European Investment Fund

Skills edition



# The VC factor

Data-driven insights about European VC and its skills trends

INVEST EUROPE

# Foreword

## Invest Europe

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Invest Europe always strives for its data and research to be authoritative and comprehensive, whether that's investigating annual fundraising, investment and divestment activity, or examining the long-term returns of European venture capital funds versus listed equities benchmarks or peers from North America or Asia. But it can also be challenging, thought-provoking and illuminate the path to stronger investment in the industries and technologies of Europe's future.

By working with the Europe's largest venture capital investor, the European Investment Fund (EIF), we have generated an unparalleled view of how the European VC and start-up ecosystem operates. And what we have discovered can have profound long-term implications for Europe, our economy, and our society.

A key attribute of Europe's venture capital ecosystem is that it is truly pan-European, active in every region and jurisdiction across the continent, creating innovation, employment and growth for respective hubs and countries. Yet we also see an ecosystem with deep and sometimes surprising – although far from random – connections spanning the entire continent. These unseen alliances between hubs, based on geographic, linguistic, institutional, or cultural factors, can also mean hidden divisions. Understanding these complex interactions is the first step to creating an even more cohesive European VC and start-up ecosystem.

This is not a financial exercise but one rooted in the real economy. Increasing the flow of capital and ideas across borders will fund and nurture the next wave of technology giants, biotech champions, and increasingly defence tech and deep tech innovators. In other words, maintaining, and indeed expanding, channels for venture capital will be essential for Europe's ambitions when it comes to competitiveness, sovereignty and security.

A stronger Europe – and European VC ecosystem – will be a more inclusive one. There is no single pathway to success, yet elite universities play an outsized role. Moreover, the world of venture capital and start-ups is still overwhelmingly male, with higher levels of investment flowing to businesses created by predominantly male teams. This is despite women often having higher levels of education from more prestigious universities. Ultimately, funding more businesses founded and co-founded by women, as well as teams from broader academic backgrounds, will bring fresh perspectives and approaches, which in turn will identify new pathways to European innovation and growth.

European venture capital has well and truly emerged over the past decade, both in terms of scale, as well as its ability to tap into Europe's unique entrepreneurial flair to create world-class start-ups. At the same time, it is still an industry packed with enormous potential. Unlocking all that promise, regardless of origin or gender, will ensure we have a venture capital ecosystem that is far greater than the sum of all its parts. And one that can meet the aspirations of investors and entrepreneurs, as well as Europe's citizens.

## European Investment Fund


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The European venture capital (VC) ecosystem, mobilising talent and investment where innovation and productivity are most needed, provides a powerful lever to address the EU's competitiveness and long-term security challenges. As the Draghi report highlights, persistent gaps in the EU's growth and technological dynamism demand a radical shift: the VC industry is uniquely positioned to drive this change, forging the industries that will secure our future.

The European Investment Fund (EIF), as part of the EIB Group, affirms its commitment to supporting Europe's transformation – accelerating digitalisation, fostering the development and deployment of cutting-edge technologies, and spearheading the Savings and Investments Union. These objectives are not just ambitions; they are essential pillars placing innovation, cohesion, and capital market integration at the heart of Europe's future competitiveness.

The importance of deeper integration for a robust, prospering European VC ecosystem is vividly illustrated by the evidence in this report. Despite progress, the latest data reveal that national and regional borders continue to exert a significant influence on the flow of VC across hubs, limiting the overall ecosystem's scale and reach. Removing these barriers is key to unlocking Europe's full innovative capacity and compete effectively on the global stage.

A growing share of cross-border investments signals deeper market integration and more efficient VC allocation across Europe. With cross-regional flows nearly doubling over the past decade, the vision of a unified European venture capital market is no longer far-fetched. Through targeted initiatives – such as the TechEU platform and the European Tech Champions Initiative – the EIB Group and EIF are working to turn this vision into reality.

Meanwhile, talent and skills remain essential in the European VC ecosystem. Analysis through a "skills lens" shows that STEM backgrounds are common among founders and investors, indicating a demand for advanced expertise in the sector. Yet, the demand for such skills far outpaces supply, and persistent shortages risk holding back Europe's innovative capacity. In response, the EIF has expanded its support for skills and education, enabling more students and professionals to access the training needed for a rapidly evolving economy.

However, a truly competitive and innovative ecosystem must value talent and ambition over individual biases. Yet data show that female-led start-ups face a persistent gap despite, on average, stronger academic credentials. This highlights the need for concerted efforts to lower barriers and build a more cohesive, inclusive ecosystem. Through the Empowering Equity platform for diversity and inclusion, the EIF is actively advancing this goal.

Last but certainly not least, reliable data-driven analysis is vital for tackling the EU's present and future challenges. Our partnership with Invest Europe, its national associations, and the European Data Cooperative (EDC) has been fundamental to this effort. By combining Invest Europe's market intelligence with the EIF's analytical expertise, we provide a comprehensive perspective of the talent and skills landscape in European VC, brought together in this fourth edition of The VC factor.

# The report in a nutshell

Welcome to a new "The VC factor" report, where data takes centre stage and reveals how European venture capital (VC) is reshaping the continent's innovation landscape with bold ideas that spark from more than 600 VC hubs. These fast-moving ideas ripple through the continent, forging new investment opportunities and driving Europe's next wave of growth.

**Europe's VC scene is evolving from isolated local hubs to a more interconnected network.**

In 2024, venture capital investments injected EUR 17.6 billion into start-ups, sustaining a decade of robust activity even as the market recalibrates from its 2021 peak. But "The VC factor" is about more than volumes: beneath the headlines, Europe's VC scene has been gradually shifting from a patchwork of local hubs to a dynamic, interconnected network.

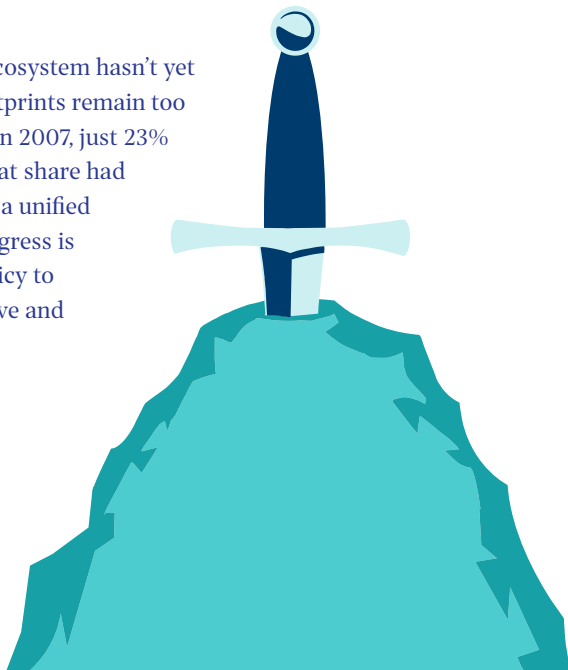
What drives hubs to interact with one another? As it turns out, a hidden order shapes how VC flows across Europe. Among 600 active VC hubs, only a select few consistently dominate the European top charts. This dominance is no accident; the flow of VC across European hubs displays clear signs of "preferential attachment", a mechanism by which well-connected hubs tend to attract even more capital and connections, reinforcing their lead over time.

But the future of European VC doesn't belong only to an elite few. Alongside preferential attachment, other forces shape the ecosystem's growth. Shared language, regulatory frameworks, institutions and culture influence where investment ties form. This dual logic – popularity and proximity – means VC flows may naturally tend to concentrate over time, but policy can still retain control, for instance by promoting bridge-building to steer the ecosystem toward greater cohesion and inclusivity.

**A hidden order shapes VC flows in Europe – while they tend to concentrate, policy can still steer them.**

While shared traits help investment ties form outside the elite few, they can also reinforce local clustering and create tight-knit regional "clans" that rarely expand their investment horizons. So what are these "clans" in European VC? Although the algorithms identifying them have no understanding of countries and borders, the patterns they reveal are clear: Europe's eight VC "clans" remain strongly shaped by national and regional boundaries.

Regrettably, this suggests that the European VC ecosystem hasn't yet matured into a cohesive whole, as its regional footprints remain too distinct to ignore. Even so, the picture is shifting. In 2007, just 23% of VC investments crossed "clan" lines; by 2021, that share had nearly doubled to 43%. Overall, the road ahead to a unified European VC ecosystem may still be long, but progress is unmistakable. The challenge now is for public policy to harness these dynamics and foster a more inclusive and resilient landscape.



**We mapped Europe's VC human capital through a "skills lens", analysing 18,800 investors and 59,200 founders or CEOs.**

If Europe's VC hubs form the "skeleton" of the ecosystem, then its lifeblood is the talent of investors and founders who keep it vibrant and evolving. To map this human capital, we put through a "skills lens" the 18,800 investors and 59,200 founders or CEOs — active in Europe's VC ecosystem between 2011 and 2021 – focusing on their alma maters, fields of study and degrees to assess how these factors shape participation and funding outcomes.

The good news? There is no single, exclusive path into European VC. For instance, most professionals did not attend elite universities, graduating from institutions outside the global Top 100 ranking. While educational paths vary significantly between start-ups and VC firms, success appears to come from a wider range of backgrounds rather than a narrow elite.

That said, the data reveals some interesting patterns that illustrate the importance of academic credentials in shaping access to European VC. For instance, 53% of investor and entrepreneurial profiles have a STEM degree, with 76% holding at least a Master's degree and 21% having also earned a PhD. Highly technical sectors (e.g. biotech) tend to have an even larger share of entrepreneurs and investors with doctorates.

**The bad news? The gender funding gap endures – even though women have, on average, better academic credentials.**

While university prestige may not determine entry into Europe's VC ecosystem, it does influence funding size. Top 50 alumni make up just 10.7% of founders but receive 15.7% of total funding from 2011 to 2021. Prestige pays off, after all: across all education variables, university prestige is the only one that consistently moves the needle on funding volumes.

Yet, one troubling fact persists: the gender funding gap. Combining our "skills lens" with the "gender lens" of our previous report, we find that start-up teams led mainly by women receive, on average, about EUR 700,000 less funding than male-led teams. Education does not explain this gap; in fact, women in the sample are, on average, more highly educated and come from more prestigious universities than men.

What is driving this funding gap? While part of this imbalance reflects structural factors, such as smaller team sizes for female-led start-ups, much of this difference remains with how these factors are rewarded among male-led and female-led teams. And here's the twist: there's no evidence of bias against female-led teams when it comes to these measurable traits.

So what drives the gap we still see? For once, the answer lies beyond the data, shaped by intangibles that influence investor decisions: soft skills, entrepreneurial experience, personal networks, perceived credibility, risk appetite, or other unseen traits. Yet despite these grey areas, the data points to an ecosystem where merit and opportunity don't always align.

**Skills, talent and ambition may open doors, but bigger cheques demand more.**

In conclusion, skills, talent and ambition may open the door to European VC, but attracting bigger cheques often takes more. For founders, the message is clear: build a strong, diverse team, aim high and don't underestimate the power of your alma mater. For investors and policymakers, it's a prompt to recalibrate their strategies: talent comes in many forms, and the next wave of innovation may emerge from unexpected places.

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Chapter 1

# The geography of European VC, reimagined

## Introduction

Over the past 25 years and more, the European venture capital (VC) ecosystem has undergone a fascinating journey, marked by both highs and lows and the emergence of major VC hubs across the continent. Today, the ecosystem continues to evolve: in 2024, it delivered EUR 17.6 billion in investments, a slight decline after the record peak of EUR 20.7 billion reached in 2021.

In our previous exploration[1], we examined over 2,800 VC firms and more than 35,000 start-ups active in Europe between 2007 and 2021, mapping their location across the European VC landscape. This snapshot revealed that the European VC ecosystem has grown to be much more than a patchwork of isolated investor and start-up strongholds.

How did we learn this? It was thanks to Functional Urban Areas (FUAs), a proxy for VC hubs that effectively captured the essence of the European VC ecosystem. We covered over 600 hubs where VC activity took place between 2007 and 2021. This approach revealed that the ten largest VC hubs accounted for 51% of the total investment received and 69% of the investment distributed across Europe.

