Ministry of Economic Affairs,
Industry, Climate Action and Energy
of the State of North Rhine-Westphalia

NRW

Startup Report 2024

A data-driven analysis of the North Rhine-Westphalian startup ecosystem

Startup Genome

dealroom.co

Foreword

Mona Neubaur

Minister for Economic Affairs, Industry, Climate Action and Energy of the State of North Rhine-Westphalia

Dear readers,

Twin transformation and the transition towards climate neutrality and a digital society, those are the big challenges we are facing. To master them, we need new solutions and new ways of working. At the same time, the combination of digital progress and sustainable management opens up new opportunities for innovation and growth. North Rhine-Westphalia has the potential to play a pioneering role in this transition and already today shows significant success in both areas.

The vitality and innovative strength of our startups are crucial to the economic future of North Rhine-Westphalia. From the development of new digital business models to the implementation of sustainable solutions - startups are the driving force behind this change.

With the NRW Startup Report 2024, we offer a detailed overview, based on key figures, of the development of our startup ecosystem. The report analyses startup activity in the various regions of our state, sheds light on the structure of the financing landscape and shows which sectors are currently particularly active. The results indicate that North Rhine-Westphalia has seen an impressive increase in startup activity in recent years and has evolved as one of the leading startup centres in Germany. Despite the global economic headwinds which affect startup ecosystems and the economy as a whole, North Rhine-Westphalia's ecosystem is livelier than many of its European and global competitors.

In particular, sectors such as agtech and cleantech, which only a few years ago played a niche role in the North Rhine-Westphalian startup scene, show marked growth. The companies active in these areas are strengthening our economy and making an important contribution to making our state more climate-friendly and sustainable. This positive development is the result of hard work, clever ideas and the determination of a multitude of bold founders in North Rhine-Westphalia.

The report also highlights areas where good starts have been made and further action is needed - such as easing access to capital and strengthening cooperation between science and industry. Another key aspect is increased international network building with other startup ecosystems. The idea is to work with each other across national borders and learn from the best worldwide. International partnerships enable our startups to tap into new markets and gain access to resources in order to further accelerate the innovation process.

As State Government, we aim to continuously improve and adapt the overall conditions, so that startups in North Rhine-Westphalia will continue to have the best possible opportunities for growth and development, going forward. I am looking forward to exciting trends and success stories in the years ahead. Let us seize the opportunities of the twin transformation together and continue to improve North Rhine-Westphalia as a leading site for digital and sustainable innovation.

Greetings from André Christ

André Christ

Co-founder and General Manager, SAP LeanIX

Dear readers,

“Seven Mountains, not Silicon Valley”. A few years ago, LeanIX postered the Rhineland with this cheeky slogan alluding to a hilly region in North Rhine-Westphalia. Founding a company nowhere near the offices of Apple, Facebook and Google? And far from Berlin, the startup hotspot? LeanIX set up shop to Bonn in 2012 with exactly this intention. And in a short time proved you can build an internationally successful tech company in North Rhine-Westphalia.

What did this success look like? More than ten years of continuous, dynamic growth, not only in Europe but also in the intensely competitive US market. Over $120 million in financing marked by close collaboration between investors and company leadership. Over 600 employees worldwide. More than 1000 global companies as customers. And recognition as a market leader in a category LeanIX’s disruptive approach itself had redefined. Then, in November 2023, SAP acquired LeanIX in an acquisition that stands as one of the biggest ever in the European tech industry.

Naturally, this story attracted a lot of attention from investors, both for Germany as a tech hub as well as for the start-up ecosystem in North Rhine-Westphalia. Despite the excitement surrounding the acquisition, however, the present report indicates that both the number and size of exits in North Rhine-Westphalia took a step backwards in 2023. Considering the evaluation of the local ecosystem, there is still significant potential to catch up with Berlin and Munich. Why is that?

On the plus side, we find an active, well-connected, local start-up community where early- phase startups get financing faster than they do internationally. What’s more, thanks to all the companies focused on deep tech and the number of specialized universities and colleges in the region, growing firms have access to one of the largest pools of STEM-educated talent in Germany, offering these firms a great chance to compete in those key areas central to the development of technology in the future.

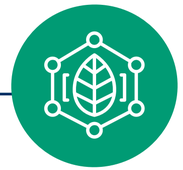
Where there’s light, of course, there’s also shadow. As active as the startup-scene may be, the report shows the scene’s relative weakness when it comes to connections with founders in other leading ecosystems. Another challenge is the lack of late-phase financing. Funding in this phase is especially important for scale-ups working towards a successful exit as well as to nurture a sustainable start-up ecosystem overall.

Naturally, gaps in growth financing are hardly a problem for one federal state to face on its own. In Germany, and in Europe more broadly, we need more incentives for institutional investors. This becomes especially clear when you compare the situation here to the situation in the United States, where new firms have far more options when it comes to accessing capital.

The report also shows, however, that start-ups in North Rhine-Westphalia have neglected an important key to success: the internationalization of their product offering. Only 1% of firms in the region have an office in another country today. It takes courage to think big and globally in the early days. But SAP LeanIX stands as a clear example of how this mindset pays off. Thinking beyond our borders is critical for faster revenue growth, bigger funding rounds, and taking the leap from start-up, to scale-up, to exit, all of which, in turn, benefits the whole ecosystem.

01

Summary and Key Facts



02

Ecosystem NRW Dashboard

03

Methodology and Metrics

Concept and Key Focus Areas

The NRW Startup Report is an annual study of the startup ecosystem in North Rhine-Westphalia, initiated by the Ministry of Economic Affairs, Industry, Climate Action and Energy of the State of North Rhine-Westphalia (MWIKE). The study is compiled and conducted by Startup Genome on behalf of, and in close cooperation with, MWIKE.

This study aims to quantify ecosystem progress, uncover insights, and identify opportunities to strengthen the startup ecosystem in North Rhine-Westphalia. The focus is on the following areas: startup creation, startup density, distribution of value creation, volume of and value of funding, impact of startups on employment and connectedness within the startup ecosystem. Data from the German commercial register, well-known funding and exits databases, and other sources were utilized for this purpose.

Startups are defined based on the following criteria:

- Younger than 10 years old
- Head office in North Rhine-Westphalia (NRW)
- Technology-focused, fast-growing companies

In addition to the data-based analysis, the founders' assessments are also extremely important for measuring the development of the NRW startup ecosystem. MWIKE also publishes another NRW Startup Report every year, which may be found at www.wirtschaft.nrw/nrw-startup-reports. This is based on an online survey of founders from NRW and shows a subjective impression of the atmosphere and opinions of the startup ecosystem in North Rhine-Westphalia.

Summary and Key Facts

01

Summary

North Rhine-Westphalia (NRW) is establishing itself as a leading startup hub in Germany, demonstrating dynamic growth despite challenging market conditions.

In 2023, there were **534 new startups in NRW**, which is in line with pre-2021 levels and reflects the nationwide trend. This level of activity underlines the high level of dynamism in NRW, even if there is still room for growth in terms of the number of startups relative to the total population.

In terms of diversity in management positions, **18% of startups founded in 2023 are led by female founders or executives**. Nevertheless, there is still work to be done both in NRW and in Germany to promote more diversity in the startup ecosystem.

The funding landscape in NRW remains robust, with the state achieving **a higher median value for Seed and Series A funding rounds** compared to many other federal states. However, relatively few startups in NRW receive a Series A round (~2%), which emphasizes the strong potential to support the next generation of scaleups from the state.

Despite a **62% reduction in early-stage funding in 2023**, NRW's startup ecosystem has shown resilience, achieving significant success amid global funding challenges. **Venture capital investment in AI startups increased by an impressive 72%**, driven by the very large $100 million Series B round of DeepL, positioning AI as the best-funded sector in NRW.

The vibrant tech community in NRW is proof of the flourishing startup culture. The **over 400 active tech meetups in NRW** is only surpassed by Berlin and Munich in the country. This strong local network provides a solid foundation for the development of startups. Notably, there remains significant growth potential in further internationalization and market expansion of NRW startups.

At the end of 2023, NRW recorded the **largest exit in Germany with LeanIX**. This underlines NRW's ability to promote significant startup success and once again highlights the region's potential as a leading startup ecosystem.

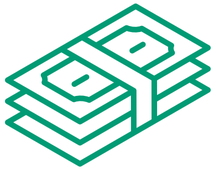
NRW shows strong growth with 534 new startups in 2023

NRW's startup ecosystem grew with 534 new startups in 2023 and 2,335 added between 2020 and 2023. The clusters of Aachen, Münster, and East Westphalia have recorded the highest growth rates. Statewide startup density is 155 per million, highlighting growth potential. This is also true at a city-level, with NRW's largest cities lagging comparable German peers on Startup Density.

Cleantech, Cybersecurity, Life Sciences, and Agtech grew in NRW despite the global "funding winter"

Despite a general downward trend in startup funding in 2023, selected technology sectors in NRW recorded notable growth, including Cleantech (4-fold increase in funding volume, Life Sciences (3-fold increase) and Agtech and New Food (6-fold rise). The vast majority of funding in these sectors contribute directly to more environmentally-friendly and sustainable development.

36 %



Decline in NRW ↘

40 %

Global decline ↘

Funding in NRW holds up well despite global headwinds

The global funding winter has impaired the availability of venture capital everywhere, including in NRW. Startups in NRW raised $374 million in funding in 2023, which represents a decrease of 36% compared to 2022. This is slightly better than the global decline of 40%. Notably, late-stage funding in NRW increased by 13% from 2022 to 2023, which is a stark contrast to the global decline in late-stage funding of -38%. The median ticket size for seed and Series A funding in NRW was $1.1 million and $8.6 million, respectively.

~20 %

of NRW startups have female founders or executives

Around 20% of startups founded between 2020 and 2023 had at least one female founder or female manager. The proportion of women in the founding teams is fairly constant at around 20%, but remains below the global average (31%).

~1.5 %

of NRW startups have a presence abroad

NRW startups are on par with European peers on expansion to global markets, with roughly 1.5% of startups establishing foreign subsidiaries.

NRW Ecosystem Dashboard

02

2.1 Startup Journey

Startup Foundations

Early-Stage Funding

Late-Stage Funding and Scaleups

Exits

2.3 Economic Impact

Job Creation

Sustainable Development Goals

2.2 Ecosystem Factors

Networks and Innovation Culture

Sector-Focused Innovation Capabilities

Access to Talent

Startup Creation and Density

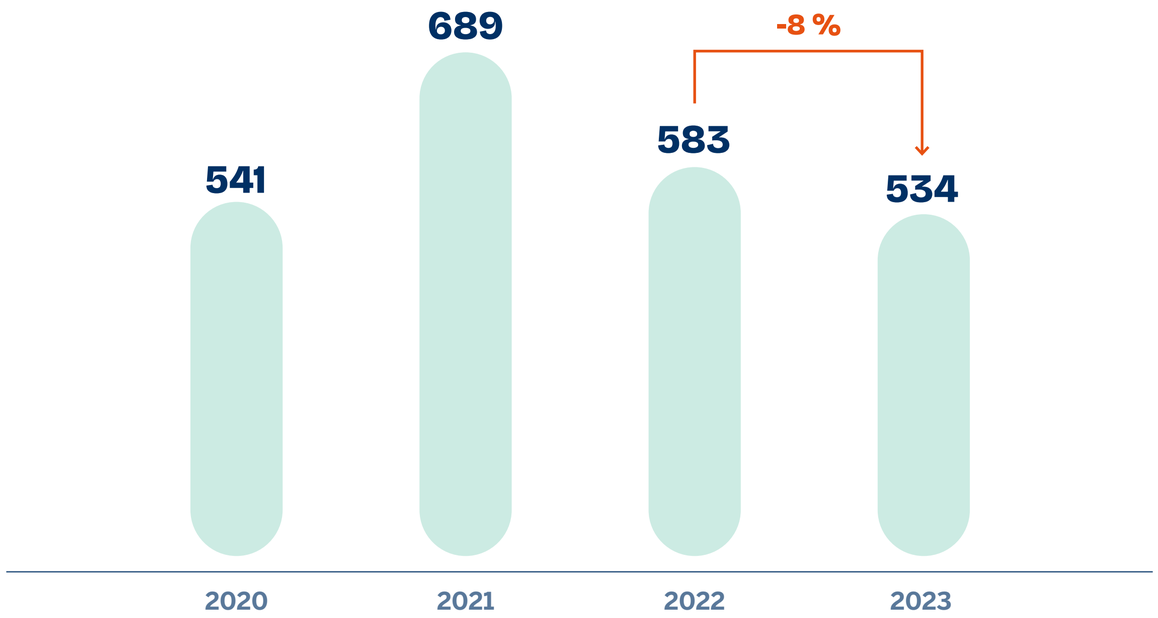
Startups are growth engines for the economy as they create jobs, introduce innovative products and services, and generate revenues.

The number of startups, or Startup Creation, within an ecosystem **positively correlates with economic impact** through network effects and knowledge-sharing.

Startup Density, or startups per million people, reflects the entrepreneurial propensity in an ecosystem. Low levels of Startup Density suggest **strong potential to create more startups.**

Startup Creation in NRW has gone back to levels observed before the global pandemic, in line with national peers

Number of Startups founded in NRW



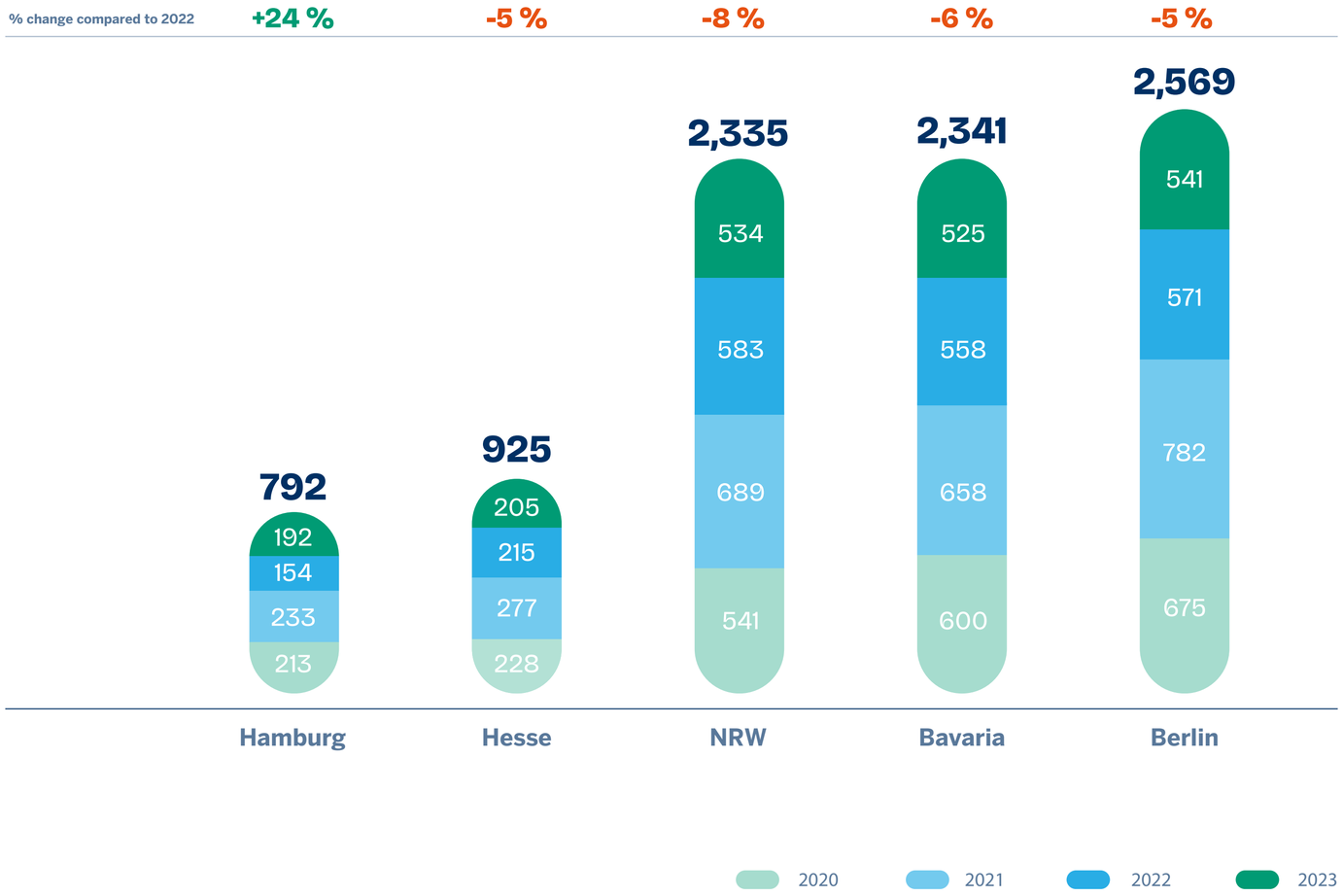
Source: Trade Register, Dealroom, North Data, Hubs, Startup Genome
Startup Creation: Number of tech startups registered in the federal state in the specified period
Methodology: The approach involves identifying tech startups that were newly registered in the commercial register in the respective years. The final list is compiled using machine learning, supplemented by manual quality controls.

