



CLUB degli
INVESTITORI

TURIN

2023

STARTUP ECOSYSTEM





"Going Global"



Research conducted by Club degli Investitori in collaboration with the Comitato Torino Finanza, ESCP Business School, Growth Capital and ToTeM - Torino Tech Map.

Authors: Diletta Di Carmine, Gabriel Zurlo Sconosciuto, Alessia Boveri.
Graphic Design: Gabriel Zurlo Sconosciuto

Index

01. Executive Summary & Introduction pag. 4

02. Research on Startups and Innovative SMEs in Turin pag. 17

03. The Turin innovation system pag. 51

04. Turin versus comparable European cities pag. 61

05. The view of international investors on the Turin of innovation pag. 75

06. Conclusions & Acknowledgements pag. 81



Executive Summary



In Turin, there are 671 Startups and Innovative SMEs, up 11%, higher than the national increase (4%).



About 68% of companies operate in the high tech sectors: DeepTech, Energy & CleanTech, Life Sciences, Software & Cybersecurity, Mobility & Automotive.



The average production value of Startups in Turin is up 53% year over year and in line with the national figure.



In 2022, Turin's Startups raised EUR 400 million in investments, 22% of venture capital investments in Italy (9% in 2021).



In 2022, Turin is confirmed as the second city in Italy in terms of the amount of investments and the first for 'hi-tech' investments.



Turin Startup Ecosystem goes global

More than 80% of the startups that raised capital in 2022 have a predominantly international vocation.



In comparison with other non-capital European cities, Turin outperforms Lyon and Rotterdam but is still 6 times lower than Munich in attracting investments.



Startuppers in Turin are mainly looking for smart capital and business development resources.



More than 27 Accelerators, Incubators, Startup Studios and more than 25 Professional Investors based in Turin expect to invest 1 billion Euro in Venture Capital in the next 5 years.

01. Introduction



Club degli Investitori



Giancarlo Rocchietti

President & Founder at Club degli Investitori



Dear Turin

I wondered if, since we started collecting data on the startup system three years ago, you have made significant progress. I thought of asking Chat GPT.

Giancarlo: "How about the starts up ecosystem in Turin?"



"Turin has experienced significant growth in the startup and technology innovation sector, fueled by a strong tradition of manufacturing that provides a foundation for innovation and entrepreneurship.

The city's startup ecosystem is diverse, with innovative businesses in sectors such as automotive and mobility, software, biotechnology, robotics, and environmental technology.

Turin's emerging businesses receive support and resources from a variety of startup incubators and accelerators.

Investors have taken note of Turin's potential, with a number of venture capital firms and angel investors establishing a presence in the city.

Turin's research institutions and universities, including the Politecnico di Torino and the University of Turin, are also major contributors to the city's startup ecosystem, attracting talented researchers and entrepreneurs.

As a result, Turin's startups are gaining national and international recognition and contributing to the economic growth of the city and the surrounding region."

Giancarlo: "How nice! The answer is very positive. But is it really so? I hope that the research, conducted by humans and not an AI, can give you a complete answer. So I invite you to read it, and we'll meet again on page .. for the conclusions."



ESCP Business School



In 2004, when we decided to open ESCP's first Italian campus in Turin, we knew that this city would be ideal for nurturing talents and their projects, and this year's report has confirmed our vision. In fact, we notice how the ecosystem, now on par with other European cities such as Lyon and Rotterdam, is heading in the right direction, with a higher number of Turin startups than the national average and investments steadily increasing.

To carry on this virtuous path, we believe that it is necessary to further develop the connections between

talents, companies, and investors, and to do so, it is important that the different initiatives present in the city play in unison to emerge with even greater strength.

As ESCP, we will continue to contribute by opening also in Turin our innovation platform called Blue Factory: it will allow us to share our model and our international network and to dedicate ourselves with greater strength to cultivating the talent and connections necessary to have that positive impact on society that we all want to generate.

ESCP Business School, ranked third in Europe by the Financial Times,

is one of the most prestigious business schools in the World. It has six campuses across Europe, and offers a range of undergraduate, graduate, and executive education programs in business and management.

ESCP is highly regarded for its international focus, diverse student body, and emphasis on entrepreneurship and innovation.



Francesco Rattalino

Executive Vice-President at ESCP Business School
and Dean of the Turin Campus



Comitato Torino Finanza



Vladimiro Rambaldi

President at Comitato Torino Finanza
Turin Chamber of Commerce



The Piedmontese startup system is growing, but with an 'Achilles' heel': it has a capital endowment, combined with operating cash flows, that is too low. This is what we verified with one of the investigations of the Comitato Torino Finanza. Entrepreneurs and their staff therefore have a limited time to prove the correctness of the concept behind the innovation proposal.

If the road to financial independence is uphill, the incentive and (subsidised) financing strategies should be selective, to provide not just a partially sufficient endowment for many, but a decidedly sufficient endowment for the most deserving

Startups, as the risk of early liquidation due to lack of time concerns all of these companies. The Comitato Torino Finanza has decided to help the galaxy of innovative Startups by promoting the ToTeM (Torino Tech Map) platform also to attract capital from outside the region.

The Comitato Torino Finanza at the Turin Chamber of Commerce has been working for years to develop a business financial culture that fosters economic growth in the region, allowing companies, SMEs in particular, easier access to financial markets.



Growth Capital

Italy's second Venture Capital city and the first High Tech landmark in our Country, Turin is one of the reference points of the VC ecosystem, also thanks to the central role in supporting innovation played by some key entities connecting investors, entrepreneurs and startups such as the Politecnico di Torino, Club degli Investitori and the OGR, pillars of this growing metropolitan ecosystem.

Turin has been able to attract young talents and skilled tech workers in the city, key to continue to strengthen the relationships between incubators, accelerators, universities and (tech transfer)

investors in order to create the most favorable conditions for Italian and foreign entrepreneurs to give birth to the scale-ups of the future. Newcleo is a clear example of what can be achieved in Turin.

Growth Capital is a team of VC professionals supporting scaleups and SMEs in their fundraising and M&A. We drastically increase success rate and reduce the time spent by managers, investors and entrepreneurs to complete finance transactions. Our vision is to be the partner of choice for financial advisory in the European innovation ecosystem.



Fabio Mondini

Founding Partner
at Growth Capital





02. Research on Startups and Innovative SMEs in Turin

The Turin's Startup ecosystem Research is an initiative launched in 2020 by the Club degli Investitori and now in its third edition.

The research, carried out in collaboration with the key players in the innovation ecosystem of the area, and with the support of ToTeM, aims to better understand the characteristics of innovative startups and investors in Turin and gather information for the launch of initiatives that promote the

creation and development of new tech companies in the city.

The aim of the 2023 edition is to measure whether there have been any changes compared to the previous period, not only in numerical terms - such as whether there are more or fewer innovative companies, or whether the amount of capital raised has increased or not - but also and above all in qualitative terms.

This is to understand the sentiments

of the entrepreneurs who lead the Turin startups.

Furthermore, this year a comparison with other European cities similar to Turin has been added, in addition to some interviews with international VC and founders.



671
Total Startups and
Innovative SMEs in Turin



478
"Truly" Innovative
Startups and SMEs in
Turin



150
Startups and Innovative
SMEs in Turin
interviewed

SURVEY SAMPLE AND METHODOLOGY

The survey sample was defined starting from the companies registered in the Innovative Companies Register of Turin, which as of 31 December 2022 numbered 671, of which 548 are startups (companies less than 5 years old from the date of incorporation) and 123 are Innovative SMEs¹.

For simplicity's sake, in the text of the research we will sometimes use the term 'startup' to indicate both types of company.

The analysis began and continued with an examination of whether each company actually had the characteristics to be defined as an innovative entrepreneurial reality, as defined by international practice².

The in-depth study we carried out identified a small sample of 478 companies, 383 Startups

(70% of the total) and 95 innovative SMEs (77% of the total), on which part of the Research will focus ("truly" innovative). Within the sample, we also interviewed 150 companies in order to elaborate more detailed information and understand the point of view of Turin's entrepreneurs.

The analysis on turnover and composition of the founding team included the entire group of 671 companies, in order to be comparable with the national data published by MISE³, which do not include the restriction of the sample.

In addition, the 2023 edition of the Research was enriched with a more in-depth and detailed analysis on the investment rounds that took place in 2022 in Turin, to which a specific section was dedicated.



Innovativeness

Of the companies in the Register, only 71% can be described as "truly" innovative.



Interviews

Research includes 150 direct interviews with innovative companies in Turin.

¹ <https://startup.registroimprese.it/isin/static/startup/index.html?slideJump=32>

² Reference is made to Steve Blank's definition: "an organisation formed to seek a repeatable and scalable business model", See Steve Blank, What is a Startup? First Principles, 25 January 2010, <https://steveblank.com/2010/01/25/whats-a-startup-first-principles/>.

³ "Cruscotto di Indicatori Statistici - Startup innovative, 3° trimestre 2022", UnionCamere, MISE, InfoCamere.



TURIN STARTUPS: DATA AND GROWTH

One year on, from the end of 2021 to the end of 2022, startups and innovative SMEs in Turin increased by **11%**, higher than the national increase (4%).

In detail, startups increased by **7%**, in line with Milan (+7%) and Rome (+8%) but at a much higher rate than the national rate, which was only 1%. Innovative SMEs also recorded a positive growth rate, with an increase of **16%**, but this was lower than the national rate of +24%.

+11%

Startups and Innovative SMEs in Turin vs. 2021

Overall, if we add up the startups and innovative SMEs registered in the Register in Italy, we have 16,639 enterprises, of which 671 are in Turin, accounting for about **4%** of the total in Italy.

There are **2.48 startups per 10,000 inhabitants** in Turin, in line with the national figure (of 2.40 per 10,000 inhabitants). In the ranking of Italian cities, Turin ranks third, after Milan (8.76 Startups per 10,000 inhabitants) and Rome (3.93 Startups per 10,000 inhabitants), **confirming that innovation is increasingly concentrated in large cities.**⁴

The number of startups and innovative SMEs in Turin grows more than the national average.

Number of Startups 2022 vs. 2021

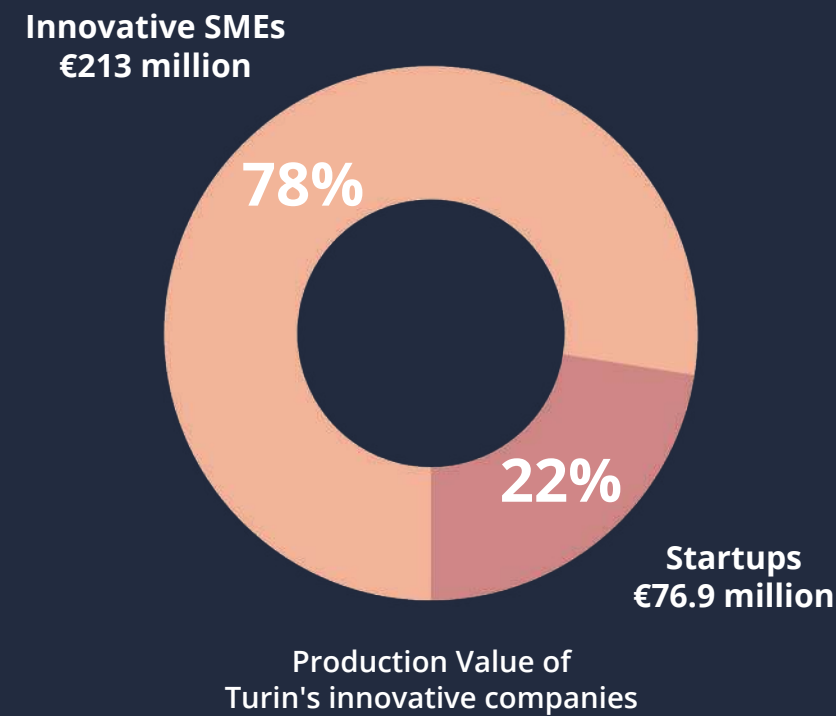
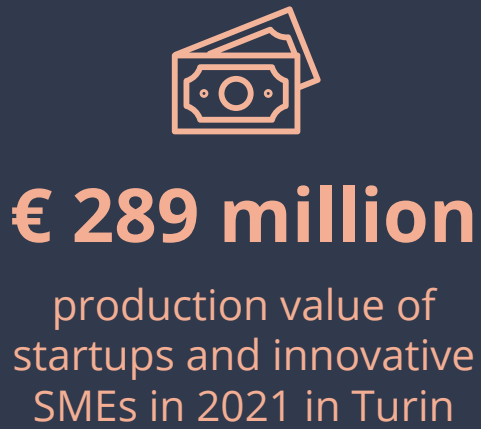


⁴ Club degli Investitori elaboration on ISTAT data (31.12.2021) and Innovative Companies Register (31.12.2022).

PRODUCTION VALUE

Through the desk analysis of the balance sheet data of the 671 companies, the total and average production value was derived.

Overall, the production value is about EUR 289 million (2021), with an average production value of about EUR 594,000.⁵



⁵ 2021 figures based on financial statements filed with the Chamber of Commerce by 2022, extracted from AIDA and processed by the Club degli Investitori.



Innovative SMEs contribute most of this figure with €213 million (78% of the total), an average production value of EUR 19 million and a median value of EUR 823,000.