Perhaps most strikingly, we observed that cross-hub interactions generate roughly twice as much activity as investments occurring within individual hubs. Through the *network lens*, the European VC ecosystem emerges as a complex and interconnected web of investment hubs rather than a collection of isolated centres. So what drives European VC hubs to interact with one another? As it turns out, a hidden order shapes the entire system. ▶

**Through the network lens, Europe's VC emerges as a complex, interconnected web of hubs.**

### The data

*Our dataset results from a partnership between the EIF and Invest Europe via the European Data Cooperative (EDC). We focus on the European Union Member States, the UK, Norway and Switzerland, enabling a broad overview of the European VC market. Our data tracks investments made by 2,824 VC firms towards 35,310 start-ups, between 2007 and 2021. The data include activity flowing from Europe (including to countries outside of Europe) as well as flowing to Europe (including from countries outside of Europe). Activity outside the radar of Europe is not covered.*

**Over 2,800 VC firms**

**Over 35,000 start-ups**

**600 VC hubs**

1 Crisanti, A. et al. (2023). The VC factor. Gender lens edition. Joint EIF – Invest Europe study

## Network analysis: a recap

A network provides a formal way to represent objects that are connected to each other, forming a larger system. In our context, the "objects" are the VC hubs, and the connections are the VC investments flowing from one hub to another. For example, if a VC firm headquartered in Paris invests in a start-up in London, Paris and London become connected.

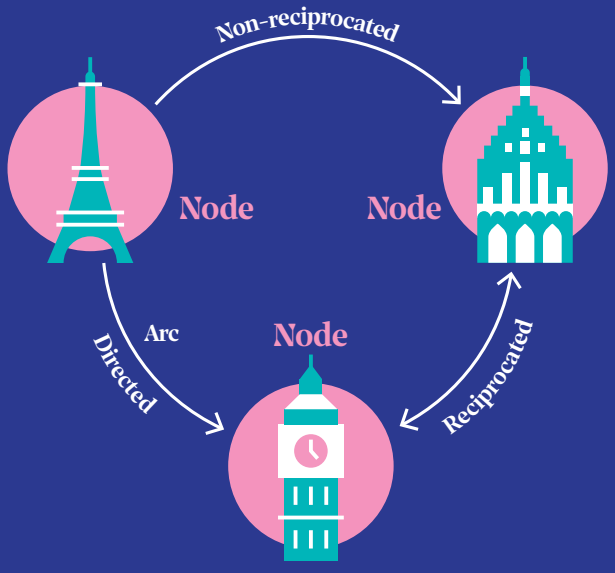
To better capture the essence of a VC hub, we used the concept of Functional Urban Areas (FUAs) – a framework developed by the European Union and the OECD. FUAs define large cities and their surrounding commuting zones, forming cohesive urban regions where economic, social, and demographic interactions converge.

In network analysis terms, the VC hubs are the *nodes*, and their connections are called *arcs*. The direction of these arcs matters: a Parisian VC firm investing in London is not the same as a London-based VC firm investing in Paris. However, if capital flows both ways between two hubs, we say that the connection is "reciprocated".

We can also consider the *strength* of these connections, distinguishing between hubs that interact frequently and those that connect only occasionally. Each connection can be assigned a weight based on the volume of VC transferred, resulting in what is known as a "weighted network".

In summary, the intricate web of VC flows among European hubs can be described as a weighted, directed network: the hubs serve as nodes, and the monetary flows between them form arcs weighted by the intensity of capital transfer.

With our network lens, we can quantify the importance of a node in terms of its connections, known as *degree centrality*. Because direction matters in our network, we distinguish between *out-degree centrality* (for VC firms) and *in-degree centrality* (for start-ups). A hub with high out-degree centrality hosts VC firms actively investing in many other hubs, while a hub with high in-degree centrality hosts start-ups receiving investments from numerous hubs.



## Degree centralisation

*In addition to the degree centrality of nodes, we can quantify centralisation (or decentralisation) of the entire network by calculating the influence of a few nodes compared to others. The resulting value ranges from 0 to 1. A value close to 1 indicates the dominance of a small group of nodes, while a value close to 0 indicates an even distribution of connections and thus a more decentralised network.*

## On the origin of European VC hubs

The structure of the European VC ecosystem is akin to an intricate puzzle, revealing deeper secrets when we step back and view it from a broader perspective. One such secret lies in the degree centrality measures of its hubs. ◀

First, let's consider the degree of centralisation in the European VC ecosystem. Our analysis reveals an out-degree centralisation score of 0.32 for VC firms. While not extremely high, it's significantly larger than the more decentralised start-ups, which have an in-degree centralisation score of 0.13. This suggests that start-ups tend to be more geographically dispersed than VC firms. What's more, both centralisation scores have increased during the years 2007 to 2021. ▶

In essence, our network analysis reaffirms that the European VC ecosystem exhibits a clear trend towards geographic concentration, as noted in our earlier reports. However, with our newly honed network analysis tools, we can delve deeper and investigate the reasons behind these VC-concentrated areas. Are they the product of random chance, or did they emerge naturally through an evolutionary process? This question forms the basis for our next exploration into the fascinating world of European VC hubs.

**Our network lens confirms the clear trend towards geographic concentration, as noted in our earlier reports.**

## Mind the… weighted network insights

*The results to the left come from the binary network of European VC hubs, i.e. if we treat connections the same regardless of their economic size. What happens if we insert the intensity of these connections and look at the weighted network instead? Not much: we find approximately the same result in the distribution of centrality scores, with the out-degree strength almost twice as large as the in-degree strength: 41 versus 22. This means that the activities of VC firms tend to be more geographically concentrated than those of start-ups, regardless of the actual volume of exchange.*

## Random networks

*Random networks are like 'thought experiments' in which nodes are allowed to connect randomly according to a certain probability law. The Erdős–Rényi model is a most typical example of random network: each node has an equal chance of connecting to another node – incidentally, fixing this probability is equivalent to fixing the network density, a concept we touched previously. Random networks serve as a 'control group' with which we can compare networks in the real world to identify patterns that aren't just due to chance. In our case, when we tried to simulate the distribution of degree centralities (how connected a hub is) from our real-world VC network, we couldn't replicate it with the Erdős–Rényi model. This tells us that the connections within the European VC ecosystem aren't random, but rather, they follow a certain pattern that reveals the unique dynamics of the VC ecosystem.*

## The hidden order of the European VC ecosystem

Just as archaeologists use footprints and fossils to piece together Earth's history, we can use the distribution of VC flows across hubs to shed light on the growth and evolution of Europe's VC ecosystem over the past decade. So, what's the natural law governing this ecosystem?

Firstly, it's not chaos. VC flows between two hubs in the European VC ecosystem don't occur at random. Some connections are far more likely to happen than others, hinting at an underlying structure. In fact, the presence of VC hubs with an exceptional number of VC flows makes the European VC ecosystem resemble scale-free networks, like the World Wide Web we discussed in the previous edition. ◀

What's so special about scale-free networks? They feature a small number of highly connected nodes, a "hidden order" that lends them stability and resilience. The growth of these networks is driven by a mechanism known as "preferential attachment", which posits that the more connected a node is, the more likely it is to receive new links. ▶

As the European VC ecosystem grows, better-connected VC hubs are more likely to establish new flows. This suggests that the ecosystem's evolution couldn't have naturally taken a drastically different path. Due to this hidden order, there might be a natural tendency for the European VC ecosystem to become increasingly concentrated.

Does this mean the European VC ecosystem is destined to become an "elite club" of a few VC hubs? Not necessarily. "Pure" scale-free networks are rare in nature, and there's good reason to believe the European VC ecosystem isn't one either.

In addition to the preferential attachment processes, other forces likely shape the ecosystem's future growth and evolution. For instance, the proximity of VC hubs — not just geographically, but also linguistically, institutionally, culturally, and so on — can play a significant role in establishing new and robust links between hubs. We'll revisit this point later.

From a policy perspective, it is reassuring to know that preferential attachment is not the only force shaping the ecosystem. This means that, although natural laws may influence how the ecosystem evolves, its future is not entirely beyond our control. Policy interventions can counterbalance these dynamics and help reduce the geographical imbalance of VC investments, paving the way for a more diverse, resilient, and inclusive ecosystem.

**Like archaeological footprints, VC flows can be used to decode Europe's VC ecosystem's decade-long evolution.**

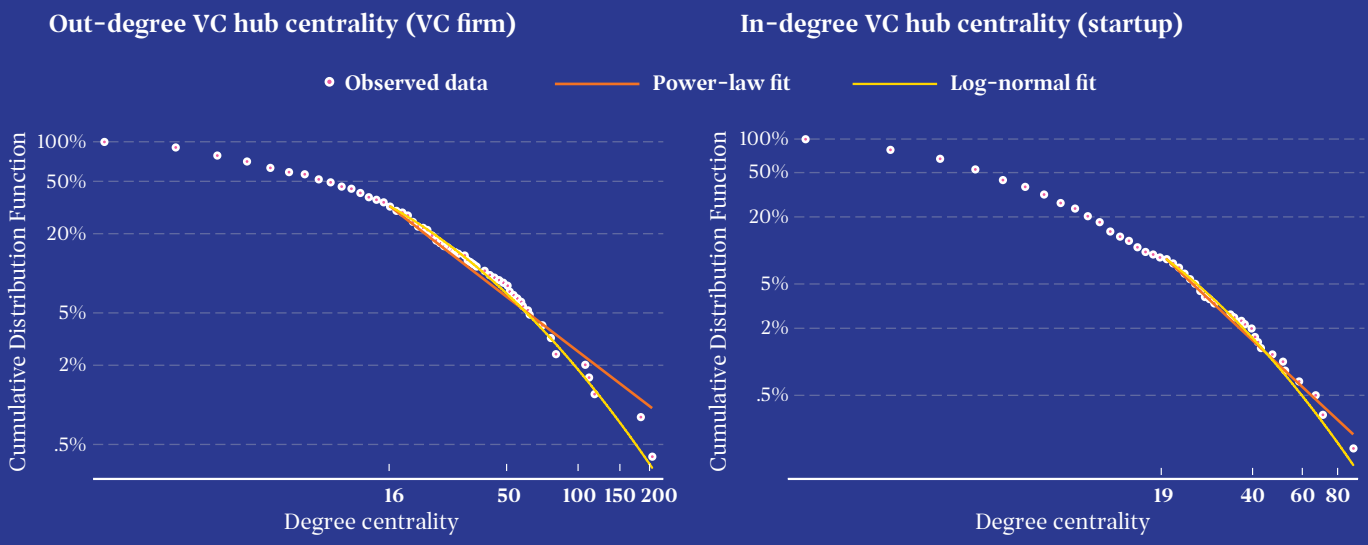
### Preferential attachment and scale-free networks

*'Scale-free' networks have nodes with an exceptionally high number of connections compared to the other nodes. They are called this way because the distribution of their node centralities follows a "power law". Why "scale-free"? That's because the shape of a power law curve remains the same no matter how much we "zoom in" or "zoom out", i.e. change the scale. The influential Barabási–Albert model explains how scale-free networks can emerge in the real world, via what is called the 'preferential attachment' mechanism, which simply says: the more connections you already have, the more likely you are to make new ones. A simple dynamic, but with far-reaching consequences: if the network of European VC flows is indeed scale-free, then the larger hubs will get more and more connections at the expense of the smaller ones, leading to an increasingly concentrated and "elite" ecosystem.*

## Scale-free networks are rare

This is the provocative title of a recent study by Broido and Clauset (2019)[2]. Analysing nearly 1,000 social, biological, technological, transportation, and information networks, the authors found that strongly scale-free structures are empirically rare, while for most networks, log-normal distributions fit the data as well or better than power laws. In their study, the authors developed a system for ranking the scale-free structure of a network, ranging from "not scale-free" to "strongest scale-free". The diagram below gives an impression of this approach: while the in-/out-degree centralities (circles) do seem to follow the power-law prediction (orange line), the log-normal prediction (yellow line) appears to fit the data even better. Consequently, the flows of European VC have, at best, a "weak" scale-free structure. This means that mechanisms other than "preferential attachment" can equally well explain the unique dynamics of the VC ecosystem. ▶

**Degree centralities and Power-Law ("preferential attachment") predictions**




**Driven by the hidden mechanism of preferential attachment, the European VC ecosystem may naturally evolve into an ever more concentrated structure.**

2 Broido, A. D., and Clauset, A. (2019). Scale-free networks are rare. Nature communications, 10(1), 1017

## Preferential attachment: the only name of the game?

*Not quite. A recent study (Smith, 2021[3]) introduces a two-factor model: 'surface' and 'depth'. 'Surface' reflects preferential attachment, where popular nodes are more likely to attract new connections. 'Depth', however, captures the tendency for nodes with similar traits – such as geographical, cultural, or institutional proximity – to connect. Smith's findings show that 'depth' often plays a bigger role than 'surface': in European VC flows, hubs sharing common features are more likely to connect than those that are simply popular. How do we know? Smith's model predicts a log-normal distribution of connections, matching the pattern we see in the data.*

## How to mitigate the geographical concentration of European VC?

Could the geographical concentration of VC be driven by central hubs' preference to connect with other central hubs, creating an "elite club" that grows increasingly powerful? This is often referred to as a "core-periphery" structure, a concept linked to *assortativity* in network analysis, a fancy word that helps us understand the nature of connections in a network. ▶

Just like in our previous issue, we need to distinguish between *outward* (VC firms) and *inward* (start-ups) assortativity. Outward assortativity is near zero and slightly negative, indicating that hubs invest in other hubs irrespective of their VC firm strength. Conversely, there's positive inward assortativity, meaning that strong (or weak) hubs in terms of start-ups tend to receive funds from similarly strong (or weak) hubs for start-ups.