Change from 2022 to 2023

NRW	-8 %
Bavaria	-6 %
Berlin	-5 %
Hamburg	+24 %
Hesse	-5 %

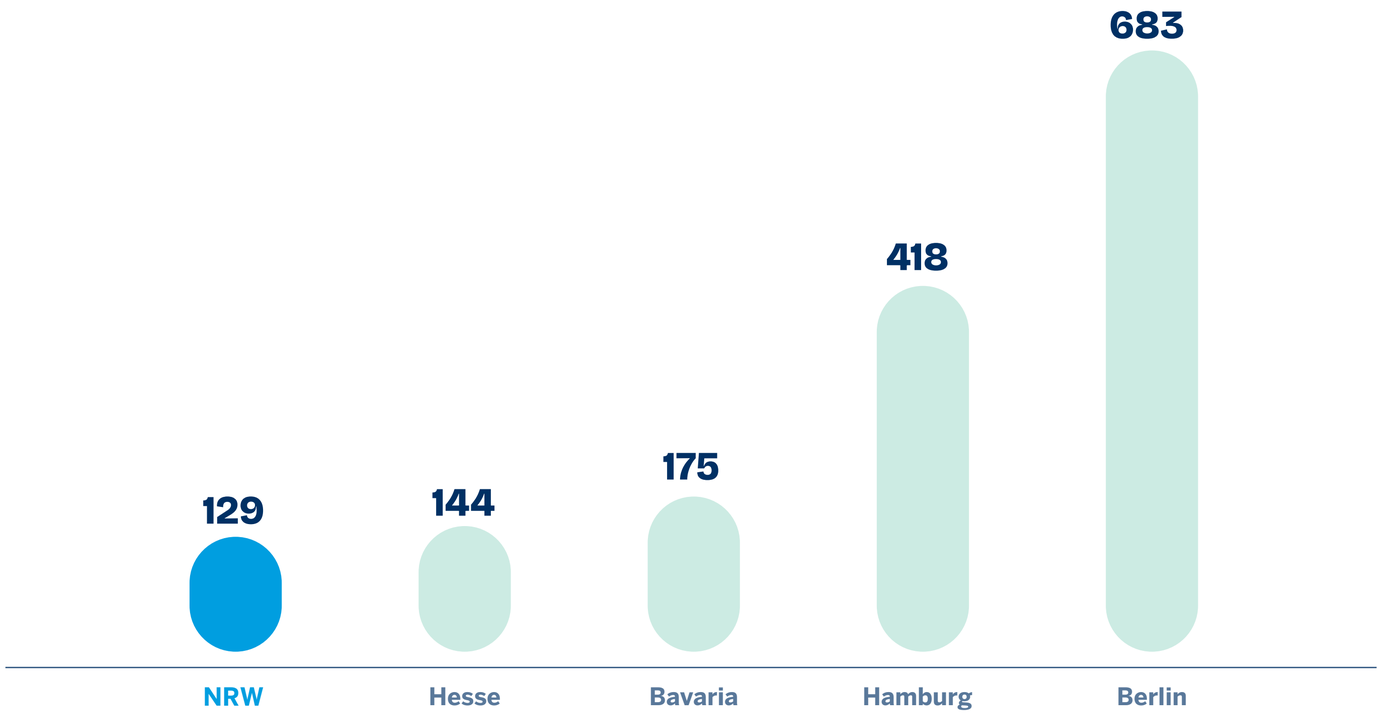
With over 2,300 startups founded between 2020 and 2023, NRW continues to be a leading startup creator in Germany.

Startup Creation Across Select German States, 2020-23



Startup Density in NRW is behind other national peers, highlighting higher potential for entrepreneurial propensity in the state.

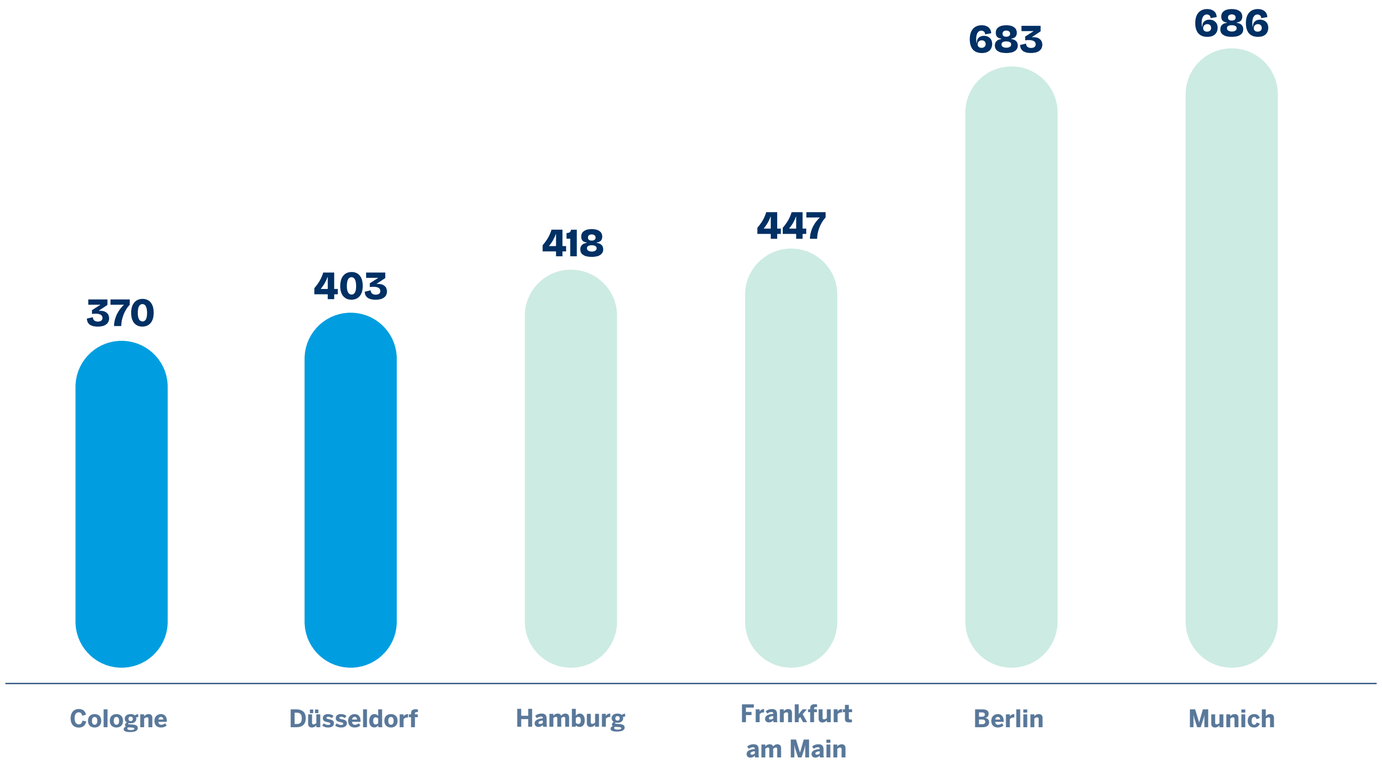
Startup Density (2020 - 2023) across selected German States



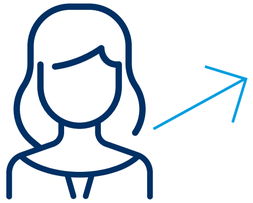
Startup Density: Number of startups created for every million people in the state (# startups created per 1 million people in the state)

Large cities in NRW also create fewer startups per capita compared to other major German cities.

Startup Density (2020-23) across selected German Cities

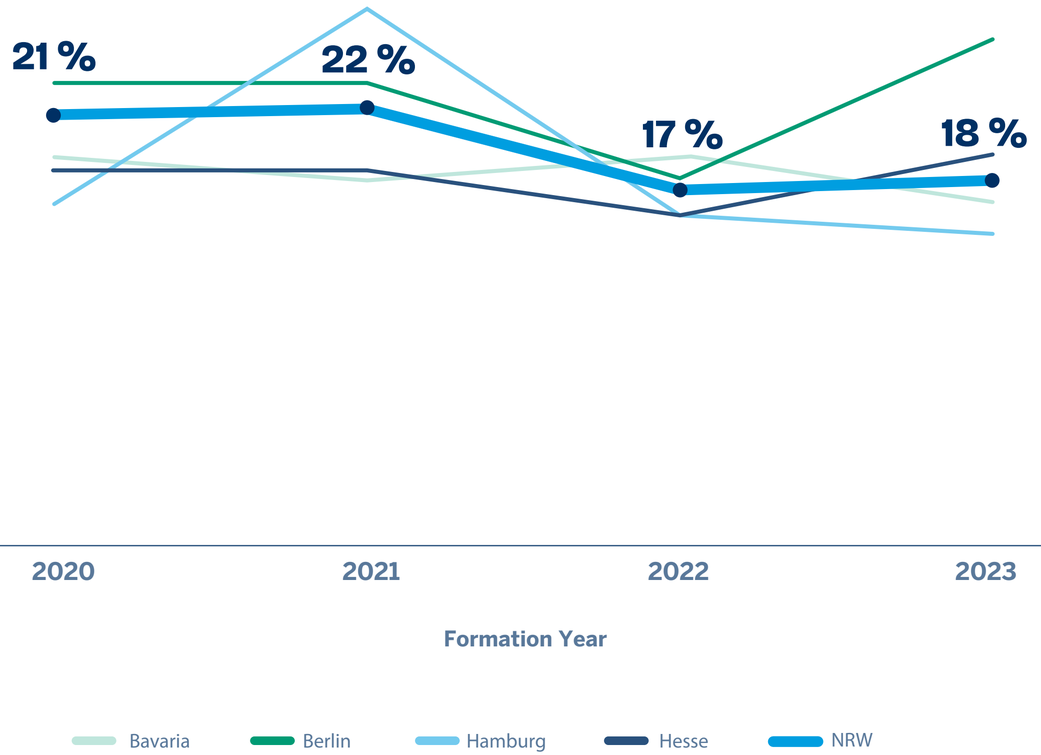


Startup Density: Number of startups created for every million people in the city (# startups created per 1 million people in the city)



The proportion of startups with female founders or executives has risen slightly in NRW compared to the previous year.

Proportion* of Startups Created with Female Founders or Executives



*as a proportion of all startups created

Ecosystem Value

Ecosystem Value is an indicator of size, performance and value creation in the startup ecosystem. The value is calculated as the sum of exits and startup valuations.

CALCULATED AS:

Valuation of startups in early stages

+

Valuation of startups in late stages

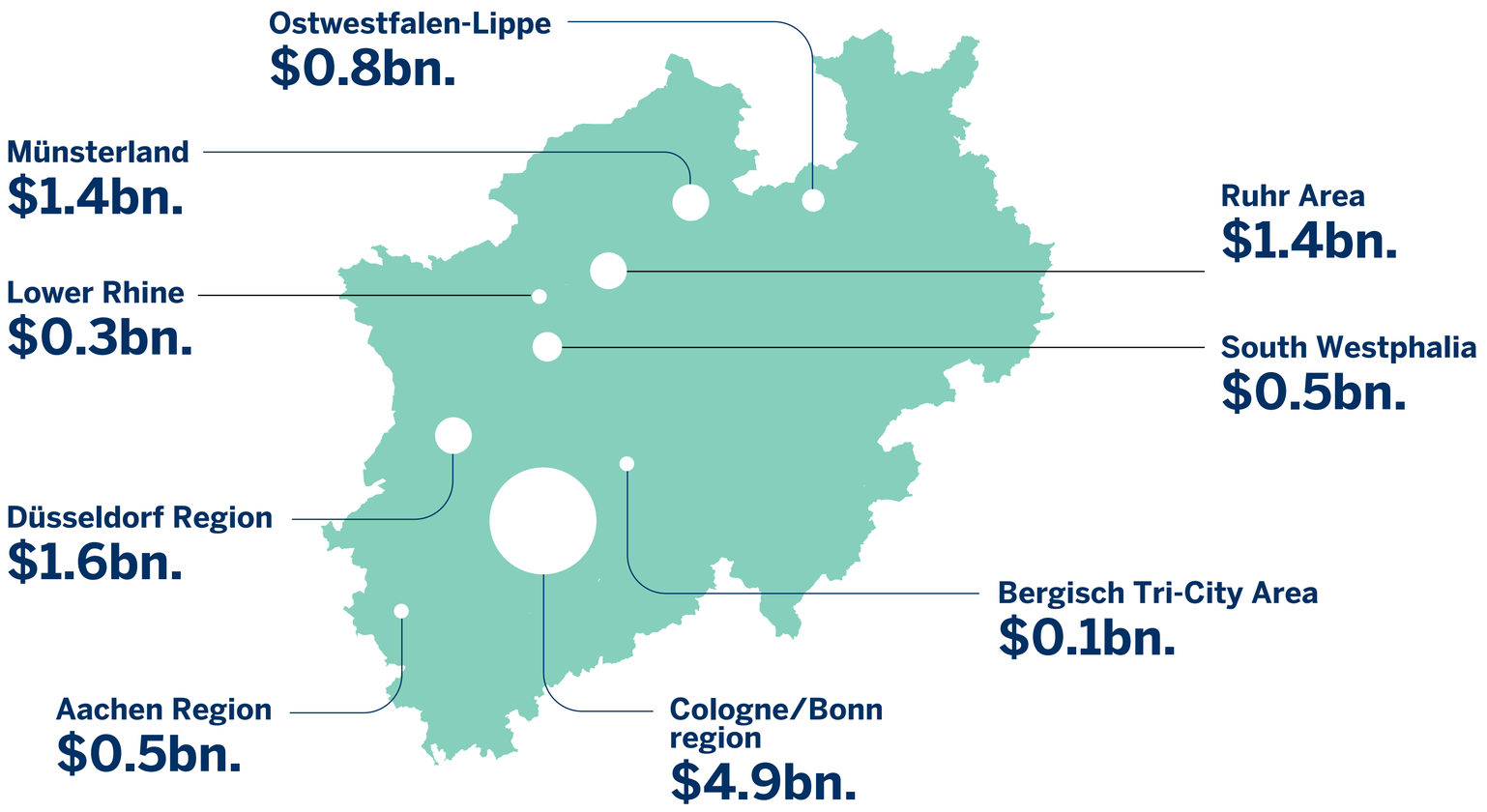
+

Exit valuations

Within a period of 30 months (2.5 years)

The Cologne/Bonn Region contributes over 40% of NRW's Ecosystem Value

Ecosystem Value by Region (H2 2021 to 2023)



Cologne/Bonn Region
is the leading startup region in NRW

Düsseldorf Region
is the second strongest region

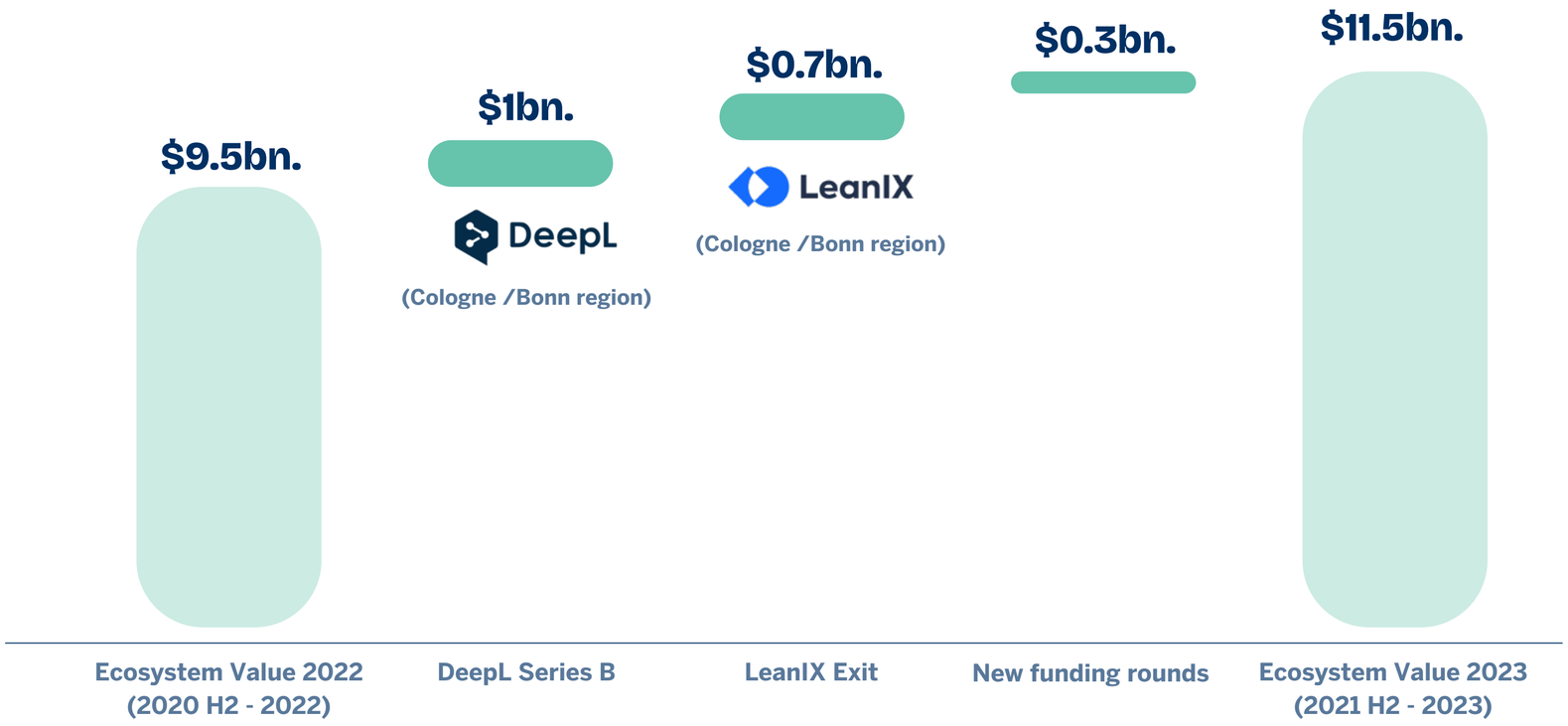
Ruhr Area and Münsterland
have been boosted by the recent exits

Ruhr area:
— Phenox exit in 2022

Münsterland:
— Flaschenpost exit in 2021

DeepL's substantial funding and LeanIX's large exit contributed a significant increase to NRW's ecosystem value in 2023.

