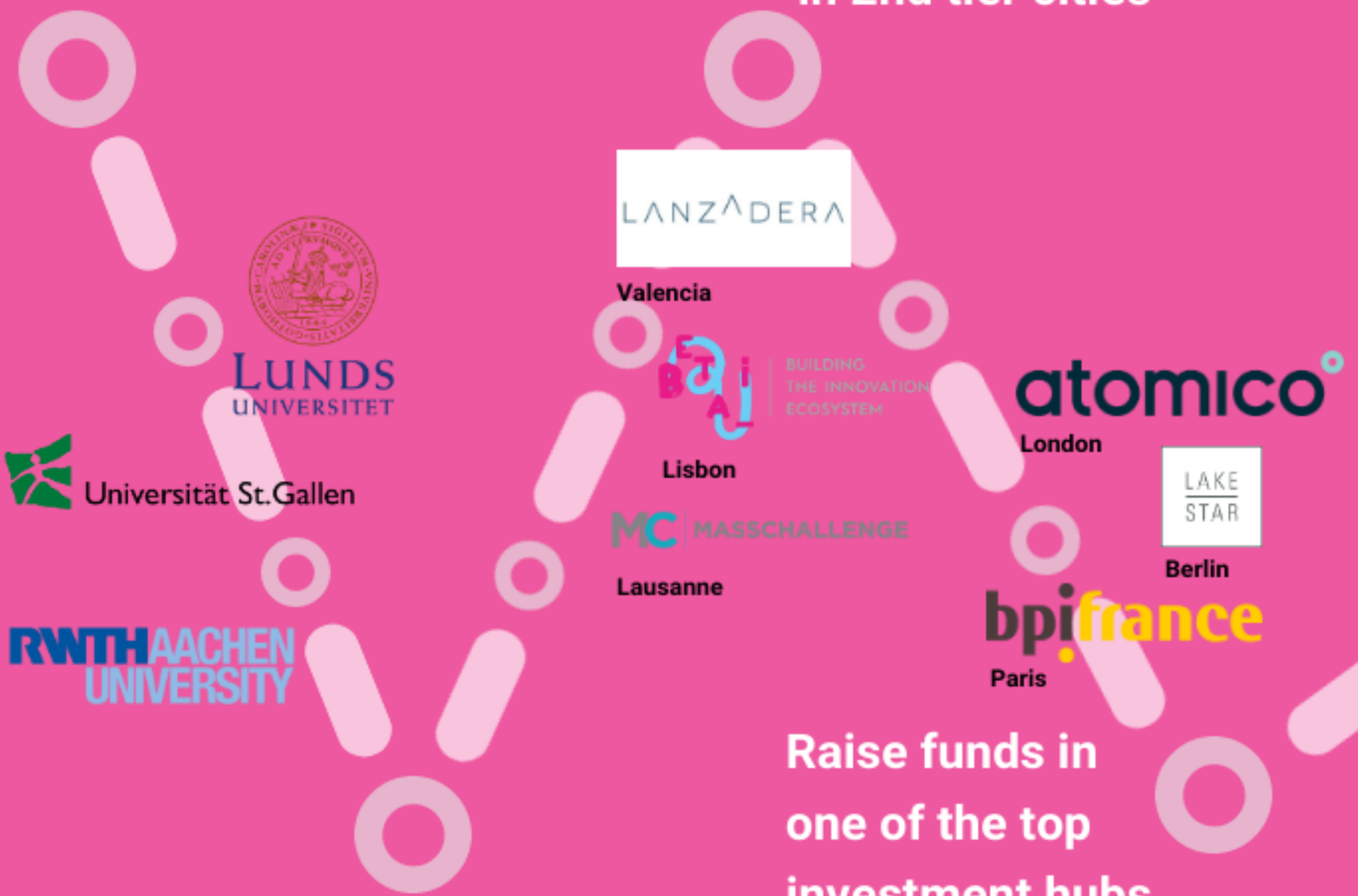
Transnational Scale-ups re-invest in all ecosystems

Different places can have different kinds of benefits along the startup journey.

Startups are born in locations with top universities, but need to move away to test their business cases to slightly larger 2nd tier cities and finally to raise funds they will move to financial centers. However, we see startups growing and re-investing in all regions they touch.

Raise funds in one of the top investment hubs

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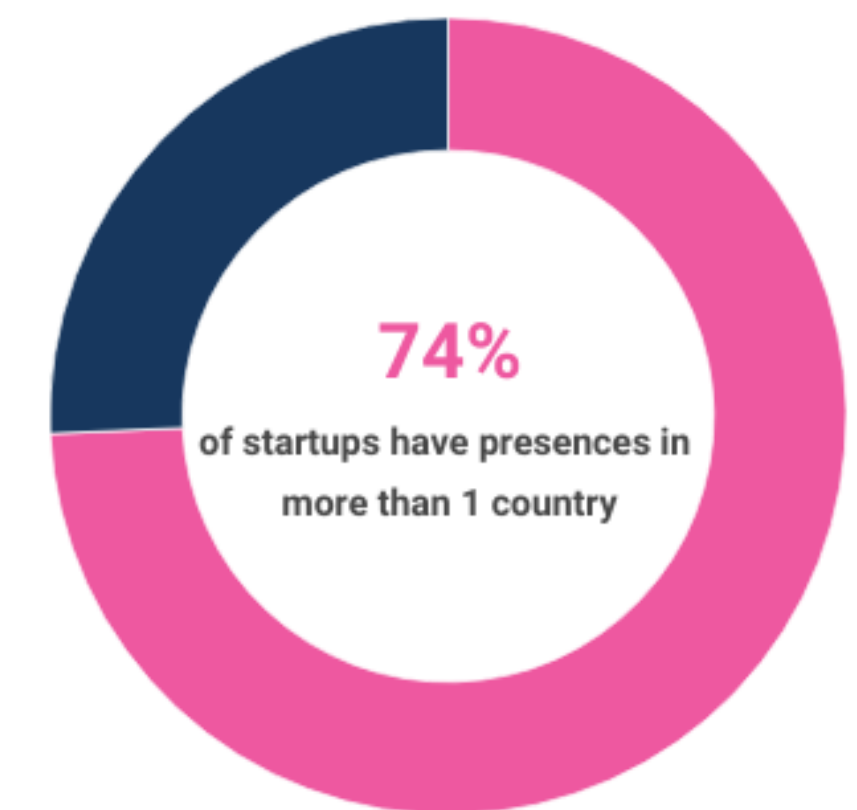
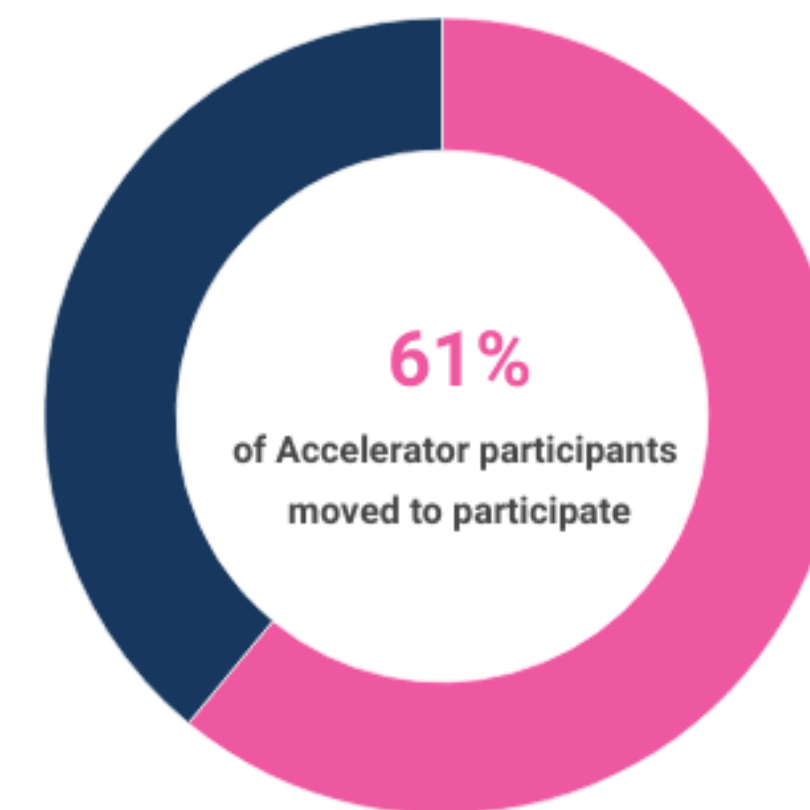
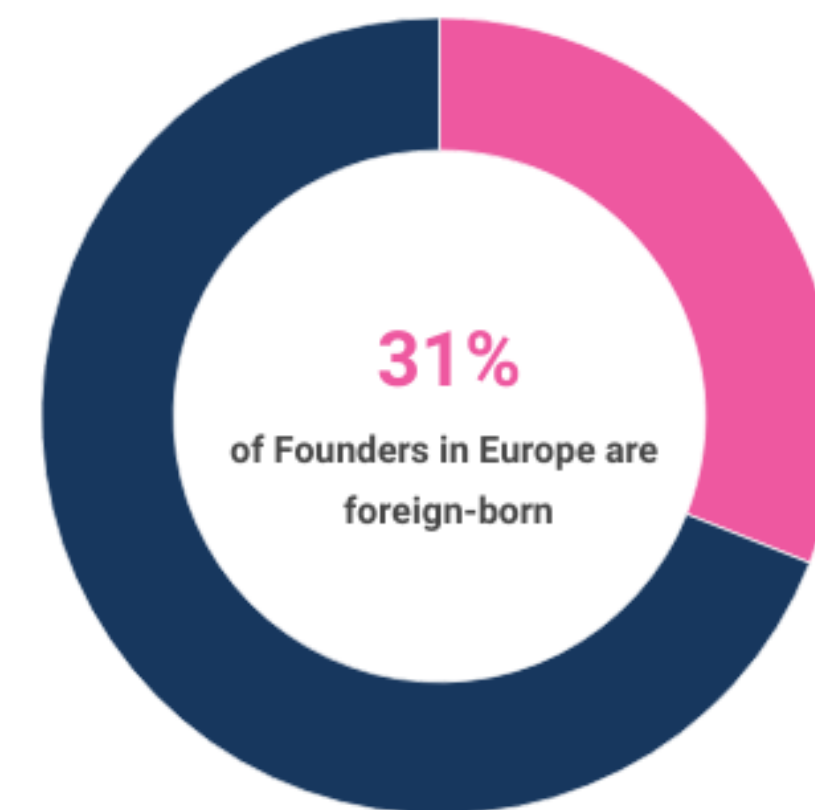


"A USP and added value of Europe is the variety of its different regional ecosystems and their smart specializations. Europe's opportunity would be in bringing together these diverse highly specialized ecosystems and offering a program or means for this increased proximity in collaboration. By breaking down barriers and promoting cross-border cooperation, Europe can unlock its full potential, attract global talent, and compete on a global scale in the rapidly evolving landscape of technology and entrepreneurship shaping the green and digital transition."

Pavlina Vujovic - Start for Future (SFF) Open Alliance for Academia, Startups, Industry and Public Organisations

Startup Mobility

Early stage funding often involves mobility between countries. On the one hand, entrepreneurs often move between countries. A solid third of founders is foreign-born . On the other hand, startup teams often relocate to participate in accelerator programs that are the best fit for them. Here the number is even higher, with almost two thirds of startups having moved for accelerators in the past years.



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Source: Startup Heatmap Survey 2023.

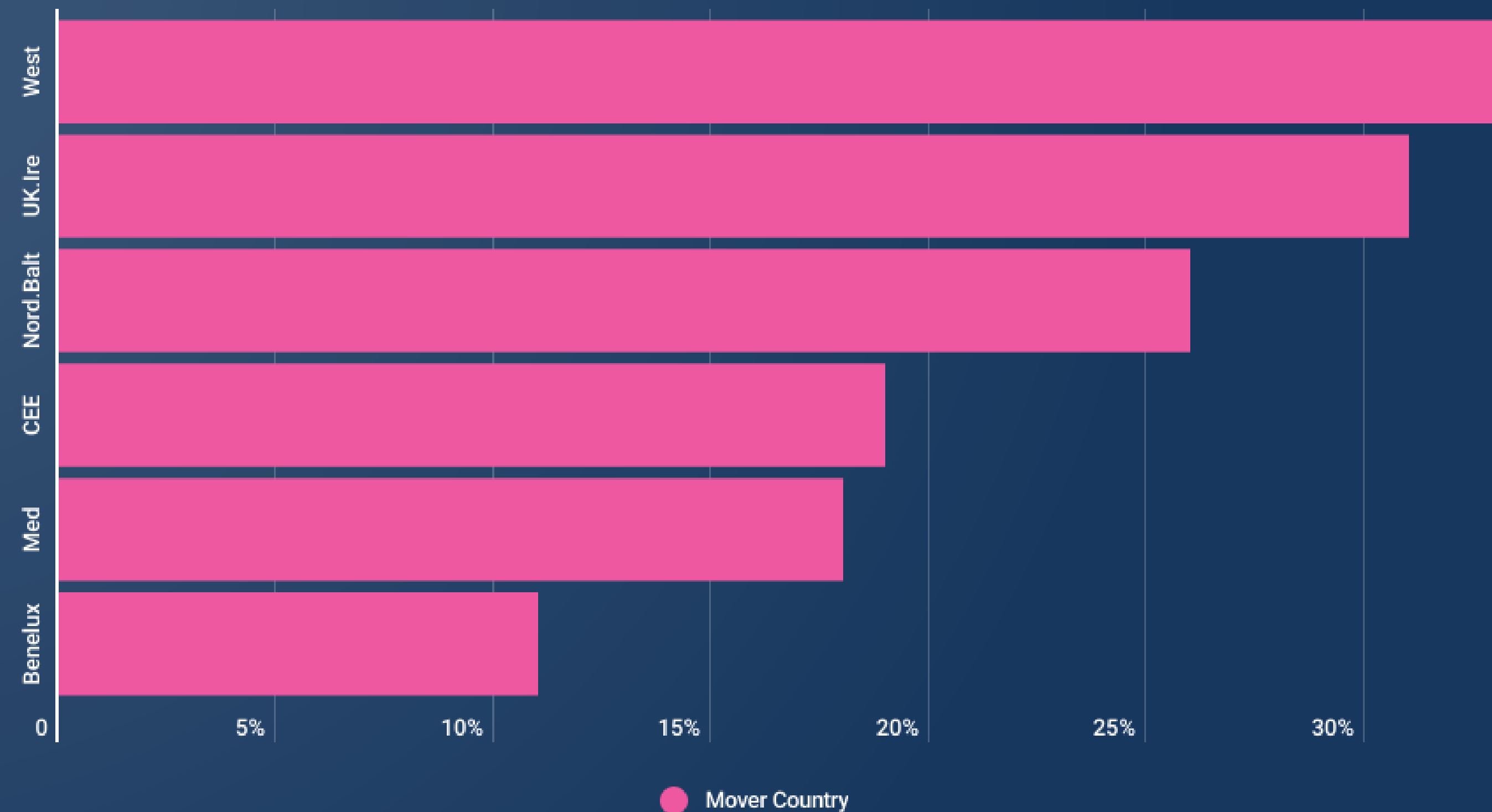
 [Download data](#)

Founder Migration

Who Moves the Most?

The highest founder mobility is recorded by founders coming from Western Europe (Germany, France, Switzerland, Austria) with 33% of founders living abroad today. However, almost all regions have a strong mobility of founders, which is also consistent with the results of previous surveys. Founder mobility does not depend on countries' specificities, but is an important reality of the European startup ecosystem.

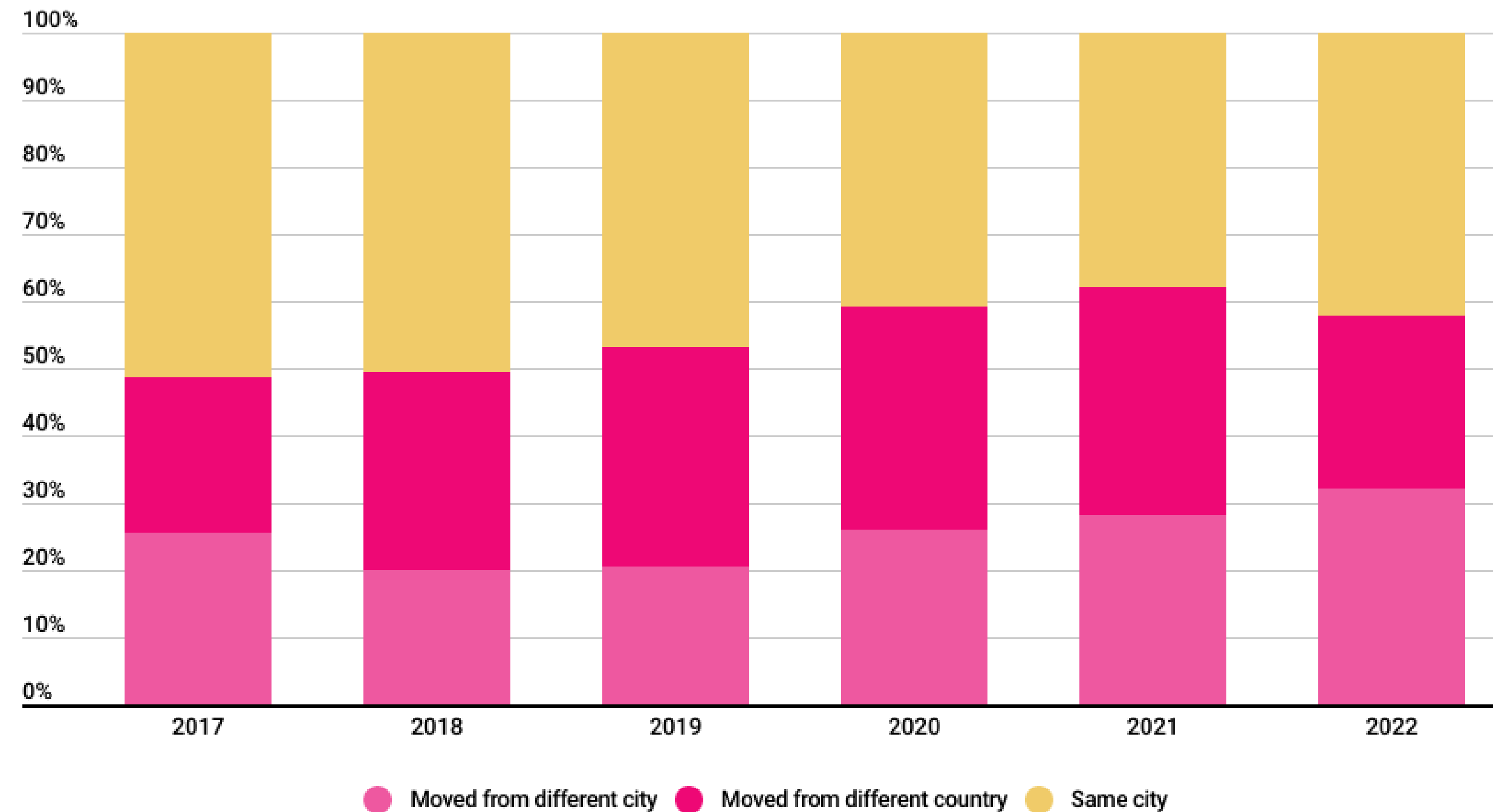
Who Moves the Most? Share of Founders Who Moved by Origin



Source: Source: Survey Startup Heatmap 2023



Non-Local Accelerator Participants over Time



An Increasing Share of Founders Move to Participate in Accelerator Programs

Over the years there is a clear tendency for startups to move to participate in accelerator programs. Despite a little increase of same-city participation in 2022, the majority moves between cities, with about one quarter of startups even participating in accelerators in different countries. This indicates the important role of accelerators to interconnect ecosystems.