What do these findings imply? On one hand, the more central European VC hubs act as *gateways* rather than gatekeepers. This is good news as it refutes the existence of a core-periphery structure, at least on a Europe-wide level.

On the other hand, start-ups still tend to receive funding from hubs with similar market strength. This means strong hubs are more likely to receive funding from other strong start-up hubs, and the same holds true for weaker ones. One possible explanation for this pattern is the presence of regional markets within the European VC ecosystem. These are groups of hubs that mostly interact within their own group rather than outside it. But how can we prove this? It's time to add yet another tool to our toolkit.

## Core-periphery structures

*Many real-world networks organise into a core–periphery: a dense, mutually connected core of hubs, and a sparser periphery that connects mostly into the core but rarely to itself. The result? The core dominates VC flows and influence, while the periphery provides reach but retains limited access to capital. Assortativity helps reveal this pattern: it's a measure of whether nodes prefer to connect with others like themselves. If high-degree hubs tend to primarily connect to other high-degree hubs (positive assortativity), it's a sign of core–periphery.*

*Core–periphery structures come with downsides. They can reinforce regional inequality, leaving peripheral regions increasingly dependent on decisions made in the core. Local policy initiatives often struggle to gain traction, as the gravitational pull of the core limits their effectiveness. Over time, this dynamic can entrench divides – unless policy responses are coordinated and multi-level.*

**Could regional markets be why European VC hubs stick to close-by, equal-strength hubs?**

3 Smith, K. M. (2021). Explaining the emergence of complex networks through log-normal fitness in a Euclidean node similarity space. Scientific Reports, 11(1), 1976.

## The unseen alliances (and hidden divisions) of VC hubs

Can we discern "clans" of VC hubs just by examining the intricate tapestry of VC flows in Europe? Indeed, we can. This task, known as *community detection*, is a vibrant area of network analysis, helping us understand how nodes in a network connect and interact.

There are different ways to spot "clans" or groups within a network. One popular method checks how closely connected the members of a group are, compared to what you'd expect from random chance. If a group has many strong connections inside it but only a few links to the outside, it gets a high "modularity" score. An algorithm then tries to split the ecosystem into groups that maximise modularity, revealing the most tightly-knit communities.

Applying one such algorithm to the flows of VC in Europe paints a fascinating picture of the European VC landscape. We identify eight distinct communities, their shapes heavily influenced by national borders. ▶

From West to East, our first "clan" is primarily composed of hubs from the Iberian peninsula; another is predominantly hubs from the British Isles, followed by clans largely made up of France, Benelux, Italy and Malta, DACH, Nordics and Baltics, and finally, a large bloc containing hubs from Central and Eastern Europe, including Greece.

## Mapping the eight distinct communities and their characteristics

### Benelux

- **Second highest density**, second lowest number of nodes.
- Highest share of investments (42%) directed outside the community. Preferred target partner is DACH (16% of investments originated).

### British Isles

- **Highest assortativity**, indicating strong correlation with similar hubs. Lower-than-average density and centralisation scores.
- Preferred target partner for 5 out of 8 communities.
- Most important investor for all EU communities, e.g. France (11% of received investment), Benelux (18% of received investment).
- Preferred target partner is DACH (15% of investments originated).

### France

- **Higher density than average**, second highest centralisation scores indicating concentrated network.
- Lowest assortativity, with hubs not correlating with similar ones.
- 80% of investments are from within the community. Preferred target partner is DACH (8% of investments originated).

### Iberian peninsula

- Average density, **lowest reciprocity**.
- Most investments (88%) are within the community.
- Preferred target partner is British Isles (5% of investments originated in the Iberian peninsula).

### DACH

- Most hubs (18% of all) with **low density**.
- Low centralisation, i.e. activity spread over many hubs.
- Second **highest assortativity**, meaning similar hubs correlate in strength.
- Preferred target partner for 3 out of 8 communities. Its main target partner is British Isles receiving 11% of investments originated.

### Nordics & Baltics

- **Highest in/out strength centralisation**, indicating concentrated activity in few hubs.
- Highest network density, despite lowest number of hubs.
- Low outward assortativity strength.
- Preferred target partner is British Isles (13% of investments originated).

### CEE (incl. Greece)

- **Lower density than average**, low centralisation scores indicating widespread activity.
- Preferred target partner is British Isles (7% of investments originated).

### Italy & Malta

- Second lowest density.
- Low centralisation scores, average positive assortativity strength.
- **Second highest intra-community investments** (87%).
- Preferred target partner is British Isles (5% of investments originated).

# The European VC ecosystem has yet to become a cohesive entity, as the footprint of national and regional ecosystems remains clearly visible.

## How we found Europe's eight VC "clans"

*To map the hidden structure of European VC flows, we started by weighting each connection between hubs using the logarithm of investment volumes. Why? This approach ensures that a handful of mega-deals don't overshadow the broader pattern – so that clusters reflect real connectivity. We then used the Leiden community detection algorithm, which looks for groups of hubs that are more tightly linked to each other than to the rest of the network. The algorithm specifically avoids groups that are just a loose collection of outliers. It does this without any knowledge of geography or history – just by examining VC flows. Yet, the eight "clans" that emerge closely track national and regional borders: the footprint of Europe's constituent ecosystems hides in plain sight.*

Remember, these algorithms have no understanding of countries and borders. They simply see nodes in the network, some strongly connected, others weakly. So, what does it mean that the VC hubs' "clans" mirror the economic and political regions typically used to segment the European VC ecosystem?

Regrettably, it suggests that the European VC ecosystem has yet to evolve into a cohesive entity, as the "footprint" of its constituent national/regional ecosystems remains clearly visible. This finding circles back to our speculation about the forces driving the hidden order of the European VC industry. These tight-knit communities provide evidence that geographic, linguistic, institutional, and cultural proximity shape the way VC hubs interact and develop.

On the other hand, the historical evolution reveals subtle but clear signs of consolidation within clans, especially at the core of Europe's VC landscape. This is evident when comparing the clans identified from 2007–11 VC flows with those from 2017–21. Despite a general backdrop of structural stability, which makes the two maps broadly similar, the number of detected clans fell from twelve to eight.

A handful of clans underwent major changes. From 2007 to 2011, DACH was fragmented: eastern Austria was in the CEE block, Switzerland stood alone, and even German hubs were scattered. Portugal and Spain were separate clans, while CEE was sparse and fragmented. By 2017–2021, DACH and Iberia had each unified, and CEE emerged as a consolidated clan.

What happens when we examine specific subsets of overall VC activity? While the main conclusions remain, we start to see intriguing pathways across VC hubs. For example, there's a notable connection between Greek VC hubs and the British Isles in early-stage and ICT investments, and a deeper interconnectedness between Italy and the Iberian peninsula in later stage investments.

There are also instances where some countries appear to break away from their geographic groups in certain subsets of activity. For instance, Switzerland forms its own "clan" in biotech investments, Portugal breaks away from the Iberian peninsula in early stage investments, and The Netherlands and Austria break away from their respective communities in VC investments that are neither ICT nor biotech.

**In 2021, investment flows across "clans" of VC hubs accounted for 43%, nearly double the 23% share seen in 2007.**

## Bridging worlds, breaking up barriers

While there may be a long road ahead before European VC hubs form a unified ecosystem, encouraging signs emerge from the analysis of how these national and regional ecosystems interact. In 2007, investment flows across "clans" accounted for 23% of overall volumes. By 2021, this share had jumped to 43%. ▼

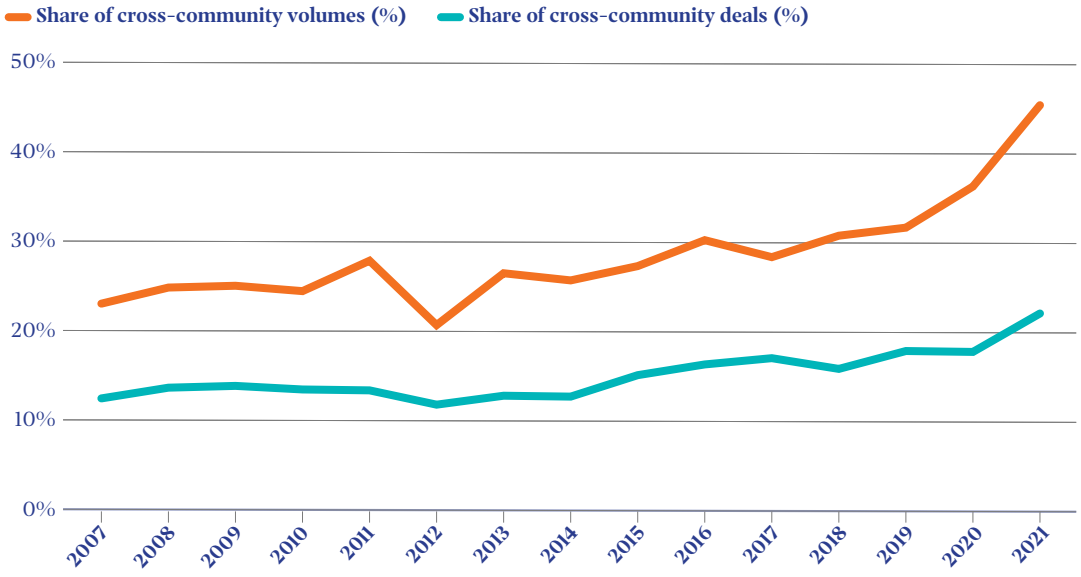
Zooming into this subset of hubs creating bridges over the various "clans", we find many of the top-ranking VC hubs. This sub-community is more densely connected than the overall ecosystem, indicating a tightly knit group of hubs with significantly more reciprocated connections than average.

Is this community of super-hubs another elite, intent on seizing an ever-growing share of the VC pie? Not exactly. Over recent years, the club of community-crossers has grown to include 42% of all European ecosystem's hubs.

In conclusion, the European VC ecosystem is dynamic and constantly evolving. With super-hubs bridging communities, its growth is fuelled by the increasing interconnectedness across regions, showing real progress towards a truly cohesive venture capital market. And the interplay between local and cross-community ties reveals a fascinating pattern: hubs that build strong local networks are also more likely to attract investors from outside of their community. This pattern could serve as a strategic roadmap for emerging VC hubs. ▶

While the road ahead to a unified European VC ecosystem may be long, the journey so far shows promising signs of progress and potential. The key challenge for public policy is to harness these dynamics and help build an inclusive, vibrant, and resilient ecosystem. Much remains to be done, but the direction is clear.

### Share of cross-community investments, over time




### Turn your hub into a super-hub

*Can a hub's "local" influence (measured by the hub's in-degree centrality within its own community) predict its success in attracting "cross-community" investment (measured by future cross-community in-degree centrality)? To answer this question, we used panel vector autoregression and Granger causality, a statistical concept used to investigate if one event (local influence) can predict another (cross-community influence) over time. The results suggest that the local influence "Granger-causes" a hub's cross-community influence (but not the other way around). Simply put, hubs that successfully attract "local" venture capital also tend to become more influential internationally, i.e. outside of their reference community. Note that this result doesn't necessarily prove causality, but it only describes a predictive relationship.*

# Complori: start ‘em young!

Complori (previously known as codary) is an online platform tackling Europe’s growing digital skills gap by teaching kids to code early. With schools lagging in digitalisation - evidenced by Germany’s 100,000 unfilled IT jobs - this Berlin-based company offers playful, coach-led courses in HTML, CSS, JavaScript, Python and more. The aim is to keep kids motivated while addressing the gender gaps that discourage girls from pursuing computer science. Backed by the EIF-supported Educapital fund, complori has strengthened its team, platform, and reach - showing parents that coding is an essential skill for all kids.


**Amanda Maiwald, CEO and co-founder**

Chapter 2

# A skills lens on the European VC ecosystem

## Mapping talent in European VC

The European VC ecosystem is not only shaped by capital flows and geographic hubs, but also by the skills, experiences, and life journeys of the individuals who are at its core: entrepreneurs on the one hand and investors on the other. In this chapter, we turn our attention from the "where" of VC activity to the "who": the human capital that drives innovation, risk-taking, and growth across Europe.