Change in ecosystem value: 2022 vs. 2023 ($Billion)



https://techcrunch.com/2023/01/11/deepl-the-ai-based-language-translator-raises-over-100m-at-a-1b-valuation/

Despite a comparable number of startups, the value of the ecosystem in NRW is significantly lower than in Bavaria and Berlin

The value of the ecosystem in NRW in the comparative period amounts to

$12 bn.

(H2 2021 to 2023) whereby

13 Scaleups[2]

and

3

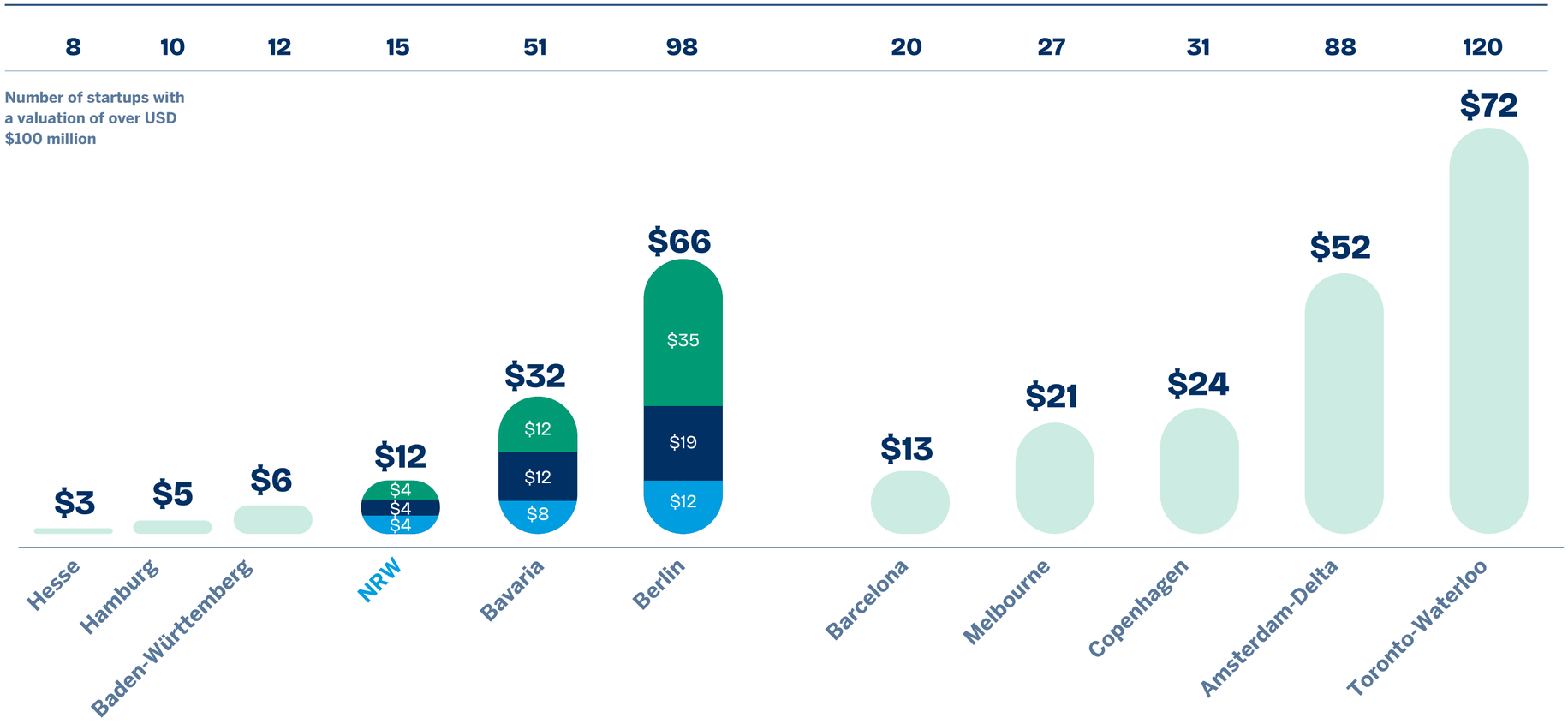
Unicorns[3]

contribute more than

66 %

of this value.

Value of the ecosystem (H2 2021 to 2023) ($Billion)



Contribution from Startups rated with..

[1] The ecosystem value refers to the sum of funding and exit valuations within an ecosystem over a 30-month timeframe and serves as a simple and indicative measure of size and economic value.
[2] Scaleup refers to a startup with a valuation of more than or equal to USD $100 million
[3] Unicorn refers to a startup with a valuation of at least $1bn

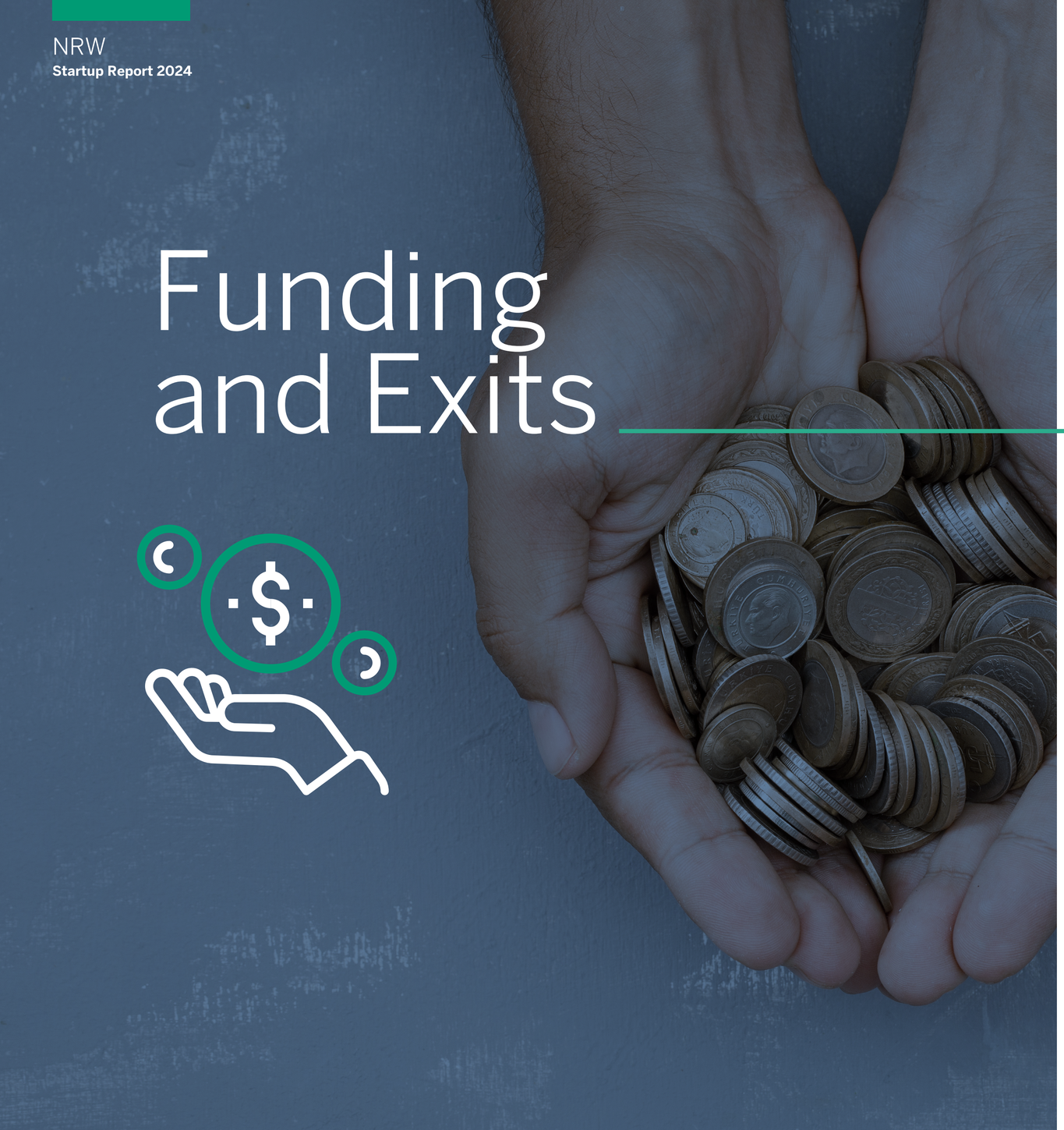
Despite strong growth observed in 2023, the Ecosystem Value of cities in NRW still lag their German counterparts from other states

Cologne's ecosystem value is comparable with German ecosystems such as Stuttgart and Frankfurt am Main.

Ecosystem value by city (H2 2021 to 2023, $Billion)

1. Ecosystem value refers to the sum of funding and exit valuations within an ecosystem over a 30-month timeframe and serves as a simple and indicative measure of the size and economic value generated.

Funding and Exits

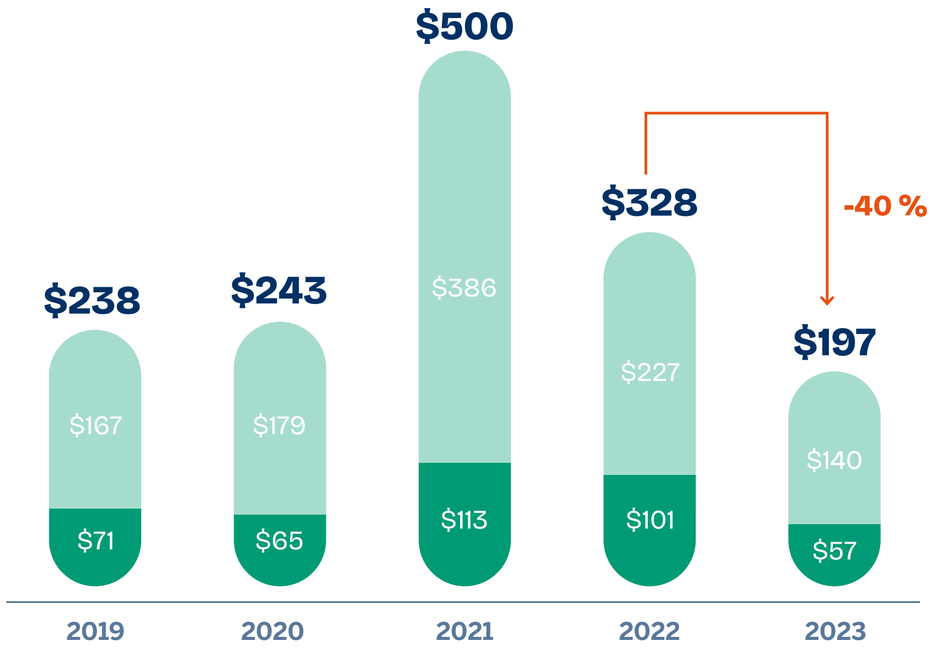


This section covers funding and exits, which serve as **leading, current, and lagging indicators of ecosystem performance.**

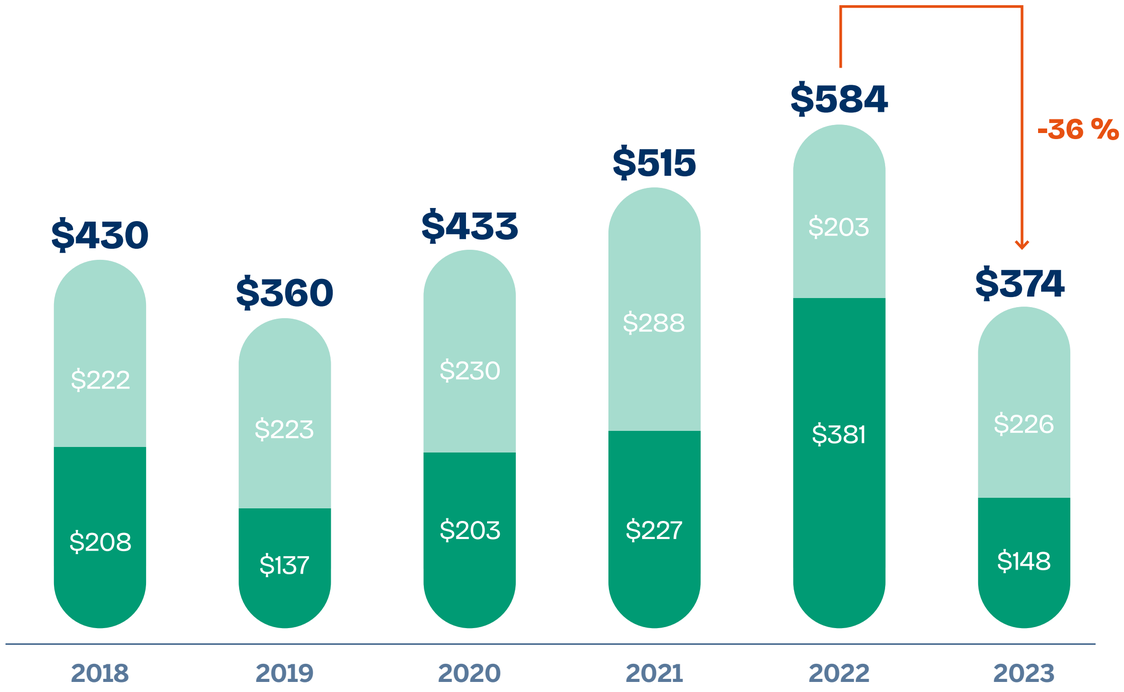
This includes **Funding** which shows how many startups have been successful in raising funds and **Exits** including M&As and IPOs.

NRW faced a 36% funding decline in 2023, in line with the funding winter witnessed globally

Venture capital invested worldwide ($ Billion)

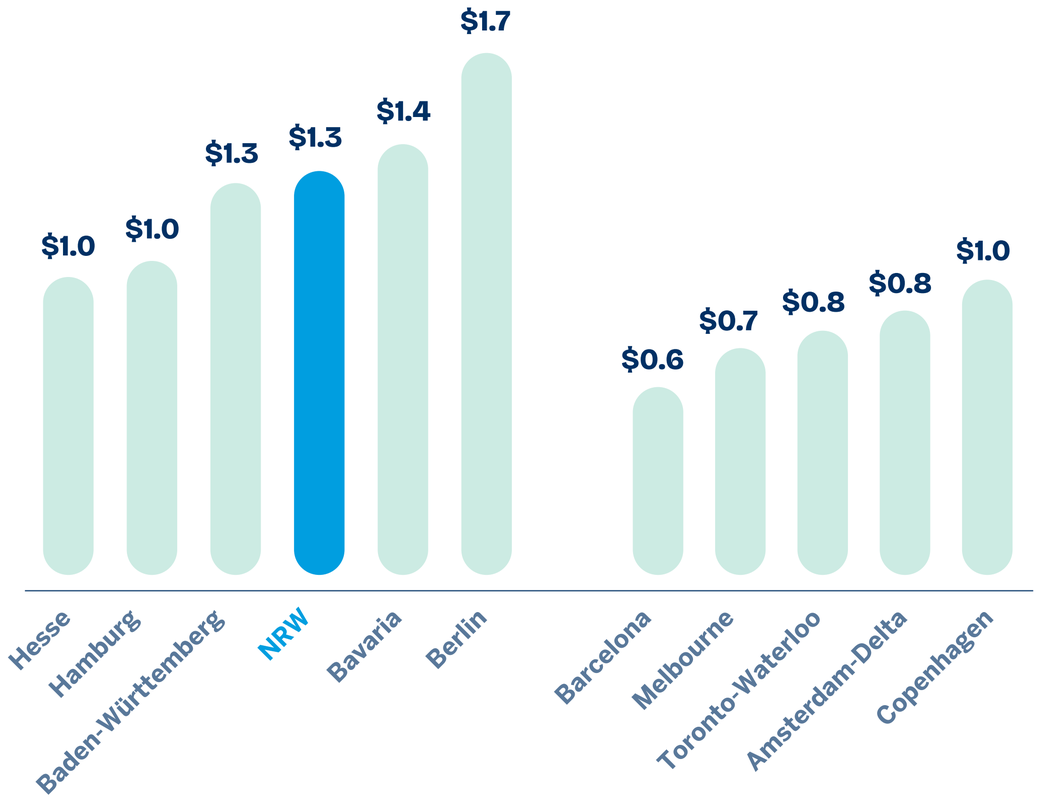


Venture capital invested in NRW startups ($ Million)

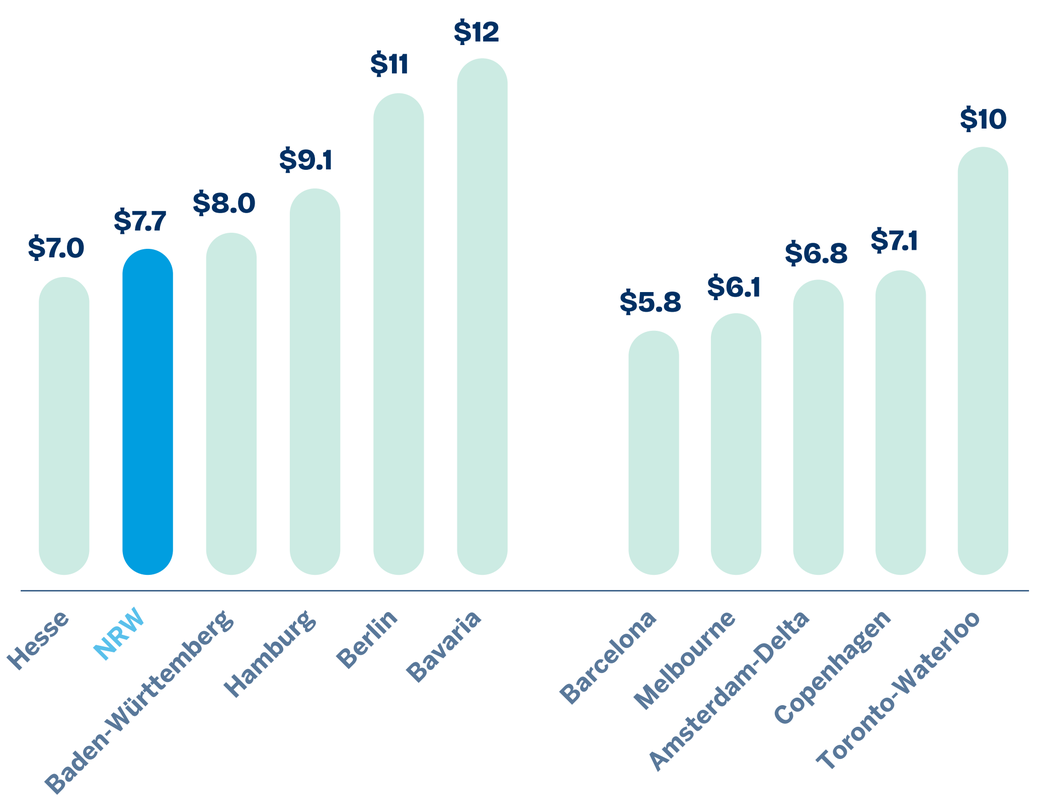


The median seed round size in NRW is among the largest in federal states and internationally competitive