Source: Startup Heatmap Europe survey 2023.

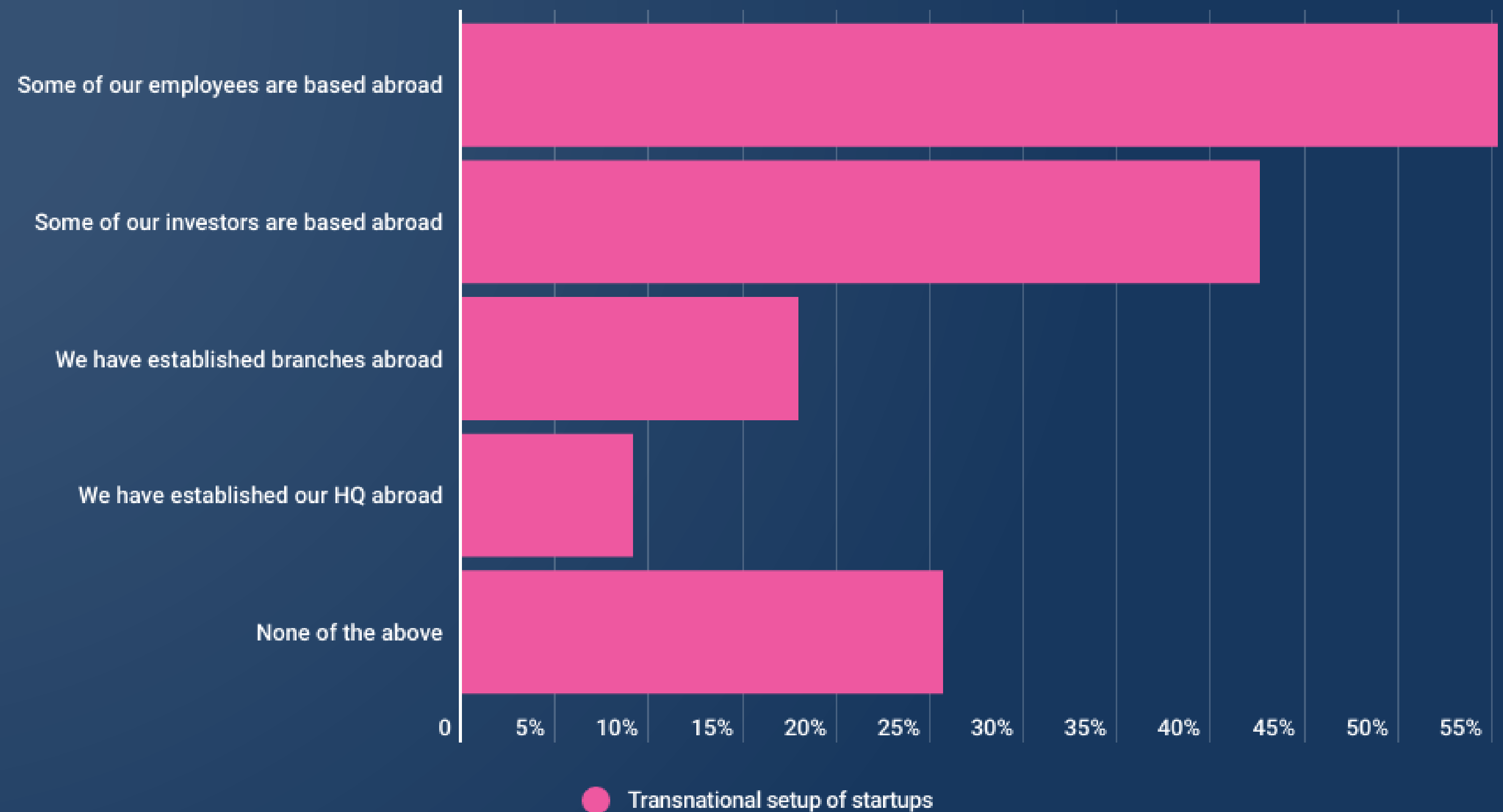
[Download data](#)

Transnational Setup

Three in Four Startups Have a Presence in More Than One Country

Overall, the share of startups with a transnational setup has reached 74% according to our survey. Startups especially connect to other countries for resources and opportunities. By accessing funding and hiring employees in multiple countries they create an ever tighter web of interconnections between the regions where they operate.

Transnational Setup of Startups in Europe



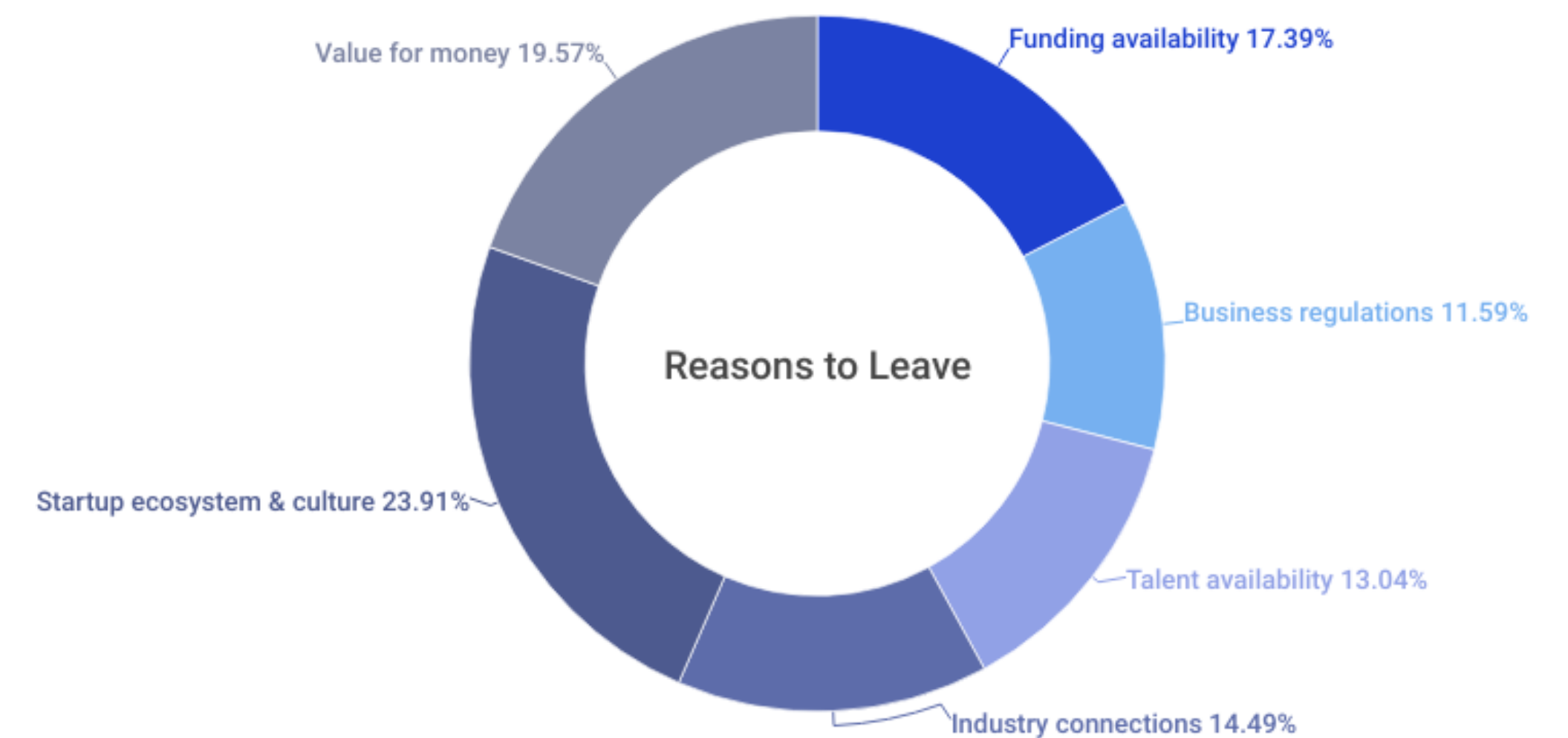
Source: Survey Startup Heatmap 2023

Founders Move for Different Reasons

Among the founders that relocate for starting a new venture, 33% were motivated by a lack of ecosystem and entrepreneurial culture. This shows that founders understand they need to be connected to the "real" startup world, where someone who dreams big is accepted and they feel appreciated and supported.

Another important aspect was value for money, which 27% identified as the most important reason to leave. In contrast, talent availability and business regulations were quoted less often.

Why Founders Move Away

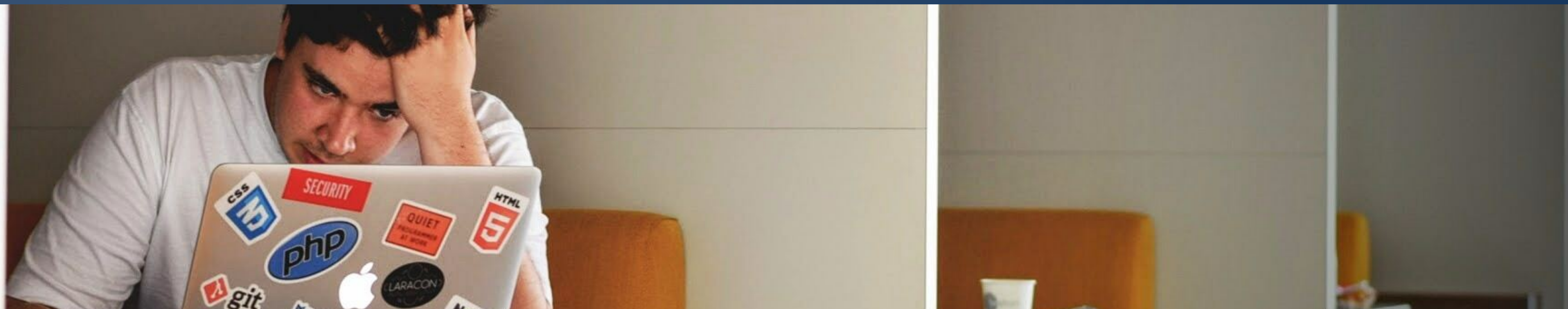


Source: Startup Heatmap Europe

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Strategy I: Growing Entrepreneurs

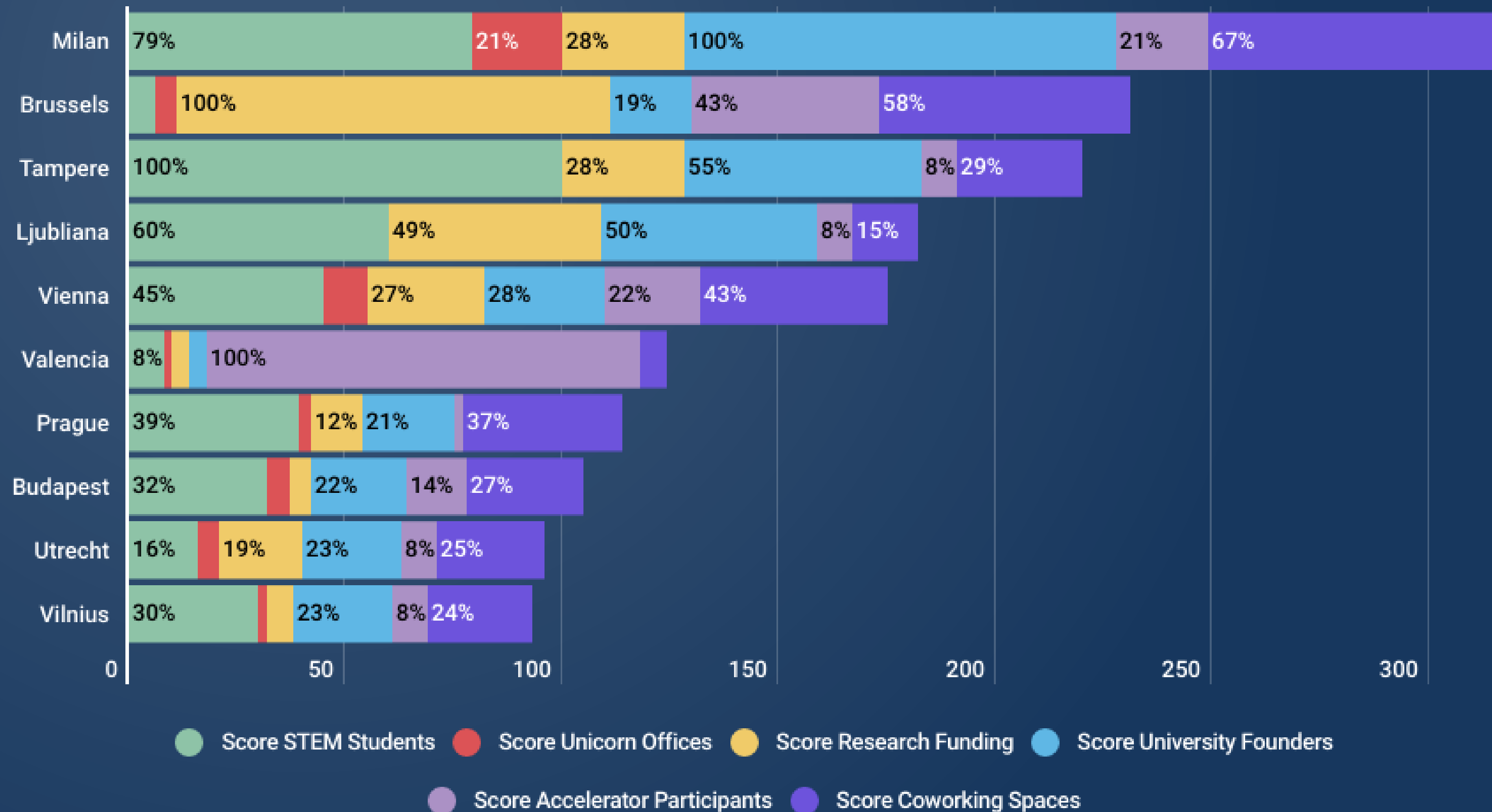


Open Region Ecosystem means teaching entrepreneurship, opening creative spaces and nurturing young firms no matter if they will become unicorns. All to enrich the local economy and infuse society with new ideas.

In an Open Region Ecosystem you can follow a strategy of growing entrepreneurs despite being a big hub. All to enrich the local economy and infuse society with new ideas. The objective here is not necessarily to become a unicorn ecosystem yourself, but to participate in global processes of transformation and identify opportunities to make use of technology and innovation for the betterment of the local economy, the environment and society.

For this ranking we identified six indicators mostly on per capita basis and excluded hubs with unicorn ecosystem status. All data in this section excludes cities with more than 1bn € VC investments on a three year average from 2020 to 2022.