We've explored who takes part in Europe's VC industry before, but this time, we're raising the bar: tracing the academic and professional lineage of those driving innovation, investments and growth.

By applying a skills lens, we will follow the journeys that brought them to the forefront of the European VC ecosystem. This means looking beyond headcounts to explore:

- the prestige of their alma maters, as measured by global university rankings;
- the disciplines that shaped their expertise, reflecting their chosen fields of study;
- and the heights of their academic achievements, captured by the highest degree obtained.

**We put Europe's VC ecosystem through a "skills lens" to map the talent of its founders and investors.**

### The Data

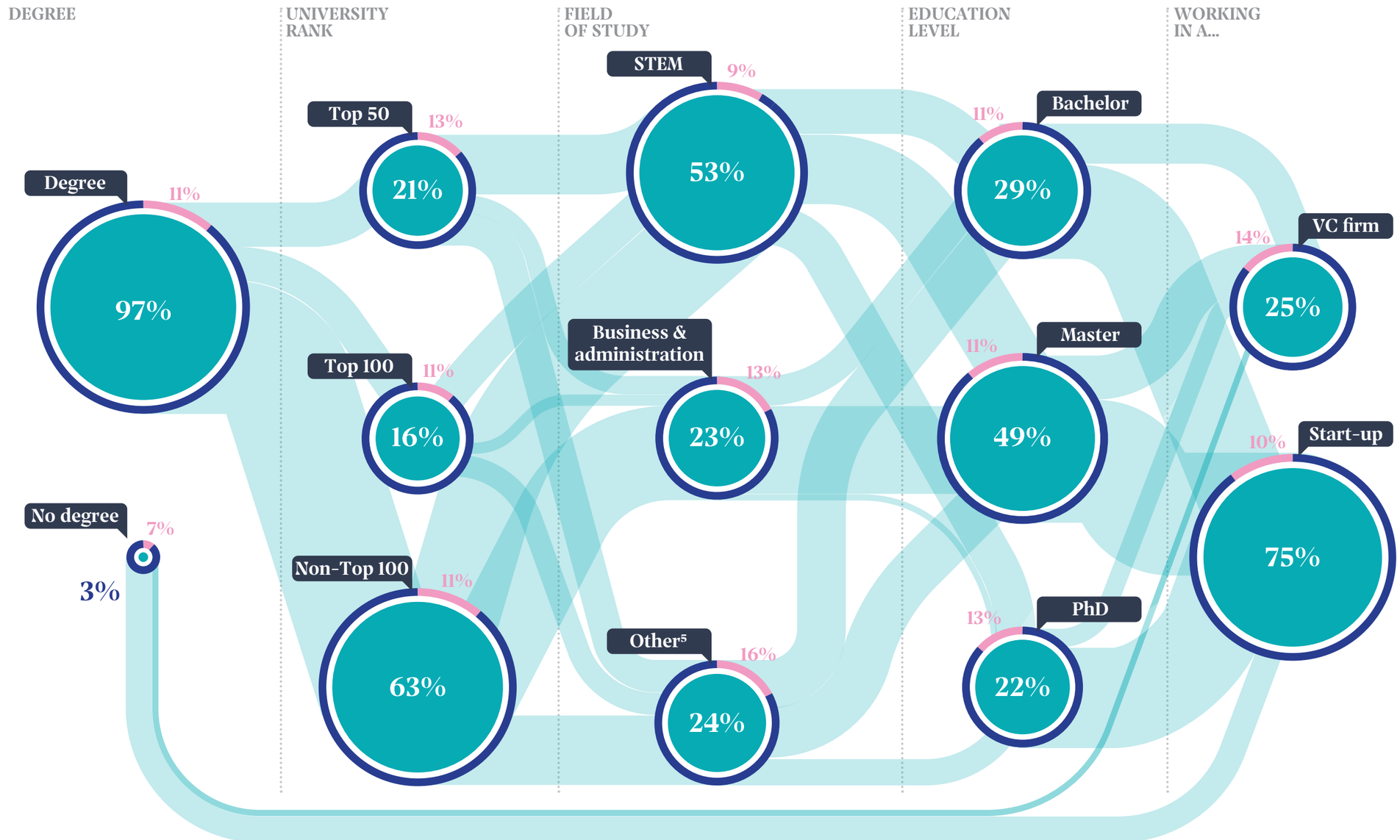
*This chapter builds on our previous edition[4], which tracked all VC deals in the European Data Cooperative (EDC) from 2011 to 2021. As before, we focus on top-level investors in VC firms based in Europe and founders or CEOs of European start-ups, enriching the dataset with self-reported academic achievement data from professional networking platforms to capture the academic background of individuals active in the European VC ecosystem. After filtering for completeness across both sources, the final sample includes 9,797 unique individuals, weighted to represent approximately 18,800 investors and around 59,200 founders or CEOs within the European ecosystem, forming the basis for the analysis presented in this chapter.*

**18,800**
**investors and over**
**59,000**
**founders and/or CEOs analysed**

4 Crisanti, A. et al. (2023). The VC factor. Gender lens edition. Joint EIF – Invest Europe study.

## Road to VC: education pathways, by gender

Female Male




How do these factors shape access and opportunity for entrepreneurs and investors across the European VC ecosystem? The diagram to the left traces the key steps from university halls to boardrooms and pitch decks. ◀

The data dispels two myths at once. First, there is no single, privileged path into European VC. For example, most entrepreneurs and investors did not graduate from the world's most elite institutions, with over half coming from universities ranked outside the global Top 100.

Second, the myth of the successful university drop-out is not supported by the data. Academic achievement is widespread: 76% hold at least a Master's degree and 21% have a PhD. Only 3% do not report a university degree, but this likely overstates drop-outs, as missing data may reflect incomplete reporting. For this reason, we exclude this subset from further analysis.

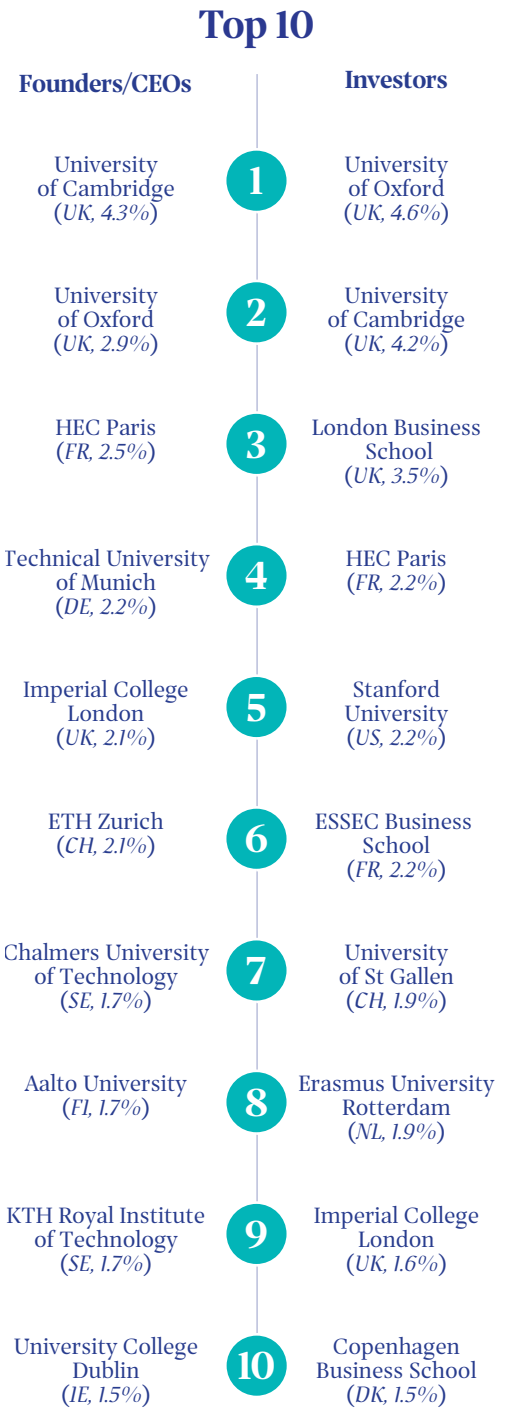
Looking at curricula, STEM dominates the landscape, with 53% of participants holding degrees in science, technology, engineering, or mathematics, while business and administration form the next largest group.

But the real insight is complexity – no single route, no guaranteed formula. The message is clear: access to European VC is shaped by a multitude of backgrounds and experiences, making it a dynamic, ever-evolving arena where different steps can lead to the same destination. So let's unpack these steps one by one.

**There is no single, privileged path into European VC.**

5 Social Sciences (15%), Medical & Health sciences (5%) and Arts & Humanities (4%)

**Top 10 alma maters in Europe's VC**
*2011–21*




## Alma maters matter (or do they?)

Our dataset covers graduates from over 500 universities worldwide, but a few prestigious ones stand out. The ten most popular alma maters for both founders/CEOs and investors are well-known institutions and account for about 25% of all affiliations for each group. These top ten universities are based in six countries alone, with the United Kingdom, France, Sweden and Switzerland being the most represented. Interestingly, just one US university appears in the list (Stanford University), and only for investors[6]. ◀

Apart from the ten most popular universities, how does access to prestigious institutions shape entry into the European VC ecosystem? To answer this, we first need to define prestige: we consider not only academic reputation and research strength but also "professional prestige" and an international standing that tracks how founders and investors build networks.

Against this backdrop, the Times Higher Education (THE) World University Rankings offer the clearest lens on how academic prestige is viewed in Europe's VC ecosystem. Using THE, we grouped universities into five tiers (top 10, 11–50, 51–100, 101–200, 200+) to map the prestige profiles of entrepreneurs and investors across our dataset. ▶

### THE Rankings

*THE World University Rankings assess over 2,000 universities using 18 performance indicators across five pillars: Teaching, Research Quality, Research Environment, International Outlook, and Industry Impact. Despite the usual big-science bias found in global rankings, THE's field normalisation and Industry Impact metrics better reflect elements of professional prestige important in Europe's VC ecosystem. After matching universities in our dataset by name, we assigned each one its median ranking for 2011–2021 to limit short-term variation.*

## The prestige of alma maters...matters (but Europe isn't alone in this game).

6 This also reflects our exclusive focus on Europe-based start-ups and Europe-based VC firms.

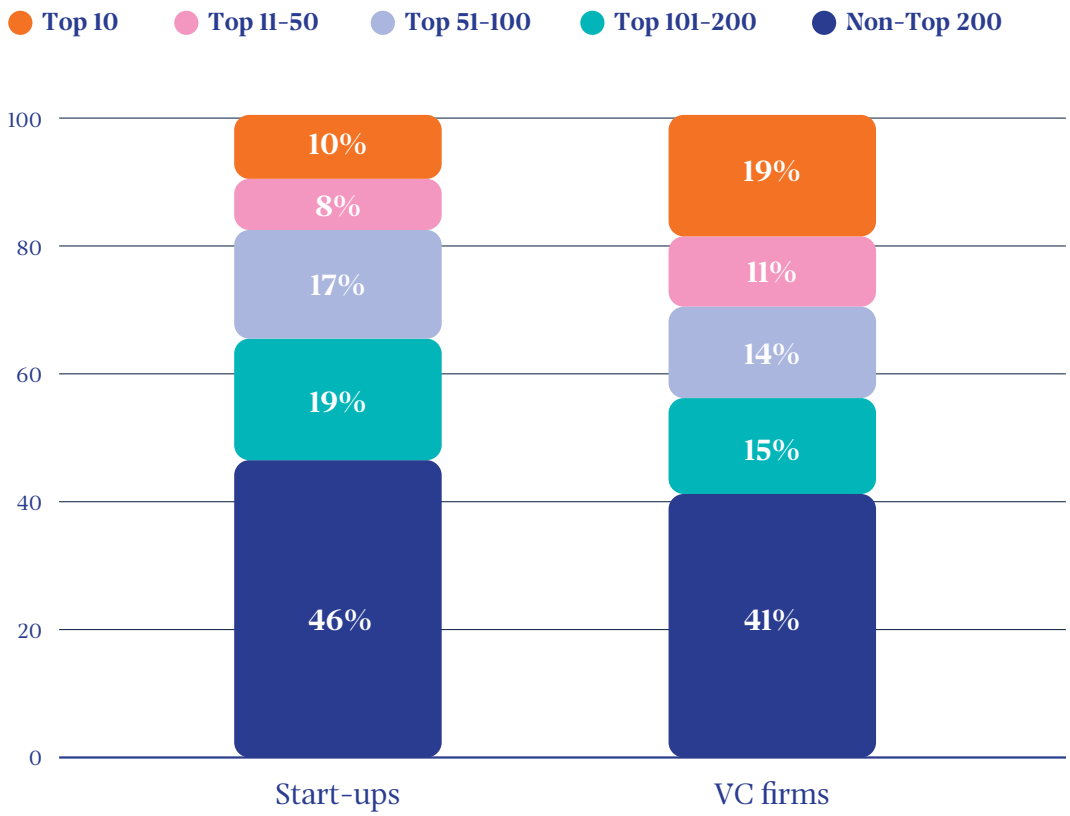
The largest share (44%) of investors and entrepreneurs studied at universities ranked outside the THE Rankings global Top 200, confirming that becoming part of the European VC ecosystem is not exclusive to a handful of alumni. In fact, representation drops as rankings rise, but then climbs up again: a striking 12% of all individuals attended a THE Rankings' Top 10 university, highlighting the strong pull of these elite institutions within the ecosystem.