Seed Median ($ Million, H2 2021 - 2023)

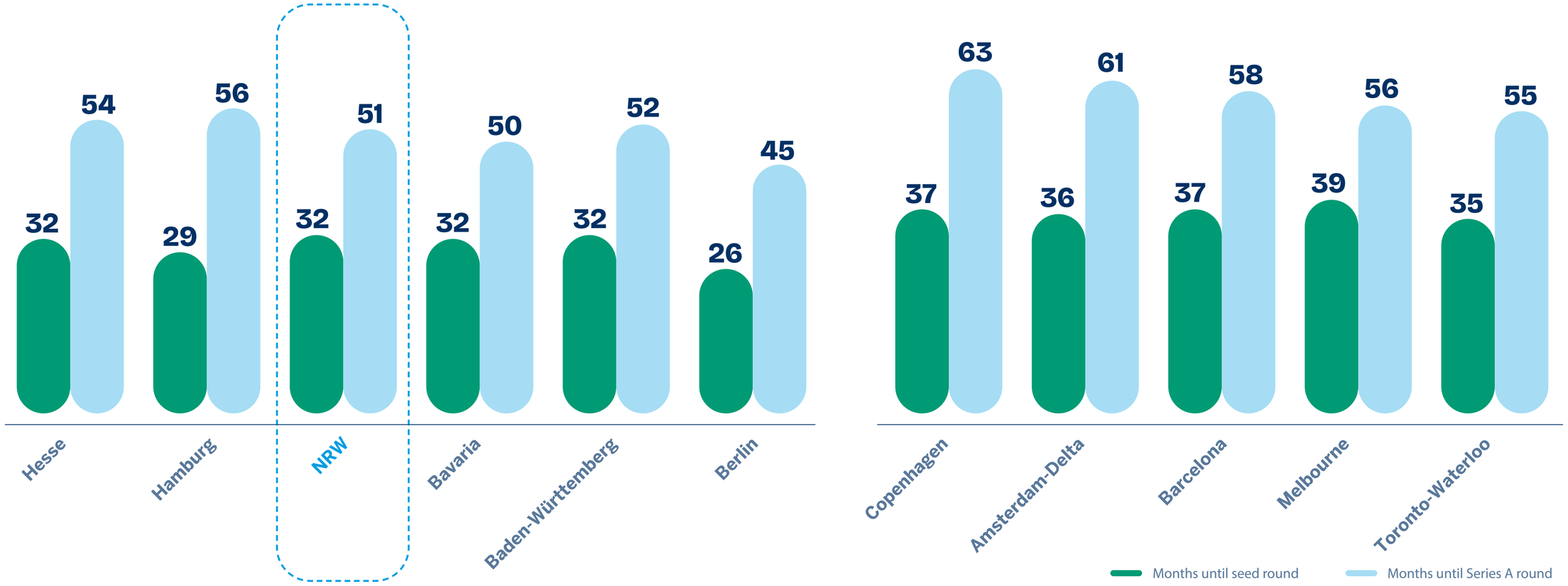


Series A Median ($ Million, H2 2021 - 2023)



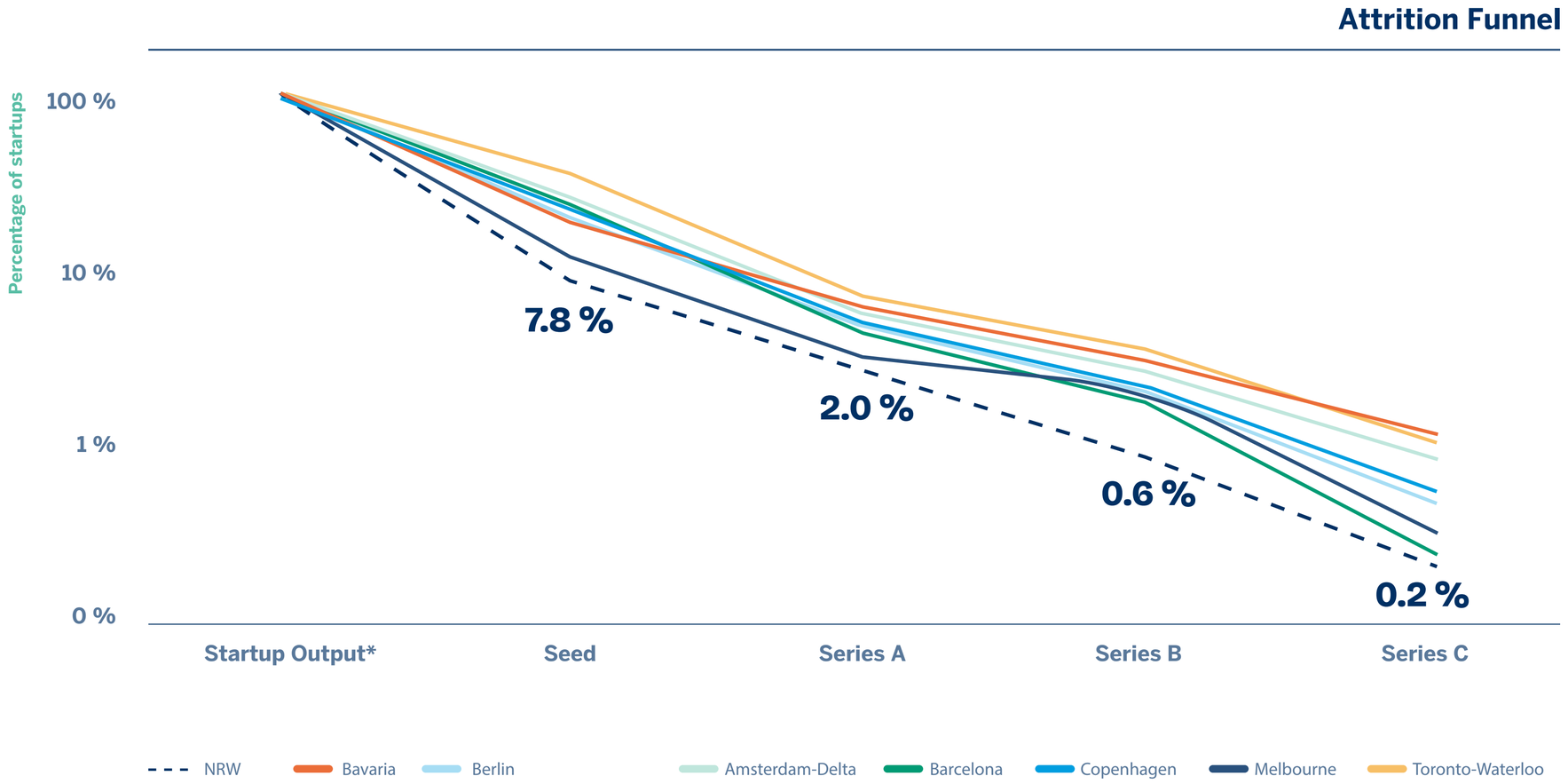
Startups in NRW receive early-stage funding faster than in other federal states and countries

#Number of months until Seed and Series A (2019-2023) from founding



Gaps in access to early-stage funding in NRW also have an impact on later stages

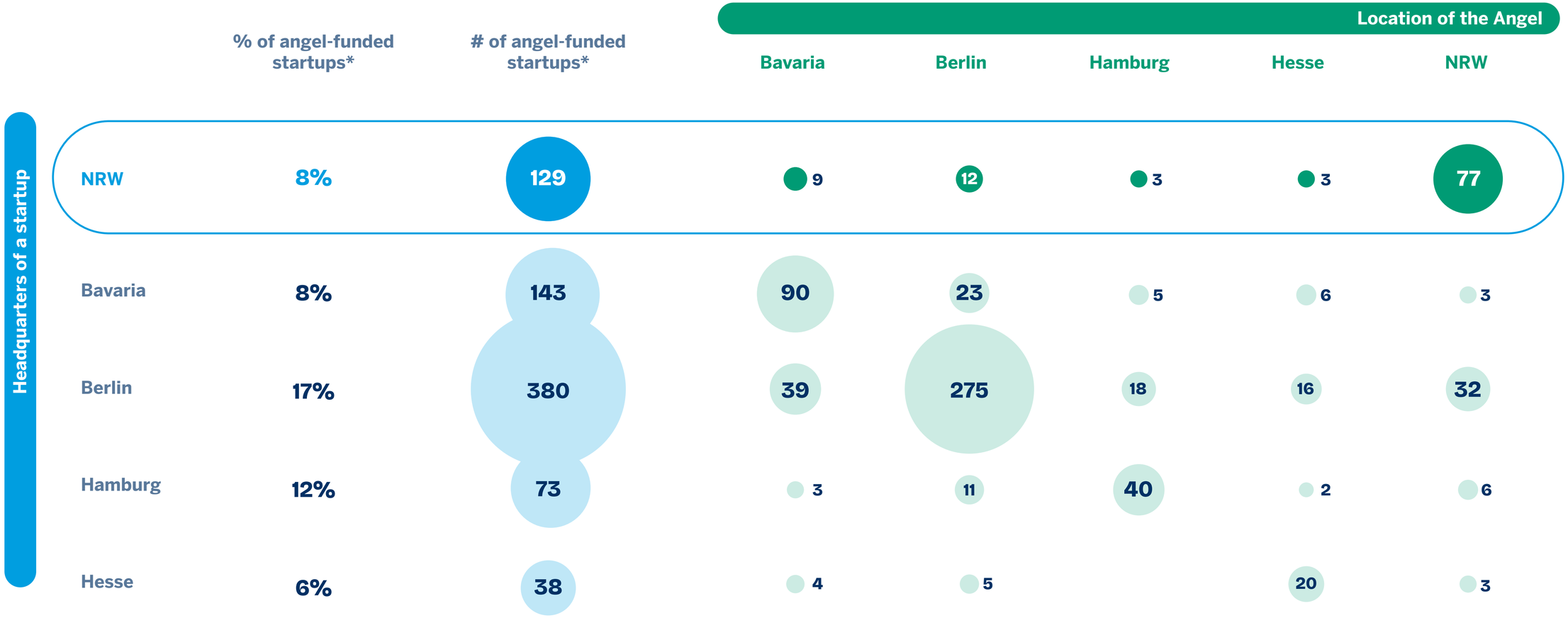
Late-Stage Funding gaps in NRW stem from gaps in Seed and Series A, which become larger downstream. Therefore, strengthening access to early-stage funding at the ecosystem level will be a necessary pre-requisite to supporting late-stage success for NRW startups.



To ensure the accuracy of the data, the figures for the various funding rounds relate to the following periods
1. Seed: 2019-2021. 2. Series A: 2020-2022.
3. Series B: 2021-2023. 4. Series C: 2022-2023

*Startup Output is an estimate of the startup population in an ecosystem

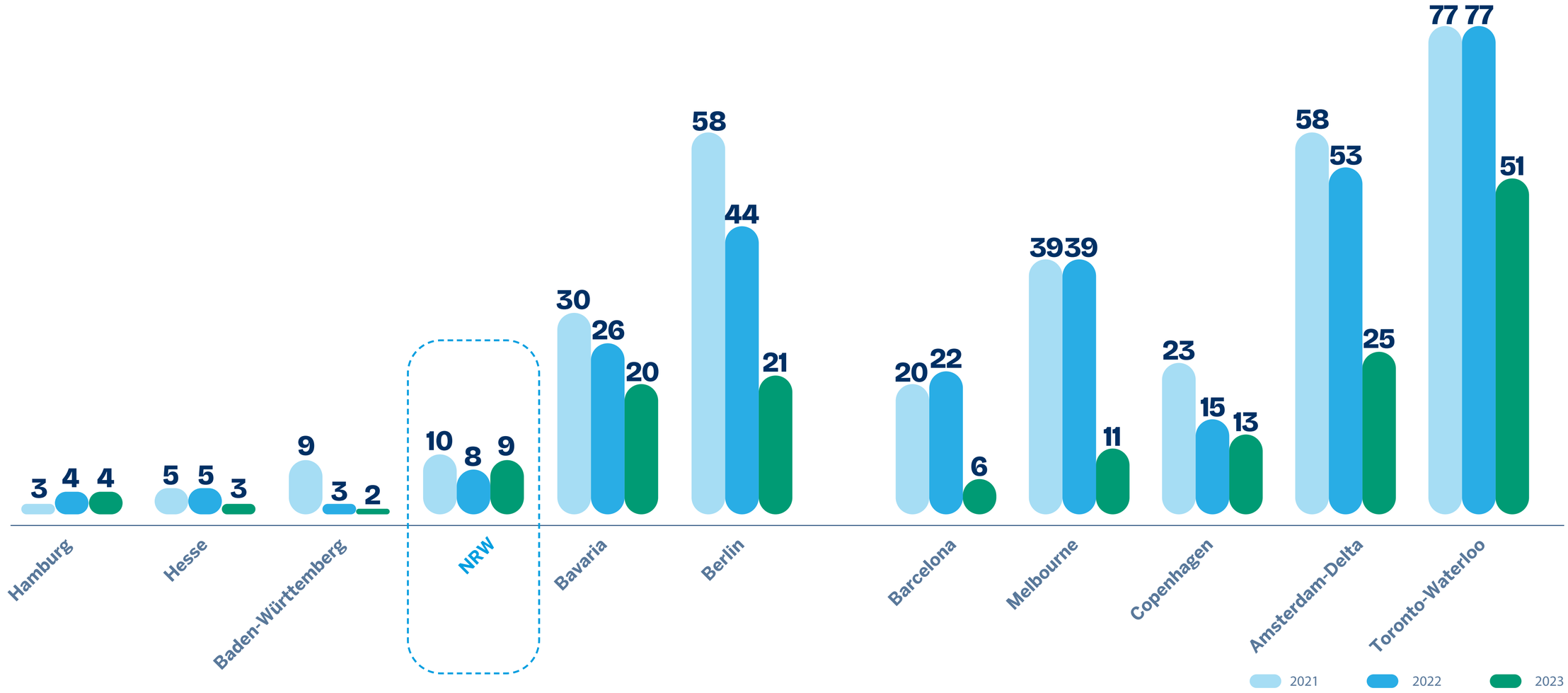
Most startups receive angel investments from angels within their state; Berlin angel investors and startups have the greatest reach



*Startups founded between 2020 and 2023

The number of Late-Stage Funding* declined globally in 2023; While NRW remained consistent, there is considerable room for growth

Late-Stage Funding Rounds (#)



*Series B and Beyond

Total Late-stage Funding* Value declined in most ecosystems, while NRW has stayed consistent

Late-Stage Funding Amount ($ Million)

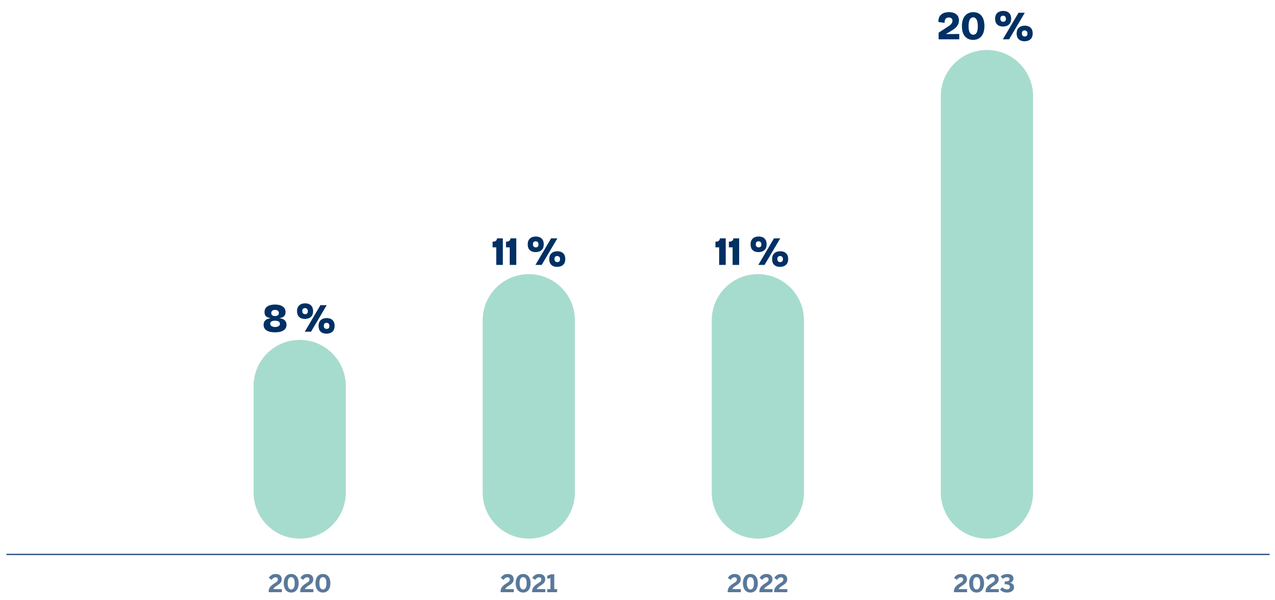
*Series B and Beyond

In NRW, ~20% of all fundraising deals in 2023 went to startups with at least one female founder or executive.