RANKING: Growing Entrepreneurs - Cities Where Founders Are Born



Indicator 1:

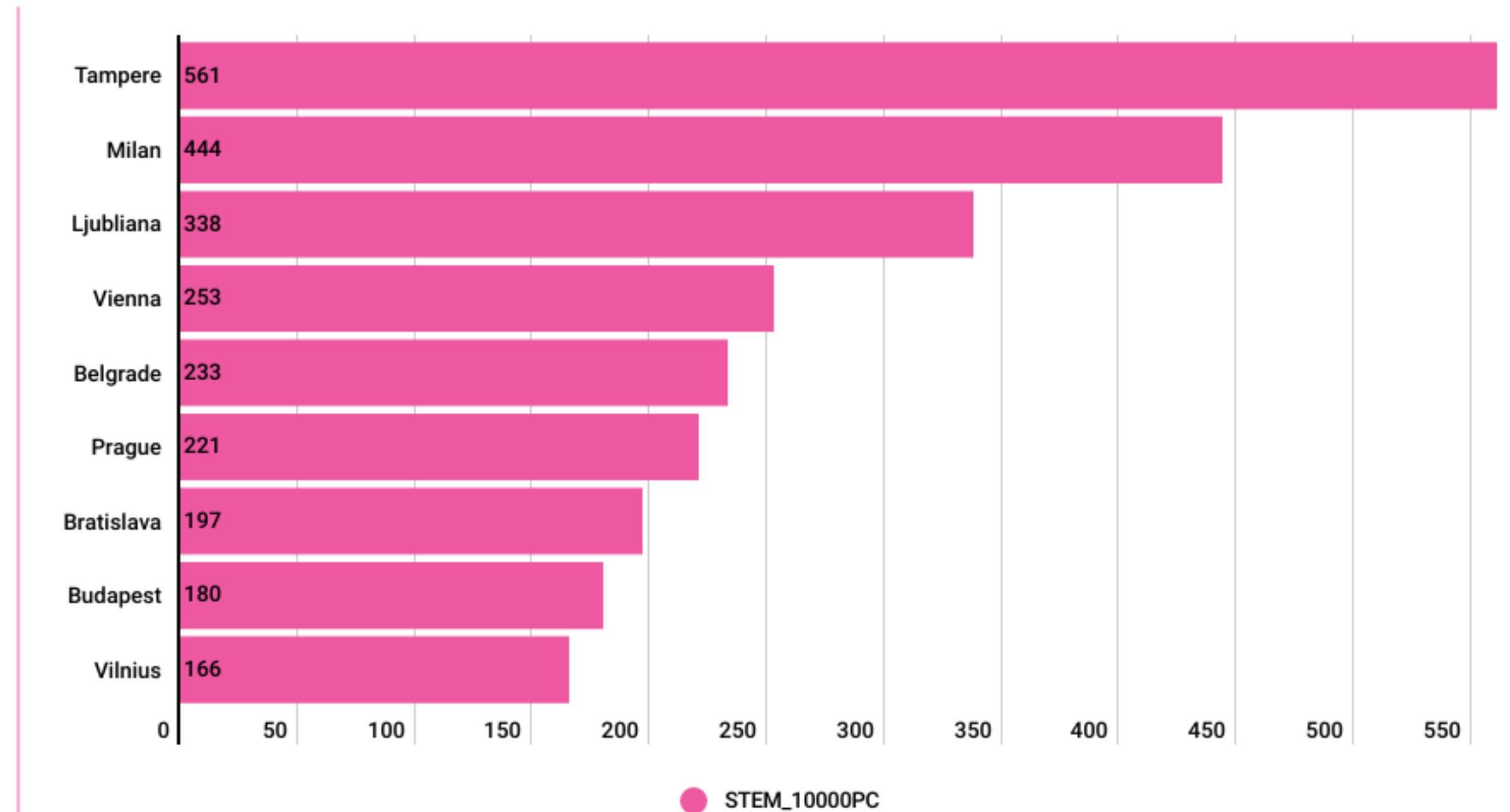
Size of the Knowledge Pool

Tampere Has the Largest per Capita Pool of STEM Students

As a first indicator we looked at Bachelor and Master students enrolled in STEM subjects based on the ETER database.

The technical knowledge pool is crucial to capture the world's latest trends and make them available for innovation in SMEs as well as corporate structures. An ecosystem following the first strategy, should ensure the creation of a strong STEM talent pool next to the business departments.

STEM Students per 10,000 inhabitants per city



Source: ETER

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Indicator 2:

Number of Co-Working Spaces

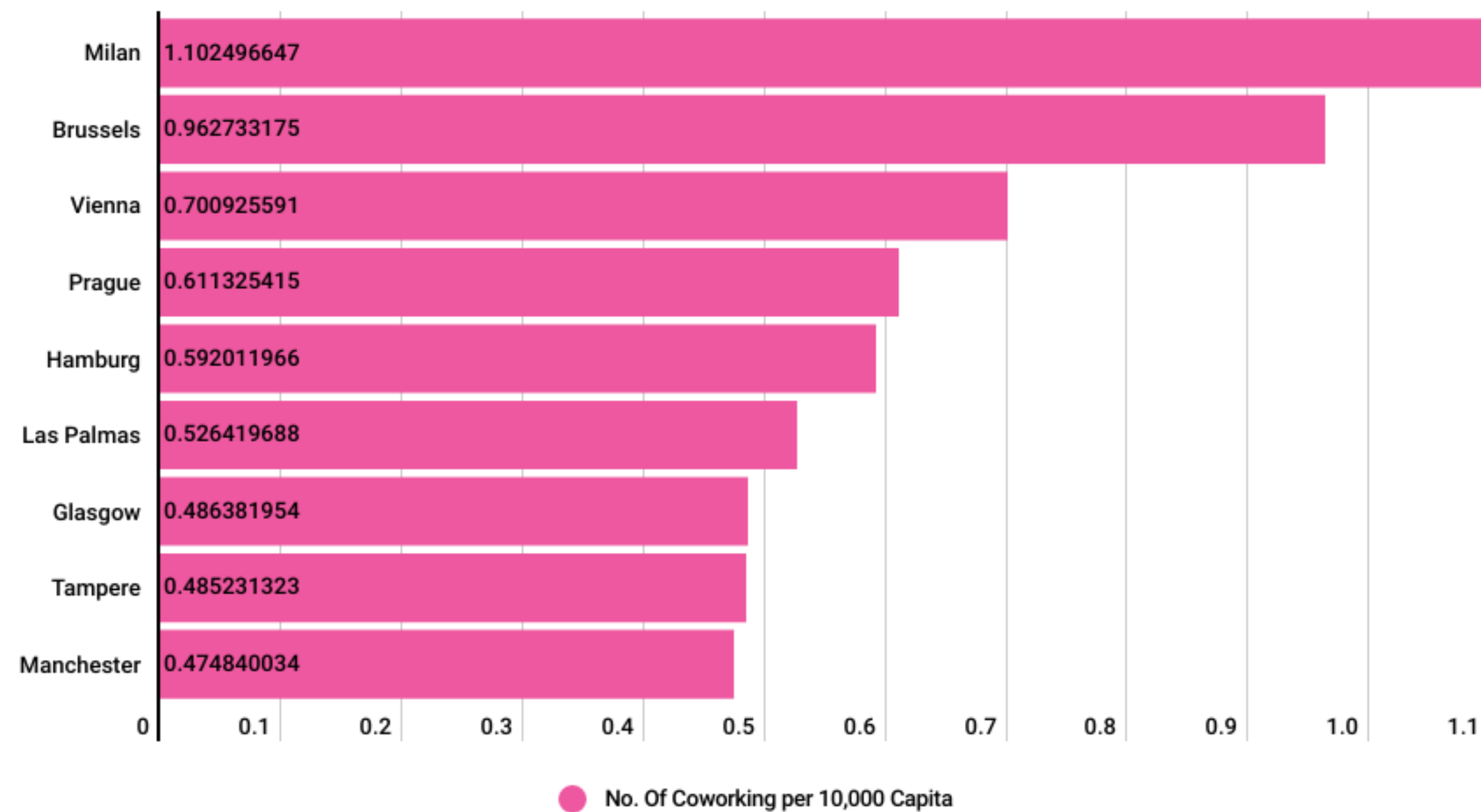
Milan and Brussels lead in Co-Working Spaces

Co-Working Spaces offer room for creatives to work on new ideas and experiment. They are not necessarily where unicorns are born, but hustlers and change-makers need them to thrive.

In the sample of non-unicorn ecosystems, big cities like Milan, Brussels and Vienna offer the most co-working spaces per capita. However, also locations for digital nomads like Las Palmas pop-up high on the ranking.

It is an important element of the growing entrepreneurs strategy to ensure the availability of such creative spaces in the ecosystem, so that ideas can grow.

Co-Working Spaces per 10,000 inhabitants per city



Source: Coworking.com

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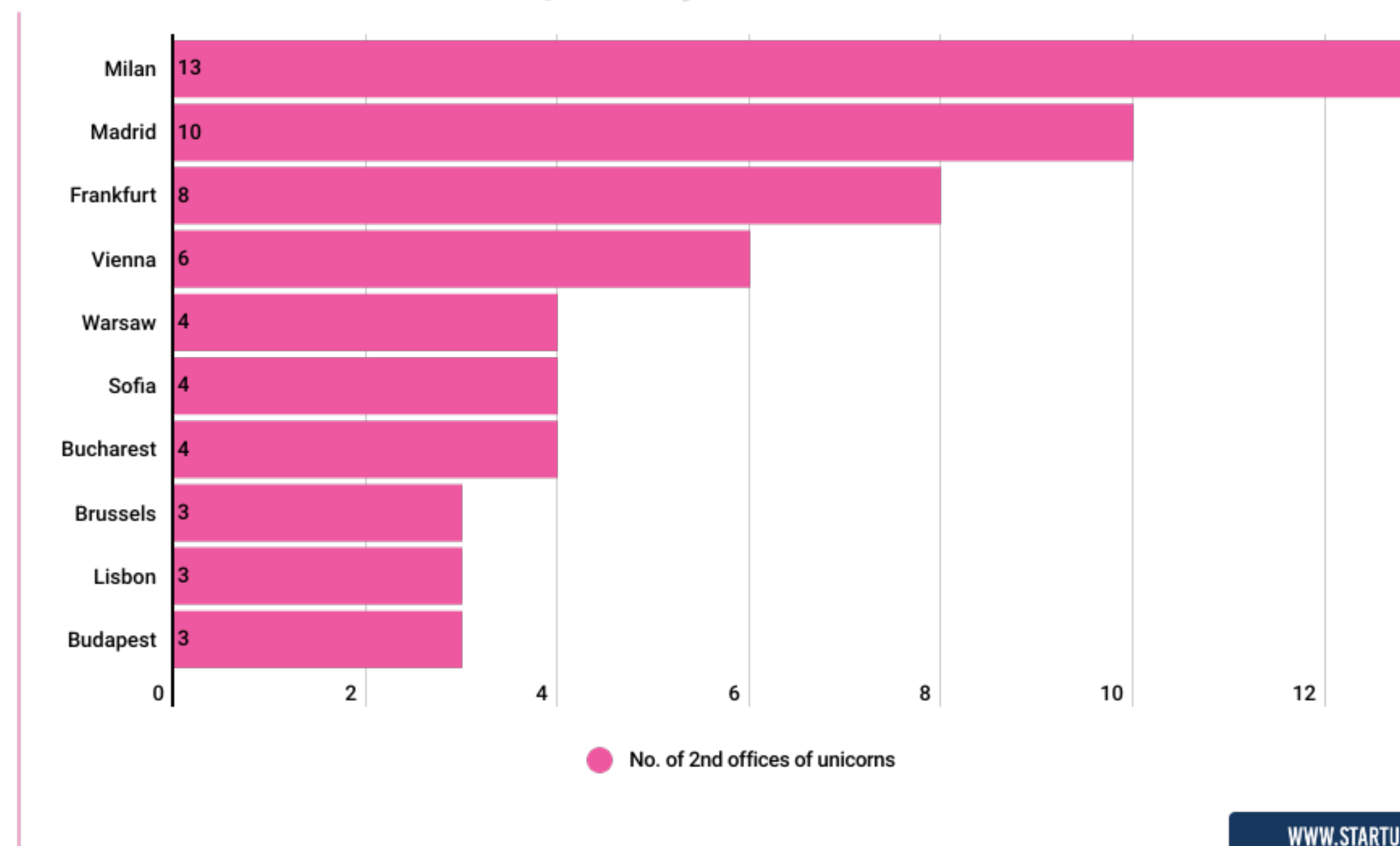
Indicator 3:

Access to World Leading Startups

Unicorns Breed New Unicorns

Where better to get a glimpse of the world of tomorrow if not in its most innovative companies? While a hub might not have its „own“ unicorn, definitely the attraction of 2nd offices of unicorn companies can be a way to import managerial talent from global startup centers and encourage local talent to start their own company.

2nd offices of unicorns per city



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Source: Crunchbase.com.

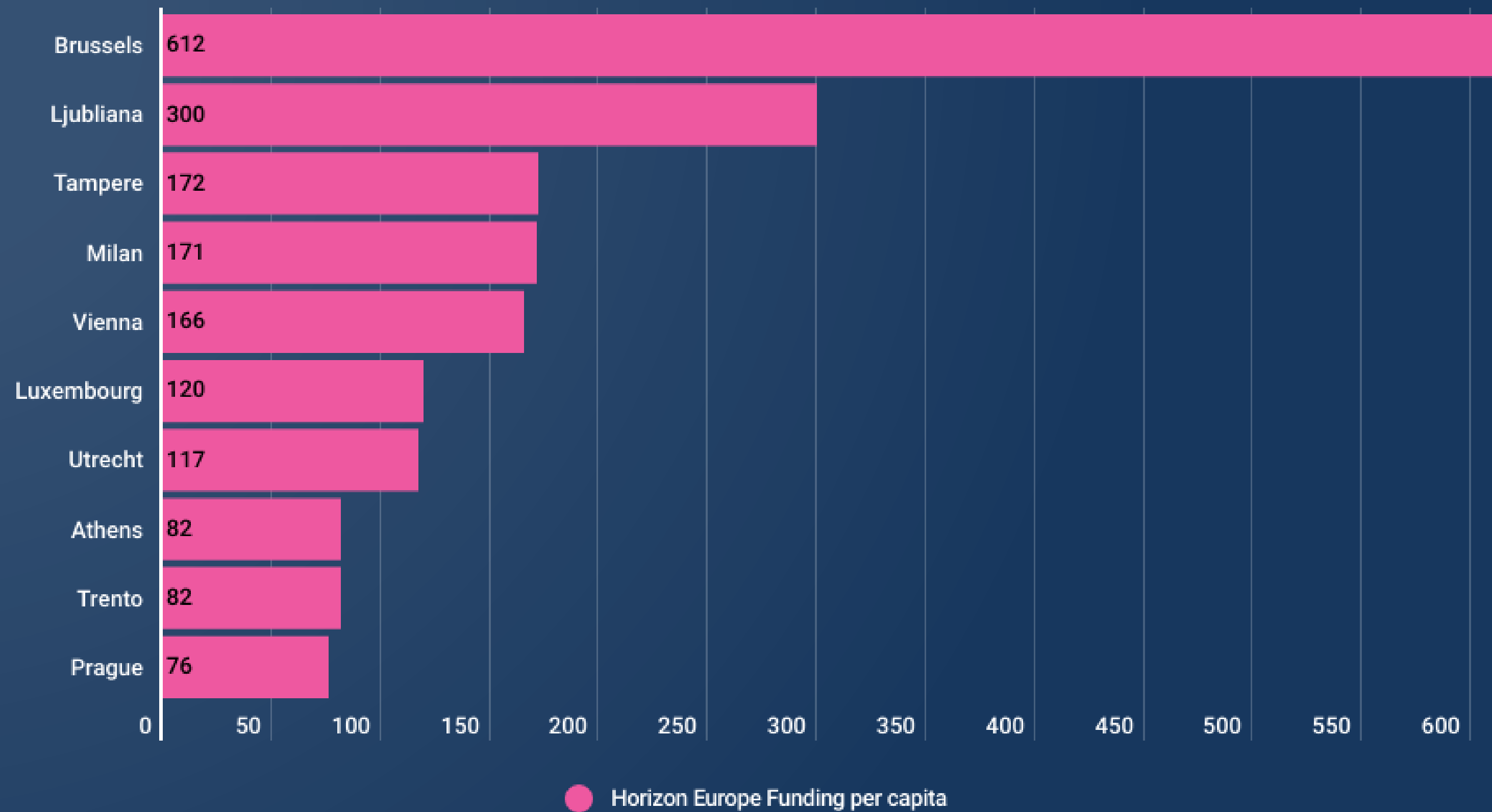
Indicator 4:

Access to Research Funding via Horizon Europe

Making Available Funding for Research & Innovation

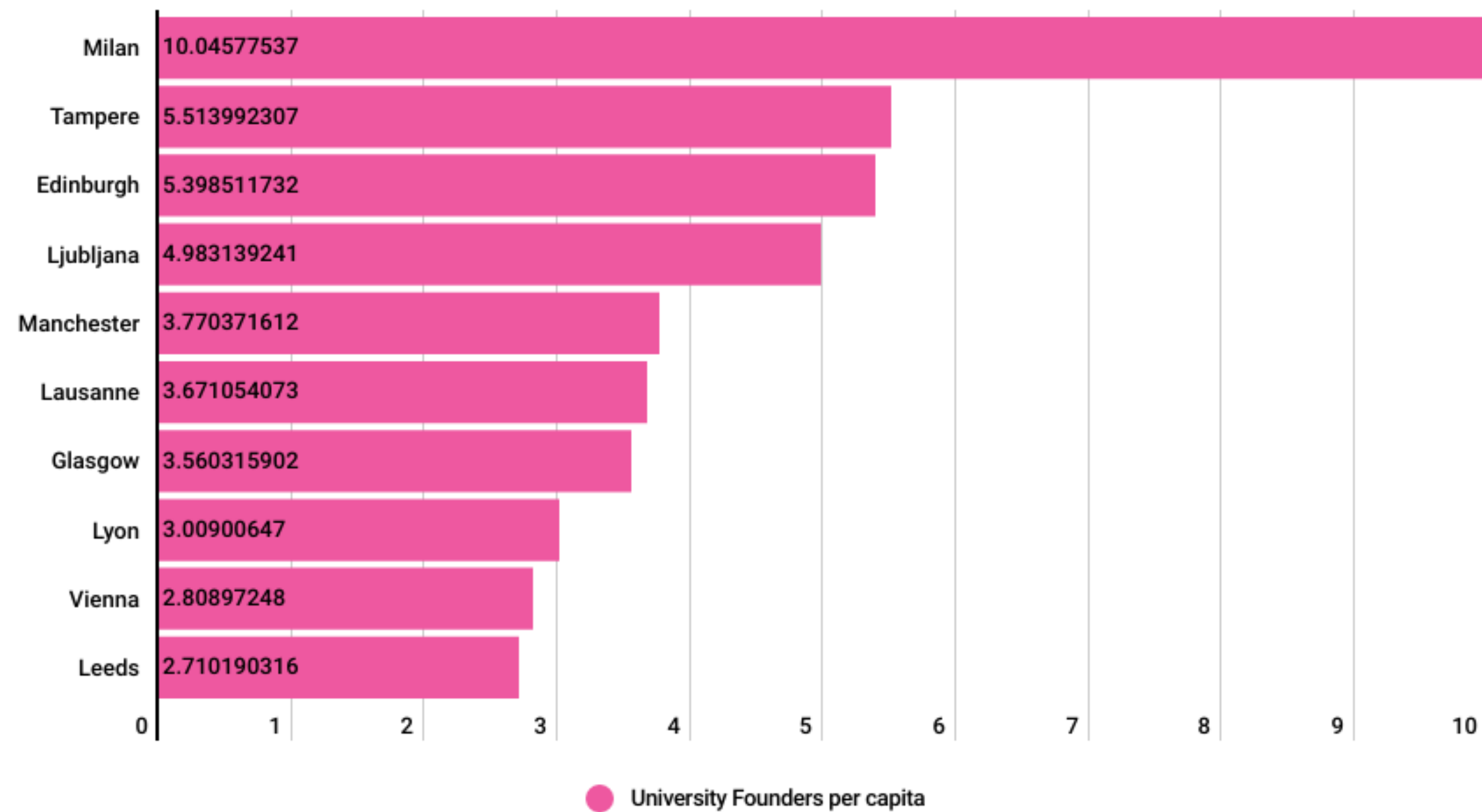
A lack of Venture Capital might impede the growth of unicorns, but local competitiveness, environmental innovation and attraction of talent can be enabled also through other types of funds. The Horizon Europe program offers an opportunity that many smaller hubs have learnt to capitalize on to grow their innovation ecosystem.