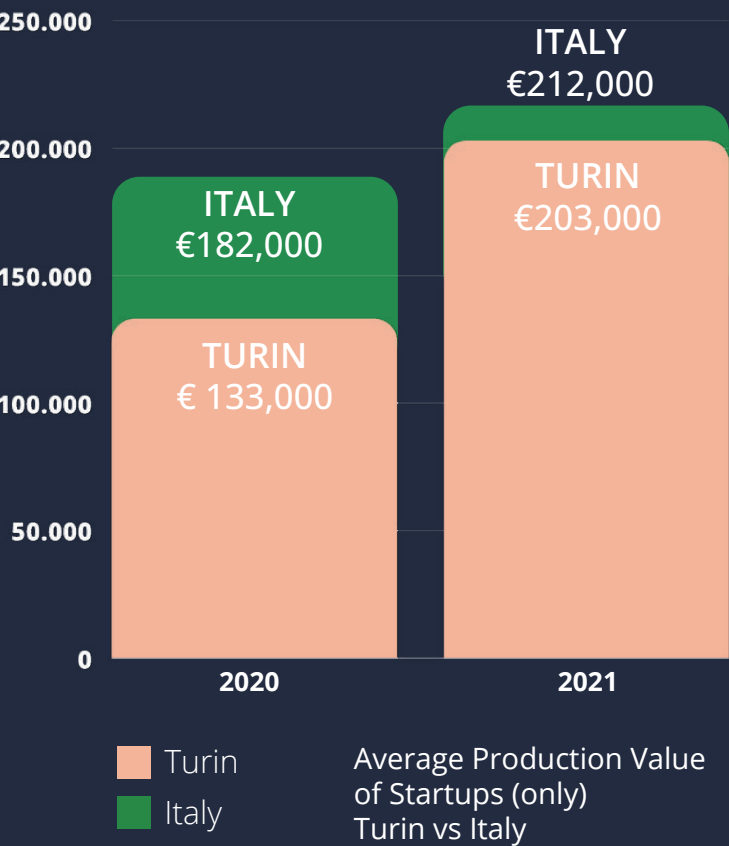
On the other hand, startups alone contribute EUR 76.9 million (+26% since 2020) with an average production value of EUR 203,000 (+53% since 2020).

The latter figure is 4% lower than the national average, which sees an average production value of around EUR 212,000, but it is also a positive figure considering that in the previous year the gap was 27%.



€ 203,000
average production value of
startups in Turin in 2021

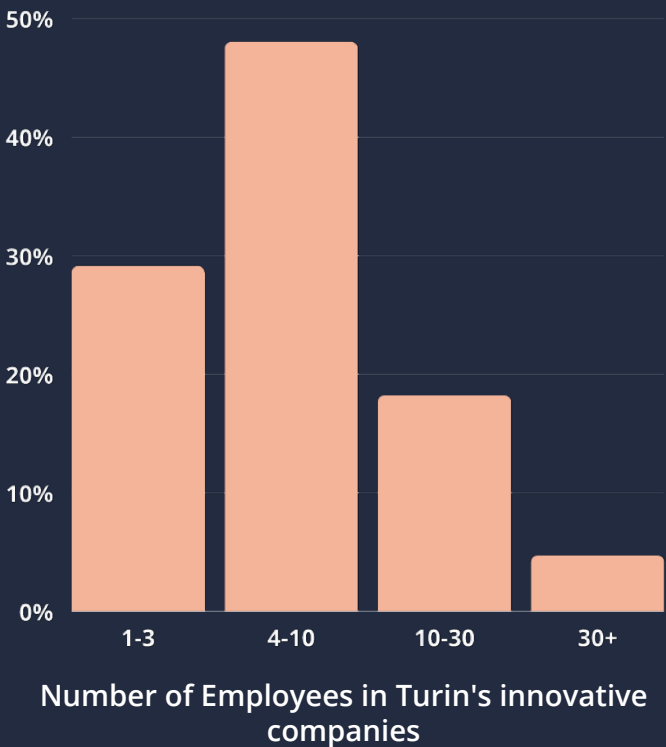
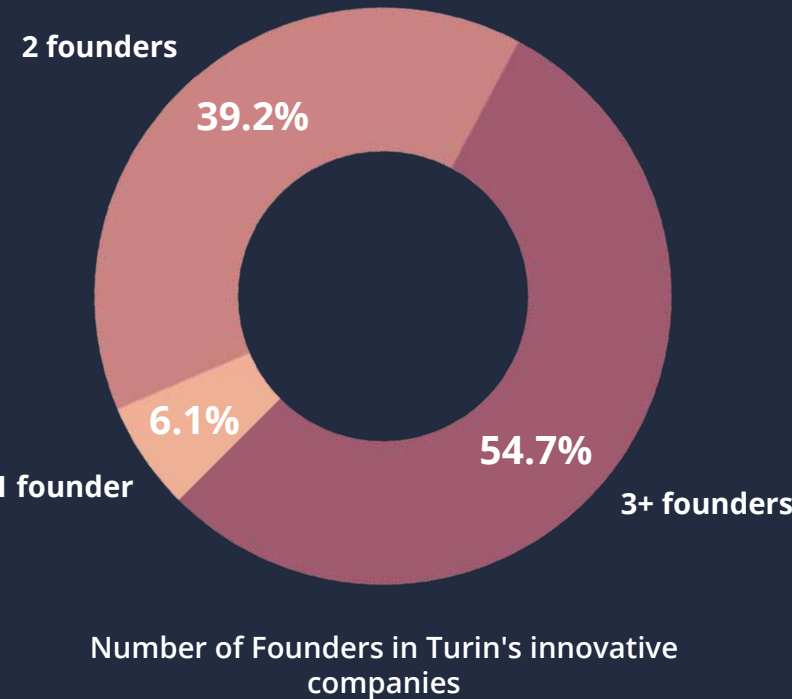
+53%
from 2020 and now in line with
the national figure



FOUNDERS AND TEAMS: AGE AND BACKGROUND

From the 150 interviews conducted, entrepreneurial teams are predominantly made up of three founders or more (54.7%), while it is rare to see a single entrepreneur at the helm of their company (6.1% - down from 7.5% in 2021). **There is less and less of the so-called 'one man company'.** Company size is still limited: more than three quarters of the companies interviewed, i.e.

77.1%, employ a maximum of 10 people, including direct and indirect collaborators. In addition, compared to 2021, there was an increase in the number of companies with between 10 and 30 employees (18.1%). In contrast, only 4.9% of companies have more than 30 employees.



In the common imagination, the successful 'startupper' is often associated with a young visionary who has just dropped out of university or recently graduated.

However, there is plenty of research showing that these cases are the exception⁶ and that the average age of successful startup founders is above 40.

Confirming the value of experience, when founding an innovative company, 74.3% of respondents stated that at least one of the founders had previous entrepreneurial experience. This figure is up from 67.1% in 2021.⁷

According to our analysis, Turin's youth-dominated Startups (under 35) are 36% of the total, which is significantly higher than the national figure of 17.9%. No innovative

Turin SMEs in the database, however, were found to be youth-dominated.



Youth-dominated startups in Turin are 36% of the total, more than double the national figure.



For 74.3% of Turin Startups, at least one of the founders had previous entrepreneurial experience.

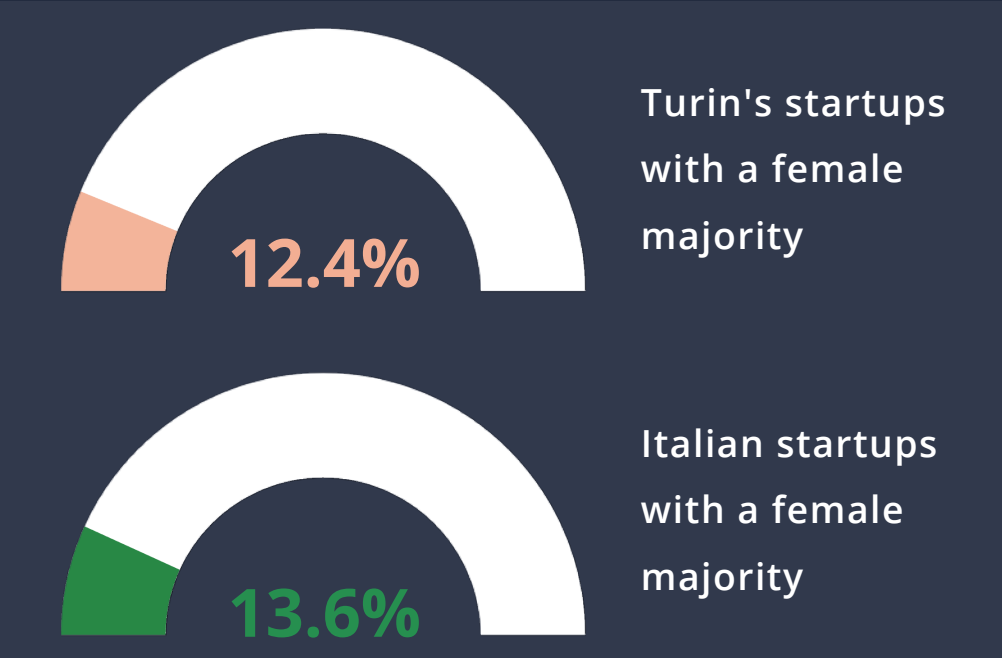
⁶ Harvard "The Average Age of a Successful Startup Founder Is 45", 2018;

MIT, <https://pubs.aeaweb.org/doi/pdfplus/10.1257/aeri.20180582>

⁷ Club degli Investitori analysis on the Register in Innovative Startups

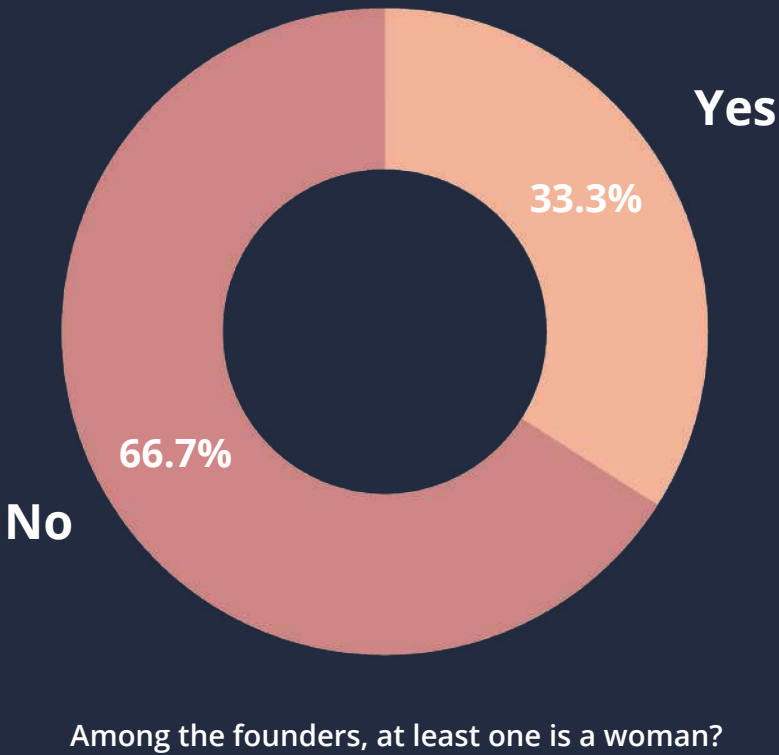
FOUNDERS AND TEAMS: WOMEN'S PRESENCE

An analysis of the founders of companies registered in the Innovative Companies Register shows that Startups with a female majority - i.e., in which the majority of ownership and administrative positions are held by women - are only 12.4% of the total, lower than the national figure of 13.6%. If we consider innovative SMEs, the figure worsens to 11.6%, confirming that younger companies are more gender-sensitive.



Furthermore, we analysed in the entire sample of 671 companies the female component among company representatives⁸, which was found to be 15% of the total.

Finally, among the 150 companies interviewed, it emerged that in 33.3% of the cases, at least one of the founders is a woman.





⁸ Corporate representatives refer to the Board of Directors, C Level, Senior Managers and the Board of Statutory Auditors.




SECTORS AND TECHNOLOGIES

Analysing the sectors of activity of the 478 innovative companies, a strong presence of activities related to the 'digital' world emerges - as is to be expected. A deeper analysis, however, reveals some important signs.