When comparing founders and venture capital professionals, further contrasts appear. Among professionals working in VC firms, nearly half (44%) hold a degree from a top 100 institution.

This stands in marked contrast to start-up founders and employees, where the share is lower, at 35%. The gap remains also when looking at elite universities: 19% of VC investors graduated from a top 10 institution, compared to only 10% of founders.

Overall, it's safe to say that the prestige of alma maters...matters. But Europe isn't alone in this game, and it may not even be the most exclusive club. While methodologies differ, comparable analyses show when it comes to academic pedigree, Europe's VC ecosystem is no more of a closed shop than its global peers – perhaps even less so. ▶

**Prestige and founders vs. investors**




## How elite are founders across the globe?

*How strongly does university prestige correlate with successfully funded ventures? Two recent studies put the numbers in perspective. Koenig (2022)[7] examined more than 42,000 investments involving nearly 40,000 individuals (founders and investors) across the US and Europe from 2000 to 2020, drawing on Crunchbase and LinkedIn data. Using a combination of global and regional university rankings, Koenig showed that the 30 most popular universities account for almost 35% of all founders' affiliations. Of these, 8 out of the THE Rankings' Top 10 are present, representing just over 17% of all founders' affiliations, a figure nearly double that in our sample (excluding the remaining two Top 10 universities present in our data). Additionally, Endeavor Insight (2023)[8] analysed the backgrounds of 200 unicorn founders – split evenly between the US and emerging markets – using the 2022 QS World University Rankings as a benchmark. The study found that one-third of these founders completed their undergraduate degree at a Top 100 university.*

7 Koenig, L. (2022). Cut From the Same Cloth: The Role of University Affiliations in Venture Capital Investments [Preprint].
8 Endeavor Insights: Endeavor-Insight-Data-Explainer_Unicorn-Founder-Pathways.pdf

## Processing education field data

*To ensure consistency and comparability across the almost 24,000 distinct field of studies, we applied a structured, multi-step approach to harmonise education data. Text entries were standardised and cleaned to remove inconsistencies. Using a systematic keyword-based method, we mapped the resulting fields of study into eight broad categories based on the International Standard Classification of Education (ISCED) developed by UNESCO. The adaptation focuses on fields most relevant to the European VC and start-up ecosystem, such as: STEM (split into ICT, engineering, natural sciences), business & administration (incl. finance), medical & health sciences, social sciences, arts & humanities and "other". We finally excluded the "other" from the analysis due to limited coverage and lack of relevance for this study. While ISCED combines business, administration, and law into a single broad field, we opted to separate business and administration, and placed law under social sciences to better serve the goals of this study. We further cross-checked with degree titles to resolve some ambiguities.*

# Subject to success: where expertise takes root

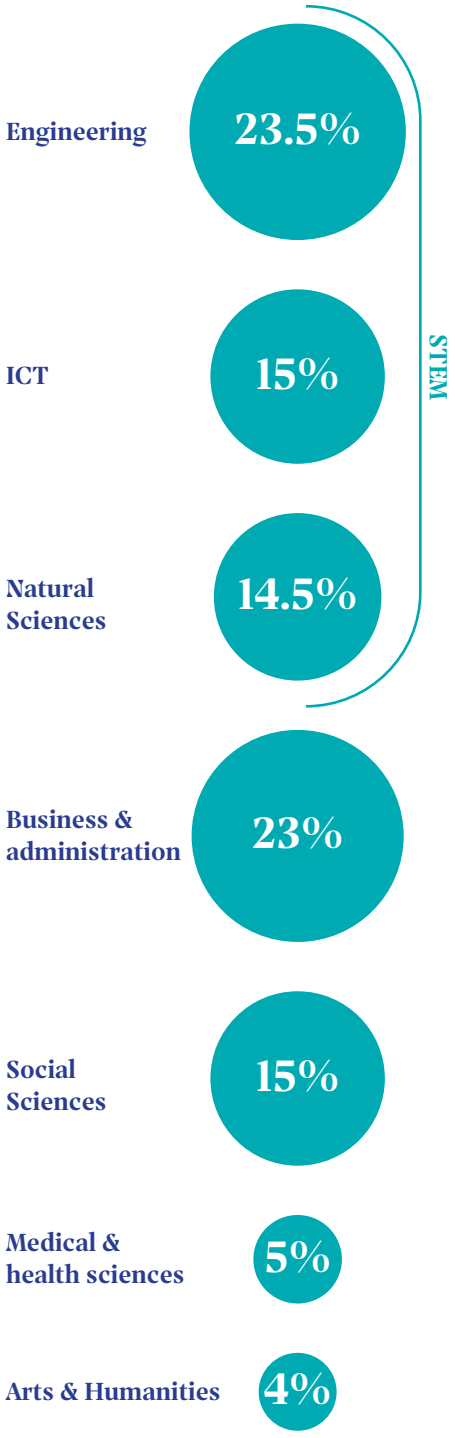
Our next focus under the skills lens is the academic field of study. For consistency and comparability, we used a keyword-based approach to aggregate academic disciplines into eight broad categories, aligned with the international standard classification of education (ISCED). ◀

What did the majority of people working in the VC ecosystem study? Most people have a STEM background (53%), with Engineering, (23.5%), ICT (15%) and natural sciences (14.5%) as key sub-groups. These are followed by business & administration (23%). Medical & health sciences (5%) and arts & humanities (4%) are the least prevalent. ▶

Does field of study correlate with an individual's eventual path into either a start-up or a venture capital firm? The data suggests that it does. In start-ups, it's STEM that steals the spotlight – these are the degrees powering the founders and teams building Europe's next big thing. Flip to the VC side, here the field of study appears to be more evenly distributed. The verdict? Founders usually rely on technical expertise, whereas investors benefit from broader knowledge across fields. ▶

**Founders usually rely on technical expertise, whereas investors benefit from broader knowledge across fields.**

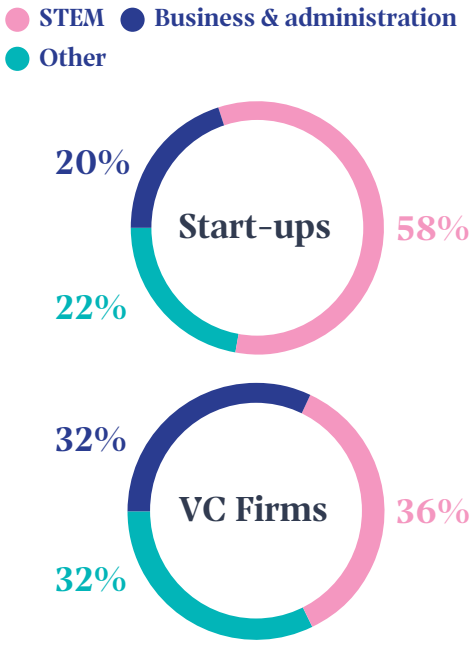
## Fields of study: full sample



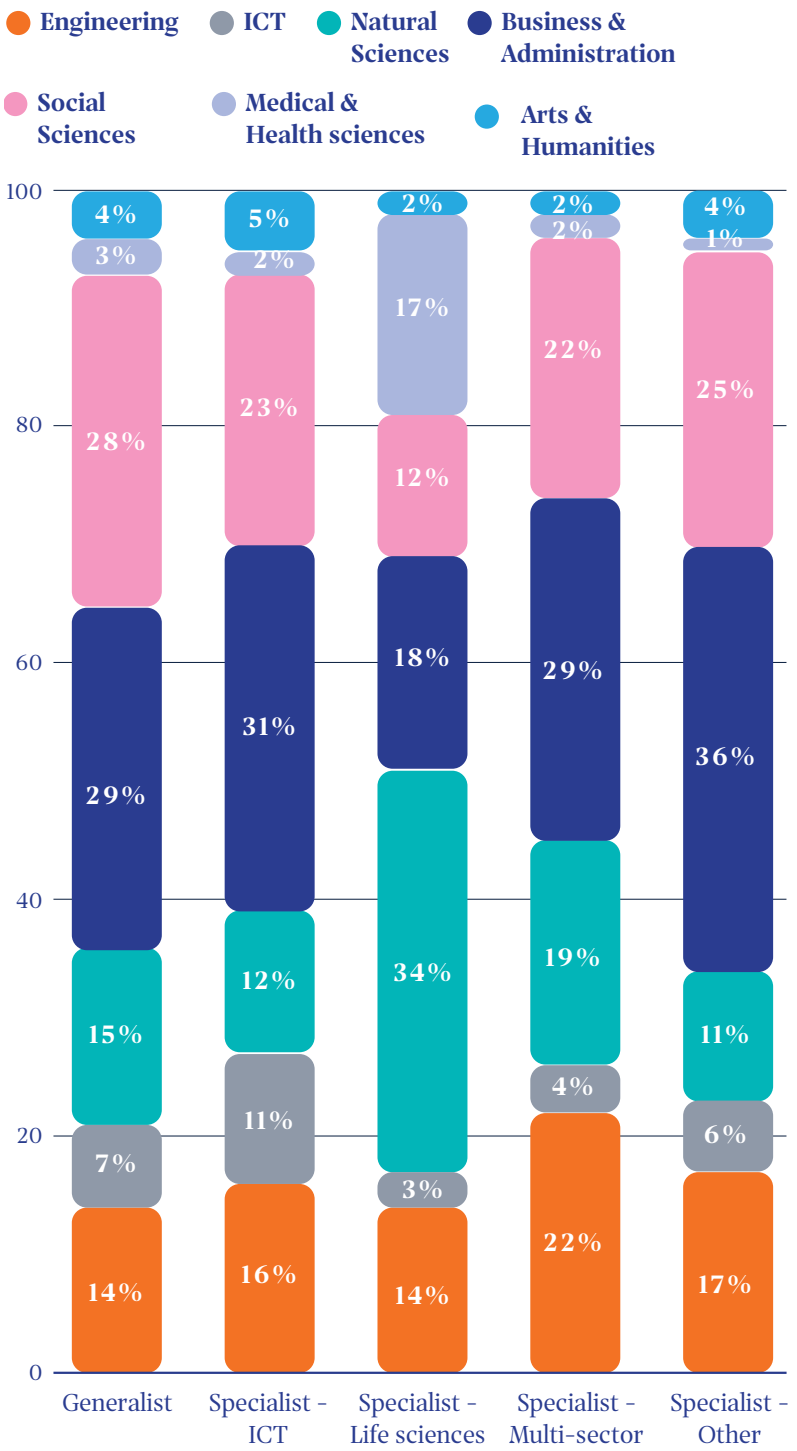
At first glance, it appears that VC firms value a broad and diverse knowledge base rather than a single specialisation field. Yet, when we look more closely at the firms' investment strategies, a more nuanced picture begins to emerge. To assess this, we grouped VC firms according to their sector focus: most are Generalist, i.e. they lack a specific sector focus (75%), followed by Multi-sector (10%), ICT (10%), Life Sciences (3%), and Other (2%). ▶

Life sciences funds are stacked with medical and natural sciences degrees – five times more medical expertise than the average, and nearly double the natural sciences know-how. ICT-focused funds, meanwhile, show a markedly higher share of professionals trained in tech. The pattern is clear: sector-focused firms lean heavily on targeted expertise, proving that when it comes to investment decisions, deep knowledge is a powerful edge.