Horizon Europe Funding per capita



Source: European Commission

Number of University Founders per 10,000 inhabitants



Source: Crunchbase

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Indicator 5:

University-Linked Founders

University Hotspots Lead Knowledge-Driven Entrepreneurship

From Lausanne to Edinburgh, top university locations strive to commercialize scientific insights and transfer technology into society.

For ecosystems aiming to grow entrepreneurs the success rate of converting students into founders is an important indicator. Crunchbase identifies founder personalities all over the world and tracks their academic career. Here we see how many founders studied in each city.



"Munich's entrepreneurial ecosystem has developed strongly in recent years, in part due to the outstanding work of Munich's universities. Universities promote entrepreneurial thinking and action through tailored programs and courses, and prepare students to start businesses. They bridge the gap between academia and industry and facilitate technology and knowledge transfer, foster start-ups, and support co-creation with industry partners. They are the thought leaders of how to shape a sustainable future by systemic approaches that include all stakeholders of ecosystems."

Prof. Dr. Klaus Sailer - CEO of Strascheg Center for Entrepreneurship (SCE) of Hochschule München (HM)

Indicator 6:

Quantity of Accelerator Programs

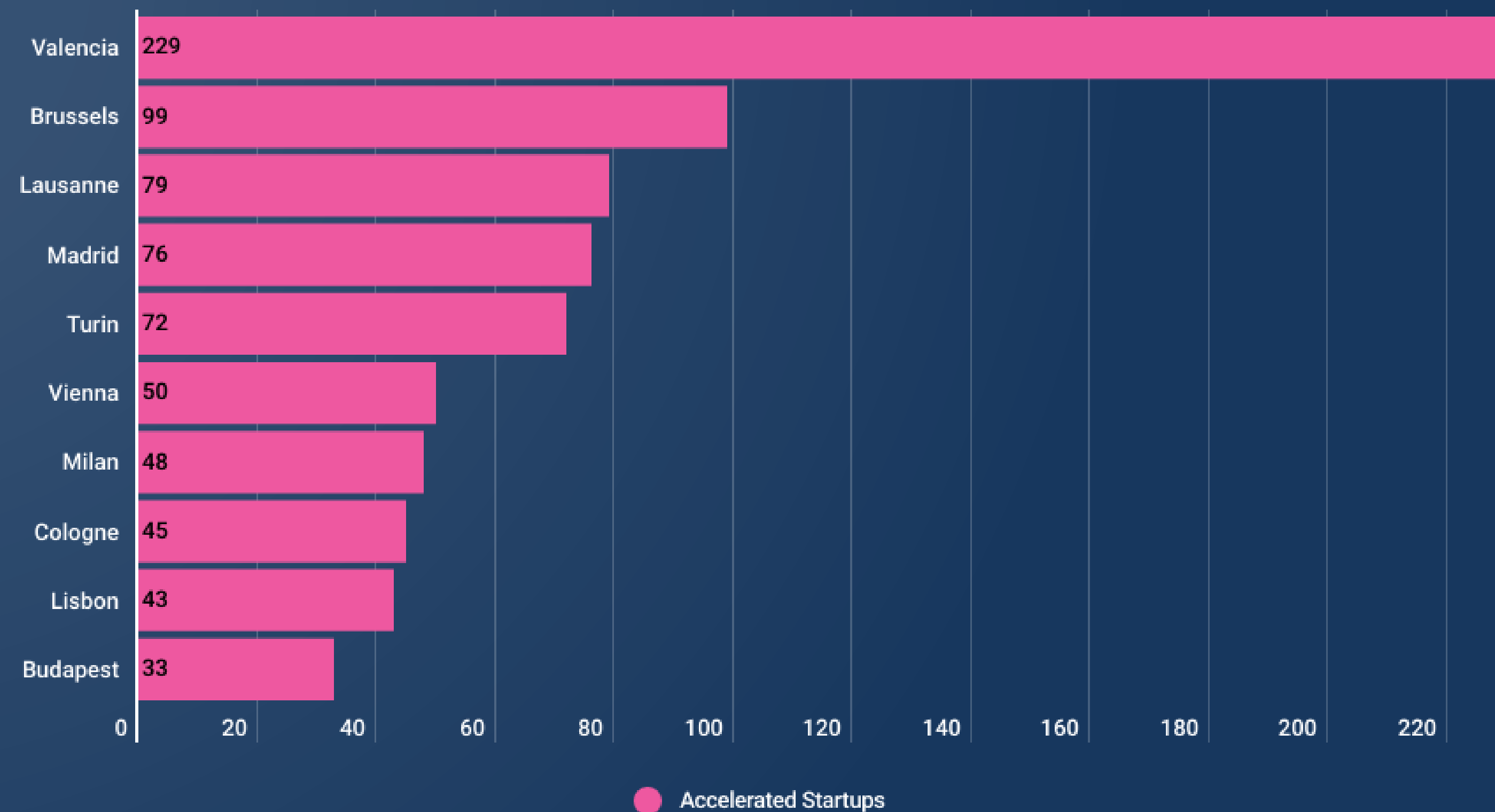
Valencia Accelerates the Most Startups

Sharing the startup spirit and lean methodologies might not be a guarantee for the attraction of Venture Capital, but encourages out of the box thinking of local talent and creates the basis for a transformation of the local economy with new ideas.

The number of startups participating in accelerator programs is based on the tracking of the >120 best accelerators across Europe for the year 2022.

Naturally, not all programs are covered and city to city comparisons can only be indicative of the actual extent of acceleration support available in each city.

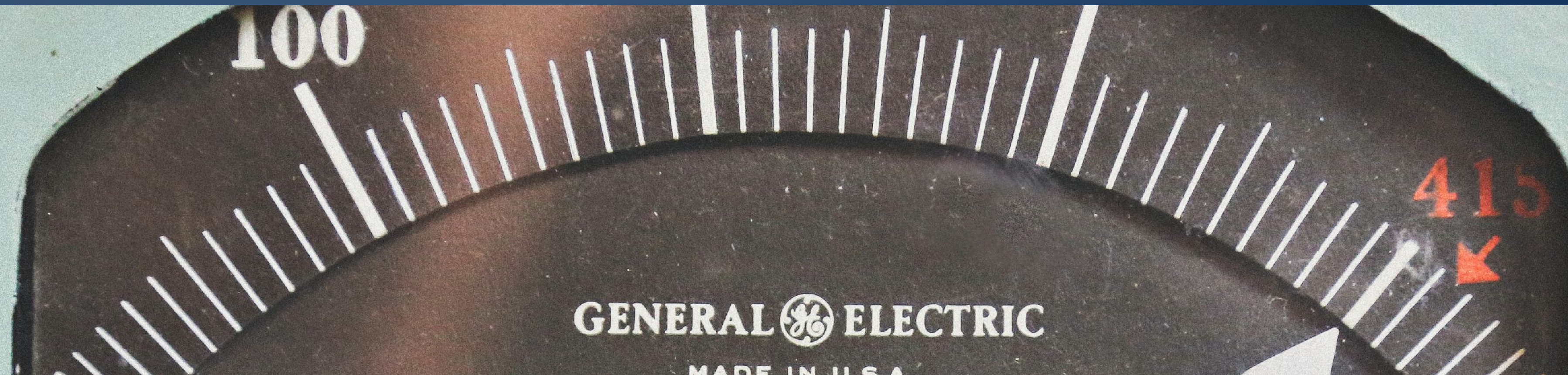
Participants in Accelerator Programs per City



Source: Startup Heatmap

 [Download data](#)

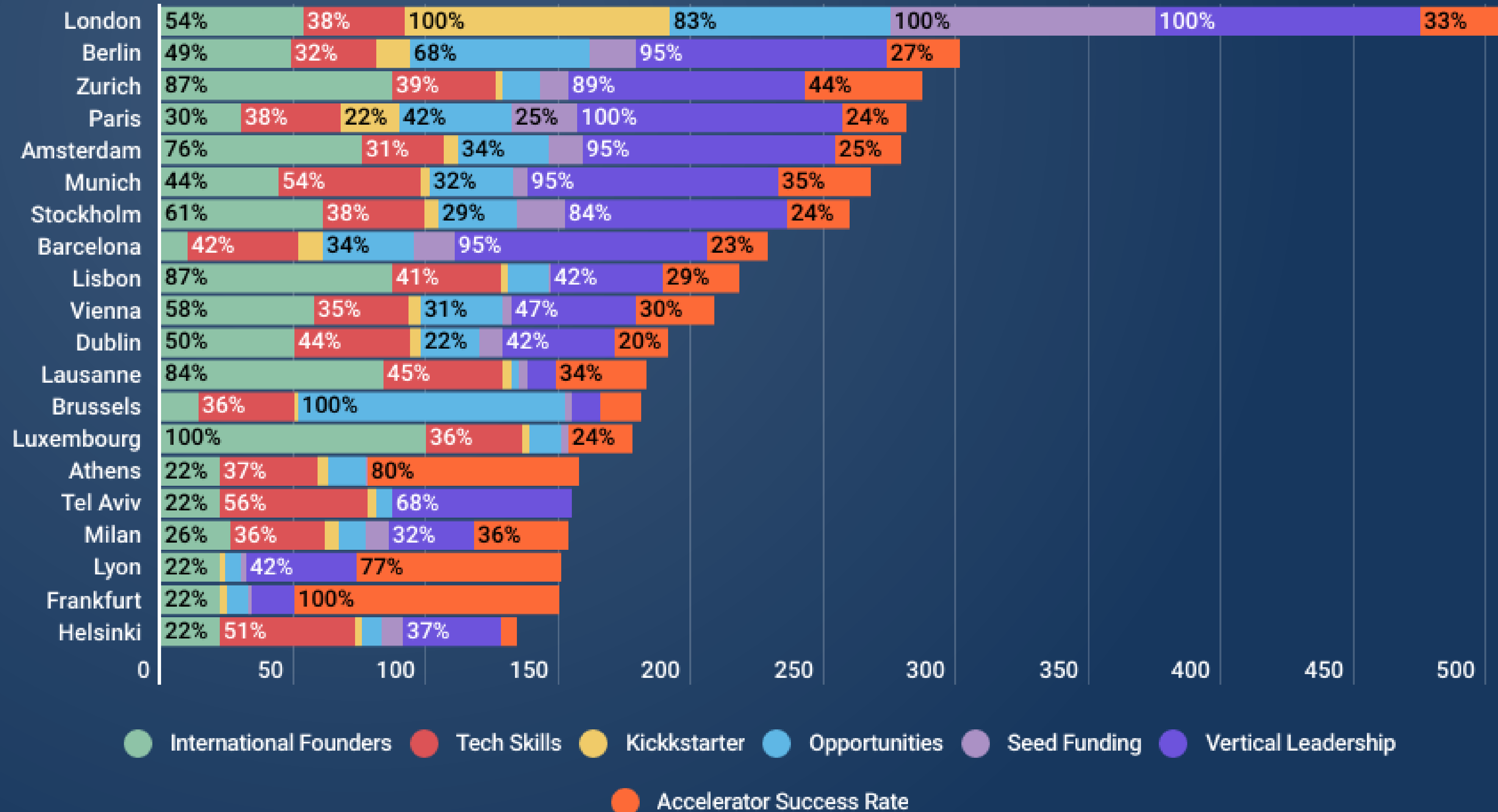
Strategy II: Accelerating Startups



The strategy of accelerating startups is attractive to many ecosystems who position to lure international ventures with unique value propositions often along a vertical specialization or a focus on a particular growth stage.

The „launch pad“ strategy promises fast access to corporate resources, pilot customers or seed funding. The local ecosystem in return gains access to innovative solutions and technical expertise otherwise not available in the region. Local SMEs and corporates keep a finger on the pulse of the world of innovation and while most startups will pass through and leave the ecosystem again after acceleration, sometimes there is a match and new branches with highly qualified jobs are created.

RANKING: Accelerating Startups - Cities Where Startups Grow





"Ecosystem building is vital for startups in Europe as it provides them with the necessary resources, networks, and support to grow and thrive. Accelerators play an essential role in this process by offering mentorship, training, funding, and access to potential investors and partners. They also help startups to navigate regulatory environments and scale their businesses. Also, more and more Venture Capital firms focus on ecosystem building and bring more platform support for startups."

Roehrl Thomas - Head of Ecosystem at RESPOND / BMW Foundation

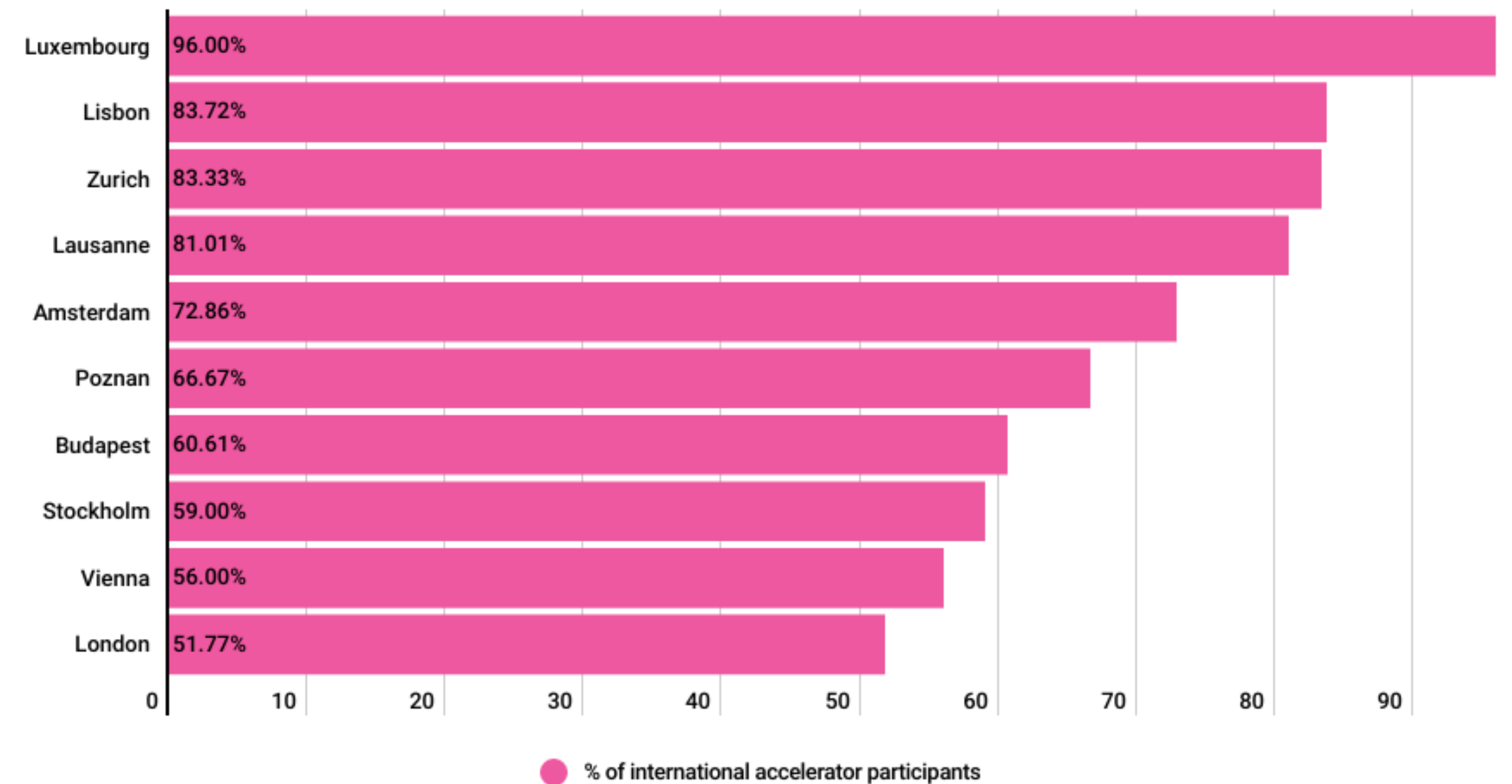
Indicator 1:

International Accelerator Participants

Top Accelerators Attract >50% International Participants

An ecosystem that positions as an accelerator of startups, does not focus on home-bred entrepreneurs, but emphasizes the attraction of international talent. Cities like Luxembourg or Lisbon show that an intake of 80-96% of international CEOs is possible, even if you are not a global economic powerhouse.