- 

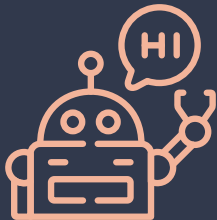
First of all, the main sector of activity is 'Software' B2B with 23.2%. Cybersecurity startups also fall into this category.
- 

The second area of activity is 'DeepTech, Industrial Technologies, Aerospace', accounting for 19.5% of the sample. This category includes, for example, machinery, robotics and logistics, blockchain, and so on.
- 

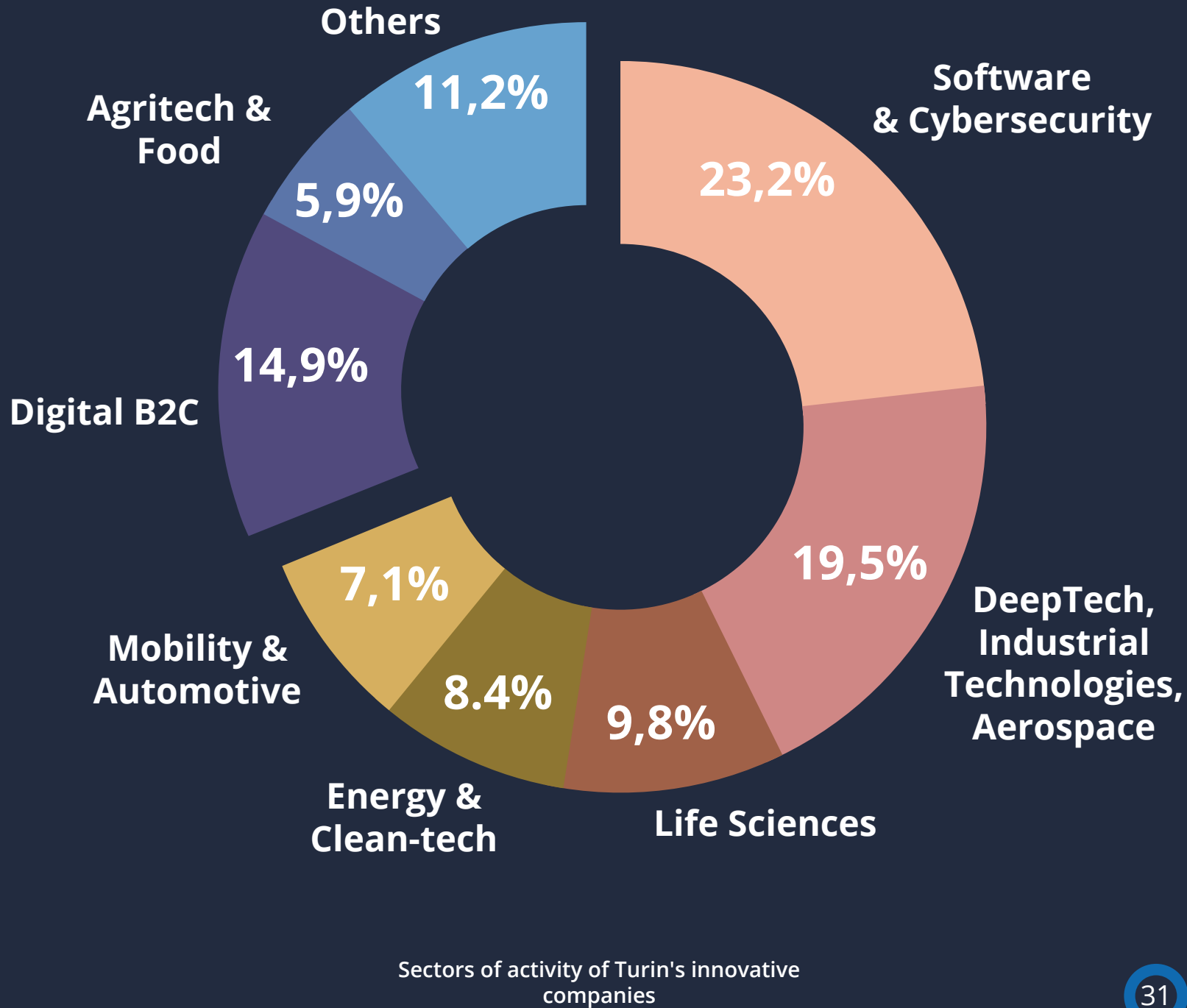
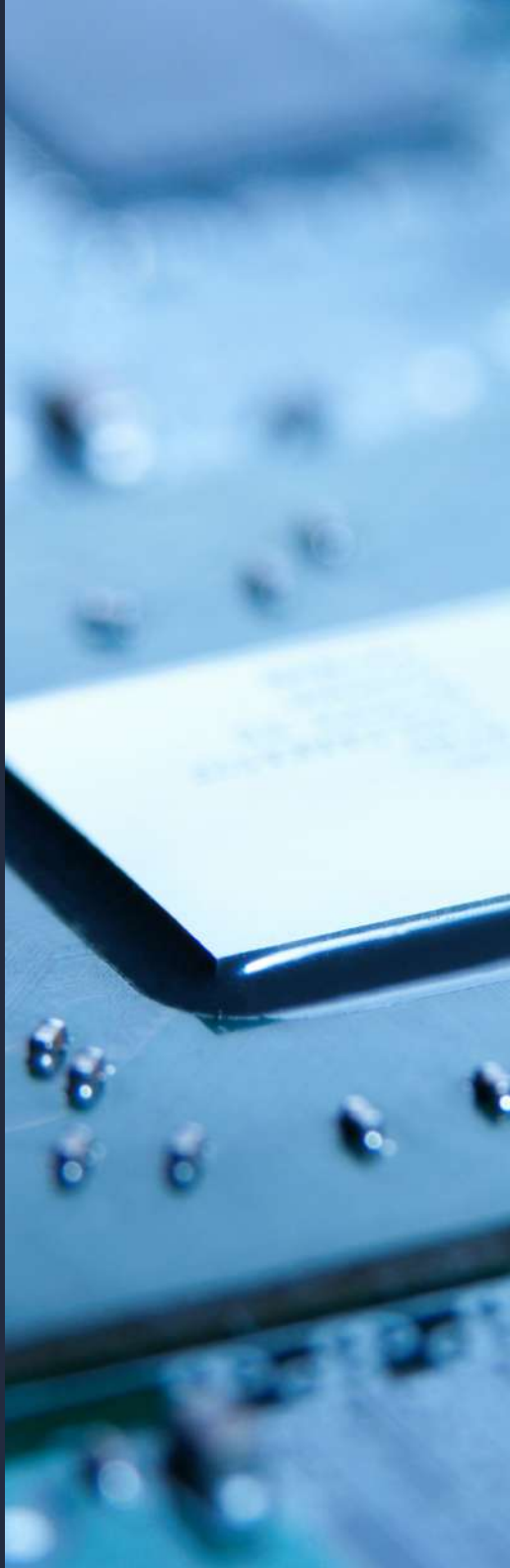
In third place is 'Digital B2C' (14,9%), i.e. the development of consumer-facing applications and services, such as e-commerce platforms.

Off the podium, in fourth place is the Life Sciences sector, representing exactly 9.8% (healthcare, medtech and biotech) and, finally, in fifth position is the Energy and Clean-tech sector with 8.4% of the sample. The 'Mobily and Automotive' sector appears in sixth position with 7.1%. Overall, if we combine the activities of 'Software', 'Deep-tech, Industrial Technologies, Aerospace', 'Life Sciences', 'Energy & Clean tech' and 'Mobility & Automotive', we reach a share of 68%, thus revealing a prevalence of activities with a "hi - tech"

character (industrial and B2B) of Turin's innovative enterprise.




68% of Turin startups operate in the hi-tech sector, up from 62.7% in 2021



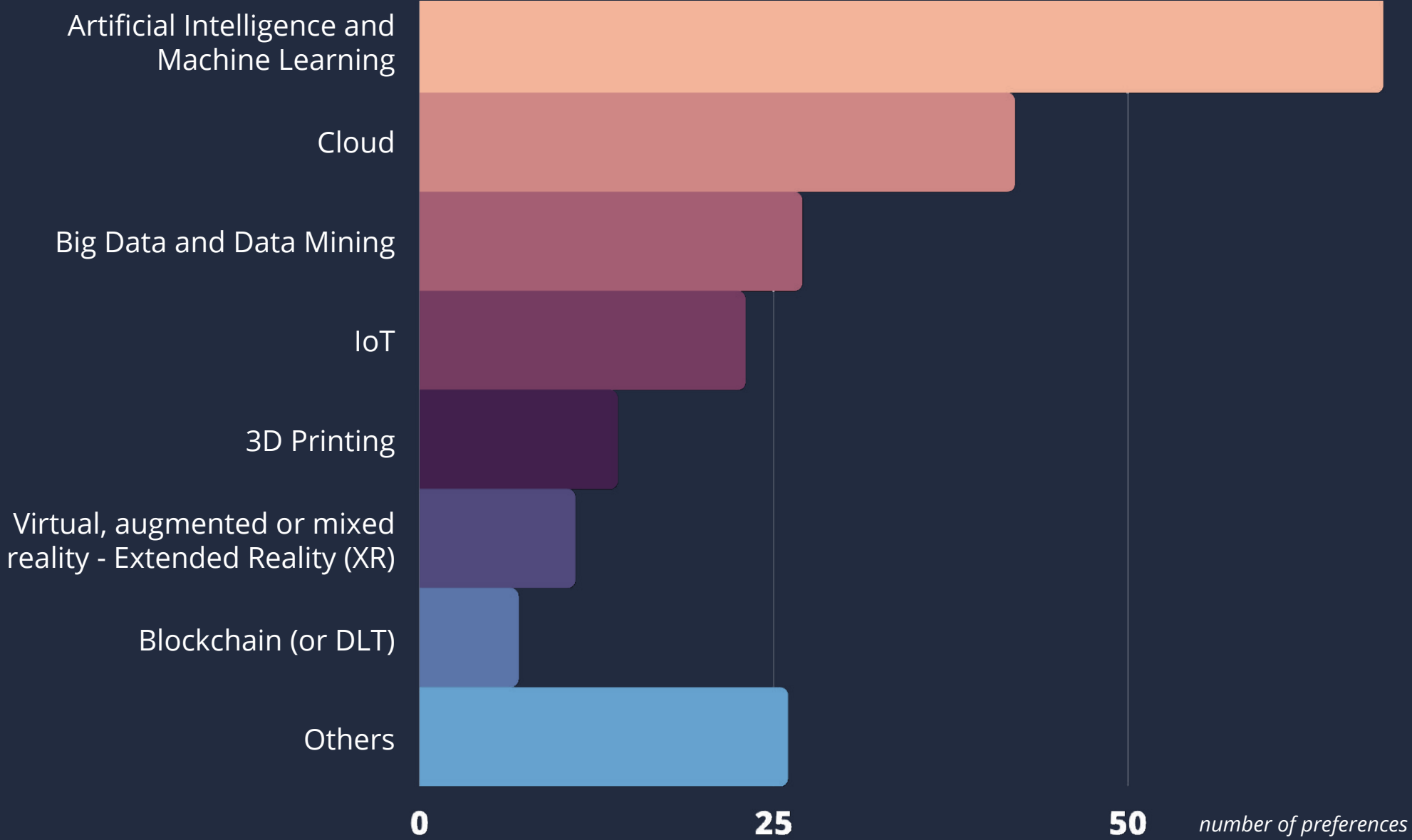
Regarding the **technologies adopted** by innovative companies, we asked the founders to answer this question: "Which technologies have been adopted for the development of your product/service?".

The questionnaire revealed that 45.6% of entrepreneurs relied on Artificial Intelligence & Machine Learning while 28.2% used the Cloud as their main tool.

On the other hand, it emerged that 3D printing (7.4%), virtual reality (7.4%) and Blockchain (4.7%) remained marginal for the development of products and services.



Almost 50% of startups
rely on Artificial
Intelligence & Machine
Learning



Which technologies have been adopted for the development of your product/service?

INTERNATIONALISATION

According to the MISE report⁹, at national level, innovative Startups with a predominantly foreign shareholder structure amount to 550, 3.7% of the total.

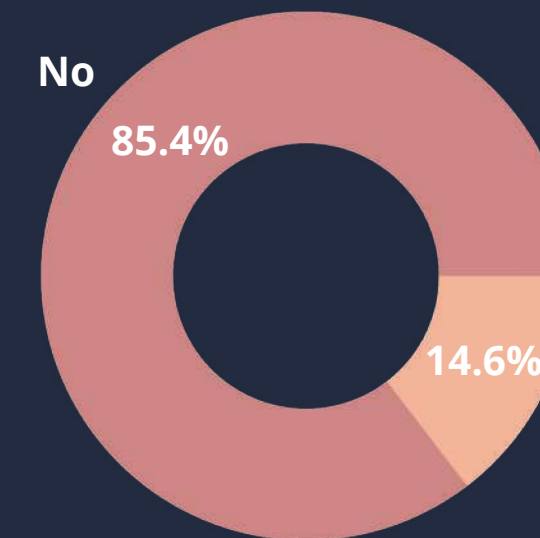
Analysing the database for companies based in Turin, the figure is in line, at 3.5%. To go into more detail, **the sample interviews revealed that in 14.6% of cases at least one founder is not of Italian nationality.**

A more positive figure emerges from the analysis of the team,

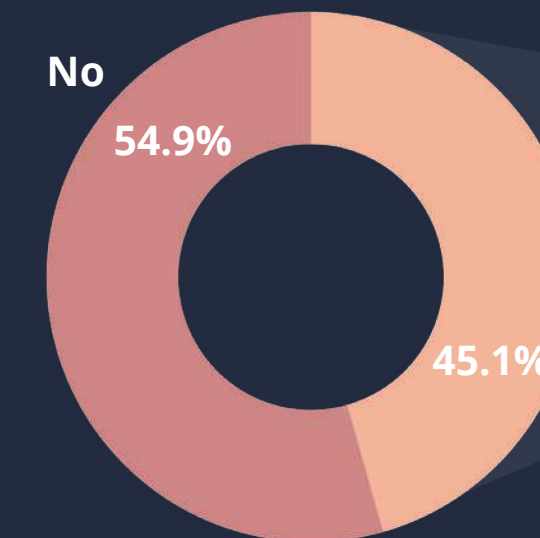
in which it appears that 45.1% of the interviewed companies have foreign co-workers, among these 36.9% have more than 3 team members of non-Italian nationality while 44.6% have only 1.



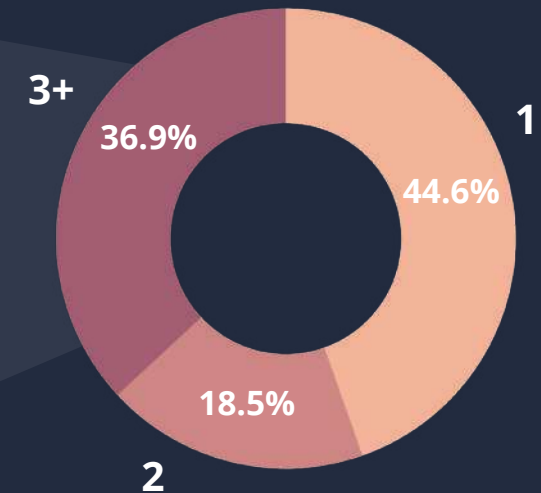
45.1% of the interviewed companies have a team of 'mixed' nationality



Among the founders, at least one is not an Italian citizen?



Are there any foreign members in the team?



How many foreign co-workers are in the team?