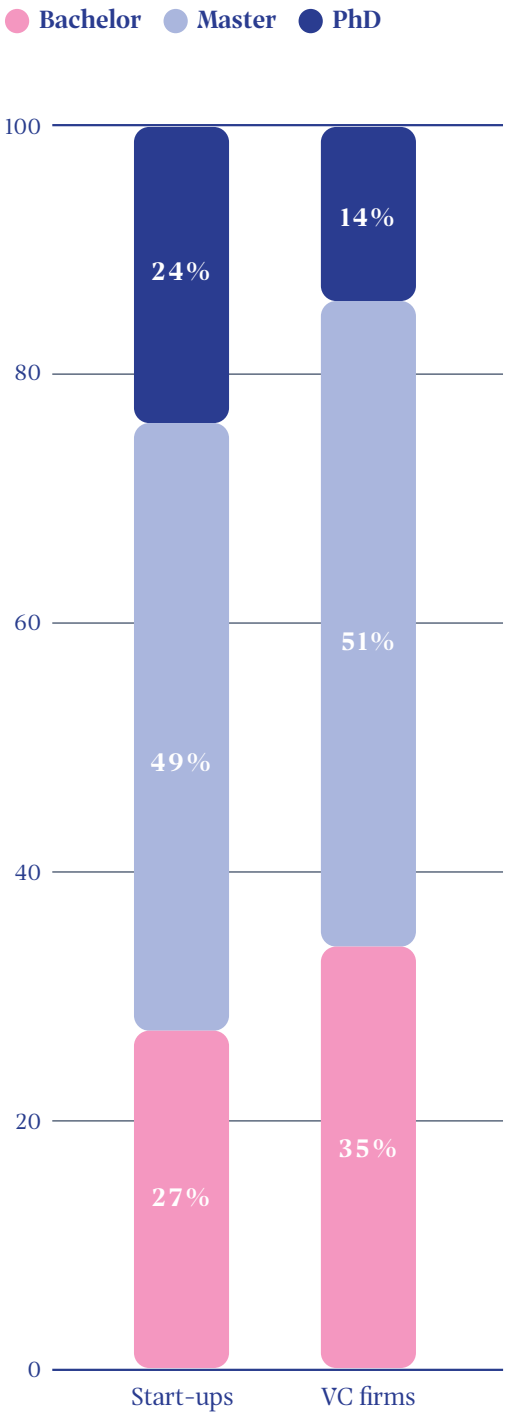
## Fields of study: Start-ups vs. VC firms




## VC firms' sector focus and field of study



## Degrees: start-ups vs VC firms




## Degrees on the rise: how high did they (have to) go?

Let's now turn to the highest level of education attained. As already shown, an overwhelming 97% of individuals in the dataset have at least a Bachelor's degree – and those that do not, might be a "noisy" subset riddled with non-reporting bias.

So for simplicity, let's make this 100%. Within this group, Master's degrees are the most common graduates, accounting for 49% of individuals, while PhDs represent the smallest share at 22%. ▶ Educational attainment is also linked to institutional prestige: individuals who studied at the most highly ranked universities are more likely to have pursued advanced degrees. As the data show, 30% of graduates from top 10 universities hold a PhD, compared to only 15% of those from universities ranked outside the top 200.

Start-ups and VC firms may share the same ecosystem, but their academic achievements tell a different story. In the world of founders and CEOs, advanced degrees are less of an exception: nearly a quarter (24%) hold a PhD, significantly more than among their investor counterparts (14%). ◀

However, not all sectors play by the same rules in terms of academic achievement. Biotechnology stands out as the PhD powerhouse – over half (56%) of its professionals have earned a doctorate, dwarfing the averages elsewhere. In Business products and services, ICT, and the catch-all 'Other' category, Master's degrees take centre stage, with PhDs trailing far behind. ▶

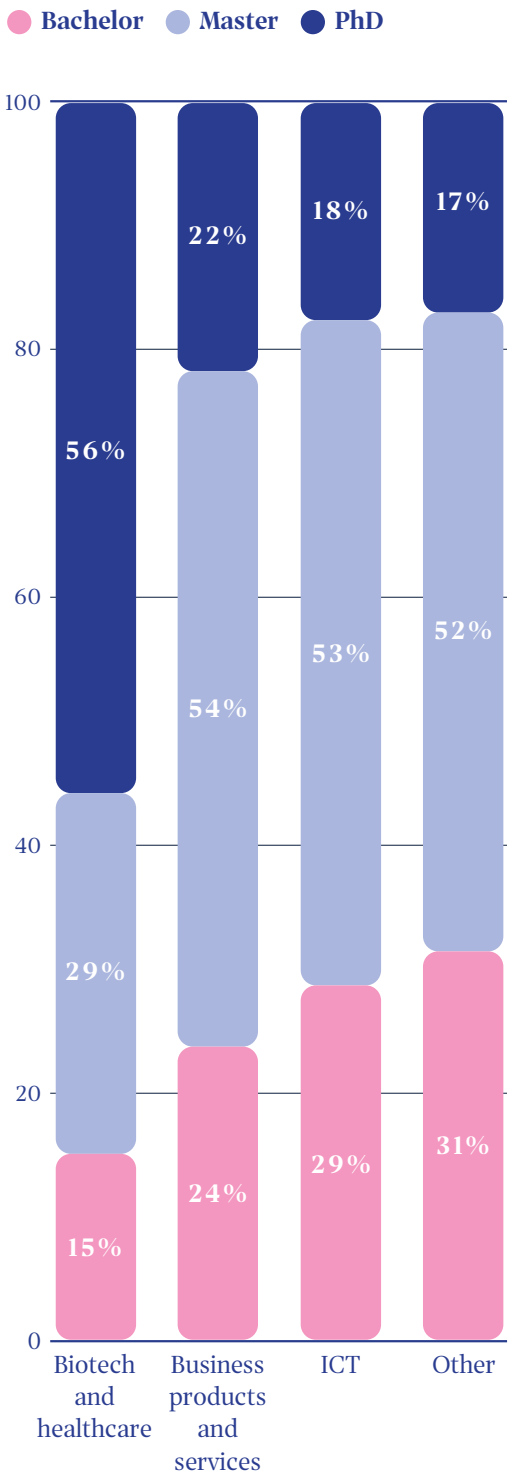
The message? When it comes to credentials, biotech is in a league of its own. By contrast, the remaining sectors broadly mirror the overall distribution of degrees, with Master's degrees being the most common and PhDs representing the smallest share.

### By degrees, VC is different

*Put into perspective, individuals in European VC have twenty times the rate of PhDs as the general workforce (22% vs 1.1%, according to OECD). Also Master's degrees stack up at three-and-a-half times the population rate (49% vs 15%). And by the way, the skew towards STEM is confirmed: twice as likely as the average degree holder (53% vs 25%).*

**Educational attainment is linked to institutional prestige.**

### Start-up industries and higher education




## Beyond the CV: the returns to education in European VC

The previous pages made it clear: academic credentials and university prestige shape who gets a seat at the European VC table. But which credentials actually translate into bigger cheques?

Drawing on our dataset, we analyse how investment outcomes relate to key founder characteristics such as educational attainment, and field of study. By mapping funding patterns across these dimensions, we seek to understand whether certain backgrounds are more likely to attract capital and, crucially, whether the system rewards merit or reproduces existing inequalities. ▶

Before delving into the findings, two clarifications are in order. First, this section focuses exclusively on the founder side of the ecosystem that is, those seeking capital, not those deploying it. Second, because investments are typically made in start-up teams rather than individuals, our analysis aggregates founders into teams based on shared characteristics. This approach allows for a more coherent understanding of funding dynamics at the start-up team's level.

### How we analyse teams

*To ensure consistency and reliability in our analysis, we aggregate investment amounts and founder characteristics at the start-up team level. Specifically, if more than 50% of a start-up's founding team shares a given attribute — such as holding a Master's degree or having studied a particular academic field — the entire team is assigned that characteristic for the purpose of analysis. This majority-rule approach allows us to identify prevailing patterns without overinterpreting mixed-team cases. Teams that are too small or lack sufficient data to draw meaningful conclusions are excluded from the analysis. Finally, to ensure comparability across different indicators and segments, the data are reweighted accordingly.*

**In the world of founders and CEOs, advanced degrees are less of an exception: nearly a quarter (24%) hold a PhD, significantly more than among their investor counterparts (14%).**

# Where, what, how much: which education signal pays off most for start-up teams in Europe?

Stacking up workforce against VC volumes, the verdict is clear: for most educational backgrounds, fields, and university ranks, capital flows broadly mirror the presence of each group in the founder pool. Yet the exceptions are surprising: bachelor-run teams, business graduates, and Top 50 university alumni secure a larger share of funding than their workforce numbers alone would suggest. In other words, where you studied appears to pay off more than what you studied or how far you went.

## Highest degree achieved

When it comes to academic credentials, the European start-up scene is dominated by teams where the majority of founders and CEOs hold either a Master or PhD. Together, these teams make up 64 .3% of the workforce and attract 64% of total VC funding. But there's a twist: bachelor-dominated teams, while only 20.3% of the founder and CEOs pool, punch slightly above their weight by securing 22.6% of VC volumes. This outperformance comes, perhaps surprisingly, at the expense of more "balanced" teams, who represent 15.4% of the workforce but take home "just" 13.3% of the capital.

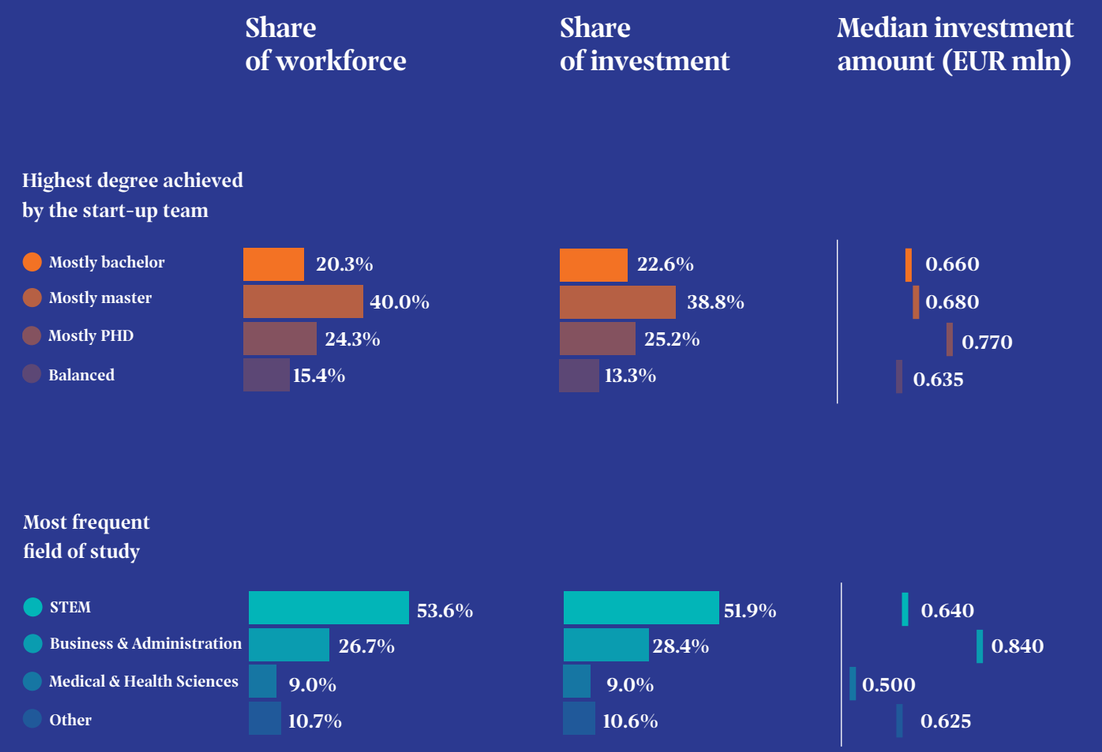
## Field of study

Looking at the field of study pursued by most team members, VC funding broadly mirrors the distribution of expertise. STEM teams dominate the landscape, making up 53.6% of founders and CEOs, yet they secure 51.9% of investment. Their shortfall is driven by engineering-majority teams, which take 24.9% of funding despite a 27.1% workforce share. Business and administration teams outperform their weight, with 28.4% of funding for a 26.7% workforce share. For medical and health sciences specialists and other specialist teams (including arts and humanities and social sciences), workforce and funding shares align almost exactly.

## University ranking

Start-ups where the majority of founders attended a university outside the Top 100 make up 75% of the workforce, but receive only 70.8% of VC funding. Teams linked to Top 51–100 universities represent 14.3% of founders and capture 13.5% of VC volumes, roughly proportional. The real standouts are Top 50 alumni: just 10.7% of founders, yet they command 15.7% of total funding. In Europe, the elite badge pays off, and at the expense of those from less celebrated institutions.