International CEOs participating in Accelerator Programs per City

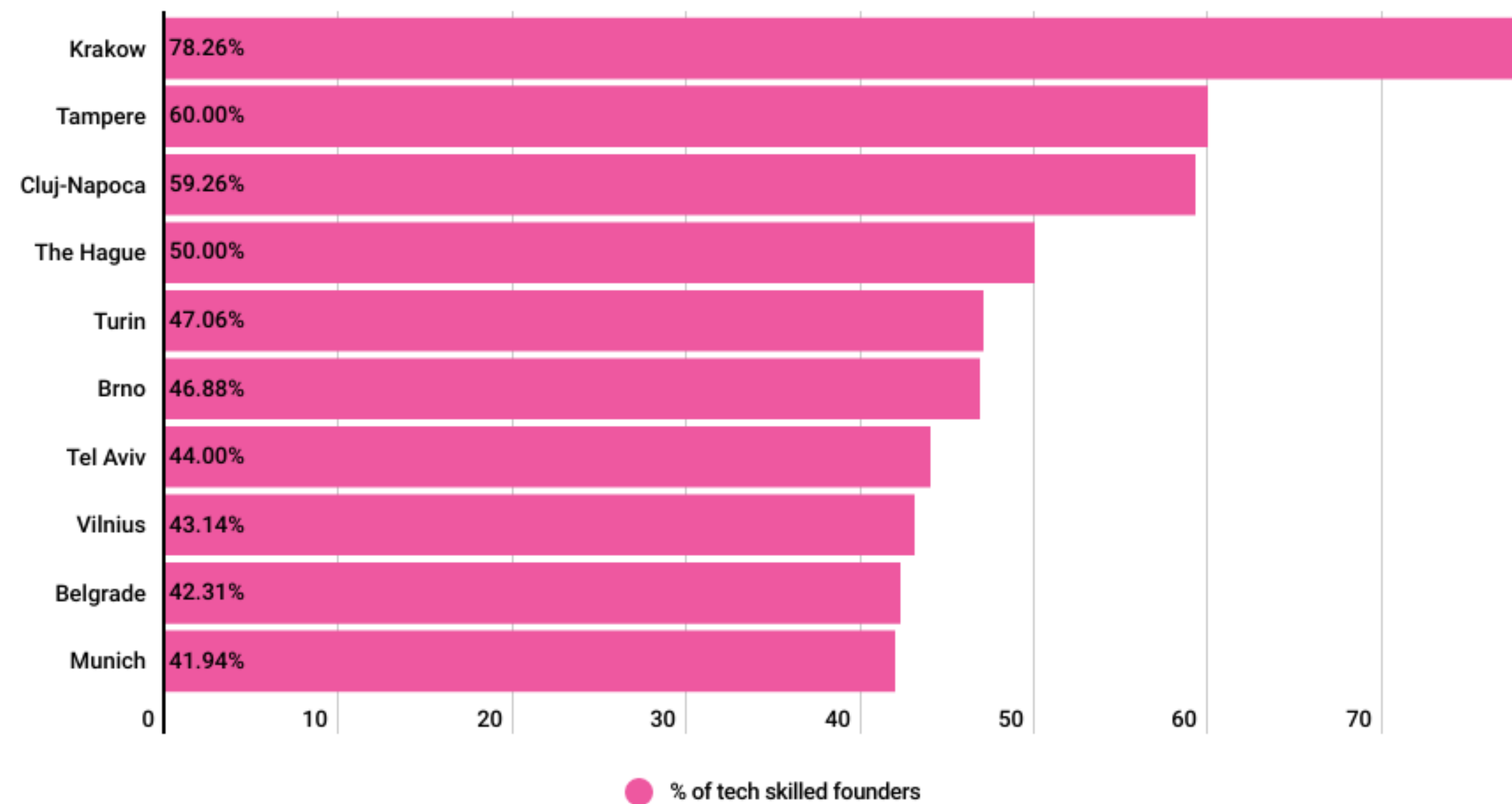


Source: Startup Heatmap

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 [Download data](#)

Share of Founders with Engineering Degree or Tech Skills



Source: Startup Heatmap

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Indicator 2:

Tech Skilled Founders

Tech Skills as a Key Differentiator

To be a successful accelerating ecosystem, the availability of co-founders who can code and build hardware solutions is key. International incoming entrepreneurs might have business insights and new product ideas, but not the tech skills to build the solutions. Helping them build an MVP allows startups to move to the next investment phase, but also increases the chance that the local hub will later on benefit from an engineering office of a future unicorn.

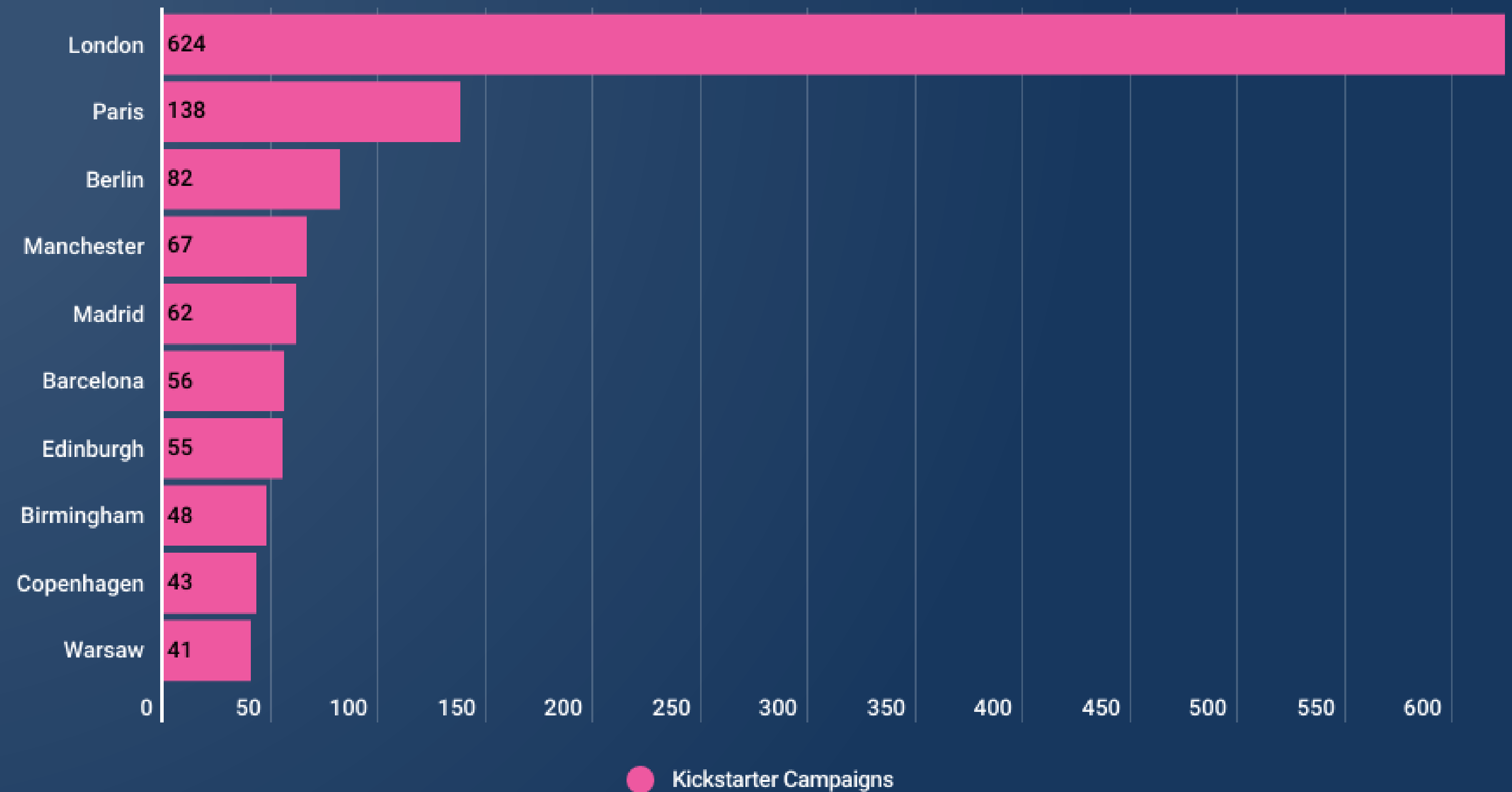
Indicator 3:

Kickstarter

Alternative Financing via Crowdfunding

Many regions still miss out on crowdfunding opportunities as a way of pooling funding in less developed VC markets. It could allow startups to bridge the first years until the market picks up their solution. Here we analyse kickstarter.com data, which can be only indicative of the plethora of crowdfunding platforms, be they equity or donation based, that have developed in Europe. Nevertheless, many countries have yet to adopt regulation allowing this form of startup financing.

Number of Kickstarter Campaigns per City in 2022



Source: Kickstarter

Indicator 4:

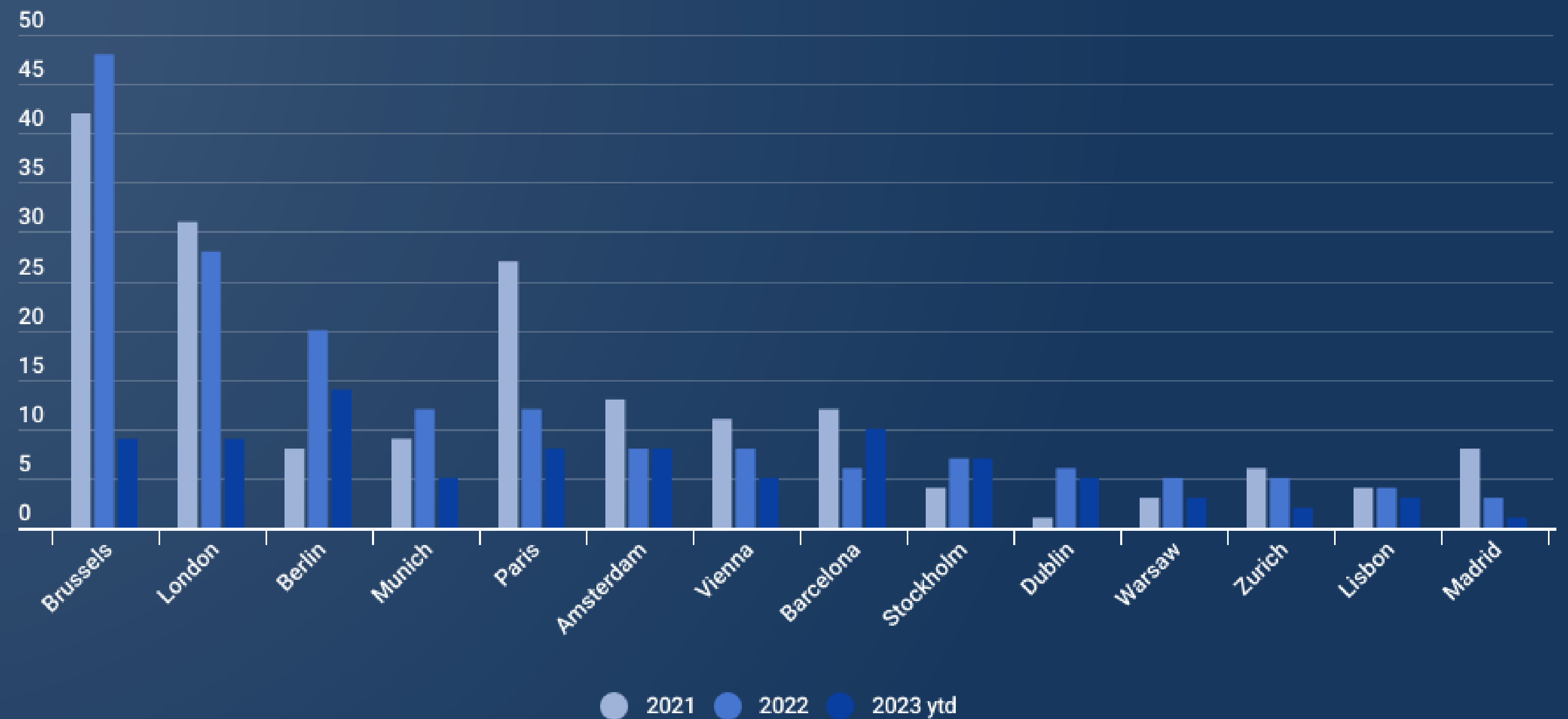
Startup Calls as a Fast Way to Growth

Ecosystems focusing on the acceleration of international startups must make it easy for their target group. Open Calls for startups that present opportunities to apply for funding or free services are a key instrument here. On the Startup Heatmap Platform we collect open calls per city that are published in English.

While the number of overall opportunities in Europe was unchanged between 2021 and 2022, some important regions like London and especially Paris saw a decline.

Quantity of Opportunities

Number of International Startup Calls per City over Time



Source: Startup Heatmap:

[View all opportunities](#)



"As a tech enthusiast, I've observed the UK tech ecosystem's remarkable growth, reaching a \$1tn valuation in 2022. Despite challenges, such as Tech Nation winding down in February 2023 due to government funding cuts, the ecosystem continues to thrive. Mixed reactions emerged, which I thought expressed concerns about losing a vital network, while others see opportunities for public and private sectors to support UK tech. London did somehow emerge as a global leader in start-ups and venture capital, and I'm eager to see the UK's continued dominance and future successes in the global tech landscape."

Christian Nwachukwu - CEO, 10mg Pharma

Indicator 5:

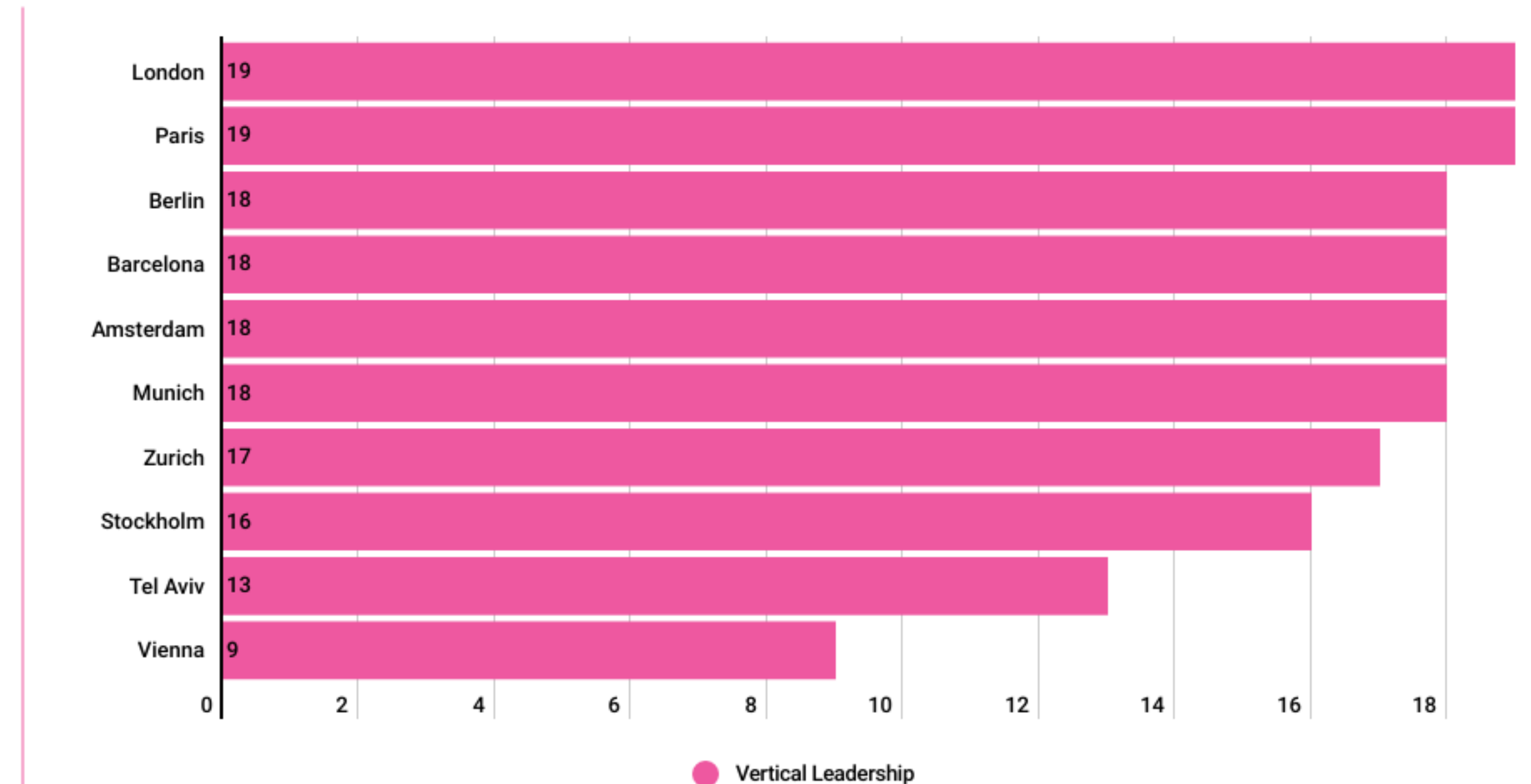
Top 20 Positions in Ecosystem Activity per Vertical

50% of Cities Make the Vertical Top 20

Ecosystems that want to attract founders, can benefit from a strong specialization that will ensure cross-border visibility.

In order to investigate the topic specialization of each ecosystem, we look at the events organized, news published as well as twitter chatter. Out of 116 cities analysed, 60% have at least one topic where they reach the Top 20. Only 9 hubs reach the top 20 of more than half of the topics. Therefore, we see a strong opportunity for topic specialization for accelerator ecosystems.