⁹ "Cruscotto di Indicatori Statistici - Startup innovative, 3° trimestre 2022", UnionCamere, MISE, InfoCamere.

AN INTERESTING PHENOMENON

In 2022, we begin to observe a phenomenon to be taken into account, which is that some international Startups have opened a European headquarters in Turin (Tevel and Electra Vehicles), have set up a technology team in Turin (Shop Circle) or, starting from Turin, have collaborators all over the world (Nebuly).



Tevel Aerobotics Technologies is an agritech startup founded in 2017 in Israel which is filling the extreme shortage in agricultural labor using fruit-picking Flying Autonomous Robots™. Tevel's flying robots are driven by state-of-the-art artificial intelligence and computer vision algorithms to identify and selectively pick fruit.



Tevel has chosen Turin as the city to open its European headquarters.



"It was a surprise for me to meet such a cohesive and motivated group in Turin to support Tevel and our growth. Starting from the very first visit to Italy, we realized that the fruit growers in Piedmont in combination with the help of Club Degli Investitori could be an excellent starting point to gradually move towards the commercialization of our product.

Tevel introduces a technology that will have an impact on every single element of the supply chain by

enhancing it and making it more efficient, secure, and productive.

Italy offers, in the extended field of agriculture, all of these cumulative core competences that a smaller country like Israel cannot combine easily.

In Turin and Piedmont, Tevel is blossoming.

The operational base, managerial qualities and entrepreneurial culture discovered in Piedmont will help Tevel accelerate. Last but not least, it is a joy to work with our Italian clients and partners."

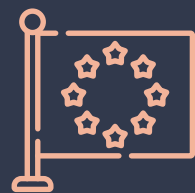


Yaniv Maor

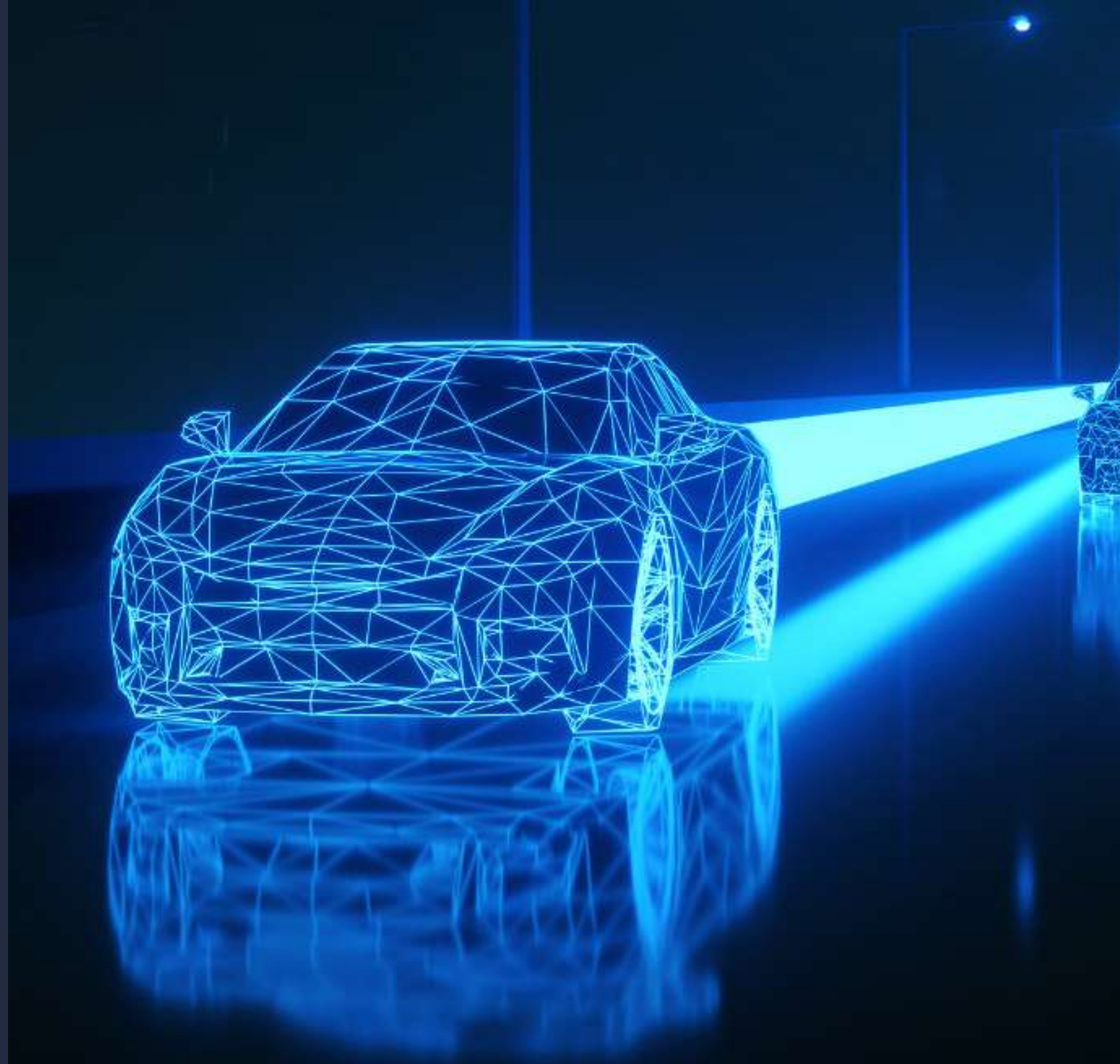
CEO & Founder
Tevel Aerobotics



Electra Vehicles is a leading B2B AI software company headquartered in Boston, USA that produces Cloud and onboard software to optimize the performance of any battery system on any vehicle. With initial focus on the eMobility market sector, Electra's technology can apply the same range, lifetime, charging, and safety benefits to other electric sectors like eVTOLs, Aerospace, Robotics, Grid, and more.



Electra Vehicles also recently opened an office in Turin, the city chosen as its European base.



“Torino has always represented innovation, global and forward thinking.

From its history as the driver of the creation and first capital of Italy to becoming an industrial powerhouse of the Automotive and Aerospace Industries, the city and its inhabitants have a natural ability to look beyond the horizon.

In this age where technology dictates the future, Electra Vehicles is in the right place to become part of an ecosystem that honors the past while looking across the Alps”.



Fabrizio Martini

CEO & Founder
Electra Vehicles



Shop Circle is the first operator of e-commerce tools. It empowers independent brands to build experiences for the consumers while providing e-commerce sellers with the tools they need to scale their business. Shop Circle's leadership includes experts from Shopify, Amazon, Bloomberg, Bold Commerce, investment banks and Venture Capital funds.



The company is based in London but has its technology team in Turin with 6 people with the intention of establishing the company's entire research and development team.



"Torino has always been the industrial heart of Italy.

The city evolved over time, and while it's been notoriously known to be a manufacturing hub, it's quickly adapting to the new trends and turning into an innovative tech centre.

The city offers a unique mix of great talents from world class universities (POLITO, UNITO, ESCP), a solid framework of large corporates fostering innovation (FCA, Intesa, Sella etc), combined with a favourable access to capital (Neva, Exor, Club degli Investitori).

These are the perfect foundations to build a strong entrepreneurial ecosystem.

And despite being based in UK, these reasons also brought us to set up our R&D centre here."



Luca Cartechini

CEO & Co-Founder
Shop Circle



Nebuly automatically boosts AI models' performance 10x by uniquely combining optimization techniques to modulate in-production AI costs, speed and accuracy.

The company has a dual presence in the US and Europe, a team from the world's top universities (MIT, ETH, etc.) and a fast-growing user community with members in over 40 countries around the world who support the mission of building the fastest and most efficient artificial intelligence ever.



Nebuly has 10 employees in Turin.



In addition, we asked the entrepreneurs whether their company was born with a predominantly international vocation and 69.6% gave a positive response.



69.6% of Turin Startups
have a predominantly
international vocation

On this issue, we also interviewed 19 Accelerators and Incubators in Turin and, averaging the data they provided, it emerged that over 60% of the companies they incubated or accelerated have a predominantly international vocation.

As we will see in the next section, an extremely relevant datum emerges from the analysis, allowing us to state that **the innovative companies that raise capital in Turin have, for the most part, an international vocation.**



FUNDING RAISED BY STARTUPS AND INNOVATIVE SMES IN TURIN

How are Startup in Turin financed?

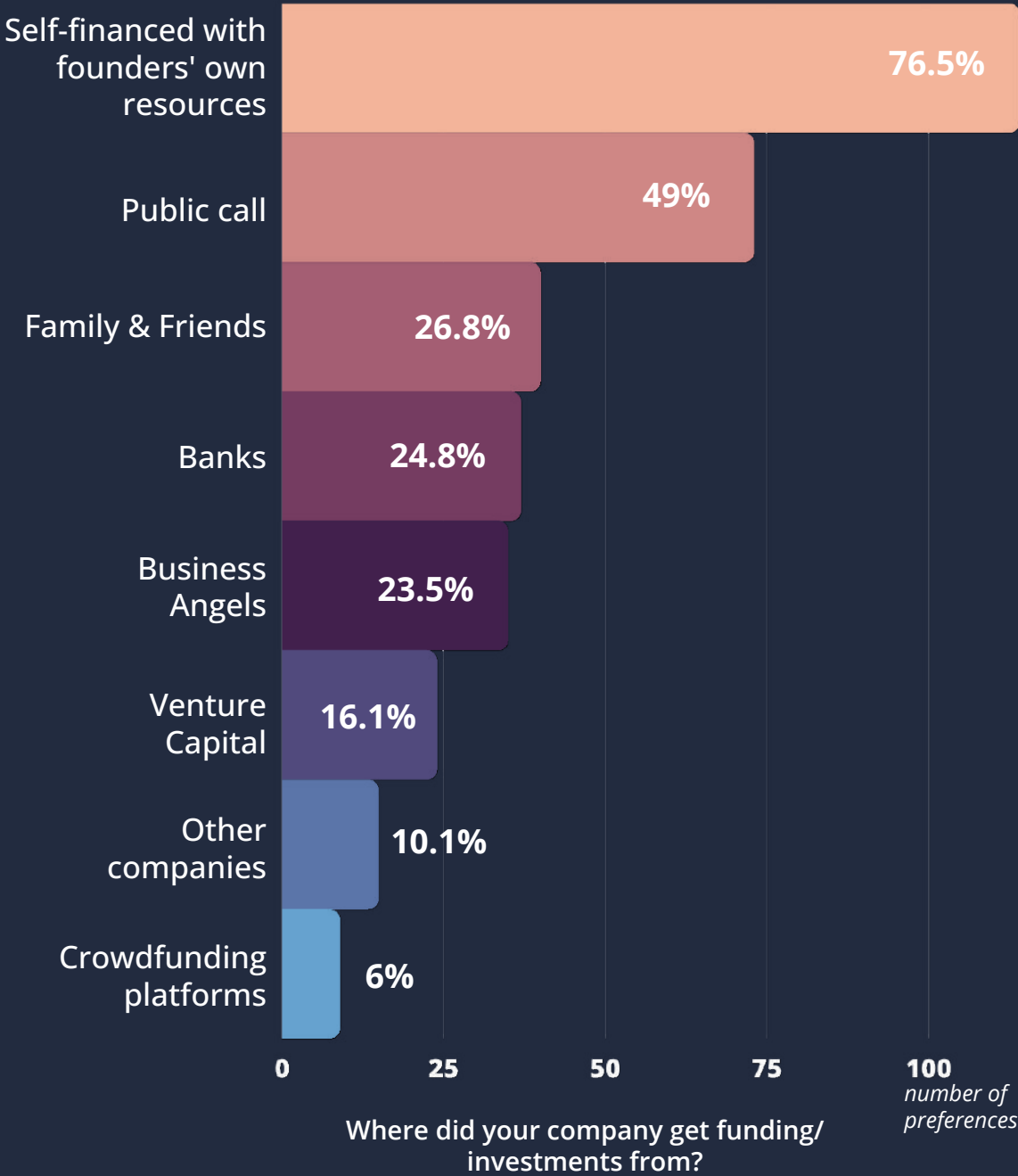
To find out, the founders were asked in the 150 interviews how they find the financial resources for their initiative, with multiple answers possible among the various options.

Most of the Startup in Turin were self-financed with the founders' own resources (76.5%). This is not surprising considering that to start a business, it is natural for entrepreneurs to invest part of their own assets to finance the startup.

The second source of funding is public procurement, with 49%, while 'Family & Friends' comes in **third** with 26.8%.

Overall, the first three sources of capital represent a 'non-dilutive' way of raising money, i.e. without the entry of new shareholders into the corporate structure.

In fourth place are banks (24.8%), followed by business angels with 23.5%, venture capital funds (16.1%) and other companies (10.1%). Finally, only 6% raised capital from crowdfunding platforms.