The tech industry and startup ecosystems worldwide are male-dominated, and although there are signs of improvement, women are still underrepresented in startups.

In NRW, too, the annual share of fundraising deals with at least one female founder or leader is rising steadily and reached 20% in 2023.

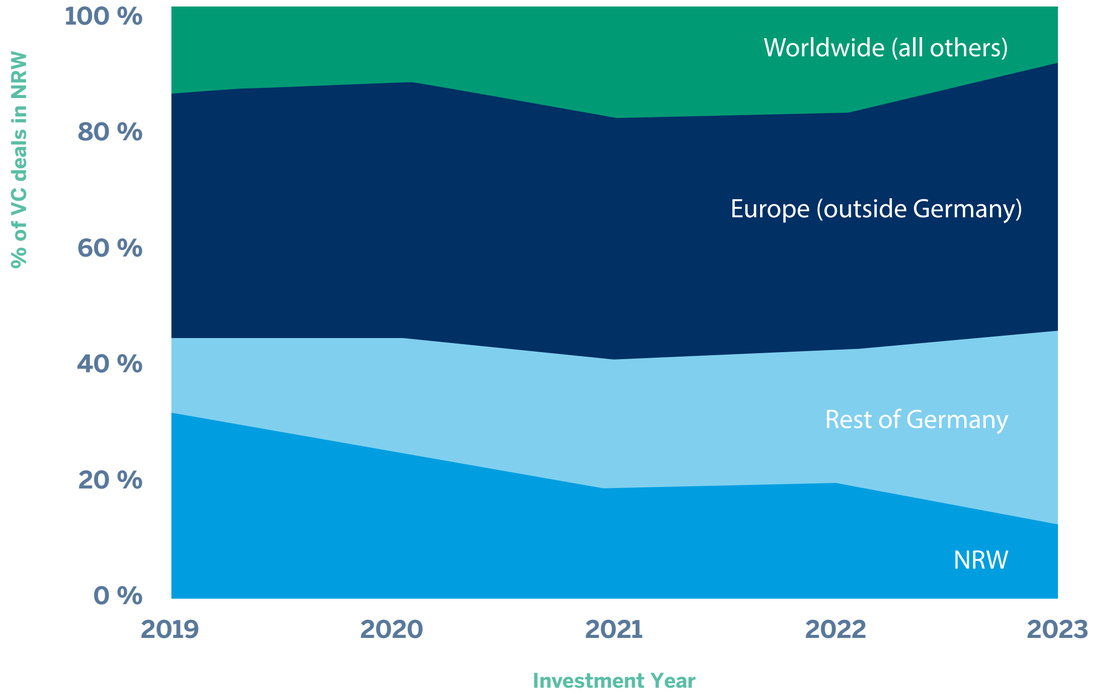
Percentage of fundraising deals per year for startups with at least one female founder or leader



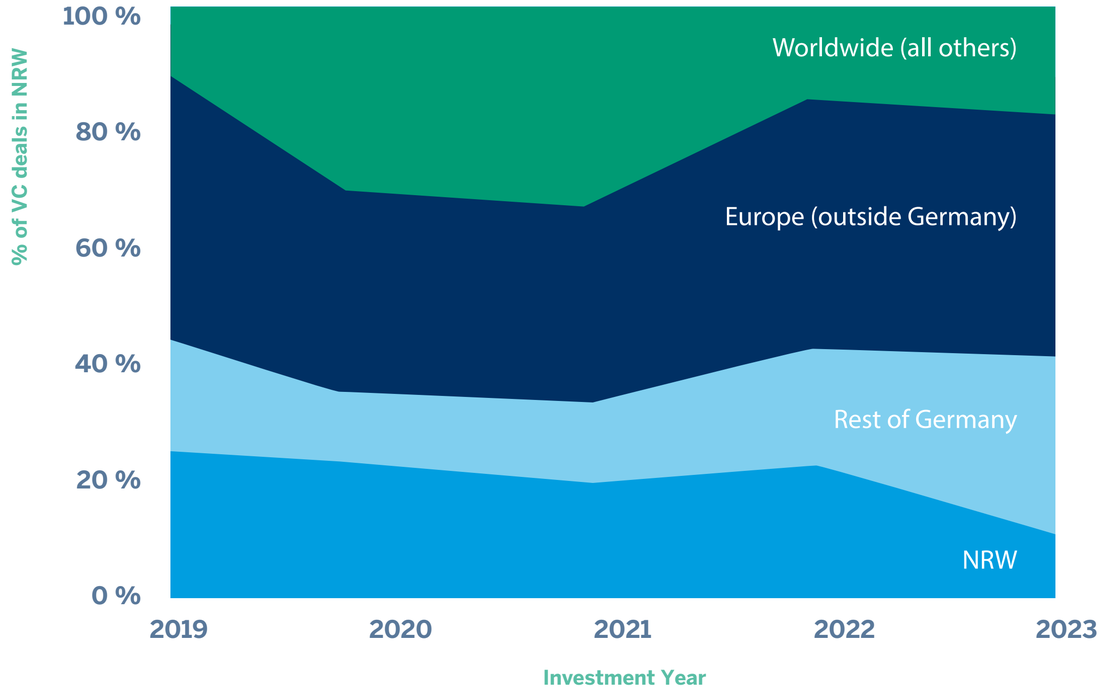
The proportion of investments in NRW startups by investors outside of the state has been steadily increasing

Startups from NRW have attracted more interest from investors outside of NRW in the last five years. The number of deals with NRW startups by investors from Berlin and Munich increased five-fold in the period 2019-23.

Share of VC deals (#) by HQ of Investor

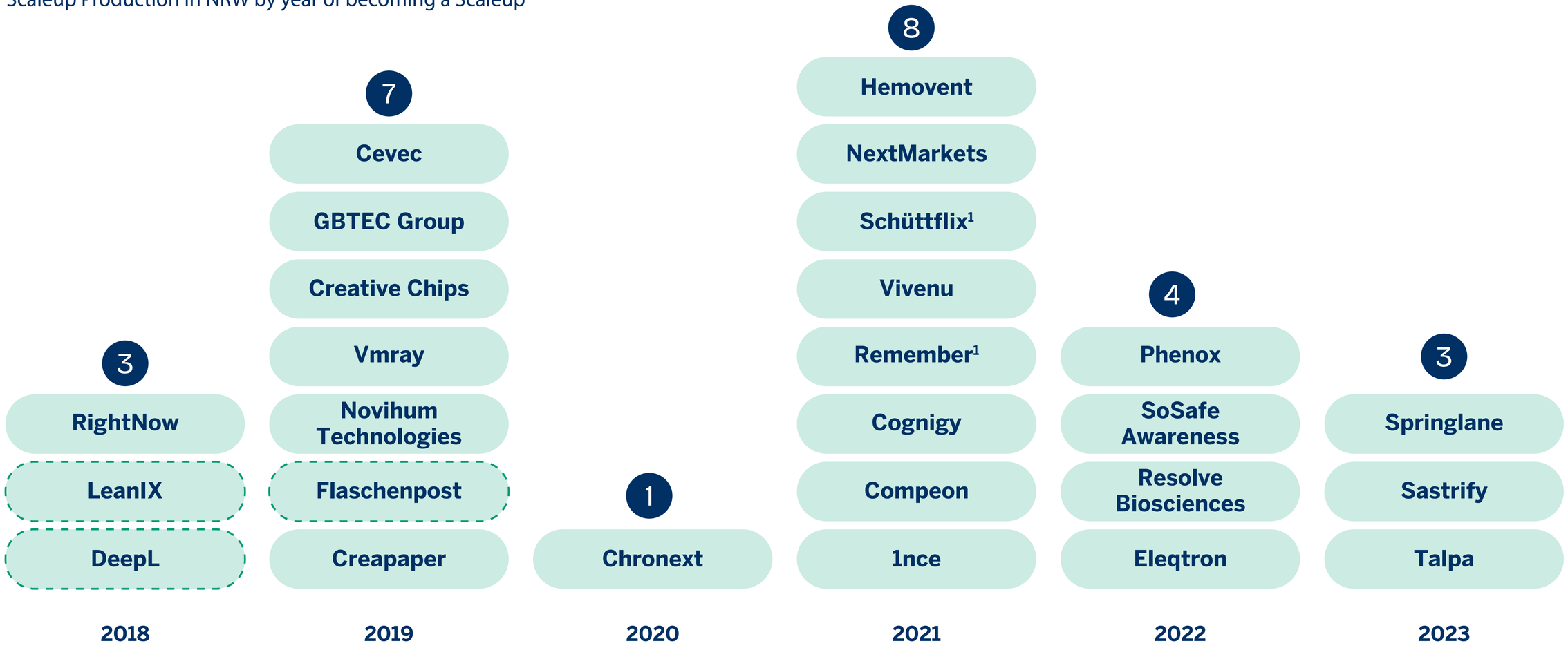


Share of VC deals ($) by HQ of Investor



The number of new scaleups in NRW in 2023 is at a similar level to 2022, but has fallen significantly compared to the peak in 2021

Scaleup Production in NRW by year of becoming a Scaleup*



*Companies with a valuation of more than USD $100 million and an age of less than 10 years when this milestone is reached.
1. Based on estimated valuations

Billion-Dollar-Startups

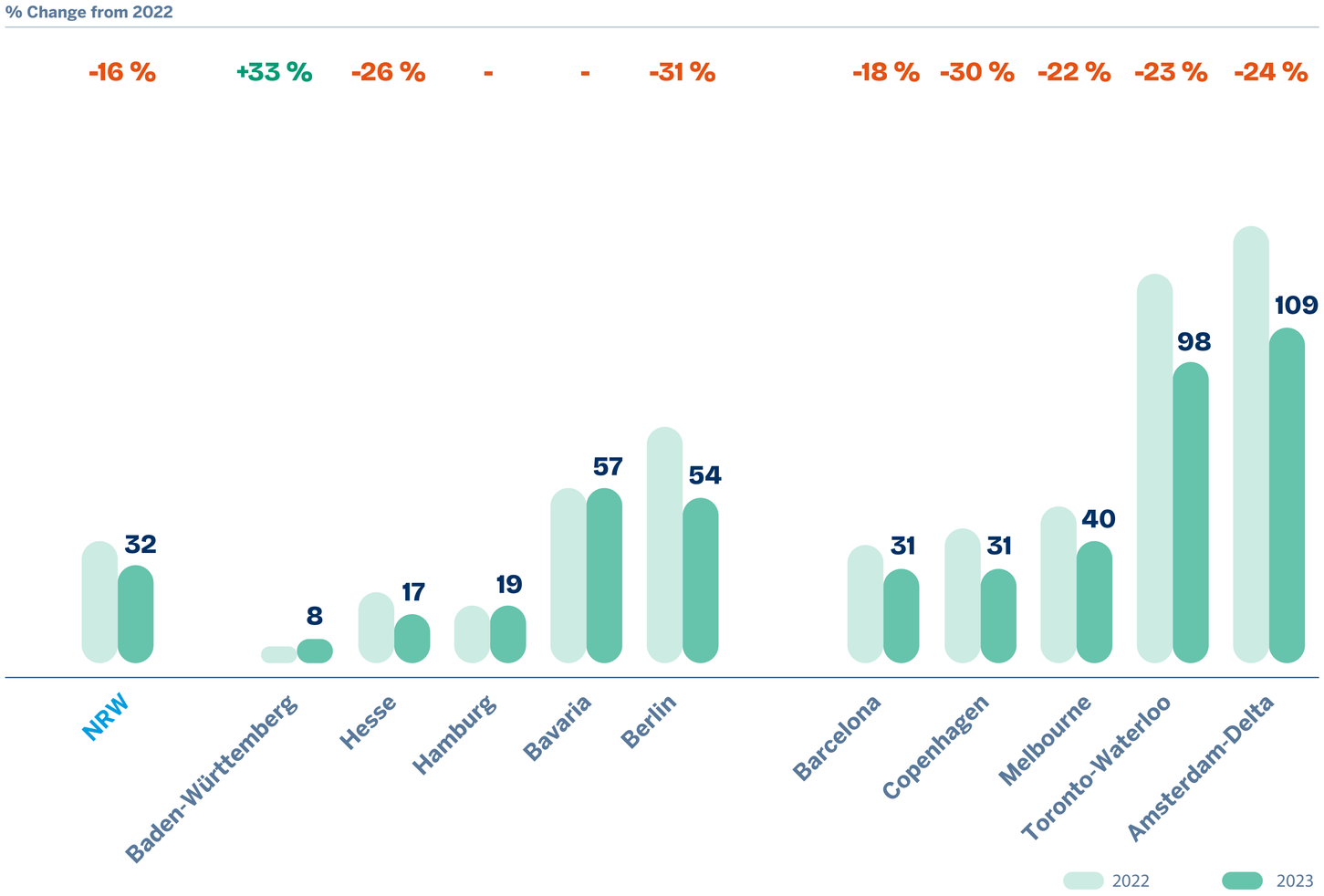
With
32
exits in 2023, NRW recorded a decline in exit activity compared to 2022.

The acquisitions of LeanIX and Phenox were among the largest exits in NRW in the last two years, with **each transaction having a valuation of**

USD $500 Million+

Exits are an important factor in ecosystem performance as they are a critical component of the ecosystem flywheel; exiting founders typically contribute their time, experience, expertise, and funding to the next generation of companies.

Startup exits in a year-on-year comparison from 2022 to 2023



NRW had the largest exit in Germany in 2023, but the overall exit volume has declined significantly since 2021

Decline in large exits:

Impacted by the global downturn, large startup exits in Germany – and in NRW -- have declined since 2021.

NRW records Germany's largest startup exit in 2023:

With the acquisition of LeanIX by SAP, NRW witnessed the most impressive exit of any German startup in 2023.

2.1 Startup Journey

Startup Foundations

Early-Stage Funding

Late-Stage Funding and Scaleups

Exits

2.3 Economic Impact

Job Creation

Sustainable Development Goals

2.2 Ecosystem Factors

Networks and Innovation Culture

Sector-Focused Innovation Capabilities

Access to Talent

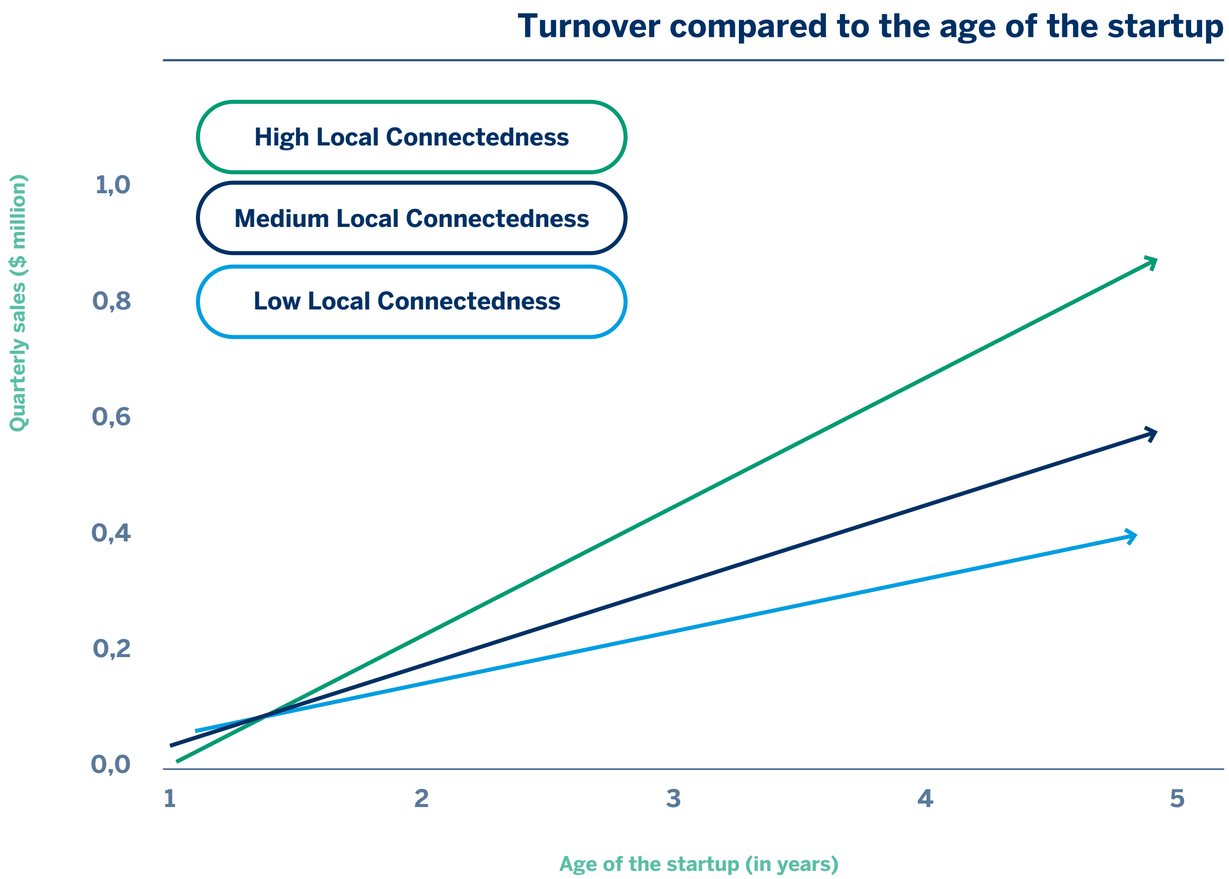
Connectedness and Global Market Reach

One of the most important factors in analyzing ecosystem performance is the connectedness within the startup community.