**"Where you studied appears to pay off more weight than what you studied or how far you went".**



## Measuring the ROI of education

*To move beyond surface-level comparisons, we used a multivariate regression approach designed to capture the true effect of team credentials on funding outcomes. We estimated the expected investment for each team profile factoring in degree, university rank, field of study, team size, timing, sector, stage, geographic region, old/new school, all at once. To make the results tangible, we used predictive margins, translating the statistical output into average investment amounts for each team profile, holding other factors constant. The result? Every headline figure reflects an apples-to-apples comparison: what a team with a given set of credentials can expect to raise, holding everything else equal.*

Is university pedigree the real differentiator in European VC? Before making such bold conclusions, we need to find which factors truly tip the scales when it comes to raising capital. Otherwise, the risk is overlooking the fact that some team profiles may outperform simply because they're linked to other favourable traits. So what happens when we bring all these dimensions together — degree, university rank, field, team size, timing, and more? ◀

When the dust settles, one badge stands out above the rest: the university name. Founding teams with roots in Top 51-100 universities raise, on average, nearly EUR 1 million more than their peers from less celebrated institutions. Push that to the Top 50, and the gap widens even further – over EUR 1.4 million extra in the investment pot. In the European VC game, prestige is a golden ticket, and it's the only education variable that consistently moves the needle on funding.

Surprisingly, the highest degree attained, whether Master's or PhD, doesn't deliver a statistically significant boost to investment once the full team profile is accounted for. The same goes for field of study: engineering, business, natural sciences, and other disciplines don't stand out. In the end, it's indeed not what you studied, but where you studied that counts most.

**In the European VC game, prestige is a golden ticket, and it's the only education variable that reliably boosts funding.**

Aside from regional or sectoral differences, another factor that never fails to impress is team size. Each additional founder adds nearly EUR 700,000 to the expected investment. Bigger teams mean bigger rounds, a reminder that human capital is more than just credentials. ▶

And then there's gender balance. The funding gap is real and persistent: teams with mostly female founders receive, on average, EUR 700,000 less per investment round than their mostly male counterparts — a difference that remains statistically significant even after controlling for all other factors. Can the skills lens help explain this divide? That's a theme we'll tackle head-on in the next section.

In the end, this multivariate analysis brings some clarity to the education puzzle. Prestige matters – especially the university's reputation, alumni network, etc.. Degrees and disciplines, less so. And while the European VC ecosystem is opening up to a broader range of backgrounds, the old signals of status still carry weight. For founders, the lesson is clear: build a strong, diverse team, aim high, and don't underestimate the power of your alma mater (and its alumni network). For investors and policymakers, it's a call to look beyond the university badge, because talent comes in many forms, and the next wave of innovation may well come from outside the usual suspects. ▶

## What moves the needle on VC funding

Teams rooted in Top 50 universities ▶ **€ 1.4M** more than teams from lower seed universities

Each additional founder adds nearly ▶ **€ 700K** to the expected investment

Teams with mostly female founders receive, on average ▶ **€ 700K** less per investment round than their mostly male counterparts

**The funding gap for female founders is real and persistent.**

## When the skills lens meets the gender lens: anatomy of a funding gap

As we bring our analysis full circle, it's time to see what happens at the intersection of the skills and gender lens. By combining these perspectives, we move beyond isolated snapshots of education or gender balance, and instead uncover how these meet to shape access, mobility, and opportunity in European venture capital.

For a full dive on female access to European VC, take a look at our previous "The VC factor - Gender lens edition" report. There, we showed that despite growing awareness and initiatives around inclusion, women remain significantly underrepresented. They hold only 14% of top roles in VC firms and account for just 10% of start-up founders. And as the cheques get bigger, the gap widens: all-female entrepreneurial teams represent 3% of total investments below EUR 1m, but only 0.88% of investments above EUR 10m. ▶

One might think that differences in education or qualifications could at least partially explain this imbalance, i.e. that female-led start-ups would be somehow less "talented" than their male-led counterparts. Yet, our data points in the opposite direction: women in our sample are, on average, more highly educated than their male counterparts, both in terms of degree obtained and the prestige of their alma mater. The gap, therefore, cannot be purely explained by a lack of academic credentials.

### A gender lens on European VC ecosystem: a recap

*In our previous issue[9], we analysed nearly 39,000 investors and 85,000 entrepreneurs active between 2011 and 2021. The results were striking: women held just 12.2% of start-up roles and 23.1% of investor positions, dropping to 14% in top investor roles and 10% in founder or CEO positions.*

*Capital flows show an even sharper gap: all-male start-up teams captured 82% of investment, while all-female teams received less than 1.8%. A quarter of deals involve no women at the top, and only 0.88% of investments above EUR 10m go to all-female teams. The facts are clear: European VC overwhelmingly backs male-led teams, and true gender balance remains out of reach.*

9 Crisanti, A. et al. (2023). The VC factor. Gender lens edition. Joint EIF – Invest Europe study.

## How we measured the funding gap

*We use a statistical approach known as multivariate decomposition. This method allows us to disentangle the observed difference in total venture capital raised between mostly-male teams and those with a more balanced or female-majority composition. Rather than focusing on any single factor, the analysis considers simultaneously a broader set of characteristics – team size, timing of first investment, geography, sector, education, university rank, and more. By comparing teams that share similar profiles, we can estimate how much of the funding gap is explained by differences in "who" the teams are (their composition), and how much is due to differences in "how" the VC ecosystem rewards those same characteristics (the returns). This approach does not attempt to predict the future or assign blame. Instead, it offers a consistent way to map the forces at play, revealing the hidden architecture behind headline numbers.*

So what exactly, in the end, is driving the gap in venture capital raised between teams with different gender compositions? To tackle this question, we need to bring back all dimensions explored so far together: team size, timing, geography, sector, education, and more. As it turns out, this approach delivers an answer that is both more nuanced and more surprising than any single two-way comparison could suggest so far. ◀

Let's first recap some basic facts. Across more than 3,600 seed and early-stage start-ups tracked from 2011 to 2021, start-ups led mostly by men – those where women make up less than 45% of the startup – have raised, on average, 79% more venture capital than their peers with a balanced or female-majority composition. As previously shown, this is not a funding gap that can be easily explained away by a single factor, nor does it vanish when we account for the "talent" of the start-up team: university prestige, highest degree, or field of study.

Instead, when we look at all relevant predictors of investment volume together, a more nuanced picture emerges. Part of the difference is structural: mostly-male teams tend to be larger, and they often secure their first investment earlier, giving them a head start in the cumulative race for VC funding. They are also more likely to be based in regions and enter at stages where VC flows more freely.

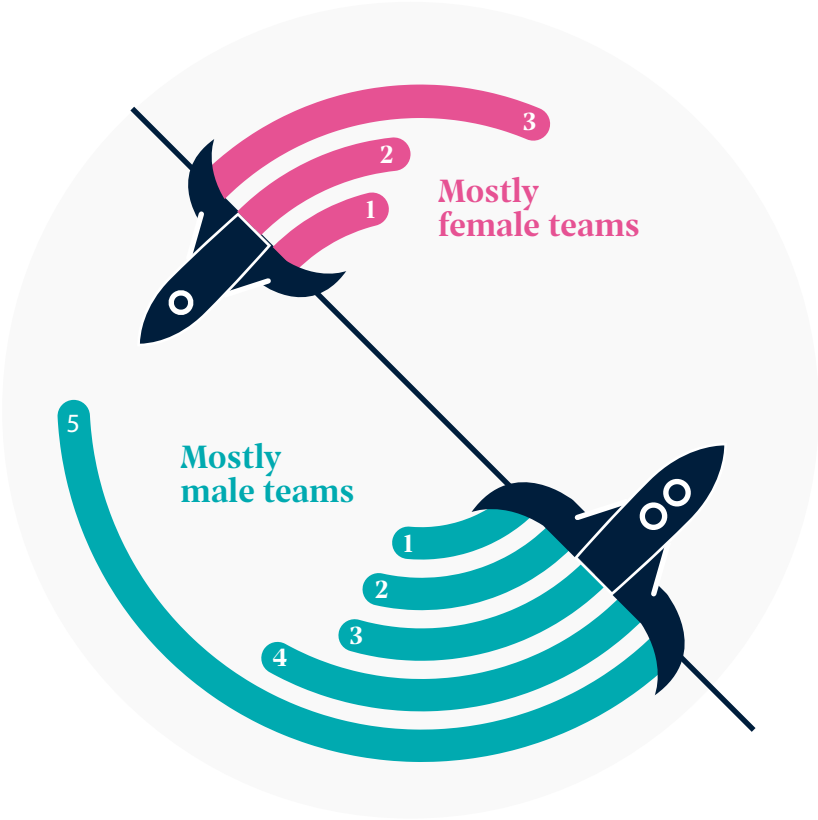
What does this mean? That not every team lines up at the same starting line: if we could level the playing field on just four fronts – team size, timing of first investment, region, and stage at entry – and keep all the rest as-is, over half of the funding gap between mostly-male teams and balanced or female-majority teams could disappear. To be fair, balanced and female-led teams also bring their own advantages to the race – think those higher degrees and stronger university pedigrees mentioned before. These strengths help at least claw back some of the lost ground, but in the end, 33% of the gap remains because of these structural differences. ▶

But what about the rest? Here lies the more surprising part of the analysis: two-thirds of the funding gap aren't explained by differences in the observed starting conditions. Instead, they are driven by factors not included in our model. And it is not necessarily about what start-up teams bring to the table, but also how VC investors reward what they bring.

And here's the twist: when we look at all dimensions explored so far, most of them do not show systematic differences in how they pay off across gender mixes. Education? No significant differences in how that pays off for either group. Geographic area? No evidence of systematic gender bias across the map. The pedigree of the alma mater? No strong evidence either. So on a positive note, our analysis finds no clear evidence that, all else equal, the observable attributes of balanced or female-led teams are systematically rated less favourably than those of their male-driven peers.

**Half the funding gap for female founders stems from: team size, timing of first investment, region, and entry stage.**

## What drives the gender funding gap: boosters for balanced/mostly female vs mostly male start-up teams




**Mostly female teams**

1. More advanced degrees
2. More prestigious university attended
3. Higher presence in specific region-sector combos

**Mostly male teams**

1. Higher presence in later stage VC
2. VC funding came earlier
3. Higher presence in VC-rich regions
4. Larger teams
5. Other unobserved factors

**It's not necessarily about what start-up teams bring to the table, but also how the VC ecosystem values it.**

### Mind the... censoring bias

*The main decomposition uses total funding from 2011–2021, which could disadvantage later entrants with more gender-balanced teams. To rule out timing bias, we repeated the analysis using only initial investment amounts. The results? The funding gap persists, stays roughly the same, and observable factors explain less than half of it.*

### Mind the... interpretation

*The patterns may be striking, but they don't tell the whole story. Many forces shaping investment outcomes remain invisible: the originality of the idea, market timing, alternative financing options, or team qualities like soft skills, prior experience and networks. These unobservables may correlate with gender — or not. We simply cannot know. What this analysis does provide is a structured view of the visible drivers of disparity. It shows where team profiles and market responses matter, but it cannot claim causality.*

## Demystifying "unobservables" in start-up teams

*What else do European VC investors really look for in start-up teams? The largest survey of European PE/ VC investors[10] makes it clear: soft skills (those "unobservables" absent from spreadsheets) are key. Leadership and people management consistently top the list, closely followed by commitment and passion, industry knowledge, and selling or pitching skills. These are also the areas where investors most often spot gaps. For founders, building these soft skills may well be crucial for attracting capital and scaling up. But could this help explain the funding gap for female-led entrepreneurs? Quite possibly: some studies indicate that investors tend to undervalue women's leadership and people skills due to persistent, often unconscious, biases[11].*

That said, the data also tells us something hard to ignore: there is at least one factor (maybe several) that consistently works in favour of mostly-male teams, and together these unseen advantages account for the majority of the gap. What are they? Here, the trail runs cold.

The drivers of this residual difference are beyond the reach of our dataset, hidden in the intangibles that shape investor decisions. They may include soft skills, prior entrepreneurial experience, the depth and strength of personal networks, the perceived credibility and risk appetite of the founding team, or something else entirely. These are the elements that rarely appear in a spreadsheet, yet often tip the scales in the real world. And until we measure them, a large part of this story will remain out of sight. ◀

Despite these grey areas, the data hint at an ecosystem where merit and opportunity do not always move in lockstep. Educational attainment and university prestige matter, but they are not enough to close the funding gap for women entrepreneurs.

There are, however, some encouraging signs. Female participation continues to increase among younger generations of start-uppers. Although progress is gradual, this shift points to a future where each next wave of entrepreneurs will be more diverse, and where skills, talent, and ambition alone may be sufficient to open the door to European VC. ▶

**Education and university prestige help, but alone cannot close the funding gap for female founders.**

10 Krämer-Eis, H., et al. (2024). Skills in European entrepreneurial finance: A survey-based analysis of skills and skills gaps in the VC and PE markets. EIF Working Paper 2024/100.
11 Pavlova, E., & Gvetadze, S. (2023). Female access to finance: a survey of literature. EIF Working Paper No 87/2023.