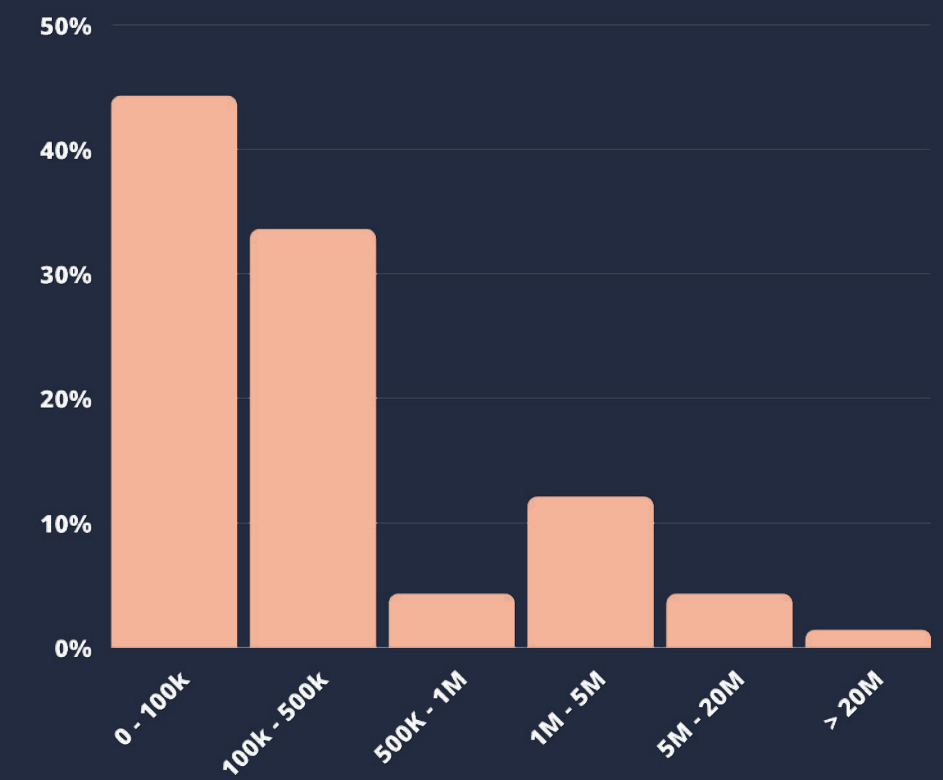


Overall, 40% of the Startup interviewed raised "smart money"

In general, the origin of funds is almost exclusively domestic, with only 16% of Startups having also raised funding from abroad, mainly through public tenders. Despite the low number, this shows growth compared to 2021, when it was only 13.0%.



In most cases, startups and innovative SMEs in Turin raised a total of up to EUR 500,000 (77.7% of cases), a figure in line with 2021, which was 77.6%. On the other hand, the number of Startups that raised, on average, between EUR 500,000 and EUR 1 million fell with 4.6% (7% in 2021), and up to EUR 5 million with 12.3% (12.6% in 2021). On the other hand, the number of investments above 5 million rose with 5.3% of the sample (it was 2.8% in 2021).



How much have you raised so far in the various funding rounds (in euros)?



Double the number of startups that have raised more than 5 million

Looking to the future, most Startups are looking for investors: in fact, 92.4 per cent of respondents said they were looking for further funding in the next 12 months.

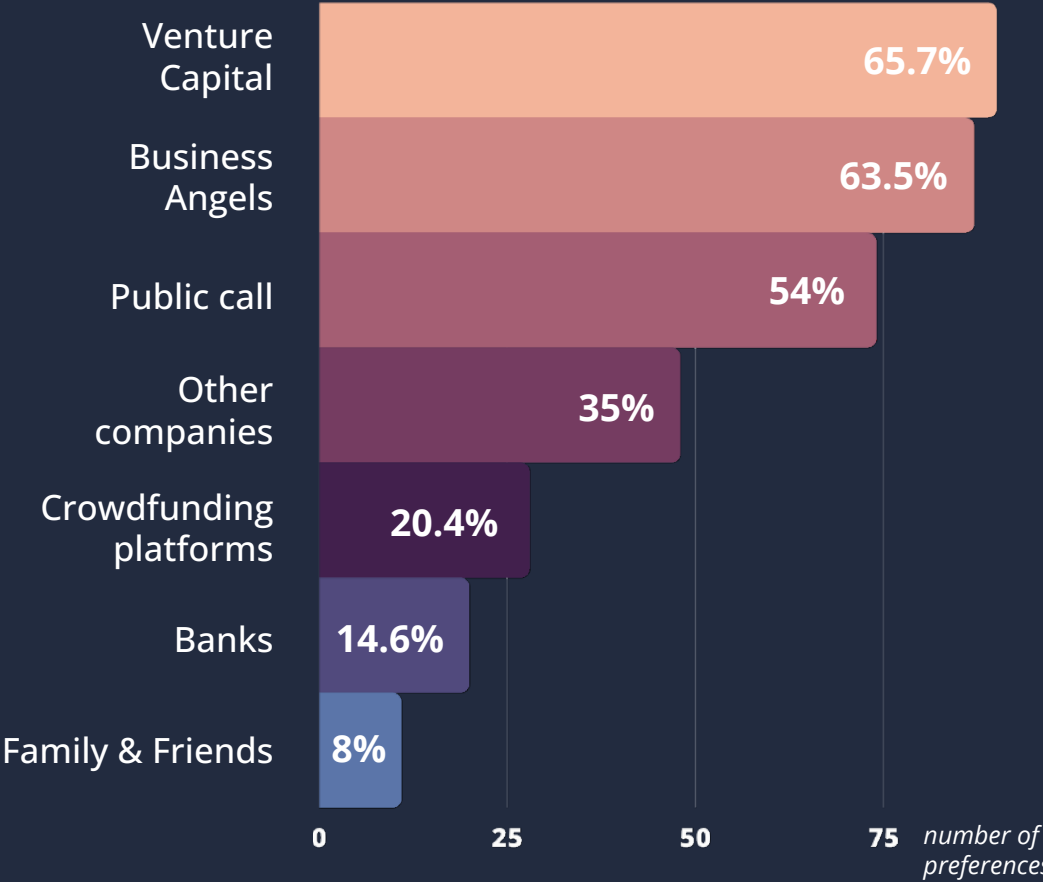


92.4% of startups are fundraising in 2023

The founders were then asked what type of financing/ investment they are looking for: at the top, the most sought-after financiers are professional operators, business angels and venture capital funds. This is followed by public tenders and in fourth place the search for partnerships with other companies. More limited is the ambition to finance via crowdfunding platforms, banks and family & friends.



Almost all the founders interviewed and currently fundraising are looking for 'smart money'



What type of financing/investment are you looking for?



In 2022, Startups and SMEs in Turin raised EUR 400 million, or 22% of the national total of venture capital funding for Italian Startups¹⁰.

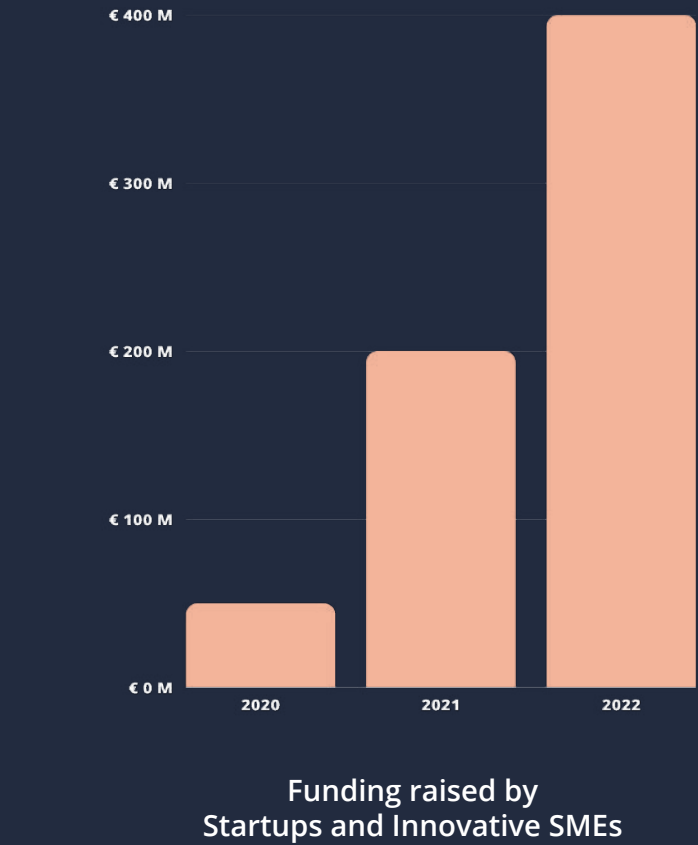
This figure is particularly significant, especially if one considers the weight of Turin Startups in the national total, which is about 4%.

Of the EUR 400 million, 75% was raised by a single startup: Newcleo, a clean tech company, born in 2020, which raised €300M in 2022 alone, after the €100M of 2021. Other relevant rounds in the city were Kither Biotech (€18.8M), Young Platform (€16.0M), Heqet Therapeutics (€8.0M), for a total of around 40 rounds, more than double the 2021 rounds.

Analysing the characteristics of the

startups that received an investment in 2022, it emerges that 81% of them have a predominantly international vocation. Looking at the top 10 by size of round, 100% are active in foreign markets or state that they will use the capital raised to do so.

EUR 400 million raised in 2022 by Turin startups (+100% from 2021)



Milan continues to lead the Italian venture capital world with, according to Growth Capital data, EUR 951 million raised by the city's Startups (+ 141% compared to Turin). Even if Newcleo is excluded from the count, Turin still ranks second among Italian cities with almost EUR 100 million raised, followed by Rome's EUR 88.8 million. Considering that, in 2021, Turin closed the year with

almost €200 million invested, we have a **year-on-year growth of 100%**, an achievement that highlights a dynamic and constantly evolving ecosystem. In any case, considering that most of the capital has been invested in companies in the DeepTech, Industrial Tech, MedTech and BioTech sectors, we can confirm last year's prediction: **Turin is to become the Italian hi-tech capital.**

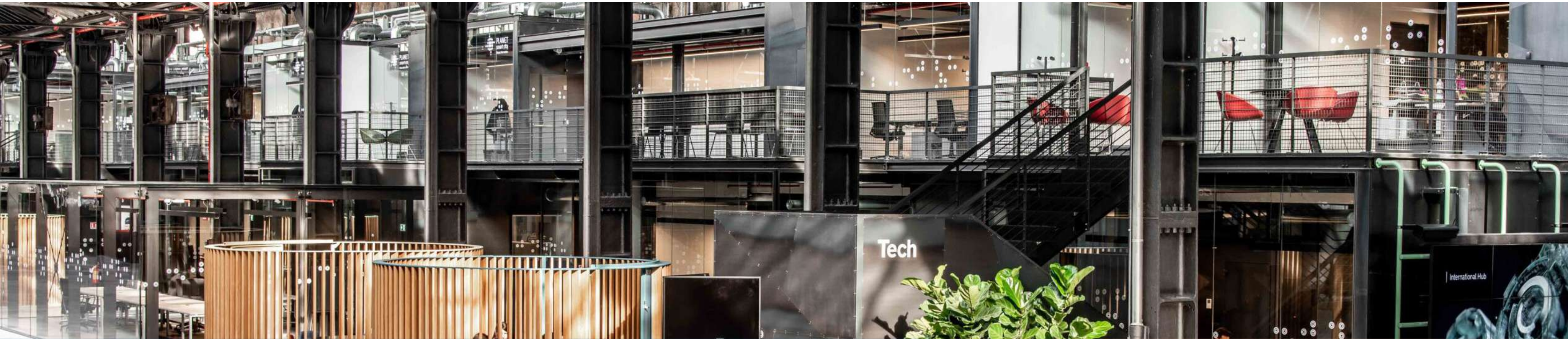
Most of the startups that raised capital in 2022 have a predominantly international vocation

Turin represents 22% of venture capital investments in Italy



¹⁰ <https://growthcapital.it/growth-capital-e-ita-presentano-losservatorio-trimestrale-sul-venture-capital-q4-22>

03. The Turin innovation system



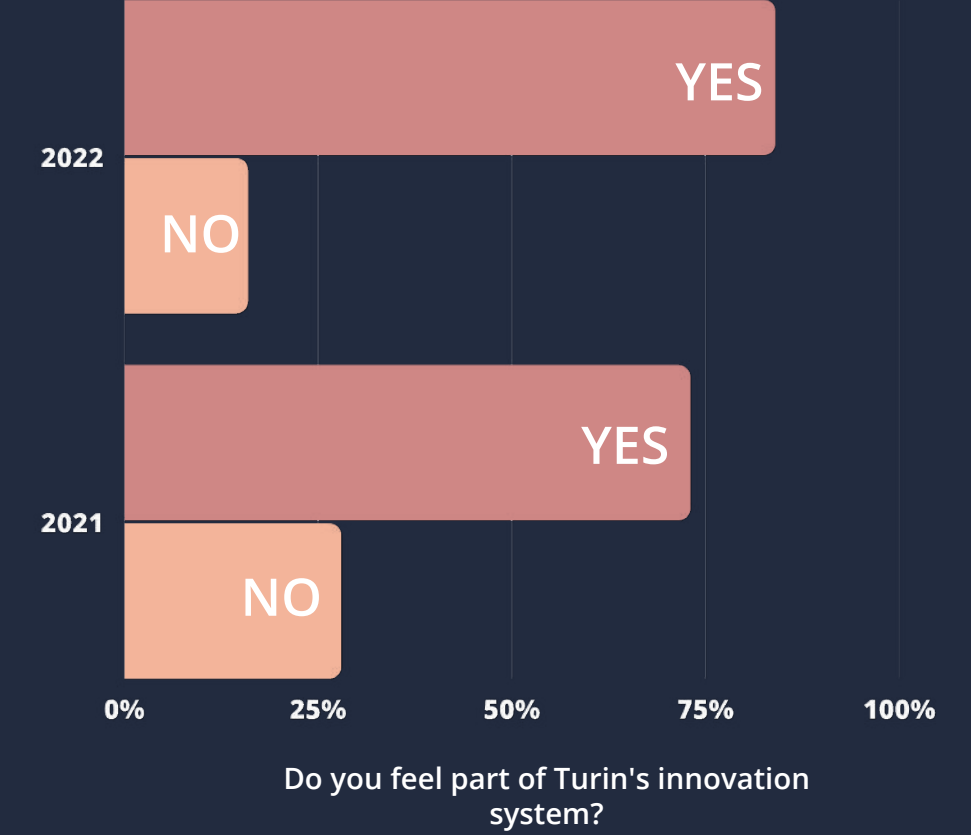
In order to find out the views of innovative entrepreneurs operating in the Turin area, the survey asked a series of questions - identical to those asked in previous editions - to understand the trends and changes in the mood of Turin's innovative enterprises in their relationship with the city.