Local Connectedness is a measure of the support founders receive in their local ecosystems and communities.

Global Connectedness and Market Reach represent the founders' ability to utilize the knowledge available in globally-leading startup ecosystems and to scale to global markets.

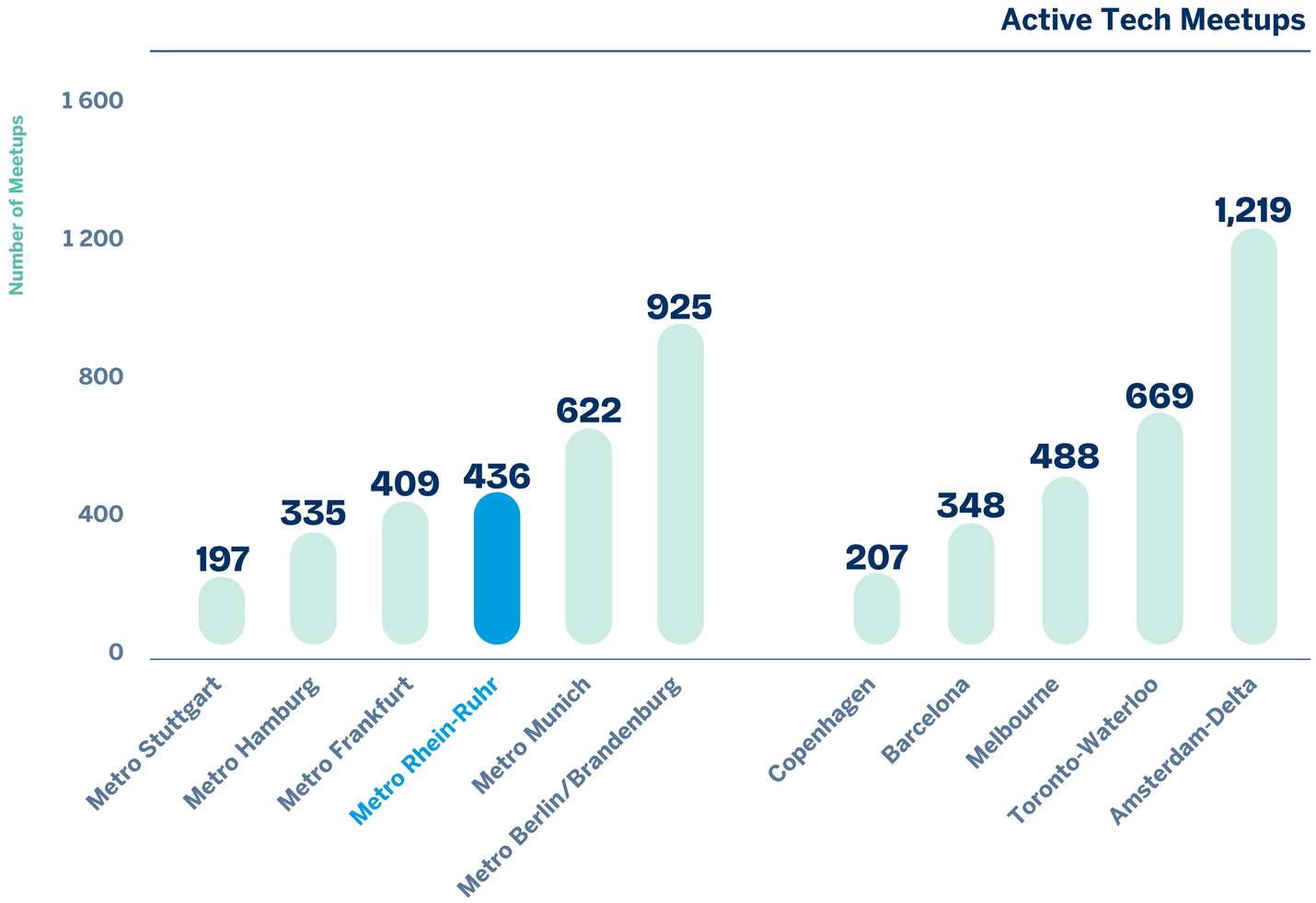
Startups with higher Local Connectedness grow faster and have more potential for large exits



2.1 X

Revenue growth for startups with high vs. low Local Connectedness

The NRW Startup Ecosystem has a vibrant local community

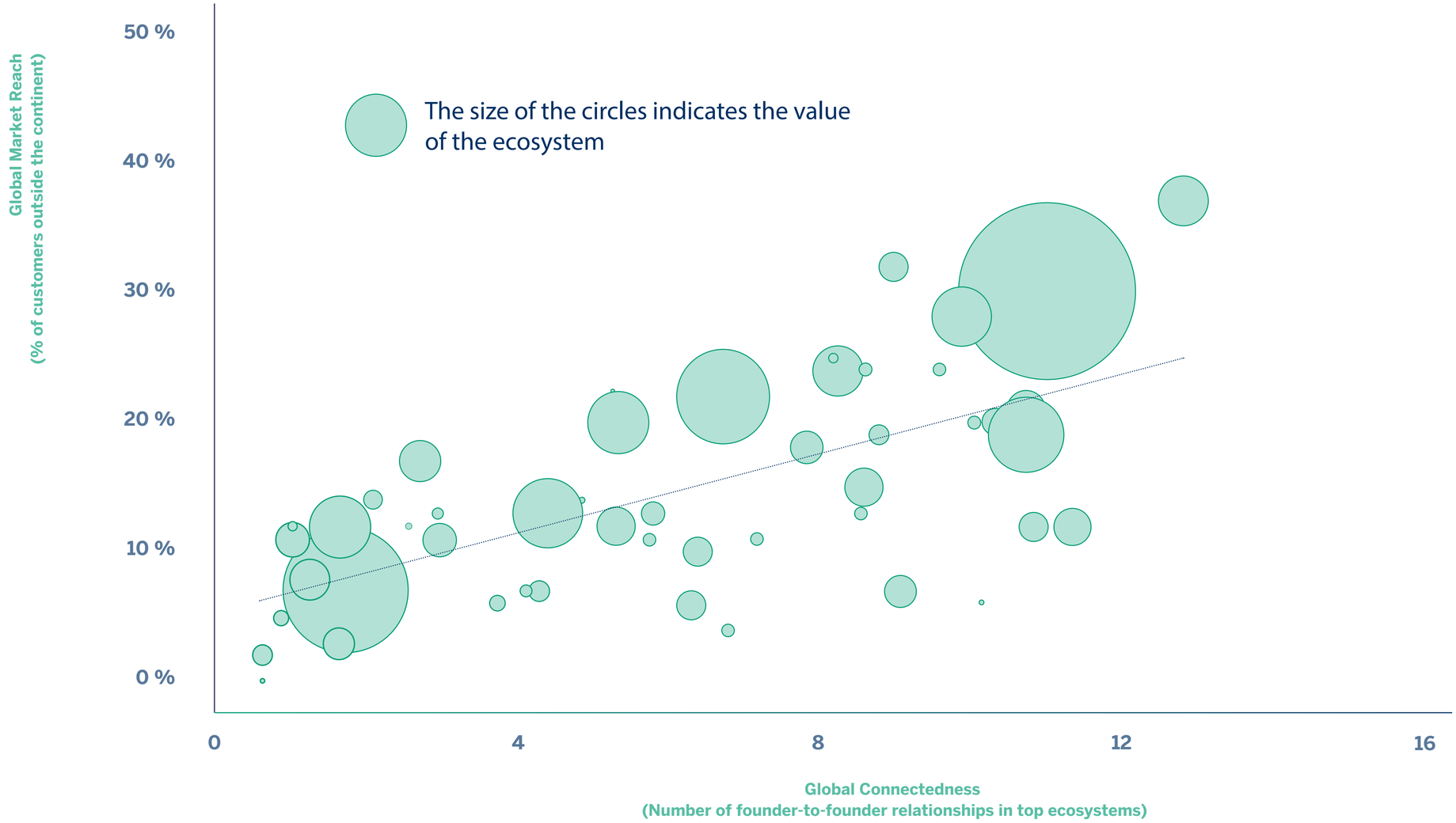


***Explanation of the diagram:** We use the number of Tech Meetups as an approximation for a networked community.

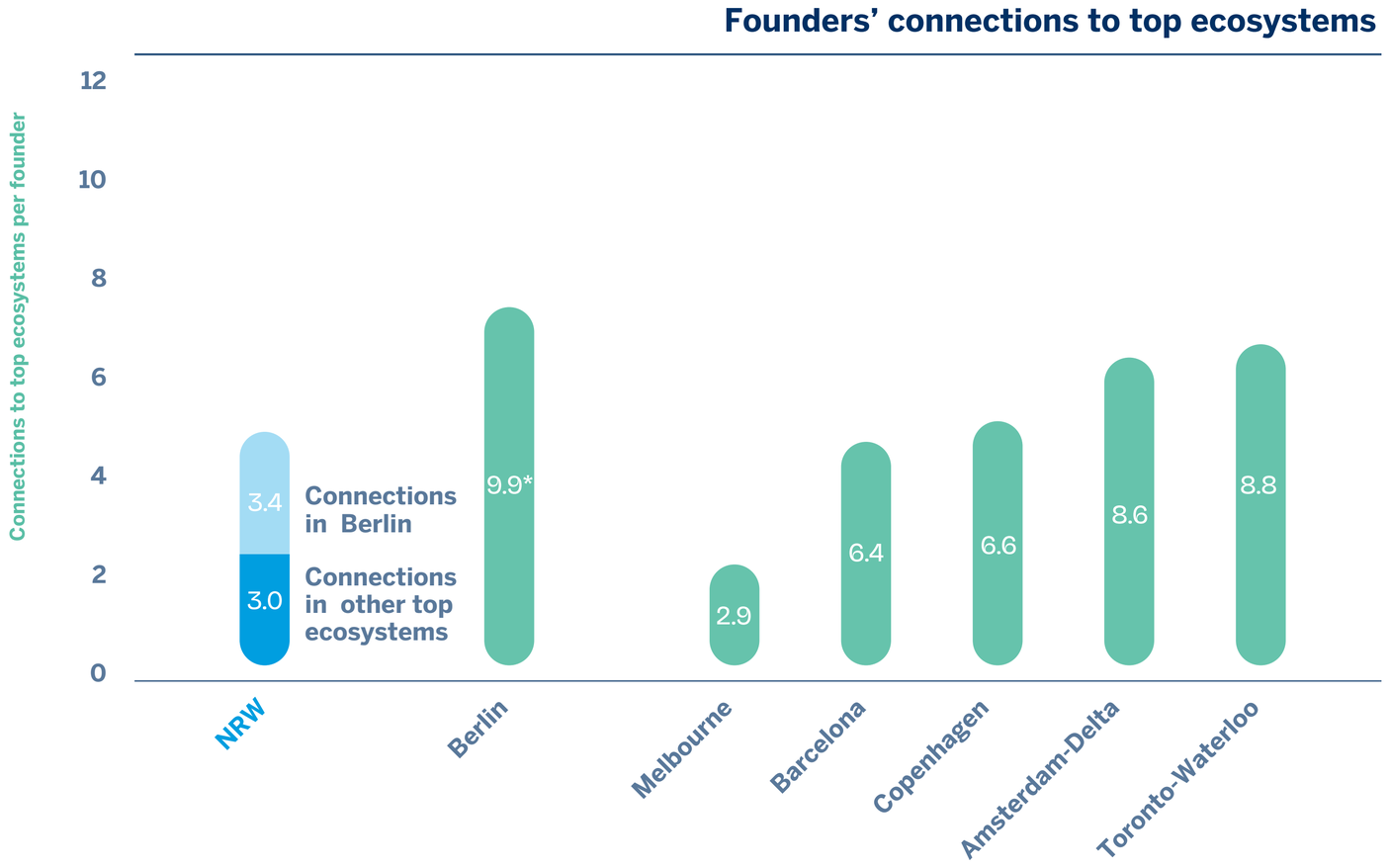
At the end of 2023, NRW recorded 436 active tech meetups, the third largest number of all German ecosystems.

This is both a result of an active startup community as well as the large population within the ecosystem.

Globally-Connected ecosystems achieve greater Global Market Reach, realizing their ecosystem's scaleup potential



Founders in NRW have an average number of Global Connections compared to similar-sized global peers



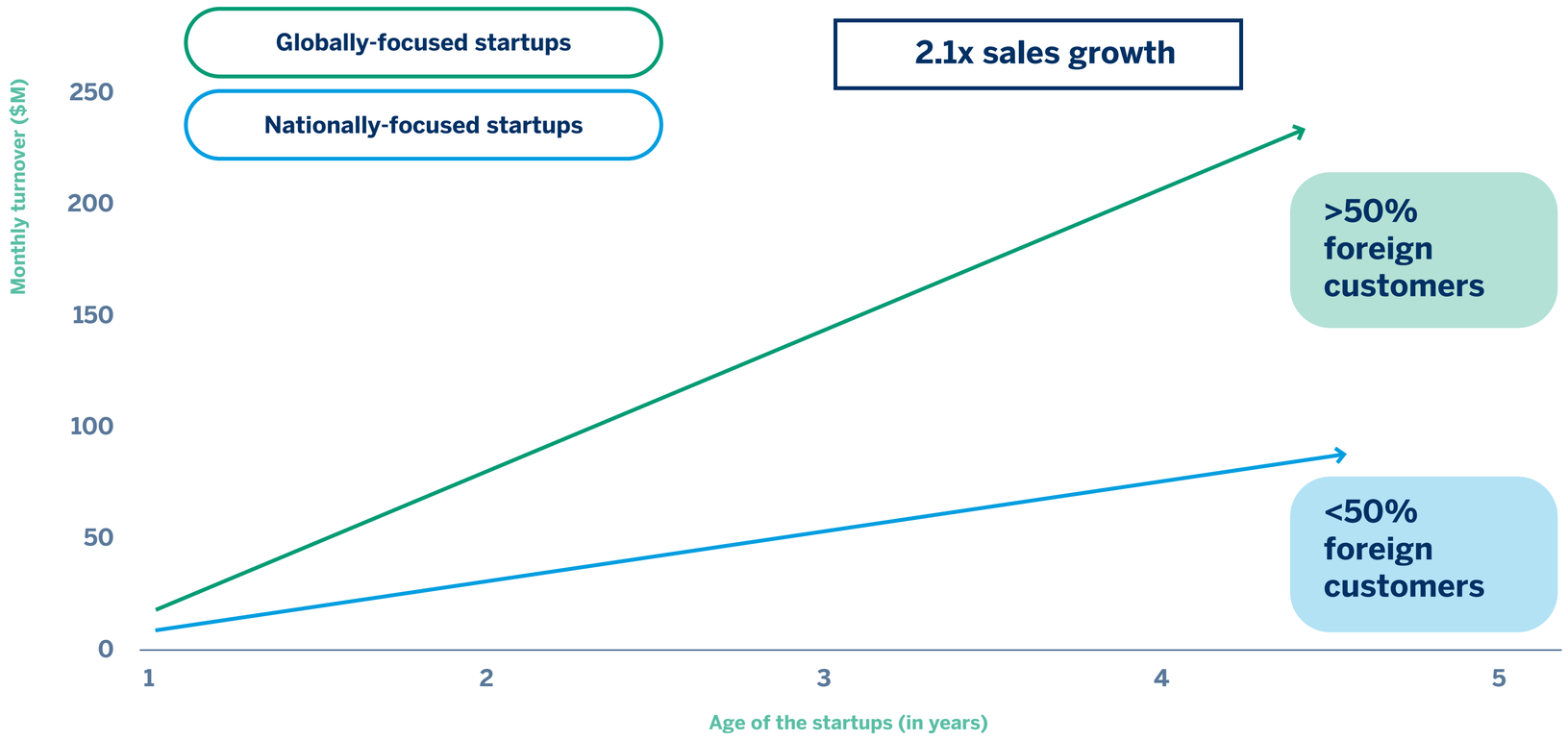
Founder Connections in Top Ecosystems serve as a great source of leading startup knowledge and connections to customers.

Through years of accumulated startup experience and networks, founders in leading ecosystems have access to this knowledge and serve as conduits for founders outside of these ecosystems.

*The value for Berlin excludes connections within Berlin.
Data for NRW's peers was collected between 2018 and 2023.

Startups that go global early achieve higher sales faster, receive more funding and are more likely to develop into scaleups

B2B startup sales growth vs. Global Market Reach

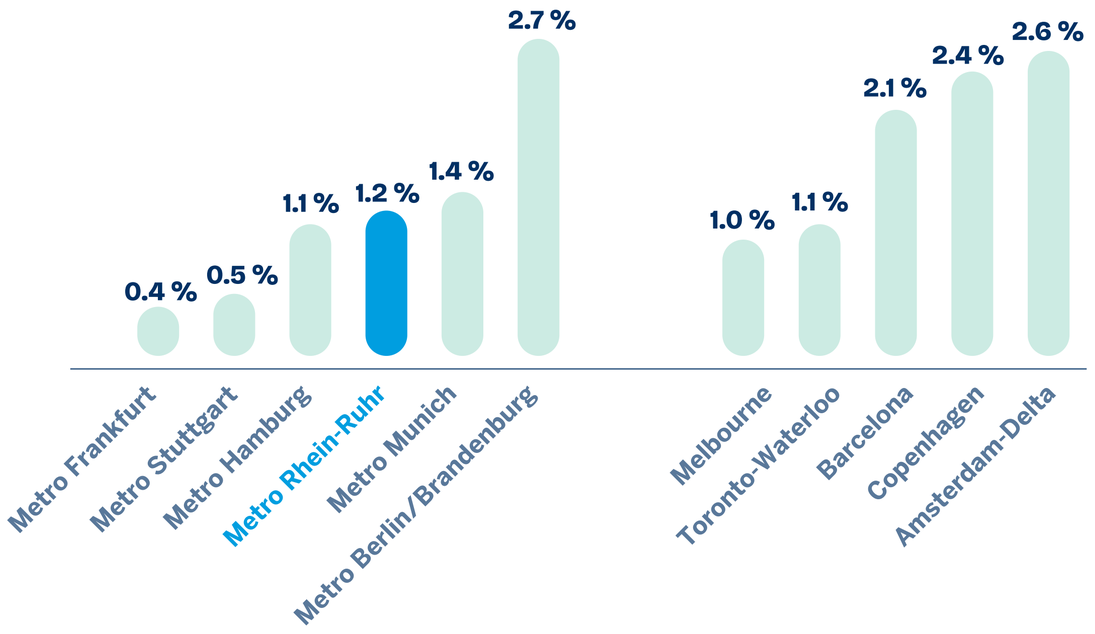


Linear regression lines based on surveys of thousands of startups.