## Mind the… recent initiatives

*Our data stops at 2021. But the story of gender inclusion in European venture capital didn't. In the last years, a wave of initiatives has emerged to lower the barriers for women entering the investment and start-up ecosystem — and to close the gap for good.*

*Invest Europe is committed to and believes in the value of diversity in their organisation and industry. This is why in 2021 a Diversity Working Group has been established. It aims to advise and support Invest Europe's work on diversity, in relation to the association's internal governance, the development of tailored guidance for members, and the ongoing engagement with external stakeholders and members to promote diversity in the PE/VC industry. It sits under the Professional Standards and ESG Committees. If you would like to know more, please visit:*

**Invest Europe diversity**

*At the EIF, one notable initiative is Empowering Equity, the main platform for promoting diversity and inclusion. The initiative is structured around three pillars: high-profile physical events, a structured mentorship programme, and an academy focused on STEM and sustainability skills , which are implemented through dedicated programmes. The first pillar is embodied, the Empowering Equity Event, now in its fourth edition, which has brought together over 300 participants, including investors, fund managers, Limited Partners and students from the Academy, serving as a key platform for dialogue on gender diversity. The second pillar is delivered through the Empowering Equity Mentorship+ Programme, launched in 2024, connects emerging female investment professionals with experienced mentors in private equity, private credit and venture capital, and includes one-to-one sessions, masterclasses and networking opportunities.*

*The third pillar is addressed by the Empowering Equity Academy which aims to close gaps in sustainability knowledge and STEM skills within investment teams; to date, two editions have been completed, training 60 participants through online modules and in-person sessions, including participation in EIF flagship events.*

*Change also requires capital. In 2024, EIF launched the Gender Smart Equity Investment Programme (GESIP), a dedicated initiative to channel funding towards female-led fund managers and gender-diverse investment teams. GESIP builds on the InvestEU framework and applies gender diversity criteria to investments. Current mandates have an investment ambition of approximately €300 million.*

*This complements EIF's commitment under the InvestEU Gender Smart Initiative, where at least 25% of supported funds meet gender diversity criteria. If you want to learn more and/or be part of this change, please visit:*

**Empowering Equity**


# Appendix

## List of Functional Urban Areas used in the analysis

**Austria**: Vienna, Graz, Linz, Salzburg, Innsbruck, Klagenfurt.

**Belgium**: Brussels, Antwerp, Ghent, Charleroi, Liège, Bruges, Namur, Leuven, Mons, Kortrijk, Ostend.

**Bulgaria**: Sofia, Plovdiv, Varna, Ruse, Dobrich, Blagoevgrad.

**Switzerland**: Zurich, Geneva, Basel, Bern, Lausanne, St. Gallen, Lucerne, Lugano, Biel/Bienne.

**Cyprus**: Nicosia, Limassol.

**Czechia**: Prague, Brno, Ostrava, Ústí nad Labem, Olomouc, Liberec.

**Germany**: Berlin, Hamburg, Munich, Cologne, Frankfurt, Stuttgart, Leipzig, Dresden, Dusseldorf, Bremen, Hanover, Nuremberg, Bielefeld, Halle, Magdeburg, Wiesbaden, Gottingen, Darmstadt, Trier, Freiburg, Regensburg, Frankfurt (Oder), Weimar, Schwerin, Erfurt, Augsburg, Bonn, Karlsruhe, Mönchengladbach, Mainz, Ruhr, Kiel, Saarbrücken, Koblenz, Rostock, Kaiserslautern, Iserlohn, Wilhelmshaven, Tübingen, Villingen-Schwenningen, Flensburg, Marburg, Konstanz, Neumünster, Brandenburg an der Havel, Gießen, Lüneburg, Bayreuth, Celle, Aschaffenburg, Bamberg, Plauen, Neubrandenburg, Fulda, Kempten, Landshut, Rosenheim, Stralsund, Friedrichshafen, Offenburg, Görlitz, Greifswald, Wetzlar, Passau, Dessau-Roßlau, Braunschweig-Salzgitter-Wolfsburg, Mannheim-Ludwigshafen, Münster, Chemnitz, Aachen, Krefeld, Lübeck, Kassel, Solingen, Osnabrück, Oldenburg, Heidelberg, Paderborn, Würzburg, Bremerhaven, Heilbronn, Ulm, Pforzheim, Ingolstadt, Gera, Reutlingen, Cottbus, Hildesheim, Zwickau, Wuppertal, Jena, Bocholt.

**Denmark**: Copenhagen, Aarhus, Odense, Aalborg.

**Estonia**: Tallinn, Tartu.

**Greece**: Athens, Thessaloniki, Patras, Heraklion, Larissa, Ioannina, Kavala, Kalamata.

**Spain**: Madrid, Barcelona, Valencia, Seville, Zaragoza, Malaga, Murcia, Las Palmas, Valladolid, Palma de Mallorca, Santiago de Compostela, Vitoria-Gasteiz, Oviedo, Pamplona, Santander, Toledo, Badajoz, Logroño, Bilbao, Córdoba, Alicante, Vigo, Gijón, Santa Cruz de Tenerife, A Coruña, Reus, Lugo, Girona, Cáceres, El Puerto de Santa María, Avilés, Talavera de la Reina, Palencia, Ferrol, Pontevedra, Gandia, Guadalajara, Manresa, Ciudad Real, Ponferrada, Zamora, Irun, Elda, Granada, Elche, Cartagena, Jerez de la Frontera, San Sebastian, Almería, Burgos, Salamanca, Albacete, Castellón de la Plana, Huelva, Cádiz, León, Tarragona, Jaén, Lleida, Ourense, Algeciras, Marbella, Alcoy, Ávila, Cuenca, Linares, Lorca, Mérida, Sagunto, Puerto de la Cruz, Igualada.

**Finland**: Helsinki, Tampere, Turku, Oulu, Lahti, Kuopio, Jyväskylä.

**France**: Paris, Lyon, Toulouse, Strasbourg, Bordeaux, Nantes, Lille, Montpellier, Saint-Etienne, Rennes, Amiens, Nancy, Metz, Reims, Orleans, Dijon, Poitiers, Clermont-Ferrand, Caen, Limoges, Besancon, Grenoble, Ajaccio, Saint Denis, Fort-de-France, Toulon, Valenciennes, Tours, Angers, Brest, Le Mans, Avignon, Mulhouse, Dunkirk, Perpignan, Nimes, Pau, Bayonne, Annemasse, Annecy, Lorient, Montbeliard, Troyes, Saint-Nazaire, La Rochelle, Angouleme, Boulogne-sur-Mer, Chambery, Chalon-sur-Saone, Chartres, Niort, Calais, Beziers, Arras, Bourges, Saint-Brieuc, Quimper, Vannes, Cherbourg, Tarbes, Compiegne, Belfort, Roanne, Saint-Quentin, Beauvais, Creil, Evreux, Chateauroux, Brive-la-Gaillarde, Albi, Frejus, Châlons-en-Champagne, Marseille, Nice, Lens - Liévin, Hénin - Carvin, Douai, Valence, Rouen, Melun, Martigues, Colmar, Cannes

**Croatia**: Zagreb, Rijeka, Slavonski Brod, Osijek, Split, Pula.

**Hungary**: Budapest, Miskolc, Nyíregyháza, Pécs, Debrecen, Szeged, Győr, Kecskemét, Székesfehérvár, Szombathely, Szolnok, Tatabánya, Veszprém, Békéscsaba, Kaposvár, Eger, Dunaújváros, Zalaegerszeg, Sopron.

**Ireland**: Dublin, Cork, Limerick, Galway, Waterford.

**Italy**: Rome, Milan, Naples, Turin, Palermo, Genoa, Florence, Bari, Bologna, Catania, Venice, Trento, Trieste, Perugia, Ancona, Pescara, Taranto, Potenza, Catanzaro, Sassari, Cagliari, Padua, Brescia, Modena, Foggia, Salerno, Piacenza, Bolzano, Udine, Lecce, Pesaro, Como, Pisa, Treviso, Varese, Asti, Cosenza, Avellino, Pordenone, Lecco, Carpi, Gallarate, Gela, Prato, Parma, Reggio Emilia, Ferrara, Rimini, Bergamo, Forlì, Latina, Vicenza, Terni, Novara, Alessandria, Arezzo, Grosseto, Brindisi, Trapani, Ragusa, L'Aquila.

**Lithuania**: Vilnius, Kaunas, Panevėžys, Alytus, Klaipėda, Šiauliai.

**Luxembourg**: Luxembourg.

**Latvia**: Riga, Liepāja, Jelgava.

**Malta**: Valletta.

**The Netherlands**: The Hague, Amsterdam, Rotterdam, Utrecht, Eindhoven, Tilburg, Groningen, Enschede, Arnhem, Heerlen, Breda, Nijmegen, Apeldoorn, Leeuwarden, Sittard-Geleen, Roosendaal, Alphen aan den Rijn, Bergen op Zoom, Gouda, Greater Middelburg, 's-Hertogenbosch, Amersfoort, Maastricht, Leiden, Zwolle, Ede, Deventer, Alkmaar, Venlo, Almelo, Lelystad, Oss, Assen, Veenendaal, Greater Soest.

**Norway**: Oslo, Bergen, Trondheim, Stavanger, Kristiansand, Tromsø, Bodø * .

**Poland**: Warsaw, Lodz, Krakow, Wrocław, Poznan, Gdansk, Szczecin, Bydgoszcz, Lublin, Katowice, Białystok, Toruń, Olsztyn, Rzeszów, Opole, Gorzów Wielkopolski, Zielona Góra, Jelenia Góra, Suwałki, Płock, Kalisz, Koszalin, Siedlce, Piotrków Trybunalski, Piła, Stargard Szczeciński, Tomaszów Mazowiecki, Leszno, Świdnica, Bielsko-Biała, Rybnik, Elbląg, Grudziądz.

**Portugal**: Lisbon, Porto, Braga, Funchal, Coimbra, Ponta Delgada, Aveiro, Faro, Viseu, Viana do Castelo, Póvoa de Varzim, Guimarães.

**Romania**: Bucharest, Cluj-Napoca, Timisoara, Craiova†, Brăila†, Oradea, Sibiu, Târgu Mureş, Târgovişte†, Slatina, Bârlad†, Roman†, Constanta†, Iasi, Brasov, Ploiesti†, Baia Mare, Satu Mare, Ramnicu Valcea†, Suceava†.

**Sweden**: Stockholm, Gothenburg, Malmo, Jonkoping, Umea, Uppsala, Linkoping, Orebro, Västerås, Norrköping, Helsingborg, Borås.

**Slovenia**: Ljubljana, Maribor.

**Slovakia**: Bratislava, Kosice, Banska Bystrica, Presov, Trnava, Trencin.

**United Kingdom**: London, West Midlands urban area, Leeds, Glasgow, Liverpool, Edinburgh, Greater Manchester, Cardiff, Sheffield, Bristol, Belfast, Newcastle upon Tyne, Leicester, Aberdeen, Cambridge, Exeter, Lincoln, Stevenage, Wrexham, Portsmouth, Worcester, Coventry, Kingston upon Hull, Stoke-on-Trent, Nottingham, Bath and North East Somerset, Guildford, Thanet, Ashford, East Staffordshire, Darlington, Worthing, Mansfield, Chesterfield, Burnley, Hartlepool, Doncaster*, Sunderland, Medway, Brighton and Hove, Plymouth, Swansea, Derby, Southampton, Milton Keynes, Northampton, Warrington, York, Swindon, Bournemouth, Wycombe, Telford and Wrekin, North East Lincolnshire, Peterborough, Colchester, Basingstoke and Deane, Bedford, Dundee City, Falkirk, Reading, Blackpool, Maidstone, Dacorum, Blackburn with Darwen, Newport, Middlesbrough, Oxford, Preston, Warwick, Norwich, Cheshire West and Chester, Ipswich, Cheltenham, Gloucester, Bracknell Forest, Carlisle, Crawley.

* This FUA has been created ad hoc for the purpose of the analysis.
† FUA dropped from the network analysis, due to missing complete geo-location data in either origin or destination

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As "The VC factor" goes on hiatus, we thank all our readers; it's been a great ride, and we hope this series left a dent (however small) in Europe's venture story.

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**His AI prompt footprint? Enough to make a GPU ask for a holiday.**

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**Had he earned a euro every time he typed "ecosystem", he'd be closing his own fund by now.**