Leadership Positions in Technology Trends



Source: Startup Heatmap

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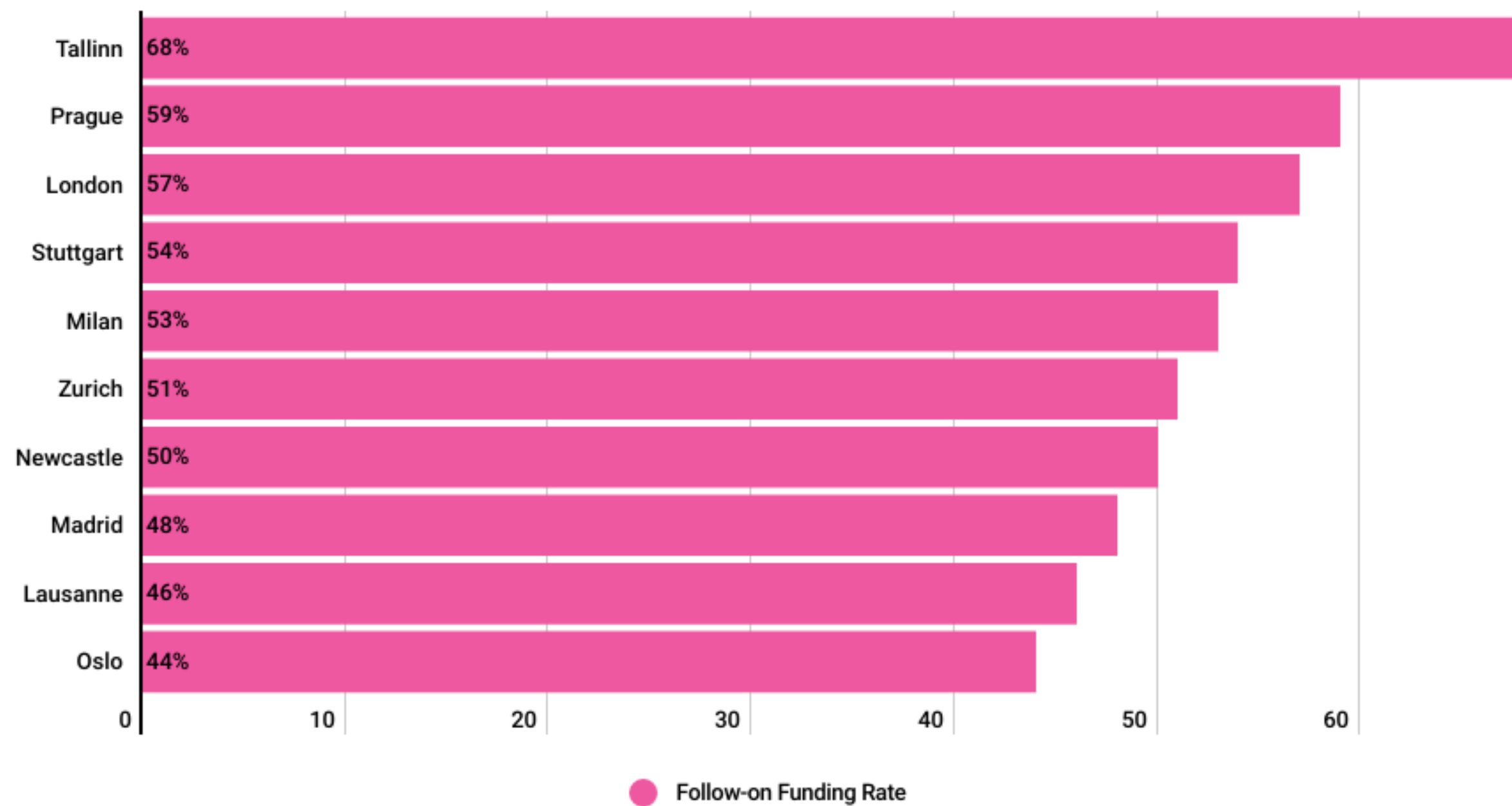
 [Download data](#)



"Barcelona is the birthplace of unicorns such as Glovo, Wallbox and TravelPerk, among others. Much of Barcelona's consolidation as a technology hub is due to 22@, an urban development project driven by public-private collaboration. This is also the path the city is following to position itself in the blue economy, gaming and health sciences sector, three key aspects to continue leading the economy of the future."

Xavier Güell - CBRE Barcelona

Follow-on Funding Success Rate in Accelerators



Source: Startup Heatmap

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Indicator 6:

Share of Accelerated Startups Raising Funds

68% of Tallinn's accelerated startups raised funds

Participating in an accelerator can be an important step for startups en route to the first VC round. However, there are significant differences between ecosystems regarding the chance of follow-up funding. While in Tallinn almost two out of three accelerated startups receive follow-up funding, other ecosystems only reach about on third.

As an ecosystem builder for the accelerating startups strategy, we must therefore ensure high quality acceleration and a good connection to seed capital.

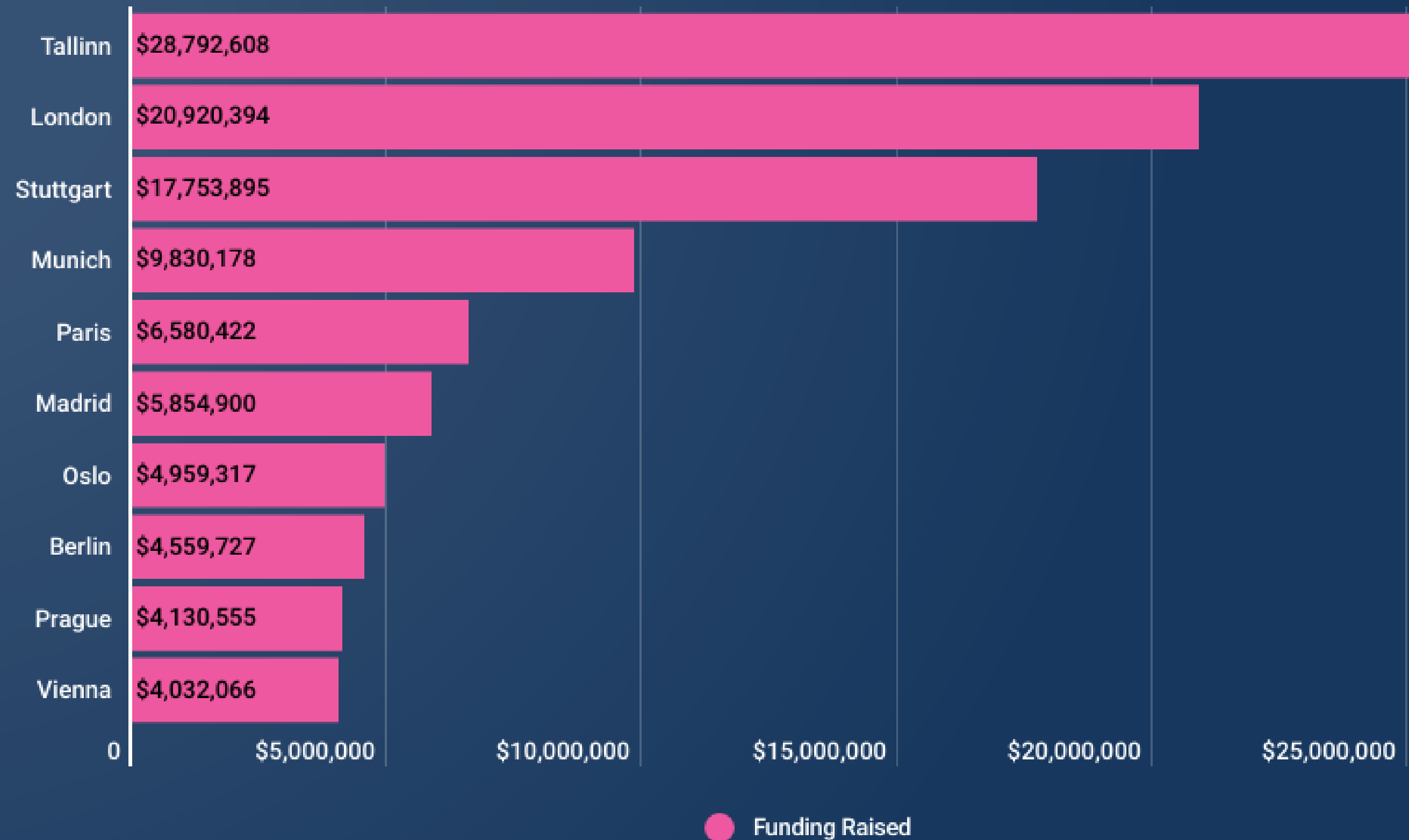
Accelerated Startups Raising Funds

Accelerators as Stepping Stones

The differences in follow-up funding of accelerated startups per region are even more pronounced for the amount of funding raised, which is highest in Tallinn, London, and Stuttgart.

What is striking is, that some smaller ecosystems manage to focus on the acceleration of more mature startups, which allow them to select the best performers, who also raise more funds than homegrown entrepreneurs.

Follow-on Funding Average Funding Raised



[View all accelerators](#)

Source: Startup Heatmap



"I believe that startup acceleration thrives through the combined efforts of the dynamic startup community, visionary enablers such as incubators and investors, as well as forward-thinking governmental institutions and organizations. Over the past five years, despite the ever-shifting global landscape, the Lithuanian startup ecosystem has witnessed a 17-fold increase in its value. This growth can be attributed to Lithuania's unwavering commitment to fostering co-creation and collaboration, providing support and momentum to ambitious entrepreneurs. Our founders fearlessly embrace the winds of change and swiftly adapt to evolving trends, ensuring their ventures remain at the forefront of cutting-edge technology and disruptive ideas. This progressive mindset sets us apart, even from startups in larger nations, as we approach our entrepreneurial journeys with a global perspective from the outset."

Roberta Rudokienė - Head of Startup Lithuania at Innovation Agency Lithuania

Strategy III: Scaling Unicorns

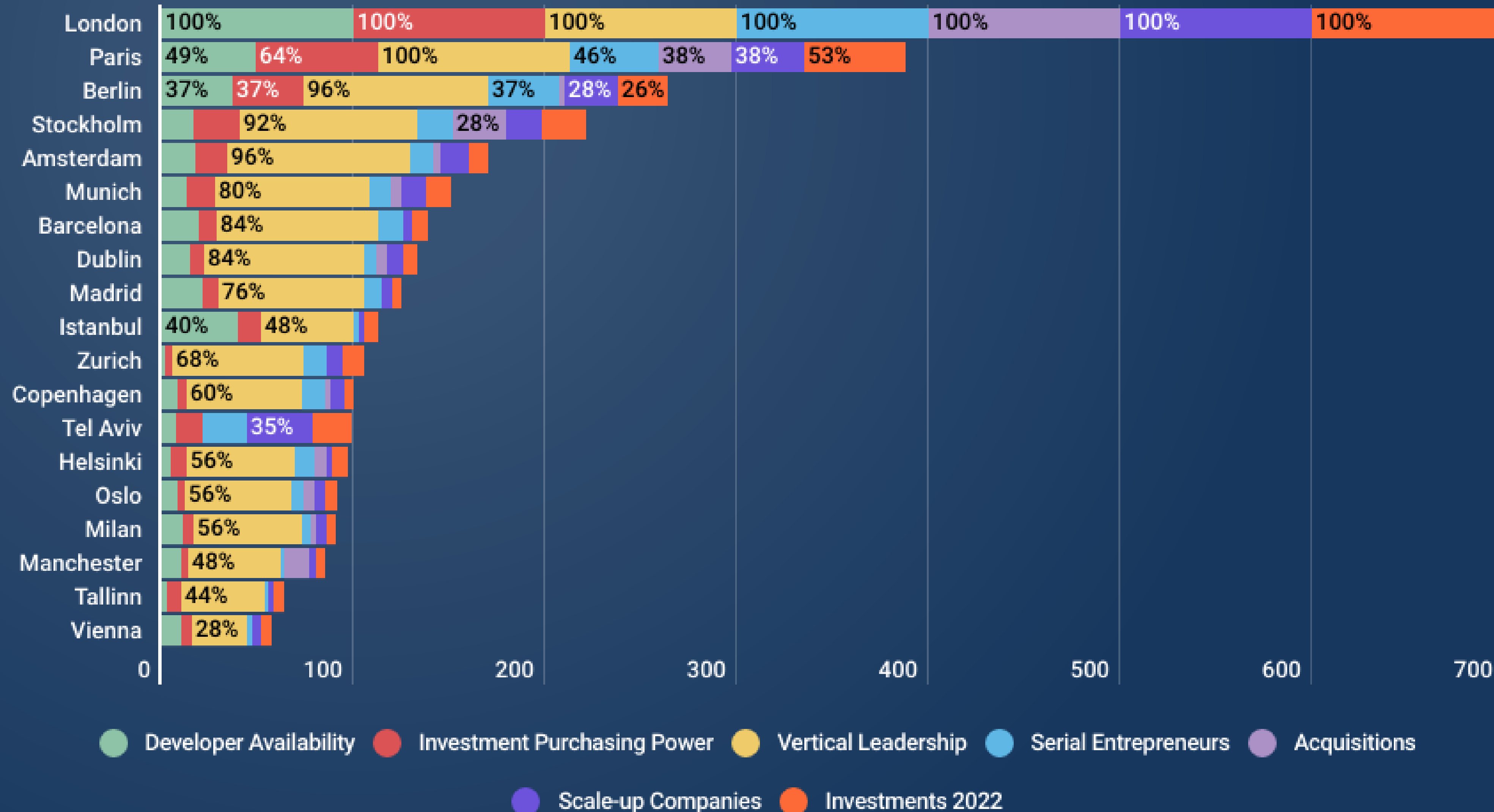


The classical idea for an ambitious startup ecosystem strategy is obviously to create and scale unicorns. The idea of creating major tech champions, which will in turn pay high taxes and create thousands of jobs in the city, might however be misleading.

The high connectedness of the ecosystems show that a) the ecosystems where startups go to raise capital to scale might not be the ones where they create most of their jobs and b) focusing on the capital markets might have detrimental effects on the support of earlier stages as spaces, political support and also funding for support structures is limited.

Nevertheless, there is an interesting competition of a relatively small and stable group of cities in Europe, who are eager to scale startups in the final growth stage before IPO or acquisition.

RANKING: Scaling Up - Cities Where Unicorns Sprint



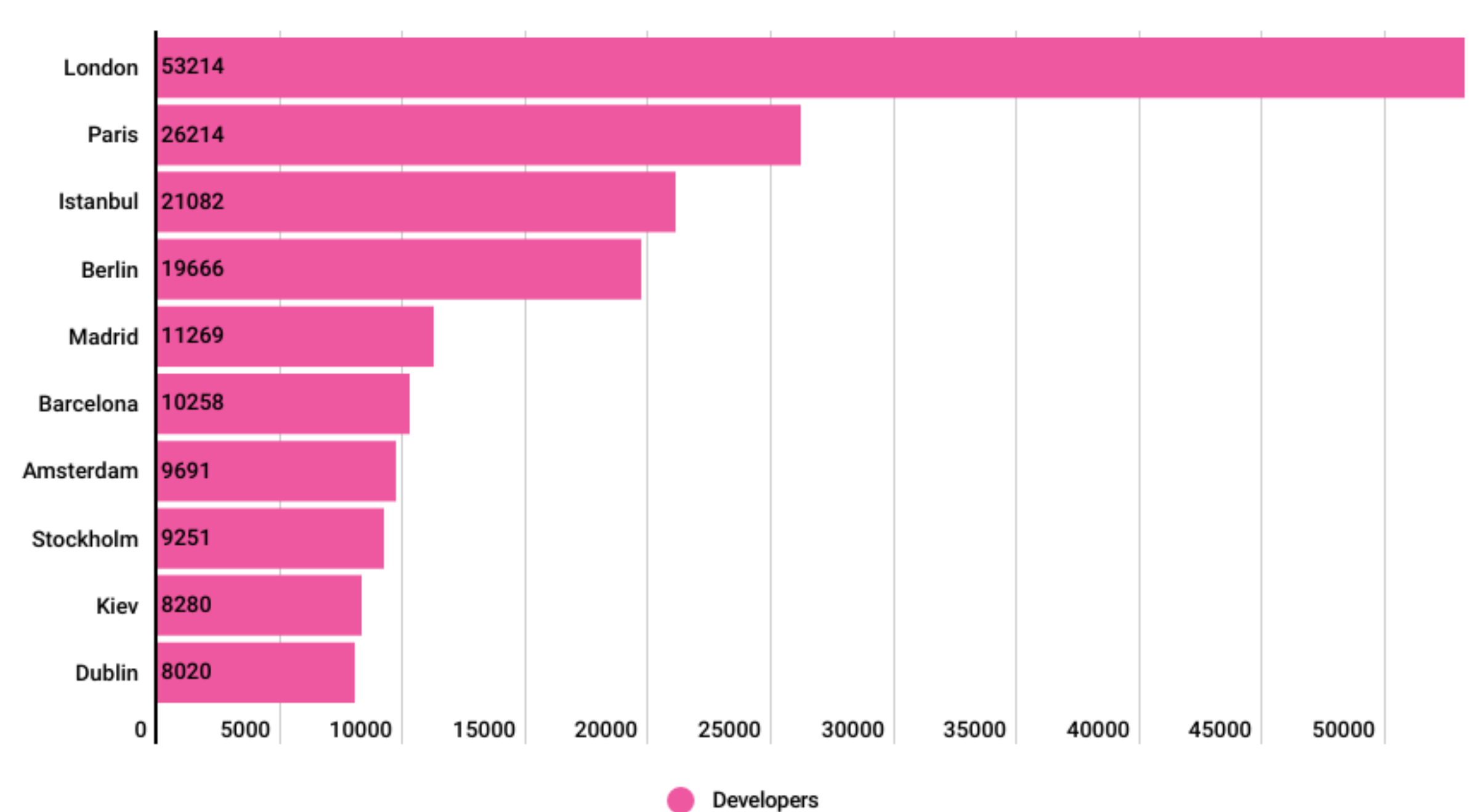
Indicator 1:

Number of Developers

London Leads the Developer Availability

The first indicator to look at in the boosting scale-ups strategy is the size of the developer pool. Next to capital, scale-ups look for tech talent and if a city wants to reap the benefits of its scale-up strategy, it needs to ensure there is a return of investment in terms of job creation. Next to sales, developers are the most important job type scale-ups will create.