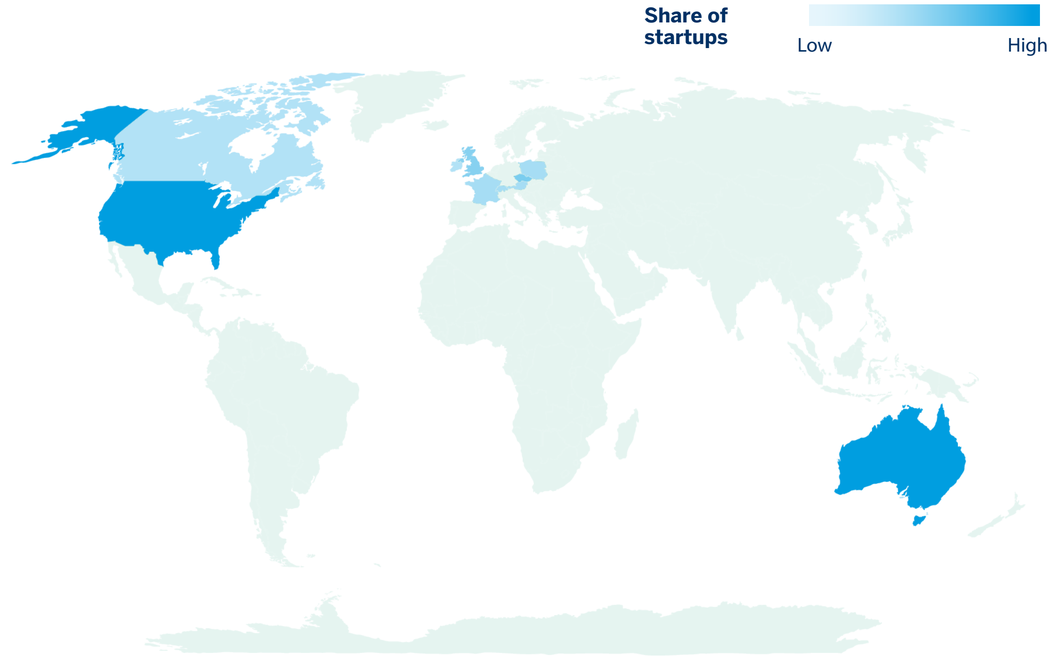
***Globally-focused startups:** Startups that target a customer base outside their country
***Nationally-focused startups:** Startups that focus on customers within their country

~1.2% of startups in NRW have international offices, with the U.S. and the U.K. being the main countries where secondary offices are established

% of startups with international subsidiaries



Global location footprint of NRW startups



NRW startups achieve similar rates of international office expansion as those in Munich and Hamburg, but lag well behind Berlin or Amsterdam with their larger scaleup segments. This indicates a lower level of Global Connectedness and Global Market Reach.

The focus of the establishment of international branches for NRW startups is on the United States, the Czech Republic, and the United Kingdom. The high percentage of branches in Eastern Europe is likely an indication of development offices rather than market development.

Startup Sub-Sector Trends

Extensive research by Startup Genome indicates that startup ecosystems with strengths in global high-growth technology sub-sectors achieve significantly better results across key success factors, such as funding, exits, access to talent, and Global Connectedness.

This section provides an overview of the current landscape of the startup ecosystem in North Rhine-Westphalia (NRW) regarding sub-sector performance, examining the sub-sector trends that are observed both globally and in the NRW Startup Ecosystem.

Deep Technology[1] startups have been the main growth driver worldwide in recent years

Global rise in Deep Tech funding in the startup ecosystem

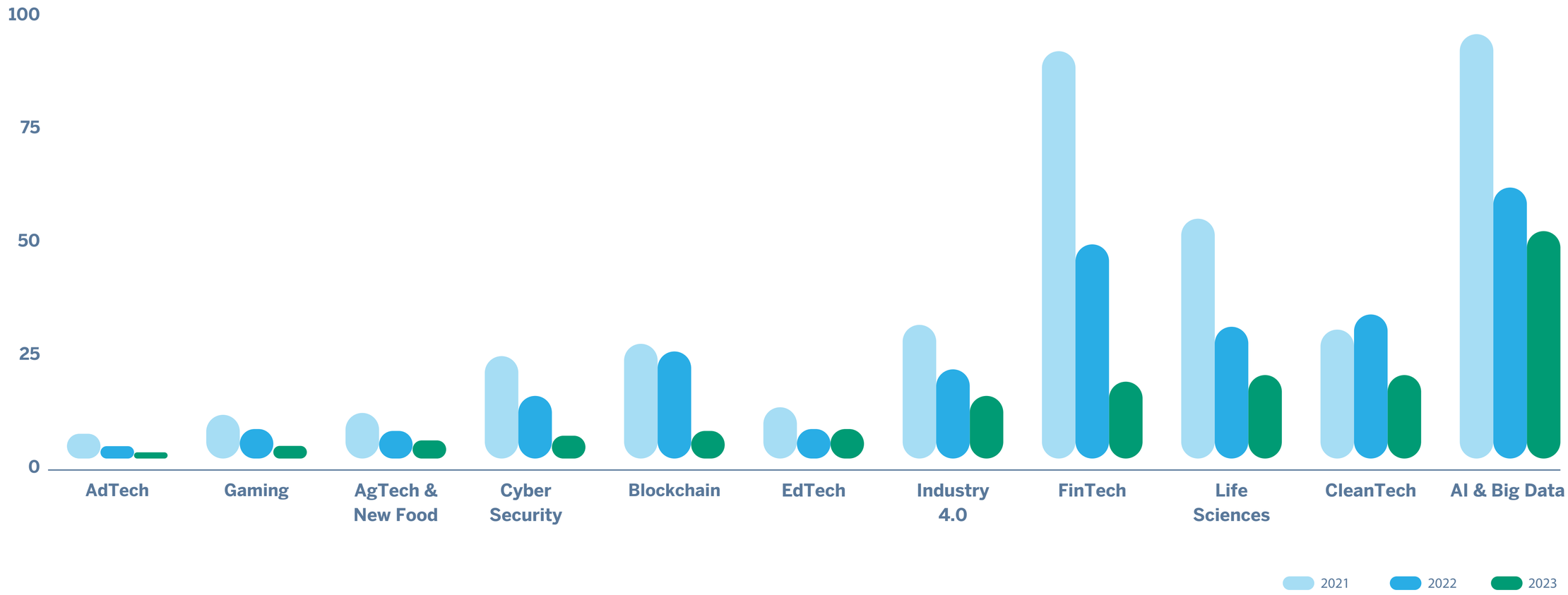
There is great potential for NRW with its traditionally stronger focus on Deep Tech-related industries and the degree of specialization of its university clusters.

1. Deep Tech refers to sub-sectors that require complex technical development and typically require original intellectual property, e.g., Cleantech, AI & Big Data, AMR, AgTech & New Food, Blockchain and Life Sciences.

Despite the overall downward funding trend, AI and Big Data continue to attract the most investment

The global funding boom and bust are evident across all sectors, with peak values in 2021 followed by a significant correction in 2022 and 2023.

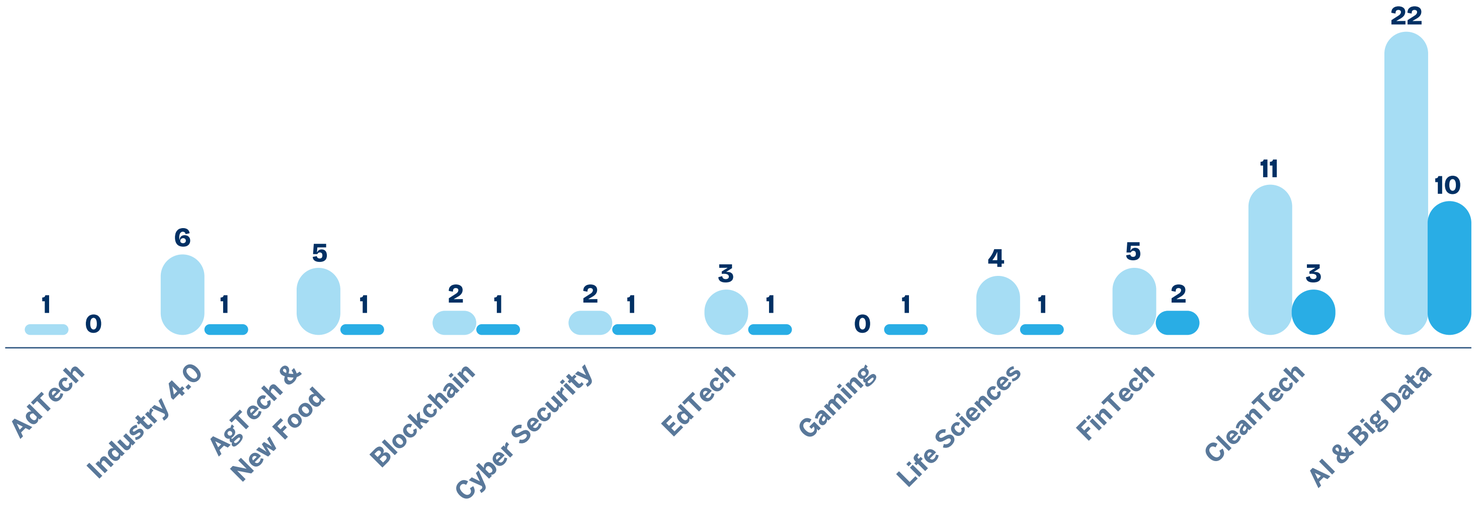
Total funding by sector ($Billion, worldwide)



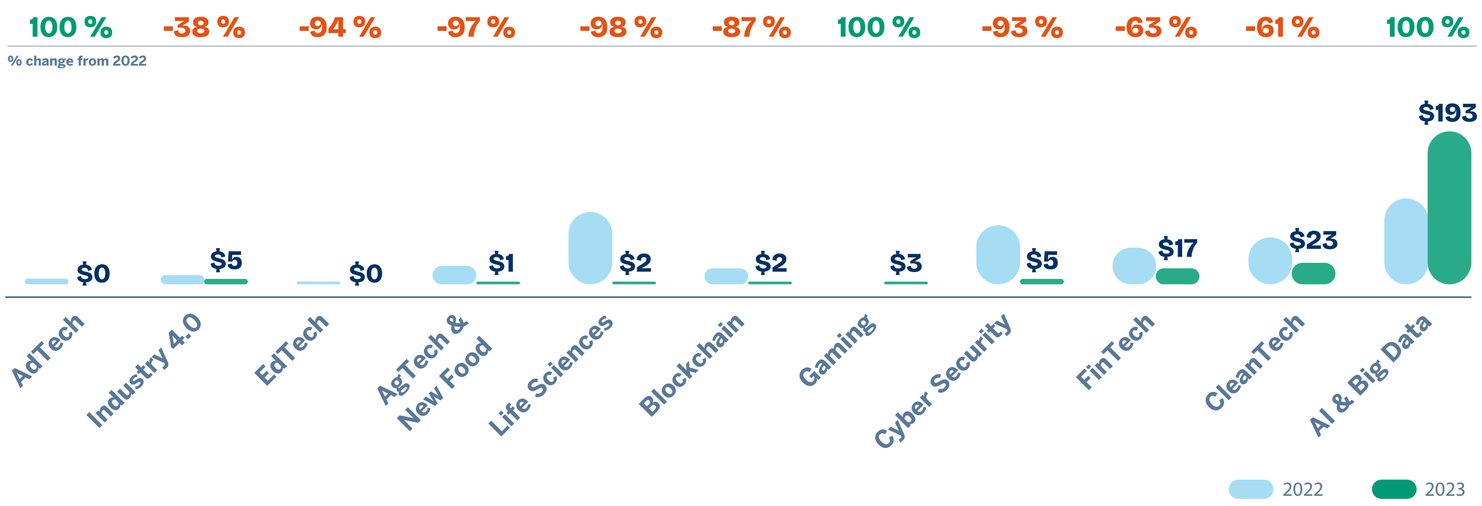
Despite a decline across most sectors, funding in AI and Big Data startups remains robust.

AI & Big Data and Cleantech were the best funded startup sectors in NRW, both in terms of the number of funded startups and the investment value. AI & Big Data leads in both the total number of deals in 2023 and in capital invested, although this is largely due to the Series B round of DeepL (USD $100 million).

Number of funding rounds in NRW by sub-sector ($Million)



Total venture capital invested by sub-sector in NRW ($Million)



NRW scaleups have invested in the development of patents

Top 10
Late-Stage Rounds in NRW, 2019-23

sosafe
$73 Million
Year: 2022
Cyber Security / Training

COGNIGY
$59 Million
Year: 2021
Generative AI

vivenu
$50 Million
Year: 2021
B2B Solutions

DeepL
$100 Million
Year : 2023
AI Translation

resolve biosciences
$71 Million
Year : 2022
Life Sciences

flaschenpost.de
$57 Million (exited)
Year : 2019
Electronic Business Transactions

VMRAY
$36 Million
Year: 2019
Cyber Security

LeanIX
$80 Million (exited)
Year: 2020
Enterprise Architecture

CHRONEXT
$65 Million
Year: 2022
Electronic Business Transactions

1NCE
$51 Million
Year: 2021
Industry 4.0.

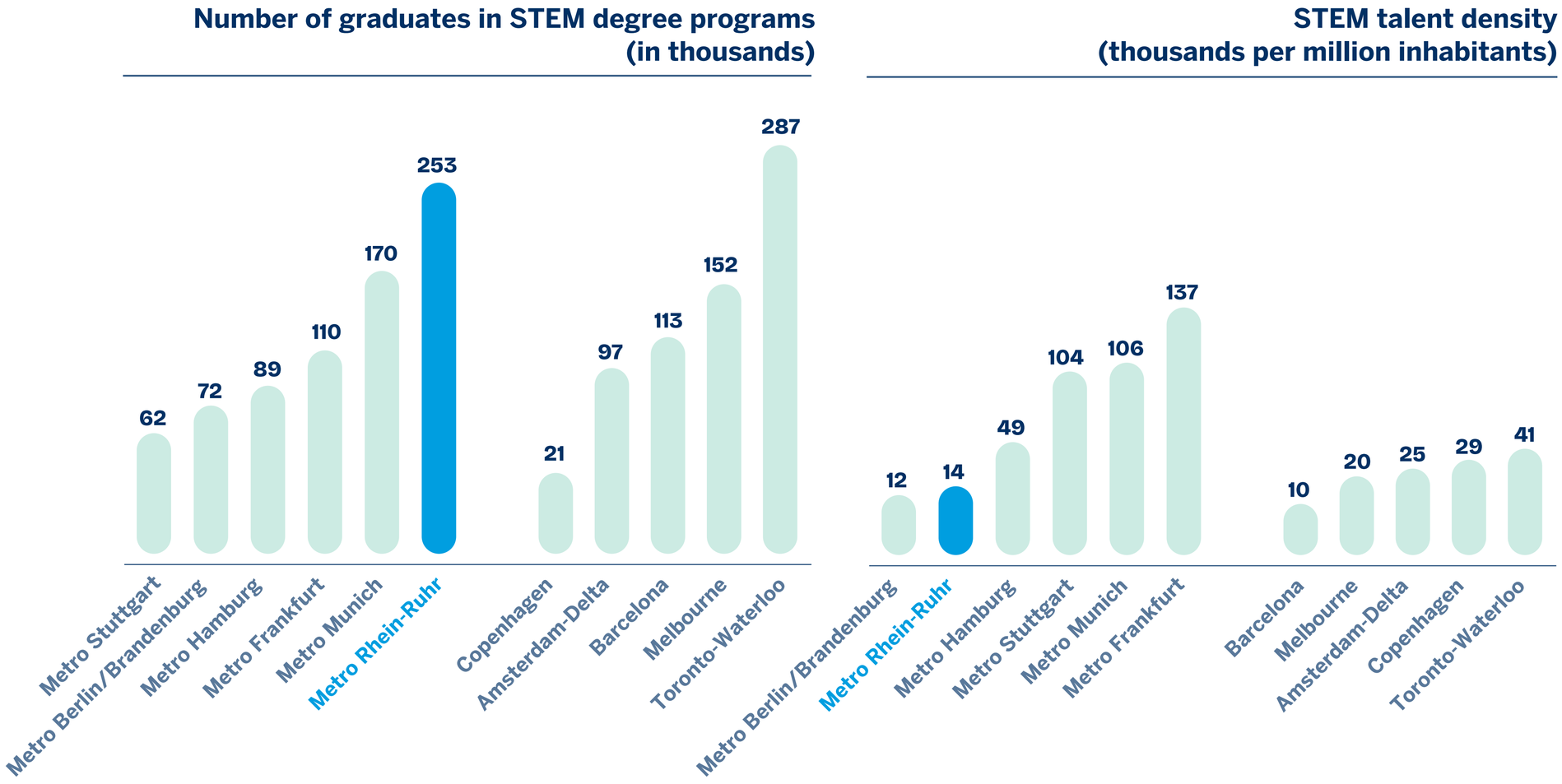
Patent(s) applied for or granted

Talent and Job Creation

The job and talent section focuses on the total direct and indirect employment effect achieved by startups.