This year, to the question "Do you feel part of Turin's



innovation system?" 84% responded positively, up almost 12 percentage points from 72.6% in 2021.

This positive figure highlights how the initiatives of the numerous venture capital operators promoted in 2022, such as ToTeM - Torino Tech Maps¹¹ and Italian Tech Week, are achieving excellent consensus within the city's innovation ecosystem.



¹¹ www.torinotechmap.it

TO TEM

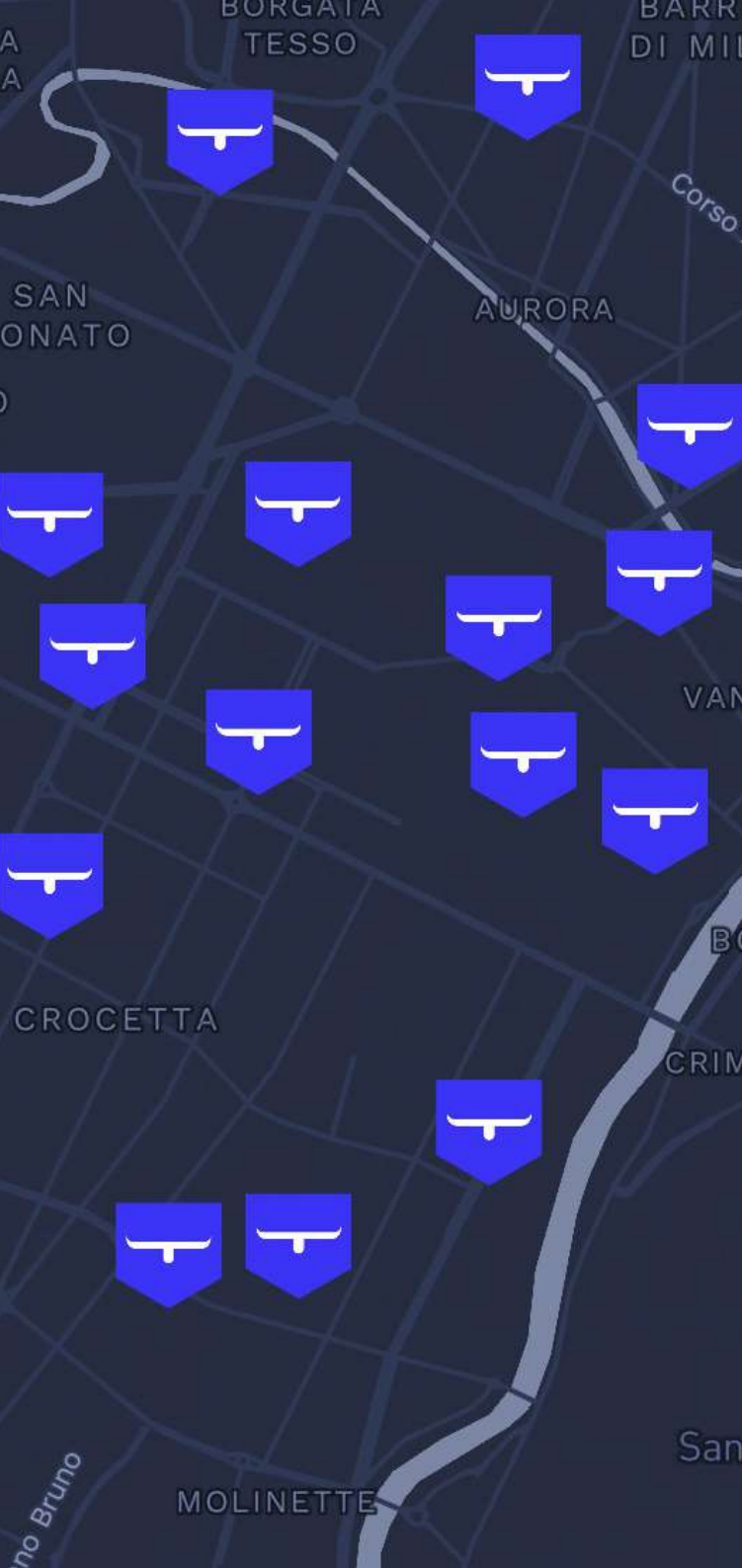
Startup Genome identifies 'local connectedness' as one of the key ingredients for the development of innovation ecosystems.

ToTeM, a project supported by Torino Finanza, Camera di Commercio,

Fondazione Compagnia di San Paolo, Fondazione Sviluppo e Crescita and Club degli Investitori, is carving out precisely this role in the Turin area.

With its platform Torino Tech Map, the guiding spirit of Turin's Startup, it now includes more than 200 players in the ecosystem, reaches thousands of people with news and information resources and, for the past few months, also brings them together at Tribe events.

Turin's startup ecosystem is maturing fast and ToTeM wants to amplify its voice by recounting its growth with its current and potential success stories.



ITALIAN TECH WEEK

Italian Tech Week is the largest and most

important Italian tech conference.

The 2022 edition saw the participation of 140

speakers from more than 10 countries

and an audience that reached 5,000

attendees over the two days of the event.

Special guest of the edition was Patrick

Collison, CEO & Co-founder of Stripe.

Almost 2 million streaming views from the

Italian Tech, Repubblica and La Stampa

websites with over 140 contents including news, videos and in-depth analysis published on the GEDI Group publications.

The Masterclasses involved 450 people for a total of 14 workshops.

The 2023 edition will be held again at

OGR Turin from 27 to 29 September.



Another competitive factor for the city is human resources, an aspect on which another section of the survey focused.

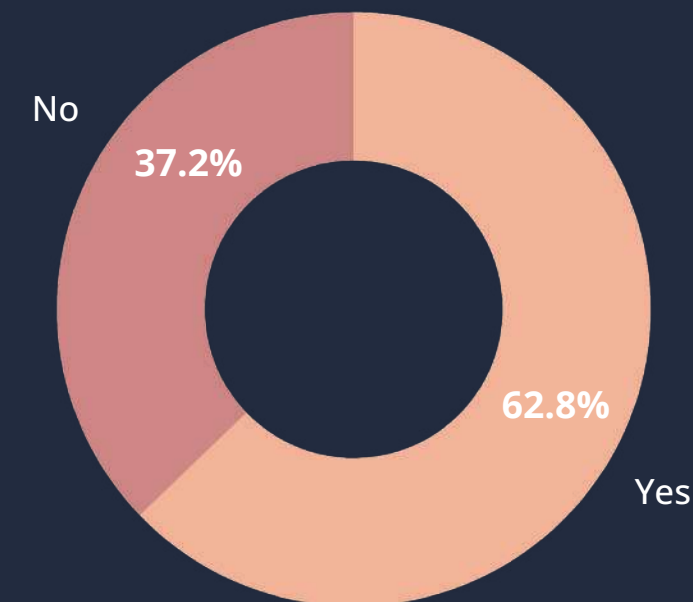
Here too, the results show a positive trend, when compared with the answers obtained the previous year: 63% of entrepreneurs believe they can find the people and skills they need to develop their business in Turin (it was 58.9% in 2021).

As a result, 37% of respondents say they are unable to find the personnel they need locally.

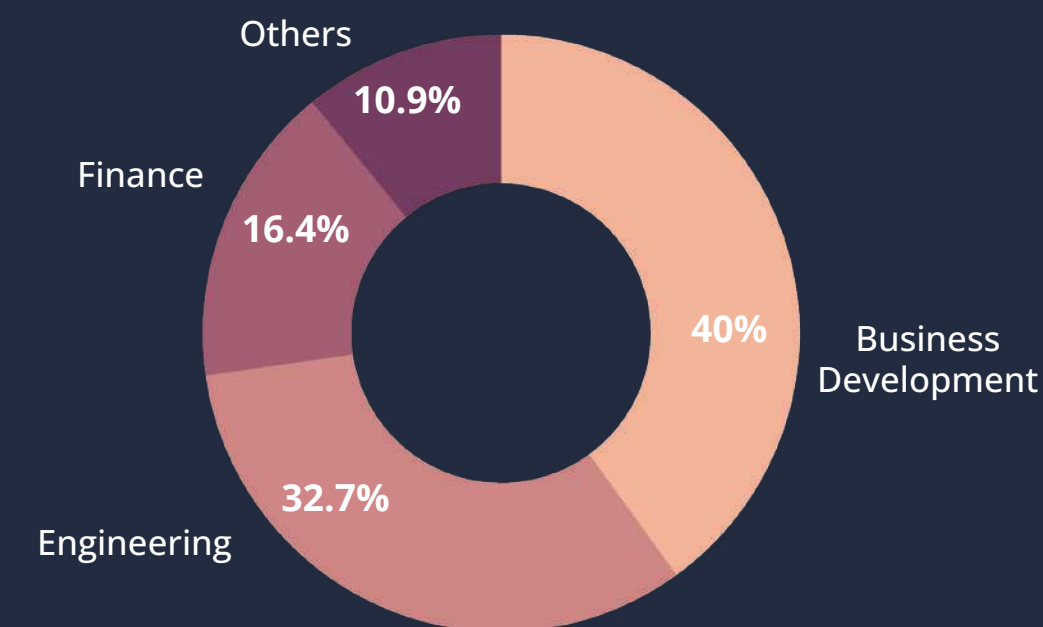
In particular, Startup in Turin need resources related to **business development** (40%), **engineering** (32.7%) as second and **finance** (16.4%) as third.



The number of entrepreneurs finding the resources they need in Turin is growing but business development resources are still lacking.



Can you find in Turin the people and skills you need to grow your business?

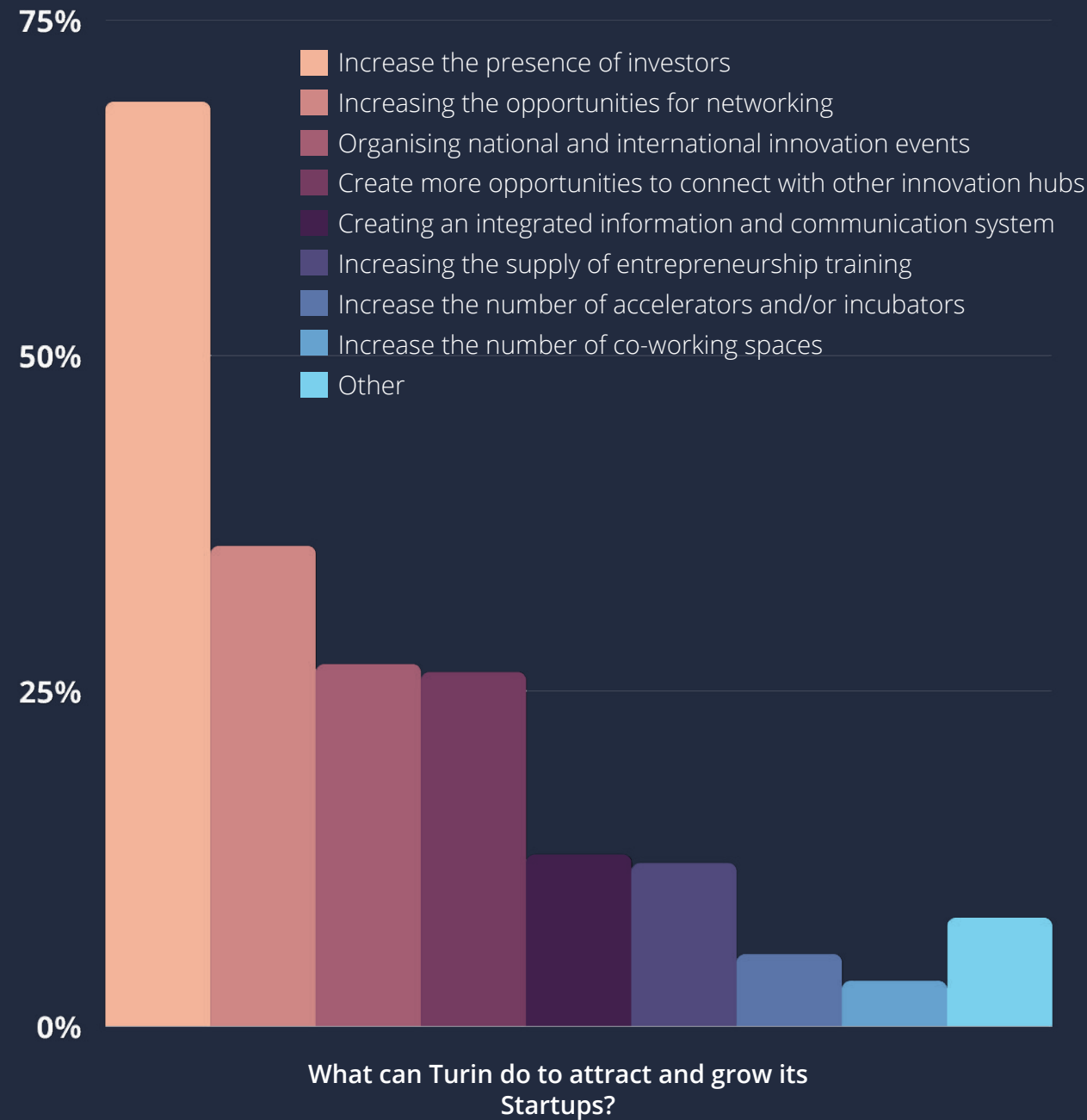


What resources are missing in Turin?