Developer Availability per City



Source: Stackoverflow

WWW.STARTUPHEATMAP.EU

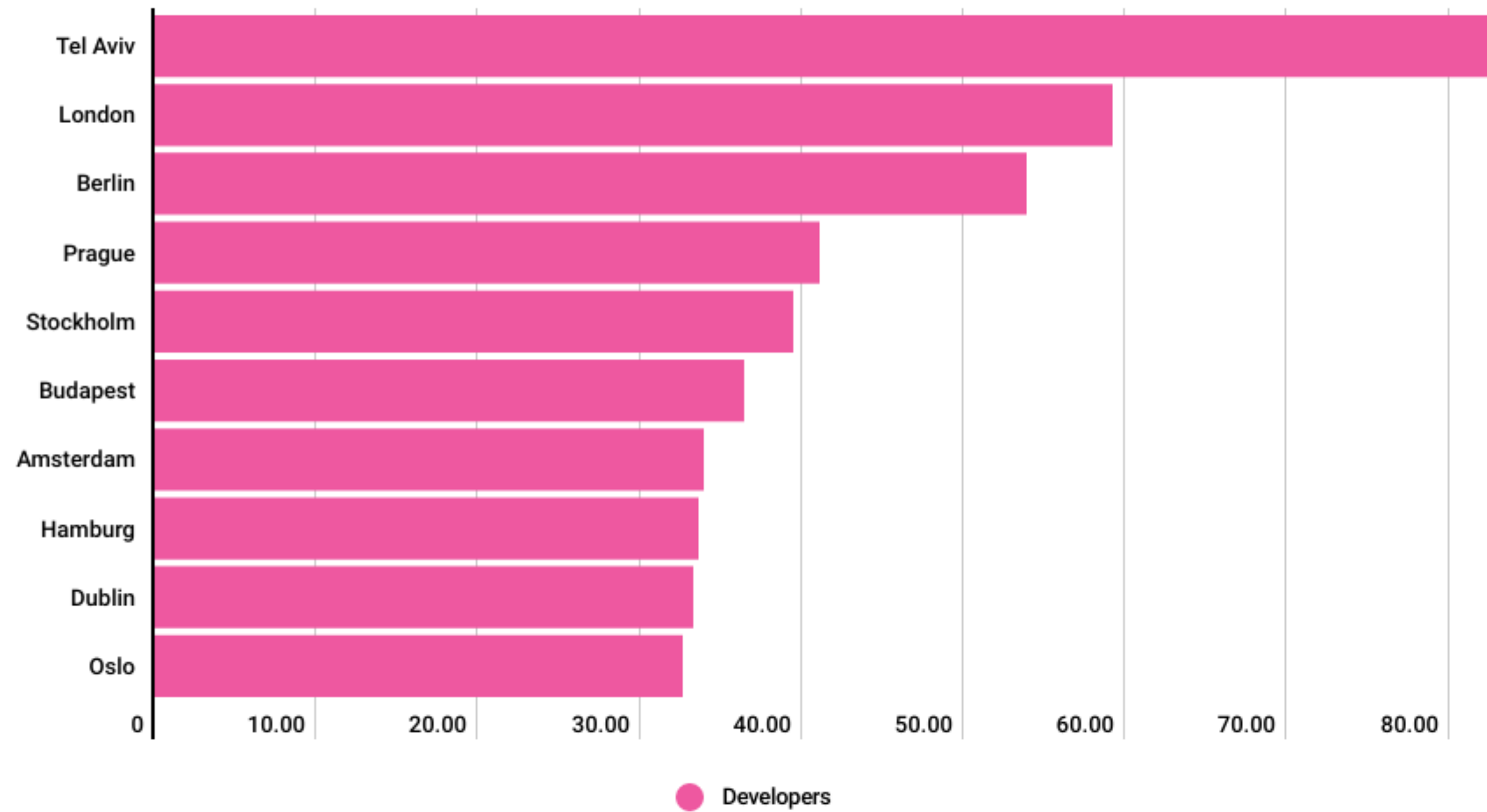
Indicator 2:

Concentration of Developers per Capita

Tel Aviv Has the Most Developers per Capita

While in Tel Aviv almost one of hundred inhabitants is a developer, other tech hubs are somewhat behind. Other tech hubs like London, Berlin, and Stockholm still have a relatively high rate of developers per capita, while Prague and Budapest also score in the top group.

Developer Availability per City per 10,000 inhabitants



Source: Stackoverflow

WWW.STARTUPHEATMAP.EU

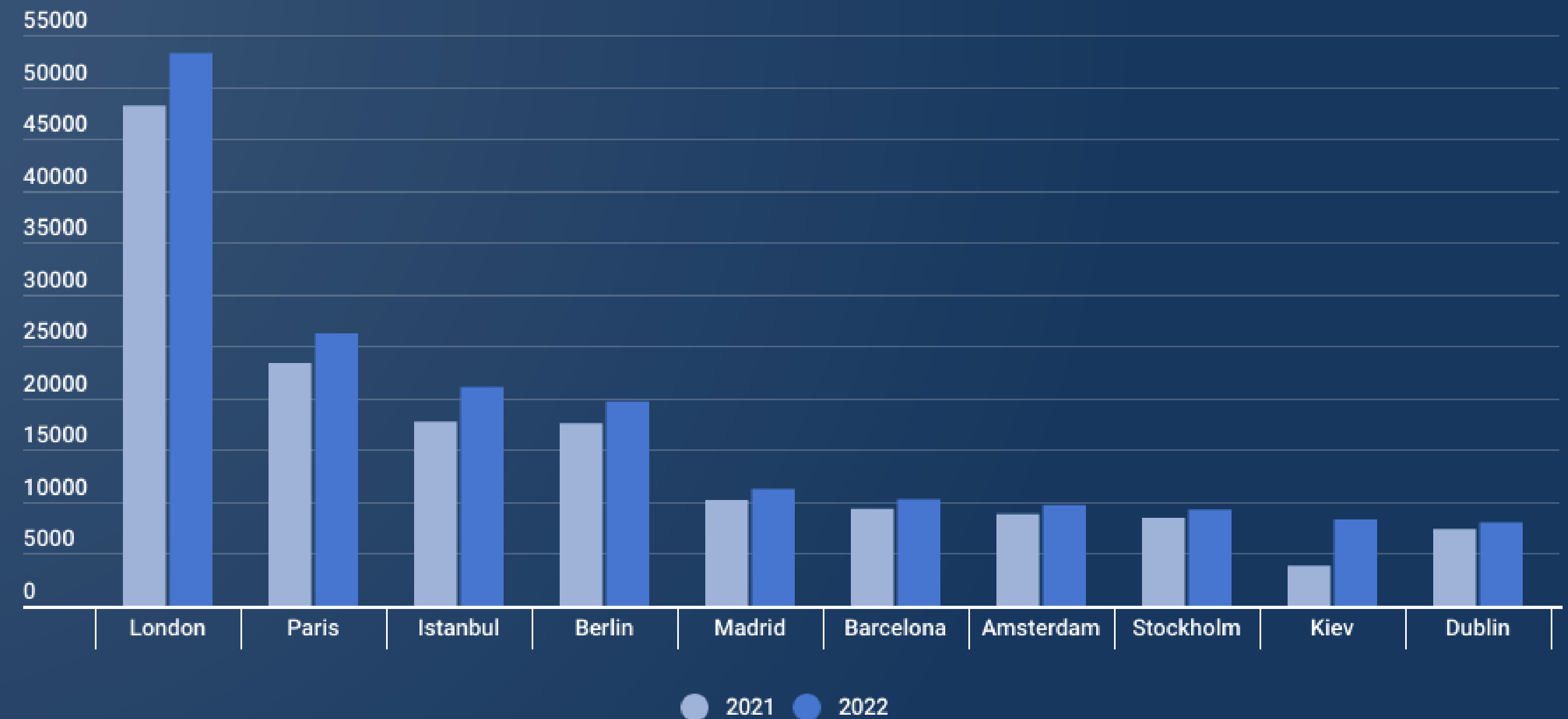
Indicator 3:

Number of Developers Are Growing

Between 2021 the number of developers has been growing in each of the top 10 cities hosting the most developers in absolute numbers. Access to IT talent is among the most crucial factors for startup teams.

Growth of Number of Developers

Number of Developers per City over Time



Source: Stackoverflow



"Unicorns and scaleups across Europe have become major economic players creating jobs and prosperity in- and outside their home countries. Acknowledging this fact, it is fascinating how governments and investment promotion agencies of ecosystems have turned into proactive shapers of societies and ecosystems with targeted programs to support startups relocate and grow. The newly formed Choose Europe initiative is a fantastic example of how cities and regions in Europe join forces to drive economic development together with a focus on sustainability and quality of life. This includes attracting startups from North America and other world regions, which support a shared European vision. Europe as a whole needs more collaboration to remain a competitive and attractive market for the world's leading startups."

Dr. Kim J. Zietlow - Director at FDI Center

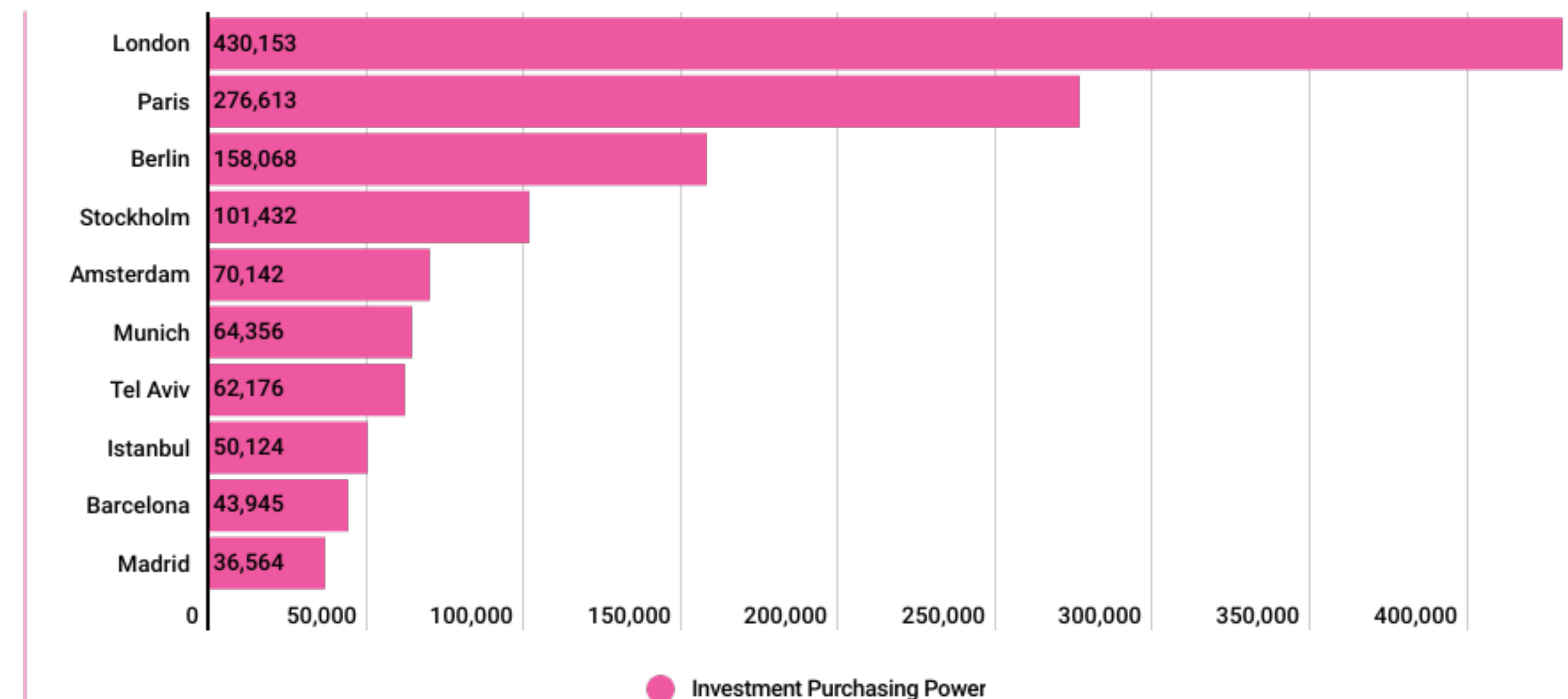
Indicator 4:

Investment Purchasing Power

The Value of an Investment Varies

It is a simple thought: The value of an investment is only worth as much as you can buy from it. To understand competitive advantages of scale-up hubs, we look at the relative purchasing power the past investments had. In London startups could have hired a collective 430,153 developer years with the money they raised per year.

Investment Purchasing Power: Annual Investments over local Salary of a Senior Developer



Source: Startup Heatmap

WWW.STARTUPHEATMAP.EU

* Investment Purchasing Power: Investment divided by developer salary cost

[Download data](#)

Indicator 5:

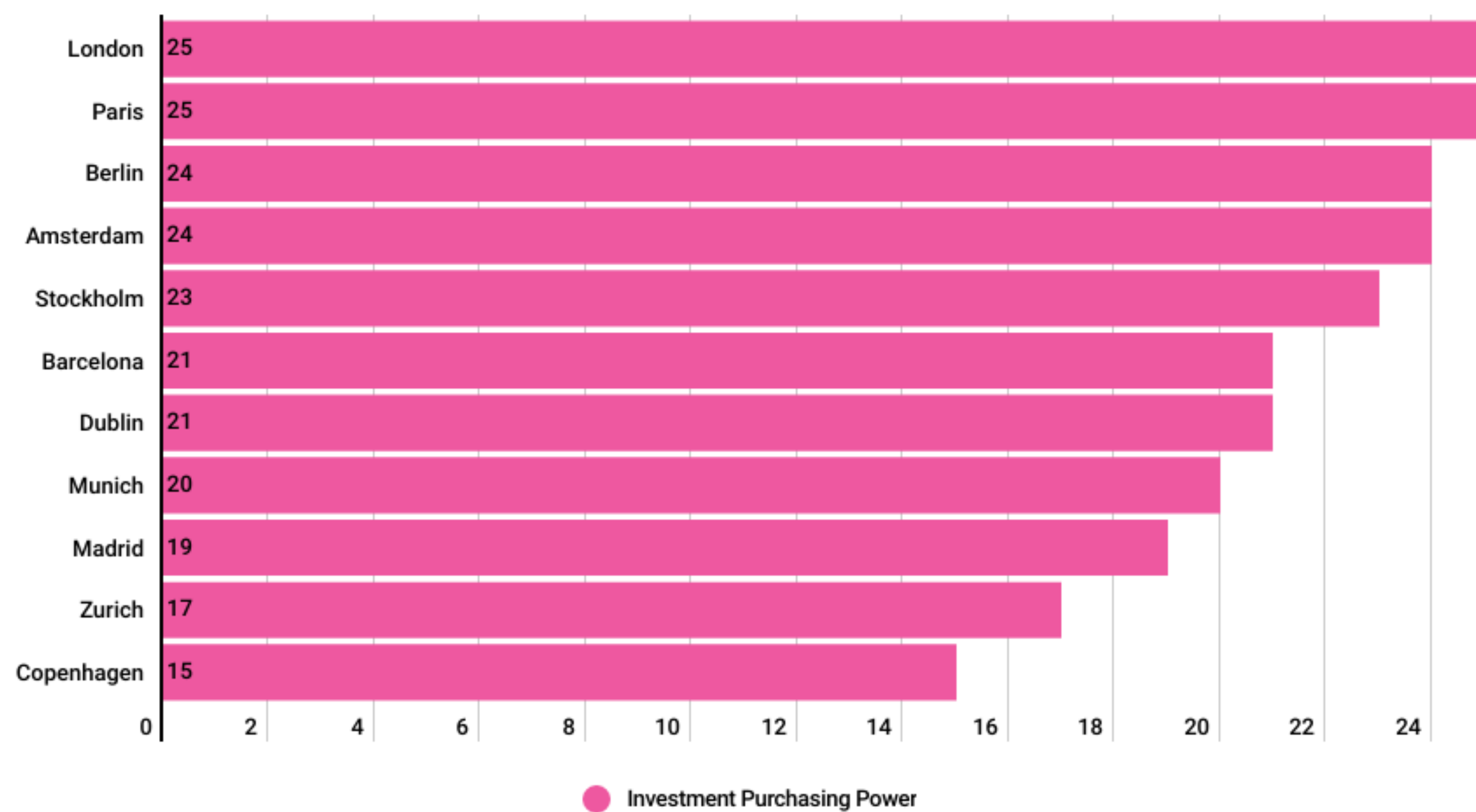
Specializations: Number of Top 20 Positions in Vertical Fundraising

Capturing the Whole Market

A clear sign for a boosting scale-up strategy is the ability to support the growth of a multitude of sectors. Successful ecosystems in this strategy show that they reach the Top 20 in terms of VC fundings in a list of 25 verticals.

London and Paris are in the Top 20 over all verticals, while Amsterdam and Berlin share a close second rank.