To better analyze access to talent in the state, we also compare NRW with peers regarding access to local developers, the number of top developers, and the average cost of tech talent.

The high population and number of universities in NRW contribute to the ecosystem producing ~253K STEM graduates



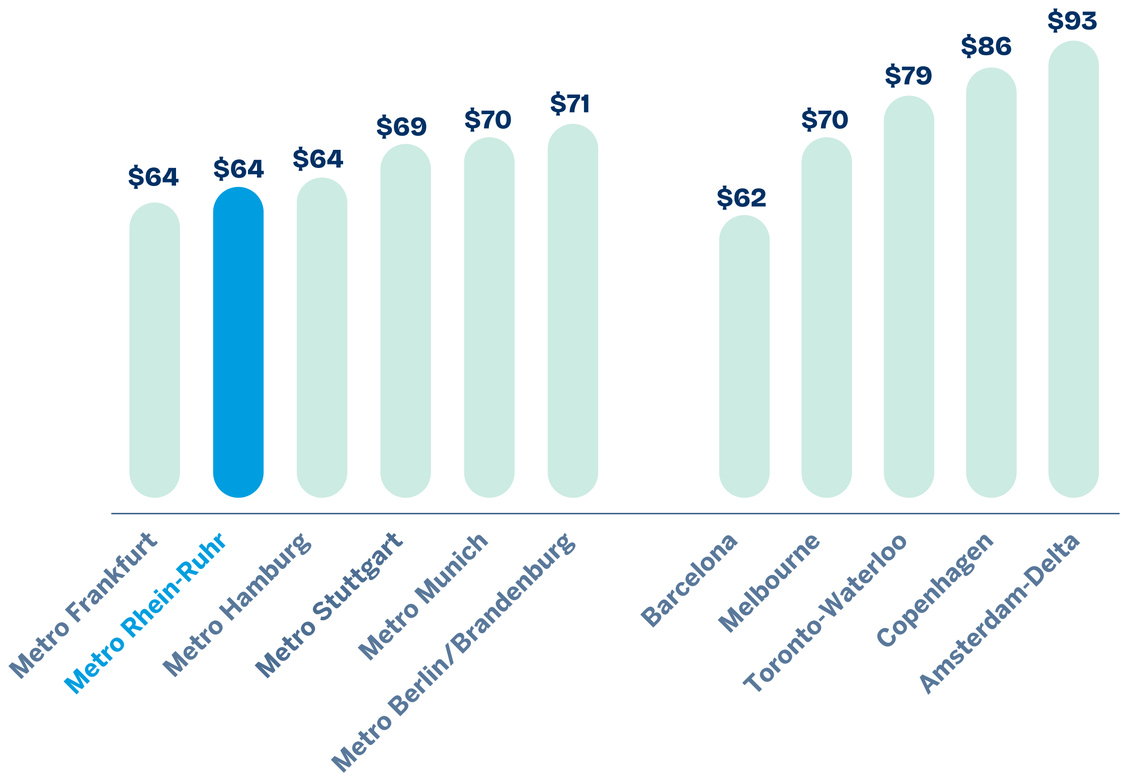
With its large population and more than 70 universities and academic institutions, NRW produces many STEM graduates and thus, at least in theory, has a significantly larger talent pool than many of its peer states.

However, when normalized for population size, NRW's results appear less competitive and correspond to the level of Berlin or Melbourne but remain lower than in Munich and other international peers. This indicates greater potential to produce STEM talent in the state.

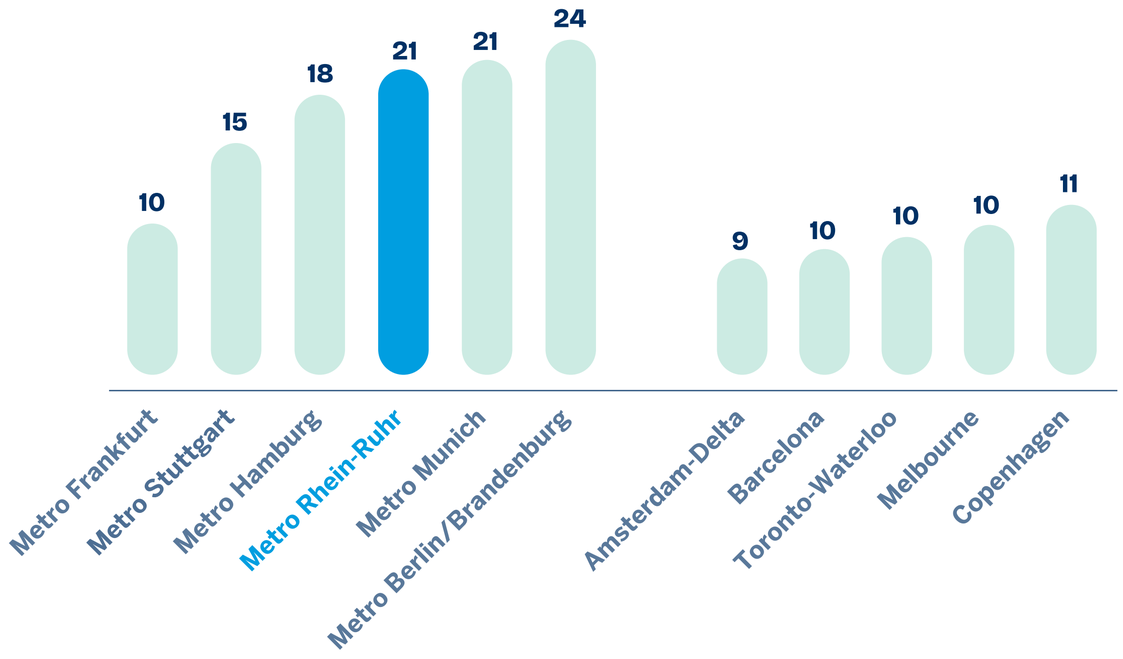
Competitive costs for talent and the size of the funding rounds make it easier for startups in NRW to compete for talent

Personnel costs in the ecosystem remain competitive for startups that receive a seed round.

Cost of technical talent ($ Thousand)



“Bang for Buck” (number of tech employees per Seed round)



2.1 Startup Journey

Startup Foundations

Early-Stage Funding

Late-Stage Funding and Scaleups

Exits

2.3 Economic Impact

Job Creation

Sustainable Development Goals

2.2 Ecosystem Factors

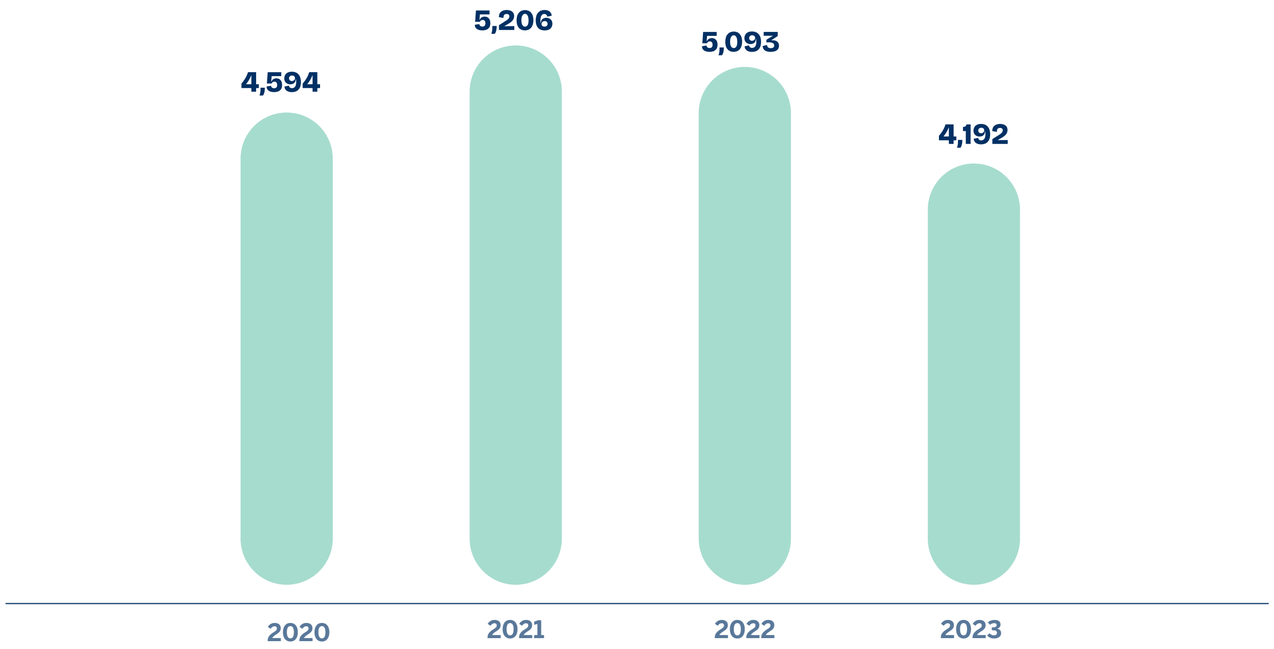
Networks and Innovation Culture

Sector-Focused Innovation Capabilities

Access to Talent

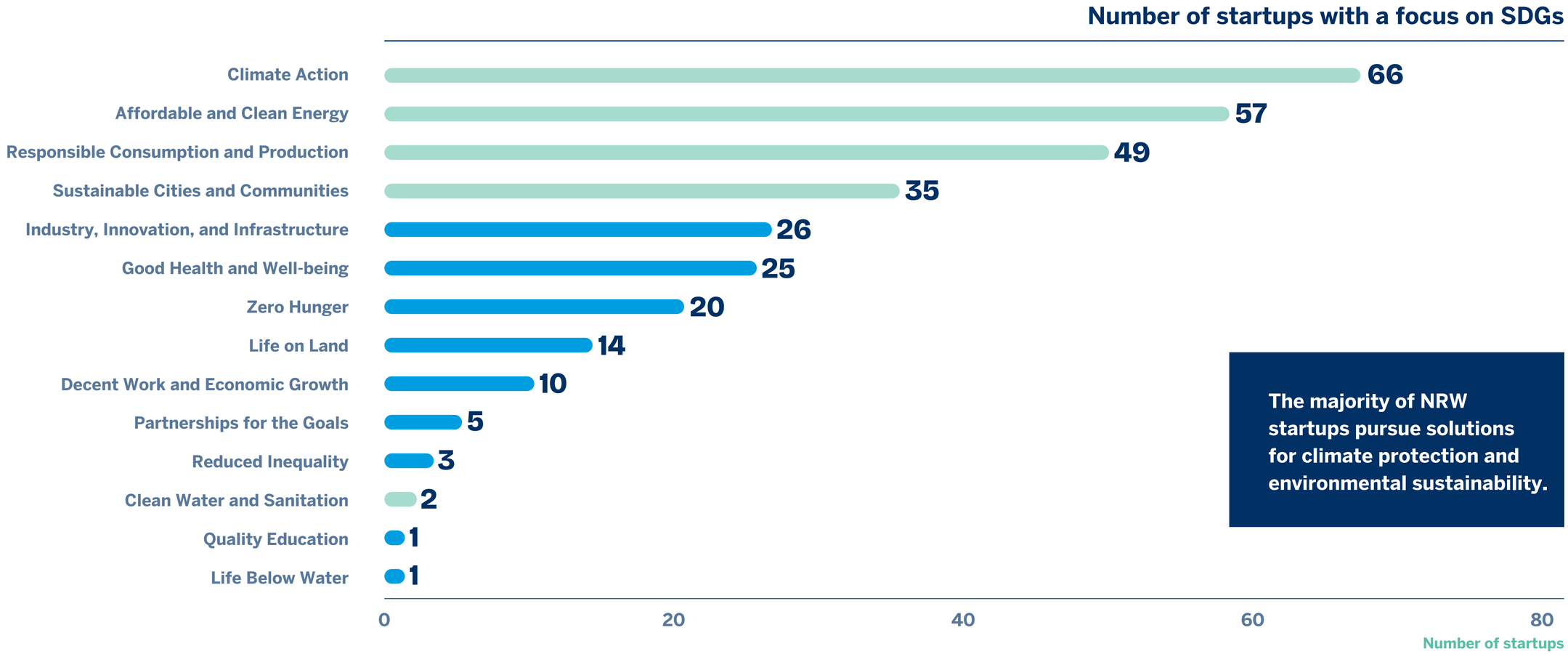
NRW startups created more than 19,000 direct jobs in Germany in the period 2020-2023; in addition, ~76,000 indirect jobs were created in the same period.

Direct job creation by startups in NRW (gross)



Studies by the MIT Technology Review show that jobs in the technology sector lead to the creation of around four indirect jobs; Startup Genome analysis based on startup foundations, funding activities, and exits.

In NRW, we can currently identify ~91 impact startups* that are directly involved with one or more of the 17 Sustainability Development Goals (SDGs)

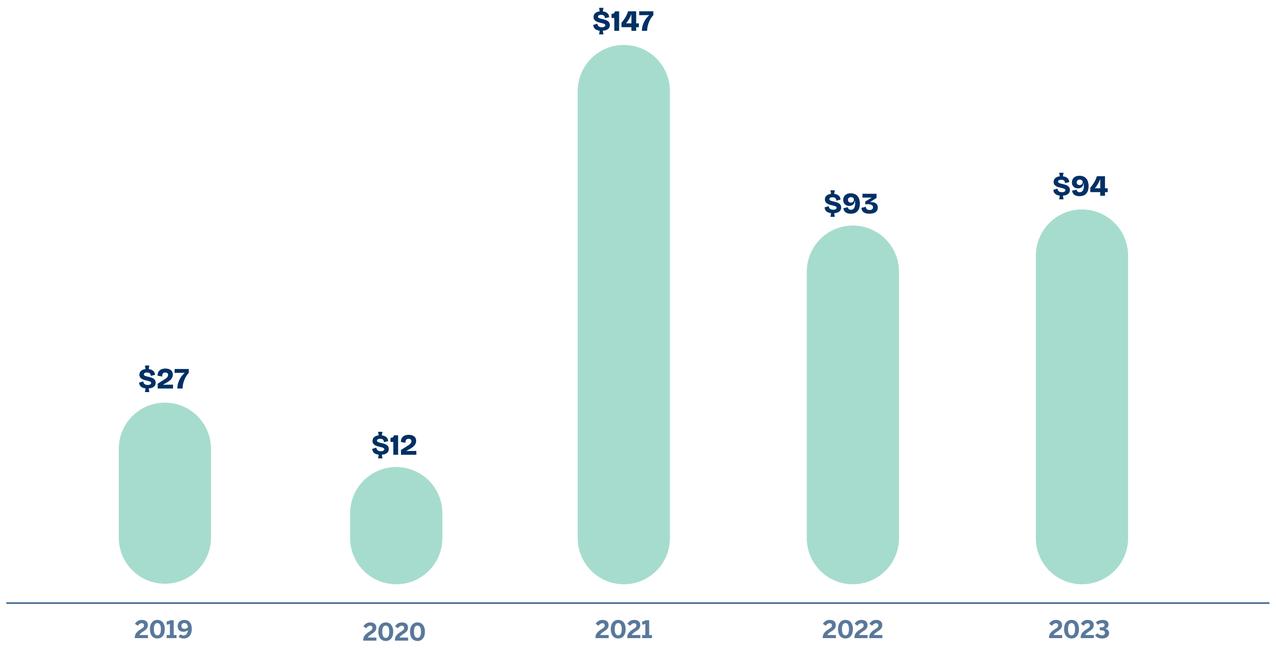


The majority of NRW startups pursue solutions for climate protection and environmental sustainability.

*Impact Startups are companies that focus on one or more of the United Nations Sustainable Development Goals.
Source: Dealroom

Investor interest in social impact ventures is growing, with total investment in these startups growing at a 37% CAGR since 2019 and reaching USD $94 million in 2023.

Total funding for impact startups* in NRW (in $ Million)



*Impact Startups are companies that focus on one or more of the United Nations Sustainable Development Goals.
Source: Dealroom

Methodolody and Metrics

03

Methodology - Overview

Approach

- The NRW Startup Report 2024 combines data from various sources, including data on company registrations, investments and takeovers, shareholding documents, etc.
- The data used for the analysis comes from both public sources and private database providers. To ensure high data quality, Startup Genome has implemented rigorous processes that include machine learning algorithms and manual review.
- Where possible, Startup Genome has combined data sets from multiple sources to create near-complete data populations to analyze. However, some analyses are based on representative samples in order to calculate statistics.

Data Sources

The sources used include:

- German Commercial Register
- Dealroom
- Pitchbook
- Crunchbase
- MeetUp.com
- GitHub
- LinkedIn
- Glassdoor, Salary.com, and PayScale
- Local startup support organizations

Peer Definitions

- NRW was compared with other comparable German federal states and ecosystems that are in a similar phase of the Ecosystem Lifecycle Model.
- For international peer comparisons, Startup Genome defines an ecosystem as the central point of a city with a radius of 100 km. This geographical range enables a comparison with the geographical structure of NRW.
- For certain key figures, such as technology meetups, engineer salaries, number of STEM graduates and others, statistics are displayed at metropolitan region level instead of federal state level due to data availability.

Explanation of the KPIs

- **Exits:**
  A measure of the number of exits, which includes initial public offerings (IPOs) and takeovers (M&As).
- **Ecosystem value:**
  A measure of economic impact, calculated as the value of exits and startup valuations over a 30-month period.
- **Unicorns:**
  Startups with a valuation greater than or equal to USD $1 billion that have not been sold by the time of publication.
- **Scaleups:**
  Startups with a valuation greater than or equal to USD $100 million.

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