In addition, entrepreneurs were asked **what they think Turin can do to attract and grow businesses.**

Once again this year, **the main request was to increase the number of investors in the city.** The second position also remains unchanged from last year with the request to increase networking opportunities and national and international innovation-related events.

On the other hand, the request to increase entrepreneurship education and to increase the number of incubators, accelerators and co-working spaces remains in the minority, as it was last year.



In addition, interviews with the startup sample showed that 55.8% participated in an incubation or acceleration programme and 42% of them did so in the city of Turin.

As for the analysis of the innovation ecosystem in Turin, if we look at venture capital operators (Incubators, Accelerators, Business Angels, Venture Capital Funds, Startup Studio) we classified 52% compared to the previous year's research.

To get a more complete picture, we interviewed 32 of them which showed that:

- The startups incubated or accelerated by the interviewed operators raised almost EUR 165 million in 2022;
- The Turin investors interviewed invested over 70 million Euro in the city's Startups in 2022 alone;

The Turin-based professional investors plan to invest a total of EUR 1 billion in startups and SMEs over the next five years



TURIN STARTUP ECOSYSTEM



Sources: ToTeM, Club degli Investitori, AIDA, Chamber of Commerce - Turin



04. Turin versus comparable European cities



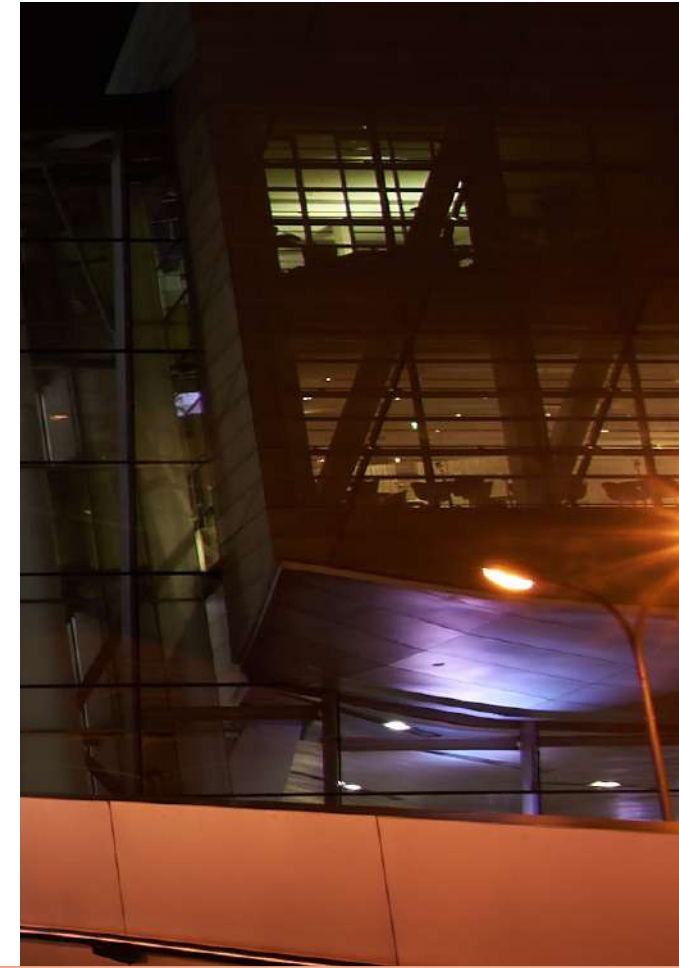
Turin is the city with the highest Italian growth rate in the number of patents filed as well as a large number of high-tech companies, thanks to the presence of important universities and research centres, as well as large industrial and automotive companies.

Moreover, as we have seen in the previous chapters, in terms of number of Startups and amount invested, a positive growth trend is evident.

In order to better understand the

maturity and development of Turin's innovation system, **we analysed how Turin is positioned on the international front, comparing it with three European cities with comparable characteristics.**

They represent, just like the Piedmontese capital, attractive innovation poles for Startups and investments but do not occupy the top of the national rankings: **Munich, Rotterdam and Lyon.**



Munich

Munich is a city that has some similarities with Turin: it is the headquarters of a major car manufacturer (BWM) and is an important industrial hub, as well as having a geography similar to that of the Piedmontese capital.

Munich is a city that offers a highly developed and dynamic entrepreneurial ecosystem, characterised by the presence of numerous innovative Startups and institutional and private support for their development.

For Startups, the city has undertaken a number of initiatives for more than 20 years: for example, in 2002 **Unternehmer** was created, **a large centre for entrepreneurship** that attracts more than 5,000 students each year, generates more than 50 Startups and is run by private individuals, also with the support of public funding.



Unternehmer is home to:

- an acceleration programme for Startups (divided into 'classes' according to their stage of development: conception phase and scaleup in the advanced stage);
- a learning centre that provides innovation courses, an MBA and general training related to entrepreneurship;
- an innovation centre dedicated to large companies in the area;
- an early-stage venture capital fund (UVC Partners) that finances Startups, particularly in B2B, with tickets ranging from 500. 000 euros to 5 million (among the Startups financed is Flixbus);
- the 'BayStartUP' startup financing programme and the 'Munich Startup' initiative, which provides information and support to local Startups.

The city has a strong presence of business incubators and accelerators (Wayra incubator, the Digital Hub Mobility and the Plug and Play accelerator.

Munich also hosts important events for entrepreneurship and innovation, such as 'Munich Startup Week' and 'Munich TechDays', and 'Bits&Bretzel' which attract entrepreneurs, investors and industry professionals from all over the world.

¹² See <https://www.unternehmertum.de/>

¹³ <https://www.uvcpartners.com/>

¹⁴ <https://www.bmwstartupgarage.com/>

¹⁵ <https://datalab-munich.com/>



Munich has developed a number of vertical initiatives in the mobility & automotive sector

For example, Munich is home to the BWM Startup Garage, the Volkswagen Data Lab and the MAN Impact Accelerator. And these are just a few of the initiatives, because Munich is also opening up to the sectors of its future, such as Fintech and Insurtech (Munich is home to AllianzX, the VC fund of the Allianz insurance company) and ICT, as for example with the initiatives put in place by Siemens with the Siemens Technolgy Accelerator.



The city is home to 2,043 Startups, or 7 Startups for every 10,000 inhabitants, which raised more than EUR 2.4 billion in 2022.¹⁶

Munich

This dynamic innovation ecosystem has created as many as 9 unicorns (there are 179 across Europe, and only 2 in Italy), including:



Celonis:

a business process management software startup that has reached a valuation of over USD 11 billion.



Lilium:

an electric vertical take-off and landing aircraft (eVTOL) startup that reached a valuation of over \$3 billion.



Personio:

a human resource management software startup that reached a valuation of over \$1.7 billion.



FlixBus:

a transportation startup offering long-distance bus and train services in Europe that reached a valuation of over \$2 billion.



Riskmethods

an enterprise risk management startup that reached a valuation of over \$1 billion.



¹⁶ See <https://www.munich-startup.de/insights/>

Rotterdam

Rotterdam is one of the world's major logistics hubs thanks to its port, the first in Europe and the third in the world after Shanghai and Singapore, and it is around it that activities related to the world of innovation and startups have also developed.

In fact, it is home to **PortXL**, an accelerator born in 2015 dedicated to innovation in logistics, maritime transport and energy. More than 90 startups and scale-ups have emerged from PortXL.

The port of Rotterdam is therefore a true innovation hub and from the shipping sector, initiatives in other contiguous sectors are springing up, such as projects related to the use of hydrogen to move large cargo ships.

This is an example of how an industrial and production hub can be an asset that, if open to the city, is able to generate initiatives that progress in directions other than those immediately imaginable - from logistics to hydrogen.

The city also has a number of programmes and initiatives to support Startups, such as the 'Rotterdam Make it Happen' programme, which provides support to Startups or expanding businesses. In addition, Rotterdam has a strong presence of business incubators, such as the Yes!Delft incubator and the Erasmus Centre for Entrepreneurship accelerator programme.

The city also has a number of co-working and collaboration spaces, such as the innovation centre BlueCity, which promotes the circular economy, and the innovation centre CIC Rotterdam.\



Rotterdam now has 1,693 Startups, or 9.2 Startups per 10,000 inhabitants, attracting approximately EUR 335 million in 2022.¹⁷

¹⁷ See <https://finder.uprotterdam.com/intro/>



Lyon

Lyon is a city that has developed into one of France's leading innovation hubs.

Over the years, the city has created its own centre for entrepreneurship, Lyonstartup¹⁸, with the support of the University of Lyon, and hosts one of France's leading incubators, H7.

Lyon is a city with a strong identity as a centre for biotechnology and health, with important institutions such as the research centre 'Lyonbiopôle' and the University Claude Bernard Lyon 1, which promote the development of new technologies and products in the health sector.

The city also hosts important international events for entrepreneurship and innovation, such as the 'BigBooster Summit' and the 'Lyon Start-up'.

¹⁸ See <https://www.lyonstartup.com/>



Furthermore, the city has developed a great capacity in attracting and managing national public calls for innovation, and has always done so by combining public resources with private management.

In France, the public system has been playing a key role in recent years in growing the entire ecosystem - an ecosystem that attracted €300 million in investments in 2013¹⁹ and will exceed €13.5 billion in 2022.²⁰

Among the main manoeuvres are the strong intervention of BPIFrance (the equivalent of Cassa Depositi e Prestiti) and the intervention supported by the French government of 5 billion euros over three years for startups²¹ and the La French Tech initiative, again a government-originated initiative, which in 10 years, from 2013 to today, has allowed the French startup ecosystem to develop and grow strongly.



In Lyon, in 2022, 669 startups found a home²², equivalent to 3.5 startups per inhabitant, having raised a total of around EUR 334 million.

¹⁹ <https://pitchbook.com/news/articles/country-focus-frances-private-markets-primed-for-further-growth>

²⁰ <https://lafrench-fab.com/news/fundraising-record-broken-in-2022-for-french-startups/>

²¹ www.businessfrance.fr/discover-france-news-french-tech-to-receive-5-billion-in-the-next-three-years

²² Reasearch on <https://ecosystem.lafrenchtech.com/>

COMPARISON BETWEEN EUROPEAN CITIES AND TURIN

	Turin	Munich	Lyon	Rotterdam	Turin + Milan
Inhabitants <i>(metropolitan area; 2021)</i>	2,208,370	2,932,668	1,899,599	1,834,417	5,423,000
Number of startups	548	2,043	669	1,693	3,364
GDP metropolitan area <i>(in euro; 2019)</i>	75,076 M	203,394 M	89,070 M	88,121 M	290,893 M
Investments <i>(in euro; 2022)</i>	400 M	2,400 M	334 M	335 M	1,351 M
Investments / PIL <i>(in euro; 2022)</i>	0.53%	1.18%	0.37%	0.38%	0.46%
Startups per 10,000 inhabitants	2.48	6.97	3.52	9.23	6.2

Munich, Rotterdam and Lyon are three examples of cities comparable with Turin: they are similar in size, they are neither the capital nor the first city for Startup and innovation in their country, but they play an important role in the field of innovative companies at national level, also defining their own character, dominant sector or identity.

They do this in three different ways:

Munich through a 20-year project that puts a number of different initiatives under a common name;

Rotterdam by putting its main asset, the port, at the disposal of the city;

Lyon by effectively managing public resources dedicated to the sector and specialising in life sciences.



And Turin?

Let us start with a consideration: if we relate investment in innovation to GDP and Turin invests or is able to attract capital as much as, for example, Munich does, investment would have to be €885.9 million, i.e. more than double the amount invested this year.

Even considering the number of Startups per inhabitant, to have a size comparable with that of other cities, Turin would have to have between 3.52 and 9.23 innovative companies per 10,000 inhabitants.

It is clear that these numbers mark a lag on this front.

Certainly, in recent years, Turin has put in place a series of initiatives that are also reminiscent of examples seen in other cities: for example, the birth of major international events, such as Italian Tech Week, and local ones such as ToTeM - Torino Tech Maps.

In addition, Turin hosts important universities (e.g. Politecnico di Torino, ESCP - Business School) and innovation hubs such as OGR - Officine Grandi Riparazioni and Talent Garden.



In terms of innovation, Lyon is known for its strength in biotechnology and life sciences, thanks to the presence of major research institutes and large companies such as Sanofi.