Number of Top 20 positions in Verticals by Investment Sum



Source: Startup Heatmap

WWW.STARTUPHEATMAP.EU

 [Download data](#)

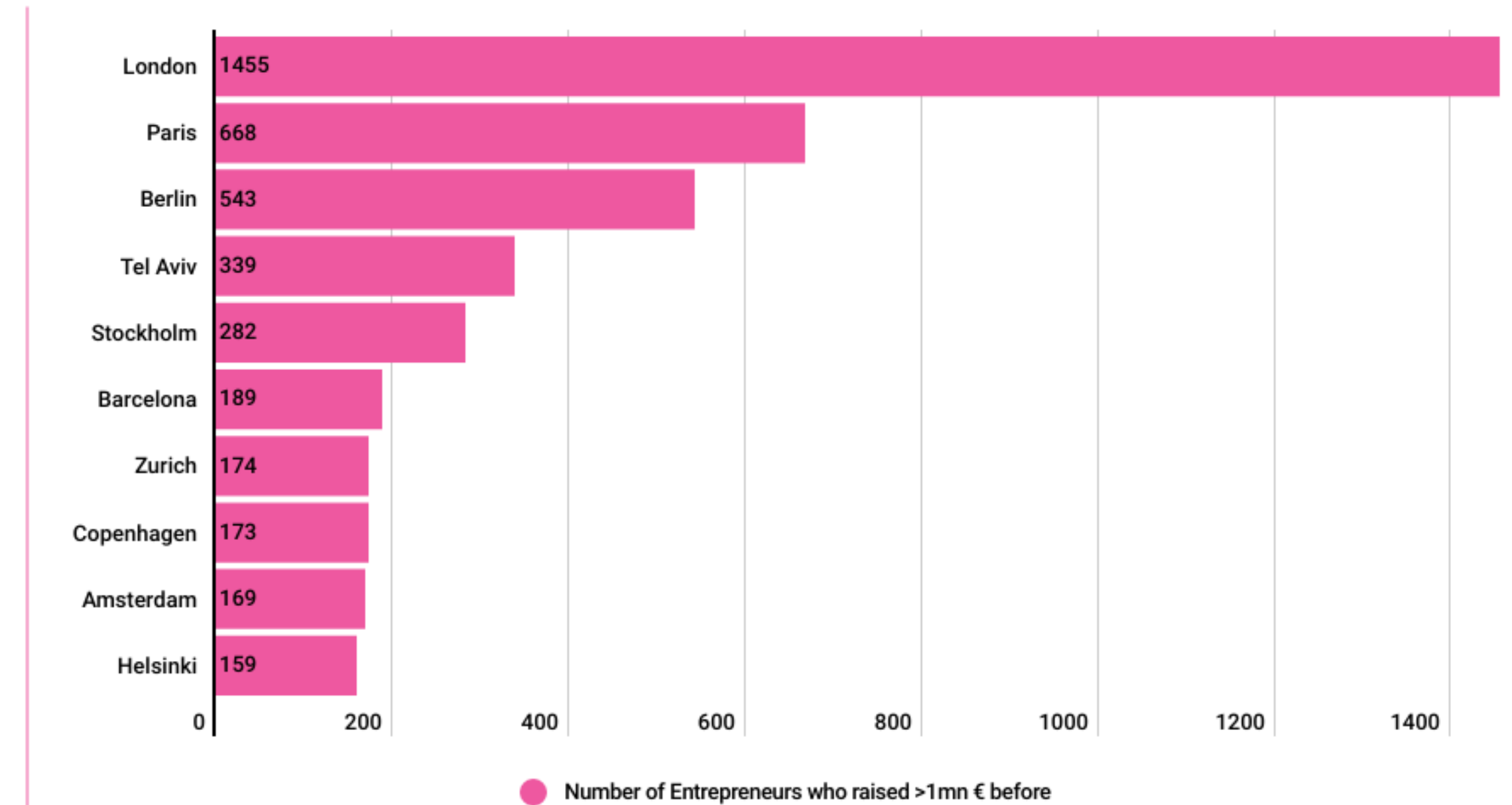
Indicator 6:

Serial Entrepreneurs with Experience Raising >1mn USD

„Top ecosystems“ Serial Entrepreneurs Lead Europe

The top 3 cities in terms of number of serial entrepreneurs who raised more than 1 million € are London (1455), Paris (668), and Berlin (543). Serial entrepreneurs who know the VC world are an indispensable ingredient for scale-up ecosystems as they know already how to turn a new idea into a fundable startup.

Number of Serial Entrepreneurs who raised >1mn €



Source: Startup Heatmap

WWW.STARTUPHEATMAP.EU

 [Download data](#)



"The startup acceleration scene in the Baltics and Central Eastern Europe has undergone significant changes in recent years. We receive a growing number of applications from experienced second- and third-time founders who no longer require basic business and sales knowledge but instead seek tailored and specific support. Our response to this trend is verticalization, focusing on sectors such as Fintech, Cyber, Web3, and similar areas."

Zane Bojare - Head of Brand at Startup Wise Guys

Indicator 7:

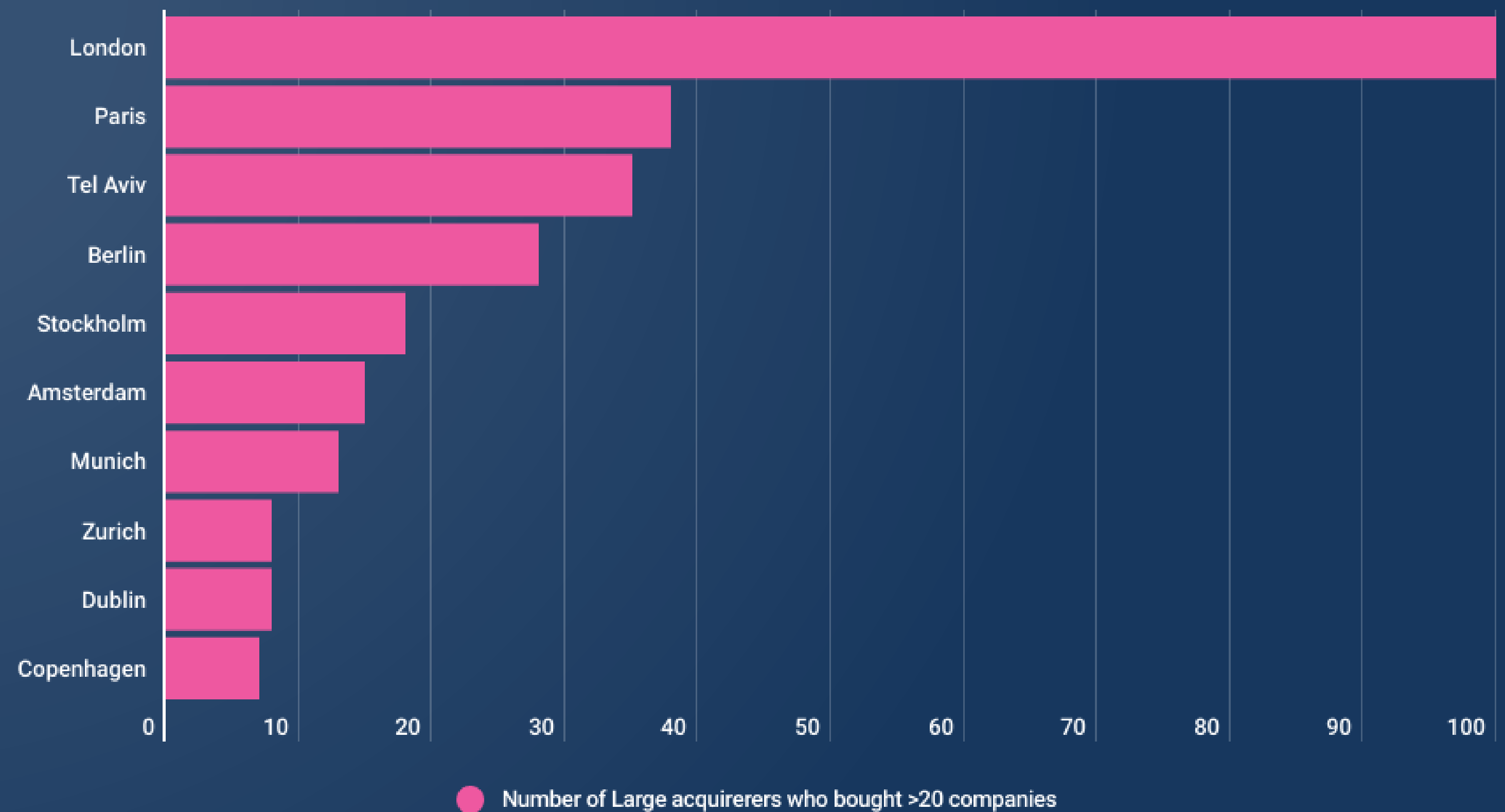
Number of Scale-Ups

Big Ecosystems Still Dominate the Boosting Phase

London (100), Paris (38), and Tel Aviv (35) are the leading ecosystems for the number of startups that scaled up in Europe in 2022.

Therefore, scaling up seems a phenomenon that occurs mainly in “more mature” and non-laggard ecosystems.

Number of Scale-Ups per City



Source: Crunchbase / Startup Heatmap

Indicator 8:

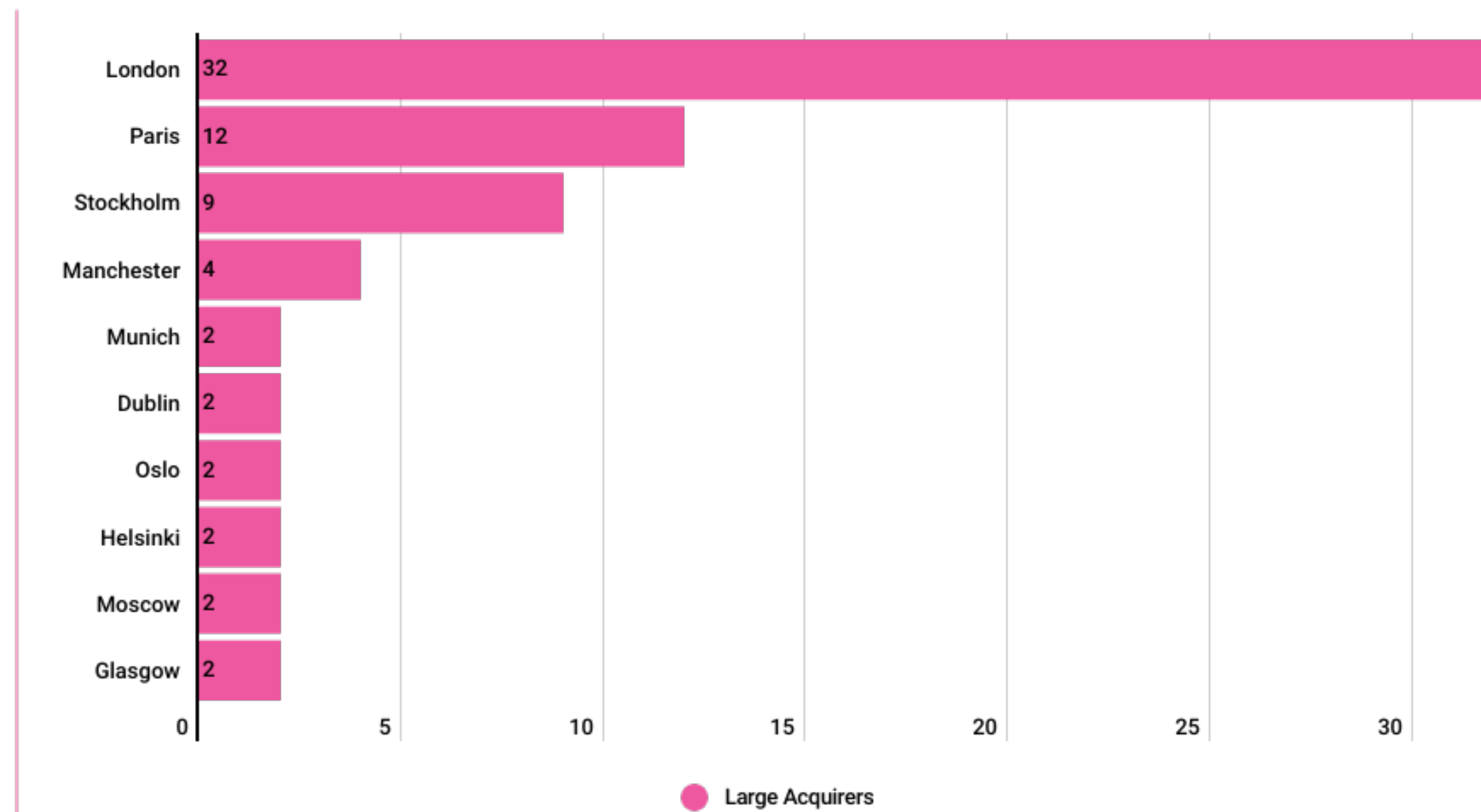
Large Acquirers Who Buy >20 Companies per Year

Only a Few Cities in Europe Have a Relevant Exit Market

In the scale-up strategy, ecosystems must foster a functioning exit market. Serial acquirers, who already bought more than 20 companies are an important cornerstone, as they lead the way and provide experience to other actors.

London is ranked number one showing more than 30 serial acquirers in 2022. Paris (12) is the second player just ahead of London together with Stockholm (9). Only 4 hubs have more than 2 system acquirers.

Number of Corporates who Bought >20 Startups per City



Source: Crunchbase / Startup Heatmap

WWW.STARTUPHEATMAP.EU

METHODOLOGY

How We Reach Our Results

Methodology

Data used in this report based on the Start-up Heatmap Europe Dataset (SHM). SHM Dataset is based on primary and secondary data collected by a tracking system and an annual survey.

The Tracking System

Primary and secondary Data is collected since 2015. At the core of our tracking system there is a composite data team that collects the qualitative data by monitoring social media, forums, blogs and websites. The data collection results from double-checked processes implemented by different data analysts at the same time. Data is updated at least quarterly.

For Accelerators:

Tracking system maps more than 155 European accelerators since 2015.

Elementary variables are: Total Funds raised by Alumni; Follow-on funding, that is defined as the number of start-ups having participated in an accelerator who have closed more than 1 funding round and reached a total equity funding amount higher than 100k USD; number of employees of start-ups having participated since 2015.

For Cities:

Tracking system maps start-ups, start-up founders and CEOs, events, and related topics.

Elementary variables are: number of tweets mentioning at the same time the name of the city and the word “startup”; Number of start-up related meetups per city; Sum of VC funding; Sum of realized exits; Median salary of a senior software developer; directional data of investments between 100.000 € and 5mn € from 2015-2018; Sum of offices of leading startup companies in the city.

Methodology

Data used in this report based on the Start-up Heatmap Europe Dataset (SHM). SHM Dataset is based on primary and secondary data collected by a tracking system and an annual survey.

The Annual Survey

The survey focuses on understanding founder mobility and the perception of the quality of start-up communities in the eyes of founders as a proxy for their future development potential.

The survey is mainly based on categorical variables covering the recognition of startup places in Europe, their rating in the main categories (Access to Capital, Access to Talent, Ease of Doing Business, Industry Connections and Quality of the Ecosystem) as well as the qualitative assessment of the brand image via associative questions ("What do you think of when you hear "Berlin startup scene"?). Further questions cover the actual mobility and transnational connectivity of startup founders in Europe, asking for the movement history as well as connections their startup has built, including opening international branches, attracting foreign investors, hiring international talent or also just frequent business trips.

These questions are paired with impartial variables measuring the number and topical focus of startup community events, investment activities or visibility of a startup hub in startup media.

The survey's units of observation are: the tech founders, ecosystem experts, Startup team members, employees or interested to join a startup, investors, startup community builders or service providers. It has run annually since 2015.

Methodology

SHM Dataset Structure

The structure of SHM dataset is made of 5 variables: (1) Connectivity (2) Community (3) Perception & Trust (4) Performance (5) Impact.

These variables are moreover mapped at two different levels: Accelerator and City level.

Unit of Analysis	Composite Variable	Metric	Source
Accelerator	Connectivity	Origins of founder (CEO) of participating startups by city/ country/ regions	Secondary Data collection since 2015 by social media monitoring and websites
	Community	Accelerated startups per year	Secondary Data collection since 2015 by forums and websites
	Community	Accelerator specialization	Primary and secondary Data collection since 2015 by social media monitoring, forums, blogs and websites
	Perception & Trust	Trust Score	SHM Annual survey since 2015
	Performance	Funding raised by participating startups	Secondary Data collection since 2015 by social media monitoring and websites
	Performance	Follow-on funding rate of participating startups	Secondary Data collection since 2015 by social media monitoring and websites
	Impact	Jobs created by participating startups	Secondary Data collection since 2015 by social media monitoring and websites
	Impact	Follow-up Investors	Secondary Data collection since 2015 by social media monitoring and websites

Table 1. The structure of the Startup Heatmap Europe Database at the Accelerator level (SHM dataset).

Source: edited by the authors.

Methodology

Unit of Analysis	Composite Variable	Metric	Source
City	Connectivity	Network Reach	SHM Annual survey since 2015
	Connectivity	Share of foreign-born founders	SHM Annual survey since 2015
	Connectivity	Market share of international investments	Pitchbook investment database
	Connectivity	International Conferences participants	Primary data collection since 2015 focusing on the 37 leading tech conferences in Europe
	Connectivity	International Accelerators participants	Primary data collection since 2015 focusing on 75 leading tech accelerators in Europe
	Connectivity	Presence of international Top startups	Primary data collection since 2015 about offices localization of the top 100 startups in Europe
	Perception & Trust	Trust Score	SHM Annual survey since 2015
	Perception & Trust	City Future Outlook	SHM Annual survey since 2015
	Perception & Trust	City Visibility	Primary and secondary Data collection since 2015 by social media monitoring, forums, blogs and websites
	Community	Meetups	Primary and secondary Data collection since 2015 by social media monitoring, forums, blogs and websites
	Community	Availability Developers	Stack Overflow
	Community	City specialization	Primary and secondary Data collection since 2015 by social media monitoring, forums, blogs and websites
	Community	Meetup Participants Variation	Secondary data provided by meetup.com since 2014
	Community	Salary Level Developers	Teleport
	Performances	Sum of funds raised	Secondary Data collection from Dealroom since 2014
Performances	Sum of exits realized	Secondary Data collection from Dealroomsince 2014	

Table 2. The structure of the Startup Heatmap Europe Database at the City level (SHM dataset).

Source: edited by the authors.

Methodology

To know more about our indexes

We have implemented two indexes for investigating some of the composite variables touched upon.

The Specialization index:

For both Accelerators and Cities, the words cloud is created by applying a content analysis to the SHM Dataset.

For Accelerators, the analysis is based on self-descriptions provided by startups and a list of buzzwords maintained by the Startup Heatmap team.

For Cities, the analysis is based on a text database of >1.5mn tweets continuously collected on startup cities and the count of mentions of buzzwords grouped in categories (e.g. Fintech includes blockchain, crypto, payment, insurtech, etc.)

The Trust Score index:

The Trust Score index at both the accelerator and city level shows the relative position of a city or accelerator in the ranking. The term “trust” indicates both a high level of “brand awareness” among founders as well as a positive attitude towards the selected destination, as survey participants are asked to provide a “recommendation”. Data is collected by SHM Annual survey.

The index is defined as:

$$\text{TrustScore} = N - r - 1N$$

where r is the rank. Since r depends on the SHM Annual survey representativeness of the sample, ranking is a weighted value. The weight is based on the share of population represented in the survey at the regional level.

N is the total number of accelerators or cities.

[Read More about our Data and Methodology](#)

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TOP 10

Inspiring
Women-led
Impact Startups



Based on data by Startup
Heatmap Europe



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DEEP Ecosystems is the world's most active accelerator for ecosystem projects helping entrepreneurs to build up their local startup community rather than moving away. With the Startup Heatmap Europe, DEEP in collaboration with the non-profit European Startup Initiative is measuring the growth dynamics of startup hubs since 2016 and successfully turned these insights into guidelines and strategic insights for policy makers and practitioners alike. You can join the movement to build better, data-driven ecosystems and start accelerating your growth too. Visit our website and get in touch

WEBSITE

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