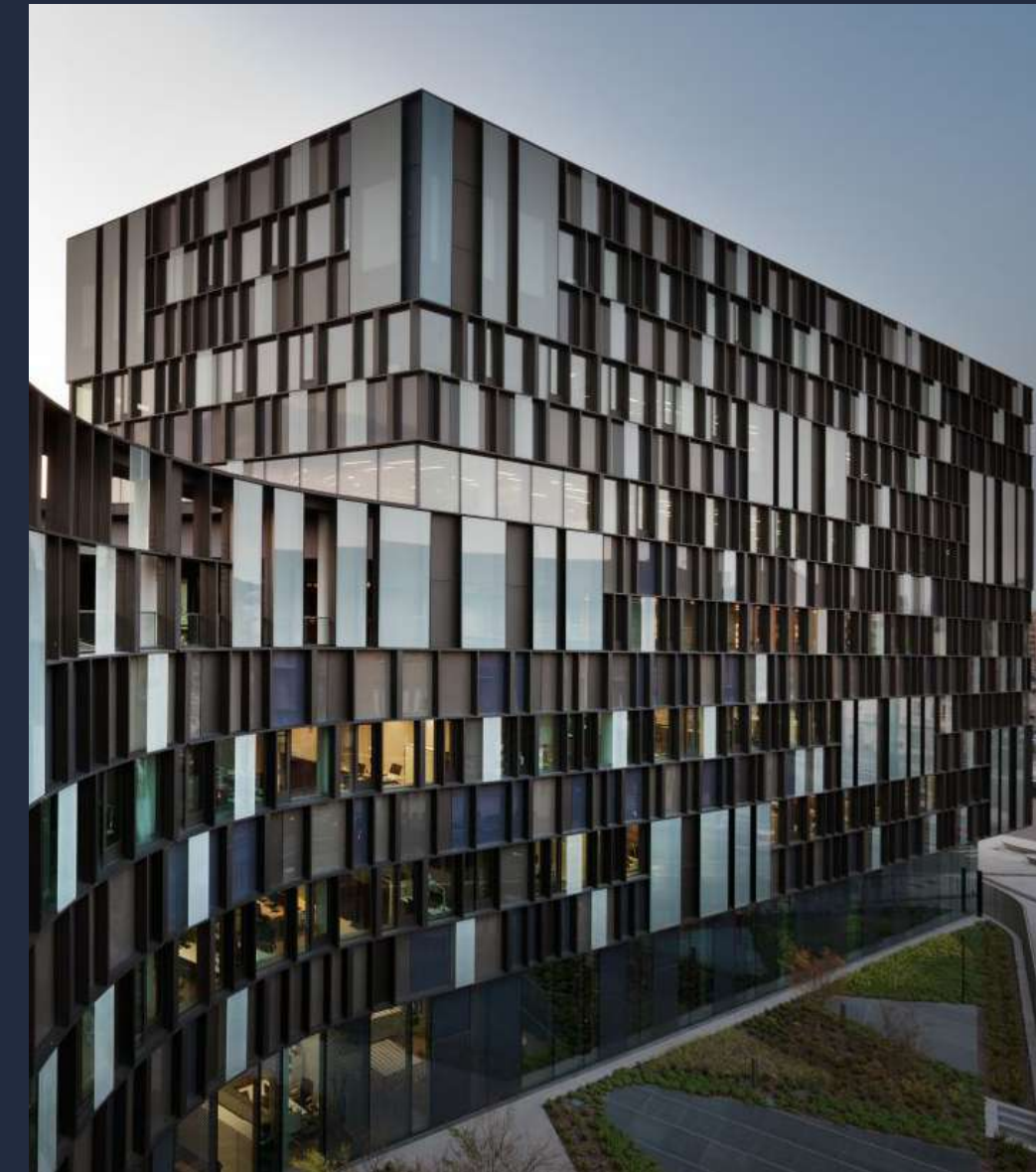
Rotterdam, on the other hand, is a port city and focuses mainly on the maritime, logistics and mobility technology sectors, with numerous Startups and companies working on sustainable and intelligent transport solutions.

Munich is known for its automotive and technology industry, with several high-profile automotive companies such as BMW and Audi and numerous startup accelerators and incubators dedicated to these sectors.

Finally, Turin is a city with a long tradition in manufacturing and mechanical engineering, but in recent years it is increasingly focusing on technology and innovation, with a growing startup community and an ecosystem of accelerators, incubators and startup studios.

Furthermore, a dynamic ecosystem in continuous growth is evident in Turin. Suffice it to say that in 2020 the capital raised by innovative companies in Turin was 54% lower than in Rotterdam and 10% lower than in Lyon. This year it exceeded them both by 19% the former and 20% the latter.

In 2022, Turin surpassed Lyon and Rotterdam in terms of capital raised but it is still four times lower than Munich.





05. The view of international investors on the Turin of innovation

How is the Turin of innovation seen by international investors?

We interviewed some Italian and non-Italian managers of venture capital funds abroad who are familiar with Turin, including:

- **Francesco Perticarari** (Silicon Roundabout Ventures)
- **Paolo Pio** (Exceptional Ventures)
- **Arrigo Bodda** (Walnut Ventures)
- **Edoardo Gentili** (Founders Factory)
- **Martin Olczyk** (TechStars)
- **Noam Ohana** (Exor Ventures)



The people of Turin have historically had the ability to transform their own history.

💬 "From its history as the driver of the creation and first capital of Italy to becoming an industrial powerhouse of the Automotive and Aerospace Industries, the city and its inhabitants have a natural ability to look beyond the horizon"

The city is now on the verge of irreversible change. From a purely mechanical-manufacturing vocation we are witnessing an interesting conversion into new technological areas such as clean energy, software and life sciences. And old factories become the temple of innovation...

💬 "I'm an expat who left Italy to work in tech over a decade ago, since I felt back then Italy in general had basically no tech scene. I therefore found refreshing that Torino today is building something (OGR) that looks a bit like a Station F in Paris when they got started"

...where Startups spring up and grow...

💬 "We see many new opportunities for founders, from very early stages, i.e. company building, incubating, local and international accelerators to later stage support for more mature companies"



...in a fertile environment.

💬 *"For me, Turin represents rationality, sobriety and dedication. The orthogonality of the city streets is reflected in the very logical way of thinking of those who live there, particularly those who do business"*

A context characterised by banking foundations that invest in the innovation ecosystem, thus contributing to its development; the presence of a very strong university pole that churns out scientific, IT and humanistic talent; international business schools; a very strong traditional industry, with entrepreneurs who enrich their system as business angels.

The city is also seen as rich in private capital seeking investment...

💬 *"Turin seems to have a unique concentration of private capital wanting to enter the venture world"*

...but the system is still small and the process of internationalisation of the city is not yet perceived by everyone abroad.

💬 *"...in terms of improvement, the ecosystem is still, of course, tiny and only slowly internationalizing"*



It might further help an effort to make English the default language in startups.

💬 *"The goal should be to create a network across the country and nternationally, which can bring the external VC and tech world to the city. Rather than just looking locally".*

And finally, a major international investor points out to us that Turin and Milan, which account for 75% of venture capital investments in Italy, could become (or already are?) a single ecosystem of innovation.

💬 *"Turin startups and VC scene grew significantly over the past couple of years. One consideration I have is that, while it takes only 45 minutes to travel between Torino and Milano by train, it takes a full 2 hours to drive through the San Francisco Bay Area, north to south. Yet, we speak of "Silicon Valley" as one single entrepreneurship ecosystem. Does it make sense to continue to speak of Torino ecosystem vs. Milano ecosystem?"*





06. Conclusions

With this research, we have observed Turin's innovation from different perspectives and we can draw some conclusions.

€ In terms of attracting investments, the city confirms its position as the second city in Italy, and the first in high-tech.

💡 The number of local operators, incubators and accelerators helping Startups grow is more than adequate in quantitative terms.

🏠 The offering of spaces, local and international events are top-notch.

🌐 The key to the growth of the city's innovation system is internationalization. In fact, Startups that are born

with a predominantly international vocation are the ones that attract capital, and furthermore, some international scale-ups are starting to open their headquarters in Turin.

📈 Turin is rich in private capital (the financial wealth of wealthy families in the city is ~ 70 billion²³), and local operators forecast to invest 1 billion in Venture Capital in the next 5 years.²⁴

The key to the growth of the city's innovation system is internationalisation.

²³ Data from Italian Private Banking Association

²⁴ Estimated by the Club degli Investitori

Turin is doing well, but it should not rest on its laurels and should accelerate its growth process. In fact, there are still some elements of uncertainty:

★ Turin is not yet in the top quartile in the rankings of the top 1000 innovative cities in the world.²⁵

📄 The city has not officially identified the leading sectors that will distinguish it and drive growth, as other comparable European cities have done in the past.

🤝 Local entrepreneurs complain that there are no investors in Turin and that commercial resources are lacking.

🌀 Turin has around 600 Startups, but there should be at least 1000 to start creating an advanced innovation ecosystem.

🦄 Turin needs a big success story, a unicorn²⁶, which is present in all the innovative cities. These companies not only create an average of over 200 jobs, but also become a true driver of innovation in the territory where they operate. At the moment, we can observe two potential unicorns (soonicorn²⁷).

Who knows if in 2023/2024 we could celebrate the first unicorn in the city?

²⁵ <https://www.startupblink.com/startupecosystemreport>

²⁶ A privately held startup company with a value of over \$1 billion.

²⁷ Tech companies with the potential to become Unicorns.

300+ Angel Investors supporting the best tech italian entrepreneurs worldwide



Suggestions for the future

The aim of the research is not to provide suggestions, but to describe the state of the art of the city's innovation system.

Through this, it is hoped to stimulate a discussion among private and public operators on what challenges need to be addressed to further grow the city's innovation system and its international competitiveness.

To start this discussion, we began with ChatGPT.

Artificial Intelligence first suggestion: "Foster a strong culture of entrepreneurship"



"What can Club Torino do to grow its startup ecosystem?"



"There are several things that Turin could do to further improve its startup ecosystem:

1. Foster a strong culture of entrepreneurship: The city could work to create an environment that encourages people to take risks and pursue entrepreneurial ventures. This could involve promoting the success stories of local startups and entrepreneurs, offering education and mentorship programs, and creating networking opportunities.
2. Increase access to funding: Funding is a crucial element for startup success. The

city could work to attract more venture capital and angel investors to the area, or offer funding opportunities through public-private partnerships or other initiatives.

3. Encourage collaboration: Collaboration between startups, corporations, universities, and research institutions can help foster innovation and growth. The city could create initiatives or programs that facilitate collaboration and knowledge-sharing between different players in the startup ecosystem.

4. Improve infrastructure: Access to affordable office space, high-speed internet, and other infrastructure is important for startups. The city could work to create

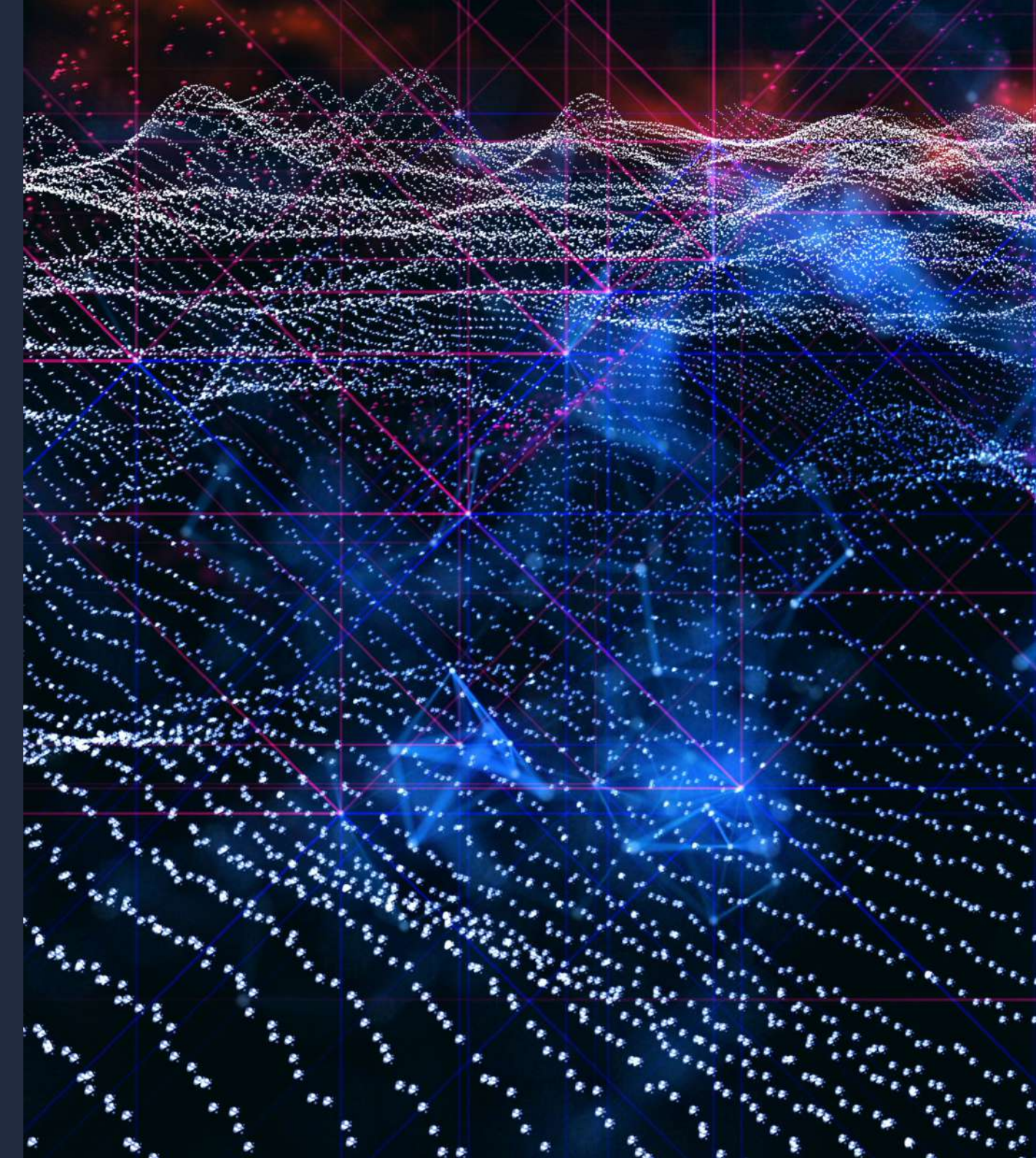
co-working spaces, incubators, and accelerators to support startup growth.

5. Attract and retain talent: Access to a skilled and diverse workforce is crucial for the success of startups. The city could work to attract and retain talented individuals, for example through programs that offer job training or incentivize young entrepreneurs to stay in the area.

By implementing these and other strategies, Turin could continue to strengthen its startup ecosystem and attract innovative new businesses to the area".



"Certainly, artificial intelligence gives us some interesting ideas to work on. We hope that the (non-artificial) intelligence of public and private decision-makers can choose and implement the right strategies for a new industrial era in our city".



Thanks to the Startups who answered the interview...



...and many more



Thanks to the Incubators, Accelerators and Investors who supported us in this research



*"Turin Startup Ecosystem
Goes Global"*



